

Expert Review Comments on the IPCC WGIII AR5 First Order Draft – Chapter 13

Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
8840	13					This is an addition, due to a serious omission in the text, to my comments reviewing Chapter 13 sent on 11 September 2009 and received with a confirmation number 259	Noted
11215	13					<p>This chapter gives no treatment to human rights in any detail (other than the brief mention in a confined context at page 29 of 92). The only specific section on rights relate to intellectual property rights. I could not find any reference to the REDD+ *safeguards* under the 2010 Cancun agreements and international obligations (though other aspects of this UNFCCC agreement are dealt with in some detail)? This appears to be a serious omission in this chapter that requires correction (though there is brief note of MDB safeguards these are quite distinct as they do not form part of an international treaty). Also no reference to recent recommendations of the Human Rights Council in relation to Human Rights.</p> <p>Needs a specific sub-section on human rights in this chapter. Such a new section would do well to cite Fergus Makay's paper on REDD and the Saramaka case: http://www.forestpeoples.org/sites/fpp/files/publication/2010/08/surinamesaramakaandreddjudgmentmar09eng.pdf</p>	Taken into account - combined with comment #2931
6986	13					<p>To me, "environmental effectiveness" means, did the policy reduce global emissions or limit concentrations? "Sustainable development" is a much richer concept, involving values. "Precaution" also can only be interpreted in terms of values (risk aversion), something I wouldn't associate with "environmental effectiveness."</p> <p>The term, "aggregate economic performance," in every day language, implies something like GDP growth, whereas you mean it to be more directly related to welfare/wellbeing. There are other terms you might use, like net national welfare. I would have thought that "sustainable development" and "precaution" would be more appropriately placed here.</p> <p>Finally, I don't understand why "fairness" would come under "institutional feasibility." I would have thought that "enforcement" would be a more relevant consideration.</p>	Noted; these comments apply to 13.2, not to 13.3. They will be addressed along with similar comments in 13.2.
6989	13					<p>Top row: You say that Kyoto establishes a compliance procedure, including consequences for non-compliance. But for that to be binding, it must be agreed in an amendment, and there is no amendment. I don't think Kyoto should be mentioned in this row.</p> <p>I think the word "mandatory" should be explained. Obviously, participation in an agreement is not mandatory, so even if the word "mandatory" appears in a treaty, there remains a strong element of volunteerism. Also, I was confused about the distinction between a "mandatory compliance system" (top row) and enforcement of "mandatory" obligations subject to "self-enforcement." If Kyoto had a compliance amendment, it would operate as a self-enforcing agreement.</p> <p>I also didn't see how "mandatory" could apply to Copenhagen (row three). Not even being a treaty, Copenhagen is weaker than Kyoto.</p>	taken into account. The table needs to be read in conjunction with the paragraph that precedes it, which spells out the meaning of bindingness. That paragraph has been revised to specify the meaning of mandatory - that it refers to the nature of the obligation actors undertake rather than whether they have choice or not whether to participate.

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3474	13					<p>One of the elements that I was expecting and is lacking from this chapter is the discussion concerning political feasibility of agreements. A large body of literature has numerically assessed the effects of different allocations/international participation to agreements and what they would imply in terms of redistribution and of international transfers. I know part of this will be in the section, still do be developed, on Performance Assessment. Still I would have expected this as a criteria discussed in 13.2.2 (there is something in line 43, page 13, but I believe some more discussion would really be beneficial).</p> <p>For a detailed discussion on equity and sustainable development the reader is referred to Chapter 4. But Chapter 4 will provide the ethical and theoretical background, while some more discussion should be devoted here to issues like: what different allocation/schemes might imply for different regions of the world? are there schemes that hurt less more vulnerable countries while implying reasonable international transfers? What are the main regional obstacles to negotiations (e.g., across many models and under many allocation rules, MENA, Transition Economies and China are almost always major losers from climate change policy)?</p>	Taken into account - this issue has now been thoroughly addressed in the revised Section 13.13 and in the discussion of institutional feasibility in Section 13.2.2.4
3475	13					<p>Although a lot of new stuff is going on (see European project LIMITS and associated publications) most models have been running C&C schemes for a long time and this should be mentioned somewhere in this chapter.</p> <p>Meyer, A. & Hanmbeck, R., 2004. Contraction and convergence. In Proceedings of the Institution of Civil Engineers—Engineering Sustainability. pagg 189–192. □</p>	Rejected - the suggested body of literature was assessed in AR4, new literature should be included, but no new references provided
13195	13					Sometimes Cancun is written in Spanish (Cancún) and other times is written without the stress. I suggest taking a unique writing criterion.	Editorial - copyedit to be completed prior to publication
3727	13					there is a lot of repetition between sections	Noted
3728	13					the discussion is still very unfocussed at this stage, very few implications are drawn from the literature, just a bunch of random and often overly brief summaries	Noted
3729	13					too much parochial self-citation by the authors, not enough reference to the broader literature	Noted
3756	13					see Biermann	Rejected - Biermann articles are cited but comment not specific about which articles
8090	13					This is a very good chapter. I have only a couple small comments.	Noted
14344	13					This figure contains various agreements and "forms of cooperation." The bubble on NAMAs and NAPAs seems out of place here. These describe one the one hand a broad array of nationally appropriate mitigation actions (a loose category that includes any activity and is not necessarily related to initiatives or agreements), and on the other national adaptation plans of action, which are actual plans, again not initiatives or agreements. These do not belong here.	Taken into account in revision of Figure 13.1.
18684	13					Concepts, principles, etc. are defined at length, which is great, but are not used much in the remainder of the chapter.	Noted
18697	13					The chapter sets out to "survey and synthesize the scholarly literature". While I think it already does a good job, I believe the *synthesis* aspect needs to be strengthened to avoid producing a (however useful) commented reference list.	Noted
2580	13					The role of subnational and local governments in addressing Sustainable Development issues, notably climate change, has been increasingly recognized by the UN System. For instance, the Rio+20 final declaration has 23 matches to "subnationals" (initial draft had just a couple)	Noted - subnational and local actions are already depicted in Figure 13.1, mentioned in 13.3, and discussed in 13.5.

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15382	13					International chapter needs to recognize the limits on national policy discussed in Ch 6 and Ch 15 – international policy can't be more than the coordination of national policies, and is subject to the same influences that make national policies inefficient. The discussion of capacity building is so bland and uncritical to be hardly worth including. But since the topic cannot be avoided, I strongly recommend being both specific and critical. Some forms of capacity building, such as education and scientific exchange, are unexceptional. But a discussion of other forms of capacity building – support for planning, policy making and enforcement, and creation of government agencies, for example, must differentiate what kind of capacity is being built, by whom, and how. Easterly's work (<i>The White Man's Burden: Why the West's Efforts to Aid the Rest of the World Have Done So Much Ill and So Little Good</i> , 2006.) is particularly relevant here, because much of the \$2.3 Trillion in development aid whose failures he documents went for precisely this kind of centralized capacity building and planning rather than on the ground efforts to encourage entrepreneurial activity and address the immediate causes of poverty.	Taken into account - Section 13.10 has been heavily revised and additional literature on interactions of national and international policy has been included where appropriate
13633	13					See Comparing Climate Commitments: A Model-Based Analysis of the Copenhagen Accord, by W. McKibbin, A. Morris, and P. Wilcoxen, Climate Change Economics, Vol. 2, No. 2 (2011) 79-103.	Taken into account - reference has been assessed
13638	13					Example: Achieving Comparable Efforts through Carbon Price Agreements, with W. McKibbin and P. Wilcoxen, Viewpoints, The Harvard Project on International Climate Agreements, Harvard University Kennedy School, December 2009.	Taken into account - reference has been assessed
13645	13					The OECD also has tools, such as the Climate change expert group (formerly the Annex I expert group).	Rejected - the level of detail suggested is too fine
7499	13					No comments.	Noted
7370	13					There is a lot of repetitive text, particularly in the introductory parts of each section.	Noted
2941	13					This is a very interesting and revealing chapter. I am pleased to see these topics discussed in AR5, and can only hope that they inspire political action in the form of more effective international agreements to mitigate climate change.	Noted
9970	13					This section is duplicated with chapter 16. Financing instruments mentioned in this section are almost repeated in chapter 16. Maybe authors from these two chapters have to communicate.	Taken into account - overlap with Ch. 16 eliminated and cross-references made.
3730	13					this section covers one of the most important and promising areas of climate governance that has emerged since the last IPCC report, and deserves much more elaboration.	Within the space limits, this section has been strengthened
5917	13					It may be useful to provide a table of international initiatives similar to Table 14.9, there may be limited assessment but it gives an idea of what is being done / available in various parts of the world.	Taken into account - a new tabel is now included
11321	13					The report may take note that UNDP and UNEP are only two of many UN programmes addressing climate-based issues. A bit mis-leading to leave readers thinking otherwise.	Accepted - text revised.
12974	13					Please check with Ch. 16 possible overlaps.	Taken into account - overlap eliminated and cross-references made
6049	13					Is there any literature that discusses how these mechanisms are set up and/or evaluates how well they are working?	Taken into account - the (scarce) peer-reviewed literature evaluating these mechanisms has now been incorporated. More literature should emerge for the final draft.
6051	13					Could this section be re-organized to more explicitly use the evaluation criteria listed in line 3?	There are no criteria in line 3.
6052	13					This section might make more sense as an introduction to section 13.11. It seems to repeat some of the material in the previous sections.	Taken into account - section deleted and relevant material shifted into the introduction.

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7374	13					This section should perhaps incorporate more of the policy ideas arising from the UNSG High Level Advisory Group on Climate Finance - such as an international transaction tax, taxes on international transport, and assessed contributions from developed countries. http://www.un.org/wcm/content/site/climatechange/pages/financeadvisorygroup/pid/13300	Accepted - AGF report now quoted with a list of instruments suggested.
14668	13					I do not understand why this section is in this chapter. There needs to be a stronger connection to the material in this section to the design, implementation, and/or success of international agreements/international efforts to combat climate change.	This section was included because of a plenary approved bullet. We have tried to strengthen the link with other sections of the chapter
6053	13					I would like to see a discussion of some of the literature that analyses the performance of PPPs. In addition to the sources listed in the first paragraph of this section, see also Biermann et al. 2007 (in Peter Glasbergen's book PARTNERSHIPS, GOVERNANCE AND SUSTAINABLE DEVELOPMENT).	Within space limits more recent literature by the same group of authors has been included.
6054	13					This section could also draw on literature that analyzes private sector governance. What are the governance issues raised (e.g. accountability issues)?	Additional literature on governance issues of the private sector are cited
18357	13					When the section is being developed for the Second Order Draft, authors clearly need to think in how far the previously discussed assessment criteria in addition to environmental effectiveness (i.e. aggregate economic performance, distributional and social impacts, and institutional feasibility) will be addressed. It is also not clear in how far the section will compile the insights from the rest of the chapter and e.g. discuss the different negotiation components (such as capacity building, technology transfer and finance etc). Also, the assessment of different burden sharing proposals should be based on the relevant discussions in Chapters 3 and 4 (which introduce equity principles underlying the UNFCCC and their translation into burden sharing regimes).	Taken into account - new text prepared
18694	13					The Introduction of the chapter (13.1) promised an evaluation "according to [the] criteria developed in section 13.2". This is indeed important to make section 13.2 meaningful, and this promise is not yet delivered upon in 13.13 (I realize that parts of the chapter are still missing, but it is also completely absent from the subsections that are present).	Taken into account - new text prepared
10927	13					The following two papers are relevant here: Peters, G.P., Minx, J.C., Weber, C.L., Edenhofer, O., 2011. Growth in emission transfers via international trade from 1990 to 2008. Proceedings of the National Academy of Sciences 108, 8903-8908.; Velders, G.J.M., Andersen, S.O., Daniel, J.S., Fahey, D.W., M.McFarland, 2009. The importance of the Montreal Protocol in protecting climate. Proceedings of the National Academy of Sciences 104, 4814-4819.	Taken into account - references included Also taken into account in 13.8. First reference is now cited. Second reference is interesting though it is not clear where it should be cited in section 13.8. Please note that second reference is already cited in previous sections of chapter 13.
7375	13					The sub-sections appear to be focused on the mitigation-target elements of the UNFCCC and KP (and the function of the CDM). As both provide for a much more holistic mitigation response to climate change it would be desirable to include overview of how these institutions have supported (or not) e.g. financial and technology transfer to achieve mitigation actions - particularly outside the context of the CDM.	Taken into account - new text prepared
18436	13			49		I think the summary should include a brief performance assessment on policy and institutions, especially regarding UNFCCC. Could be a suggestion for the second draft, considering that the authors are saying that that work is incomplete	Taken into account - new text prepared

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8778	13					See the report of the CDM Policy Dialogue for an assessment of the performance of the CDM and recommendations for change. http://www.cdmpolicydialogue.org/	Taken into account - the CDM policy dialogue is mentioned as an institution but its reports are not peer-reviewed; however the peer-reviewed references cited therein are included where relevant
14670	13					This assessment of Cancun is focused only on environmental outcome. First, it assumes compliance (and there is a long literature, much of which is referenced here, raising questions about that). Second, it ignores efficiency, cost-effectiveness, and equity.	Taken into account - Included more literature on costs-efficiency.
8099	13					Same comment as number 7 above	Taken into Account - Is addressed in current textt.
11347	13					It may be worth mentioning somewhere - either in the financing section or here in the assessment section - the problems of fraud and trade practices issues that can (and do) arise in private/voluntary schemes and which have particularly negative impacts on their efficacy and on consumer and investor confidence	Taken into account - new text prepared
3753	13					add a column on causal mechanisms, and indicate which types are complementary and which interfere with one another, and which have no interactive effects	Rejected. The comment was not understood by the authors.
18685	13					Suggestion: the relations between the different terms that are defined in this section (principles inform goals, goals are fleshed out in targets, targets are implemented in policies, criteria are fleshed out in metrics, policies are evaluated according to metrics, ...) could be visualized in a diagram to make these basic concepts clearer.	Taken into account. The text has been rephrased to make clear what is the differences bewteen principles and criteria, and a more detailed explanation on goals, targets and metrics has been introduced. For the latter, a new subsection was inserted in 13.4.2
3173	13					section 13.2.1: cross reference to the discussion in chapter 6 of international cooperation and transformational pathways. Chapter 6 makes a very important point that echoes the argument here about the need for participation. A cross reference would make this point much stronger and tie WG3 together more fully.	Accepted. Text in section 13.2.1.3 makes now reference to the point raised by the referee (section 6.3.6 International Strategies and Stabilization in chapter 6).
6030	13					The chapter focuses on climate change as a commons issue but there are many scholars who approach their research from an alternative framing that emphasizes how climate change is embedded in the neoliberal global political economy, which in turn raises different types of challenges in terms of international cooperation. Could this be added as an alternative framing in the chapter to better reflect the literature?	Rejected. No scientific evidence/publication provided to support changes suggested by the reviewer. Commentator should provide a clearer explanation theoretical background and relevant peer-reviewed literature.
2163	13					From my point of view, one important approach to overcome undersupply of public goods should be included: the matching approach first suggested by Joel Guttman (1978), American Economic Review. This approach has been also highlighted by Scott Barrett (1990), Oxford Eview of Economic Policy. Recently there have been several papers analyzing this approach and applying it in the global public good / climate change mitigation context (Boadway et al 2007, Cornes et al 2011 etc.).	Accepted. Text has been revised to include the suggested matching literature under 13.2.1.1. after the mention on the role of prices to internalize "extrenal costs" since matching is a sort of "Lindhal pricing" mechanism.
3740	13					why these principles? How about other global principles, like sovereignty, human rights, respect for IPRs, WTO liberalization?	Accepted. Section 13.2.1.2 to 4 and 13.2.2. will be fully revised.

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12976	13					<p>It is not clear why "high cost-effectiveness may have negative impact on sustainable development if cost effectiveness is calculated on a short time horizon". The authors should expand on that or cancel the statement.</p> <p>I think this is the right place to introduce the literature on the trade-off between efficiency and equity.</p> <p>Given a mitigation target, the highest possible level of efficiency minimizes aggregate abatement costs. Equity can be achieved by means of transfers (Coase, 1960).</p> <p>However, in the absence or in the impossibility to distribute the efficiency gains in an equitable way, efficiency might require some regions to bear a large fraction of the costs. If those regions are poor, efficiency might have impact on sustainable development.</p> <p>Most IAM study global mitigation policies assuming an efficient distribution of abatement effort. However, this often implies a disproportionate cost for developing countries (in case of a carbon tax) or an unfeasible transfer scheme (global cap-and-trade). In the impossibility to redistribute efficiency gains, equity and development considerations might push towards less efficient distributions of abatement effort.</p> <p>Unfortunately the trade-off between equity and efficiency is not well reflected in the estimates of mitigation costs.</p> <p>I have recently done work with Massimo Tavoni on this issue and our paper is forthcoming on Energy Economics: http://dx.doi.org/10.1016/j.eneco.2012.02.005.</p>	Accepted. The text " if cost effectiveness is calculated on a short time horizon" was eliminated because it was not clear. Section 13.2.1..3 was moved to 13.2.2.5. More explanation on efficiency equity trade-off was added.
6032	13					The sub-parts of this section are imbalanced with the discussions of environmental effectiveness and institutional feasibility much more detailed than the discussions of aggregate economic performance and distributional and social impacts.	Accepted. Text was better balanced, as suggested.
3741	13					what are the legitimacy of these principles? Who says they are legitimate? What are the warrants?	Taken into account.These are principles discussed in the literature. Legitimacy is one of the criteria for the evaluation of the principles as stated in section 13.2.2.4. Text was revised to justify the choice of principles.
12979	13					The paragraph is not crystal clear.	Editorial-copedit to be completed prior to publication.
14343	13					There are links between the "sub-criteria" - in particular between participation and flexibility. Because of the range of national circumstances, policy processes, legal institutions, etc... an institutional structure, to be feasible, will not only need to take into account flexibility to adapt to new information or changes, but also flexibility in terms of participation for the multiple actors involved. See Bodansky, Daniel, "The Durban Platform Negotiations: Goals and Options," Belfer Center Policy Brief, July 2012.	Taken into account. The suggested article is not peer reviewed literature. The link between Participation and Flexibility is now acknowledged. Not enough specific literature was found. Furthermore, the sentence on links among subcriteria was moved to the "Conflicts and complementarities" section.

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3174	13					13.2.2.4: institutional feasibility should be unpaved a bit to include domestic politics. That's not just "compliance" but more generally all the work by scholars that has looked at how domestic political forces constrain (and sometimes vice-versa) the feasibility of international agreements. There's a big discussion of so-called "domestic politics" in the international relations literature in the Hafner-Burton et al (2012, American Journal of International Law) review article. Political science has done a ton of work in this area. Similarly, Lee Lane and others have been trying to get the IAM community to look at how institutional factors constrain (and make impossible) some climate goals—though that work has focused on the the "new institutionalism" and "institutional economics" and I'm not sure if any of Lee's stuff has been published.	Accepted. An explicit reference to domestic policies and the literature on "two-level games" was introduced. Hafner-Burton et al (2012, American Journal of International Law) review article was added, as well as another more economic article by Kroll and SHogren (2008). Lee Lane (unclear) reference was not found.
18696	13					On the structure: section 13.3 seems unneccesarily brief, especially compared to later sections (e.g. 13.4 which gives rich details on the Kyoto Protocol, or 13.9 which is a nice introduction to the literature). 13.3 would benefit from more information on how the reported results were found.	Noted - but no specific text is proposed here, and 13.3 is intended to be brief because more detailed discussions are found in subsequent sections such as 13.4, 13.5, and 13.13.
18698	13					I'm missing a discussion of the literature on dynamic games and repeated games, both for the context of climate treaties. Examples are found in Dutta PK, Radner R (2004) Self-enforcing climate-change treaties. Proc Natl Acad Sci USA 101:5174–9; Dutta PK, Radner R (2006) A game-theoretic approach to global warming. Adv Math Econ 8:135–153; Rubio SJ, Casino B (2005) Self-enforcing international environmental agreements with a stock pollutant. Span Econ Rev 7:89–109; Rubio SJ, Ulph A (2007) An infinite-horizon model of dynamic membership of international environmental agreements. J Environ Econ Manage 54:296–310, Asheim GB, Froyn CB, Hovi J, Menz FC (2006) Regional versus global cooperation for climate control. J Environ Econ Manage 51:93–109; Froyn CB, Hovi J (2008) A climate agreement with full participation. Econ Lett 99:317–319; Asheim GB, Holtsmark B (2009) Renegotiation-proof climate agreements with full participation: Conditions for Pareto-efficiency. Environ Resour Econ 43:519–533; Weikard HP, Dellink R, van der Werf E (2010) Renegotiations in the greenhouse. Environ Resour Econ 45:573–596; Heitzig, J., Lessmann, K., Zou, Y. (2011): "Self-enforcing strategies to deter free-riding in the climate change mitigation game and other repeated public good games." Proceedings of the National Academy of Sciences (PNAS), 108, 38, 15739-15744	Accepted by adding both text and numerous references (several of those provided by this comment, and others as well).
11335	13					This section seems particularly weak. In the introduction we are promised a review of lessons to be learned from climate and non-climate international agreements but instead, the introductory section focuses on a tour of game theory and a confusing discussion of IEAs and MEAs - the difference between which is not explained. The following subsections then focus most of their analysis back on the climate regime with little to no identification of lessons that might be learned from other regimes	Taken into account in revisions to 13.3, to clarify and strengthen the lessons learned from past practice and from theory.
3747	13					what are the implications for effective governance from this section?	Accepted by adding both text and references.
18365	13					The discussion could expand more on the importance of transfers in the context of establishing participation.	Accepted by adding both text and references on the role of transfers, in theory and in practice, including in treaties generally, in the Montreal Protocol, and in the climate treaties.
18687	13					Section 13.4 picks up terms from 13.3, e.g. participation. The chapter can be improved by relating the two discussions to each other.	Accepted. As of 2 December unable to do however, requires more coordination across the sections than we have been able to do.

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14653	13					This sub-section seems abbreviated. Are there really only three elements of international cooperation -- legal form, participation/burden-sharing, and flexibility? Could an alternative way of framing this be: legal form, objectives, and implementation? In this latter formulation, one could envision more discussion of elements than just flexibility, e.g., policy surveillance, compliance incentives, etc. In addition, see comments on flexibility section.	Taken into account. Section reorganised and the nature of this discussion clarified. Additional element introduced (goals, actions and metrics), to be drafted.. Emphasised that this is not an exclusive list but ones prominent in current discussions.
18688	13					This section picks up participation from 13.3 as a basic element, but not, for example, compliance. Either the role of compliance or its omission needs some explanation.	accepted. As of 2 December unable to do however, requires more coordination across the sections than we have been able to do.
3754	13					does participation relate only to states, or to non-state actors as well?	Taken into account - text revised to mean participation can be by states or non-state actors
18689	13					How does this discussion of participation relate to section 13.3.1? How can participation in climate architectures be interpreted in the light of the findings presented in 13.3.1?	accepted. As of 2 December unable to do however, requires more coordination across the sections than we have been able to do.
14654	13					This sub-section has an excessive focus on the CDM. Performance of international emission trading would also be useful to understand. It would also be important to note that international emission trading can be quite extensive (e.g., under the ETS) even though it is not formally through a KP Article 17 provision. It would also be useful to discuss the role of land use emissions under KP and REDD+ under post-KP agreements. It is also not clear how the CDM facilitates an international agreement. Does it serve as a stepping stone for developing countries to do more? Does it undermine environmental performance by lowering the price of carbon in developed countries (and risks bringing so-called anyway tons into Annex I countries)? Put another way, why is this an important element of an international agreement? I understand it for legal form and for participation/burden-sharing, but the case is not made clearly here.	taken into account. Section reframed (see response to #522) to take into account other forms of flexibility. Nevertheless, the literature on existing flexibility mechanisms is overwhelmingly on the CDM. Text introduced to explain this.
18686	13					Discuss flexibility mechanisms with respect to "aggregate economic performance" and "institutional feasibility" as defined in 13.2.	Rejected - this evaluation is carried out in section 13.13
12985	13					This is a long sub-section on CDM. Is CDM covered elsewhere in the AR5? If yes, please check if there are overlaps. My feeling is that this is not the chapter where the pros and cons of CDM should be discussed. In this chapter I expect to see a discussion of how CDM affects international cooperation or how CDM-type tools are treated by different regional policy initiatives.	rejected. A division of labour concerning where in AR5 the CDM is discussed has already been established.
14655	13					Are there lessons from the arms control treaty literature that would be relevant for a discussion of the governance challenges facing SRM?	rejected - space limits preclude a discussion.
14340	13					Generally, this section appears to not fully address the literature on criteria for design of international cooperation and governance of geoengineering; see literature mentioned above, e.g. - Bodle, Ralph, "International governance of geoengineering: Rationale, functions and forum", in: William C.G. Burns and A. Strauss, (eds.), Climate Change Geoengineering: Legal, Political and Philosophical Perspectives, Cambridge: Cambridge University Press (submitted February 2011; in press); - Lin A.C., International Legal Regimes & Principles Relevant to Geoengineering (in press). In: W.C.G. Burns and A. Strauss, (eds.), Climate Change Geoengineering: Legal, Political and Philosophical Perspectives. Cambridge: Cambridge University Press, Cambridge (submitted 2011, in press);	Noted. Commenter contacted for copies of the papers which are not yet published. (Not yet received).

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3755	13					see Zurn, somehow this section belongs at the end. See comment 7, 12.	Reject - comment not clear enough to establish what changes it recommends
12986	13					CDR and SRM are very different. CDR should not be mentioned in this section. CDR is an emission abatement technology which suffers from all sorts of coordination problems as any other mitigation option because it is costly. SRM can instead provide local benefits and can be relatively inexpensive. CDR supplies a public good, some forms of SRM provide a private good.	Taken into account. Including CDR and SRM in the same subsection follows the treatment in chapter 6, section 9. Also included because they produce some similar challenges for international cooperation. Differences between CDR given greater emphasis in the text.
11340	13					What si the justification for a subsection on SRM in a section on climaet oplyc architectures? And why is SRM given special prominence when other options are not discussed.	noted. Section reorganized, and place of SRM clarified as a consequence. Explanation of discussion also introduced into subsection.
6040	13					There are some other multilateral options that could be discussed such as mini-lateralism (e.g. moving discussions to for a like the G20) and/or creating clubs.	accepted. Notion of minilateralism included in revised section.

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16344	13					<p>Kyoto 2 http://www.kyoto2.org/ provides a simple alternative approach which is well researched and would be useful to draw attention of policy makers to. Kyoto (Tickell) 2008 ZED Books. Here is the simple explanation from the website.</p> <p>Kyoto2 is a global framework for a Climate Treaty to limit emissions of greenhouse gases to a level that would prevent dangerous interference with the Earth's climate system, while generating enormous economic, social and environmental benefits. It is thus a delivery mechanism for the objective and principles of the Climate Convention (UNFCCC).</p> <p>Greenhouse gases are global pollutants and can only be regulated under a global emissions cap. As a genuinely global system Kyoto2 applies the cap without regard to national boundaries, dispensing with national emissions targets, national allocations and the 'territorial accounting' that characterizes the Kyoto Protocol.</p> <p>Permits to produce CO2 or other greenhouse gases are sold up to the cap by global auction using a Uniform Price Sealed Bid system subject to reserve and ceiling prices. The secure carbon price signal stimulates long term investments in a low carbon future. Any permits sold above the cap are clawed back in subsequent years and the extra money raised is invested to reduce future demand for fossil fuels.</p> <p>Greenhouse gas emissions are regulated 'upstream' - at or close to where fossil fuels are produced, and at the source of other greenhouse gas emissions such as CO2 from calcinating lime in cement kilns - because this is where emissions are most reliably and inexpensively controlled.</p> <p>The market mechanism is supplemented by direct regulation aimed at overcoming market failures, or where a market system would create unnecessary cost. Demanding efficiency standards are set for all energy consuming sectors, from housing to transport, industrial machinery and domestic appliances. Most of the powerful industrial greenhouse gases or PIGGs used in industry and refrigeration are phased out following the example of the Montreal Protocol.</p> <p>The funds raised at auction - of the order of \$1 trillion per year - are invested in solving the problems of climate change, with an emphasis on the needs of poor countries, poor people and those most adversely impacted, including to:</p> <ul style="list-style-type: none"> bring about a worldwide clean energy revolution and a prosperous low-carbon global economy through investments in energy research and development, energy efficiency, and the deployment of renewable energy infrastructure; meet developing country costs of complying with the standards and regulations set out in [5] above via a 'Multilateral Fund'; finance developing country adaptation to climate change, and responses to climate-related health challenges and emergency needs; conserve and sequester carbon within the biosphere - soils, peatlands, forests and other ecosystems - and reduce land-based emissions of other greenhouse gases including methane and nitrous oxide, while boosting soil fertility and water retention; research low-cost, reversible and environmentally benign geo-engineering options that could in extremis halt a 'runaway greenhouse effect'. <p>Reducing emissions by cap and carbon price alone would require such a high carbon price as to cause hardship and economic pain. By contrast Kyoto2 uses three mutually supportive mechanisms: the cap-and-trade market; direct regulation; and the investment programme. Working together these can rapidly reduce emissions.</p> <p>Is there much literature on this approach? What are the advantages and disadvantages?</p>	Taken into account - text revised to concede that all the approaches discussed preclude the emergence of a supranational authority as proposed in the arguments by Tickell (2008). The Tickell text is cited.
6039	13						rejected. The space for this discussion would be 13.13. This subsection (13.4.3.2, the commenter was asked for clarification) has been expanded to include other examples.
6044	13					There is unevenness in this section where some agreements and institutions are discussed in extensive detail while others are merely mentioned without any consideration for their advantages/disadvantages or significance (e.g. Section 13.5.1.4)	Accepted, a new sub-section outlining dis/advantages of different architectures included

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7371	13					This section is structured very strangely- it may be better to organise the elements of agreements under headings (e.g. the UNFCCC, the Kyoto Protocol), rather than listing parts in an ad-hoc manner.	Taken into account - further sub-headings included to organise the text. To improve the structure, new subsection added titled "Advantages and disadvantages of different forums."
8098	13					Suggest adding reference to the Clean Energy Ministerial following the MEF discussion	Accepted - text revised and new reference added
18366	13					The assessment in this section would benefit from a closer linkage to Figure 13.1 and the related discussion in section 13.3.	In Section 13.5, Taken into account - new column to be added to Figure 13.1 In Section 13.9, Taken into account - reference to Fig. 13.1
11342	13					This section mixes treaty bodies and fora with non-treaty bodies and national initiatives. There is confusion between this and the following three subsections.	Accepted - unnumbered subheadings added to clarify structure of sub-sections of 13.5.1
18691	13					I suggest to include an evaluation/interpretation of the past and future role of the listed coalitions. As it is, this section only enumerates the coalitions, which has little value by itself.	Taken into account - evaluation of dis/advantages in new 13.5.1.2
11344	13					'transnational' initiatives are better described as 'transnational arrangements'. And how are city-level schemes and the California scheme 'transnational'?	Rejected - proposed wording does not seem an improvement, and the initiatives mentioned have international dimensions; e.g. the California system is linked internationally through the WCI
15726	13					I wouldn't mention details on the WCI or the EU-ETS or other schemes here as this is anyway part of chapter 15, there is risk of overlap. Instead I would give a brief overview of the dynamics since Copenhagen regarding the emergence of cap-and trade schemes (AUS, SKorea, China...) and the danger that a fragmented international Carbon Market outside the UNFCCC may emerge. It would be important to mention the "framework for various mitigation approaches, including opportunities for using markets" as was considered to be established in the Durban Climate Conference. De Sepibus, Sterk and Tuerk, 2012, assess the possible roles of such a framework.: Top-down, Bottom-up or In-between: How Can a UNFCCC Framework for Market-Based Approaches Ensure Environmental Integrity and Market Coherence? NCCR Working Paper No 2012/31 July 2012	Taken into account: refer to section where other national systems are described
6046	13					Why focus on WCI when RGGI is operational and arguably more prominent?	Taken into account: refer to section where other national systems are described
12923	13					I would rather focus this section on issues like: incentives; has EU ETS led to mitigation and innovation?; the allocation process; concerns of competitiveness and carbon leakage; dynamics of the carbon price; changes for 2013-2020 and linkages wth other carbon markets. I can provided references if needed.	Rejected - outside the scope of the chapter. It deals only with the interlinkages to international cooperation not a full assessment of the systems

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12987	13					Any information on the actual emission reductions obtained by these regional initiatives?	Rejected - outside the scope of the chapter. It deals only with the interlinkages to international cooperation not a full assessment of the systems
12988	13					<p>I think the key question in this section should be: why do we observe many regional and sub-regional initiatives when theory says that free-riding should prevail (as mentioned in the first sections of the chapter)? Why should the EU, California, or other local initiatives start reducing emissions when the impact on global concentrations is negligible?</p> <p>I can see three possible answers (but I am sure there is more in the literature):</p> <ul style="list-style-type: none"> - proactive behavior: they anticipate that some form of global regulation will be implemented in the near future; - domestic political reasons and/or self-promotion of a "green" brand; - experimenting solutions and building institutions at local level that will lower the cost of building global institutions. <p>Is there a literature that addresses these issues? This would be the right place to mention it.</p>	Taken into account. Will coordinate with Chapters 14 and 15 as they are not particularly relevant to Chapter 13.
7372	13					Indicative information on the linking of the EU-ETS and the Australian Carbon Pricing Scheme should be included here. Details are available here: http://www.climatechange.gov.au/en/media/whats-new/linking-ets.aspx	Rejected. The linking is not to commence until 2018. No peer reviewed literature on this initiative.
11345	13					Mention should now be made of the Australia- EU linkage arrangements	Rejected. The linking is not to commence until 2018. No peer reviewed literature on this initiative.
18361	13					The treatment of trade and embedded emissions is a very sensitive issue and a clear vision of its coverage should be developed in cooperation with Chapters 4, 5 and 14.	Taken into account: discussion has been moved to the beginning of section 13.8; the discussion has been slightly expanded and appropriate cross-references have been inserted.
11346	13					There is a striking omission of discussion of the work in the IMO. For a summary see Rayfuse, R., 'Climate Change and the Law of the Sea' in Rayfuse, R. and Scott S. V. (eds.), International Law in the Era of Climate Change (Edward Elgar, 2012) page 166	Taken into account: additional reference have been cited and the part on the IMO has been expanded slightly.
14667	13					Note that MEF Leaders agreed to double R&D by 2015 at the L'Aquila summit in 2009	Taken into account - text revised by adding suggested information plus reference at end of first paragraph in section 9.4.2.
18358	13					Please link this discussion to the relevant sections in Chapter 3 (3.12.6) and 16 (16.5) to sharpen chapter specific focus and avoid redundancies.	Taken into account - cross-cut references to chapters 3 and 16 added.

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15383	13					This is good, it states the difficulties adequately. Principles, beyond net benefits, are vacuous and not helpful for determining the existence or stability of an agreement. They are associated with criteria: environmental effectiveness, costeffectiveness, distributional considerations, and institutional feasibility. Lots of words to get to a commonsense list, could just take from Chapter 3 which develops them clearly	Taken into account. A statement on procedural justice was added (in addition to distributive justice, that was already in the text). That follows chapter 3 framework, which is now quoted.
4232	13					The distinction between these two sections seems artificial to me. Moreover, the material in the two sections is not sufficiently different to warrant two sections. As it is, some of it is repetitive. I would recommend combining the two sections into one section concerning linkage. Also, it is surprising that there is not more mention of the New Zealand system which is an example of a national system linked (totally) to the international system.	Rejected - Cannot merge the two sections because they are plenary-approved
4235	13					This section needs to be rewritten. It contains significant mis-statements as detailed below.	Taken into account - Section 6 has been rewritten.
15388	13					This is really weak. It needs a correlation of international systems with national policies – in a mosaic world, national policies define what any agreement will coordinate. Different countries – different institutions – different policies. This is what sinks the global cap and trade ideal. Needs to be more carefully coordinated with national chapter – and eliminate massive repetition with regional.	Taken into account. Will coordinate with Chapters 14 and 15.
15392	13					The WTO section is good.	Noted: Thank you!
15390	13					This needs to be coordinated with investment chapter.	Taken into account - for later inter-chapter coordination.
15393	13					IP section is good.	Noted
11329	13					The introductory paragraph suggests 5 topics to be surveyed in the chapter but the Executive Summary only addresses 4. Heading for 'the performance of climate policies and institutions?	Accepted - text revised
11681	13	0				Overall, it is a very comprehensive survey and synthesis report on the international cooperations on climate change, finished by well-known scholars in this field, the report is very objective with careful citations, and the report structure is well organized with clarity. I only have some minor comments as follows.	Noted
4231	13	0				Subject to the specific comments below, I thought the chapter was organized appropriately and written well. The works cited and the comments made reflect the literature as I know it. As such, the chapter provides a good summary statement of the literature for anyone interested in this subject. Also, I did not read sections 13.2 and 13.13, the latter of which is incomplete.	Noted

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16950	13	0				<p>It is many years since I worked directly on global architecture issues. I was also asked opportunity to comment verbally on this chapter at the IPCC Washington meeting. Of my remarks there I will only underline the following. The chapter really must address the apparent tension between the theoretical conclusions of the second paragraph:</p> <p>("... as a result there is very little incentive for firms and individuals (and countries) to reduce emissions in the absence of international cooperation (High Agreement, Robust Evidence, Very High Confidence"). which seems to contrast with the reality that MOST of the chapter appears to be about organisations, individuals (and countries) doing just that.</p> <p>The chapter could consider two main explanations of this apparent paradox.</p> <p>The first is that motivations and indeed the economics of climate change action are far more complex than assumed. In particular, they involve all three Domains of human decision-making and economic processes (Grubb, Hourcade and Neuhoff), and there are clear potentials for "win-win" opportunities in both the First and Third domains (and even potentially in the second, if more subtle views of pricing, including subsidy removal and market stabilisation, are considered).</p> <p>The second (and somewhat related) is that the simpler versions of the international theories assume that States are unitary economic actors operating a world of purely Second Domain economic processes, and that emission reductions can be separated from other activities and international relations. These seem to be highly questionable assumptions.</p> <p>Consequently, I incline to take the empirical evidence of the chapter more seriously than the theoretical statements of the Exec Sum 2nd paragraph, in which I would certainty dispute the level of confidence ascribed. Certainly, I believe the chapter has to take far more systematic account of the different kinds of actions that countries are undertaking, to illuminate which are proceeding unilaterally / regionally, and which are seriously impeded. A reasonable hypothesis from the Three Domains perspective is that is easiest to pursue Pillar 1 actions (regulatory and engagement approaches) unilaterally, that Pillar 3 actions (innovation for infrastructure and innovation) could be done unilaterally particularly by larger countries but that more often some level of sub-global international cooperation is likely to be helpful; and that Pillar 2 actions (pricing) are likely to be most difficult unilaterally. The fact that the EU ETS was adopted in the context of the Kyoto Protocol would seem to mean that this does not disprove such a view (See comments on that section).</p> <p>For details see Grubb, Hourcade and Neuhoff, Planetary Economics: the Three Domains of Sustainable Energy Development, Taylor & Francis forthcoming (Chapters 1 – 5 submitted, others in draft available on request). A reference that may be of interest for its consideration of regime design interactions with possible US-EU participation is B.Lee and M.Grubb, "US in the World: the challenge of global warming", chapter in Robin Niblett (ed), America and a Changed World: A Question of Leadership, Wiley-Blackwell (2009); also published as a Chatham House Energy, Environment and Development Programme Paper 09/02, Royal Institute of International Affairs, London 2009.</p>	Taken into account in the substantial revisions of 13.5 and 13.13. The confidence statements in the executive summary will be revised in the next round in concordance with the text.
14256	13	0				I would be happy to provide additional comments if I had time (so, please let me know if the deadline is extended or if one can provide comments later/to later revisions).	Noted

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13545	13	0				<p>Taking on the challenge of integrating an assessment of multilateral governance and instruments with emerging transnational and sub-national governance dynamics is a worthy endeavor for this chapter. Naturally given the balance of the literature and longer history of the multilateral approach, the chapter focuses significantly more in this area. However, too often when the chapter turns towards the alternative forms of international cooperation, the analysis appears to treat these alternative forms in the same way as multilateral governance when they are in fact very different institutional forms. The analysis of linkage, effectiveness, participation, compliance, feasibility, etc look very different in the transnational arena than they do in the multilateral arena. The holistic analysis of International Cooperation that is a strength of this chapter could be enhanced by providing additional analysis of the alternatives on their own merits and from standpoints relevant to the different governance dynamics characteristic of this different institutional form. Much of this literature is already cited, but could be drawn upon more extensively (Bulkeley 2005; Bulkeley et al 2012; Hoffmann 2011; Pattberg 2010; Bernstein et al 2010). Bulkeley 2005 citation: Bulkeley, Harriet. 2005. Reconfiguring Environmental Governance: Towards a Politics of Scales and Networks. <i>Political Geography</i> 24(8): 875–902.</p> <p>An arguably more controversial suggestion that follows from this point, is to seek greater balance between the analysis of transnational and multilateral cooperation in discussions of possible architectures for the global response to climate change. Given that two decades of focus on multilateral negotiations has given us lots of experience with the challenges inherent in multilateral approaches, it may be time to focus more of our energies and advice about the design of institutions to the alternative forms of cooperation.</p>	Noted - the suggested literature is covered by the text and Section 13.13 on performance evaluation (including evalution in term of institutional feasibility) is now included
13649	13	0				In this chapter the use of terms such as Robust Evidence and High Confidence is not an accurate statement as many assessments are quite subjective. It is however possible to use terms such as High Agreement,	Rejected - no scientific evidence/publication provided to support changes suggested
13650	13	0				subjective.	Rejected - comment unclear
13653	13	0				Extensive re-writing of the chapter is required to reflect more accurately the role of the state. The chapter also inaccurately seeks to portray that the thrust of climate action is moving away from a negotiated binding climate treaty between states to a nebulous partnership of private sector players. It confuses proposals with the actual functioning arrangements. Nominal partnerships, like network of cities, are confused with serious working arrangements that make any serious dent on emission reduction.	Taken into account - covered in Section 13.13
18350	13	0				General comment: Chapter 13 could be improved through a sharpening of key findings and better integration across the different chapter sections. The TSU is thus submitting a range of questions that can guide the author team in focusing their discussions in the relevant sections.	Noted, this comment does not suggest a specific revision, but key findings are being continuously revised as the draft progresses.

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18351	13	0				Guiding question: What has been achieved to date to solve the climate change/global commons problem, why has so little been achieved (i.e. identify barriers more clearly). It would be helpful to explain to what extent game theory explains the achievements and failures of climate policy (e.g. has been more or less achieved than projected by the Nash equilibrium?)	In Section 13.1, Taken into account - text revised in 13.1 with additional material In Section 13.3, Additional text has been added on game-theoretic models and their lessons for participation, on empirical experience with actual participation, on options for improving participation and effectiveness in the future, and on the methodological difficulty of evaluating actual effectiveness compared to unobserved counterfactual scenarios. In Section 13.13, Taken into account - significant new text that assess the performance of existing agreements is now incorporated with incorporation of causal explanations where possible.
18352	13	0				Guiding question: Which options may potentially be relevant for negotiators in the context of the UNFCCC process and what are the implications: a) keeping the process running, b) linking to national policies, c) focusing on climate finance only? In this context, could you clearly assess the role of different negotiation components, such as capacity building, technology transfer and finance (with a better linkage to Chapter 16) etc., and provide insights of their empirical relevance? This section can be written in policy neutral way because you explore simply draft the available options.	Taken into account through the creation of a new table (13.2) that updates AR4 Table 13.2. This table will be continuously updated through the next draft.
18353	13	0				While sections 13.1-13.7 read very well and provide a good overview of the existing literature, the overlap between 13.3 and 13.4 could be reduced and the sections more closely linked. Also, section 13.3.1 should be clearer about the role of transfers in the context of achieving participation.	In Section 13.5, Taken into account - in new section 13.5.1.4 In Section 13.6, Rejected - not relevant here In Section 13.8, Taken into account. However, this needs to be treated by sections 13.3 and 13.4 and is not part of section 13.8. This has been done in section 13.3 and 13.4.
18354	13	0				Sections 13.8-13.13 on the other hand still require quite substantial work to provide an in-depth assessment of the literature and need to be more closely linked.	Noted
18355	13	0				Overall, game theoretical perspectives and discussions could be enhanced in the chapter and may be used more to organize the different themes. In this context, it is noted that from a game-theoretical point of view SRM (section 13.4.2) is an exceptionally interesting example but it has to become clearer to the reader why it has been selected and may be better discussed in another section.	Taken into account - combined with comment 18351

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18356	13	0				Please check if the impacts of the financial crisis on the UNFCCC process can be described based on the available literature. Also, the issue of environmental rent taxation and its linkage to Chapter 16 should deserve some attention.	Taken into account - new text relating the financial crisis to the operations of the G20 included in 13.13.1.4. Other literature will be included as it becomes available.
18364	13	0				The chapter could aim to improve its linkage to Chapter 2 by more clearly addressing regulatory uncertainty.	In Section 13.2, Taken into account. A very short mention (and reference) to regulatory uncertainty was introduced at the end of the section.
4724	13	0				Generally, I think this chapter would benefit by having more discussion of the importance of ensuring an "effective" future climate agreement, i.e., one that leads to a lowering of emissions relative to what they would have been otherwise. Perhaps this is related to the compliance points but I think more attention to the importance of causing changes in emissions, even if there is low compliance, would seem important to a chapter on international agreements.	Taken into account - covered in the significantly revised Section 13.13
4725	13	0				This chapter might also note the need for an effective climate change agreement to include some process for incorporation and response to new scientific findings. Without the ability to incorporate new science, the agreement will not foster the adaptive management that will undoubtedly be necessary to address the climate change challenge in the years ahead.	Taken into account - covered in Section 13.2
4726	13	0				This chapter might also note the need for an effective climate change agreement to include some process for incorporation and response to new scientific findings. Without the ability to incorporate new science, the agreement will not foster the adaptive management that will undoubtedly be necessary to address the climate change challenge in the years ahead.	Taken into account - combined with comment 4725
18660	13	0				Well-written and a joy to read Excellent overview and clear conclusions + a complete draft! Presents and defines the problem plus describes different efforts made to handle	Noted
18664	13	0				IPR is discussed in chapter 15, shouldn't it be included here (if included at all)? DISCUSSED ON page 41 and onwards	Taken into account - covered in Section 13.9
9039	13	0				The chapter tends to argue that the existing multilateral policy regime for climate change under the UNFCCC is not effective in addressing climate change mitigation. The chapter seems to assume that the UNFCCC itself is flawed in terms of its design and architecture and hence there is a need for other arrangements to be designed. It therefore disregards the possibility and thus its treatment is not comprehensive that perhaps the failure of the UNFCCC as a regime is due to the lack of political will to fully implement it rather than to its design per se.	Taken into account - combined with comment 18351
9040	13	0				There are multiple instances of inaccurate characterizations of the Copenhagen Accord as being on the same political and legal footing as the UNFCCC COP16 Cancun Agreements. They are not the same as the Copenhagen Accord was not adopted by the UNFCCC COP. Accurate characterization as the legal nature of the instrument is important because the chapter discusses international cooperation issues.	Taken into account - covered in Section 13.2 and 13.5

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9041	13	0				The chapter can be commended for its treatment of the interlinkages between climate policy and other policy areas, particularly with respect to trade and intellectual property, which is good, but does so in a way that does not fully reflect developing country concerns with respect to the use of unilateral trade measures and to the barriers that IPRs may pose. On IPRs, for example, it emphasizes that strong IP enforcement regimes would have beneficial effects on technological investment but does not present alternative views on this issue.	Rejected – no scientific evidence/publication provided to support changes suggested by the reviewer
9042	13	0				The chapter does not adequately survey and recognize the existingUNFCCC provisions regarding climate change related technology transfer and climate finance as the policy jumping off point for discussions on international cooperation in these areas.	Rejected – no scientific evidence/publication provided to support changes suggested by the reviewer
11586	13	0				All through the chapter there is a consistent statement that international cooperation is needed to mitigate climate change. While stating that there is uniform mixing of GHGs there is need to state that the impacts are not uniform and its those countries that are least able, and have not contributed to the problem, with little or no adaptive capacity that bear the brunt of the adverse effects of climate change.	Taken into account - text revised throughout chapter
16174	13	0				Recommend moving section 13.5 before 13.2. The "Framing concepts" are highly abstract and presented in technical terms specific to the authors' disciplines such that, while they are valuable, it is likely to be difficult for non-specialists to easily read, understand and engage with the material. By sequencing the framing concepts after the discussion of current agreements and institutions readers will be well positioned to deepen their understanding of the theoretical research and to apply it to climate change.	Rejected - we believe the current organization to flow logically
16175	13	0				Human rights agreements and instruments are increasingly relevant to international climate change arrangements, and so warrant mention here. The widely-subscribed UN Charter and Universal Declaration of Human Rights (U.N.G.A. Res. 217A (III) U.N. Doc. A/810 (Dec. 10, 1948) provide the basis for claims by indigenous peoples and small island states that reduction of GHG emissions is a legal obligation. Three UN Human Rights Council resolutions (Resolution 7/23 (2008), Resolution 10/4 (2009), and Resolution 18/22 (2012) addressed the link between continued GHG emissions and human rights. Whether human rights constitute a legally binding obligation on states to minimize climate change is controversial. (Wolfgang Sachs. 2006. Human Rights and Climate Change in Interactions between Global Change and Human Health. 349 Pontifical Academy of Sciences 349; Lavanya Rajamani. The Increasing Currency and Relevance of Rights-Based Perspectives in the International Negotiations on Climate Change J Environmental Law (2010) 22(3): 391-429.) There has also been extensive discussion of the human rights effects of climate change agreements and policies (for example, the consequences of the promotion of biofuels), which should be mentioned. Many other sources are available in the literature on this topic, should it be agreed that it ought to be included in the next draft.	Taken into account - combined with comment 2931
16176	13	0				While carbon tax is a policy that is implemented at the national or subnational level, it seems like a gap in coverage not to mention it as a policy option and note that would not be implemented at an international/multilateral level because international instruments do not have capacity to impose taxes.	Taken into account - carbon taxes are mentioned as an instrument under strong multilateralism and harmonized national policies in 13.4
16358	13	0				Whilst the chapter draft gives a comprehensive overview of international negotiations, agreements and partnerships, it currently contains quite a lot of repeated material that makes it difficult to read in its entirety (eg discussion of CDM design and shortcoming comes up in several sections, as do national and non-national agreements and partnerships outside of the UNFCCC). Also, the concluding sections on finance and investment (13.11) and public/private involvement (13.12) deserve to be more comprehensive and take a stronger role in the overall chapter.	Noted

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11328	13	0				<p>The chapter is very heavily focused on economics, trade and investment issues and does not adequately incorporate legal aspects or address the interlinkages between the international climate regime and other areas of legal literature has improved, including international law and policy making. It misses a significant aspect of the international cooperation interface which is the possibility for substantive and procedural fragmentation and/or conflict between and among climate and non-climate regimes. For a comprehensive assessment of these interlinkages see the various chapters in Rayfuse, R. and Scott S. V. (eds.), International Law in the Era of Climate Change (Edward Elgar, 2012). The Australia EU linking arrangements will also need to be considered</p>	Taken into account - our survey of the citations to the Rayfuse and Scott book.
7133	13	0				<p>The broadening of the institutions and policies addressing climate change is a consequence of the increase in the complexity of the climate debate, but also of the climate impacts, and of the public awareness on the matter. All those elements are connected. With the goal of keeping the increase of temperature below 2 degree a much more aggressive mitigation policies are required at global, regional, national and subnational levels. The needs for adaptation are also increasing the need for several modalities of cooperation.</p> <p>The Chapter makes reference several times at the increase in the complexity of climate arrangement since AR4, and maybe it could be useful to try to explain why it is happening.</p> <p>This explanation could be useful also because in the way it now appears in the document produce the impression that is taken place a fragmentation of the global climate policies. That broadening is not necessarily detrimental to UNFCCC, but supportive in many cases. It is not the case of facing UNFCCC vs other modalities, but taking all – or at least many of this institutional arrangement – as part of a system with the same final porpoises.</p> <p>Is also important to remark that International cooperation on climate change is not only expressed through direct actions for mitigation (targets, timetables, taxes, cap and trade, and so), but also by means of finance, tech and capacity building support, as is the case of UNFCCC, that is also strong multilateralism. In fact, UNFCCC is mainly about that kind of cooperation, due to the fact that no specific and enforceable mitigations goal appears in the Convention. That kind of cooperation paved the way for specific mitigation actions that resulted in the KP.</p>	Taken into account - combined with comment 11328
11127	13	0				<p>Reading is somehow disperse and complex. It would improve with reduction of text. It would also help to explain and discriminate concepts such as governance, authority and government, for example: the difference between authoritarian and command-control policies, on the one hand, and democratic participation on the other.</p>	Noted

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
3976	13	0				<p>Overall, the chapter does a commendable job of integrating the state of the art on international climate policy, comprising a variety of disciplines and viewpoints. My main general concern relates to the Chapter's structure. The chapter rightly points to the complexity of international climate policy as a recent theme in the literature. However, it does so in a rather confused and disorganised fashion. For instance, the issue is first highlighted with Figure 13.1 in a subsection that barely addresses the issue. The issue is next touched upon in Section 13.3.1, but again only tangentially. The issue returns again in Sections 13.5.1.2-13.5.1.4, but also in 13.6, 13.8, 13.9 and 13.11. The problem with this scattered approach to the issue is that it becomes unclear which questions are being addressed. The Executive Summary does a better job at raising and addressing these questions (to the extent the literature allows). My suggestion is to be clearer about the specific questions that are being addressed. These include : 1) How does the regime complex for climate change look like - this is addressed in part by Figure 13.1 and its accompanying text; 2) What are the advantages and disadvantages of addressing climate change through a variety of institutions rather than through a single institution (this is in part addressed in section 13.5.1.2); 3) What are the possible responses to complexity? These responses could include linkages (which are discussed in Sections 13.6 and 13.7) but they are also discussed in other sections (e.g. 13.8 discusses how to respond to climate-trade interactions).</p>	Taken into account - text revised throughout to focus discussion on complexity and fragmentation

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
3977	13	0				<p>Related to the first point, it is unclear why the chapter has chosen to single out interactions between international climate policies and issues such as international trade, technology transfer, capacity building and investment and finance. While I do not dispute the importance of these issues, there is virtually no attention for the institutional interactions between climate change and biodiversity; climate change and ozone depletion; climate change and local air pollution; climate change and marine pollution, to name but a few examples. There is no lack of literature on these issues. To give but a small sample: On biodiversity: 1) Sagmüller, Imke (2006). Forest Sinks under the United Nations Framework Convention on Climate Change and the Kyoto Protocol: Opportunity or Risk for Biodiversity? Columbia Journal of Environmental Law 31(2), 189-242; 2) Asselt, Harro van (2011). Integrating Biodiversity in the Climate Regime's Forest Rules: Options and Tradeoffs in Greening REDD Design. Review of European Community and International Environmental Law 20(2), 139-149; 3) Jacquemont, Frédéric, and Alejandro Caparrós (2002). The Convention on Biological Diversity and the Climate Change Convention 10 Years after Rio: Towards a Synergy of the Two Regimes? Review of European Community and International Environmental Law 11(2), 139-180; 4) Long, Andrew (2011). Global Climate Governance to Enhance Biodiversity and Well-Being: Integrating Non-State Networks and Public International Law in Tropical Forests. Environmental Law 41(1), 95-164; 5) Morgera, Elisa (2011). Far Away, So Close: A Legal Analysis of the Increasing Interactions between the Convention on Biological Diversity and Climate Change Law. Climate Law 2(1), 85-115; 5) Pittock, Jamie (2011). A Pale Reflection of Political Reality: Integration of Global Climate, Wetland, and Biodiversity Agreements. Climate Law 1(3), 343-373; 6) Savaresi, Annalisa (2012). Reducing Emissions from Deforestation in Developing Countries under the UNFCCC: Caveats and Opportunities for Biodiversity. Yearbook of International Environmental Law 21. On ozone depletion: 1) Oberthür, Sebastian, Claire Dupont, and Yasuko Matsumoto (2011). Managing Policy Contradictions Between the Montreal and Kyoto Protocols: The Case of Fluorinated Greenhouse Gases. In: Oberthür, Sebastian, and Olav Schram Stokke (Eds.), Managing Institutional Complexity: Regime Interplay and Global Environmental Change. (115-142). Cambridge, MA: The MIT Press; 2) McCabe, Daniel G. (2007). Resolving Conflicts between Multilateral Environmental Agreements: The Case of the Montreal and Kyoto Protocols. Fordham Environmental Law Review 18(2), 433-466. On local air pollution/short-lived climate forcers: Rosenthal, Erika, and Robert Watson (2011). Multilateral Efforts to Reduce Black Carbon Emissions: A Lifeline for the Warming Arctic? Review of European Community and International Environmental Law 20(1), 3-10. While I appreciate it may not be possible to integrate all these topics, at the very least the emerging body of literature on these institutional interactions should be acknowledged.</p>	<p>Taken into account - discussion of multiple interactions of climate change with other policy areas has been strengthened throughout.</p> <p>In the next round of revisions, the links between climate policy and international conventions on biodiversity and desertification will be highlighted more thoroughly.</p>
3978	13	0				The term 'regime complex' is nowhere defined in the chapter. Does it only include multilateral, negotiated regimes? Or also public-private or even private initiatives? If the latter (which seems to be implied in the chapter), is the term even accurate?	Taken into account in the ES and Section 13.2
3172	13	0				<p>CHAPTER 13</p> <p>This chapter is in fine shape. I have lots of detailed comments, but that is mainly because this is one of the few chapters that is essentially complete (with a couple notable exceptions) and not so massively over-limit in length that it is impractical to review the text.</p>	Noted

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
18432	13	0				<p>The chapter has two major problems. The first one is avoiding addressing the strong contradiction between the outcome of climate science and the outcome of the UNFCCC climate process. This process is presented with a bias in favor of authors that view the process in an optimistic way. Authors that have made a negative assessment of the UNFCCC process are reviewed but their conclusions have small weight in the overall tone of the chapter. This is very clear in pages 26 and 27, where the failures of the process are listed: end of Kyoto Protocol, new global agreement expected only in 2015 (whose probabilities are low), the insufficiency of Cancun pledges to avoid 2C target, and the problems of adaptation funds. However, the frame of the segment is too optimistic: the UNFCCC and the KP led to more climate action than any other agreement (pag 26 par 1). This is not wrong, but it should be presented in other way: current climate policy architectures are clearly failing, so other paths should be explored. There is a major mistake in the whole chapter: the argument that the UNFCCC negotiations are good, even when it has almost no impact in terms of emission reduction and other related goals. A second problem is not addressing the recent trajectory of carbon emissions and the assessment of climate/energy policies in each one of the major carbon emission countries. It could be the G20 countries, maybe adding some others like Nigeria, Egypt, Democratic Republic of Congo, Iran, Venezuela, Pakistan and Vietnam.</p>	Rejected – no scientific evidence/publication provided to support changes suggested by the reviewer
11435	13	0				<p>The chapter tends to argue that the existing multilateral policy regime for climate change under the UNFCCC is not effective in addressing climate change mitigation. Hence, it argues, there is a need for regime change. However, the chapter does not have a clear discussion of exactly why the UNFCCC is not effective – e.g. whether the arguable ineffectiveness is due to the policy design and architecture of the UNFCCC itself (e.g. a <i>in se</i> flaw in the regime) or to the failure of implementation of the UNFCCC by those supposed to implement it (e.g. an implementation flaw). The chapter seems to assume that the UNFCCC itself is flawed in terms of its design and architecture and hence there is a need for other arrangements to be designed. It therefore disregards the possibility that perhaps the arguable failure of the UNFCCC as a regime is due to the lack of political will to fully implement it rather than to its design <i>per se</i>.</p>	[draft single response will be made in line for comment #29]
11436	13	0				<p>There are inaccurate characterizations of the Copenhagen Accord as being on the same political and legal footing as the UNFCCC COP16 Cancun Agreements. They are not the same as the former was not adopted by the UNFCCC COP. Accurate characterization as the legal nature of the instrument is important because the chapter discusses issues</p>	Taken into account - combined with comment 9040
11437	13	0				<p>The chapter makes a strong pitch for the use of carbon market mechanisms as a key feature of any new international cooperation regime on climate change. It gives a lot of space for a discussion on the interlinkages between climate policy and other policy areas, particularly with respect to trade and intellectual property, which is good, but does so in a way that does not fully reflect developing country concerns with respect to the use of unilateral trade measures and to the barriers that IPRs may pose. On IPRs, for example, it emphasizes that strong IP enforcement regimes would have beneficial effects on technological investment but does not present alternative views on this issue.</p>	Taken into account - combined with comment 9041
11438	13	0				<p>The chapter does not adequately discuss UNFCCC provisions regarding climate change-related technology transfer and climate finance as the policy jumping off point for discussions on international cooperation in these areas.</p>	Taken into account - combined with comment 9042

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
14700	13	0				Related to my comment no 3. The chapter's overall use of key terms like "agreement" (in my understanding: an individual accord between governmental and / or non-governmental actors) , "regime" and "institution" appears eclectic and interchangeable. This may create difficulties, since one of the chapter's explicit purposes is to give an overview of the complexity of global climate governance - and its different institutional elements. It therefore would be useful to briefly define and distinguish these terms for the purpose on the report based on some widely acknowledged international relations or international law definitions (as suggested in my comment no. 3 for 'regime' and 'institution') - and then use them accordingly throughout the report.	Taken into account - consistent usage of terminology has been improved, but we will continue to check for such confusing issues in the next round
14701	13	0				This section gives a concise and much needed overview on the institutional nexus between climate and trade. However, it raises the question why other crucial institutional overlaps between climate change and other issue areas are not equally treated here in their own sections of chapter 13. This goes, for instance, for climate change and security, climate change and biodiversity, etc. I understand that these issues are partly dealt with in different chapters of the report. Still, giving climate and trade (and in the next sections: climate and technology; climate and investment) this extra attention in chapter 13, while leaving out other overlaps, appears a bit selective. A solution would be to at least briefly introduce an overview of overlaps (that also accounts for: climate and forestry institutions; climate and biodiversity institutions; climate and energy institutions; climate and security institutions; climate and development institutions) - and then refer to the respective chapters and sections of WGIII AR5 where these institutional overlaps are addressed.	Taken into account - combined with comment 3977
10446	13	0	0			I would urge you to refer http://planningcommission.nic.in/reports/genrep/index.php?repts=report_carbon.htm for future plans of India in terms of development as spelled out by its 12th five year plan	Rejected - outside of the scope of Chapter 13
6324	13	1		58		The chapter contains useful information, but some aspects might need to be addressed, in particular the following: 1) Frequently, there are comparisons between different approaches without specifying what of these approaches has been implemented in practice and what are "paper approaches" prepared or suggested by scholars, but not implemented. This information should be provided; 2) In some sections the bibliographic sources of given statements and, even, of whole paragraphs are not identified. This does not allow to know if the authors missed to include the bibliographic sources or if the written statements come from the own author's ideas or views; 3) In some cases the sections do not reflect different opposite views in areas that are known to be controversial.	Taken into account - primarily covered in Section 13.13

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
14669	13	1		92		A few overarching comments. First, I felt like much of this chapter read like a catalog. It would provide much more value to the reader if it could include more synthesis. Why are capacity building, or technology transfer, or finance important for the design and implementation of an international climate policy architecture? How do they relate to the principles presented at the top of the chapter. Second, I strongly recommend a sub-section on policy surveillance (i.e., national communications, emission inventories, MRV, and ICA). This is an important issue and needs more than the few, brief discussions in the current draft of the chapter. Third, and I suspect the next draft will highlight this in section 13.13, it is important to note the effectiveness of the various approaches taken to date on the elements that receive attention in specific sub-sections. For example, can one understand how the structure of agreements related to adaptation have impacted the effectiveness of adaptation efforts? Fourth, insights on how a reader may think about the evolution of international climate policy architecture would be helpful. The UNFCCC was originally characterized by voluntary emission goals for about 35 nations. Today, the discussion is about whether to make legally binding commitments around a whole host of policy elements -- emission goals, financing goals, tech transfer, adaptation, etc. -- for developed and developing countries. In addition, the emerging role of SRM/geoengineering and how that affects the design, participation, implementation, and compliance with an international climate agreement is important.	Taken into account - deeper synthesis has been included in this draft; MRV discussion in 13.3 has been strengthened; the revised 13.13 synthesizes the literature on performance assessment in subsectors; the evolution of the UNFCCC is also covered in the revised 13.13; SRM governance is discussed in the revised 13.4
4942	13	1				Ch.13 International cooperation ...	Noted
12990	13	1				I was expecting to see more on the theoretical and empirical literature on international climate agreements. Is the game-theoretic literature covered elsewhere? Probably the empirical literature will be covered in the second order draft, as mentioned in sections 13.13.2.1 and 13.13.2.2. Some sections are not well connected to the rest of the chapter. In some sections the chapter still reads as a patchwork of literature reviews rather than as an assessment of the literature in which the authors guide the reader through the most important issues that affect international cooperation on climate change. However, I recognize that this is an early draft and much progress will be done in the second-order draft.	Taken into account - combined with comment 18351
4956	13	1-				MISPRINTS etc.	Noted
3739	13	10	11	18		see literature on social learning, especially Haas.	Taken into account. Reference to Haas is too vague . However, explicit mention to the wording "social learning" was added in the last paragraph of section 13.2 because it was defined there.
17666	13	10	12	10	13	It is not clear what the term "policy entrepreneur" means in this context; the term should be explained or there should be an example in brackets; Also, in the next line, it is referenced to Chapter 15, but in Chapter 15 there's no more information about "policy entrepreneurs"	Taken into account. Reference to chapter 15 is eliminated because there is no reference there on "policy entrepreneurs". Text was rephrased to clarify the concept of "policy entrepreneurs".
8167	13	10	13	10	18	"Each country must consent to a treaty to be bound": Treaties are not the only ways in which countries bind themselves. If the intent is to say "Each country must consent to a treaty to be bound by that treaty", it may be wise to spell that out.	Accepted. Text was rephrased as suggested.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
13627	13	10	16			This line erroneously assumes that cooperation must take the form of a binding treaty.	Accepted. Text was rephrased as suggested. Related to another comment.
3663	13	10	23	10	46	Is there no special FAQ-section foreseen in the text? Please consider to intergate in a separate chapter.	Rejected. FAQ will be placed where editors decide.
8092	13	10	24	10	46	This FAQ is excellent	Noted. No action required.
13629	13	10	24	10	46	I think there's a risk to claiming cooperation is necessary. First, what matters is emissions, not cooperation. Second, if we persist in believing that an international treaty is necessary, we may get more of what we've gotten so far, which is floundering international process and uneven domestic progress. There could be a case to be made to focus on pledge and review or other kinds of measures, at least in the near term. How about "desirable" instead of "necessary"?	Taken into account. Text was rephrased .

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
3965	13	10	27	10	28	<p>It is not so easy to characterize the climate change as "global commons" in international law. Climate change has been characterized in several ways including "common property", "common heritage" and "common concern". Common property, or res communis, refers to areas such as the high seas that are open for legitimate use by all States, and which may not be appropriated to the sovereignty of any individual State. Airspace above the high seas is in this sense "common property." However, like sovereign airspace, common property is fundamentally a spatial dimension, and is therefore insufficient to deal with the atmosphere as a global unit as described in paragraphs 83-86 above.</p> <p>The concept of common heritage was employed in UNCLOS Part XI on deep sea mining and in the Moon Treaty. However, Malta's attempt at the UN General Assembly in 1988 to have the global atmosphere declared part of the common heritage of mankind was unsuccessful. Since 'common heritage' implies that a resource must be exploited and conserved for the benefit of mankind as a whole, such designation would usually require a far-reaching institutional apparatus to control the allocation of exploitation rights and benefits. If the atmosphere were treated as part of the common heritage of mankind, it would, in effect, place atmospheric problems under collective management - something widely considered premature.</p> <p>While the concepts of common property and common heritage may not be appropriate indicators of the legal status of the atmosphere, the notion of common concern is, and should be included in its legal status under international law. In 1988, the UN General Assembly declared in resolution 43/53 on the "Protection of global climate for the present and future generations of mankind" that climate change was a "common concern of mankind", somewhat mitigating the failure of Malta's proposal mentioned above. The same concept was incorporated in the 1992 UN Framework Convention on Climate Change (preambulary paragraph 1). In view of the growing recognition of the linkages between transboundary air pollution and global climate change, application of the concept of common concern to the whole of atmospheric problems should be considered appropriate.</p> <p>The legal content of the concept of common concern is that States can no longer claim that atmospheric problems are within the reserved domain of domestic jurisdiction, because the issues now legitimately fall under "matters of international concern". It will certainly lead to the creation of substantive legal obligations on the part of all States to protect the global atmosphere as enforceable erga omnes. It may be too early at present to interpret the concept of common concern as giving "all States a legal interest, or standing, in the enforcement of rules concerning protection of the global atmosphere," in view of the absence of appropriate procedural law to implement such an interpretation. It may also be premature to consider that the concept of common concern creates rights for individuals and future generations.</p> <p>Based on the foregoing analysis, it may be concluded that the atmosphere, and climate change in particular, has the legal status of an international resource, whether shared or common, indispensable for sustaining life on earth, health, crops and integrity of ecosystems that it is a common concern of mankind.</p>	Coverage of the legal literature is presented in the current draft, but conceptualization from other disciplines is also included. Perhaps more could be done to distinguish which disciplines the cited literature come from, but our mission is to synthesize across disciplines.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
4714	13	10	31	10	32	"These characteristics create incentives for actors to "free ride" on others' investments in climate protection." True but, in addition, as US behavior makes clear, a MAJOR obstacle to international cooperation is not agreement that climate change mitigation is worthwhile but we want others to pay for it but, instead, that we are not sure that climate change mitigation makes sense (whether because of scientific disagreement or because of valuing the benefits of emitting carbon over the costs of restricting such emissions). The point is that some countries, in principle, and many others in practice, are behaving in ways that suggest they believe that addressing climate change is less important than economic growth, full stop. A Tragedy of the Commons problem involves everyone agreeing on the goal but some not wanting to contribute to achieving that goal -- in the climate case, however, that captures part but only part of the problem. A separate obstacle is the disagreement among countries over the goal itself, or the priority of the climate goal relative to other goals.	Rejected. The tragedy of the commons involve overuse of the commons because of free-riding. So, what matters is action, not goals. Those exploiting the commons do not share the goal of sustainable use with others.
15283	13	10	32	10	32	"Section13.2" change to be "This section", because this is already in Section 13.2	Taken into account. "Section13.2..." was deleted.
5913	13	10	33			"to level the playing field" is a vague idiom. Do you mean it provides procedural fairness to participants?	Taken into account. "level the playing field" was replaced by "to give every country the same opportunities"
3738	13	10	5	7		a table of emissions would be good here	Rejected. Comment is not clear..
13546	13	10	8	10	18	The connections between chapter 13 and chapter 15 could be strengthened. Specifically, the idea that sub-national, national, and transnational policy experiments (see Hoffmann 2011; Bulkeley et al 2012, Rabe 2007b) could be the source of coalitions that make multilateral cooperation more likely is under-explored in Chapter 13. The focus of chapter 13, not unsurprisingly given what the bulk of the literature focuses on, concerns top-down forms of cooperation—how treaties and/or large multilateral agreements can be designed effectively to motivate and channel action. The literature on climate governance has begun to more significantly explore how climate action in other arenas could be the catalyst for action and that multilateral process might instead serve a coordinating role (Abbot 2011) or even follow from subnational and transnational action (Selin and Vandeveer 2009, Hoffmann 2011; Bulkeley et al 2012)	Editorial-copyedit prior to publication. Linking other levels of government is already discussed in chapter 13 (e.g. section 13.8) and linking among different levels of government is also analyzed. Most references are incomplete. However, attempt will be made of tracking them before publication.
13911	13	10	1	10	5	This sentence appears as a statement which does not follow logically: The first part states that coordinated action may be more effective than uncoordinated action, the second lists the reasons for this (diverse preferences and perceptions; geographically widespread emissions sources; uncertain and non-homogenous mitigation costs and climate change impacts). However, these seem to be more the barriers to cooperative action, than reasons behind its benefits. See Barrett, S., "Environment and Statecraft: The Strategy of Environmental Treaty-Making", Oxford, OUP, 2003. Barrett shows that the reasons behind the presumed effectiveness of cooperative action are: climate stabilization is a public good that cannot be provided by single actors (except potentially geo-engineering); the need to deter free riders; the possibility for pareto optimizing negotiation and effort sharing; the possibility for positive international spillovers resulting for more efficient, larger-scale actions	Taken into account. Text has been rephrased. Barrett (2003) was already cited.
13912	13	10	11	10	13	This list of ways to smooth the internalization of externalities is maybe missing the literature on effort sharing negotiations (see Ringius, L., "Differentiation, Leaders, and Fairness: Negotiating Climate Commitments in the European Community", International Negotiation, 4: 133–166, 1999); and the opportunity to link climate policy to other policy agendas, such as fiscal reform, energy security, or sustainable development (see Huberty, M., "Green growth as necessity and liability: The political economy of a low-carbon energy systems transformation in the European Union", Berkeley Roundtable on the International Economy, Working Paper no. 200, 2011).	Rejected. The first recommended is a bit "old". The second recommended paper is interesting, but grey literature. If published in time, better inserted at line 22 of page 10.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
6948	13	10	27	10	32	Please see previous comments on this particular phrasing -- in addition, suggest not to simply copy/paste text here (in particular if it's partly incorrect) to avoid repetition and duplication.	Accepted. Change the word "depository" such as with the word "receptor" everywhere.
10806	13	10		11		It is worth locating these principles more robustly, particularly with relevance to international law. While all these principles listed here may be relevant, they are not all equally clearly articulated, nor as widely accepted. One way to sort through them is to note which ones are enshrined in international law, and how robustly. Absent this location and grounding, this section is very weak.	Taken into account. The reasons for the choice of principles and criteria that were selected has been clarified.
14246	13	10				The discussion of various "principles" is a bit ad-hoc, artificial and mysterious. In economics we are concerned with simply efficiency and distribution, and that captures all the variants you here refer to. Cost-effectiveness is implied by efficiency (pareto efficiency, or as here utilitarianism: the maximization of global net benefits). The precautionary principle follows from uncertainty and risk aversion. Sustainability follows from both distribution and efficiency if discount rate is sufficiently low. Fairness refer to distribution, etc.	Taken into account. The reasons for the choice of principles and criteria that were selected has been clarified. The link among criterias has been analyzed more in depth.
11588	13	10	48	11	29	Equity is a key issue and should be included as a principle	Rejected. "Equity" is stated on page 11 line 4. It is also included under the principle of CBDR and respective capabilities (page 11, lines 22 to 25).
18437	13	11		13		<p>I think one central principle is missing, the effectiveness of any treaty in terms of emission reduction with strong reference to the demands of science (pag 11 paragraph 2). This principle is common in literature, such as Stern or Keohane, but here seems not to be presented in an explicit way. Missing this principle, the others are incomplete: how to discuss efficiency and equity absent clear mitigation targets? Even more, the tradeoff (conflict) between effectiveness and equity has been always at the center of international climate politics. Those principles listed on page 11 are all related to "how", but no one focuses on "what" has to be done. This is rather strange because the reference to effectiveness appears immediately after as a criteria to assess the success of international cooperation (pag 12 par and last paragraph2; pag 42 par 1), along with efficiency and equity (pag 13 par 6 and 7).</p> <p>I think the paper should talk about potential unpleasant tradeoffs between justice and effectiveness: it might discuss if there is a hierarchy in principles, and with the growing evidence of the climate crisis, effectiveness should not be gaining terrain in relation to efficiency and justice.</p>	<p>In Section 13.2, Rejected. Text in Section 13.2.2. and (Table 13.1) already includes environmental effectiveness. We distinguish environmental effectiveness from compliance and from equity. Conflicts and complementarities among criteria are discussed in the text.</p> <p>In Section 13.3, Section 13.2 already explicitly discusses environmental effectiveness as a primary objective, which is also highlighted in Table 13.1. Then, section 13.3. does explicitly discuss environmental effectiveness and its distinction from equity; it also discusses the need to address equity in order to engage participation in a treaty, in order to increase its effectiveness.</p>
2306	13	11	1	92	1	GENERAL COMMENT: On the whole, this chapter is quite sound, although it does not get to the heart of the political issues involved. Perhaps a cogent political analysis is impossible in the IPCC context since these issues are so sensitive. I really liked Figure 13.1.	Noted. No action required.
2164	13	11	12			Sometimes first names (or their abbreviation) are stated and sometimes not (whole chapter 13). Please check!	Editorial -copyedit to be completed prior to publication.

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2268	13	11	15	11	18	The precautionary principle is based on the assumption of maximum effort for the least risk . It is the opposite of common sense.	Rejected. Normative comment. No literature suggested for the statement. No action required.
3742	13	11	15	18		differentiate between outcomes and outputs	Rejected. Comment unclear, there is no mention of outcomes/outputs in the text mentioned..
3966	13	11	15	11	15	The term "precautionary principle" is misleading and inappropriate, treating as if it was a "legal" principle. The principle is not yet established, apart from specific treaty provisions, as customary international law. The Draft should continue to use the expression "precaution" or "precautionary measures (or approaches)". See, ILA Committee on Legal Principles relating to Climate Change, First Report, 2010, Second Report, 2012, http://www.ila-hq.org/en/committees/index.cfm/cid/1029 See also, Report of the National Committee, "Legal Principles relating to Climate Change: Preliminary Issues on the Methodology and Scope of the Work", Japanese Yearbook of International Law, vol. 52, 2009, pp. 508-511.	Taken into account. The term "precautionary principle" was changed to the "precaution" principle.
2407	13	11	15	11	15	Comment on specific text: The core of the precautionary principle is that it creates policy space for regulators to act to guard against risks even in the face of scientific uncertainty. Your definition does not quite capture that.	Taken into account. The precaution principle was linked to risk by mentioning Weitzman's dismal theorem as well as its critics.
2267	13	11	19	11	21	Sustainable Development is impossible, There are only two directions, forward and backward. Future generations will make up their own minds up on what they want and they will not appreciate what we have willed upon them. Currently we have plunged the next generation into mass unemployment.	Rejected. Normative comment. No literature suggested for the statement. No action required.
3967	13	11	19	11	19	On "sustainable development", add to the reference the ILA's final report and resolution: http://www.ila-hq.org/en/committees/draft-committee-reports-sofia-2012.cfm	Noted. This reference would need to be vetted. Hold for consideration in the next stage.
17098	13	11	19			the principle of sustainable development, as it is now emerging in the climate negotiations (China and the African Group calling for looking at concentrations of GHG's and sharing the carbon budget, at the most recent talks in Bangkok) and the literature cited above, as well as my peer reviewed work published in recent editions of 'Climate and Development' need to be acknowledged, rather than the IPCC of 2007 and the World Bank on 2010. As the Cancun Agreement stated the political issue is equitable access to sustainable development in the context of ecological limits and is about sharing the global commons, or sinks, or the carbon budget	Taken into account. Instead of citing a few papers on the vast sustainable development literature, a reference to chapter 4 review on that issue was added.
11440	13	11	19	11	21	This is an inaccurate characterization of the concept of sustainable development. The multilaterally accepted definition of sustainable development is contained in paragraph 2 of the 2002 Johannesburg Plan of Implementation (see http://www.un.org/esa/sustdev/documents/WSSD_PlanImpl.pdf) and in paragraph 4 of the 2012 Rio+20 Outcome Document (see http://www.unsdn2012.org/content/documents/727The%20Future%20We%20Want%202019%20June%20201230pm.pdf). The multilaterally agreed definition of sustainable development emphasizes the integration of the three pillars of sustainable development – economic development, environmental sustainability, and social development – rather than the temporal aspect of the academic definition of sustainable development that came out of the Brundtland Commission report and which were picked up by the IPCC and the World Bank.	Combined with comment # 17098
6833	13	11	2	11	8	Inaccurate to characterize Rio Declaration and UNFCCC as 'literature' - these are legal instruments of varying degrees of legal bindingness and gravitas. This entire section needs to be further researched and nuanced.	Taken into account. Text was rephrased.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
14640	13	11	22	11	29	Why are CBDR/RC and fairness treated as separate principles? Isn't CBDR/RC any interpretation of fairness?	Taken into account. We follow UNFCCC (art 3.1.) by not merging both concepts: "The Parties should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities." The two principles are however closely related.
14342	13	11	22	11	25	With regard to "common but differentiated responsibilities and respective capabilities" - the text here assumes that this concept has been defined as purely a "historical" metric. In fact, there is no agreed definition of this concept, and certainly no agreement that it refers only to historic responsibility or capabilities. Current and/or future responsibility and capability are just as relevant. It is also important to note that both CBDR and equity are both closely linked to action, as in Article 3.1 of the 1992 Convention which says that all should act to protect the climate based on CBDR and equity. So they cannot be viewed outside of the context of action.	Rejected. The current text clearly mentions current responsibility and does not seem to give the impression that the concept should not relate to concrete action.
3968	13	11	22	11	22	On CBDR principle, add to the references the above ILA Committee on Legal Principles relating to Climate Change, First Report, 2010, Second Report, 2012, http://www.ila-hq.org/en/committees/index.cfm/cid/1029 ; and also the excellent study by Lavanya Rajamani, Differential Treatment in International Environmental Law (Oxford University Press, 2006. See also, Report of the National Committee, "Legal Principles relating to Climate Change: Preliminary Issues on the Methodology and Scope of the Work", Japanese Yearbook of International Law, vol. 52, 2009, pp. 505-508.	Taken into account. Some of the reference are grey literature. The Lavanya Rajamani book reference was added.
14641	13	11	26	11	29	An alternative view of fairness is one focused on outcomes. An agreement can be characterized as "fair" if countries willingly participate and comply with it. By their actions, they reveal their interpretation of the agreement as fair if they submit to the commitments represented therein.	Taken into account. Text was rephrased to include both outcomes and procedural fairness. A link was made to chapter 3 for more details.
3743	13	11	26	29		elaborate this	Taken into account. Text was rephrased.
12796	13	11	26	11	29	You may like to provide a link and make a cross reference to chap. 4.	Taken into account. Cross reference to chapter 3 (on ethics) was added. No reference here on chapter 4 since it deals with equity, no ethics.
15662	13	11	26		29	To link more clearly with the discussion at the top of the page and avoid further proliferation of concepts, the principle of "fairness" could be used synonymously with the principle of "equity". This is common in the literature. See for example Soltau, F. 2009. Fairness in International Climate Change Law and Policy. New York: Cambridge University Press.	Taken into account. Cross reference to Chapter 3 included.
6835	13	11	26	11	29	None of the principles in FCCC Article 3 referred to above, engage notions of fairness that cover distributive justice within countries. Need to specify whether this is sourced to the FCCC or suggested in the literature. Cannot blur boundaries between the two without running the risk of erroneously converting aspirations/opinions expressed in secondary literature into interpretations of legal text.	Rejected. Fairness among countries and within countries belong to the generation of justice. Text in its present state is not saying that art 3 affirms it is.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
2165	13	11	26			Fairness does not only involve distributive fairness, but also procedural fairness (agents' conduct in the negotiation process). This should be mentioned here. Also reference could be made to Rabin (1993), American Economic Review and the concept of kindness functions in his game-theoretic approach.	Taken into account. The different aspects of fairness have been added as procedural and outcome fairness. The reference was not added because it is not new.
17099	13	11	26			the principle is NOT "fairness" but "equity". The developed countries are describing this element as fairness while the developing countries refer to equity. You also refer to equity, but in the grouping club it under fairness. It should be EQUITY.	Editorial -copyedit to be completed prior to publication. This issue may be asked to co-chairs. See my answer to comment 169.
13630	13	11	30	11	41	Suggest an example or two here.	Taken into account. Text was elaborated.
3744	13	11	31	41		elaborate the tradeoffs/conflicts	Taken into account. Text was elaborated.
7138	13	11	46	12	2	"There are also goals not related with mitigation e.g the 100 billions on finance agreed on Cancun. As stated before, climate change agreements are not only about mitigation goals..."	In Section 13.2, rejected. Goals are those that imply reduction in concentrations. Funding is a mean to achieve that goal in a more equitable (and more feasible) way. Nevertheless, finance issues are considered important in international negotiations and so are treated in Section 13.11. In Section 13.11, taken into account - 100 billion target mentione in introduction to section 13.11.1
4957	13	11	9		29	six broad categories: .. ~ but there are only five ?	Taken into account. Text rephrased to list five principles, by linking cost benefit principle to cost effectiveness.
8093	13	11	9	11	9	Suggest changing "broad categories: The principle" to "broad categories: First, the principle" as on initial read it was unclear that lines 9-14 were related to the first principle only.	Taken into account. Text rephrased to list five principles, by linking cost benefit principle to cost effectiveness.
18692	13	11	9			"[...] six broad categories" - I believe only give categories are covered in the following.	Taken into account. Text rephrased to list five principles, by linking cost benefit principle to cost effectiveness. Several comments dealt with this point.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
6834	13	11	9	11	29	Need to first source these principles (in the order in which they appear in Article 3 if that is the primary source), provide widely accepted legal interpretations of them, and then introduce secondary literature on these. Currently the legal interpretation and the aspirational/normative views on it have been conflated. Also need to cite work by the numerous Southern scholars that have worked on these principles. Among others, I have written an Oxford University Press, UK manuscript on Differential Treatment/CBD RRC, and numerous articles on peer-reviewed legal journals on CBD RRC. Also see the two Reports of the International Law Association Committee on the "Legal Principles Relating to Climate Change." http://www.ila-hq.org/en/committees/index.cfm/cid/1029	Taken into account. Rajamani Lavanya (2012) is now cited, as it is peer-reviewed. Other literature would have to be thoroughly vetted.
11333	13	11				What are the four criteria listed by Gupta referred to in line 1? What are the six broad categories referred to in line 9? How does this relate to the five principles listed and described?	Taken into account. The reasons for the choice of principles and criteria that were selected has been clarified. The difference between principles and criteria has also be pointed out.
13914	13	11	15	11	18	The discussion of the principle of precaution could also reference Weitzman's article, as it integrates the fat-tail risks particular to climate change with an empirical analysis of how these relate to the principle of cost-effectiveness, and in particular the discount rate used to measure same. See Weitzman, M., "A Review of The Stern Review on the Economics of Climate Change", Journal of Economic Literature, Vol. XLV (September 2007), pp. 703–724	Accepted. There was a reference to Weitzman (2009, not 2007) in page 13 line 28 (section 13.2.2.1). That reference was replaced and Weitzman work conclusion on fat-tails was included in section 13.2.1.2 under the Precaution principle.
11682	13	11	9	11	29	The author notes that "These principles can be grouped into six broad categories:", used Second, third, fourth, fifth, I think after the first principle, A related principle is also one category, the wording is a little bit confusing, so think better to write a separate para. for the 2nd principle - cost-effectiveness, then it is much clear with six categories	Accepted.. Principles have been reduced to five by groping together two related principles: benefit/cost analysis and cost-effectiveness. The text was rephrased to add clarity.
13913	13	11	9	11	29	This section only numbers 5 categories of principles, not six as stated. If "cost effectiveness" is one of these six, it should be numbered as such for clarity.	Accepted.. Principles have been reduced to five by groping together two related principles: benefit/cost analysis and cost-effectiveness. The text was rephrased to add clarity.
2930	13	11	18	11		I. 18 as said clearly in ITLOS Advisory Opinion n°1, Case No. 17, Responsibilities and obligations of States sponsoring persons and entities with respect to activities in the Area (Request for Advisory Opinion submitted to the Seabed Disputes Chamber)	Reject. Comment unclear.
2929	13	11	2	11	8	what about principles of cooperation and prevention ?	Rejected. The principle of prevention can be linked to that of precaution appearing the text. And, the principle of cooperation is implicit in Section 13.2.1.1. when dealing with the commons aspect of the problem.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
5684	13	11	33	9	34	The conflict between cost-effectiveness and sustainable development is not obvious, particularly because much of the cost savings from market-based policy instruments is achieved dynamically (in the long run, not "on a short time horizon," as noted in the text). I don't know the source cited here, van Asselt and Gupta (2009), and that might clear up my confusion, but it is not in the list of references.	Taken into account. The part of the sentence referred to "short run" was deleted because it was indeed confusing. van Asselt and Gupta (2009) was added to the reference list.
11334	13	11				This heading is inappropriate. You have listed principles in a previous section. This section discusses goals. It may be more helpful to have a heading that clearly indicates the 'concepts' you are addressing and then combine 13.2.1.3 and 13.2.1.4	Taken into account. The reasons for the choice of principles and criteria that were selected has been clarified. The difference between principles and criteria has also be pointed out. The distinction between principles and goals will be in 13.4.2.2.
5690	13	11	42	12	2	Having a section entitled "principles and goals", just two sections after one entitled "principles" (sec. 13.2.1.2) is confusing, and this one-paragraph section does not add much. The authors could consider simply adding a sentence at the end of 13.2.1.2, stating that the goals that are incorporated in international climate change agreements flow from principles, and then drop section 13.2.1.4.	Accepted. Section 13.2.1.4 was dropped. Part of its content will move to a new subsection in 13.4.2.2
10807	13	12				How and why does the principle of "fairness" pertain to institutional feasibility? Institutional outcomes often do affect fairness, but why feasibility then? If the link is between institutional issues and principles, a case could be made for including all the principles: institutional design can affect sustainable development, precaution etc. It all depends what the institution is designed to do.	Taken into account. The reasons for the choice of principles and criteria that were selected has been clarified. The difference between principles and criteria has also be pointed out. Table 13.1. has been improved.
14247	13	12				"Fairness" is too loose, as there are so many variants of what fairness could mean.	Taken into account. Text has been reworked.
14248	13	12				"Institutional feasibility" is not a criteria but a constraint which cannot be violated.	Rejected. With the same logic, Environmental effectiveness is also a constraint for an agreement.
13631	13	12				Somewhere in here there should be a discussion of the political feasibility of a particular approach as means to evaluate its prospects. Important tradeoffs apply. Equity is a fine principle, but it's clear that demand for net transfers from rich to poor countries, or any transfers for that matter, make it far more difficult to reach conclusion. Indeed some parties have used equity arguments precisely to inhibit progress (remember the compensation discussions under Kyoto promoted by the OPEC countries?)	Taken into account. The text makes it clear that political feasibility is included under the umbrella of institutional feasibility.
3969	13	12				On "Principles and Criteria", the concept of "fairness" is extremely ambiguous and confusing. The same is true with the concept of "legitimacy" in Page 14, Line 25. In this context, the concept of "equity" is more appropriate as a principle and criteria to be applied. Equity has three dimensions in international law (see for instance the 1985 ICJ judgment on Frontier Dispute (1985 ICJ Reports): equity infra legem, equity praeter legem and equity contra legem, which should be strictly differentiated. See Report of the National Committee, "Legal Principles relating to Climate Change: Preliminary Issues on the Methodology and Scope of the Work", Japanese Yearbook of International Law, vol. 52, 2009, pp. 515-521.	Taken into account. Discussion to a precise definition of fairness was referred to the corresponding chapter 3. That chapter discusses ethics, and within it, considers that fairness is part of justice.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
6107	13	12				Principle of fairness is an important factor in evaluating institutional feasibility. However "cost" is another important factor for the evaluation of this criterion. Here "cost" does not mean cost effectiveness. It does not necessarily mean economic efficiency. However it may be misleading to avoid to mention "cost" as a factor of evaluation of institutional feasibility. It may be better to add some explanation on cost as a footnote.	Taken into account. Text and figure were reworked.
13915	13	12	12	12	13	To what extent the criteria of "institutional feasibility" solely draws upon the principle of fairness is questionable. Other principles may be relevant, such as cost effectiveness or administrative capacity to implement the policy. It would be useful to clarify what exactly Gupta (2007) means by "institutional feasibility".	Taken into account. Text was reworked and figure changed.
8168	13	12	12			There is much more to institutional feasibility than fairness. Designs can be fair but unwieldy; they can also be feasible even though many consider them to be unfair.	Taken into account. Text was reworked and figure changed.
12797	13	12	12			The table is not well described in the text. It might be helpful to explain the indicated relationships between criteria and principles to verbalize the additional information of the table. Esp. The link regarding Fairness is missing (resp. firstly found on p.13)	Taken into account. Text reworked and table changed.
10411	13	12	12	12	13	The criterion "Maximizing global net benefits" for the principle of aggregate economic performance should be revised, as this criterion does not take account of the circumstance of the developing countries. Only maximizing the global net benefit will bring the unfair issues, and even enlarge the economic gaps between developed countries and developing countries. So, countries convergence to certain economic level should be considered. Another criterion "mutual growth" should be added. In fact, such researches have been developed in developing countries and achieve some mitigation strategies, such as Wang,Zhang, Wu(2012).	Rejected. Maximizing global net benefits is what yields efficiency at the global level. This is correct. Equity is a different criteria, though it is related to efficiency.
6987	13	12	18		20	The word "biased" wouldn't seem relevant here, since you are emphasizing a difficulty to predict. Please just clarify what you mean.	Accepted. Tex rephrased.
12798	13	12	20			Is interaction typically costly as laid out in Levinson? You may like to cite some literature on issue linkage taking a different view point.	Accepted. Literature on conflicts and complementarity was added.
14642	13	12	28	12	33	There is a potential disconnect between the objective of the FCCC and the 2 degrees C goal elaborated first in Copenhagen (technically, first elaborated by the MEF Leaders, more on that below). The FCCC objective is focused on stabilizing concentrations. The temperature goal under Copenhagen could be achieved through geoengineering (e.g., SRM as described in this chapter) and yet concentrations may not stabilize for some time. And the damages from a given concentration level may vary not only with the extent of geoengineering, but also with the investments made for adaptation. Is the FCCC objective still operational for evaluating environmental effectiveness? At the time the FCCC was being negotiated, policymakers were not seriously thinking about adaptation and geoengineering. How does the emergence of these options affect our understanding of environmental effectiveness? This is hinted at in the subsequent discussion, but could be made more explicit.	Accepted. A reference to the Copenhagen Accord 2 degree idea was added. A cross-reference to the different ways to achieve environmental effectiveness as defined in chapter 6. Mention to geo-engineering was more explicit.
12978	13	12	29			I suggest cancelling "in this area".	Accepted. "in this area" was deleted.
17100	13	12	3	3	27	the 'criteria' to assess means of cooperations MUST include equity, which is not the same thing as 'distributional impacts'. Again, this is the developed country position that equity will be reflected in mitigation measures (different levels of reduction) and in adaptation (different levels of vulnerability), whereas developing countries see equity in terms of "access to sustainable development, for example, which is about comparable standards of living, poverty eradication as the overriding objective and sharing the carbon budget. The problem arises because equity is absent from the principles and sustainable development is not defined in the UNFCCC context. There is no reference to related peer reviewed literature from developing countries, including my work.	Editorial. See answer to comment 169.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
6108	13	12	33	13	1	Citation of J.B. Smith is unnecessary. "Article 2 of UNFCCC" is enough.	Accepted. Reference to Smith was deleted.
9044	13	12	8	12	12	The Chapter fails to recognize the possibility that principles and objectives set out in Articles 2 and 3 of the UNFCCC can also be used as assessment principles and criteria in themselves. To be comprehensive, AR5 should assess the effectiveness of international cooperation arrangements in the context of the implementation of the UNFCCC, rather than assess the effectiveness of the UNFCCC per se as an international cooperation regime. That is, the assessment focus should be on the implementation of the UNFCCC rather than on the design of the UNFCCC	Taken into account. The text is related to principles and criteria in general, not those specifically stated in the UNFCCC. However, text was rephrased to add more clarity.
11441	13	12	8	12	12	In addition to the reiteration of the IPCCAR4 principles and criteria for policies and arrangements as the potential criteria for assessing means of international cooperation for AR5, there should also be a discussion looking at how the principles and objectives set out in Articles 2 and 3 of the UNFCCC can also be used as assessment principles and criteria in themselves. This would then allow the IPCC to also assess the effectiveness of international cooperation arrangements in the context of the implementation of the UNFCCC, rather than assess the effectiveness of the UNFCCC per se as an international cooperation regime. That is, the assessment focus should be on the implementation of the UNFCCC rather than on the design of the UNFCCC.	Taken into account. The text is related to principles and criteria in general, not those specifically stated in the UNFCCC. However, text was rephrased to add more clarity.
2408	13	12	table	12	table	Comment on Table 13.1: I thought it would be helpful to specify more clearly the relationship between the criteria and the principles. What does it mean to say that a criterion 'draws upon' a principle in this way? In the main the principles seem to specify the components which make up the outcome (or criterion). Criteria and components might capture this relationship. Aggregate economic performance is made up of economic efficiency and cost-effectiveness. Institutional feasibility was harder to figure out here. Institutional feasibility implies the task of identifying components which makes the emergence of an agreement which meets the other three criteria more likely. It suggests that institutional arrangements are purely a means to an end. High institutional feasibility arises when institutional arrangements deliver on the other three criteria. Is this what you mean to say? In this case, you will have to justify the assertion that fairness (presumably procedural fairness) as well as participation, compliance, legitimacy and flexibility (p. 14) are the components which make institutional arrangements likely to deliver on the three substantive criteria. Or do you mean to say that there are certain institutional attributes which, while one hopes they will deliver on the other three criteria, are of independent normative value. In which case you might end up having to discuss not only trade-offs between economic performance and distribution but also between environmental effectiveness and institutional appropriateness.	Taken into account. The reasons for the choice of principles and criteria that were selected has been clarified. The difference between principles and criteria has also be pointed out. Table 13.1. has been improved.
11683	13	12	12	12	13	In the Section 13.2.2 and Table 13.1, this section list the relationship to the six categories of principles discussed in section 13.2.1.1. The section title 13.2.2.3 is "Distributional and Social Impacts", but in the Table 13.1, only "Distributional Impacts", so Social impacts is missing; second, I think the matrix is slightly confusing, for instance, sustainable development is actually very comprehensive but vague, I think not only environmental effectiveness, and distributional impacts would relate to the principle of sustainable development, the other two criteria are also could draw on "sustainable development", so the 4x6 matrix is slightly confusing regarding the concept connotation and relationship.	Taken into account. Table and text realaborated to make it clearer.
5685	13	12	12	12	13	I was surprised that "sustainable development" is not listed as a principle relevant to "aggregate economic performance," in the second row.	Taken into account. Text and table have been reworked.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
16178	13	12	3			The list of criteria omits two important and related criteria: concerns about a democratic deficit in international administrative bodies and consequent lack of representativeness and legitimacy; and public participation. National governments' concerns about the former is one of several barriers to concluding successful climate change agreements. The mention on p 14, line 30 is useful but it should be addressed here as well.	Rejected. The two concerns (which are more specific than environmental effectiveness or efficiency or equity) are already incorporated withing the criteria of insitutional feasibility, as aknowledegd by the comment.
15454	13	12	3			When assessing the performance of international cooperation (or international regimes), it should be noted that there is always a problem of comparing it against counterfactual case. The "true" effect of cooperation (or regime cannot be known unless it is compared with a counterfactual case with no cooperation. The problem is well known in the existing studies on international regimes. For example, Arild Underdal and Oran R. young (eds.) (2004) Regime Consequences: Methodological Challenges and Research Strategies. Dordrecht: Kluwer Academic Publishers. Second, there could be different stategies of "effectiveness." For example, international cooperation might cause behavioral changes of parties but that do not necessarily mean the expected environmental changes would happen. National policies may fail even if parties did act. Although the issue is not solved yet, at least the complexity of "effectiveness" has been already identified in existing studies on international regimes and thus it should be acknowledged in this report too.	Rejected. Effectiveness is not understood in the text as the difference between BAU and actual, but as if goals are reached. This is clear in 13.2.2.1.. The comment on effectiveness stages is not relevant in this section, but is likely relevant to section 13.13.
12977	13	12	4	12	27	This section is not clear. The reader does not understand the main message. The table increases, rather than reducing, confusion.	Taken into account. Table and text realaborated to make it clearer.
6328	13	13				NAMAs and NAPAs go along the three dimensions and should not be located only at national/regional level. Support to them is international and, in many cases, the direct beneficiaries of NAMAs and NAPAs are at the local level.	belongs to 13.4
4943	13	13	1		3	There were efforts by the IPCC itself to deal with the interpretation of the Article 2 and the dangerous anthropogenic interference and consequent vulnerabilities.	Rejected. Original sentence seems to be clear enough.
8169	13	13	1	13	3	This statement seems too absolute. Perhaps "some other" forums do not take a holistic approach, but it seems incorrect to imply that "all other" forums share that characteristic.	Accepted. Text was rephrased.
12980	13	13	1	13	2	This sentence is not clear. Not clear what "this objective" is.	Rejected. The objective is to stabilize GHG concentrations, as stated on page 12 line 29, the previous sentence.
4958	13	13	11			{Cor} storing {those} [emissions] underground That is: storing those underground	Accepted. Text revised as suggested.
6836	13	13	13	13	17	Not clear why SRM is listed here – why has this been chosen over other geo-engineering options? What gives it credibility? Need to establish.	Taken into account. SRM was not chosen over other options. However, the text was rephrased to make that clear and balance the presentation of all alternatives.
3477	13	13	13	13	17	This is a very brief and inadequate discussion of SRM and its potential benefits and risks. It needs references to much larger discussion in the WG I and WG II reports. In WG I, the discussion is in Chapter 7.7.	Taken into account. SRM advantages and disadvantages are discussed in chapter 6. Here the interest in based on the need of not of international cooperation. The text was rephrased to make that clear.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
3479	13	13	13	13	17	This is the wrong definition for mitigation. SRM is not mitigation. It is geoengineering, which is an attempt to actively control the climate. Mitigation is defined as reducing the emissions of greenhouse gases and aerosols that cause global warming.	Accepted. Text was rephrased.
4959	13	13	14			reflect solar radiation through ..	Accepted. Text was rephrased.
5914	13	13	17			Include references re acidification. Add: "and the associated ecosystem damage" (Doney, SC, Fabry, VJ, Feely, RA and Kleypas, JA. 2009. Ocean acidification: The other CO ₂ problem. Annual Review of Marine Science, 1: 169–192.; Fabry, VJ, Seibel, BA, Feely, RA and Orr, JC. 2008. Impacts of ocean acidification on marine fauna and ecosystem processes. ICES Journal of Marine Science: Journal du Conseil, 65(3): 414–432.). Solar radiation management also risks stratospheric ozone depletion, with ensuing health risks from increased ultraviolet radiation (Rasch, PJ, Tilmes, S, Turco, RP, Robock, A, Oman, L, Chen, C-C, Stenchikov, GL and Garcia, RR. 2008. An overview of geoengineering of climate using stratospheric sulphate aerosols. Philosophical Transactions of the Royal Society A – Mathematical Physical and Engineering Sciences, 366(1882): 4007–4037, Tilmes, S, Müller, R and Salawitch, R. 2008. The sensitivity of polar ozone depletion to proposed geoengineering schemes. Science, 320(5880): 1201–1204.)	Taken into account. Geo-engineering definitions needed here follow now closely from chapter 6.3. Discussion in chapter 13 (not this Section 13.2, but Section 13.4) is limited to discuss the need of international governance, not scientific evidence on SRM impacts (which is reviewed in Section 6.9).
15723	13	13	19	13	25	would be important to mention impacts on water quality. What about side-effects on adaptation policies?	Taken into account. A mention and references were added to the link between adaptation and mitigation.
11696	13	13	24	13	25	Final comments, I feel the reference citation is not quite consistent, some provide detail page number, some are not, and some with first name initial but some are not)	Editorial- copyedit to be completed prior to publication.
14643	13	13	37			Could cite 1996 Wigley, Richels, and Edmonds Nature paper that provides an early, and effective illustration of cost-effectiveness analysis	Rejected. This is not a new literature post AR4.
6110	13	13	38	13	39	Add "(benefit)" after performance in the following sentence. It does not require environmental performance to be monetized. This makes the meaning clearer.	Accepted. Text was rephrased.
11791	13	13	4	13	8	Nuclear power should be put into example of low carbon emitting methods.	Rejected. The text is giving an example of cleaner technologies, not a list of all of them. So, there seem to be no need to include a specific reference to nuclear power.
6837	13	13	40	14	6	Unbalanced treatment – one paragraph on distributional and social impacts – there are reams of literature on this including by several developing country academics/policy scientists, that is not referred to here.	Taken into account. Text was more reworked. Space is still limited.
2166	13	13	41			Please also refer to procedural fairness and put it in context when you also discuss "legitimacy" on page 14.	Accepted. Mentions to procedural fairness and procedural legitimacy are now included.
3979	13	13	43	14	39	The terms political and institutional feasibility are never really defined either. The lack of such a definition becomes apparent in the discussion of the subcriteria: On lines 18-20 of page 14 it is stated that compliance can challenge institutional feasibility. So what exactly does it challenge? Its environmental effectiveness? Its legitimacy from those who want the institution to succeed? On line 34 of page 14, this aspect of 'success' is again mentioned - but doesn't this mean that institutional feasibility simply replaces other criteria already mentioned (including environmental effectiveness or aggregate economic performance)? Only if institutional feasibility is more clearly defined can it be useful as a criterion for assessing policies. Otherwise, anyone could simply insert his or her definition of feasibility, clouding the judgment.	Taken into account. Text was added and existing text was rephrased.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
9519	13	13	6	13	7	Please, replace 'by switching from ...storage' with 'by improving energy efficiency in direct combustion and end use and deploying low carbon technologies such as renewables and nuclear' (WEO 2010, p393 and Figure 13.9)	Taken into account. The sentence was rephrased and shortened.
3478	13	13	9	13	12	This is the wrong definition for mitigation. CDR is not mitigation. It is geoengineering, which is an attempt to actively control the climate. Mitigation is defined as reducing the emissions of greenhouse gases and aerosols that cause global warming.	Accepted. The whole subsection on environmental effectiveness was rephrased to follow closely chapter 6 definitions on mitigation, CDR (including traditional sinks and geo-engineering options) and SRM.
3480	13	13	9	13	12	This is a very brief and inadequate discussion of CDR and its potential benefits and risks. It needs references to much larger discussion in the WG I and WG II reports. In WG I, the discussion is in Chapter 6.	Taken into account. Discussion on subsection on environmental effectiveness was shortened and cross-referenced to chapter 6 was added.
6109	13	13	9	13	9	GHG concentrations can be reduced by, "in addition to emission reductions", methods of sequestration --.	Accepted. Text revised as suggested.
13916	13	13	43	13	43	Some confusion over the terminology could arise between "political feasibility" evoked here, and "institutional feasibility" evoked in the next section. What is the difference, where do they overlap, etc?	Taken into account. Text was rephrased.
11684	13	13	45	13	46	Revise "assessed along several dimensions" to "assessed along two dimensions", since only two: intra-generational equity and inter-generational equity	Accepted. Text was corrected.
2931	13	13	3	13	6	include a reference to human rights	In Section 13.5,taken into account - section 13.2, 13.5. For the next draft, the authors will review the literature on human rights more thoroughly.
15384	13	14				This page gives an excellent but far too brief discussion of the critical issues in formation of international agreement. This should be the heart of the discussion, not buried in an obscure paragraph. I would focus the discussion on the observation that 20 years after signing of the Framework Convention, there is still no enforceable agreement on mitigation and the prospects are universally recognized to be worse now than they were thought to be then. It is necessary to recognize and explain these historical events before any other discussion of international agreements is worthwhile. The answer has been clearly laid out by Scott Barrett and Bossetti et. al., and I would characterize the problem as being that negotiators have pursued national interests in the negotiations, not some global optimum, and if agreements do not promote those interests, they will be discarded when they taken home – as was the Kyoto Protocol in several countries that voted for it in Kyoto. The discussion needs to start here, then discuss possible solutions for some measure of progress (and their likelihood). Maybe the fact that Solar Radiation Management does not require collective action moves it up in the ranking, since the game theoretic models of Barrett (Why Cooperate?: The Incentive to Supply Global Public Goods. New York: Oxford University Press, 2007.; Environment & Statecraft: The Strategy of Environmental Treaty-Making. New York: Oxford University Press, 2003.), Bossetti ("The Incentives To Participate In And The Stability Of International Climate Coalitions: A Game-Theoretic Approach Using The Witch Model, OECD Economics Department Working Papers No.702.), and others show that only low level, individually motivated action on mitigation is likely.	Taken into account. Section 13.13. deals with the performance assessment. Suggested Barrett (2003,2007) are already cited in section 13.2.1 Bossetti et al (2009) is also cited (in Section 13.3.1.)

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
12799	13	14	1	14	3	Maybe you like to consider not speaking only of burden but also of benefit sharing. It is also expected to make a difference in the assessment of burdens and benefits if the focus is on a second best world (cost-effectiveness) or on welfare maximization (first best focus) as well as on whether there is a right to pollute (no mitigation duty per se) or a right to protect (posing a mitigation duty). Maybe you like to add some words on these issues.	Taken into account. Space is limited so no notes can be added. However, we introduce the suggestion to talk about burden and benefits sharing.
6033	13	14	12			Is it possible to provide some examples of the types of incentives included in the literature?	Accepted. Examples were included, as suggested.
6034	13	14	12	14	17	I think this paragraph needs a general statement about why participation matters (see introductions to the subsequent sub-criteria).	Taken into account. The last sentence of this paragraph to the beginning after removing "In either case,".
4715	13	14	18	14	24	The relationship of compliance to institutional feasibility needs to be better delineated. Compliance has some relationship to institutional effectiveness but the linkage to getting agreement is less clear. As the signing and ratification of Kyoto and the UNFCCC made clear, most countries did not assess compliance costs before signing up - they signed up because that was the politically correct thing to do. In any event, showing how compliance relates to feasibility needs to be clarified.	Rejected. Text was considered clear.
16180	13	14	2	14	2	Add external funding to the list of burden-sharing options in international agreements.	Accepted. Have added "and funding or technology transfers" at the end of the parenthesis line 2 p.14.
15663	13	14	2			Criteria for burden sharing also relate to financial transfers	Accepted. Have added "and funding or technology transfers" at the end of the parenthesis line 2 p.14.
12475	13	14	22	14	24	Please note that national trade partners may be allowed by WTO or others (p 38) to tax or ban goods from companies in other countries that do not comply.	Rejected. Unclear comment. I.e., What p.38 refers to?
4944	13	14	22		24	It is true, however, sometimes compliance is facilitated through incentives and/or sanctions either within the same agreement or in another agreement/mechanism (see options by the Compliance Cmte of the Kyoto Protocol and the eligibility conditions for funding of the GEF in relation to climate projects).	Taken into account. GEF funding conditions may be a too specific incentive for UNFCCC compliance. However, text was rephrased in the direction suggested.
7665	13	14	22	14	22	Another ref. would be Heitzig, Lessmann, Zou (2011) PNAS, doi:10.1073/pnas.1106265108	Accepted. Suggested reference was added.
17667	13	14	22	14	24	Maybe you should rather say "in international agreements, it is hard to establish an authority (...)" instead of "in international agreements, there is no authority (...)", because it's not impossible to establish one (see WTO Dispute Settlement Body)	Accepted. Text was rephrased.
4716	13	14	23	14	23	"compliance is fundamentally problematic in international agreements, as there is no authority that can reliably impose sanctions upon national governments" -- much of the international relations literature on this point has shown Downs, Rocke, and Barsoom 1996 to be wrong. Chayes and Chayes, Mitchell, Brown Weiss and Jacobson, and others have all shown the power of various other forms of social control, including shaming, norms, preclusive policies, etc. to be important ways of influencing state behavior.	Taken into account. Text was added.
2409	13	14	23	14	23	Comment on specific text: You say that there is no authority that can reliably impose sanctions on national governments. Not only does this seem quite a sweeping statement when you think about the powers of the UN Security Council but also it depends upon how you define the concept of sanctions. If you take a broad understanding, including for example, reputational sanctions then many international organizations can 'sanction' the behaviour of states.	Taken into account. Text was rephrased.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
16363	13	14	25	14	31	Legitimacy discussion would benefit from more discussion of political drivers and barriers "at home" for each country	Taken into account. A sentence on domestic feasibility was added in the first paragraph discussing institutional feasibility of international agreements.
8170	13	14	28	14	29	This statement seems too absolute. Perceived legitimacy of rules may be based on their expected consequences including but not restricted to distributed fairness; perceived legitimacy may also accrue from a belief that the rules do not create perverse outcomes (e.g. single country veto).	Taken into account. Text was rephrased.
12800	13	14	29	14	31	You may like to make a cross reference to chap. 4.	Accepted. A reference to chapters 2 and 4 was added, since in both concepts of legitimacy are also discussed there.
17101	13	14	3			the phrase "emissions budget over time" is NOT used in the literature or in the negotiations commonly. The commonly used term "carbon budget" should be used here.	Taken into account. The sentence was rephrased and shortened.
6036	13	14	41	16	6	I really like the discussion about how the broad landscape of climate change governance has changed since AR4 and think it's an important context that needs to be addressed in the chapter. But I'm not sure it fits in Section 13.3 at least in its current form where there is relatively little explicit discussion about the lessons to be learned from some of these different types of initiatives. This makes for an awkward transition to the discussion of game theory and rationalism.	Rejected - Figure 13.1 should stay in 13.3 because 13.3 does begin to discuss the lessons of the regime complex across the landscape of proliferating agreements (which are then discussed further in 13.5.1.2)
4945	13	14	43		45	"since the publication of AR4" ~ better to avoid an interpretation that the sole reason for such a change is the AR4 (there are equally essential e.g. political factors), moreover	Accepted in part, by revising text to explain "in 2007".
8171	13	14	45	14	46	For the only published review of those efforts, see Michonkski and Levi (2010), cited in other chapters.	Noted; the paper cited is already mentioned in 13.5.1.2 and included in the References.
3980	13	14	45	46		There are a few publications that should be mentioned here: 1) Hoffman, Matthew J. (2011). Climate Governance at the Crossroads: Experimenting with a Global Response after Kyoto. Oxford, UK: Oxford University Press; 2) Zelli, Fariborz (2011). The Fragmentation of the Global Climate Governance Architecture. WIREs Climate Change 2(2), 255-270; 3) Biermann, Frank, Philipp Pattberg, Harro van Asselt, and Fariborz Zelli (2009). The Fragmentation of Global Governance Architectures: A Framework for Analysis. Global Environmental Politics 9(4), 14-40; 4) Bausch, Camilla, and Michael Mehling (2011). Addressing the Challenge of Global Climate Mitigation – An Assessment of Existing Venues and Institutions. Berlin: Friedrich-Ebert Stiftung.	Accepted. These publications by Hoffmann 2011, Zelli 2011, and Biermann et al. 2009, are already cited in section 13.5. Citations to them, and also the book Biermann et al. 2010, are now being added to the beginning of section 13.3 as well. (Bausch and Mehling 2011 is in the grey literature.)
14697	13	14	45	14	46	There is a much larger body of literature on the institutional complexity (or fragmentation) of climate governance. Further texts to be referred to here include: Biermann, F., P. Pattberg, H. van Asselt, and F. Zelli (2009). The Fragmentation of Global Governance Architectures: A Framework for Analysis. Global Environmental Politics 9(4), 14-40; Hoffman, Matthew J. (2011). Climate Governance at the Crossroads: Experimenting with a Global Response after Kyoto. Oxford, UK: Oxford University Press; Zelli, F. (2011). The Fragmentation of the Global Climate Governance Architecture. WIREs Climate Change 2(2), 255-270.	Accepted. These publications by Biermann et al. 2009, Hoffmann 2011, and Zelli 2011, are already cited in section 13.5. Citations to them, and also to the book Biermann et al. 2010, are now being added to the beginning of section 13.3 as well.
6111	13	14	5	14	6	Why poverty is not included here?	Reject. Poverty is important, but not for this part of the text. Here the text refers to the difficulty of assessing security issues as part of aggregate benefits.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
2305	13	14	7	14	39	The discussion of political feasibility of institutions is curiously apolitical. The political science literature is quite clear that the most important condition of institutional feasibility is consistency between the interests performed by the institutions and the interests of powerful member states -- those whose participation is required for the institution to be effective. National capacity is also important. See Haas et al (1993), especially 398-408.	Taken into account. Text was clarified.
11685	13	14	1	14	6	Since it mentioned intra-generational equity and inter-generational equity, it would be better in this paragraph, not only discussing the options for burden sharing across countries, but also how the distributions of burden across the generation, are there any examples on these? also what might be the social impacts, this part also needs to extend a little bit, and the lengthes is slightly too limited compared to other principles	Taken into account. Intra and inter generational equity I smentioned in the previous paragraph. A cross reference to chapters 3 and 4 (where distributional issues are discussed in more depth) has been added. If more space was allowed for chapter 13, more discussion could be added.
13918	13	14	32	14	39	The discussion here could reference the literature on designing policy to balance flexibility and certainty, in particular regarding the need to clearly define objective criteria for policy adjustment and delegating policy adjustment to independent authorities. See Brunner, S., et al, "Credible commitment in carbon policy", Climate Policy 12 (2): 255-271, 2012	Accepted. The drade-off between flexibility and regulatory uncertainty was inserted. The reference was added.
16232	13	14	38			Suggest inserting a penultimate sentence to paragraph: "Flexibility also has the virtue of attracting participation by governments even in the face of uncertainty about policy options and future political demands (Thompson, 2010)." The cite is to Thompson, A. (2010). Rational design in motion: Uncertainty and flexibility in the global climate regime. European Journal of International Relations 16, 269-96.	Accepted. Text has been modified and reference inserted.
13917	13	14	7	14	11	There is a risk of confusion between the criteria of "institutional feasibility" and the criteria of "distributional impacts" and the principle of "fairness". Reading your sub-criteria (participation, compliance, legitimacy, flexibility), they seem to relate more to institutional effectiveness, than feasibility. "Institutional feasibility" could be changed for "institutional effectiveness"	Taken into account. Text has been rephrased. "Feasible" seems better than "effective" for institutional issues. Have decided not to change wording.
14644	13	15				I recommend including Arctic Ministerial and Clean Energy Ministerial under the Other Multilateral Clubs category	Rejected - the legend of Figure 13.1 only lists a few examples of each type, and there is not space in the legend to add more examples. More details on specific agreements are given in sections 13.4 and 13.5.
6035	13	15				Overall I like this figure but I would suggest revising the Legend note to clarify that this figure is meant to illustrate the broad range of initiatives. I find the language "but either a representative set of examples or the principal ones" a little confusing. Which is it, representative or principal? In the end, I don't think it really matters, again because this is really meant to be illustrative rather than comprehensive, right?	Taken into account in revised new version of Figure 13.1. As the comment states, Figure 13.1 is only meant to be illustrative.
11686	13	15				It needs explanation what is "NAMAs, NAPAs"	Taken into account in revised version of Figure 13.1.
10808	13	15				Nice figure! Perhaps useful to cross reference with Ch 15, and find ways of expanding the national and sub-national rings.	Noted; there are already cross-references to section 13.5 and Chapters 14 and 15 in the text.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
4960	13	15				Fig 13.1: these are agreements and various cooperative mechanisms; some others to be added: Non-UN IOs: GEF; Other multilat: UNCCD	Taken into account in revised version of Figure 13.1. Caption revised to add "and institutions". Some additional examples will be included, but Figure 13.1 is only illustrative and there is not space to mention every example.
18661	13	15				Page 15: Useful figure presenting the landscape of agreements on climate change	Noted.
17668	13	15				I do not find the figure very useful; Note: In the legend to figure 13.1, it is not specified what "Regional governance" and "NAMAs/NAPAs" entails; this should be added to make the legend complete	Taken into account in revised version of Figure 13.1. The legend is only illustrative and cannot go into every detail. More details are in section 13.5.
11589	13	15				This figure is the UNFCCC with an attempt to capture the infrastructure of support to the work including the decisions taken under the UNFCCC. The link with other institutions clearly point to the climate change issue as cross-cutting.	Noted.
16181	13	15				Should include sectoral agreements - industry-based measures may need to be distinguished from "other multilateral clubs" which are, presumably, inter-state. Human Rights Council should be included in list below figure.	Taken into account in revised version of Figure 13.1. Not every variation can be shown in the figure. The legend lists illustrative examples, not every example.
16364	13	15		15		In this list, would be good to split out private sector partnerships (eg Green Growth Action Alliance, CCS Institute, Climate Group), from other non-business partnerships. Other multilateral clubs could also include IEA implementing agreements	Taken into account in revised version of Figure 13.1. Not every variation can be shown in the figure. The legend lists illustrative examples, not every example.
11103	13	15				Please include Global Superior Energy Performance Partnership (GSEP) as examples of "Other multilateral clubs." Please rename "Partnerships" as "Public-Private Partnerships." In addition, please include IPCC as another example of "Other UN Intergovernmental Organizations."	Taken into account in revised version of Figure 13.1. Not every variation can be shown in the figure. The legend lists illustrative examples, not every example.
3981	13	15				The Figure is a good effort at mapping the global climate governance landscape. However, there are a few issues: 1) it uses the term 'agreements' and 'international agreements'. While this may be appropriate for most international institutions, it is difficult to capture transnational initiatives such as city networks under this term; moreover the presence of NAMAs/NAPAs becomes all the more confusing; 2) The lines are confusing - are they representing existing relationships? If so, what kind of relationships (these are often quite unclear), or are they representing desirable relationships (one where different non-UNFCCC governance arrangements link to the UNFCCC)? And is it really necessary to have these lines?; 3) The figure groups many different institutions which have different characteristics (e.g. private initiatives; treaties; international organizations) - it would be helpful to add a distinction (e.g. in the shape of the box) that highlights some of these differences; 4) It is debatable whether clubs such as the G20, APP or MEF are 'multilateral' - the better characterization is probably 'plurilateral' (conform WTO terminology), or to use a more fashionable word: multilateral; 5) the correct name of the APP is the Asia-Pacific Partnership on Clean Development and Climate; the correct name of Methane to Markets is the Global Methane Initiative (others may need checking as well).	Accepted by revising Figure 13.1 to reorient and add several of the items; by revising the caption of the Figure to add "and institutions"; by explaining the connecting lines in Figure 13.1 in the subsequent text in section 13.3.1 that again discusses Figure 13.1; and by editing the legend of Figure 13.1. Also, the term "plurilateral" is added to the text discussing the evolution of multiple coalition agreements in the trade/WTO context.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
14698	13	15	5			Figure 13.1 seems to draw on a similar "onion" figure by Biermann et al. , dating back to 2009,that also assigns institutions into different spheres of the fragmentation of climate governance. But even if Figure 13.1 originated without being familiar with the Biermann et al. figure, the latter one should be referred to here. Unlike figure 13.1 (that uses scale as the criterion for distinguishing spheres), the figure by Biermann et al. used the predominant jurisdiction or subject matter of the institutions to distinguish between different spheres (namely, from inside out: climate regime; climate and energy-related multilateral partnerships; non-climate environmental institutions; non-environmental institutions). The reference for this figure is: Biermann F., P. Pattberg, and F. Zelli (2009). Global climate governance after 2012. Architecture, agency and adaptation. In: Making Climate Change Work for Us. M. Hulme and H. Neufeldt, (eds.), Cambridge University Press, Cambridge, UK, pp. 263-290, (ISBN: 978-0521119412). Moreover, Figure 13.1 should also clarify the meaning of the connectors/ arrows between some types of agreements.	In Section 13.3, Accepted, by adding citation to Biermann et al. 2009 (and also Biermann et al. 2010 and other citations) in the text at the beginning of section 13.3, near Figure 13.1; by revising Figure 13.1; and by revising the text in section 13.3.1 where Figure 13.1 is again discussed (including to explain the meaning of connecting lines in Figure 13.1).
							In Section 13.5, Taken into account-13.3., 13.5.1.2 chapeau
7722	13	15	1	15	5	In the Figure, interaction between UNFCCC and other environmental treaties is shown and in Footnote 4, Montreal Protocol is shown as an example. The lessons form the successful Montreal Protocol to the Kyoto Protocol are very important. I recommend to cite Chapter 10 'Lessons from the Success of the Montreal protocol' in the book entitled "The Montreal Protocol celebrating 20 years of environmental progress -Ozone Layer and Climate Protection-" edited by Donald Kaniaru, published 2007 by Cameron May Ltd. Insertion of a new sub-chapter will be desirable to describe or cite Lesson 1 to Lesson 11 in the book from page130 to page152.	Accepted in part, by adding a citation to Kaniaru 2007 in a new sentence in section 13.3 referring to lessons from the Montreal Protocol. The specific chapter 10 in Kaniaru noted in the comment is by Sarma, Anderson and Taddonio; we are now adding a citation to their book (2007) as well. But there is not sufficient space in section 13.3 to add an entire subsection on the Montreal Protocol. Further discussion of the Montreal Protocol is already in section 13.5.
14249	13	16				You write that the game-theoretical literature assumes that no IEA can enforce agreements. Well: In reality, by requiring domestic ratification, domestic stake-holders (e.g., in the USA) can hold a government accountable if it breaks its pledges, so some enforcement is possible by requiring ratification. Some game-theoretical analysis takes this into account and analyses the implications of the limited enforcement-possibility on the design and optimal duration of IEA: see e.g. Harstad, Bard, 2012: "Climate contracts: a game of emissions, investments, negotiations, and renegotiations," Review of economic studies, forthcoming, or the companion paper "The dynamics of climate agreements."	Taken into account in revised text mentioning the role of domestic actors in enhancing international cooperation. But if an IEA "requires" domestic ratification, it must still provide incentives for countries to ratify, hence still "self-enforcing" regarding participation/adoption.
15385	13	16				Where are Bossetti et al ("The Incentives To Participate In And The Stability Of International Climate Coalitions: A Game-Theoretic Approach Using The Witch Model, OECD Economics Department Working Papers No.702.? How about a discussion of the issue of a non-cooperative equilibrium with low levels of action?	Bossetti et al. 2009 was already cited (although sometimes it was misspelled Bossetti), and is now being cited additionally in 13.3. The issue of a non-cooperative equilibrium with low levels of action is discussed above in 13.2, and in the discussion of game-theoretic lessons which is now expanded in 13.3.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
18018	13	16	13	6	13	The sentence of "absence of ..a binding international agreement on climate change" does not reflect the fact that UNFCCC and KP are actually binding agreements.	Taken into account by revising the sentence including adding "universal." Also, the sentence is referring to institutional options, not describing the UNFCCC or KP.
3745	13	16	19	24		this literature isn't game theoretic	Taken into account by revisions to this paragraph which explain that actual institutions may play roles not fully considered in the game-theoretic literature.
16183	13	16	19	16	20	Here or in subsequent discussion of WTO sanctions mechanisms, should discuss CITES trade sanctions, which are highly relevant to the question of enforceability of environmental agreements. See, e.g., Peter H. Sand, <i>Whither CITES - The Evolution of a Treaty Regime in the Borderland of Trade and Environment</i> , 8 Eur. J. Int'l L. 29 (1997)	In Section 13.3, taken into account by expanding the discussion of trade sanctions in 13.3.1, but without referring specifically to CITES which would take too much space here. In Section 13.8, Rejected: Interesting comment but cannot be included for the following reason. The issue here is the link between climate policy and trade. There is a reference to the Montreal Protocol in that sense (p. 19, line 14), which is closely linked to climate. CITES would be interesting for a general statement regarding the link between environmental agreements and trade in general but in our context the focus has to be on climate change.
7663	13	16	20	16	20	"IEAs are self-enforcing" should be replaced by "IEAs need to be self-enforcing to ensure compliance" since history shows that some IEAs have not been sufficiently self-enforcing, leading to compliance issues.	Taken into account in revisions to this sentence.
17669	13	16	20			I recommend to write "IEAs should be self-enforcing" instead of "IEAs are self-enforcing" because they are not necessarily self-enforcing	Accepted.
3746	13	16	24	28		elaborate with names of countries, and consequences for the effectiveness of governance. Is this really significant for any country other than China?	Rejected - no need to name specific countries in this discussion of the general concept of the distribution of net gains from a treaty.
12981	13	16	25	16	33	I suggest rephrasing this paragraph. It reads as a patchwork of citations.	Taken into account in revised paragraph.
7139	13	16	26	16	29	How to fix with the CBDR principle? If responsibility of major emitters is accepted, it is hard to expect a symmetric distribution on net gains, or compensatory measures.	Taken into account in revised paragraph.
7664	13	16	31	16	31	If only "some suggest" that countries pursue their interests rather than the global interest, this sounds like altruism was the standard assumption in this analysis. To my knowledge, it is rather standard to assume countries maximize their own welfare instead of global welfare.	Taken into account in revised paragraph.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
12982	13	16	35	16	36	Please provide a definition of open and exclusive participation.	Accepted - done.
16184	13	16	35			Should read "membership" not "accession". Accession is "the route followed by a state that did not originally negotiate or sign a treaty, but that subsequently wishes to adhere to the agreement." Janis, International Law (5th ed. 2008, Wolters Kluwer) 22.	Accepted - clarified.
16185	13	16	36			Given the lack of empirical evidence, "major" overstates this theoretical result.	Accepted - reframed in revised paragraph.
4946	13	16	39		41	Just contrary in practice, as it was demonstrated in case of some recent negotiation rounds with exclusive participation of a limited number of Parties/actors during the UNFCCC COP sessions.	Taken into account in revised paragraph, but citing other exclusive memberships such as Annex I/non-Annex I, EU ETS, MEF, APP, etc. (following comment #285).
7659	13	16	39	16	41	Is there a reference for this claim? It seems that whether exclusive membership helps in practice can only be judged once it has actually been tried in practice. Has it? The formation of a coalition bottom-up, e.g. by linking carbon markets, which is a form of „closed membership“ coalition, has been suggested and seems to be tried already.	Taken into account in revised paragraph. See comments 303 and 285.
6838	13	16	39	16	41	In the context of 'treaty' negotiations that appears to be the focus of this section, there is an exclusive institution with authority to host climate change negotiations i.e. the UNFCCC. I'm not sure what point, therefore, is being made here. In any case, it needs to be explained	Taken into account in revised paragraph. See comments 303 and 285.
9045	13	16	40		43	These statements are in erroneous. The UNFCCC is, by intent and design, the primary multilateral institution and forum for climate negotiations. Nothing prevents states from making commitments at the sub-multilateral level on climate change and establish plurilateral or bilateral regimes but the UNFCCC is designed to be a comprehensive legally binding global treaty on climate change	Taken into account in revised sentence, although the sentence is discussing the conceptual option of multiple coalition agreements and is not saying that the UNFCCC prevents this.
11442	13	16	40	16	43	These are factually incorrect statements. The UNFCCC is, by intent and design, the primary multilateral institution and forum for climate negotiations. States may, of course, also undertake negotiations at the sub-multilateral level on climate change and establish plurilateral or bilateral regimes. Furthermore, the UNFCCC is designed to be a comprehensive legally binding treaty on climate change.	Taken into account in revised sentence, although the sentence is discussing the conceptual option of multiple coalition agreements and is not saying that the UNFCCC prevents this.
11443	13	16	40	16	47	This is factually incorrect because it assumes that the UNFCCC is not a comprehensive legally binding agreement.	Taken into account in revised sentence, although the sentence is discussing the conceptual option of multiple coalition agreements and is not saying that the UNFCCC prevents this.
8172	13	16	42	16	47	"Multiple agreements can be an interim solution". Why interim? What evidence is there that multiple agreements cannot be a permanent solution (or that single agreements can be)?	Taken into account in revised sentence.
9043	13	16	42	16	43	The Chapter fails to recognize that the Framework Convention is comprehensive and legally binding. Line 42-43 in page 16 states: "Multiple agreements may be an interim solution, in the absence of a comprehensive legally binding treaty on climate change" despite the fact that the Convention itself is a comprehensive legally binding treaty on climate change.	Taken into account in revised sentence. The sentence is discussing conceptual options; it is not saying that the UNFCCC is not legally binding.
16186	13	16	42			Instead of "interim", use "alternative". There is no reason that a single omnibus treaty is necessary.	Taken into account in revised sentence.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
16365	13	16	42	16	45	Would be useful to split out the "single comprehensive" aspect from the "legally binding" aspect and treat these separately here	Taken into account in revised sentence, but the sentence is contrasting a single universal agreement to a set of multiple coalitions.
6839	13	16	42			Isn't it too early in the chapter to reach this conclusion? Is this borne out by the literature?	Taken into account in revised paragraph.
7134	13	16	42	17	8	Express the idea that multiple agreements may be an interim solution, in the absence of a comprehensive legally binding treaty on climate change. That could be theoretically correct considering the analysis in a vacuum, but does not apply to reality do to the existence of UNFCCC. The vision in this Section, but also in other parts, of the Chapter, seems to downplay de role of UNFCCC, by locating the Convention as one among many international agreements. See list on 13.1. In our view that is no accurate in various senses, including that the list make a very broad consideration of what an agreement is, eg. UNEP, UNDP, these UN bodies does not make or negotiate climate policies, but work on supporting UNFCCC work. In fact, the UNFCCC has been progressing on creating the basis for future developments, as showed by the Durban decisions which include the negotiation of a new legally binding instrument in the framework of the Convention, with a strong focus on mitigation.	Taken into account in revised paragraph, which now references the universal design of the UNFCCC and the Durban Platform.
3983	13	16	42		43	"Multiple agreements may be a pragmatic interim solution in the absence of a comprehensive legally binding treaty on climate change". This is not only suggestive that they are indeed a solution, it also provides an incorrect dichotomy. There IS already a comprehensive legally binding agreement (the UNFCCC) and there are already multiple agreements. The correct question is to ask how they could or should relate to each other to effectively address climate change.	Accepted - revised in rewritten paragraph.
4947	13	16	47	17	2	"Whether these will evolve into an effective global agreement.." This is crucial point for the critical stage of the climate negotiations. There are examples with subjects closer to climate change, e.g., the JREC (Johannesburg Renewable Energy Coalition as response to the failure to agree on global targets on renewables at WSSD that lately expanded but could not become global; or the more recent problem on more concrete agreement on corporate sustainability reporting at the UNCSD, 2012 and the formation of the Group of Friends of this procedure.) Another very concrete aspect not mentioned here in context of multiple agreements and linking various agreements is the one that is now inherent element of the ongoing climate negotiations: the parallel negotiations since 1997 on the extension of the Kyoto Pr. and the new instrument with the intended universal participation and commitments.	Taken into account in revised paragraph, althoug not using all of the examples proposed here.
11444	13	16	47	16	48	The reference to the emergence of "bilateral and multilateral" (this should properly be called "bilateral and plurilateral" because the WTO is the multilateral regime) trade agreements, there is no empirically proven causal relationship between the slow progress of the WTO Doha negotiations and the emergence of such bilateral and plurilateral trade agreements. Negotiations on such bilateral and plurilateral trade agreements have taken place both before and during the WTO Doha negotiations.	Taken into account in revised text.
13547	13	16	7	16	41	This section is indicative of theoretical unevenness throughout Section 13.3 International Agreements: Lessons for Climate Policy and that to some extent characterizes much of the chapter. Rational choice approaches certainly have a great deal to say about the issues raised in this section and have produced significant insights. However, the sociologically-oriented literature on international agreements has some equally strong theoretical findings about international agreements that have significant empirical evidence behind them. This literature is cited in the chapter, but is not as extensively drawn upon in the analysis as the rational choice literature. The lessons about why the multilateral process have faced challenges are often different as are the solutions to those challenges.	Taken into account in revisions to 13.3, such as regarding norms, acculturation, and legitimacy, but this comment does not suggest specific literature to cite.

Expert Review Comments on the IPCC WGIII AR5 First Order Draft – Chapter 13

Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
4717	13	16	7	16	12	As just noted, there is an extensive literature in IR that goes beyond the "rationalist school in political science" and lays out a range of mechanisms that have been shown, empirically, to be central to the processes by which international agreements influence state behavior or do not. States rarely negotiate "treaties with teeth" and, when they do, rarely apply them. The mechanisms of behavioral influence are rather broader and, if the goal is to have those designed into the follow-on to Kyoto, it would be valuable to mention the range of other strategies that international treaties use to get states to adjust and comply.	Taken into account in revisions to 13.3, such as regarding norms, acculturation, and legitimacy, but this comment does not suggest specific literature to cite.
16182	13	16	7	16	12	Add Chayes & Chayes, A New Sovereignty. The managerial approach is still important and was historically significant in the existing climate architecture.	Taken into account in new text on reputation, norms and legitimacy.
3982	13	16	7		12	Not only is this sentence a quite abrupt transition from the discussion of the governance landscape to one of lessons learned from game theory, it never states clearly what lessons are learned. Moreover, the list of references at lines 11-12 is very random, and does not support the argument preceding these.	Taken into account in revised and expanded text.
16234	13	16	23			I suggest replacing the cite to Keohane 1989 with Keohane 1984, which is the classic work on transaction costs and international cooperation. Keohane, R.O. (1984). After Hegemony: Cooperation and Discord in the World Political Economy. Princeton University Press, Princeton, NJ.	Accepted by adding citation to Keohane 1984.
16235	13	16	24			Suggest adding a sentence at the end of the paragraph: "International organizations can also promote cooperation by orchestrating the activities of other actors and institutions, both public and private, involved in the governance of an issue area (Abbott and Snidal, 2010)." Abbott, K., and D. Snidal (2010). International regulation without international government: Improving IO performance through orchestration. <i>Review of International Organizations</i> 5, 315-44.	Accepted by adding citation to Abbott and Snidal 2010.
5304	13	16	7	16	12	the first sentence implies that the game-theoretic approach is limited to environmental economics. Game theory is itself a big subject in political science, particularly in international relations (see Avenhaus and Zartman, 2007, diplomacy games. Formal models and international negotiations). Furthermore, it would be interesting to show that there is a huge community of scholars on negotiation, several of which focusing on climate (environmental) regime and cooperation (for instance Sjöstedt 1993 International Environmental Negotiation).	Accepted by clarifying that game theory is used in both disciplines, and adding citations to Sjöstedt 1993 and Avenhaus and Zartman 2007.
8086	13	16	7	16	33	On line 7, it is surprising that under the heading "lessons from game theory" the coalitional stability issue (a game theoretic controversy of long standing, and recognized in AR3 as well as in AR4) is not mentioned, although the controversy has made progress recently, as in Bréchet, Gerard and Tulkens (2011). The conceptual progress consists in (i) clarifying the different logical nature of two coalitional stability concepts involved (namely, core stability vs. "Internal-external" stability), and (ii) in testing either one of them on the same IAM numerical model. One policy implication one can derive from that comparison is that one concept is more appropriate when considering the a priori design of cooperative international agreements, whereas the other suits better for the study of compliance of existing such agreements. Reference: Bréchet, Th., F. Gerard and H. Tulkens (2011). Efficiency vs. Stability in Climate Coalitions: A Conceptual and Computational Appraisal, <i>The Energy Journal</i> 32 (1), 49-75.	Accepted by adding discussion of coalitions, and citations to work by Brechet et al. and others.
16233	13	16	8			The classic cite for the rationalist school in political science, which I suggest adding before the Downs et al. cite, is: Koremenos, B., C. Lipson, and D. Snidal (2001). The Rational design of international institutions. <i>International Organization</i> 55, 761-99.	Accepted by adding citation to Koremenos, Lipson and Snidal, 2001.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
14645	13	16				Denny Ellerman has a chapter in Aldy and Stavins 2010 book about lessons from the EU ETS for international climate policy. Isn't the EU climate policy, negotiated among an exclusive club (EU members), an example of an effective climate agreement (if at the regional level as opposed to global)?	Accepted by explaining this in the text, and citing Ellerman 2012 (a newer chapter on this topic). Cross-references to Chapter 14 also made throughout when the EU ETS is discussed at length.
14646	13	16				A more nuanced take on participation could benefit the reader. What does it mean for developing countries to participate in the Kyoto Protocol if it does not impose any emission commitments on them? What lessons can we learn in terms of promoting participation in global climate agreements from the effective prohibition under the Kyoto Protocol of any new country taking on an emission commitment? In 1999, Argentina proposed an emission commitment (similar in form to what China and India proposed in 2009), but there is no mechanism under the Kyoto Protocol for Argentina to accede to Annex B.	Accepted by explaining the possibility of different types of participation with different commitments, as under the Annex I/non-Annex I distinction in the Kyoto Protocol and potential evolution in subsequent agreements such as the Durban Platform.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
6988	13	16				<p>I am rather skeptical of the value of “exclusive membership” for providing a global public good. If the cited papers can explain this, the paragraph should at least mention the mechanisms they identify which give this result. At a minimum, exclusivity raises problems of legitimacy as regards global public goods. The Antarctica Treaty is exclusive, and in my view lacks legitimacy for that reason. The WTO is also exclusive, but the WTO is not trying to provide a global public good.</p> <p>Lines 40-41 say that there is no exclusive institution with the “authority” to host climate negotiations. I was confused here, because several such institutions (or organizations) have undertaken unilateral initiatives—an example being the MEF. You might explain what you mean by “authority.” Do you mean the UNFCCC?</p> <p>In the trade area, while it might be argued that preferential or regional trade agreements (RTAs) can lead to a multilateral agreement, the opposite argument is at least as powerful. RTAs create trade diversion, and so can have negative consequences for countries outside the “region.” But, as noted above, trade is not a global public good, so the relevance of this should be explained. You might cite the paper by Asheim, Bretteville Froyen, Hovi, and Menz (2006) on the utility of small agreements for addressing climate change.</p> <p>On the role of transfers, I would suggest citing Carraro and Siniscalco (1993), who show that, assuming countries are symmetric, transfers won’t help increase participation (without commitment); and Barrett (2002), who shows that, if countries are strongly asymmetric, transfers can increase participation dramatically (asymmetry becomes the source of commitment).</p> <p>You discuss trade later, but the role that trade restrictions can play in increasing participation should be mentioned here; see Barrett (1997) below, though this point is also made in Barrett (2003), which is already cited in your chapter. Note also that I have always looked at compliance and participation jointly. I don’t think they should be considered separately. See Barrett (1999), though again this same point is made in Barrett (2003), already listed in your references.</p> <p style="text-align: right;">Asheim, G.B., C. Bretteville Froyen, J. Hovi, and F.C. Menz (2006). “Regional versus global cooperation for climate control,” Journal of Environmental Economics and Management 51: 93-109.</p> <p>Barrett, S. (1999). “A Theory of Full International Cooperation,” Journal of Theoretical Politics, 11: 519-41.</p> <p>Barrett, S. (1997). “The Strategy of Trade Sanctions in International Environmental Agreements,” Resource and Energy Economics 19: 345-61.</p> <p>Barrett, S. (2001). “International cooperation for sale.” European Economic Review 45: 1835-1850.</p> <p>Barrett, S. (2011). “Rethinking Climate Change Governance and Its Relationship to the World Trading System,” The World Economy, 34(11): 1863-1882.</p>	Accepted by revising text to note both pros and cons of exclusivity and to discuss actual examples of open vs. exclusive climate agreements. Then, transfers and trade sanctions are discussed a little later in this subsection, where this comment is again accepted by adding several sentences and citations.
6579	13	16	45	16	47	Supply more details about “the practical difficulties encountered in negotiating short term” constitutionally.	Taken into account by revising this paragraph; this sentence is redundant with the first sentence of the paragraph. Text is now inserted to explain the importance of participation, and to clarify the findings on multiple agreements.
6578	13	16	47	17	8	Good example.	Noted.
8006	13	16	47	17	8	I fully support this part because both globally centralized and de-centralized scheme & initiatives are required for the effective and practical policies & measures against climate change.	Noted.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
3750	13	17				fairness - how is this operationalized? Absolute effort, MC of effort, environmental outcomes, procedural approaches, representation in decisions?	Noted, but a detailed comparison of different conceptions or measures of fairness is beyond the scope of this section 13.3. It is discussed in 13.2, and in chapter 4.
14250	13	17				Is there a trade-off between depth and breadth? Maybe not: (i) In reality, Kyoto 1 performs badly on both, (ii) in theory, a large coalition internalizes the externality of more countries, suggesting a positive relationship between breadth and depth, (iii) this is consistent with a recent analysis that investigates the relationship between depth, breadth, and duration of the agreement (see Marco Battaglini and Bård Harstad, 2012, "Participation and Duration of Climate Contracts")	Accepted.
12801	13	17	13	17	14	"equity concerns arising..." How is it meant? Do you refer to precursor behaviour in the sense of the Kyoto Protocol, here?	Taken into account in revised sentence.
3749	13	17	19	28		elaborate	Taken into account in expanded paragraph on transfers.
15386	13	17	19			This is also very important – it is hard to even tell what they are talking about, which in plain language is: thus there is a fundamental conflict, that even with no transfers to developing countries and full participation, the net benefits of undertaking the globally optimal mitigation burden are less than the costs to necessary participants. Therefore national interests are clearly opposed to any "equity" solution. The research challenge is to determine how robust this conclusion is under different formulations of the damage function for major emitters. Some is on 18. It is a gross understatement that "sanctions are not fully credible" under Kyoto Protocol – its one thing to say that the literature has opposing views, another to water down what articles actually say. I don't see how it is possible to mention participation on p. 21 without the 16 – 19 game theory.	Taken into account in revised paragraph on transfers and equity in 13.3.1. (The end of this comment 326 appears to be addressing a different section, p.21 in section 13.4.)
12802	13	17	19	17	28	See former comment; it may be worthwhile to not focus only on burden but also on benefit sharing (you may like to check for the whole chapter).	Taken into account in revised paragraph on transfers.
6840	13	17	24	17	26	This statement is not clear i.e. "it is not sufficient to consider only plausible and widely accepted equity criteria for the redistribution of the gains from cooperation" – this seems to suggest that implausible and less well accepted criteria should be taken into account? If that's the argument, it needs further explanation.	Taken into account in revised paragraph on transfers and equity in 13.3.1.
13634	13	17	26			This is the point I was making earlier about equity notwithstanding, countries won't act against their own interests.	Noted, and clarified in revised text.
3751	13	17	29	39		elaborate - which linkages foster agreement, which inhibit it?	Taken into account in revised text.
13632	13	17	29			Note that important linkages exist whether or not there are formal linking agreements. An important transmission mechanism is through prices of traded fuels. Our research has found that some of the countries most affected by mitigation are not those mitigating. Rather, the greatest GDP hit can fall on energy exporters.	Accepted and added in revised text.
16187	13	17	29	17	39	Add linkages to human rights and biodiversity.	Accepted.
16366	13	17	29	17	32	Important to mention fossil fuel subsidies. Note OECD and IEA work in this area	Noted, but fossil fuel subsidies are not the kind of linkage discussed here, which is from climate treaties to non-climate issues.
11445	13	17	29	18	3	The treatment of issue linkages (e.g. between mitigation, adaptation, finance, technology) in these lines should be improved in terms of what the advantages are. The way that the phrasing is made currently, it creates the implication that issue linkages in the context of climate negotiations has become a stumbling block to concluding multilateral climate negotiations.	Clarified in revised text.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
2410	13	17	3	17	7	Comment on specific text: Global administrative law emerges not only from the specific recommendations of organisations such as the subsidiary bodies of UNFCCC but also from the routine practice of governance. One of the distinctive things about the methodology of GAL is that it is formed also from the bottom-up. GAL principles are viewed as of normative significance, regardless of whether a particular institution has expressly endorsed them or not. This may also be of relevance when you are thinking about institutional feasibility/appropriateness as discussed above.	Accepted in revised text.
8173	13	17	30	17	32	It would seem appropriate to add international security to the set of issues with significant linkages.	Accepted along with comment 332 regarding human rights and biodiversity.
18693	13	17	40	17	43	The effect of linking with R&D (or technology oriented agreements) needs references, possibly Nagashima and Dellink (2008) and/or Lessmann and Edenhofer (2011). Also, the language in these lines is rather strong ("can only work"). Unless the author adds references that I am not aware of, some qualifications are needed.	Accepted, text revised.
8174	13	17	41	17	42	Linking can work even if benefits of R&D spread to nonmembers so long as *some* benefits do not.	Accepted.
12983	13	17	45	17	46	This first sentence repeats what said at p. 17 line 29.	Accepted and revised in line 29.
7140	13	17	45	18	3	This analysis does not take fully into account the fact that all the elements under negotiation are connected and the progress in one area (e.g. mitigation), is related with advances in other areas (e.g. finance). This paragraph, among several others in this Chapter, suggests a non-UNFCCC approach as the preferred one.	Taken into account in revised paragraph.
3748	13	17	9	12		is this talking about G20 versus UN?	Noted; the sentence is speaking conceptually, not specifically about the G20 versus UN. See revised paragraph.
8088	13	17	26	17	28	This reviewer wishes to suggest that what is mentioned in these two lines be more explicitly connected with what is said in lines 37-40 and 45-47 of p. 62 of chapter 4: the transfers discussed here (in chapter 13) do have a fundamental role in making the Paretian approach (discussed in chapter 4) a feasible one in terms of voluntary agreements. Astonishingly, both here in chapter 13, and there (throughout chapter 4), the inescapable necessity of a voluntary character of any international agreement is pretty much ignored, the authors seeming to be dominated by the quest for equity. But on this subject, undermining the voluntary dimension is a severe lack of realism. NB : in referring to p. 62 of chapter 4, I ignore lines 41-44, because they are an extreme, and actually, as stated, incorrect implication of paretianism. There are better things to say on Pareto improvements in international affairs well.	Accepted and added in revised text. Note that the "voluntary character of any international agreement" is already discussed in 13.3 in terms of the lack of a supranational coercive institution and the need for IEAs to be self-enforcing; but this "voluntary" or "consent"-based character is now mentioned there as well.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
8087	13	17	9	17	18	<p>The paragraph devoted to the alternative "breadth vs. depth" introduced by Barrett (2002) does not, in this reviewer's opinion, reflect correctly the state of this interesting question. Hence two suggestions:</p> <ul style="list-style-type: none"> – After mentioning that the "breadth first" option is (rightly) credited to Schmalensee (1998), it could be added to the text at the end of line 12: <p>"The entire chapter 11 of Barrett (2003) is devoted to justify this option in formal terms. However, a weakness of this justification is pointed out in Chander and Tulkens (2009) (pp. 180-181) who therefore find the preference for this option not well established in theory."</p> <ul style="list-style-type: none"> – In the text then continuing with "Other scholars..." it would be good to have some reference appearing in support of the alternative view. <p>Reference Chander, P. and H. Tulkens (2009). "Cooperation, Stability and Self-Enforcement in International Environmental Agreements: A Conceptual Discussion", chapter 8 in R. Guesnerie and H. Tulkens, eds, <i>The Design of Climate Policy</i>, The MIT Press, Boston.</p>	Accepted - citations added.
8175	13	18	2	18	3	This risks appearing dated if there is progress in negotiations.	Revised to remove "current" and make the sentence more conceptual.
6329	13	18	27	18	36	This paragraph is controversial and, to certain extent, subjective. The sentence that begins in line 31, to certain extent, put in doubt one of the main findings of the AR4 on the need to carry adaptation action together with mitigation action. The sentence that begins in line 32 need to be expanded and clarified: the current wording could be perceived that, in general, mitigation and adaptation actions counteract each other and this is not the case. Finally, its last sentence, which is not supported by any bibliographic source, might be controversial. For this reason the referred experimental evidence should be described. In addition, the concept that adaptation is private might be no appropriate and does not reflect the agreements of the international community that request to give the same attention to adaptation than to mitigation, as stated in the preambular language of the Cancun agreements (decision 1/CP.16)	Taken into account in revisions to paragraph.
12984	13	18	27	18	36	<p>These two papers provide an analysis of the optimal mix of adaptation and mitigation:</p> <p>Bosello, Francesco, Carlo Carraro, and Enrica De Cian. 2010. "Climate Policy and the Optimal Balance Between Mitigation, Adaptation and Unavoided Damage." <i>Climate Change Economics</i> 01: 71. doi:10.1142/S201000781000008X.</p> <p>de Bruin, K., Rob Dellink, and Shardul Agrawala. 2009. <i>Economic Aspects of Adaptation to Climate Change: Integrated Assessment Modelling of Adaptation Costs and Benefits</i>. OECD Publishing. http://ideas.repec.org/p/oec/envaaa/6-en.html.</p>	Accepted.
13635	13	18	27			One challenge with adding adaptation into the mix is that many adaptive policies are adopted by sub-national governments. It is difficult for some national governments to bind or speak on behalf of their sub-federal entities.	Noted.
7141	13	18	27	18	28	This is an idea hard to sustain. Adaptation is key for all, but particularly for more than a hundred countries in the UNFCCC process. Those countries, if taken together, amount just a very small portion of the GHG, the broad participation in the UNFCCC is a consequence of a broad approach to CC, which include mitigation and adaptation together, in addition to compromises on means of implementation.	Noted. The text already indicates that adaptation is crucial for many countries.
2175	13	18	27ff			Highly vulnerable countries (island states) are frequently minor carbon emitters. So the linkage between mitigation and adaptation looks a bit blurred. I guess, some better distinction between different adaptation measures could also be helpful (maybe a reference to adaptation related chapters of the report?).	Taken into account in revised text which clarifies that this paragraph is discussing incentives to participate in supporting mitigation and/or adaptation.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
11446	13	18	29	18	29	The reference to "highly vulnerable" countries should be reworded because it could create unintended categorizations among countries that would depend on how one defines what "highly vulnerable" means. Under the UNFCCC, the phrasing is with respect to "particularly vulnerable" countries (which is defined in preambular paragraph 19 and Article 4.8 of the UNFCCC)	Accepted.
2167	13	18	32		34	I think that it would be more helpful to refer to empirical papers investigating substitutability of adaptation and mitigation. Referring to theoretical papers in this respect is of lesser relevance, I guess (in the context of this paragraph; otherwise mentioning these theoretical paper is very appropriate, I think)	Taken into account in revisions to paragraph to highlight the need for empirical research here. Unfortunately, the comment does not identify any empirical papers.
11572	13	18	34	18	36	Here, it may be fruitful to distinguish between "direct" and "indirect" benefits. The direct benefits of types of adaptation may be local and private but indirect benefits may be global and public. If people near the sea benefit directly from an adaptation policy, people living elsewhere may benefit indirectly if the adaptation policy secures the sustainability of the sea community (and thereby reduces the pressure on other communities).	Taken into account in revised paragraph.
14647	13	18	37	18	45	This literature showing that reducing uncertainty could reduce the participation incentive seems to mask a participation-compliance trade-off. That is, at the compliance stage, uncertainty should be reduced (countries will know their costs of compliance), and thus even if participation is high before the resolution of uncertainty, then compliance may be low once that uncertainty is resolved (a possible real-world example of this could be Canada under the Kyoto Protocol).	Taken into account in a revision to the text. But the text already captured this point by saying that "as parties learn of the actual costs of mitigation, so their incentive to participate may shrink," and then by adding that reduced uncertainty about transfers (which lower compliance costs) can increase participation.
6841	13	18	37	18	42	What is 'experimental' research and 'experimental' evidence. Need greater clarity here on what this is and is not.	Noted. The word is not necessary to the sentence. It refers to laboratory experiments using volunteers, but there is not space to explain this methodology in this section.
6037	13	18	4	18	21	This is an important point but I'm not sure it belongs in the section on lessons for participation.	Kept in current location because it addresses how to deal with regime complexity, discussed earlier in the section.
8176	13	18	4	18	5	What is the evidence for this claim? It is unclear that "better articulation" of linkages is necessary for "adequate" aggregate effect, which itself is undefined.	Taken into account in revised sentence.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
2411	13	18	4	18	4	<p>Comment on section of text: I liked the section on linkages but felt that it could be expanded a little more and perhaps organized a little better. In a sense, you have an opportunity here to set out an agenda for creative thinking on the part of the different 'elements' and for research.</p> <p>I thought it might be worth stressing very clearly at the beginning of the discussion that linkages need to be designed/evaluated from the point of view of the criteria and principles set out earlier in the chapter. This is, I think, what is meant here by 'adequate aggregate effect'. But also that fragmentation/interaction provide opportunities to contest and develop what the appropriate criteria are, mean and require.</p> <p>Drawing on non-climate change literature examining fragmented/multi-level governance I thought it might be worth trying to identify certain values that could inform the design/evaluation of actual or proposed interactions/linkages. Several come to mind:</p> <ul style="list-style-type: none"> i) mainstreaming: horizontal integration of climate change policies and objectives into all other policy spheres. EU experience with 'environmental integration' or 'gender mainstreaming' are relevant here. ii) Redundancy: Fragmented governance can provide 'safety nets' to guard against the negative effects of under-regulation elsewhere. This is expressly discussed in the US federalism literature. See e.g. Robert Schapiro on polyphonic federalism. iii) Accountability: e.g EIRS: Empowering Responsible Investment iv) Learning: e.g. UN database on local coping strategies <p>With the emphasis upon outcomes (criteria) and values, there is space for all sorts of different kinds of institutional frameworks for linkage. You see this kind of approach in Sabel & Zeitlin's work where they insist that their vision of 'experimentalist governance' should be understood in functional rather than structural/institutional terms. The different elements that make up experimentalist governance can be performed through a variety of different institutional arrangements (http://www2.law.columbia.edu/sabel/learning%20from%20difference%20ELJ%202008.pdf p. 274).</p> <p>Still it might be possible to try to identify certain kinds of interactions/linkages that may be productive from the point of views of the outcomes (criteria) and values above. Again, it should be possible to illustrate by reference to climate change and non-climate change governance literature. Some candidates overlapping with your section on p. 18:</p> <ul style="list-style-type: none"> i) hierarchy ii) catalyst: iii) networks iv) monitoring/peer review <p>No doubt reflecting my own current research interests, I would like to see you pay more attention to the catalyst potential inherent in actions by individual (powerful) states and supranational organizations such as the EU. The EU-ETS aviation example and biofuels again come to mind. There is a rich IR and legal literature that points to the potential or unilateral action to galvanize global change, whether as a result of emulation of norms or as a result of ensuing global agreement. Beth Simmons writing in the area of financial regulation offers one very well known example of this.</p>	Accepted - several points here added to this revised paragraph, although unfortunately there is not space in 13.3 to go into detail on all of these.
6463	13	18	40	18	42	Meaning of "transfer" should be clarified, such as technical transfer, financial transfer, or both.	Noted. It refers to the transfers discussed on the previous page, including both financial and technology transfers.
11447	13	18	46	19	41	The section on compliance needs to have text relating to positive or incentive-based compliance regimes (such as the provision of support similar to what is contained in Art. 4.7 UNFCCC) rather than simply focusing on punitive or sanction-based compliance regimes.	Accepted in revised text.
8177	13	18	47	18	49	I would characterize this as the view of one scholar rather than as an undeniably true statement. It is far from clear that "a high frequency of reporting" is necessary to effective compliance strategies.	Noted and clarified in the text, with cross-references to preceding sections and to the prior IPCC AR3.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
7142	13	18	47	18	48	MVR is not only about mitigation, since the Bali Action Plan there is also MRV of means of implementation."	Noted. The paragraph on MRV does not confine itself to mitigation.
4961	13	18	48			MRV is used for measurement, reporting and verification AND for monitoring, reporting and verification ~ recently the latter version is used for c.c. negotiations	Added in the text.
16367	13	18	49	19	4	Important to specify that these initiatives are for MRV regimes under FCCC. Also, would be good to introduce tiering options as discussed in Ellis et al (2011),FREQUENT AND FLEXIBLE: OPTIONS FOR REPORTING GUIDELINES FOR BIENNIAL UPDATE REPORTS http://www.oecd.org/environment/climatechange/48073760.pdf	MRV applies to the UNFCCC but also potentially to other initiatives and institutions.
14648	13	18				Some real-world grounding for the discussion of transfers is warranted. The scale of transfers discussed in the literature -- and by some in international negotiations, especially those who care that the form of transfers is by and through governments -- does not seem feasible given the current fiscal outlook in the US, EU, and Japan. This goes beyond my area of expertise, but is there some political science literature that could shed light on how foreign aid varies with a donor country's fiscal outlook?	Taken into account in text added on feasibility of transfers via allowance allocation rather than government aid, citing Ellerman 2012.
13919	13	18	22	18	26	The issue of technological change unilateral action and participation under repeat interactions is also discussed in a game theoretic See Pitel, K. and D. R bbelke, "Transitions in the negotiations on climate change from prisoner's dilemma to chicken and beyond, International Environmental Agreements DOI 10.1007/s10784-010-9126-6.	Accepted.
7507	13	18	22	18	26	Important point.	Noted.
13920	13	18	42	18	45	This section could also reference Weitzman's article (Weitzman, M., "A Review of The Stern Review on the Economics of Climate Change", Journal of Economic Literature, Vol. XLV (September 2007), pp. 703–724) which shows that negative damage risks should lower discount rates and hence increase incentives to mitigate/participate.	Accepted.
4718	13	18	46			This section has two problems. First, even the Montreal Protocol has sought to facilitate compliance as much as to enforce it, but that approach receives no mention. Second, the larger issue of inducing "adjustment" or achieving "effectiveness" is replaced with a now passe notion that compliance is what matters. Compliance can be coincidental and hence unimportant (ie, not due to the treaty and counterfactually, would have occurred anyway) whereas non-compliance can reflect important efforts that fell short of compliance but nonetheless would not have occurred absent the treaty. Indeed, one imagines that eventual analyses of the Kyoto Protocol will show very low levels of compliance but, we hope, at least some effectiveness in leading to emission trajectories that were ever-so-slightly less than they would have been in the absence of the Protocol. This literature noting that effective behavior change is more important than compliance should be reflected in this chapter, I believe.	Accepted; see new paragraph on effectiveness.
17663	13	18	47	19	41	It might be useful to note that the withdrawal of Canada from Kyoto I, also revealed some important lessons with respect to compliance. If a country expecting to fail to meet its commitments can withdraw from a treaty without sanction the effectiveness of even the most sophisticated compliance mechanism is ultimately undermined.	Accepted as a conceptual point to add regarding noncompliance and withdrawal.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
17664	13	18	47	19	41	<p>Note that the implications of incomplete enforcement of a treaty differ among the regulatory approaches, i.e. between a cap-and-trade system and international emission taxes. Overselling and underbuying of permits undermines the environmental integrity under cap-and-trade regulations while international harmonized emission taxes are additionally exposed to the risk of fiscal cushioning, i.e. the adjustment of domestic fiscal policies to offset the emission tax incentive effect (Rohling and Ohndorf (2012)). For example, tax exemptions, special provisions for exporting firms, or subsidies for pollution intensive sectors undermine the international tax rate. Enforcing fiscal cushioning is difficult as detailed directives on domestic fiscal policies can be considered as unacceptable infringements in the countries' sovereignty (Wiener (1999), Victor (2001), Hoel (1993), Nordhaus (2007), Aldy et al. (2008),).</p> <p>Aldy, J. E., Ley, E. and Parry, I. W.: 2008, A tax-based approach to slowing global climate change, Discussion Paper RFF DP 08-26, Resources for the Future.</p> <p>Hoel, M.: 1993, Harmonization of carbon taxes in international climate agreements, Environmental and Resource Economics 3, 221–231.</p> <p>Nordhaus, W. D.: 2007, To tax or not to tax: Alternative approaches to slowing global warming, Review of Environmental Economics and Policy 1(1), 26–44.</p> <p>Rohling, M. and Ohndorf, M.: 2012, Prices vs. Quantities with fiscal cushioning, Resource and Energy Economics 34, 169–187.</p> <p>Victor, D. G.: 2001, The Collapse of the Kyoto Protocol and the Struggle to Slow Global Warming, Princeton University Press, Princeton, N.J.</p> <p>Wiener, J. B.: 1999, Global environmental regulation: Instrument choice in legal context, Yale Law Journal 108, 677–707.</p>	Accepted; new paragraph added on these points.
3473	13	19				Section 13.4 is in general very clear (although I believe 13.4.2 should not be a section)	Noted. Purpose of section on SRM more clearly explained.
14345	13	19	1	19	1	This references a paper by Ellis and Moarif from 2009, which is a follow up to the original paper from the previous year: Ellis J. and K. Larsen, "Measurement, Reporting and Verification of Mitigation Actions and Commitments," OECD/IEA, Paris, 2008. The original paper should be referenced here.	Accepted.
4948	13	19	10		14	It is not fully clear, since possible sanctions in the compl. system under the KP include the suspension of eligibility to take part in the flexibility mechanisms (in particular, in trading with AAUs) which proved to be a "credible" provision to some extent.	Accepted.
8178	13	19	10	19	11	I would suggest listing and/or citing some of the proposed alternatives.	Accepted, per comment 377.
12804	13	19	13			Can you provide a reference?	Unfortunately, the comment did not suggest a reference. Found Feldstein 2011.
8754	13	19	14	19	21	A fundamental point about trade sanctions is that they are costly for the countries imposing the sanctions as well as the countries sanctioned. This increases the reluctance to use them. See Kemfert et al., Can Kyoto Protocol Parties Induce the US to Adopt a more Stringent Emissions Target?, Interdisciplinary Environmental Review, v. 5, n. 2, 2003, pp. 119-141.	Accepted. Added to earlier text on trade sanctions in 13.3.1.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
8094	13	19	14	19	21	Would mention here that trade-related measures can also be used to prevent emissions leakage, as well as sanctions instruments, and the WTO considerations are different in each case.	Noted, but this point relates to national policies seeking to avoid leakage, whereas this section is on international policies seeking to increase participation.
2302	13	19	14	19	21	The claim that "in any case, trade sanctions run the risk of reducing cooperation" is misleading, because the absence of strong self-interested incentives, such as the prospect of trade sanctions, also runs the risk of reducing cooperation due to the collective action problem. This paragraph is more negative on trade sanctions than justified, since it does not consider the incentive effects of the prospect of trade sanctions. If trade sanctions are actually imposed, they will have failed; the positive impact comes prospectively. The discussion on pp. 36-37 of the same issue is much more balanced, and it seems to me that the discussion on p. 19 is inconsistent with it.	Taken into account in revised text on trade sanctions in both 13.3.1 and 13.3.2.
8179	13	19	14	19	21	This does not appear to acknowledge the option of altering the WTO.	Taken into account in text.
3175	13	19	15	19	17	p.19, lines 15-17. Perspectives are evolving here, and certainly my view is a bit different from how I am quoted here. I laid out in some detail in Victor (2011) the tradeoffs involved here—on the one hand, trade measures open the door for mischief (and in hard economic times the incentives for mischief are legion). On the other hand, the free rider problems are nearly impossible to solve without punishments for free riders and semi-appropriable benefits for "club" members.	Noted with added reference to Victor 2011 and this dilemma, at the end of the paragraph.
12551	13	19	18			After "2011", add -- "For example, Hoerner (1996) showed that a symmetrical border tax levied on ozone-depleting chemicals by the US was trade-compliant." J. Andrew Hoerner, 1996. Tax Tools for Protecting the Atmosphere: The US Ozone-depleting Chemicals Tax. In Green Budget Reform: An International Casebook of Leading Practices, Robert Gale, Stephan Barg, Alexander M. Gillies, International Institute for Sustainable Development, Earthscan.	Noted, but this example is too specific to the Montreal Protocol to add here, where we cite more recent analyses on the WTO-legality of border taxes on GHGs or embedded carbon. (which may raise broader trade impacts than did the Ozone-depleting chemicals tax).
3970	13	19	19	19	19	The sentence that "trade sanctions pose significant risk of reducing cooperation" should be strengthened. Trade sanction as a measure for compliance is grossly inappropriate: See Shinya Murase, "Conflict of International Regimes: Trade and the Environment", in S. Murase, International Law: An Integrative Perspective on Transboundary Issues, Sophia University Press, 2011, pp. 130- 166.	Taken into account by revising the text to note the difference between threatened and imposed trade sanctions, adding this and other citations, adding a cross-reference to the discussion of trade sanctions earlier in 13.3.1, and adding a cross-reference to 13.8.
13636	13	19	21			A border tax on even one good by one party, the airline fuel tax in the EU, has produced strong backlash.	Noted, but not mentioned for now because no literature is yet identified discussing this airline fuel tax example, and the EU has recently suspended its implementation.
15072	13	19	21			An example illustrating the possibility that border taxes could harm the countries intending to punish others appears in WJ McKibbin and PJ Wilcoxen, "The Economic and Environmental Effects of Border Tax Adjustments for Climate Policy," in L Brainerd and I Sorkin, (eds), Climate Change, Trade and Competitiveness, The Brookings Institution, pp. 1-34, 2009.	Accepted.
7662	13	19	22	19	23	In my understanding punishments are not mainly targeted at misreporting only but at missing the targets.	Text clarified to indicate that sanctions may apply to both.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
12805	13	19	22	19	25	Can you provide a reference?	This text just states the rationalist observation that parties will comply if the benefits exceed the costs. The text also seems out of place; it belongs earlier in 13.3.2. This text is being revised and relocated.
17670	13	19	22	19	25	It would be valuable if you gave some examples for "deterrence mechanisms" in this context and cite some literature	Text revised, see comment 391.
7661	13	19	23	19	25	One such mechanism is described in Heitzig, Lessmann, Zou (2011) PNAS, doi:10.1073/pnas.1106265108	Already inserted per comment 377.
6330	13	19	26	19	28	Is it necessary to use this extensive list of literature from 1998 to 2006. Was not this issue covered by the AR4? If so, possibly it could be cited instead. There are not more updated literature on this matter?	Taken into account by adding newer citations. Deleted Doelle 2004 which is about a different topic. Older citations retained for now to illustrate the history.
10809	13	19	26	19	41	Consider citing a recent book on Climate Change Liability by Lord, Goldberg, Rajamani and Brunee. Cambridge 2012.	Accepted.
16188	13	19	26	19	41	Add Daniel A. Farber. 2011. The UNCC as a Model for Climate Compensation in Gulf War Reparations and the UN Compensation Commission: Environmental Liability. Cymie R. Payne and Peter H. Sand, eds. New York: Oxford University Press.	Accepted.
6842	13	19	26	19	41	There is a vast quantity of more current literature on climate litigation that has not been referred to. See for instance, Richard Lord, Silke Goldberg, Lavanya Rajamani and Jutta Brunnée (editors), CLIMATE CHANGE LIABILITY: TRANSNATIONAL LAW AND PRACTICE (Cambridge University Press, UK, 2011); See also work by Osofsky and Burns	Lord et al. 2011 now added. Burns was already cited.
6843	13	19	26	19	41	There is also an increasing emphasis on human rights remedies that should be mentioned. See work by Stephen Humphreys, formerly of ICHRP, for instance, as well the work on the OHCHR on this. In the context of the climate negotiations see also: The Increasing Currency and Relevance of Rights-Based Perspectives in the International Negotiations on Climate Change, 22(3) JOURNAL OF ENVIRONMENTAL LAW 391-429 (October 2010)	Human rights are important but are not the topic of this paragraph on civil liability litigation as a compliance enforcement mechanism; instead, the role of human rights in international law related to climate change is being addressed in section 13.5. This reference should be held for later and its placement considered.
2412	13	19	26	19	41	Comment on specific text: As above, I think it would be helpful to specify what you mean by legal remedies here. It seems that you have private law remedies (especially tort) in national legal systems in mind? The concept of legal remedies seems quite vague and to cover a lot of things that are also discussed elsewhere.	Text clarified.
3752	13	19	45			define durability	The term is used in its ordinary sense and is explained in the context of the sentence ("long-term").
4962	13	19	5		6	Actually, the compliance system was not established by the KP per se, but that was elaborated and adopted several years later (in 2001 as rightly indicated in Table 13.2 on p.20), but formally/legally it is "under" the KP.	Noted and text revised to add "and its follow-on accords".
12803	13	19	5			MEAs (not explained; reference was IEA so far)	Text revised to refer only to IEAs throughout 13.3.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
7660	13	19	7	19	9	A credible sanctioning mechanism for the Kyoto protocol and similar architectures has recently been suggested in the game-theoretic literature (Heitzig, Lessmann, Zou (2011) PNAS, doi:10.1073/pnas.1106265108)	Accepted, and statement that "few alternatives have been identified" is removed.
14649	13	19				The discussion of compliance could expand the brief text on MRV to include lessons learned from non-envl international policy surveillance programs, such as IMF Article IV consultations, OECD economic policy reviews, WTO trade policy reviews, etc. May also be useful to draw lessons from arms control treaty surveillance.	Taken into account in revised text.
5686	13	19	26	19	41	If legal remedies for climate damages are to be discussed as a potential solution, it would be helpful if this paragraph offered an example of a case in which this has happened. In addition, the paragraph should mention the lack of an international legal system with the power to enforce credible penalties/sanctions. This would seem to be a key barrier to the liability approach, and very similar to the more general problem of enforcing international agreements, discussed earlier in the chapter.	Taken into account in revised text.
2933	13	19	39			add a reference to Lord et all, 2011 : Richard Lord QC, Silke Goldberg, Lavanya Rajamani, Jutta Brunnée (eds.) (2011), Climate Change Liability: Transnational Law and Practice, CUP, 712 p.	Accepted.
13921	13	19	5	19	9	The discussion on the Kyoto compliance regime could benefit from further nuance. The references cited (Obertuer and Lefebvre, 2010; Doelle et al, 2012) show that the Kyoto regime has been successful in inducing compliance with onerous reporting requirements, which itself can raise the detection risks and political costs of non-compliance. They also argue that, whatever its failings, the Kyoto compliance regime presents important elements and lessons-learned that could feed into future regimes, in particular with regard to the MRV requirements.	Accepted.
2932	13	19	6		7	include WHILE others MEAS...	Accepted.
18662	13	20				Page 20: Useful typology of commitment in international agreements for climate change	Noted
3971	13	20				On typology of commitments, the first Colum, the reference to WTO is not appropriate, since the WTO dispute settlement enforces States to comply only with future commitments (such as amending the non-compatible national laws for the future) without demanding the ex-post-facto restitution or redress. WTO mechanism looks quite rigid at first sight, but actually quite "soft" allowing flexibility. See, Shinya Murase, "International Lawmaking for the Future Framework on Climate Change: A WTO/GATT Model", in S. Murase, International Law: An Integrative Perspective on Transboundary Issues, Sophia University Press, 2011, pp. 167- 180.	Taken into account - text revised to recognise the claim re the WTO was too strong in the earlier version.
3972	13	20				There should be an additional Colum between "Mandatory provision in a legally-binding agreement" and "Mandatory provision in a nonlegally-binding ("political") agreement", regarding "Mandatory provision of legally binding agreement with flexible commitments" to which the WTO/GATT mechanism belongs. See, Shinya Murase, "International Lawmaking for the Future Framework on Climate Change: A WTO/GATT Model", in S. Murase, International Law: An Integrative Perspective on Transboundary Issues, Sophia University Press, 2011, pp. 167- 180.	Taken into account. The clarification of the meaning of "mandatory" (see response to #418) has specified that this could include obligations that contain flexibility, so the proposed extra row is unnecessary. The suggested reference has been incorporated.
11590	13	20				The table is a clear demonstration how the UNFCCC has met all the requirements for an international agreement. It is the burden sharing that is causing difficulties because those who are supposed to take a leadership role are not doing so.	Noted
16189	13	20				Should read "somewhat more weight than a political agreement"	Accepted - text revised.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
11336	13	20				A 'mandatory provision in a non-legally binding 'political' agreement'- is not binding as a matter of law - but only as a matter of morality. There are no degrees of bindingness.	Taken into account. The opening paragraph has specified that bindingness may be legal but may come in other forms - these are not "degrees" but types of ways actors may be bound.
11448	13	20				The reference to the Copenhagen Accord in the third row, third column, of Table 13.2 is factually inaccurate. The Copenhagen Accord is not an official document of the UNFCCC COP. In this context, UNFCCC Parties submitted mitigation pledges and NAMAs in response to UNFCCC COP decision 1/CP.16 (the Cancun outcome) rather than the Copenhagen Accord. If UNFCCC Parties made submissions pursuant to the Copenhagen Accord they did so legally not as UNFCCC Parties but rather as individual States. The conclusion in the fourth row, third column, that UNFCCC Art. 4.2 is a non-mandatory provision in a legally binding agreement is not accurate. Art. 4.2 – particularly paragraphs (a) and (b) therefore – is a mandatory provision because it specifically commits and requires Annex I Parties to undertake specific actions. The "aim" language relates to the mitigation target of returning emissions to 1990 levels by 2000 and should be read as a legal requirement because it is in the context of the mandatory requirement of Annex I Parties to report on the mitigation actions that they are to undertake in compliance with Art. 4.2(a) of the UNFCCC. It is a standard rule in treaty interpretation that the text of treaty provisions should not be read in isolation but rather in terms of their context and ordinary meaning.	Part I (Copenhagen Accord) - accepted - text revised. Part II (Article 4) - taken into account - text revised to distinguish between article 4.2(a) and (b).
6112	13	20	18			In the 4th column of Example, there is a description that "The UNFCCC target for developed countries to return their emissions to 1990 levels by the year 2000" (Article 4.2). This is incorrect. Correct wording is "the return by the end of the present decade to earlier levels". Then US President Bush senior opposed to sign the treaty if it is written as to stabilize at 1990 level by 2000. After the final negotiation, the wording "return -- to earlier level" has been agreed. Please change "1990" to "earlier".	Accepted - text revised.
6844	13	20	6	21	27	There are, again, southern legal scholars that have written on these topics in peer reviewed international legal journals but are not cited here. Among others, I have written numerous pieces on the issue of legal form. A more comprehensive literature survey(going beyond American journals/scholars) and reflecting greater balance and diversity in the voices/literature cited would be helpful. For instance, L. Rajamani, The Copenhagen Agreed Outcome: Form, Shape and Influence, XLIV (48) ECONOMIC AND POLITICAL WEEKLY 30-35 (28 November 2009) L Rajamani, Addressing the Post-Kyoto Stress Disorder: Reflections on the Emerging Legal Architecture of the Climate Regime, 58(4) INTERNATIONAL & COMPARATIVE LAW QUARTERLY 803-834 (October 2009)	Accepted. Rajamani's second suggested article incorporated (The first, in EPW, is not peer-reviewed, but also more of a commentary on the Copenhagen negotiations rather than a detailed exploration of the legal form question). However, in the next round of revisions, the authors will consider more literature from developing country authors.
4963	13	20	7			these are generally not among governments, but among States (usually represented at the negotiations by gov. representatives)	Accepted - text revised. Similar consequent change also made in FAQ at p25 lines 18-19

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
10811	13	20		23		<p>The sub-sections of 13.4.1 do not seem to me to cover the full range of issues on which international cooperation is needed, nor those on which discussion is, in fact, already ongoing. The discussion as currently written tilts too much toward mitigation alone, with no real space given to the cooperation required on adaptation, financing, technology and so on. There are two ways forward: If the current construction is retained, it would be good to explain where the categories of legal binding, burden sharing and flex mechs come from. And then to make sure the substantive themes such as adaptation, finance etc., are appropriately discussed in brief, most likely under burden sharing (and to a greater extent than a single word reference, which is what exists at the moment). Another option would be to use other alternative typologies available, for example, by drawing on the UNFCCC process in general and the Bali Action Plan pillars in specific. Either way, the underlying point is that the scope of international cooperation should be widened to, at minimum, encompass the current discussions.</p>	taken into account. Section structure reorganised. Additional subsection on "goals, actions and metrics" added, to be drafted yet. Emphasised that these elements are not the only ones that could be discussed.
14650	13	20				<p>The legal bindingness section should include some discussion of how treaty obligations vary across nations as a function of their respective domestic law. As I understand it, a ratified treaty in the United States carries the force of domestic law, while in other nations ratified treaties do not necessarily provide standing for domestic constituents to sue for compliance by their sovereign.</p>	Accepted - text revised.
5311	13	20	1	21	27	<p>It is interesting to see the typology of commitment in international agreements for climate change. It may be useful to add the growing literature on "norm-building" in international relations especially in the absence of a legally binding agreements. For instance, although we do not have an international treaty on nuclear tests (the CTBT is not yet in force), there is always a huge international protest when one country announces nuclear tests. In the climate change context, norms may be more effective than legal binding agreements.</p>	Accepted. Discussion of this incorporated into section on legal bindingness.
11141	13	20	6	21	27	<p>The word "bindingness" does not exist in the English language. Please clarify in all instances.</p>	Rejected - the comment is incorrect about the existence of the word bindingness. First use according to the OED is in 1874, meaning "binding or obligatory quality".
3176	13	20	6			<p>section 13.4.1.1 and section 32.4.1.3. There's a lot of literature (by lawyers and political scientists alike) on bindingness and on flexibility. The Hafner-Burton et al (2012 AJIL) article reviews the political science literature in some detail. Helfer's work, among others, addresses the law. Also, I think the section on flexibility is overly focused on the CDM as a source of flexibility when, in fact, countries have used (and have available in the future) lots more—such as the ability to adjust (before a treaty is finalized) their targets, possible designs that include more explicit target or commitment flexibility (e.g., pledge and review), etc. This text makes it sound like the CDM is the cat's meow for flexibility.</p>	taken into account. Opening paragraph had emphasising plural ways that flexibility might be organised. The argument in Hafner-Burton used as an example. But overall focus of section remains on Kyoto flexibility mechanisms. Re the final point (the "cat's meow"), it is worth noting the section cites a good deal of material highly critical of the CDM. See also response to #407.
6990	13	21	1		10	<p>You might note that an agreement can require that parties adopt domestic legislation for compliance.</p>	Rejected. The text already states that agreements may "set in motion domestic legal-implementation mechanisms" which covers this sort of process.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
16368	13	21	1	21	10	Could mention here analysis and literature on examples of where domestic law has been triggered by international commitments (eg EU ETS)	Rejected. This comment is correct but not relevant here. The sentence refers only to the different sort of authority relations in domestic and international law, not to the dynamic relationship between the two levels. This comment would be more relevant for section 13.13, in elaborating the effects of institutions like the Kyoto Protocol.
11337	13	21	1			There is no such thing as a nonbinding treaty (even though a treaty may contain non-binding or non-enforceable 'obligations')	taken into account. The word treaty has been replaced with agreement to be consistent with the rest of the section, and address this confusion.
10810	13	21	11	21	19	The definition of soft law used here is imprecise. Better to use the most accepted definition by Abbott, Kenneth W. and Snidal, Duncan, Hard and Soft Law in International Governance (2000). International Organization, Vol. 54, p. 421. They distinguish hard and soft law on three axes: obligation, precision, and delegation. These actually map quite well to Werksman's latter three categories of obligatory language, sufficient detail for compliance and mechanisms (his fourth is legal form), which is cited at the beginning on 13.4.1.1. Making the link locates this discussion in a broader context of international relations thinking and scholarship.	accepted - text revised to make the definition of soft law more precise.
11338	13	21	14			enactment of domestic legislation is not necessarily indicative of a state's acceptance of something as legally binding. It may do so for purely pragmatic or political reasons	reject. This comment is mistaken. The sentence does not imply that all domestic action is evidence that states regard an international agreement as binding - just that if states do treat it as binding this may lead to domestic action, and the legal character of the "bindingness" may not be the crucial question.
4949	13	21	16		19	There is also a climate policy related example: the declaration in 2001 (the "Bonn Declaration") by the EU members and some other developed countries to provide a concrete amount of financial means to the developing countries.	rejected. It is too unclear if the bonn declaration has had the effect implied in the text - that states have regarded such a declaration as binding on their actions.
6331	13	21	25	21	27	This last sentence of this paragraph is not backed by any literature source. In addition, it is not clear that the cited section 13.3.1 backs this statement.	accepted. Sentence on administrative law deleted here, because not strictly relevant to the question of legitimacy - which here is introduced to explain why legal bindingness may not always be central to a successful agreement. Paragraph moved in response to other comments and reorganization of this section.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
6991	13	21	25		27	Please explain the shift in the direction of administrative law. I didn't find the description here or in 13.3.1 to be satisfactory. I didn't even understand what was meant by the term. Please also give evidence of the "shift." Perhaps you could give examples?	see response to #447
8180	13	21	25	21	27	This is a huge statement. At a minimum, I would recommend explaining what you mean by "less and less important" (i.e. less important in what sense). I would recommend considering deleting this.	see response to #447
11339	13	21	25	21	27	What is your authority for the statement that international law is shifting in the direction of administrative law? What relevance the x reference to section 13.3.1 which merely refers to literature asserting that international organisations may be developing some form of global administrative law. The literature cited here is old and while it may be arguable that administrative aspects are developing within international law that is not the same thing as saying that international law is becoming nothing more than administrative law - which is what your statement suggests.	see response to #447
14651	13	21	26			I do not understand this reference to administrative law and the reference to see the section on participation.	see response to #447
16190	13	21	26	21	27	This understates the importance of national governments' concerns about the democracy deficit in international organizations that assume significant decision making authority through administrative structures.	rejected - This comment is not relevant here. The sentence refers to arguments that empirically, the character of international law is changing. Governments' concerns about this may be a part of the political process involved, but this does not in itself invalidate the claim made.
6845	13	21	26	21	27	This is quite a sweeping claim i.e. that international law is shifting in the direction of administrative law and the issue of state consent is becoming less and less important. This lacks context and nuance. There are a group of primarily American scholars that hold this view but this by no means undisputed.	see response to #447
17102	13	21	28	22	11	burden sharing methods is only PART of the new rules since Copenhagen-Cancun, because ecological limits has brought on assessments by UNEP, which were discussed in the most recent informal negotiations of the UNFCCC at Bangkok, on "resource sharing" and considering the global carbon budget. Burden sharing is now being discussed in the literature and the negotiations in terms of BOTH costs and carbon budget. The terminology used, "share of global GHG emissions covered" is not a commonly used term in the literature of the negotiations and should be replaced with the term "global carbon budget".	taken into account. Title of subsection changed to "participation, equity and effort sharing methods". Section expanded in response to other comments. Discussion of on carbon budgets introduced..
6846	13	21	34	21	39	Principle 7 of the Rio Declaration is not identical to Article 3 of the UNFCCC. There are important differences - and these were negotiated in by the US primarily because the legal status of the two instruments (Rio Decl and UNFCCC) are different. Cannot conflate in this manner.	Accepted - text revised.
14652	13	21	36			This quote should also include "respective capabilities."	Accepted - text revised.
8095	13	21	36	21	36	Change "common but differentiated responsibility" to "common but differentiated responsibilities and respective capabilities"	Accepted - text revised.
6992	13	21	37			I don't see how the UNFCCC's mention of avoiding "dangerous" interference relates to burden sharing. It's a collective goal.	rejected - the overall objective of the FCCC creates a set of limits to GHG emissions that thus imply distributive questions. The line is however amended to read "... the objective of preventing "dangerous ..."; the previous text (Without the word "preventing") was ambiguous.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
4965	13	21	39			burden sharing (here and generally): recently it was replaced with a "positive" terminology in the EU's climate-energy package and pol. documents, namely: with "effort-sharing" ..	taken into account. Section title changed to effort sharing, clarification in the text as to the two terms.
4964	13	21	7			{Add} objective of {}avoiding "dangerous anthropogenic ..	rejected - unclear to which bit of text this comment applies. Clearly not relevant for the text on p21, line 7.
7143	13	21	9	21	10	That's right, but there is also a fact that international law produces the development of domestic law, which is the case of climate change, e.g. The European normative. In the absence of UNFCCC and, particularly, of the KP, most of the current domestic legislation related with CC never have been issued	rejected. This comment is correct but not relevant here. The sentence refers only to the different sort of authority relations in domestic and international law, not to the dynamic relationship between the two levels. This comment would be more relevant for section 13.13, in elaborating the effects of institutions like the Kyoto Protocol. see also comment #423.
13922	13	21	1	21	10	The discussion on bindingness and effectiveness could benefit from a reference to Raustiala's paper: Raustiala, K., "Form and Substance in International Agreements", The American Journal of International Law, 99, 2005. He makes the point that there is often an inverse relationship between bindingness, stringency and the means of enforcement with an IEA, as governments seek to reduce the potential costs of non-compliance.	accepted. Text revised accordingly.
5305	13	21	7	21	7	loss of reputation should be changed to "loss of good reputation".	rejected - the term "good" is redundant - to lose a reputation implies to lose a good reputation. This is particularly obvious with the word "credibility" following.
10812	13	21		22		The participation and burden sharing section is disproportionately small compared to legal bindingness and flex mechs. Yet there is a huge literature on this topic, and a great deal of new insight generated in the last 5 years since AR4. I realize there is a section 13.13.2.2 assessing burden sharing still to come. But for balance, this section needs to set up the problem better. At minimum, the resource versus burden sharing frameworks should be laid out, with representative studies of each of these. The citations in lines 8-10 p. 22 are broadly right, but perhaps some survey articles are worth mentioning. I am not fully aware of the literature, but one by D. Narasimha Rao in Handbook of Climate Change and India, Navroz Dubash (ed.) OUP/Earthscan 2012 has some key citations.	Accepted. Section significantly reorganized and expanded.
13923	13	21	28	22	11	The discussion on participation could reference (Raustiala, K., "Form and Substance in International Agreements", The American Journal of International Law, 99, 2005.) on the relationship between legal form and substance: the legal nature of commitments and the participation that the regime is likely to attract.	rejected. Article consulted, the point about the relationship between legal form and participation seems relatively marginal to its overall point.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
6580	13	21	28	22	11	<p>Consider coorelation between "Participation" and "Degree of Legal bindingness". Examples of examination objects are as follows.</p> <p><Mandatory provision in a legally-binding agreement with enforcement mechanism: Kyoto Protocol> At the time of the adoption of the Protocol, it covered 58% of global emissions. Because of US withdrawal and rapid increase of emissions from emerging economies, coverage has shrunk to only 27% in 2008 (figures are based on ener-gy-related CO2 by IEA statistics). And at COP 17 in 2010, Japan, Russia and Can-ada made it clear that they do not commit any numerical figure for the second commitment period of the Kyoto Protocol. This has led to the outcome that the protocol covers less than 15% of global CO2 emissions in 2009 No treaty without the United States and emerging economies is effective.</p> <p><Mandatory provision in a non-legally-binding ("political") agreement: The Copenhagen Accord> The Copenhagen Accord is quite welcome in that it adopted the pledge and review style, and almost all coun-tries agreed to submit their pledges.</p>	taken into account. Revision of text in line with #434 addresses this point.
12000	13	22	12	23	25	<p>Note that the Schneider study came to the conclusion that there is theoretical gaming possibility but that there is no evidence of this having happened. Also, it is wrong to imply that all projects are financed by the project owner and it is wrong to imply that there is something wrong with the cases where the projects are indeed financed by the project owner because that is simply a question of financing. The importance lies in the incentive in the form of the carbon price (from industrial countries), the international exposure, the access to new customers and international currency the CDM provides: by putting a price on the currently issued credits, investors are incentivized to develop the next project. Otherwise it is like asking a constructor to build a house and then when she is done and wants the bill paid, you say "well, clearly you built my house without me giving you the money upfront i.e. you do not need my money!" Wrong approach.</p> <p>Please make sure to refer to the High Level Policy Panel's study findings that are now available at cdmpolicydialogue.org/ i.e. a lot of the governance issues have been fixed or are currently being fixed. Also, it is important to mention here the necessity for continuous demand, be it for specific methodologies and countries, in order to maintain that price signal of the CDM. This statement needs to be made prominently, as it is at the very basis of the CDM: The market has collapsed, people have been leaving for the past year and a half. Less than one more year like this and we do not need to mention the CDM anymore as it won't matter, the capacity will have disintegrated beyond a critical point.</p>	taken into account. Reference to final report of CDM Policy Dialogue included. The text includes already the point re the Schneider paper. The text does not imply that unilateral proejcts are necessarily more problematic than others.
15724	13	22	12	23	25	<p>Green Investment Schemes should be mentioned. More than 300 Mio AAUs were traded so far under GIS.</p>	<p>In Section 13.4, taken into account. More appropaithe for section 13.13 than here.</p> <p>Section 13.7, Taken into account - green investment schemes are covered in 13.7</p>

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
11450	13	22	12	23	25	The discussion on flexibility mechanisms erroneously highlights these mechanisms as main components of international cooperation arrangements on climate change. Under the UNFCCC and the Kyoto Protocol, such flexibility mechanisms are rather subsidiary mechanisms that are intended merely to assist in achieving compliance with mitigation commitments rather than serve as the primary vehicles for achieving such compliance.	Rejected. The focus on flexibility mechanisms as elements in existing agreements is appropriate. The chapter also discusses other aspects of international climate agreements, in this section as well as in 13.15, 13.13 and other places.
6993	13	22	13			Flexibility mechanisms cannot have the desired effects mentioned here unless backed up by enforcement. This kind of observation is important for readers trying to connect one part of your chapter with another.	Rejected. Unnecessary detail for this section. All types of agreements entail a question about enforcement. Dealt with elsewhere in the chapter (13.3).
11688	13	22	13	23	25	In the section 13.4.1.3, many flexible mechanisms are discussed including trading allowances, CDM, JI etc, but I feel that the pricing regime is neglected somehow, for instance, the Australia carbon tax might be able to link with future trading regime, so I wonder if it is better to include discussions or surveys of carbon tax related policies, so maybe change the title to "carbon pricing and flexibility mechanisms"?	Rejected. The title of flexibility mechanisms includes the dimension of carbon pricing in that they frequently operate by generating a carbon price. The main discussion of Australia's new carbon tax is in chapter 15; it is mentioned here in relation to linking on p34.
8181	13	22	13	22	13	"Utilize markets": I recommend being more specific. Does this mean emissions permit markets or markets in general?	Accepted- text revised.
8755	13	22	30	22	31	"which takes advantage of Article 4 of the Kyoto Protocol, which allows parties to meet their Kyoto commitments jointly" is not relevant to the use of Kyoto units in the EU ETS. Delete the phrase.	Accepted. The statement in the text is correct but not pertinent to the point about the EU ETS being the driver of CDM investment. Text amended to make this point clearer.
4966	13	22	31			to set/define and meet their Kyoto commitments jointly ~ otherwise it would mean the JI ..	Rejected. Text no longer in given response to previous comment.
4967	13	22	32			{Cor} entities (companies or {their installations} [plants]) That is: entities (companies or their installations)	Accepted - text revised.
8756	13	22	34	23	25	Revise this section using the reports prepared for the CDM Policy Dialogue. See http://www.cdmpolicydialogue.org/ Three background reports were prepared and should be available on the site by mid-October. The reports review the literature on all substantive and governance issues related to the CDM.	taken into account. See response to #473.
17103	13	22	34			the negotiations are focussing on equity, and not fairness. There was also a workshop to discuss this issue, and reflects a clear position of the majority of countries. The meaning of this term, as is emerging in these negotiations, is NOT burden sharing rules about how parties are "differentially obligated" as is in the text (this is the position of developed countries in the negotiations), while developed countries (especially the African Group, ALBA and China) are focussing on sharing the carbon budget, or equitable access to sustainable development, and you need to refer to the most recent consensus on this in the Cancun Agreement, including in the literature referred to in this section, but has not been specified. This omission gives a distorted picture of the literature.	Taken into account. Response to #454 addresses also the concern in this comment

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
17671	13	22	36	22	38	Can you specify what the "market price effect" is and what role it plays in the context of baselines and leakage. This is not clear without further information.	taken into account .reference consulted and the meaning of this term specified.
16191	13	22	38			Consider reference to Michael Wara, Measuring the Clean Development Mechanism's Performance and Potential 55 UCLA L. Rev. 1759 (2007-2008)	accepted. Citation incorporated.
16192	13	22	43	23	14	Reference Barbara Haya. Failed Mechanism: How the CDM is Subsidizing Hydro Developers and Harming the Kyoto Protocol. Working Papers from eSocialSciences at http://econpapers.repec.org/paper/esswpaper/id_3a4822.htm or	reject. report checked, it is an NGO report and would not meet the peer-review test. There is plenty of material critical of the CDM already cited.
16369	13	22	43	22	45	Perhaps too strong to say that project needs to be "motivated primarily" by credit sales; each investor assesses the business case of projects, and credit revenue may be a crucial factor in making a project viable even if not "primary" motivator (cf electricity sales etc).	accepted. Text revised to clarify the role of CER income in a project's viability to qualify as "additional".
2168	13	22	43	23	25	Rive and Rübelke (2010) Review of World Economics have investigated the interplay between CDM effects and national regulation effects (in China). This paper could help linking the CDM section (13.4.1.3) and Section 13.4.3 and Section 13.7 (especially Subsection 13.7.2) on page 34.	accepted. Introduced in the context of bringing more attention to developing country motivations for the CDM (See comment #502)
4950	13	22	48			in fact this aims at "certification" in accordance with the name of the CDM-units: "CER"	Reject. In fact the processes identified in the text refer to what in the CDM are the two separate processes of "certification" and "verification". Audit is a reasonable term to refer to these combined.
11449	13	22	5	22	11	Given the high importance that many countries attach to equity and burden sharing in the context of mitigation, and the extensive academic research that have gone into these issues, the discussion on these issues should be substantially expanded beyond these 6 lines.	accepted. Text revised as explained in response to #438.
6038	13	22	7	22	8	Include a sentence that characterizes the "considerable discussion of burden-sharing in the scholarly literature"	accepted. Text revised as explained in response to #438.
12476	13	22	7	22	11	This sentence states that "There is considerable discussion of burden sharing in the scholarly literature". Then 11 different references are given. But there is nothing about results or findings from these references. Please consider to include some of the findings, if the references are to be listed.	accepted. Text revised as explained in response to #438.
6847	13	22	7			Where is this right to sustainable development sourced to? Article 3 - refers to the "right to and should promote" SD. Not the same thing.	taken into account. Text revised to be more precise in citing the FCCC, article 3.
6848	13	22	7	22	11	Again, Many southern voices not reflected - as for instance work by Jayaraman et al, TISS, Mumbai, on the global carbon budget approach.	accepted. Text revised as explained in response to #438.
6332	13	22	12	23	25	To facilitate the understanding of the reader on flexibility mechanisms it is needed to describe in numbers the magnitude achieved by the different flexibility mechanisms, in terms of emission reductions and financial amounts. A table with this information would be illustrative and useful.	reject- this discussion will take place in 13.13.1.2
11687	13	22	7	22	11	In this part, it is written "there is considerable discussion of burden-sharing in the scholarly literature", however there are no discussions of these studies at all except just a long list of the literature. Or if skip the discussion then need to provide a reference to the section 13.13.2.2 which will discuss more on burden sharing	accepted. Text revised as explained in response to #438.
11573	13	22				Flexibility mechanisms of the market are mentioned. What about flexibility mechanisms of political institutions and administrative procedures?	Rejected. The text makes clear what flexibility mechanisms are to refer to, and the sorts of flexibility implied by the commenter are not included.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
3177	13	22	1			section 13.4.1.1 and section 13.4.1.3. There's a lot of literature (by lawyers and political scientists alike) on bindingness and on flexibility. The Hafner-Burton et al (2012 AJIL) article reviews the political science literature into that comment. some detail. Helfer's work, among others, addresses the law. Also, I think the section on flexibility is overly focused on the CDM as a source of flexibility when, in fact, countries have used (and have available in the future) lots more—such as the ability to adjust (before a treaty is finalized) their targets, possible designs that include more explicit target or commitment flexibility (e.g., pledge and review), etc. This text makes it sound like the CDM is the cat's meow for flexibility.	same comment as #422. see response
16236	13	22	23			Suggest adding a sentence at the end of the paragraph: "Flexibility is politically valuable because it allows governments to reduce emissions at a lower cost overall and because it offers governments a toolkit of policy options that can be adjusted over time as circumstances change (Thompson, 2010)." Thompson, A. (2010). Rational design in motion: Uncertainty and flexibility in the global climate regime. European Journal of International Relations 16, 269-96.	Reject. The point made in this comment is already reflected at pp22, line 13. the point is also ubiquitous in literature on this subject back to the early 1990s. Little gain is to be had by a single citation on this point.
11142	13	22	38	22	40	This "conclusion" has been rejected by the CDM Executive Board and has not been accepted (please see EB papers).	Rejected. The reference to EB papers is too vague to be useful, and are not peer-reviewed literature in any case. The text also only states that there is an incentive to increase emissions in the HFC methodology, not that emissions have in fact been increased (See comment #473).

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
6582	13	22	43	23	25	<p>Add following 7 problems of CDM. CDM has both good and bad points.</p> <p>Quote>></p> <p>1.The Clean Develop Mechanism's (CDM) credits, CERs, are worth the same as EU ETS credits and can be submitted by ETS installations instead of EUAs. CERs are generated by extra-EU emission reducing projects to be sold on, to incentivise green investment, especially in developing nations. The EU is effectively offloading its ETS obligations in a 'do as I say, not as I do' move.</p> <p>2.The CDM is a 'zero sum' mechanism. For example, a CDM project reducing emissions by 1,000 tCO2e will generate 1,000 CERs, which can be bought by ETS installations to allow the emission of 1,000 tCO2.</p> <p>3.The CDM is vulnerable to corruption. A study of the top five UN-accredited CDM validatory bodies found that on a scale from 'A' (very good) to 'F' (very poor), none scored higher than 'D'.</p> <p>4.A 4,000MW coal plant in Gujarat, India, has received CERs because it is marginally less polluting than other coal stations. This is despite the fact it emits 26 million tonnes of CO2 per annum, will do so for at least 25 years, is India's third largest source of emissions and is the 16th largest worldwide.</p> <p>5.Industrial gas credits reap huge profits. HFC-23 generates 11,700 credits per tonne destroyed at approximately €12, but costs only €0.17/tCO2e to destroy: a 7,000 per cent markup. As a result, some companies are creating HFC-23 just to destroy it in order to generate credits. If the scheme did not exist, these emissions would never have been produced.</p> <p>6.This is especially rife in China where, because it is so lucrative, the government taxes CDM revenues at 65 per cent, expecting to generate £1.7 billion by 2013.</p> <p>7.While gas credits have been banned from May 2013, lobbying led to a delay in the ban and 412 million credits are still waiting to be issued through the scheme.</p> <p>For citation: David Merlin-Jones (2012). CO2.1 Beyond the EU's Emissions Trading System. 17-27</p>	Rejected. The proposed source is not in the peer-reviewed literature and cannot thus be cited.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
6581	13	22	48	23	5	<p>Especially for projects for energy saving, it is difficult to work for CDM. It is necessary to establish new frame work to evaluate contributions of technology transfer seeing following analysis.</p> <p>Quote>></p> <p>The CDM under the Kyoto Protocol is generally believed to lower economic barriers with the introduction of climate friendly technologies. According to authors' experiences in promoting energy saving projects under the CDM scheme in China since 2005, however, CDM procedure is extremely complex and its socalled additionality check is excessively strict in validating a qualifying project. Additionality check requires an investment analysis. For a project to be qualified as "CDM" there is a need to show that the investment will not be decided without CO2 credit.</p> <p>Economic or environmental additionality is a typical item.</p> <p>"Economic additionality" in CDM context, for example, is used in the following manner. If a certain project is profitable enough to invest without an economic benefit of CDM credit, this project is not appropriate as a CDM project due to being recognized as a business-as-usual project (IGES, 2010). As the initial investment in steel sector is generally too large to be paid back by the economic incentive accruable by CDM credits, there have been many cases where energy saving technologies were adopted by steel companies in developing countries, without waiting for CDM Executive Board's decision, which were frequently rejected later (an example of the rejected CDM application is available in UNFCCC (2010)). Even in such cases, steelmakers can still get benefit from energy saving investments primarily by lowering their energy costs. Typically, an energy saving investment yields an annual saving of 20–30% (depending on the price of energy) relative to the initial investment. Even if a project is qualified under the CDM scheme, the value of the resulting credits will be much smaller than the benefit of the energy cost reduction by a factor of 10. For a typical smaller CDQ facility, an initial investment is about f3.5 billion per facility and the annual reduction in energy consumption (crude oil equivalent) is approximately 14,000 t-crude oil/year. The annual energy saving benefit is about 28% of the initial investment (Refer to NEDO (2008)). This means CO2 reduction is approximately 0.1million t-CO2/year and the value of the CO2 credit (if calculated at f1000/t-CO2) is only about one-tenth of this benefit. Since the value of credits is only a minor factor concerning the investment decision, the benefit of removing the economic barrier through CDM would probably not be significant. In order to promote technology transfer, it is necessary to establish a new framework to evaluate contributions of technology transfer from developed to developing countries in more practical manner than that of current CDM. In addition, the length of the CDM procedure presents major risks for project owners, letting them cast doubts on the reasons for the very existence of the CDM scheme.</p> <p>For citation: Okazaki T, Yamaguchi M (2011). Accelerating the transfer and diffusion of energy-saving technologies steel sector experience - lesson learned. Energy Policy 39. 1296-1304</p>	taken into account - reference added into to list of references on debates about CDM governance.
3469	13	23				The section on Cooperation in solar radiation management (SRM) should probably be a box, rather than a section	taken into account. Structure of section revised to make place of SRM discussion clearer.
6334	13	23	15	23	25	To facilitate the understanding of the reader on the issue of sectoral CDM, it might be useful to provide information on the actual results in using sectoral or policy approaches, in terms of GHG emission reductions and financially.	rejected. The status of sectoral mechanisms remains at the level of a set of proposals, and no such evidence exists. Section 13.13 will deal more generally with assessing proposals such as this.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
16370	13	23	15	23	25	Discussion would benefit from fuller treatment of host country government involvement in sectoral initiatives, including the need to overcome incentive problems to individual actors, and the resulting need for the host government to impose some form of binding compliance or penalty regime on covered emitters. On baselines, see Prag and Briner (2012), CROSSING THE THRESHOLD: AMBITIOUS BASELINES FOR THE UNFCCC NEW MARKET-BASED MECHANISM (OECD/IEA info paper) http://www.oecd.org/env/climatechange/50315387.pdf	accepted. Text revised. Reference introduced.
3984	13	23	26			The heading seems to be incorrect, as not only SRM is discussed. Moreover, why is the term geoengineering not used (as it is in many of the references cited)?	Accepted. Subsection title changed.
8182	13	23	27	23	28	Is the international policy itself adapting or is it helping countries adapt? Unclear.	accepted- text revised to clarify.
14339	13	23	31	23	31	the cross-reference to chapter 5, section 5.8 seems to be wrong	Accepted. Cross reference referred to section in the First Order Draft, this has been moved to chapter 6. cross reference corrected.
3482	13	23	32	23	39	This needs a reference to WG I report, Chapters 6 and 7.7, where these ideas and problems with them are discussed in great detail.	accepted - cross reference inserted.
3476	13	23	35			Change "upper atmosphere" to "lower stratosphere"	accepted- text revised.
3481	13	23	35	23	36	Change "increasing clouds with reflective properties" to "making low clouds more reflective"	accepted- text revised.
8525	13	23	35	23	35	"sulfate particles" instead of "sulfur particles". "Sulfur particles" means that the particles consist of elemental sulfur	accepted- text revised.
8526	13	23	35	23	35	It is better to say "into the stratosphere" instead of "to the upper atmosphere". The upper atmosphere is higher than 50 km.	accepted- text revised.
8528	13	23	35	23	36	Examples of SRM should include ground-based option – enhanced reflective properties of the ground surface (different kinds of vegetation, roofs and so on – see Section 9.5.2)	accepted. Example included. Not clear what 9.5.2 refers to.
8527	13	23	36	23	36	«increasing clouds with reflective properties» It is better to say "increasing of clouds reflectivity" or "increasing of cloud brightness"	taken into account. Text revised as suggested by #510
16193	13	23	39			Consider reference to Robock, Alan, 2012: Will geoengineering with solar radiation management ever be used? Ethics, Policy & Environment, 15, 202-205 and/or Robock, Alan, 2008: 20 reasons why geoengineering may be a bad idea. Bull. Atomic Scientists, 64, No. 2, 14-18, 59, doi:10.2968/06400200	Rejected. These references refer generally to the pros and cons of geoengineering, not to specific questions raised in relation to international cooperation.
6335	13	23	40	24	8	The text is useful, but it seems to be apologetic in relation to SRM. It might be needed to include some bibliographic source(s) that point out to risks and disadvantages of SRM 1.	Taken into account. Most of this comment is more relevant to chapter 6, section 9. Revisions to this passage however in response to other comments do emphasize more than the previous draft the risks associated with SRM.
6994	13	23	40		43	David Victor has suggested that individuals might deploy geoengineering. I have not suggested that, and so the writing here could be more specific. Also, I have pointed out that many countries would have an interest in deploying (combined with an ability to deploy) geoengineering, but I wouldn't put "small" countries in this category. Geoengineering is "cheap" relative to the size of India or Indonesia but not Tuvalu or Mauritania.	accepted. Text revised to reflect these citations more precisely.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
11574	13	23	40	23	45	What is the incentive for small states to engage in SRM? The authors claim that smaller-scale actors may perceive advantages to be first-movers with SRM, in order to ensure both global climate protection and a favourable distribution of regional impacts from their SRM projects. Several premises should be clarified. Do small scale actors want to ensure global climate protection? If they would, there may be easier and more inexpensive ways to make local solutions. Second, what kind of SRM does only have regional impact? More should be said about what kind of SRM projects the authors are talking about.	taken into account. Text revised, clarified, example introduced, citation given.
6995	13	23	45		48	You should explain why countries might "rush" to use geoengineering. You're implying there is a first mover advantage. Why?	rejected. The text already explains why an actor might perceive first mover advantage.
14338	13	23	45	23	48	The text "hardly any cooperation might be needed" suggests that unilateral pursuit of geoengineering would be politically easy. However, it has been shown that there are several strong reasons why it is in the national interest to participate in an international governance framework even for those states that could pursue geoengineering unilaterally (Bodle, Ralph, "International governance of geoengineering: Rationale, functions and forum", in: William C.G. Burns and A. Strauss, (eds.), Climate Change Geoengineering: Legal, Political and Philosophical Perspectives, Cambridge: Cambridge University Press (submitted February 2011; in press). First, the mere potential for transboundary impacts even at an early (field testing) stage could have serious foreign policy implications and entail the risk that other nations may hold the researching or deploying state responsible for alleged impacts. Second, the public debate could become framed in terms of outright rejection or support, which could eventually polarize and divide the science community and public opinion in a way similar to the broader debate on climate change. Third, depending on the particular technique, research and experiments are likely to require coordination at the international level in order to attribute data to particular experiments and ensure valid results (Bodle, Ralph, Geoengineering and International Law: The search for common legal ground, Tulsa Law Review. Geoengineering Symposium issue, 46 Tulsa Law Review 2 (2010) 305-322, at 322)	rejected due to space constraints. Article from Tulsa Law Review inaccessible.
8183	13	23	47	23	47	Recommend qualifying "benefits" and "damages" with "perceived" -- leaders make decisions based on their beliefs rather than based on actual costs and benefits.	taken into account. Text revised - perceived added, "risk-adjusted" removed.
6333	13	23	6	23	14	First sentence: it is not clear that by whom was thought. Second sentence: Seems that the process of unilateral CDM is driven by consultants, and not by the companies or national authorities of a given country and this might not be exact. Possibly, this sentence might be redrafted. Sentence starting in page 11: Although the clause "even if unfounded" softens the meaning, it would be more balanced than in addition to the current sentences, to provide information of the current efforts and future plans of emission limitation that might have the countries that more practice unilateral CDM. This would contribute to balance the content of this paragraph.	accepted. Text revised accordingly.
4951	13	23	6		14	Concerning CDM, it is a sensitive question to mention only its benefit for the relevant developed countries (cost-eff. in meeting the target), since it was basically accepted by the developing countries as a mechanism contributing to their sustainable development – in this sense, it is a kind of a compensatory instrument ..	accepted. Additional paragraph on this introduced.
16238	13	23	19			Suggest adding a reference at the end of this sentence to Keeler and Thompson, 2009. Keeler, A., and A. Thompson (2009). Mitigation through resources transfers to developing countries: Expanding greenhouse gas offsets. In: Post-Kyoto International Climate Policy: Implementing Architectures for Agreement. J.E. Aldy and R.N. Stavins, (eds.), Cambridge University Press, Cambridge and New York, pp. 439-68.	accepted. Reference added.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
16237	13	23	5			Suggest ending the paragraph with the following sentence: "While some progress has been made to standardize methodologies and streamline the approval process, the CDM is currently supporting a relatively narrow set of projects and benefitting a limited set of countries (for example, few least-developed countries are able to participate)."	accepted. Text incorporated.
14251	13	23				On SRM, one may notice that (i) since SRM can be implemented unilaterally, the risk is that one party implements it despite negative consequences for others, (ii) Risk aversion (or the precautionary principle) suggests one should be overly careful with SRM, (iii) humans do not have a good track-record w.r.t. solving one ecological problem by influencing other parts of the environment. For these reasons, the possibility or "threat" of future SRM is an additional reason for early abatement / emission reduction.	Taken into account. First part accepted - text revised to bring in this point. Other points rejected, for space reasons.
8355	13	23				I suggest section 13.4.2 be moved into Box because 13.4.2 is unnatural in terms of hierarchy in 13.4.	Noted. Section reorganized and title changed to clarify its relation to the rest of the section.
8402	13	23				A point that should be made in this section is that, as shown in our recent paper, the same conditions that might require SRM (in particular, a high climate sensitivity) also require substantial emission mitigation. Therefore, should such conditions be perceived to be in place, governance that assures that mitigation and SRM would be conducted in concert is needed. Reference: Smith, Steven J and PJ Rasch (2012) The Long-Term Policy Context for Solar Radiation Management Climatic Change (accepted).	accepted. Point and reference incorporated.
11689	13	23	26	23	26	The section title is "Cooperation in solar radiation management (SRM)", but in the main text CDR and SRM have similar lengths, so the title might be better to include CDR as well	Accepted. Subsection title changed.
4719	13	23	26			Although exciting and new, should the notion of regulating SRM be central to the argument being made here? I think it is a smaller piece of the puzzle and unlikely to be addressed in international negotiations (given the problems in mitigation and adaptation already on the table). I would recommend this be given less space and more be dedicated to the more central themes that are likely to take up negotiators time in the foreseeable future.	noted. Section reorganized, and place of SRM clarified as a consequence. Explanation of discussion also introduced into subsection.
6949	13	23	26			It's necessary here to refer to WGI AR5, Chapter 7, and its assessment of the physical science basis of SRM and CDR technologies. Please avoid re-assessing the natural science components here in order to avoid duplication and inconsistencies in assessment between WGs. We suggest to also consider the cross-WG IPCC Expert Meeting Report on Geoengineering held in June 2011 (IPCC, 2012: Meeting Report of the Intergovernmental Panel on Climate Change Expert Meeting on Geoengineering [O. Edenhofer, R. Pichs-Madruga, Y. Sokona, C. Field, V. Barros, T.F. Stocker, Q. Dahe, J. Minx, K. Mach, G.-K. Plattner, S. Schlömer, G. Hansen, M. Mastrandrea (eds.)]. IPCC Working Group III Technical Support Unit, Potsdam Institute for Climate Impact Research, Potsdam, Germany, pp. 99.).	Taken into account. Current draft of WGI report, chapter 7 read, and cross reference inserted. No inconsistencies between our presentation here and that chapter observed, and the focus here clearly on implications for international agreements rather than the natural science aspects.
8401	13	23	31			Discussed also in chapter 6, section 6.9	Noted. Text corrected as in response to #508.
6568	13	23	40		43	Explain what is "SRM options" that appears first and "other SRM approaches" that appears next or give examples for them.	Accepted. An example of cheap SRM options given. The other approaches are too variable to specify here - they are given in the previous paragraph.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
5915	13	23	26	24	8	This sub section is not mentioned in the introduction and seems incongruous to the heading “architecture”. SRM is well covered in chapter 6.9.2. The relevance for chapter 13 is that international agreement is required for the governance of SRM. An agreement on SRM would also be subject to debate on fairness as the most poor and vulnerable parts of the world are the least likely to have access to this technology, consequential changes to other parts of the climate system are uncertain and cannot be limited, and there is the risk of the unilateral use by a country or individual to the detriment of others.. (Lin A. (2009): Climate engineering governance. Issues in Legal Scholarship, Vol. 8, No. 3., Article 2; Barrett S. (2008): The incredible economics of climate engineering. Environmental and Resource Economics, Vol. 39, No. 1, pp. 45–54.)	Taken into account. Section revised to restrict discussion only to questions of international cooperation. Particular relation of this subsection to the overall section more clearly explained. Barrett reference is already cited; Lin reference incorporated.
3470	13	24				13.4.3 Approaches to international cooperation, a Figure or a scheme to represent different nuances of cooperation preceding existing examples would be very insightful	accepted. A figure has been produced to represent the options discussed in this section and facilitate greater comprehension of their character.
6996	13	24	1		8	I have argued in favor of an international agreement on geoengineering with open participation because of the governance problems. I mention this because many people (at least in conference discussions) have proposed exclusive membership.	Noted
3484	13	24	1	24	8	This section needs to include a discussion of and reference to the SRMGI report: Solar Radiation Management Governance Initiative (SRMGI), 2011: Solar radiation management: The governance of research. (Royal Society London, UK), 69 pp., http://www.srmgi.org/report/	Accepted. This is a follow-up report to the Royal Society (2009) report already cited, that elaborates further on the governance of research into SRM question.
6997	13	24	16		23	I have a hard time seeing how Kyoto can be called an example of “strong multilateralism.” Perhaps the problem is that I don’t understand the definition of this term.	taken into account. Section resrtuctured and retitled - meaning of multilateralism has been clarified.
4968	13	24	18		19	{Cor} ETS: here sometimes system or scheme, but latter is the official one .. the EU ETS for {all EU member states} [participating EU nations]) That is: ETS: .. scheme .. the EU ETS for all EU member states)	accepted. Scheme is the correct term for the EU ETS. Changed here. Other places noted to be changed also.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
10032	13	24	20	24	27	<p>This part should be deleted completely. EU-ETS is based on the Kyoto Protocol. But the Kyoto protocol has substantially become ineffective in the second commitment period because the condition of meaningful participation has not met. In addition, EU-ETS has several problems. Volatility of emission permit prices affects volatility of product prices as evidenced by fluctuating price developments in the EU-ETS. Therefore, the market-based policy tools of cap-and-trade cannot provide credible incentives for the technological change, as described in (Montgomery, 2005, abstract) and (Baldursson, 2009, page29). In addition, CO2 leakage caused by the implementation of the ETS happened actually through transfer of industry from one country to others. Market mechanisms at least under Kyoto-like international scheme, where the condition of all countries' meaningful participation is not met, does not work well, as shown in (Rosendahl, 2011, abstract), (Aichele, 2012, page336), and (Peters, 2011, page1). These two literatures are listed in the No50 line of this table.</p> <p><Reference></p> <p>[1] Montgomery, W.D., and Smith, A.E.(2005). Price, Quantity and Technology Strategies for Climate Change Policy, CRA International. Available at: http://crai.ca/uploadedFiles/RELATING_MATERIALS/Publications/Consultant_publications/files/pub_4141.pdf</p> <p>[2] Baldursson et al. (2009). Price Volatility and Risk Exposure: On the Interaction of Quota and Product Markets. Available at: http://ssrn.com/abstract=1394342 or http://dx.doi.org/10.2139/ssrn.1394342</p>	rejected. This comment is too evaluative for this section. The arguments are in effect already dealt with in 13.13. Some suggested references are not peer-reviewed but industry consultant reports, and the one article (Baldursson et al) is in a solid journal but is tangential to the discussion in this section.
6998	13	24	28		33	Copenhagen couldn't be considered "strong multilateralism" by any sensible definition. It's not even a treaty!	taken into account. The figure helps understand the necessary simplification the ideal types introduce, and the title has been changed to reflect its character. Nevertheless, Copenhagen did introduce a process whereby states tried to hold each other accountable for the pledges they came up with, a key element in a multilateral approach.
14346	13	24	28	33		This paragraph characterizes the Copenhagen/Cancun pledge and review system as "voluntary" in nature. Decisions taken by the COP are not considered to be voluntary simply because they are not legally binding. The mitigation pledges contained within the Cancun and Durban decisions are not considered voluntary by most (though some claim they are conditioned on international financial support). It would be more accurate to describe them not as "voluntary" but as non-legally binding.	taken into account. Point contradicts #541. word voluntary removed, text revised.
7369	13	24	28	24	33	It is unclear how 'pledge and review' requires "cooperation to come to an agreement" in the same sense as the agreements listed above (Kyoto, the EUETS). The determination of 'targets' and the 'bindingness' of that target are the key elements of international agreement on mitigation, 'pledge and review' requires no cooperation to reach agreement on those elements and so should be classified separately. The current discussions in the UNFCCC reflect how distinct 'pledge and review' is, with countries having distinctly different targets in terms of form and accounting rules in contrast to the Kyoto Protocol period 2008-2012.	taken into account. Section has been reorganized. Figure clarifies that pledge and review may have a range of processes of coordination, with the Copenhagen accord at the more "centralized" end of the spectrum.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
10033	13	24	28	24	33	<p>This part should include the advantages of "voluntary target scheme" and successful examples in the world. Each industry in Japan has voluntary target and the voluntary target scheme has played a big role, as described in (Yamaguchi, 2012, page35 and 154), (Manuel, 2010, page 6 and 13), and (Yamaguchi, 2010, abstract). In addition, there is also a successful example of "voluntary target scheme" in Netherlands, as shown in (Martijn, 2002, page162).</p> <p><Reference></p> <ul style="list-style-type: none"> [1] Yamaguchi et al (2012). Climate Change Mitigation, A balanced approach to climate change, Springer, London [2] Manuel Frondel et al (2010). Economic Impacts from the Promotion of Renewable Energy Technologies: The German Experience, Ruhr Economic Paper #156, Energy Policy 38, 4048-4056. Available at: http://www.rwi-essen.de/publikationen/ruhr-economic-papers/74/ [3] Yamaguchi (2010) . Voluntary CO2 emissions reduction scheme: Analysis of airline voluntary plan in Japan. Transportation Research Part D: Transport and Environment, Volume 15, Issue 1, January 2010, Pages 46-50. Available at: http://www.sciencedirect.com/science/article/pii/S1361920909000856 [4] Martijn G. Rietbergen, Jacco C.M. Farla, Cornelis Blok (2002). Do agreements enhance energy efficiency improvement? Analysing the actual outcome of long-term agreements on industrial energy efficiency improvement in The Netherlands, Journal of Cleaner Production 10 153-163 	rejected. This suggestion is not appropriate for chapter 13 but for chapter 15. it focuses on domestic action alone, not on how they may be connected or coordinated.
11451	13	24	28	24	29	There is no need to reference the Copenhagen Accord together with the Cancun outcome. The official UNFCCC instrument in relation to pledge and review is the Cancun outcome rather than the Copenhagen Accord.	reject. The focus of the chapter is not only on the UNFCCC, but all instances of international cooperation over climate change.
6337	13	24	31	24	31	It seems questionable to consider as "strong multilateralism" the pledges presented in Copenhagen and Cancun. If it is so, how to consider an approach as the Kyoto Protocol with legally binding targets?? It might be considered not to use the adjective "strong".	taken into account. See response to #541
13637	13	24	34			This gives WAY too short shrift to the potential for price-based agreements! All sorts of proposals have been advanced that would treat climate negotiations more like economic or trade negotiations. In my view, as a former negotiator, price based agreements have a lot of potential. And harmonized national policies don't only have to be negotiated in decentralized ways. There could be strong multilateralism involved.	taken into account. The figure 13.2 reflects the diversity of way that price agreements might be governed as suggested here. But overall, the text reflects the state of the literature in terms of the potential role of price agreements.
14656	13	24	37			Another example of a harmonized national policy would be an agreement to phase out fossil fuel subsidies, as the G20 and APEC leaders agreed to in 2009.	accepted. Example incorporated into text
16372	13	24	40	24	46	Note that linking ETS can be an example of the harmonised policies described in 13.4.3.2 - would be good to highlight this, or not make the distinction between these two subsections	taken into account. The figure shows that ETS linkage may be more or less decentralised depending on how much harmonisation of rules is involved, and the text revised to indicate this range.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
2413	13	24	40	24	40	If I am not mistaken, whenever you talk about decentered linkages you always use the example of tradeable permits. There must be other examples of loose coordination between the activities of different states? The EU's sustainability criteria for biofuels and European Commission endorsement of private biofuels certification schemes in e.g. Brazil might be one example. Giving rise to transnational, public-private (hybrid) interactions.	accepted. Example incorporated into text.
8184	13	24	42	24	44	This should cite Victor et al, "A Madisonian Approach to Climate Policy", Science, 16 September 2005.	accepted. Citation incorporated.
8757	13	24	47	25	3	See also Mehling and Haites, Mechanisms for linking emissions trading schemes, Climate Policy, v. 9, n. 2, 2009; Climate Policy, v. 9, n. 4, 2009 , a special issue on linking emissions trading schemes. It is useful to distinguish a unilateral link (common) from a bilateral link (none yet). Most links have quantity constraints that affect price convergence -- see Linking Emission Trading Schemes: A Short Note, Georg Grull and Luca Taschini, Economics of Energy & Environmental Policy, V. 1, N. 3, 2012. The conditions mentioned apply to a bilateral link but not to a unilateral link. In addition the compatibility of the linked systems must be sustained -- see Ensuring the environmental effectiveness of linked emissions trading schemes over time E. Haites & X. Wang, Mitigation and Adaptation Strategies for Global Change (2009) 14:465–476.	taken into account. Mehling & haites reference incorporated. But detail not introduced here - more appropriate for 13.6.
6336	13	24		25		The 1st general comment to chapter 13 (see comment no.1 above) is specially valid for this section: "1) Frequently there are comparisons between different approaches without specifying what of these approaches has been implemented in practice and what are "paper approaches" prepared or suggested by scholars, but not implemented. This information should be provided". The differentiation between actual and potential approaches would be important to understand properly this section. The consideration of the potential performance of not actually implemented approaches is useful, but this performance has not been demonstrated yet and the reader should be informed on this.	accepted. The distinction between agreements in place and those proposed is made more clear throughout the text. The new figure also helps indicate this.
10813	13	24		25		This section is conceptually murky and incomplete. The distinctions between the three categories are not clear. Exactly what separates each category? Lines 10-11 flag degree of centralization in organization and management as key distinguishing factors. These categories suggest a four box diagram along these axes. But I don't really see evidence of high-low organization/management in the three categories that follow. Is it the extent of overall agreement on outcomes? Or the overall agreement on means and instruments? Or harmonization of those? Putting pledge and review in the "strong multilateralism" bucket further confuses matters. If that is strong multilateralism, then it certainly seems bizarre to put mutual recognition of permits, which is a far stronger form of cooperation, in the third category of decentralized architecture and coordinated national policies. Second, the literature often refers to "top down" and "bottom up" approaches, which the chapter may wish to refer to. Admittedly, this is simplistic and conflates things that should really be teased apart. But moving away from the accepted language without clear conceptual distinctions between your categorizations is not so useful. Xinyuan Dai "Global Regime and National Change" in Climate Policy 10(2010) represents one effort to move beyond these binary distinctions. Dubash and Rajamani "Beyond Copenhagen, Climate Policy 10 (2010) represent another. It might be helpful to acknowledge the use of the crude top down and bottom up terms in this section, and then problematize it by showing that there are, in fact hybrid spaces. Without recourse to the literature, and without clear definitional clarity, these three categories here are unhelpful.	taken into account. section reorganized and various elements of the comment here clarified. Figure introduced to clarify. Reference to the "top-down vs bottom up" distinction made, as well as the limits of this sort of framing

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
10814	13	24		25		A second point about 13.4.3 is that all the examples of coordination and harmonization are market based. But there are other forms of coordination that are arguably more realistic given current debates, in particular around reporting, information and so on. There is a literature on how common reporting can lead to linkages between domestic and international policy, again, see Xinyuan Dai "Global Regime and National Change" in Climate Policy 10(2010). The broader point is that harmonization taxes or cap and trade, or allowing for recognition of credits do not constitute the full set of possibilities of international collaboration.	accepted.a number of examples not about market-based agreements now introduced. See in particular responses to #532, #548, and #550, that make similar points with specific suggestions. Reference also incorporated into text.
14252	13	24				The strongest form of "strong multilateralism" (13.4.3.1) is to combine it with harmonization (not discussed as a weaker form, 13.4.3.2): while this is "inefficient" when countries are heterogeneous, I think such harmonization-clauses (which the EU has, for example) can facilitate the negotiation process (my arguments are explained in "Harmonization and Side Payments in Political Cooperation", American Economic Review 97 (3), 2007: 871-889	rejected. This comment is interesting in the detail but in general, but the article on which it is based operates with a different definition of centralization than that adopted in this section, and the argument is thus not appropriate for our discussion here.
11575	13	24				The authors stress the degree of international cooperation and focus on the distinction between centralised (global) and decentralised (local) policies. Nonetheless, other combinations may be fruitful to mention. Especially global centralised but thin policies that are combined with local decentralised policies should be considered (Cf. David Miller "Global Justice and Climate Change", Tanner Lectures, 2008; Elinor Ostrom "Green from the Grassroots" (Project Syndicate, June 12, 2012).	taken into account. Nuance in the relationship between centralized and decentralised account has been dealt with as in response to #524. ostrom peer-reviewed article dealing with the same theme found and cited.
6583	13	24	15	24	33	EU-ETS and pledge and review should not be in same term. Separate them in terms of legally bindingness.	reject. A) the criteria of legal bindingness is not central to the definition of centralised-decentralised in this typology. B) the figure and discussion has nuanced that the boundaries between the three ideal types should not be regarded as hard and fast.
5312	13	24	15	24	33	It is implied here that only multilateralism is the legitimate approach to international cooperation. It may be useful to include the prominent typology used in the international relations literature regarding international cooperation: multilateralism, bilateralism, unilateralism, minilateralism, exclusive multilateralism, inclusive multilateralism. Another important point is to show that all approaches may enhance international cooperation.	rejected. Comment mistaken that the section privileges multilateralism. Proposed alternative typology has no supporting citation and the source is not evident.
5306	13	24	24	24	24	"normative notions of fairness...": Is there any non-normative notion of justice and fairness at all? I would suggest to make the storyline here clearer, saying that targets-and-timetables has been coupled with notions of fairness (...) which are normatively laden leading to (XXXX, e.g. complexity, delays in decision making, unreachable goals).	taken into account. Text revised, removing the word "normative", replacing with "specific". The implied evaluation of fairness questions - that they lead to delays, etc, is not incorporated - the discussion of this is discussed in 13.3 concerning the question of participation.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
13924	13	24	34	24	39	<p>It is not sure that the single classification criteria "central organization and management" is sufficient. International approaches to cooperation can contain different permutations along multiple axes: multilateral vs. plurilateral/unilateral geometries of participation; targets and timetables or policies and measures, or both; deep vs shallow coordination and management. The single criteria of central organization and management makes it difficult to reflect the actual variety of international regimes (e.g. Kyoto, EU climate and energy package), and the evolution of the international regime from Kyoto to Copenhagen and Cancun.</p>	<p>taken into account. The figure introduces a second dimension (cooperating over means vs ends), which corresponds to some of the other axes mentioned in the comment here. Some of these are also dealt with elsewhere, notably the question of participation in 13.3. It is correct that there are multiple axes along which approaches might be analysed. But the choice of the degree of centralised authority generated by an agreement remains a reasonable starting point and well embedded in the literature.</p>
16371	13	24	34	24	39	<p>Could build out analysis of harmonisation options, including agreement of international standards (through ISO or otherwise). For carbon markets, see Prag et al (2012 forthcoming) Making Markets (OECD/IEA Information paper, www.oecd.org/env/cc/ccxg).</p>	<p>accepted. Standardisation example incorporated. The Markets example not incorporated since other comments (#525, for example) point out that the section is already over-reliant on market-mechanism examples. Other examples included in response to #548, and #550.</p>
16239	13	24	34	24	39	<p>Would it make more sense to fold this section into the next one, on Decentralized Architectures and Coordinated National Policies? It fits well under that theme.</p>	<p>taken into account. The new figure emphasises that the boundaries between the three types are porous, helping address the concern in this comment.</p>

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
14657	13	24				Aren't decentralized architectures more than just linking? For example, Pizer's chapter in the Aldy and Stavins 2007 book discusses bottom up pledge and review that may involve implicit targeting of domestic programs to a common (or similar) carbon price without explicit linking. And this is one paper that builds on the work of Schelling, which may be worth referencing in this sub-section as well. Are there lessons from the emergence of the international trade regime that would be relevant here? For example, at Bretton Woods, there were negotiations for an International Trade Organization, and unlike the World Bank and IMF, those talks failed. Instead, a bottom-up system of bilateral and small regional trade agreements emerged that established norms and trust that yielded some four decades later the Uruguay Round culminating in the World Trade Organization.	In Section 13.4, taken into account. Section reorganized. This subsection edited to restrict the meaning of "linking" to the meaning in the comment, while making clear that policies could be connected in a variety of ways. Other examples introduced in response to other comments. Pizer reference consulted but not incorporated here. In Section 13.3, the text has been revised to refer as well to highly decentralized architectures of only implicitly coordinated national policies, distinct from linkages. But this comment appears to refer more to section 13.4, where decentralized approaches such as "pledge and review" are discussed. In section 13.3, a cross-reference to 13.4 on this issue has been added.
16240	13	24	42			Suggest adding a second sentence to this paragraph: "A virtue of more decentralized approaches is that they accommodate a wider range of interests and circumstances across jurisdictions, attracting participation even under heterogeneity."	In Section 13.4, reject. This discussion more appropriate for 13.13. In Section 13.13, Taken into account - this notion is incorporated in Section 13.13 with relevant references to the peer-reviewed literature
3664	13	25	10	25	43	Is there no special FAQ-section foreseen in the text? Please consider to intergate in a separate chapter.	Noted
13640	13	25	15			I think "legitimacy" is subjective, and I'd use another term. If legitimate includes actually being effective at reaching agreements with measurable environmental impact, the UNFCCC is anything but.	taken into account. The comment is mistaken that legitimacy is a "subjective" term - there is a large and elaborate literature in political science on legitimacy as an empirical concept. The sentence has been revised to make clear that this is an empirical use of legitimacy, not a normative evaluation of the UNFCCC.
8185	13	25	18	25	19	This is not true. Many other institutions (e.g. the G20, MEF, etc) host negotiations on climate change.	accepted. Text revised accordingly.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
11453	13	25	19	25	24	The treatment of the use of smaller, exclusive gatherings outside of the UNFCCC to advance UNFCCC negotiations should be more nuanced, because questions of legitimacy will arise with respect to these smaller groups.	rejected. The text refers to 13.5 which discusses these, including the different legitimacy questions they raise, in detail. Text added to refer also to figure 13.1 which further illustrates the centrality of the FCCC.
6569	13	25	21		23	Add the Clean Energy Ministerial (CEM) as one of the examples.	rejected. There is a longer more inclusive list in section 13.5 and 13.12 and in figure 13.1. The list presented here is a decent reflection of these initiatives.
12806	13	25	26	25	28	This paragraph summarizes shortly most of the important results of the literature about the impact of integrating adaptation on agreements in an appropriate way. Nevertheless, a discussion paper from Eisenack/Kähler (2012) leads to new insights with regard to the effect of integrating adaptation on overall mitigation. The model of Eisenack/Kähler (2012) is based on the results of Ebert/Welsch (2012) and indicates that unilateral action (with respect to mitigation and adaptation) leads to Pareto improvements (i.e. increased total mitigation) if a type of country with a certain damage and benefit structure exists. References: Eisenack, K and L Kähler (2012): Unilateral emission reductions can lead to Pareto improvements when adaptation to damages is possible, Oldenburg Discussion Papers in Economics, http://www.vwl.uni-oldenburg.de/download/DP_V-344_12.pdf and Ebert, U and H Welsch (2012) Adaptation and Mitigation in Global Pollution Problems: Economic Impacts of Productivity, Sensitivity, and Adaptive Capacity. Environmental and Resource Economics 52, 49-62).	In Section 13.4, Noted. comment more appropriate for section 13.3.1 (page 18, lines 27-36). In Section 13.3, References added in 13.3.1 in the paragraph on adaptation, mitigation and participation.
12807	13	25	26	25	28	The definition of "policy architecture" is quoted without detailed and formal definition (as on p. 19 l. 43). You may like to make a cross reference or to avoid this technical term, maybe by "basic policy structure".	accepted. Reoss-reference inserted.
16194	13	25	29			The FAQ is the first mention of "politically pragmatic". The chapter would be strengthened if information related to this important concept were more systematically referenced to this term. See also comments above on democratic deficit concerns.	taken into account. :"politically pragmatic" is replaced with "institutionally feasible" which is a criteria for evaluating the agreements developed in the text.
8308	13	25	36	25	38	Mention that harmonizing national policies can also be achieved by coordinating GHG regulations (e.g., Canada and U.S. on vehicle fuel efficiency regulations)	Taken into account. too much detail for the FAQ, but discussed in relation to 13.4.3.2 (old section number - section has since been revised).
13641	13	25	38			Again, negotiated carbon prices could be developed through a very multilateral approach. (Note I would use the term "negotiated" rather than "harmonized." The prices don't have to be similar; the differences just have to be mutually acceptable.) Think of tariff rate quota negotiations under GATT as an example.	taken into account. Too much detail here for the FAQ, but the variation in how centrally organised such price agreements might be discussed in 13.4.3
9046	13	25	4		8	Developing countries have consistently opposed non-multilateral policies (including border tax adjustments) justified as climate change policies. This chapter on international cooperation should recognize the fact the use of policies in other areas, such as trade, for climate change purposes have not been acceptable to developing countries.	Taken into account, though in section 13.8. See Tax border adjustments.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
10034	13	25	4	25	5	The example of "cap and trade linked with carbon tax" should be deleted completely. Levying "carbon tax" and "cap & trade" simultaneously is not meaningful and would fail to reduce CO2 emission because carbon tax and cap & trade are theoretically same mechanism to reduce CO2 emission, as described in (Clive, 2007, page4-5). This literature is listed in the No5 line of this table.	taken into account. The comment reflects a misunderstanding of the text, which is about the situation where one jurisdiction has a tax, and another has an ETS (as in current negotiations between Australia and the EU), and cites Metcalf and Weisbach as a discussion of how linkage might occur in this situation. Text amended to clarify this.
11452	13	25	4	25	8	The reference to linking sub-multilateral policies through trade mechanisms (such as import allowance or border tax adjustments) or carbon trading could be dangerous in terms of the implication that such sub-multilateral linkaging could take place independent of what might happen in terms of multilateral negotiations. This could give rise to increased national actions on establishing border tax adjustment measures on the grounds of climate change, something that many developing countries have consistently opposed.	Taken into account, though in section 13.8. See Tax border adjustments.
11793	13	25	5			Delete the example. Section 3.8.3 describes there is no need for combination of carbon tax and cap&trade.	reject. Not clear what 3.8.3 refers to (it is not 13.8.3, which doesn't discuss this). The comment is also mistaken in the same way as #555 - the paragraph does not discuss a "combination" of the two instruments in the same jurisdiction.
6041	13	26	10	26	11	Technically isn't the EU ETS a supra-national policy rather than a set of national policies?	Taken into account - text revised for clarification
16374	13	26	10	26	25	Recommend moving whole para on "achievements" of KP to section 13.13. Also, it is no longer reasonable to say that CDM project documents project over 2bn CERs to be issued by end 2012. It may be more useful to use this point to emphasise that i) info in project documents is not always reliable and ii) a range of factors have meant that on average (with key exceptions) CDM projects have been less effective than expected (factors including tech problems, monitoring difficulties, process delays etc).	Taken into account- 13.5.1.1 on CERs, topic also relevant to 13.13 - consider in combination with comment 597
2414	13	26	10	26	25	Comment on section: To talk about the key achievements of the Kyoto Protocol here is to pre-empt the performance assessment at the end of the chapter, especially in relation to the CDM. ETS and CDM are only achievements if they have been effective in bringing about emission reductions.	Taken into account with comment 593, text revised to be covered in section 13.13, s.t. ongoing drafting
12026	13	26	10	26	25	It should be shown why Kyoto Protocol as compared to Montreal Protocol failed to involve or retain major emitters. Analysis of the differences of incentives between two systems should be included.	Taken into consideration - text revised in 13.5.1.4
8758	13	26	11	26	11	The EU ETS covers 30 countries, not just the 27 EU member states.	Accepted - text revised
8759	13	26	21	26	21	The quantity of CERs issued by the end of 2012 may be about 1.1 billion (1 billion have been issued), but not close to 2 billion.	Taken into account with comment 593, text revised
8096	13	26	26	26	31	In saying the pledges under the Copenhagen Accord are inadequate in achieving 2 degrees, is that because the commitments only go to 2020 or because the level of the 2020 commitments precludes subsequent reductions consistent with 2 degrees. These two points often get confused in discussions of "adequacy" and it would be useful to clarify both here and in the executive summary where this is referenced.	Accepted - text revised to clarify

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
14348	13	26	26	26	27	This sentence omits the fact that several developing countries also pledged absolute emission reductions (e.g. Marshall Islands, Antigua Barbuda, PNG, Moldova) and a couple even pledged carbon neutrality (e.g. Costa Rica, Maldives).	Accepted - text revised to reflect diversity of pledges
11454	13	26	26	26	31	References to the Copenhagen Accord are not needed. The Copenhagen Accord does not have the same official nature as an instrument of the UNFCCC COP as compared to the Cancun outcome (decision 1/CP.16).	Taken into account - reference to the Accord is retained, but its legal status elaborated
4969	13	26	34			{Add} The Durban {session of the} conference	Rejected - stylistic preference
4970	13	26	36		37	for clarity, it would be reasonable to add that the extension of the KP (if any) will be anyway w/o the participation of the USA (as a "non-Party" to the KP)	Accepted - additional text added
6849	13	26	41	26	42	The 2010 Article of mine cited here is one in a series of articles deconstructing the climate negotiations: L. Rajamani, 'The Cancun Climate Change Agreements: Reading the Text, Subtext and Tealeaves', 60(2) INTERNATIONAL & COMPARATIVE LAW QUARTERLY 499-519 (April 2011) & L. Rajamani, 'The Durban Platform for Enhanced Action And the Future of the Climate Regime', 61(2) Int'l & Comp. L. Qtrly 501-518 (April 2012)	Accepted - reference included
14347	13	26	6	26	7	I am not sure that there are any other climate agreements. How can the UNFCCC be compared when no other comprehensive system exists?	Accepted - text revised
4720	13	26	1			Section 13.5 describes various elements about what is going on but provides little analysis of which are the best strategies, institutions, etc. Having a clearer sense of what the literature suggests are better or worse strategies and approaches would seem beneficial here. In short, this section is too descriptive and not sufficiently analytic.	Taken into account - new subsection added titled "Advantages and disadvantages of different forums."
16373	13	26				Suggest reorganising this section as the categories listed by subsection are not very coherent: 13.5.1.1 could be better entitled Negotiations under UNFCCC, and could include those "coalitions" currently listed in their own subsection but which are really only relevant under UNFCCC (umbrella, EIG, BASIC). 13.5.1.2 could be other UN forums relevant to climate (and should include UNCSD/Rio+20 and World Bank/IFC). Next would be good to have other international state-level partnerships (as 13.5.1.3) including not only the other groupings currently under 13.5.1.2 but which would be better made distinct from UN (eg MEF, G20, G8) plus others not mentioned such as G77. 13.5.1.4 could then cover other relevant international institutions (but please see specific comment on OECD/IEA below).	Taken into account - further sub-headings included to organise the text.
11591	13	26	5	27	39	This should include the Vienna Convention on protection of the Atmosphere and the Montreal Protocol on ODS. As it is its only a discussion on the UNFCCC.	Taken into account - both protocols/conventions are discussed in section 13.5.1.3.
6999	13	26				I'd like to see this section summarize what we know about what the ETS and CDM have achieved in terms of global emission reductions. This means a rigorous analysis, which takes into account what countries would have done in the absence of these initiatives and trade leakage. The ETS is impressive from an institutional perspective, but has it had much effect in terms of emission reductions? The CDM, of course, has more serious problems, some of which are discussed in the chapter.	Taken into account- 13.5.1.1 on CERs, 13.6.1.1. on ETS Mt - topic also relevant to 13.13 - consider in combination with comment 589

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
10815	13	26		27		This section is a bit disappointing. It simply goes negotiating session by negotiating session, rather than providing a sense of the broader debates. Even on individual sessions, it provides little insight into the key moments and key debates. In anybody's book, since AR4, Bali, Copenhagen and Durban have been the key moments. It would be worth structuring the section around these focal points, their substantive implications and the debates on the political import and implications of these moments. There are statements of interpretation in the section but in a scattered and ill organized way. Perhaps it would be useful to hark back to other organizing frameworks: bindingness, burden sharing, and implementation mechanisms, for example, and sort out the implication of each key session according to these. It would lend more coherence to the chapter. This section appears disconnected from previous sections.	Taken into account - text revised with some changes to organisations; first section retains descriptive tone and new subsection with more analysis added on "Advantages and disadvantages of different forums." Focusing on only some points, for example excluding Cancun, would not be balanced.
16196	13	26				Note that the discussion of emissions trading is very uncritical and does not reflect the literature on this. In particular, empirical analysis of the impact of emissions trading on actual GHG emissions and CDM impacts on sustainable development in non-Annex I countries are highly relevant.	Taken into account - combined with comment 587 - topic relevant to 13.13
11455	13	26		27		The entire section in relation to the climate agreements under the UN seems to imply that the lack of mitigation ambition in the UNFCCC is due to its policy architecture or design rather than to the lack of political will among the Parties that were supposed to have mitigation ambition in the first place. It conflates a failure in implementation as equivalent to a flaw in the policy design. The discussion should be more nuanced. If the argument is that the UNFCCC's policy design itself is flawed, then there should be arguments saying why this is so. But if the failure being pointed at is the lack of political will or failure of implementation, then arguing that such are due to a design flaw should not be done unless a strong causal link is made between design flaw and implementation failure. Such a link has not been established in this case.	Taken into account - text added in new 13.5.1.3 "Advantages and disadvantages of different forums."

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
6590	13	26	10	26	14	<p>Especially for projects for energy saving, it is difficult to work for CDM. It is necessary to establish new frame work to evaluate contributions of technology transfer seeing following analysis.</p> <p>Quote>></p> <p>The CDM under the Kyoto Protocol is generally believed to lower economic barriers with the introduction of climate friendly technologies. According to authors' experiences in promoting energy saving projects under the CDM scheme in China since 2005, however, CDM procedure is extremely complex and its socalled additionality check is excessively strict in validating a qualifying project. Additionality check requires an investment analysis. For a project to be qualified as "CDM" there is a need to show that the investment will not be decided without CO2 credit.</p> <p>Economic or environmental additionality is a typical item.</p> <p>"Economic additionality" in CDM context, for example, is used in the following manner. If a certain project is profitable enough to invest without an economic benefit of CDM credit, this project is not appropriate as a CDM project due to being recognized as a business-as-usual project (IGES, 2010). As the initial investment in steel sector is generally too large to be paid back by the economic incentive accruable by CDM credits, there have been many cases where energy saving technologies were adopted by steel companies in developing countries, without waiting for CDM Executive Board's decision, which were frequently rejected later (an example of the rejected CDM application is available in UNFCCC (2010)). Even in such cases, steelmakers can still get benefit from energy saving investments primarily by lowering their energy costs. Typically, an energy saving investment yields an annual saving of 20–30% (depending on the price of energy) relative to the initial investment. Even if a project is qualified under the CDM scheme, the value of the resulting credits will be much smaller than the benefit of the energy cost reduction by a factor of 10. For a typical smaller CDQ facility, an initial investment is about f3.5 billion per facility and the annual reduction in energy consumption (crude oil equivalent) is approximately 14,000 t-crude oil/year. The annual energy saving benefit is about 28% of the initial investment (Refer to NEDO (2008)). This means CO2 reduction is approximately 0.1million t-CO2/year and the value of the CO2 credit (if calculated at f1000/t-CO2) is only about one-tenth of this benefit. Since the value of credits is only a minor factor concerning the investment decision, the benefit of removing the economic barrier through CDM would probably not be significant. In order to promote technology transfer, it is necessary to establish a new framework to evaluate contributions of technology transfer from developed to developing countries in more practical manner than that of current CDM. In addition, the length of the CDM procedure presents major risks for project owners, letting them cast doubts on the reasons for the very existence of the CDM scheme.</p> <p>For citation: Okazaki T, Yamaguchi M (2011). Accelerating the transfer and diffusion of energy-saving technologies steel sector experience - lesson learned. Energy Policy 39. 1296-1304</p>	Rejected, outside the scope of this section, CDM treated elsewhere

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6591	13	26	10	26	14	<p>Add following 7 problems of CDM. CDM has both good and bad points.</p> <p>Quote>></p> <p>1.The Clean Develop Mechanism's (CDM) credits, CERs, are worth the same as EU ETS credits and can be submitted by ETS installations instead of EUAs. CERs are generated by extra-EU emission reducing projects to be sold on, to incentivise green investment, especially in developing nations. The EU is effectively offloading its ETS obligations in a 'do as I say, not as I do' move.</p> <p>2.The CDM is a 'zero sum' mechanism. For example, a CDM project reducing emissions by 1,000 tCO2e will generate 1,000 CERs, which can be bought by ETS installations to allow the emission of 1,000 tCO2.</p> <p>3.The CDM is vulnerable to corruption. A study of the top five UN-accredited CDM validation bodies found that on a scale from 'A' (very good) to 'F' (very poor), none scored higher than 'D'.</p> <p>4.A 4,000MW coal plant in Gujarat, India, has received CERs because it is marginally less polluting than other coal stations. This is despite the fact it emits 26 million tonnes of CO2 per annum, will do so for at least 25 years, is India's third largest source of emissions and is the 16th largest worldwide.</p> <p>5.Industrial gas credits reap huge profits. HFC-23 generates 11,700 credits per tonne destroyed at approximately €12, but costs only €0.17/tCO2e to destroy: a 7,000 per cent markup. As a result, some companies are creating HFC-23 just to destroy it in order to generate credits. If the scheme did not exist, these emissions would never have been produced.</p> <p>6.This is especially rife in China where, because it is so lucrative, the government taxes CDM revenues at 65 per cent, expecting to generate £1.7 billion by 2013.</p> <p>7.While gas credits have been banned from May 2013, lobbying led to a delay in the ban and 412 million credits are still waiting to be issued through the scheme.</p> <p>For citation: David Merlin-Jones (2012). CO2.1 Beyond the EU's Emissions Trading System. 17-27</p>	Rejected, outside the scope of this section, CDM treated elsewhere
6584	13	26	14	26	22	Delete from "As of 31..." to "...2012)". These contents has been already covered on chapter 14.	Taken into account – policy chapters discussed distribution of assessment of mechanisms in Wellington explicitly, and agreed that issues related CDM finance are discussed in both 13 and 14. Further coordination with ch 14 will continue.
6570	13	26	24		25	Specify the "levels consistent with the lower stabilization levels assessed by Metz et al.".	Accepted - text revised to lowest level, specifying 450 ppm, and referencing IPCC (not Metz et al)
16195	13	26	4			Incorporate reference to the benefits of reporting (actions, emissions) under the UNFCCC and COP measures, which are substantial. You can't regulate what you haven't measured.	Taken into account - text on MRV elaborated - includes reporting and more
6806	13	26	43	26	45	Reference must be made to one of the drawbacks of Copenhagen Accord, namely that it is not a legally binding agreement, but rather a political agreement, and its failure to ensure commitments for all states in an equitable manner and to ensure continuity of Kyoto Protocol and the UNFCCC.	Accepted - text revised to give clarity
4313	13	26	43	26	45	Sentence implies that there were two different but equal views on Copenhagen. However, analysis shows that Copenhagen was perceived as the major failure in/of international climate politics. (no source)	Taken into account - along with comment 584

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6585	13	26	46	26	47	<p>Indeed, Cancun save the multilateral process.</p> <p>A top down, legally binding type of international treaty does not work effectively because of a following reason.</p> <p>Quote>></p> <p>The author would like to focus on the nature of a top-down, legally binding treaty. The Kyoto Protocol is an example under which Annex I countries have legally binding numerical targets²³. It is the authd's view that this type of international treaty does not work effectively. Take Canada's case for example. Legally speaking, Canada should have purchased credits, say, from Russia and by doing so, it could comply with its reduction target. It did not. Instead, it simply announced one year before the Kyoto period started that it would be impossible for Canada to comply with the target. In the Protocol, there were no penalty provisions. A legally binding international agreement without any penalty provision will be toothless. On the other hand, if it has a penalty provision, the United States is unlikely to join. Lawrence Summers, recalling his experience as U.S. Secretary of Treasury, writes on international emissions trading as follows: As one who has sought, with mixed success, to induce the US Congress to support transfers in low hundreds of millions of dollars to international financial organizations at a time when the US economy was imperiled by international financial instability, I am skeptical that US policy would ever contemplate transfers in the billions of dollars. I fear this kind of political constraint may be every bit as real as the various natural constraints imposed by the laws of chemistry and physics (Summers 2007).</p> <p>This means that the U.S. Government would not spend taxpayer's money to comply with its target under the treaty²⁴. To sum up, any legally binding treaty without a penalty would not work effectively, but the United States would not join any legally binding treaty with a penalty, making the treaty ineffective. In this connection, what kind of agreement will be reached to reflect "a protocol, legal instrument or an agreed outcome with legal force" decided at COP 17 in Durban is yet to be seen.</p> <p>For citation: M.Yamaguchi (2012).Climate Change Mitigation, A Balanced Approach to Climate Change. 34-35</p>	Taken into account - topic relevant to 13.4
5307	13	26	5	26	6	The first sentence ("due to ist universal...") is the exact repetition of the sentence on line 15 on page 25.	Taken into account - repetition may be valid in FAQ
14658	13	27	13	27	17	Recommend referencing the discussion of Durban and CBDR from the Aldy and Stavins 2012 Science article.	Accepted - text revised
11341	13	27	13	27	17	This paragraph seems oddly out of place - mixing process and principle	Taken into account - covered in section 13.2
11457	13	27	13	27	17	Given the importance of the principle of CBDR for developing countries in the climate change context, this paragraph should be substantially expanded in order to give wider scope for a discussion of the application of the principle in international climate change agreements.	Taken into account - covered in section 13.2
5308	13	27	17	27	17	Winkler, 2010: either wrong citation (+Beaumont) or missing in the reference. Hertel 2011 is also missing in the reference.	Accepted - citations corrected
4952	13	27	18		39	The subselection of the institutions is unclear and misguiding. There are two other funding mechanisms (Special Fund and LDC Fund), there is the basic "external" funding institution (the GEF). Moreover, the concrete negotiations have been undergoing in very specific institutional settings, namely in ad hoc (i.e. temporary) negotiating frameworks (AGBM for the KP, Ad hoc WGs for the new agreements since 2005 and 2007 or more recently the one related to the mandate from the "Durban Platform for Enhanced Action".	Taken into account with comments 622 and 623 - text revised to add clarity, unnumbered sub-heading added

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8761	13	27	18	27	18	The introductory sentence does not relate to the rest of the paragraph, which deals with the Adaptation Fund. A number of specialised bodies of varying composition have been established including the CDM Executive Board, the JI Supervisory Committee, the Technology Committee, Adaptation Committee and Standing Committee (finance). Most of these bodies have voting rules so, unlike the COP, they are not constrained by the need for consensus.	Taken into account with comments 621 and 622 - text revised to add clarity
14349	13	27	18	27	39	This paragraph omits the many institutions created in Cancun: the Climate Technology Center and Network, the Adaptation Committee, etc... It also states that the Green Climate Fund is "under the Convention," which it is not.	Taken into account with comments 621 and 622 - text revised to add AC and CTC&N; GCF - text revised to clarify
8760	13	27	20	27	20	The 2% levy is applied to CERs issued (not CER transactions) for most, but not all, CDM projects.	Accepted - text revised; 2% levy already addressed correctly in 13.11, removed here
6338	13	27	26	27	27	Check context. "This" does not connect with previous sentences . Therefore, it is difficult to understand the meaning of "this".	Accepted - text revised
11792	13	27	3	27	5	International cooperation has brought about not political agreement but recognize. It should be amended to correct expression.	Taken into account - combined with comment 604, 609, text revised
6464	13	27	3	27	5	In Cancun, the Parties did not agree to quantify the climate stabilization objective of 2 degrees Celsius, but just recognized the scientific view. Therefore, the sentence should be changed to, for example; "In Cancún, parties to the UNFCCC reached a political agreement that deep cuts in GHG emissions are required according to scientific view to hold the increase in global temperature below 2C above pre-industrial levels (UNFCCC, 2010)".	Taken into account - combined with comment 604, 608, text revised
8097	13	27	3	27	8	Suggest noting the number of countries that put forward mitigation commitments under the Cancun Agreements and their share of global emissions.	Accept - text revised
9520	13	27	3			Please, replace political agreement with international goal.(Decision1/CP16, paragraph4)	Taken into account - combined with comments 604, 605, 609
10669	13	27	3	27	5	Refer my comment No. 3.	Noted
3181	13	27	3	27	8	p.27, lines 3-8. IN fact, most scenarios that are connected to reality DON'T deliver 2 degrees. That probably should be acknowledged, and cross refs added to the chapter (6?) that deals with the impossibility (or not) of various goals. Also, fyi the official goal now is "1.5 or 2 degrees" not just 2 degrees. (Some countries are trying to lower the goal to 1 degree, which is proof that reality is no obstacle to a bold-sounding goal, but so far the 1 degree is not regularly repeated as an official-type UNFCCC goal.)	Rejected; 1.5 degrees was included and comment makes judgement on what is realistic

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6113	13	27	3	27	4	The expression "In Cancún, parties to the UNFCCC reached a political agreement to quantify the UNFCCC's climate stabilization objective in terms of a limit to temperature increases of 2°C above pre-industrial levels" is not correct. Actual wording of the Cancun agreement (Decision 1/CP.16) is "Further recognizes that deep cuts in global greenhouse gas emissions are required according to science, and as documented in the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, with a view to reducing global greenhouse gas emissions so as to hold the increase in global average temperature below 2 °C above preindustrial level". Dr. Pachauri said at the IPCC scoping meeting plenary (held in July 2009 in Venice) on the declaration of L'Aquila G8 Summit that the leaders of G8 have agreed to 2 degree target. The wording was "We recognise the broad scientific view that the increase in global average temperature above pre-industrial levels ought not to exceed 2°C". I have pointed out that this is not the correct interpretation. They did not agree but they recognized. Not only Dr. Pachauri but nobody else did not argue back against at the plenary. As a matter of fact, I had many LAs supporting my argument (later through coffee break). Though the wording is a little bit different between G8 and Cancun Agreement, the substance or essence is the same. IPCC report should not interpret the wording in its own way. Therefore please rewrite as "In Cancún, parties to the UNFCCC reached a political agreement to recognize the UNFCCC's climate stabilization objective in terms of a limit to temperature increases of 2°C above pre-industrial levels". This is very important point.	Taken into account - combined with comments 604, 605, 609, 611
16197	13	27	30			Effectiveness and environmental impacts are additional important criteria.	Accepted - text revised
5241	13	27	30			The coalition for climate and clean air (CCAP, The Climate and Clean Air Coalition to Reduce Short-Lived Climate Pollutants, http://www.unep.org/ccac/) could also be mentioned in the text.	Taken into account - already mentioned in section 13.5.1.4 "International coalitions"
6339	13	27	35	27	37	This sentence is not exact. The Adaptation Fund, established under the Kyoto Protocol, exists before the Copenhagen and Cancun conferences. In addition, it might not be appropriate to rename the UNFCCC process as the "Kyoto/Copenhagen/Cancun process": other important conferences in which key decisions were adopted by the UNFCCC are ignored, such as the Marrakech Conference (where the main architecture to implement the Kyoto Protocol was adopted), the Montreal Conference (where the Kyoto Protocol entered into force) and the Bali Conference (where the process that led to the Copenhagen and Cancun results started). The new Technology Committee would avoid fragmentation in technology matters, but not in adaptation policy. It might not be appropriate, to cite an UNFCCC source to back this sentence as it stands now.	Accepted - text revised to improve accuracy and clearer structure
14659	13	27	8			These analyses all assume zero geoengineering/SRM.	Taken into account - text revised
11456	13	27	9	27	12	This paragraph should simply copy and paste paragraph 2 of decision 2/CP.17 rather than try to paraphrase it so as to avoid any interpretative controversies in the future arising from the IPCC report.	Taken into account with comment 614 - text rephrased, but IPCC assessment cannot be a legal text
6573	13	27	10		11	Correct the description, as in UNFCCC Decision 1/CP.17 COP only "Decides that the Ad Hoc Working Group on the Durban Platform for Enhanced Action shall complete its work as early as possible but no later than 2015 in order to adopt this protocol, another legal instrument or an agreed outcome with legal force at the twenty first session of the Conference of the Parties and for it to come into effect and be implemented from 2020" but not "agreed to reach an agreement by 2015 [...]".	Accepted - text revised.

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6571	13	27	3		5	Correct the description, as in Cancun Agreements COP only "recognizes that deep cuts in global greenhouse gas emissions are required [...], with a view to reducing global greenhouse gas emissions so as to hold the increase in global average temperature below 2 degrees C above preindustrial levels [...]; also recognizes the need to consider [...] strengthening the long-term global goal [...], including in relation to a global average temperature rise of 1.5 °C" but not "reached a political agreement to quantify the UNFCCC's climate stabilization objective [...] of a limit to temperature increase of 2 degrees C [...], with the expressed possibility of strengthening it further to 1.5 degrees C".	Taken into account - text revised, but without repeating precise legal text in IPCC assessment
6572	13	27	9			Specify a reference paper for "the Durban Platform for Enhanced Action".	Accepted - reference included
10816	13	27		30		The section on other climate related forums (fora?) would also benefit from some intellectual work to categorize and sort the various forums being described. Apples and oranges are too frequently lumped together. For example, to go from MEF to IRENA (which I would not include in this section) - lines 20-35 --without any discussion of how these differ and how they fit into a larger framework mis leads the reader. Relevant axes might be: extent of explicit linkage with UNFCCC- strong connection vs weak connection; narrow sectoral focus vs. broad meta focus. This would result in a four box diagram. For example, the REDD+ agreement would be UNFCCC related and sectoral. The World Bank's programs would be non-UNFCCC and sectoral; the MEF would be non-UNFCCC and broad, and so on. I think forums like the MEF and G-20 deserve special commentary and discussion as parallel and perhaps complementary fora operating at the political rather than the technical level since there is much written on their usefulness and salience. I would also argue that there is a category of important discussions that are highly relevant to climate change but are not explicitly articulated as such. These include ongoing discussions on global energy governance (see Cherp, A., Jewell, J. and Goldthau, A. (2011) 'Governing Global Energy: Systems, Transitions, Complexity', Global Policy, 2 (1), pp. 75–88. Goldthau, A. and Witte, J. M. (2009) 'Back to the Future or Forward to the Past? Strengthening Markets and Rules for Effective Global Energy Governance', International Affairs, 85 (2), pp. 373–390. and Dubash and Florini, "Mapping Global Energy GOvernance". Global Policy Volume 2 . Special Issue . September 2011.	Taken into account - section divided by unnumbered headings and order revised
18433	13	28		29		There is bias against smaller structures of negotiation, such as MEF or G20 (pag 28, last paragraph, pag. 29 last paragraph). The disadvantages of these kinds of instruments are highlighted. There are treated as complementary negotiation forums to the UNFCCC, and not as potential alternatives. In conclusion, the chapter is good, it does acknowledge the fragmentation of climate governance since 2007, but it fails to highlight that the fragmentation is, in part, due to the failures of intergovernmental schemes, especially the UNFCCC.	Taken into account - this will be addressed in new subsection added titled "Advantages and disadvantages of different forums."
8186	13	28	20	28	21	This is not correct. The MEF has not been focused on clean energy technology policy.	Accepted - text revised
13642	13	28	22			It was actually the Major Emitters Meetings	Accepted - text revised
14660	13	28	29			This discussion of the MEF ignores the L'Aquila Leaders Declaration of 2009. This was a negotiated agreement, and included several elements worth referencing in this chapter. First, it represents the first time that leaders of developed and developing nations embraced a 2 degrees C objective. It represents the first time that developing countries agreed that their emissions should peak and decline. And it included a pledge to double energy R&D.	Rejected - the L'Aquila declaration was by G8 leaders, not MEF, and it is cited in the chapter
17672	13	28	32	28	35	It would be valuable to get some evaluation of IRENA: How successful is the process so far? Are there any first results to report about IRENA activities?	Taken into account - to be included in 13.13, subject to ongoing drafting and available literature on IRENA
7407	13	28	41	28	41	The G20 referred to "inefficient" fossil fuel subsidies, which implies that not all fossil-fuel subsidies are bad.	Accepted- text revised

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14661	13	28	43			The G-20 leaders agreed to phase out, not reduce, fossil fuel subsidies.	Accepted - text revised
13192	13	28	43			<p>the statement "...though in subsequent meetings it has given much less attention to climate and energy." seems to be too strong, mainly taking into consideration that in Seoul (2010), leaders announced their commitment to fight against climate change, addressing it as an urgent priority for all nations. Leaders reaffirmed the objective, provisions, and the principles of the UNFCCC. They welcomed the work of the High-Level Advisory Group on Climate Change Financing established by the UN and supported and encouraged the delivery of fast-stat finance commitments (G-20, 2010). In Cannes (2011), leaders recalled the commitment made by developed countries to assist developing countries to mitigate and adapt to the impacts of climate change, and requested Finance Ministers to report at the next Summit on progress made on climate finance (G-20, 2011). Also in 2011, a report coordinated by the World Bank and the IMF entitled "Mobilizing Climate Finance: A Paper prepared at the request of G20 Finance Ministers" was presented to the G-20. Moreover, in their Communiqué of April 2012, Finance Ministers established a study group to consider ways to effectively mobilize resources to fight climate change. In Los Cabos (2012), leaders welcomed the creation of that study group and asked to provide a progress report to Finance Ministers in November 2012 (G-20, 2012). In this sense, I recommend removing that statement and incorporate in the paragraph that begins in line 36 some of the above information.</p> <p>References: G-20 (2010). The Seoul Summit Document. G-20 (Group of Twenty), Seoul, PA. 66. Available at http://www.g20.utoronto.ca/2010/g20seoul-doc.pdf. G-20 (2011). Cannes Summit Final Declaration – Building Our Common Future: Renewed Collective Action for the Benefit of All. G-20 (Group of Twenty), Cannes, PA. 63. Available at http://www.g20.utoronto.ca/2011/2011-cannes-declaration-111104-en.html. G-20 (2011). Mobilizing Climate Finance: A Paper prepared at request of G20 Finance Ministers. Coordinated by the World Bank and the IMF. Available at http://www.g20-g8.com/g8-g20/root/bank_objects/G20_Climate_Finance_report.pdf. G-20 (2012). Leaders Declaration. G-20 (Group of Twenty), Los Cabos, PA. 71. Available at http://www.g20.utoronto.ca/2012/2012-0619-loscabos.html.</p>	Accepted - text revised
11794	13	28	44	28	46	G8 leaders didn't agree but recognize 2 degree target. It should be amended to correct expression.	Taken into account - combined with comment 643, text revised
9521	13	28	44	28	46	Please, replace 'agreeing' with 'recognising the importance of a view'.(Para 65, http://www.g8italia2009.it/static/G8_Allegato/G8_Declaration_08_07_09_final%2c0.pdf)	Accepted - text revised
10670	13	28	44	28	46	Refer my comment No. 3.	Rejected - unable to locate comment referred to
6114	13	28	45	28	46	The text describes "culminating in the G8 leaders agreeing on 2°C as a goal for the limit to temperature increases (G8, 2009)". This is misinterpretation of the wording. Actual wording is "We recognise the broad scientific view that the increase in global average temperature above pre-industrial levels ought not to exceed 2°C". When Dr. Pachauri said at the IPCC scoping meeting plenary (held in July 2009 in Venice) on the declaration of L'Aquila G8 Summit that the leaders of G8 have agreed to 2 degree target, I have pointed out at the plenary that this is not the correct interpretation. leaders did not agree but they recognized. Not only Dr. Pachauri but nobody else did not argue back against at the plenary. Therefore the wording should be changed to "culminating in the G8 leaders recognizing the the importance of broad scientific view that temperature increase ought not exceed 2°C (G8, 2009)".	Accepted - text revised
6340	13	28	5	28	10	It might worth to mention the regional banks. The African, American and Asian regional banks also have supported some adaptation initiatives.	Accepted - additional text added to 13.5.1.2

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
11458	13	28	9	28	10	The reference to "direct international flows of finance" should be reworded as the flows being referred to would be ODA rather than other types of finance flows (such as investments)	Accepted - text revised
6574	13	28	32			Add the Clean Energy Ministerial (CEM) somewhere after MEF.	Accepted - text revised to include reference
6575	13	28	44		46	Correct the description, as in G8 Leaders Declaration (2009) Leaders only "recognize the broad scientific view that the increase in global average temperature above pre-industrial levels ought not to exceed 2°C" but not "agreeing on 2°C as a goal for the limit to temperature increases".	Accepted - text revised
15441	13	29	10			DELETE: "may" All of the these treaties / agreements are relevant for geoengineering, including ENMOD. While ENMOD was created to deal with hostile uses of weather modification, the expected unequal regional impacts of some geoengineering techniques will make determining whether motivations are hostile, or not, less straightforward. According to Article 5 of the ENMOD treaty, Parties are under an obligation to consult one another and cooperate in solving any problems that may arise in relation to the Convention. If, for example, a geoengineering experiment by one Party perturbed the precipitation patterns of another country (a risk of SRM, for example), such an act could be considered hostile without necessarily being an act of war or even having military involvement. (The text of the ENMOD treaty is online: http://www.fas.org/nuke/control/enmod/text/environ2.htm)	Rejected - original text is more conservative, as literature is not definitive that all agreements apply to geoengineering, nor where intended for that purpose
12552	13	29	13			The word "statement" is not fully accurate and should be changed to "decision." This was included in Decision X/33 of the 10th Conference of the Parties of the CBD. http://www.cbd.int/climate/geoengineering/	Accepted - text revised
15442	13	29	13		14	DELETE: "...which adopted a statement at its COP 10 in October 2010 calling for a moratorium on geo-engineering (Tollefson, 2010)" REPLACE WITH: "...agreed a moratorium on all geoengineering activities that may affect biodiversity at its COP 10 in October 2010 (CBD, COP 10 Decision X/33 paragraph 8(w) [online] http://www.cbd.int/decision/cop/?id=12299 .)"	Taken into account - joined with comment 652, text revised
6042	13	29	21			I don't think the term "geoengineering" appears in the earlier discussion. It might be good to introduce it then since readers may be more familiar with this term than SRM or CDR.	Rejected - WGIII specifies terminology that described the distinction should be used
11343	13	29	21			Section 13.4.2 does not deal with geoengineering and its governance. It merely refers a bit to SRM. If you are going to deal with geoengineering then you need to do so more fully. You will find discussions of geoengineering governance in the chapters on Space Law (Lyall), Environmental Law (Redgewell) and Law of the Sea (Rayfuse) in Rayfuse, R. and Scott S. V. (eds.), International Law in the Era of Climate Change (Edward Elgar, 2012). See also Rayfuse R. and Warner, R., 'Climate Change Mitigation Activities in the Ocean: Turning up the Regulatory Heat' in Schofield C and Warner R. (eds) Climate Change and the Oceans: Gauging the Legal and Policy Tides in the Asia Pacific Region (Edward Elgar, 2012). See also the various publications by Karen Scott on geoengineering.	Rejected - guidance to WGIII is to refer to SRM, and ch 13 deals with aspects related to international cooperation, hence scope is narrow
18367	13	29	22	30	2	This is an important discussion but may better be merged with section 13.3.1.	Taken into account - new subsection introduced and thereby highlight content's importance.
15387	13	29	22			This pretty much get it right	Noted
11592	13	29	22	29	34	The UNFCCC is the only international forum where climate change action can be evaluated for compliance and that is why I believe other institutions dealing with climate change try to associate themselves with the UNFCCC. Its wrong to say it has failed. There is almost universal membership. The required actions have implications for development hence the sensitivities and the foot dragging by certain parties	Noted

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
15664	13	29	22	30	2	<p>It would be useful to mention the possibility of an intermediate approach between universal (or 'inclusive') multilateralism and "club" approaches (also known as "exclusive multilateralism"), namely "inclusive multilateralism", for example in the form of a smaller council _within_ the UNFCCC chosen in a representative fashion. This proposal is outlined in Eckersley, R. 2012. Moving Forward in Climate Negotiations: Multilateralism or Minilateralism? Global Environmental Politics 12 (2):24-42.</p>	Taken into account - new figure to be introduced to make clear different points on continuum from de- to centralised architectures.
13643	13	29	23			<p>It wasn't just resistance to costly measures that doomed negotiations; it was the insistence on them by the EU and others. Talks at COP6 collapsed because the EU did not accept offers by the US that now would be considered quite ambitious.</p>	Rejected - interpretive comment, no literature provided, beyond remit
4953	13	29	5			<p>Actually, there are so many similar multinational / intergovernmental forums: so either it should be indicated that all the above are a few examples, or ? – e.g. Arctic Council, forums initiated by the UNSG on climate change, OECD and IEA are also extensively dealing with these issues etc-etc. (IEA and OECD are mentioned later in another context on p.30).</p>	Taken into account -at outset of 13.5.1.2
15439	13	29	5			<p>At end of line 5, INSERT: The WPCCC declaration also called for a ban on geoengineering, due to the many and significant environmental, social and political disruptions it is expected to cause. Geoengineering was also addressed as a potential warfare instrument and an intensifier of climate injustice.</p>	Rejected, WPCCC declaration does not mention a ban on geoengineering; IPCC WGIII addressing solar radiation management
15074	13	29	5			<p>Add a reference to CD Stone, 1972, Should Trees Have Standing? Toward Legal Rights for Natural Objects, S. Cal. L. Rev. 450.</p>	Accepted - reference included; seminal ones suggested plus a more recent one
2304	13	29	6	29	7	<p>There is no regime for SRM and CDR, only a very loose regime complex.</p>	Accepted - text revised
15440	13	29	6		7	<p>DELETE: "The regime of SRM and CDR related fora has also begun to take shape and is similarly comprised of many institutions." It is an overstatement to suggest that something called "the regime of SRM and CDR" exists. The only regulations on geoengineering are the moratoria established at the Convention on Biological Diversity (CBD) on ocean fertilization (2008), extended to all geoengineering activities that may affect biodiversity (2010) and at the London Convention/Protocol (which has limited membership as compared to the CBD – 87 States are Parties to the London Convention; 42 States are Parties to the London Protocol; 193 States are Parties to the CBD), which holds that, given the uncertainty surrounding negative impacts, ocean fertilisation other than 'legitimate scientific research' should not be permitted. The London Convention/Protocol has established an assessment framework, including criteria for determining legitimate scientific research. REPLACE WITH: Several multilateral fora have recently begun to take up the issue of SRM and CDR.</p>	Accepted - text revised
18438	13	29				<p>There is no reference to Hartwell Paper and Climate Pragmatism approach in the discussion regarding the feasibility of a comprehensive, integrated regime (pag 29, par 3).</p>	Rejected - peer-reviewed literature addresses issues and is assessed

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
16375	13	30	11	30	20	Several factual inaccuracies in this para. The IEA is in fact an autonomous agency of the OECD, so this should be stated without making them sound like independent institutions. IEA was established as a response of OECD countries to the oil shocks, not a "consortium of oil-importing countries". IEA membership requirements do include a minimum oil stocks level which has restricted some OECD members from also being full members of IEA (notably Mexico). OECD has recently granted membership to Korea, Chile, Israel, Slovenia and Estonia and is in accession talks with other developing countries, all of which might become IEA members in due course. OECD and IEA have been jointly supporting the UNFCCC negotiations since 1993 through the Climate Change Expert Group (CCXG, formerly Annex I Expert Group AIXG, see www.oecd.org/env/cc/ccxg), the work of which directly influenced several aspects of the KP and ongoing agreements. OECD also has a long history of broader climate analysis, most recently OECD Environmental Outlook to 2050, REF, as well as the 2009 document currently cited. IEA is already the world leader in gathering energy and emissions data, including the flagship publication World Energy Outlook. So it would be great if this para could recognise both organisations as already contributing heavily to global knowledge on energy and climate, with a more direct potential influence on member governments than NGOs.	Taken into account - comment joined with comments 661,672, 673 to add clarity
11459	13	30	11	30	20	The identification of the IEA and the OECD as "potentially relevant institutions", while couched as examples, gives priority to the institutions of developed countries and could have the unintended effect of granting IPCC recognition to these institutions as potential alternative multilateral governance or negotiating forums on climate change away from the UNFCCC. This should be avoided as the UNFCCC remains the sole legitimate universal multilateral negotiating forum on climate change.	Accepted, text revised
14662	13	30	15			IEA membership is determined by OECD membership. Thus, it includes several oil exporting nations, such as Norway, Mexico, and the UK (which may have transitioned from net exporter to net importer by now). OECD membership has expanded to nations as their incomes increase and as they satisfy other policy conditions. Would be more appropriate to refer to recent entrants as middle income (e.g., Chile).	Taken into account - comment joined with comments 661,671, 672
6043	13	30	21	30	34	There are other links to MEAs that could be discussed as well...e.g. the Biodiversity Convention and the Convention to Combat Desertification.	Taken into account - CBD in 13.5.1.2
4954	13	30	21		31	The relation between these legal instruments and their provisions (on ODS and on GHGs) has not been so smooth as it is described here ..	Accepted, text revised
13644	13	30	3			There are several other institutions with potential roles to play. The IMF, for example, has done recent work on ways in which fiscal policy (e.g. carbon taxes) can mitigate climate change: http://www.imf.org/external/Pubs/FT/books/2012/climate/climate.pdf	Taken into account - joined with comment 667 to include more institutions in 13.10.2
6850	13	30	36	30	40	Durban, Cancun, and Copenhagen are under the UNFCCC and Kyoto negotiations. It would be inaccurate to place them like this.	Accepted - text revised
11593	13	30	38	30	38	The bracketted part, these are all UNFCCC for a.	Text revised - as with 676
8841	13	30	41	30	9	It is important to start this paragraph mentioning the Group 77 and China, which is the largest and one of the more active and determinant coalition of countries in the UNFCCC negotiations. It is constituted by 131 developing countries. The Group of 77 is the largest intergovernmental organization of developing countries in the United Nations, which provides the means for the countries of the South to articulate and promote their collective economic interests and enhance their joint negotiating capacity on all major international economic issues within the United Nations system, and promote South-South cooperation for development.	Accepted - text revised to include G77

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
6341	13	30	41	31	9	<p>The mentioning of country grouping in the climate change process is politically sensitive and needs to be handled with care. The following comments and suggestions try to address this issue:</p> <ul style="list-style-type: none"> 1) As a general principle, it would be convenient that if the members of some coalitions of countries are mentioned, the members of all coalition should be also mentioned to avoid possible perceptions on differentiation, except these coalitions with large memberships for obvious reasons. 2) Norway, Russian Federation and Ukraine are missing in the Umbrella Group 3) In the particular case of the Environmental Integrity Group, in which it is mentioned that is the first coalition of industrialized and developing countries, the membership (Switzerland, Republic of Korea and Mexico) should be mentioned to inform the reader the scope of this particular coalition. 4) Although it might not be worth to mention all numerous members of the Coalition of Rainforest Nations a brief description on this coalition would inform better the readers. 5) The groups of Least Developing Countries (LDC) and the African Group, both very active in negotiations and with a membership of around 50 countries each, must be mentioned, likely at the beginning of the paragraph as the AOSIS. 6) Several other groups also work together in the climate change process, including countries from the Organization of Petroleum Exporting Countries (OPEC) and a group of countries of Central Asia, Caucasus, Albania and Moldova (CACAM). 	Accepted - text revised to reflect sensitivity to the description; but space does not allow full listing of all groupings
11460	13	30	41	31	9	<p>The identification of negotiation coalitions in the climate negotiations makes no mention at all of the biggest primary negotiating group for developing countries – the Group of 77 and China composed of 133 developing country Parties of the UNFCCC, of which AOSIS is a sub-group. The section also ignores the existence of regional groups that have tended to act as such – i.e. the African Group and the Arab Group – and also makes no mention of the Least-Developed Country (LDC) Group. Furthermore, the section mischaracterizes the political nature of some of the coalitions that it refers to – i.e. the Cartagena Group and the BASIC group of countries are political groupings that meet regularly but do not officially negotiate as their own groups in the UNFCCC negotiations.</p>	Text revised, as with comment 679
14664	13	30	43			<p>The Umbrella Group, when created for the 1997 climate talks, included more than JUSCANZ countries. For example, it included Russia, and I believe Ukraine.</p>	Text revised
12477	13	30	43	30	43	Please note that the Umbrella Group consists of more countries than the JUSCANZ, hence they are not the same.	Taken into account - joined with comments 677 - 680 - text revised
4971	13	30	43		45	<p>{Add} "... and New Zealand {and some other developed countries}" ~ because Switzerland, Norway also attended that informal meetings (so it was also called JUSSCANZ), moreover, Russia and Ukraine sometimes also participated. ... "first coalition of {a few} industrialized and developing countries"</p>	Taken into account - joined with comments 677 - 680 - text revised
14350	13	30	43	30	44	<p>The Umbrella Group is not also known as JUSCANZ, as it also includes other members, including: Norway, Russia, Ukraine, and Kazakhstan.</p>	Taken into account - joined with comments 677 - 680 - text revised
10618	13	30	11			<p>The IEA (and the OECD with which it is linked) may be promising contributors to data collection. However, as I mention in my comments on Chapter 7 (Energy), the international energy regime is quite fragmented, and the IEA/OECD are hampered by the fact that their membership is mostly developed, oil-consuming countries -- rather than oil-producing countries (e.g., Saudi Arabia) or emerging big consumers (e.g., China, India). For an overview, see: [Colgan, J, T van de Graaf, and R. Keohane. 2012. Punctuated Equilibrium in the Energy Regime Complex. Review of International Organizations. 7(2): 117-143.]</p>	Accepted - text revised

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
10620	13	30	21			The international regime dealing with ozone depletion is one of the most promising partners for the climate regime, in part because the Kyoto Protocol explicitly states its relationship (particularly, concerning the division of labor in substances regulated) vis-a-vis the earlier Montreal Protocol of the ozone regime. But the report misses the fact that the burgeoning international forests regime also may be a partner for the climate regime in the future - consider, for example, two new institutions launched within the last 5 years: the Forests Carbon Partnership Facility (FCPF) launched by the World Bank, and the UN Collaborative Initiative on Reducing Emissions from Deforestation and Forest Degradation (UN-REDD) launched by the United Nations. For an overview of how various environmental regimes fit together, see: [Johnson, T., and J. Urpelainen. 2012. A Strategic Theory of Regime Integration and Separation. International Organization 66(4): 645-677.] [ABSTRACT: States frequently disagree on the importance of cooperation in different issue areas. Under these conditions, when do states prefer to integrate regimes instead of keeping them separate? We develop a strategic theory of regime integration and separation. The theory highlights the nature of spillovers between issues. Positive spillovers exist when cooperation in one issue area aids the pursuit of objectives in another issue area; negative spillovers exist when cooperation in one issue area impedes this pursuit in another issue area. Conventional wisdom suggests that both positive and negative spillovers foster greater integration. We argue that negative spillovers encourage integration while positive spillovers do not. States integrate not to exploit positive spillovers but to mitigate negative spillovers. To test our theory, we examine the degree of integration or separation among four environmental regimes: climate, deserts, forests, and ozone.]	Taken into account, section 13.5.1.4
14663	13	30				Would also be worth referencing the IMF and World Bank. The former has been active on fossil fuel subsidies and has recently advocated for carbon taxes. The latter has been active in climate finance through the CIFs. These organizations, in contrast to the IEA and OECD, do have near universal participation/membership.	Taken into account - 13.10.2 includes World Bank, to add IMF
17673	13	30	11	30	20	In this section, I missed other UN bodies and the Bretton Woods institutions that contribute to the debate with analytical work and reports (besides IEA and OECD), e.g. UNEP, UNDP, UNCTAD, World Bank, etc.	Taken into account - 13.10.2, 13.11.1.2
11143	13	30	28	30	31	Please add USA/Canada/Mexico proposal	Accepted, reference added
7408	13	30	3	30	34	Not only IEA, but institutions such as OPEC are also relevant for climate change issues	Taken into account - section 13.5.1.4
4721	13	30	3			Although it is addressed later in the chapter, the authors should point out that the major other "potentially relevant institution" is the WTO.	Accepted, text revised to include cross-reference to 13.8
5309	13	30	35	31	9	It would be worthwhile to introduce a typology of coalitions. While others are issue related (AOSIS), some are process oriented (G77 and China). While some coalitions are inherited from other domains in the international system (G77, G20, G8, OPEC) some have been established in the climate change context and during the climate negotiation process (AOSIS, BASIC). Important is to see whether these coalitions are actually complementing each other or competing among each other (see mutually exclusive membership between coalitions). To my view, they are complementing each other, and therefore claims regarding the fragmentation of blocs of both developed and developing countries should be questioned.	Accepted, text revised
5310	13	30	36	30	40	The comparison between coalitions and subgroups or clubs is not appropriate or is unclear, because two different analytical levels are chosen to show the difference between the two. Coalitions are groups of countries presenting coordinated positions in the international treaty. Does it mean that subgroups or clubs do not present positions in the international treaty? On line 39, subgroups and constrained as countries seeking to regulate GHG emissions in their region of the world. Are coalitions for instance OPEC, EU not seeking to regulate GHG emissions at all?	Accepted - text revised to give clarity

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
8187	13	31	20	31	20	"global corporations": Why just "global" ones? They attempt to influence single-country corporations too.	Accepted - text revised
17674	13	31	25	31	27	Another good citation for price differentiation in the realm of voluntary markets is: Conte, M. N. and Kotchen, M. J.: 2010, Explaining the Price of Voluntary Carbon Offsets, Climate Change Economics 1(2), 93–111.	Accepted - reference included
6342	13	31	27	31	28	The section 13.12 does not describe how certification schemes have been used in CDM. Bibliographic sources are needed to back this statement.	Accepted - text revised
6045	13	31	29	31	32	Theses initiatives are also discussed in ch. 15.	Accepted - text revised
8188	13	31	37	31	37	"regional (i.e. multi-country)": I would delete regional. Multi-country efforts are often not regional.	Rejected - stems from the plenary-approved heading
8189	13	31	38	31	39	"Generally, regional collaboration has been triggered by the setup of an international regime": I would describe this as the view of one author; it is far from clear that it is generally true.	Accepted - softened the language to not make a "general" satement
11690	13	31	41			The title of the section 13.6.1 is "interaction of Regional and International Carbon Markets", it may understand as interations between the regional and international markets, however, in the following contexts more are discussing on EUETS and linkage to other like CDM or more on EU ETS itself, and more discussions on WCI itself, so the section title is easy to cause confusion	Taken into account: adjusted the headings to make the content of the sextion clearer
16377	13	31	41	31	46	There are numerous other EU policy integration initiatives besides carbon markets (eg energy efficiency labelling, building efficiency standards etc etc) so this should be recognised in the first sentence. Also, would be good to note that WCI is sub-national but involves sub-national jurisdictions in more than one country, and may therefore have implications for national emissions accounting under UNFCCC (see Prag et al. (2011), Tracking and Trading:EXPANDING ON OPTIONS FOR INTERNATIONAL GREENHOUSE GAS UNIT ACCOUNTING AFTER 2012, http://www.oecd.org/env/climatechange/49101167.pdf)	Rejected - outside the scope of the chapter. It deals only with the interlinkages to international cooperation not a full assessment of the systems
15725	13	31	42	31	43	"Due to the scale effects that occur when carbon markets are enlarged, carbon markets have been the primary means of regional policy integration": better: "may" be primary means of regional policy integration. So far there are only plans, the EU-Norway ETS link, the only existing link so far...	Accepted
4955	13	31	44		45	Some countries were involved in the ETS after its pilot phase, i.e. from 2007 (Cyprus, Malta; and also Bulgaria and Romania as these two became EU-members later). Besides Norway, 2 more non EU Member States also joined the ETS (Iceland, Liechtenstein), as it is correctly referred to later. There is a national ETS in New Zealand.	Taken into account - Iceland and Liechtenstein now included in text.
8762	13	31	44	32	2	National ETS are operating in the EEA (EU ETS covering 30 countries), Switzerland, New Zealand and Japan all of which are linked to Kyoto units. Many more are proposed. At a sub-national level, RGGI and Alberta have operating systems, although neither is linked to other systems. This chapeau needs to introduce what follows. The EU ETS clearly needs to be discussed. It is not clear why California should be discussed in preference to other systems. If experience with linking is the subject, then Japan and NZ should be discussed.	Taken into account: refer to section where other national systems are described
10211	13	31	44			Should it be EU Emissions Trading System or EU Emission Trading Scheme (see e.g. p. 32, l. 3)?	Accepted
12478	13	31	45	31	45	Please note that the EU ETS is linked with the system of all the countries in the European Economic Agreement (EEA), which consists of all the 27 countries in the EU pluss Norway, Iceland and Lichtenstein.	Accepted - text reflects this
15075	13	31	45			As noted above, the new Australian carbon policy will link to the ETS by 2018	Taken into account: refer to section where other national systems are described
12922	13	31	45	31	45	Should mention the Australian ETS and agreement to link with EU ETS.	Taken into account: refer to section where other national systems are described

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
11461	13	31	5	31	9	The characterization of the “Climate and Clean Air Coalition” should be nuanced in that it is not a negotiating coalition in the UNFCCC climate negotiations context, but rather a coalition for dialogue and discussion outside of the UNFCCC context for the States and non-State partners thereof.	Accepted - text revised
11104	13	31	1			Please consider adding the following sentence after Nhamo, 2010, in order to capture the recent event. "In 2012, a new coalition is formed among 30-40 like-minded developing countries, including China, India, Saudi Arabia, and other Asian, Latin American, Middle East, and African developing countries. The group requests developed countries to reduce their emissions more aggressively and provide large-scale financial and technological assistance to developing countries. Among BASIC countries, Brazil and South Africa do not join it."	Accepted, text revised
16376	13	31				I wonder about the utility of this sub-section as it is; given that there is a whole section on pub-priv and priv-priv arrangements (13.12) might be best to keep this discussion for that section	Rejected - section makes clear that typology and placement - "The first two (dealing directly or indirectly with private sector initiatives) will be dealt with in section 13.12; the other two (related to government or community initiatives) here."
17117	13	31	29			It should be acknowledged that ICLEI's climate programmes have started in 1993 whereas C40, majority of which also are members of ICLEI, have started only in 2005. This chapter does not have any acknowledgement of the global climate advocacy efforts of local governments that has focused through Local Government Climate Roadmap in 2007. A major outcome of the process was the Global Cities Covenant on Climate - the Mexico City Pact which has an international secretariat and regularly monitors progress of signatories. carbon Cities Climate Registry in an important effort of local governments for measurable, reportable, verifiable climate action, which captures information of more than 170 cities worldwide as of July 2012. Recognition of local governments as governmental stakeholders in para.7 of Cancun Decisions is also important reflection of all these efforts in to UNFCCC processes.	Taken into account - text revised to incorporate suggestions
10817	13	31	29	31	35	It will be important to coordinate with Ch 15 on this discussion, since many of these initiatives are also covered there.	Noted
4722	13	31	36			This section also seems far more descriptive than analytic.	Taken into account - Section 6 has been rewritten.
18663	13	32				Page 32: Description of EU ETS (2/3 page), fair but too general. No direct reasoning on the effects or price level.	Rejected - outside the scope of the chapter. It deals only with the interlinkages to international cooperation not a full assessment of the systems
13646	13	32				It would be worth pointing out that leakage is likely to be greater in subnational arrangements than in national approaches because both capital and labor are more mobile within economies.	Rejected - outside the scope of the chapter. It deals only with the interlinkages to international cooperation not a full assessment of the systems
8763	13	32	15	32	16	During the 2005-2007 period Norway had a unilateral link with the EU ETS as well as the CDM. Norway did import some EUAs but neither Norway nor the ERU ETS used CERs during that period because they were more expensive than the domestic allowances.	Rejected - outside the scope of the chapter. It deals only with the interlinkages to international cooperation not a full assessment of the systems

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
4237	13	32	19-20			There were no limits on CER/ERU use during the pilot phase, but there was never any possibility to import these credits since the international transaction log had not yet been created and linked to the EU ETS registry.	Reject - comment could not be verified
4238	13	32	20-21			Forestry credits are indeed not allowed, but other credits were also banned. I don't recall the specifics but there is a negative list that includes large hydro and some other types of mitigation projects.	Taken into account - relates to large hydro
2415	13	32	22	32	26	Comment on specific text: My understanding of the EU position is that no CERs can be used in the ETS DURING THE THIRD TRADING PHASE (2013-2020) from projects registered after 2013 unless the projects are in LDCs. See Article 11a Directive 2003/87. Also, my understanding is that CERs from new projects in non-LDCs will be accepted after 2013 where the EU has concluded a bilateral agreement with the country in question regulating their level of use. No agreements of this kind have so far been concluded.	Accepted
4239	13	32	23-24			The provision referred to on these lines applies to the third phase, not the second as implied by the sequencing statements.	Accepted - rephrased
4240	13	32	27			It should be stated that the 1.74% annual decline in the EU ETS cap continues indefinitely beyond 2020.	Accepted
4973	13	32	28			.. that is a 20% overall reduction by 2020 compared to the 1990 level.	Accepted
16379	13	32	29	32	34	Note that EU ETS HAS become more centralised in its later phases (see Prag et al, (2012 forthcoming), Making Markets www.oecd.org/env/cc/ccxg). For the final two sentences, see my comment above (noting also that the ITL exists for international movements outside of Europe too; it's the link between the ITL and the EU system (CITL, now EUTL) that is important for this point)	Accepted - text reworded
12027	13	32	3			The effects of later participation of East European countries should be described together with analysis of marginal abatement costs among members.	Rejected - outside the scope of the chapter. It deals only with the interlinkages to international cooperation not a full assessment of the systems
6343	13	32	33	32	34	It might worth to mention that the international transaction log has been created under the UNFCCC. Although it was developed with a close collaboration with the EU, this log is not part of the EU ETS.	Accepted - text reworded
4241	13	32	34			It is not accurate to say that the International Transaction Log has been created for the purpose of enabling the coupling of AAUs with EUAs. The ITL exists independently to record and effect all transfers of Kyoto units, just as the Community Independent Transaction Log exists to transfer EUAs. The linkage between the two ensures that AAU's accompany EUAs when the latter are traded across member-state borders. Moreover, if the member-state has not met the Kyoto requirements for enabling trading, AAUs cannot be traded and therefore EUAs are similarly restricted in the EU ETS from being traded across borders.	Accepted - text reworded
8764	13	32	35	33	2	The purpose of this section is not clear. It could be dropped. If you keep it add a reference to Haites and Mehling Linking existing and proposed GHG emissions trading schemes in North America, Climate Policy, v. 9, n. 4, 2009 approved	Rejected - This section is plenary-
8191	13	32	36	32	36	"strong": This seems like a value judgment that is not supported. Recommend deleting.	Accepted - rephrased
4972	13	32	4			{Add} The EU ETS is the key means for the Europe{an Union} ..	Accepted
8190	13	32	4	32	4	This claim requires a citation.	Taken into account - now sais: "The EU ETS was designed as the key means".

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
16378	13	32	4	32	5	Whilst EU ETS is indeed independent of UNFCCC, would be worth noting that it was designed to operate embedded within international emissions trading (i.e. until 2012 EUAs are created by converting AAUs). Although from 2013 the unit link will be less direct (EUAs will be created rather than converted from AAUs), the point is still important as it affects Europe's position in the KP negotiations - it would be easy to continue KP because the infrastructure is all set up via the EU ETS systems.	Taken into account - rephrased to be more accurate: "although the system could exist independent"
16951	13	32				Given the topic of the chapter, I think it would be worth saying that the European Commission intervention cut the allocations proposed in National Allocation Plans by almost 10% in total, and that the principal legal basis for doing so (in relation to the western European countries) was compliance with the EU's Kyoto Protocol targets. The Member States accepted this ruling (note that the Commission rulings on the New Member States used the other legal provision (preventing hidden subsidies) and these were contested. I'd guess this has been written up elsewhere but for one account see Carbon Trust (2007), EU ETS Phase II allocation: implications and lessons (The Carbon Trust, report CTC715, London). □	Accepted - issue and literature added
17675	13	32				After this section, I missed some evaluation of the EU-ETS (criticisms, potentials for improvement, planned reforms, etc.)	Rejected - outside the scope of the chapter. It deals only with the interlinkages to international cooperation not a full assessment of the systems
13925	13	32	29	34	42	The political underpinnings of the ETS also relate to the fact that EU-ETS is embedded in a broader suite of policies addressing multiple agendas (See Huberty, M., "Green growth as necessity and liability: The political economy of a low-carbon energy systems transformation in the European Union", Berkeley Roundtable on the International Economy, Working Paper no. 200, 2011; Haug, C. and A. Jordan, "Burden sharing: distributing burdens or sharing efforts?", in A. Jordan et al (eds), "Climate Change Policy in the European Union: Confronting the Dilemmas of Mitigation and Adaptation?", Oxford, Oxford University Press, 2010.	Rejected - outside the scope of the chapter. It deals only with the interlinkages to international cooperation not a full assessment of the systems

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
6586	13	32	29	32	31	<p>Delete "than decentralised approaches" or express bad points of EU ETS clearly. Other decentralised approaches should NOT be compared to EU ETS since EU ETS has not only good points but also bad points such as following problems.</p> <p>Quote>></p> <p>The EU's Emissions Trading System (EU ETS) is the flagship mechanism by which the EU hopes to reduce its carbon dioxide (CO2) emissions via the principle of cap-and-trade. It has run from 2005 and will continue at least until 2020. However, it has failed to have the impact hoped for and is not the cheapest method by which to lower CO2 emissions. It needs dismantling and replacing, while retaining the same aim of providing emission reductions at the lowest necessary cost.</p> <p>Why it fails to reduce net global emissions</p> <p>There has been a huge over-allocation of credits via under-ambitious targets. The 2012 caps for 20 member states, including the UK, are higher than the measured emissions in 2005. Many companies will not need to make any reductions in their emissions until 2016-18 so even the tightening of the EU ETS in 2013 fails to have a real effect.</p> <p>The over-allocation of free credits is leading to huge windfall profits as companies pass through the non-existent credit cost to consumers or sell their credits if unrequired. The power sector alone is likely to have made €16-€50 million by passing on non-existent costs to consumers.</p> <p>The EU ETS actually risks raising global emissions. Companies whose competitive advantage has been undermined by the EU ETS emigrate to countries with slacker emission regulations and then the EU imports their products. In the UK this means that from 1990-2005, while production of carbon has fallen by 15 per cent, carbon consumption has actually gone up by around 19 per cent via imports.</p> <p>Whether the price of EU ETS credits rises or falls, emissions will not be lowered. A rise will result in carbon leakage and, if the price falls, it will be cheaper for companies simply to buy credits rather than install emission abatement equipment.</p> <p>The operation of the Clean Development Mechanism (CDM), a source of offsetting credits for the ETS, is riddled with corruption and profiteering, involving billions of pounds. All five main project validating bodies failed UN accountability tests.</p> <p>The CDM's subsidies for emission reductions mean some emissions are being deliberately created to be destroyed and generate CDM credits. The gas HFC-23 generates 11,700 credits at £12 per tonne destroyed, but costs only £0.17/tCO2e to destroy: a 7,000 per cent markup.</p>	Rejected - outside the scope of the chapter. It deals only with the interlinkages to international cooperation not a full assessment of the systems
2934	13	32	34			add a reference to Maljean-Dubois & Tabau, 2010 for : S. Maljean-Dubois, A.-S. Tabau, « Non-compliance Mechanisms: Interaction between the Kyoto Protocol System and the European Union », European Journal of International Law, 2010, vol. 21, pp. 749-763	Accepted - issue and literature added
10818	13	32	32		33	This is really a sub-national initiative. But I can see the problem, since there are so few cases of large scale carbon markets, it is hard not to talk about this. Ch 15 has an equivalent problem - that chapter talks of the California case, but the EU ETS is outside its scope.	Taken into account - WCI is transnational, so belongs in this section

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
4236	13	32	8-9			The sentence in these two lines suggests that the ETS was an optional or negotiable part of the accession negotiations. I believe this is incorrect. The ETS had been enacted before any of the new member-states acceded to the EU and was therefore part of the <i>acquis communautaire</i> . New member states would have been aware that the ETS was part of the price of joining the EU since the final agreement on the ETS Directive in 2003 and the accession negotiations were contemporaneous; however, unless corrected by some one much closer to the accession negotiations than I, whether or not the new member-states would be subject to the ETS was not a matter of negotiation.	Accepted - point here is that the ETS was expanded, not the negotiations
11691	13	33	20	35	25	In this section, the section structure is laid out differently compared to other sections, it starts with an "overview" then a special sub-sector on "linkages between the Kyoto instruments and national policies", I think this section can be further extended to include more materials, or put more sub-titles to make the structure more clear	Accepted. Text revised, headings streamlined.
10212	13	33	33	33	38	Examples on how international and national climate policy, or centralized vs decentralized political structure, matters would be interesting.	Noted.
6344	13	33	38	33	38	It is not clear for a reader what does means "the consensus culture in Netherlands" in comparison with the centralized and decentralized national policy structures mentioned in this paragraph.	Rejected. Literature cited adequately explains the term.
4975	13	33	38			it was also centralized in Hungary but with the participation of many scholars from different disciplines (e.g.: Climate change and Hungary: mitigating the hazard and preparing for the impacts, 2010, ISBN 978-963-508-605-4 http://www.vahavahalozat.hu/files/vahava-2010-12-korrigalt-2.pdf	Rejected. The example does not add significant additional information.
10213	13	33	42	33	46	This sentence is difficult to read and unclear	Accepted. Text revised. The sentence is broken into three sentences.
4974	13	33	6			" It included countries that had not ratified the Kyoto Protocol, " it was valid only for the USA and for a while for Australia ..	Rejected - current text correct
6115	13	33	9	33	9	After "(Heggelund and Buan, 2009).", add "The AsiaPacific Partnership for Clean Development and Climate was globally expanded from 7 to 24 countries and formerly taken over in July 2010 by the Global Superior Energy Performance (GSEP). (Okazaki et al. 2012). For citation Okazaki, T., Yamaguchi, M., Watanabe, H. Ohata, A., Inoue, H. Amano, H. (2012), Technology Diffusion and Development. In: Climate Change Mitigation, A Balanced Approach to Climate Change. M. Yamaguchi, (ed.), Springer, London pp. 179-221.	Accepted - text added
16380	13	33				Might be better to cover the Asia-Pacific partnership in section 13.5 above.	Rejected - placement correct

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
6587	13	33	3	33	9	<p>Add the description of GSEP.</p> <p>After the final meeting of the APP in April 2011 activities of Cement, Power Generation and Transmission and Steel Task Force were formally inherited to the GSEP.</p> <p>Quote>></p> <p>Transition from the APP to the GSEP</p> <p>The GSEP was launched as one of the key initiatives that came out of the Clean Energy Ministerial meeting in 2010 and has also been accepted as a task group under the International Partnership for Energy Efficiency Cooperation(IPEEC).⁴ The objective of the GSEP is to reduce global energy use by encouraging industrial facilities and commercial buildings to pursue continuous improvements in energy efficiency and promoting public–private partnerships for cooperation on specific technologies or in individual energy-intensive sectors.⁵ In addition to the majority of the APP countries,⁶ GSEP members will include Denmark, the European Commission, Finland, France, Mexico, Russia, South Africa and Sweden.</p> <p>Like the APP, the GSEP adopts a working method based on sector-specific working groups. In the GSEP, members do not have to participate in all the working groups. The aim is to provide a forum for public–private dialogue and cooperation, involving the public, private and academic/research sectors in order to exchange information on improved technologies and create practical projects through public–private partnerships in a bottom-up manner.⁷ It started with six working groups, covering 1) certification, 2) power, 3) steel, 4) cement, 5) cool roofs and pavements and 6) combined heat and power and efficient district heating and cooling (see Figure 1). In June and September 2011, the GSEP working groups organised the first workshops to define strategic objectives and discuss work plans.⁸ Among others, the GSEP Working Groups on Power, Steel and Cement will build upon activities initiated through the corresponding APP task forces. The groups will concentrate more on energy efficiency and environmental performance and expand the scope of participation.</p> <p>For citation: Noriko Fujiwara (2012). Sector-specific Activities as the Driving Force towards a Low-Carbon Economy From the Asia-Pacific Partnership to a Global Partnership. CEPS POLICY BRIEF No. 262. Available at: www.ceps.eu/ceps/download/6569</p>	Accepted - text added
7508	13	33	3	33	9	<p>It should be explained that main activity of the APP has been successfully inherited to GSEP.</p> <p>GSEP has been lauched as an official activity of the Clean Energy Ministerial meeting(CEM) and the International Partnership for Energy Efficiency Cooperation(IPEEC). GSEP is typical non-legally binding type international scheme and is applying methodology successfully developed by the APP and is expanding participation. APP type scheme has been proved effective to improve energy efficiency(Fujiwara(2012)and consequential reduction of CO2 emission from industry, which is main source of CO2 emission.</p> <p>Noriko Fujiwara (2012). Sector-specific Activities as the Driving Force towards a Low-Carbon Economy From the Asia-Pacific Partnership to a Global Partnership. CEPS POLICY BRIEF No. 262.</p>	Accepted - text added

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
6576	13	33	4		6	Add a note that the activities of three sectoral task forces (one each for Power, Steel, and Cement) under APP were incorporated in the activities of the Global Superior Performance Partnership under the Clean Energy Ministerial (Fact sheet: Global Superior Performance Partnership, 2012).	Accepted - text added
17116	13	33	10			ICLEI - Local Governments for Sustainability is the correct name of the referred organization. However, I completely disagree with this comment. ICLEI's more than 1200 members are from more than 70 countries worldwide. ICLEI led initiatives like Mexico City Pact, carbon Cities Climate Registry and World Mayors Council on Climate Change, as well as Local Government Climate Roadmap are truly global and have worldwide recognition.	Taken into account - name changed, added "global"
13926	13	33	20	35	25	This section should mention that, how and why new actors are lobbying for an acknowledgement of their role in fighting CC within UNFCCC agreements. See Lefevre, B., 2012, Incorporating cities into the post 2012 climate change agreements, Environment & Urbanization, Vol 24(2): 1–21 This paper examines the legal, political, technical, economic and financial implications of fitting commitments by cities into the post-2012 climate change agreement; Bentley, H., Zikman, S., 2010, Local Governments Key to Cancun Climate Talks, Natural Resources & Environment Volume 25, Number 2.	Taken into account. Covered in 13.5.2.
11576	13	33				Focus is on efficiency. What about social commitment? David Miller argues for example that national politics may be more efficient (and legitimate) because people may be more committed and engaged (Cf. Miller 2008).	Rejected. Outside the scope of the Chapter. The WG may consider taking "social commitment" into account at a suitable place if sufficient peer reviewed literature is available.
10819	13	33	22	38	33	This section will also have to be closely coordinated with Ch. 15. IN terms of linkage, Xinyuan Dai "Global Regime and National Change" in Climate Policy 10(2010) may be worth referring to for other mechanisms of linkage.	Taken into account. Will continue coordination with Chapter 15 and ensure inclusion of the reference depending on agreement with Chapter 15 either in this section or in Chapter 15 at a suitable place.
16381	13	34	1	34	4	Would be good to also include China's pilot ETS initiatives here, certainly an example of sub-national policy experimentation with a view to expanding to national level	Rejected. Outside the scope of this Chapter, although Figure 13.2 makes reference to these initiatives. Chapter 15 however might consider use of this along with such domestic laws including the one passed by Republic of Korea.
16382	13	34	14	34	16	Note that some countries do both, eg many EU countries, such as Denmark CDM/JI programme via DEA	Accepted. Text revised.
6116	13	34	18	34	18	Add after (Michalowa and Buen,) "Also Japanese firms have committed to purchase credits of more than 300Mt/CO2 to comply with their commitments under Industry Voluntary Action Plan. The total purchase amount is estimated around \$4.5-6 Billion for the Kyoto period (Yamaguchi 2012)". For citation, Yamaguchi M., Policies and Measures. In: Climate Change Mitigation, A Balanced Approach to Climate Change. M. Yamaguchi, (ed.), Springer, London pp. 129-159.	In Section 13.7, Accepted. Text revised. In Section 13.13, quantification not included at this stage
16383	13	34	19	34	25	Note also political motivation to be ensuring emissions reductions "at home" both to promote home-grown technologies, ensure modernisation of the economy for future competitiveness, etc	Accepted. Text revised.
10035	13	34	19	34	22	This part should be deleted completely or revised to explain Japan's situation. Japan does not limit imports of Kyoto credits. Furthermore, artificially keeping carbon price high is contradictory for the original idea of using market mechanism.	Accepted. Text revised from "all" to "many".

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
15727	13	34	19	34	10	"All industrialized countries limit imports of credits generated by the Kyoto mechanisms for various reasons" Do you mean: limit imports into their cap- and trade schemes? I don't agree that all industrialized countries limit credit imports for national Kyoto target achievement. Austria eg purchases 75 Mio Kyoto credits, the majority of Austria's reduction requirement.	Accepted. Text revised. Also see response to comment no. 763.
6117	13	34	19	34	19	"All industrialized countries" is incorrect. Change this phrase to "Some industrialized countries". USA and Japan did not limit imports of credit for several reasons. Also this paragraph (from lines 19-31) is so much inclined to European Situation. This kind of expression will be appropriate for Chapter 14.	Accepted. Text revised. also see response to comment no. 763.
8765	13	34	2	34	2	Why is RGGI ignored?	Accepted. Text revised. Figure 13.2 already shows RGGI. In addition RGGI is covered in detail by 15.5.4.5.
8192	13	34	2	34	2	It is not clear that the "most notable" example of sub-national experimentation is in California. It may be the "most notable" within the United States, but I would be careful in making this claim globally.	Accepted. Text revised.
15076	13	34	2			RGGI should be mentioned here.	See the comment to response comment number 757.
12971	13	34	20	34	20	It seems that the authors endorse the idea that keeping the price high induced technological innovation in the country, and that this is good. This is debatable and I suggest the authors should rephrase the sentence to convey this message.	Rejected. There is no endorsement of any particular policy in the text. It is drawn from the literature cited already. An additional paper by Alex Bowen is cited as well. There is literature available to suggest that countries (notably UK) think this way.
12972	13	34	20	34	22	Why should environmental effectiveness be lower if emission reductions occur in other jurisdictions? If addtionality is satisfied, it does not really matter where emission reductions occur. If addtionality is not satisfied (or only partially satisfied) it is a different story. Maybe it is sufficient to delete "or" at line 22.	Accepted. Text revised.
12989	13	34	20	34	22	Why should environmental effectiveness be lower if emission reductions occur in other jurisdictions? If addtionality is satisfied, it does not really matter where emission reductions occur. If addtionality is not satisfied (or only partially satisfied) it is a different story. Maybe it is sufficient to delete "or" at line 22.	Accepted. Text revised.
6047	13	34	22	34	24	The example of limits on AAUs doesn't really fit with the point being made which is focused on the use of credits from the CDM and JI.	Rejected. This comment is not relevant, as the point made is a separate one.
4976	13	34	23		24	.. but it did not exclude the opportunity for an EU Member State to transfer such credits (AAUs) to/from another Member State (therefore at national level but not at company level, i.e. outside the ETS).	Rejected. The length given to the treatment of EU-ETS is adequate. This topic is also covered in Chapter 14.
12809	13	34	23	34	25	Can you provide more detailed reason for "more attractive"	Accepted. Text revised.
15728	13	34	23	34	25	"For example, the European Union has prohibited the import of Assigned Amount Units into the EU-ETS in order to prevent the use of surplus units from countries in transition, colloquially called "hot air" (A Michaelowa and Buen, 2012)" Important to mention that A1 countries use AAUs from Green Investment Schemes for national target achievement. Japanese companies use AAUs for meeting their voluntary targets...see eg Tuerk A., Frieden D., Sharmina M., Schreiber H., and D. Ürge-Vorsatz; 2012: Green Investment Schemes: First experiences and lessons learned http://www.joanneum.at/climate/GIS.html	Accepted - text revised

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
12001	13	34	25			<p>Note that leakage has been assumed widely and researched extensively, including by the meth panel and found to be non-existing based on the assessed evidence. The EU has taken a decision to ban these projects based amongst other an assumption rather than evidence. Today, these emissions are again emitted freely, so we have cheap abatement technology, transferred from Annex I countries, having solved a problem within a few years which the Montreal Protocol has not been able to solve in decades and we through the whole thing out rather than fix it. This is a scientific report i.e. the current state of evidence needs to be mentioned rather than the 2011 hypotheses by Schneider ("... due to possible emissions leakage").</p> <p>Otherwise, the CDM presentation is very good. It should also be mentioned under its contributions that it is at the basis of the South Korean and the Chinese Emissions Trading Schemes.</p>	Rejected. Not supported by the peer-reviewed published literature.
8766	13	34	26	34	31	Literature relating to the regional distribution of CDM projects is reviewed in the Impacts report prepared for the CDM Policy Dialogue. See http://www.cdmpolicydialogue.org/	Accepted. Reference added.
5916	13	34	26	34	31	Cross-reference CDM in ch 7, ch 16, and specifically ch 14.3.4.3 re geographical distribution of CDM projects.	Noted. No text revision is necessary in this chapter. Coordination with other chapters, however, is an ongoing exercise.
8193	13	34	26	24	31	The relevance of this passage to the rest of the discussion is not clear.	Noted. No text revision is necessary in this chapter. Coordination with other chapters, however, is an ongoing exercise.
12973	13	34	26	34	31	It is not clear why an uneven distribution of mitigation action across countries would motivate a limit to imports credits. In general, I don't think it is appropriate to introduce here problems of the CDM.	Accepted. Geographic distribution is important and the placement is adjusted so that the idea stands alone in a separate paragraph.
17676	13	34	26	34	31	Here, I would mention that the EU-ETS was reformed exactly in this direction, i.e. by restricting the trade to CERs from LDCs. It is mentioned in another section, but I would at least reference here to this section or mention citation provided.	Accepted. Text revised. Necessary
16384	13	34	26	34	31	I would question whether the discussion of geographical distribution of CDM is relevant here	Accepted. See response to 777 above.
12808	13	34	32	34	40	This para could be rephrased, also some coherences should be provided in order to better inform the reader on the main point.	Noted.
16385	13	34	33	34	35	This sentence is not very clear; I know what you mean, but the phrasing makes it difficult to understand. Suggest instead: "The EB decided that the effects of new policies implemented in host countries should not be considered when assessing the additionality of new projects, to avoid perverse incentives etc...". Would also be good to note in this para that the consideration of impacts of policy measures is an important issue when considering future market mechanisms (see Prag et al (2011), KEEPING TRACK: OPTIONS TO DEVELOP INTERNATIONAL GREENHOUSEGAS UNIT ACCOUNTING AFTER 2012 http://www.oecd.org/env/climatechange/48125645.pdf).	Accepted. Text revised.
8767	13	34	46	34	46	It is useful to distinguish unilateral and bilateral direct links. All existing links are unilateral. They are easy to implement. Bilateral links are difficult to implement and none is yet in place although Australia and the EU announced their intention to implement one between 2015 and 2018.	Rejected. The chapter dealt with unilateral and bilateral linkages although no definition was advanced as it was not deemed necessary.
16386	13	34	46	34	46	It seems the subsequent discussion covers direct/indirect linkage of ETSS in general; suggest therefore deleting reference to Kyoto mechanisms from this sentence	Accepted. Text revised.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
7000	13	35		39		<p>You might want to look at Barrett (2011) for a discussion of the use of trade restrictions in climate agreements. I think they could be used strategically in some very narrowly focused agreements.</p> <p>Barrett, S. (2011). "Rethinking Climate Change Governance and Its Relationship to the World Trading System," <i>The World Economy</i>, 34(11): 1863-1882.</p>	Noted. Comment will be taken up in 13.8
3468	13	35				Figure 13.2 is not completely accurate (US did not pull out of 2nd period Kyoto but of first period two; what does white and red stripes stand for?;)	Accepted. Figure will be adjusted.
6577	13	35				Explain "Japanese bilateral mechanism" either in Figure 13.2 or in 13.4.1.3 Flexibility mechanism. (MOEJ Initiatives on Bilateral Offset Credit Mechanism for Mitigating Climate Change, 2012)	Accepted. Text revised. See response to comment 787.
16387	13	35				Nice figure, but given the tenuous current nature of the Japan bilateral offset system it seems to get undue coverage in this map; as far as I know, the countries marked have only had feasibility studies of varying degrees of detail, so cannot really be considered projects. Would also be good to have a bit more definition on the China pilots, and of course the EU-Aus link (I realise this happened after the first draft was written).	Accepted. Figure will be revised. Also see response to comment 787.
15729	13	35		35		Figure 13.2. Cap and trade schemes and linkages: you mean Cap and trade schemes with existing and possible linkages?	Taken into account -- title changed to "Cap and trade schemes with existing linkages"
6345	13	35	10	35	25	There are comparisons between different kind of linkages without specifying what of these linkages have been implemented in practice and what are the linkages prepared or suggested by scholars that have not existed yet. This information should be provided.	Rejected. The text is clear.
8771	13	35	10	35	12	A unilateral direct link does nothing if the linked units are not the marginal supply -- in that case the linked units are a form of price cap although the exact price is not known. With a bilateral link the benefits mentioned occur (subject to restrictions on use of the linked units). In addition a bilateral link value also reduces leakage, output losses in countries with the ETS, and lower welfare losses. See ALTERNATIVE APPROACHES FOR LEVELLING CARBON PRICES IN A WORLD WITH FRAGMENTED CARBON MARKETS, Elisa Lanzi, Jean Chateau and Rob Dellink, OECD Environment Directorate, 2012.	Accepted. Text revised. Citation included.
13647	13	35	10			Offsets are fundamentally different in carbon tax regimes than in cap and trade. They are tax expenditures.	Rejected. Not relevant for this discussion.
16388	13	35	10	35	25	Important additional references on linking are Dellink et al (2010), "Towards Global Carbon Pricing: Direct and Indirect Linking of Carbon Markets", doi : 10.1787/5km975t0cfr8-enand Elis and Tirpak (2006), LINKING GHG EMISSION TRADING SCHEMES AND MARKETS http://www.oecd.org/environment/climatechange/37672298.pdf . Would also be good to add a final para to this section, discussing the impact of regional linking of ETSS on international emissions accounting both under KP and broader FCCC agreements (eg see Prag et al (2011), Prag et al. (2011), TRACKING AND TRADING:EXPANDING ON OPTIONS FOR INTERNATIONAL GREENHOUSE GAS UNIT ACCOUNTING AFTER 2012, http://www.oecd.org/env/climatechange/49101167.pdf). This would also provide a nice link back to the KP systems, where the section begins by discussing.	Accepted. Reference added on the first point. Second point needs more research.
4234	13	35	13-14			Ditto comment above (page 6, line 32); second time this incorrect statement is made.	Noted. Will be responded in the revisions to the Executive Summary.
12810	13	35	2			Check whether "pull-out..." symbol is not better placed after "links"	Accepted. Figure will be changed. In the changed version Tokyo will be replaced with Japan.
4243	13	35	21-23			What is the difference between a reciprocal unilateral link and a bilateral link (referred to in the preceding sentence)? I don't think there is any. The two sentences seem to concern mostly the formality of the agreement by which mutual recognition is achieved.	Accepted. Text clarified.
10214	13	35	23	35	25	Expand on indirect linkage; how does it work?	Taken into account. Detail is contained in 13.7.4.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
12811	13	35	29	36	1	The different levels of interaction of climate and trade are mentioned without any further description of the effects or conclusions derived from this information. The implications of this statement are not self-evident and should be explained- Otherwise the sentence does not provide any additional information nor does it help to structure the chapter.	Taken into account: examples provided.
9294	13	35	3			A minor comment. The projects under Japanese bilateral mechanism also include Djibouti, Ethiopia, Kenya, Maldives, Moldova, Mozambique and Myanmar, References http://www.meti.go.jp/press/2012/04/20120426004/20120426004.pdf (in Japanese) http://www.meti.go.jp/press/2012/07/20120726002/20120726002.pdf (in Japanese) http://www.meti.go.jp/press/2012/07/20120726003/20120726003.pdf (in Japanese) http://www.nedo.go.jp/content/100495085.pdf (in Japanese) http://gec.jp/main.nsf/en/Activities-Climate_Change_Mitigation-adopt2012	Accepted. Figure will be changed.
12479	13	35	4			The figure shows "Projects under Japanese bilateral mechanism". We can't find any place where this mechanism is explained. Please consider to include some information about the mechanism in the text, if it's to be included in the Figure.	Accepted. Text revised in 13.7.3
6048	13	35	5	35	6	The Norway- EU ETS link doesn't appear in Figure 13.2	Rejected. The figure treats only present and future situation.
8768	13	35	5	35	5	Norway had a unilateral direct link with the EU ETS during 2005-2007 -- Norwegian firms could use EUAs for compliance, but EU ETS installations could NOT use Norwegian allowances for compliance. The Chicago Climate Exchange also had a unilateral direct link with the EU ETS, but they terminated that link when the price of phase I EUAs fell to just above the price of CCX allowances.	Rejected. The figure treats only the current and future situation.
15077	13	35	6			The Australian system will now (as of August 2012) be directly linked to the ETS by 2018.	Accepted. The figure will reflect this new initiative.
8769	13	35	7	35	7	Switzerland and Japan also have ETS that accept Kyoto units for compliance. They could also be used in RGGI if the price rose above \$10/ton CO2. These systems all accept ERUs, most CERs and, for Australia and NZ, RMUs, so not just the CDM.	Noted, although it is unclear if the figure can accommodate all this detail. Over to Axel!
8770	13	35	8	35	9	Estimates of compliance cost savings are provided in the Impacts report prepared for the CDM Policy Dialogue. See http://www.cdmpolicydialogue.org/	Accepted. Reference added.
4242	13	35	8-9			A finding that "EU demand has driven the price of CDM credits" does not directly lead to an implication that costs were reduced in the EU ETS. The surrender of CERs implies that these credits are less costly on the margin than EUAs or internal abatement, but the co-movement of EUA and CER prices and the cost savings from the use of CERs are two different things. Whether the cost savings from CER use are substantial also depends on the quantity of CERs surrendered in addition to whatever is the reduction in price. I would suggest that little is known about the price-quantity relationship for abatement in the EU ETS so that the finding of "substantial" cost savings seems to me unsubstantiated. No doubt there are some, but whether they are substantial is another matter.	Accepted. Text clarified.
5687	13	35	2	35	3	Figure 13.2 identifies several cap-and-trade regimes that I did not see mentioned in the text (e.g., RGGI, Korea, Taiwan). It would be helpful to mention these briefly, if they are shown on the map.	Noted. Reference is made although detailed treatment is in Chapter 15.
14253	13	35				One should note the important consequence of trade as pointed out by Brian Copeland, e.g., "Free Trade and Global Warming: A Trade Theory View of the Kyoto Protocol" (with M. Scott Taylor), Journal of Environmental Economics and Management, 49 (2005): 205-34.	Taken into account: reference included.
15389	13	36				Either explain what is in yellow or don't even include it	Rejected: Unfortunately, this comment cannot be related to the text.
6118	13	36	10	36	10	After The Kyoto Protocol, "(UNFCCC, 1998)" is unnecessary. Remove it.	Accepted and changed

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
2303	13	36	13	36	30	This discussion could be further improved by citing Victor (2011) who says that he now views trade sanctions as "essential" to effective climate change mitigation. On the whole, this paragraph gives a balanced view, unlike the additional nuanced view.	Accepted: Reference included including paragraph on p. 19.
10215	13	36	13	36	25	References lacking	Taken into account, new references have been inserted.
11462	13	36	20	36	22	The reference to "economic analysis of trade issues typically assumes that there are gains from free trade based on countries' comparative advantages and that government intervention tends to create inefficiencies, albeit with some exceptions" highlights only the orthodox neoliberal economists' view. It disregards a growing body of empirical evidence that highlights the flaws in such assumptions.	Taken into account: However, lack of space precludes to survey the entire literature on non-orthodox approaches. We have phrased this sentence now more carefully.
2416	13	36	25	36	29	Comment on specific text: The language of 'trade sanctions' is loaded . It immediately sounds like a bad thing. Trade measures might be a more neutral phase. When does something become a trade sanction? Already there are all sorts of trade measures in place: product standards e.g. CO2 emissions from cars or from energy-using equipment; process standards e.g. biofuels; application of EU-ETS to flights taking off from or landing in EU. All of these simply involve the application of domestic law to imported goods or services and this happens all the time across many sectors without anybody talking about trade sanctions.	Accepted, phrasing has been changed in accordance with reviewer's suggestion.
11463	13	36	25	36	27	The reference to "trade sanctions or trade enticements could be used to address free-rider problems of international agreements – specifically participation and/or compliance problems" has no empirical backing. It is not clear whether or not trade measures could, in fact, engender improved compliance. Having the IPCC refer to such use of trade measures could give rise to future trade-related disputes in the event that States use such IPCC reference as the "scientific" imprimatur for the adoption of such trade measures.	Taken into account; phrasing is now more careful. Note, however, that some other comments had to be taken into account when changing this paragraph.
14665	13	36	27			There is an Aldy, Orszag, and Stiglitz 2001 paper that calls for trade sanctions to promote participation and compliance. Full cite in the Aldy, Barrett, and Stavins 2003 13+1 Climate Policy paper.	Taken into account in so far as additional literature has been considered regarding this issue. However, given space restrictions, we focused on more recent contributions.
2417	13	36	31	36	32	Comment on specific text: Suggested addition to text:consistent with principles of non-discrimination and other WTO disciplines such as the 'necessity' test. WTO law does not only discipline discriminatory measures. For example the TBT Agreement provides that technical regulations should not be more trade restrictive than necessary to achieve a legitimate objective.	Rejected: The text says a central issue which implies that this is not the only issue. However, non-discrimination is an important issue as the referee confirms and hence we focus on it.
2169	13	36	31ff			Maybe it would make sense to compare fairness aspects w.r.t. those related to climate policy and those related to trade policy (see e.g. Suranovic, S.M. (2000)World Economy).	Rejected: Though this is an interesting idea, section 13.8.1 is on WTO-related issues to climate change. Fairness is an issue in its own right and will be covered in other chapters.
16952	13	36				Actually this conflates two rather distinct topics and if possible with the constraints, I would suggest to separate them. One is the literature on production vs consumption accounting. The other concerns instruments and how they relate to WTO. It would be a great pity if the former – accounting - issues got complicated politically by mixing them up with the latter.	Taken into account: we have separated both issues.

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10617	13	36	41			<p>An overview of WTO-permissible environmental instrument is provided in [Johnson, T., and R. Brewster. 2012. Information Revelation and Structural Supremacy: Explaining the International Trade Regime's Perceived Hostility to Environmental Policy. Duke University, Durham NC. 28 pp.] [ABSTRACT: The World Trade Organization (WTO) offers numerous instruments for privileging environmental goals over freer trade. What explains these instruments' common form, with use conditional on states' revelation of private information about environmental policies? We emphasize the WTO's need to mitigate industrialized countries' fear of "trade at all costs" and developing countries' fear of "green protectionism." And why is the WTO nevertheless accused of hostility toward environmental goals? Trade law is unusual, because states submit to third-party dispute resolution. This "structural superiority," combined with the WTO's information-revealing mechanisms, means that TRADE officials apply TRADE law to assess the appropriate balance of trade and environmental goals. Thus, the WTO's perceived hostility is fuelled not only by actual rulings -- but also by the WTO being in a position to issue rulings at all. We demonstrate with the General Agreement on Tariffs and Trade (GATT) and the Sanitary and Phytosanitary (SPS) Agreement.] And section 13.8 also would benefit from acknowledging the wider debate in which the Johnson & Brewster article engages: whether the World Trade Organization (particularly, its dispute settlement body) is an appropriate institution for addressing environmental issues -- or whether environmental issues would be better served by a forum (and dispute settlement body) of their own. Other research in this debate includes: [Conca, K. 2001. The WTO and the Undermining of Global Environmental Governance. <i>Review of International Political Economy</i> 7(3): 487-496.]; [Keleman, D. 2001. The Limits of Judicial Power: Trade-Environment Disputes in the GATT/WTO and the EU. <i>Comparative Political Studies</i> 34(6): 622-650.]; [Neumayer, E. 2004. The WTO and the Environment: Its Past Record Is Better than Critics Believe, but the Future Outlook Is Bleak. <i>Global Environmental Politics</i> 4(3): 1-8.]; [Thomas, U. 2004. Trade and the Environment: Stuck in a Political Impasse at the WTO after the Doha and Cancun Ministerial Conferences. <i>Global Environmental Politics</i> 4(3): 9-21.]; [Shaffer, G., and J. Trachtman. 2012. Interpretation and Institutional Choice at the WTO. <i>Virginia Journal of International Law</i>. 52: 103-153.]</p>	<p>Taken into account: all references have been carefully checked and cited if appropriate. It is clear that this is an interesting but also highly complex issue which cannot be discussed in its entire dimension in the text. Section 13.8 tries to hint at least at the most important issues, though admittedly at a very superficial level.</p>
11464	13	36		37		<p>Some of the discussion relating to the various WTO-related issues identified in this section should also be further expanded by the inclusion of discussions or references to Martin Khor, The Climate and Trade Relation: Some Issues (Research Paper 29, South Centre, May 2010), in order to provide more balance to the discussion.</p>	<p>Taken into account: reference has been checked for additional information and useful information has been included, given our strict space limitations. Reference needs to be approved because this paper has not been published in a peer-reviewed journal .</p>
12812	13	36	32	36	32	<p>You might like to consider giving introduction like the following paragraph: "There are two basic approaches to discuss WTO concerns in conjunction with the given climate regime: First, to analyze the compatibility between existing WTO-rules and climate change rules (legality), second, to analyze the potential of normative changes, either of WTO rules or of the climate regime in future (policy dimension). [It might also be helpful to add a new headline here "13.8.1.1 Border Adjustment Measures" or at least a new paragraph and then to introduce with:] Further, there are two types of Border Adjustment Measures: import-related and export-related Border Adjustments since it depends on this categorization which norms apply on Border Adjustments (i.e. that Border Adjustments can consist of a combination of export and import measures but it is also possible that Border Adjustments are based on only one of these types either.</p>	<p>Taken into account: even though we have not introduced new headings (as they are determined by the IPCC guiding rules), we have given BAMS a much more prominent role, expanding on this issue, trying to give a balanced view on the economic, legal and political issues. Needless to say, space restrictions required to sketch only roughly the main arguments.</p>

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
12813	13	36	32	36	32	The elimination of quantitative restrictions (article XI GATT) could be added in the introductory sentence because chapter 13, section 13.8.1, line 47 refers to non-tariff barriers as well and not only the non-discrimination rules. Kateryna Holzer considers article XI GATT as one important basis for the jurisprudential evaluation of Border Adjustments, too (see Holzer, Kateryna, Perspectives for the Use of Carbon-related Border Adjustments in Preferential Trade Agreements, NCCR Climate Research Paper 4/2011, Bern 2011, p. 8).	Rejected: Though interesting, and certainly a possibility to account for environmental issues in WTO/GATT, the introductory sentence refers to WTO-folks and their view.
16050	13	36	36	36	37	need more evidence to justify that WTO agreements, annexes are pertinent to climate change	Rejected: section 13.8 provides plenty of evidence why WTO is pertinent to climate change
18439	13	37				Pag 37 par 5: I think the paper dodges the problem of embedded emission in exports, presenting it as an ethical issue. Maybe it should be some kind of guide in how to deal with the subject in this part.	Taken into account; we are now more explicit about the issues involved in embedded emissions. However, the issue has to be discussed in other chapters and we give now the appropriate cross references.
3757	13	37	25	31		unclear	Rejected: formulation seems clear; however, paragraph has been relocated within section 13.8 and expanded.
16389	13	37	25	37	31	Could be interesting to note here that the UNFCCC system has built up a system of national emissions targets, and corresponding inventory reporting processes, which provide a certain impetus to remain national-level emissions accounting, rather than a consumption-based system	Accepted: suggestion has been integrated in the rewriting of this paragraph which has been relocated within section 13.8.
6346	13	37	29	37	31	It might be necessary to explain the use of the adjective "ethical" in this context or to consider deleting it. It might be also necessary to make reference to chapter 14 where is presented information on "embedded GHG emissions" at regional level.	Accepted: suggestion has been integrated in the rewriting of this paragraph which has been relocated within section 13.8.
6119	13	37	29	37	31	This is not necessarily 100% ethical issue. For example the issue has something to do with equity, burden sharing as well as who should pay mitigation cost. Suggest to rewrite.	Accepted: suggestion has been integrated in the rewriting of this paragraph which has been relocated within section 13.8.
14254	13	37	30			Is this an "ethical" issue? I would consider it a highly technical issue, instead.	Accepted: suggestion has been integrated in the rewriting of this paragraph which has been relocated within section 13.8.
12814	13	37	30	37	30	The question whether emissions should be based on importing or exporting countries is indeed ethical if we think about the related responsibility principle. But it can be an economic question, too (Droege, Susanne, Using Border measures to address carbon flows, in: Droege, Susanne (Ed.), Do border measures have a role in climate policy?, in: climate policy, Consuming and producing carbon: what is the role for border measures, Routledge, pp. 1191-1201).	Accepted: suggestion has been integrated in the rewriting of this paragraph which has been relocated within section 13.8.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
16953	13	37	32		45	<p>The paragraph notes that these issues are "especially problematic and consequential ..". Given this, the paragraph really needs to be more precise an in particular its final sentence is very problematic. I believe the literature shows consensus that whether "border measures" are compatible with WTO depends entirely on the question of what kind of border-related measures and how they are designed (this was the main message of the WTO's own study). The most simplistic – a straightforward inclusion of specific carbon-intensive imports into a trading scheme benchmarked on the basis of product only – clearly satisfies both the core GATT criteria (non-discrimination and MFN) and is directly analogous to excise duties which most countries already do: it thus does not even need Article 20 exemption. There is then a broad panoply of measres that involve more or less PPM / discriminatory / exemption requirements.</p> <p>The essential point to communicate in this paragraph is that there are in fact two entirely different discourses: one on how to 'level' carbon costs at the border; and the other how to 'leverage' action in other countries. The former is intrinsically non-discriminatory in intent. The latter is explicitly discriminatory, and thus infinitely more contentious. Legally they are entirely different discussions and should not be confused. For details see the Carbon Trust report, Tackling Carbon Leakage: specific approaches in a world of unequal carbon prices (2010), which is also being written up as an academic article by Grubb and Das for the Journal of World Trade.</p>	Taken into account: We agree that this paragraph did not convey enough message. The paragraph has been substantially expanded, though it still has to remain rather superficial due to space limitations. However, we hope that now the main arguments are clear, with the message that BAMs can be in line with WTO-GATT, but there is also a political dimension which requires also support from non-Annex B countries for implementation.
8772	13	37	32	37	45	See ALTERNATIVE APPROACHES FOR LEVELLING CARBON PRICES IN A WORLD WITH FRAGMENTED CARBON MARKETS, Elisa Lanzì, Jean Chateau and Rob Dellink, OECD Environment Directorate, 2012 for as comparison of the effects of linking and border adjust mechanisms.	Taken into account: study has been studied and cited.
15078	13	37	36			Another study examining the role of border tax adjustments is WJ McKibbin and PJ Wilcoxen, "The Economic and Environmental Effects of Border Tax Adjustments for Climate Policy," in L Brainerd and I Sorkin, (eds), Climate Change, Trade and Competitiveness, The Brookings Institution, pp. 1-34, 2009.	Taken into account: study has been studied and cited.
14666	13	37	42		43	Recommend citing Aldy and Pizer 2009 Pew report in context of econometric studies on competitiveness. I'm not positive the papers cited here are econometric in their methods.	Taken into account: study has been studied and cited. We also corrected "econometric" to "empirical" and include more studies.
11692	13	37	43	37	45	The authors note that " There has been less consensus in legal-institutional studies ...", it is better to provide more discussions, and why there are less consensus, what are the major differences	Taken into account: the phrasing has been changed as our previous statement was not illuminating as the referee suggests.
13927	13	37	32	37	45	For a comprehensive analysis on WTO rules and border adjustments, see Tamiotti, L., "The legal interface between carbon border measures and trade rules", Climate Policy, 11(5), 2011.	Taken into account: reference was already included but reference has been studied again carefully to see whether additional information can be used for the text.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
12815	13	37	36	37	40	<p>To arrange the research on Border Adjustment Measures you may like to consider a structure sub-dividing the arguments since: "It makes a difference for WTO law compatibility how the climate protecting measure is structured. An ETS-Border Adjustment Measure underlies different requirements than a Border Tax Adjustment (cf. Holzer, Kateryna, Proposals on Carbon-Related Border Adjustments: Prospects for WTO Compliance, in: Carbon & Climate Law Review 2010, S. 51-64). Even if Border Adjustment Measures do not a priori violate WTO law their justification (legality) depends on several questions: judicial and technical respectively economical ones. Judicial emphasis is to be put on a) the question which agreements apply to which type of measures, b) the question how to resolve WTO law-internal conflicts if several WTO-Agreements apply to the same measure, c) how to avoid WTO law-external conflicts or at least how to reduce conflicts between trade and climate protection norms within the existing international law d) the Like products question in the different WTO-Agreements, especially concerning the production methods that cannot be retraced in the final product (non-product-related process and production methods) and e) the necessity criteria respectively the criteria of disguised restriction within the climate-related exceptions (article XX GATT) of WTO-law. Technical and economic questions directly affecting legality questions are a) the relevance of carbon leakage, b) the measurement of the effectiveness of carbon leakage policies, eg. Border Adjustment Measures, c) the determination of the carbon footprint within all the uncertainties when monitoring climate policies in foreign countries and within the limits of international law's sovereignty of other states, d) the estimation of the costs of Border Adjustment Measures." (see for these emphases: Holzer, Kateryna, Proposals on Carbon-Related Border Adjustments: Prospects for WTO Compliance, in: Carbon & Climate Law Review 2010, pp. 51-64; McGrady, Benn, Necessity Exceptions in WTO Law: Retreaded Tyres, Regulatory Purpose and Cumulative Regulatory Measures, in: Journal of International Economic Law 2008, pp. 153-173; Du, Michael Ming, The Rise of national regulatory Autonomy in the GATT/WTO Regime, in: Journal of International Economic Law 2011, S. 639-675; Condon, Bradley J., Climate Change and unresolved Issues in WTO Law, in: Journal of International Economic Law 2009, pp. 895-926; Veel, Paul-Erik, Carbon Tariffs and the WTO: An Evaluation of Feasible Policies, in: Journal of International Economic Law 2009, pp. 749-800).</p>	Taken into account: references have been considered and critically investigated whether additional information should be included. The paragraph on tax-border adjustment has been restructured. However, the nuanced arguments on the legal compatibility of various policy measures and WTO/GATT rules, though very interesting, would require too much space. As we have included all suggested reference, we hope the interested reader will find sufficient references on this subject.
11693	13	38				<p>It notes: there have been doubts about their potential effectiveness, why? Please explain what Epps and A. Green concern for this</p>	Taken into account - text revised
7409	13	38	31	38	47	<p>Because of the difference in entitlements and obligations under WTO vs UNFCCC, please cite the literature that argues for discussion of climate change trade-related issues under UNFCCC rather than under WTO.</p>	Taken into account - WTO-interactions are discussed at length in 13.8.1 and a reference to Whalley (2012) has been included in 13.8
11465	13	38	31	39	11	<p>The discussion in this section relating to WTO-based options with respect to the institutional architecture for address trade-climate interactions is based almost entirely on just one study (Epps and Green 2010). The suggestions raised by Epps and Green, while academically relevant, have not, by and large, been discussed in the WTO.</p>	Combined with comment #6347
8773	13	38	9	38	20	<p>See Market-Based Instruments for International Aviation and Shipping as a Source of Climate Finance, Keen, Parry and Strand, Policy Research Working Paper 5950, World Bank, 2011 and Hautes, Linking emissions trading schemes for international aviation and shipping emissions, Climate Policy, v. 9, n. 4, 2009, pp. 415-430.</p>	Taken in consideration: reference cited.
6851	13	38	9	38	20	<p>There have been questions raised about the CBDRR- compatibility of the EU ETS extension to aviation. See Joanne Scott and Lavanya Rajamani, 'EU Climate Change Unilateralism', European Journal of International Law 23(2) 469-494 (2012)</p>	Taken inconsideration; reference cited with qualification as suggested by referee.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
4723	13	38	3			Annex VI of MARPOL under IMO appears to be one area in which GHGs might be addressed.	Taken into account: additional reference have been cited and the part on the IMO has been expanded slightly. Other suggestions may be interesting but require backing by literature.
6347	13	38		39		A diversification of sources might benefit this section. Five of the eleven bibliographic cites correspond to the same authors.	Rejected: to the best of our knowledge the literature is scarce on further development of the WTO-GATT rules to make them compatible with environmental objectives, though there is an extensive discussion whether the current rules are compatible. Authors will check the non-English literature in the next round of revisions
7410	13	39	12	39	14	Provide more assessment of the literature comparing unilateral to multilateral climate policy arrangements and trade measures. These elements will prove very important within the newly bottom-up approach to climate change policy architecture.	I am not sure whether I get the point. Unilateral trade measures to support climate policy by a subgroup of countries have been dealt with under BAMs, an item which has been expanded. But I am not sure what multilateral means now.
8194	13	39	12	39	12	"have received little attention thus far": From whom? They have received attention from policymakers. Perhaps this refers to scholars?	See comment 845.
7135	13	39	12	39	14	There has been an intense discussion on the Convention on that issue, particularly under the "shared vision" LCA negotiation, there is not a Decision on that because position remain divided, but the fact is that a group of G 77 countries has been elaborating in the need to address that from the Convention, due to the worries of trade being used as protectionism. That discussion also came under the "sectoral approach" negotiation, with developing countries concerned with the use of harmonized standards and concepts like a level playing field for international competitiveness, which again would open the door to protectionist trade measures against developing countries' products. The discussion is also linked to the economic and social consequences of response measures under 1(b)(vi). So it has not been a minor issue under the Convention, and, at that moment, discussions are still ongoing.	See comment 845.
11466	13	39	12	39	13	The reference to "there has been some interest in adopting a prohibition on the use of unilateral trade measures, such as offsetting border measures" should be further expanded considering that this is an issue that is likely to face the climate-trade community in the near future and is one that many developing countries in the context of the UNFCCC climate negotiations have already expressed support for such adoption as part of the negotiated outcome in the Ad-Hoc Working Group on Long-Term Cooperative Action (AWG-LCA) of the UNFCCC.	See comment 845.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
6852	13	39	14			Is it not worth referring to the numerous Indian proposals on prohibiting unilateral trade measures here?	Taken into account: this section has been rewritten; the critical views of developing countries about trade measures is now mentioned under BAMs, though not with explicit reference to India. We also mention there the negative welfare effects of BAMs on non-Annex B countries.
6348	13	39	17	39	17	Use UNFCCC secretariat rather than UNFCCC alone.	Accepted, text revised.
8195	13	39	34			"Technology" is undefined in this section. It seems to refer variously to physical capital (not just ideas embedded therein) and to ideas themselves. It would make sense to either define the term or to be clear in the various passages about which definition is being used. This section also seems to neglect the tension that many countries find between promoting technology transfer and national competitiveness. It is difficult to understand technology transfer discussions without including this factor in one's model.	Taken into account - any revisions to text are pending Glossary decisions and contents.
11467	13	39		40		The section on the rationale for mechanisms for technology development, transfer and diffusion contains no reference at all on the fact that under Art. 4.5 of the UNFCCC, technology transfer is an explicit treaty commitment on the part of Annex I Parties. Furthermore, under Art. 4.7 of the UNFCCC, compliance by Annex I Parties with such a commitment could, inter alia, spur increased levels of implementation by developing countries of their own UNFCCC commitments (such as on mitigation and adaptation). The existence and importance of such treaty commitments would be a very important element of the rationale for having such technology transfer mechanisms at the multilateral level.	Taken into account. The chapter text already mentions this point explicitly in section 9.3.2, though not in section 9.1. An U872 insertion has been made in the first sentence of section 9.3.2 to refer specifically to Article 4.5. Also see response to comments 900 and 901.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
6588	13	39	35	40	13	<p>In order to remove "implicit cost" (such as preferences, perceived risk and Transaction, Information and research cost) for technology transfer, information sharing based on technologies and experts is essential as a first step. Good example is steel sectoral approach such as APP, GSEP and worldsteel etc.</p> <p>Quote>></p> <p>The steel industry's "voluntary" sectoral approach for technology transfers and diffusion has been examined based on the bottom-up approach in APP and briefly at the "worldsteel" activities (mandatory sectoral benchmark approach and its effect on technologies will be examined in the following section). It is the authors' belief that advancing industry's voluntary sectoral approach supported by governments' policies as stated in (2) above can effectively remove barriers for technology transfer and diffusion. APP is a framework that brings together the public and private sectors, and still a prime example of the voluntary sectoral approach by individual industries. APP has eight task forces, including the steel sector. The eight task forces are cleaner fossil energy, renewable energy and distributed generation, power generation and transmission, steel, aluminum, cement, coal mining, and buildings and appliances. This approach is explained from a practical standpoint followed by an examination of its effectiveness.</p> <p>The APP steel task force has three major activities that are called "flagship projects": sharing information on technologies, establishing a common methodology for targets setting and increasing the implementation of technologies. One of the highest priorities is compiling an energy efficiency database using a uniform method for all seven APP member countries. That database provides the foundation for establishing targets and taking measures to secure them. Finally, task force members discuss the methodology for establishing targets that will be ambitious yet open to re-examination as required. In addition, the task force sends experts to, where needed, such as China and India, to help improve energy efficiency. As a result, there have been several concrete cases of technology transfers. Benefits are starting to be seen in the form of technology transfers and other activities. For example, in China, companies are installing equipment based on evaluations made at steelworks about desulfurization technology for sintering exhaust gas and energy saving technologies like CDQ. In this context, technologies have been transferred on a commercial basis. To be specific, actual achievements in APP Steel Task Force, which is basically in the category of voluntary sectoral approach, are in the followings. (1) Sharing information on the energy saving technologies and local environmental technologies in the SOACT handbook has been established. (2) A common evaluation methodology for energy efficiency of steelworks and a common APP 7 nations' database have been established. (3) A common methodology for target setting has been established. (4) A common methodology for expert diagnosis at the site has been established, including pre-study survey sheets, actual site visit and reporting with recommendation to a particular steelworks visited. (5) Some steelworks in China, after diagnosis and recommendation, have already decided to invest energy saving technologies and also denitrification technology. Next to the APP is the sectoral voluntary approach of the "worldsteel". This approach has four elements: data collection, technology transfers, development of innovative technologies and promotion of eco-product. The fundamental concept is to establish suitable targets for each country's steel sector in the post-Kyoto framework through negotiated agreements with respective governments. The voluntary sectoral approach of the steel industry is very "flexible and soft" in comparison to, for example, the</p>	Rejected - too much detail about a particular industry and based to a great extent on work of APP which has been disbanded.
15391	13	40		41		This gets it	Noted - no change needed.
7411	13	40	35	40	37	Does it follow from the statement that incentives to scale-up fossil-related technologies such as CCS is not warranted.	Taken into account - sentence revised for greater clarity.
6120	13	40	35	40	35	Is reduce (not increase) incentive correct?	Taken into account - sentence revised for greater clarity.
7412	13	40	38	40	45	Provide a review of pros and cons to the use of such market-based mechanisms for mitigation and adaptation on/for developing countries in relation to energy prices, energy access, sustainable development, burden sharing, distributive and spillover implications.	Taken into account - points are addressed in other sections of this chapter (13.11 and 13.13).

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
17677	13	40	13			After this section, I missed some evaluation: What technology-oriented agreements are there already? What processes are currently ongoing under the UNFCCC and in other fora? How successful are these processes so far? Etc.	Taken into account - covered in section 13.9.4
3178	13	40	1			sections 13.9.2 and 13.9.3. For my taste these sections are overly focused on IP and not enough on other fundamentals such as protection of property, sanctity of contracts, etc. There's a ton of practical (and to some degree academic—such as in the int' finance, int'l investment law and some of the international political economy literatures) experience with how these kinds of factors actually drive investment outcomes and diffusion of technology. Somewhere WG3 should deal with that—if not here then (better) in the industry chapter (chapter 10, which is devoid of most real world industrial concerns) or the finance chapter (chapter 16, which is a mess). □	Taken into account - text revised with sentence and reference added at the beginning of section 13.9.3. Also note that the point is already made in this section including in the second paragraph of 13.9.2. Not covered in section 13.11

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
6589	13	40	26	40	31	<p>Not only pricing on GHG but also following voluntary action should be added. For example, voluntary industry sectoral approach follows 4 steps.</p> <p>Quote>></p> <p>Through discussions in this paper, pros and cons in sectoral voluntary approach has become apparent. This approach should be applied as one of the several measures taken to compliment other policies. In view of the fact that there are few studies on this approach, however, the authors have tried to draw readers' and policymakers' attention to the importance of voluntary sectoral approach based on the steel industry's actual experience in various international forums. The success of the approach will depend on the four factors discussed below, which can be applied to other industries.</p> <p>First is the sharing of information. Companies must make information about established technologies (best available technologies and best practices) readily available. Accessibility to information about the latest development is also imperative. For example, all companies must follow benchmarks that use common definitions for diffusion ratio, unit energy consumption and other parameters. This category should also include identifying any barriers to the widespread implementation of technologies and determining the potential for reducing CO2 emissions.</p> <p>Second is the establishment of challenging numerical targets on a voluntary basis. These targets should include intensity goals as well as goals for the diffusion rate of technologies.</p> <p>Third is to utilize communications, especially among experts, promoting more widespread use of technologies to achieve the set targets. For example, engineers from many countries should create a forum to evaluate existing technologies, and to encourage the implementation of more advanced technologies. Model projects could be conducted if necessary.</p> <p>Fourth is the setting up and sharing of, a common long-term vision. Companies would need to follow a unified program for developing innovative technologies (such as participation in the "worldsteel" CO2 Breakthrough Program).</p> <p>The authors would like to add a word about international standardization here. Creating a database is one of the most critical elements of the voluntary industry sectoral approach. This information must be collected using indicators based on a single.</p> <p>For citation: Okazaki T, Yamaguchi M (2011). Accelerating the transfer and diffusion of energy-saving technologies steel sector experience - lesson learned. Energy Policy 39:P1296-P1304</p>	Rejected - because these issues are addressed in chapters 14 and 15 and are not international issues for this chapter
13596	13	40	38		45	While international carbon markets may be helpful there are many who question their effectiveness (focused on financing equipment and less on socio-technical fit and being incorporated into the innovation process and heavily skewed towards emerging economies) see Byrne et al (2012) chapter 7 energy pathway in low carbon development the need to go beyond technology transfer in Ockwell and Mallett (eds) (2012) and (2007) Forsyth World Development on cross sector partnerships also updated version in Chapter 18 of Ockwell and Mallett (eds) (2012)	Taken into account - text revised in section 13.9.2, 5th para, 1st sentence
8196	13	41	13	41	13	"financing": Do you mean financial transfers or something else? Unclear.	Taken into account - text revised with clarification of meaning of sentence.

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6853	13	41	17	42	16	Not sure what the policy is on including references to submissions - but some reference to among others, Indian submission on IP (and in particular their proposal to treat CC like HIV and allow for compulsory licensing) might provide context to this discussion.	Taken into account - text revised by adding sentence and reference in section 13.9.3.1 at end of first paragraph.
9157	13	41	18	42	16	M&A is another way of international tech transfer - Indian steel and Chinese wind power/ PV are examples.	Taken into account - text revised to include international M&As
9158	13	41	18	42	16	It should be noted that more than half of PV are produced in developing countries.	Rejected - not a necessary addition to the paragraph.
16390	13	41	2	41	5	Very relevant here is the OECD's policy framework for green infrastructure investment. See Corfee-Morlot et al (2012, forthcoming), Towards a Green Investment Policy Framework: the Case of Low-carbon Climate-Resilient Infrastructure. Email virginie.marchal@oecd.org for info	Taken into account - reference added.
13597	13	41	21		27	the literature referenced in Chapter 15 is not exclusive to low carbon -- so wondering if it's also useful to point out some that pertain to clean tech / low carbon (e.g. Dechezleprêtre et al 2010 http://ideas.repec.org/f/pde570.html and Abdel Latif (2012) in Ockwell and Mallett (eds) 2012	Rejected - not a necessary addition to the paragraph.
6349	13	41	28	41	40	It would be necessary to add bibliographic sources that indicates that IPR might act as a barrier for technology transfer in order to provide a balanced view of this very controversial matter. There are literature sources from scholars of some developing countries that supports this view.	Rejected - discussion is already balanced in several paragraphs.
12553	13	41	28			"Stronger" IP may well impede effective technology diffusion for climate response, and there is substantial literature and debate on this point. IP is not a normative continuum from "weak" to "strong." It requires a balancing of interests.	Rejected - discussion is already balanced. Seems balanced in several paragraphs.
7373	13	41	28	41	40	This passage is focused on technology transfer in the context of market transactions. That should be clarified and space given to consider the role of IPRs in non-market-based technology transfer possibilities.	Taken into account - text revised by adding sentence in section 13.9.3.1 at end of 4th paragraph.
4004	13	41	9	42	16	<p>Without having any empirical proof at hand, I am convinced that the underlying thesis of the authors is correct that strong IP protection increases technology transfer, whereby strong IP protection in my view as a patent law expert contests particularly of two aspects: a) a patent prosecution system allowing foreigners to apply for patents and to register patents under internationally harmonized and clear conditions, and, b) a strong system to forbid patent infringements effectively and quickly. Both aspects are the basis of strong IP protection in any country.</p> <p>One of the treaties administered by WIPO is the PCT (Patent Cooperation Treaty) which supports applicants to extend their (national) patent applications to all countries which are members of the PCT. The Paris Convention is another treaty which goes beyond this and laid down several principals in patent law the member states agreed to comply with.</p> <p>I also support the idea that the link between strong IP protection and licenses may be stronger than the link between IP protection and exports, as licensing typically, at least very often, is accompanied by the provision of know how which is necessary or helpful to distribute the licensed products by licensee in its country.</p> <p>However, as it is up to the patent owners, if there is a technology transfer by R&D agreements, by (cross-)licensing agreements or cooperations, it is up to the international community to find incentives for patent owners to share their knowledge. Compulsory licenses will in most cases not be a solution. They can be a solution, if the inventors manage to implement an invention as standard specification and if the law (typically jurisdiction) confirms that there is a right for a compulsory license, however such right will never be for free.</p>	Noted - no change needed.

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14255	13	41				One may here discuss the important relationship between IP-agreements (TRIPS) and the ideal design of climate agreements, since they are both influencing the incentive to develop new technology (e.g., I discuss this relationship in a recent working paper, Harstad, Bård, 2012, "The dynamics of climate agreements").	Taken into account - point is already made in section 13.8 and cross reference to 13.8 has been added in 13.9.3.2 at end of first para, but reference suggested in comment is not in refereed publication.
11664	13	41				The relationship between IPRs and technology transfers also depends on the characteristics of industries, products and technologies. For example, Ivus (2010) groups industries into patent-sensitive and insensitive to examine the impacts of stronger IPRs on exports. Reference: Ivus, O. (2010) Do stronger patent rights raise high tech exports to the developing world? Journal of International Economics, 81(1), pp.38-47	Taken into account - text revised by adding sentence and reference at end of 1st para in section 13.9.3.
11144	13	41	14	41	16	This paragraph appears to draw an unreferenced conclusion (use of word "impediment") prior to the discussion of IPR in section below.	Rejected - point is addressed in other sections of the chapter.
7509	13	41	6	42	31	Climate-friendly technologies are often energy efficient technologies naturally with profit in industry field. Proper IP protection is indispensable to accelerate climate-friendly technology. A lot of energy efficient technologies were transferred to developing countries and imitated.	Noted - no change needed.
3179	13	41	6			sections 13.9.2 and 13.9.3. For my taste these sections are overly focused on IP and not enough on other fundamentals such as protection of property, sanctity of contracts, etc. There's a ton of practical (and to some degree academic—such as in the int' finance, int'l investment law and some of the international political economy literatures) experience with how these kinds of factors actually drive investment outcomes and diffusion of technology. Somewhere WG3 should deal with that—if not here then (better) in the industry chapter (chapter 10, which is devoid of most real world industrial concerns) or the finance chapter (chapter 16, which is a mess).	Taken into account - text revised with sentence and references added at the beginning of section 13.9.3.
7001	13	41				Patents promote technological development, but as you know they also limit the use of new technologies by setting price above marginal cost. I am aware of no theorem supporting the view that patent arrangements should be harmonized. The extension of the patent system (as under TRIPS) may stimulate some new technological development, but it will also have redistributive effects, with no advantages for efficiency (much of this investment in R&D would have occurred with more limited patent protection). There should be some mention of approaches like "prizes," which promote R&D without granting patent protection. These require that the goal of technological development be pre-specified—a clear weakness. However, they also allow new technologies to be sold at marginal cost (assuming competitive markets, of course), helping to spread the new technologies. This is especially important if R&D into new energy technologies is aimed at providing the global public good of climate change mitigation. We want these technologies to spread.	Taken into account - text revised by adding paragraph at the end of 13.9.3.1.
11468	13	41		41		The section on IPRs makes a case stating that stronger IP protection fosters exports, FDI and technology licensing to middle income countries. This section (in page 42, line 10) also states that "IP protection has elicited innovation without significantly impeding technology transfer, although problems could arise if new, very broad patents were granted that impede the development of future, more efficient technologies." In stressing that stronger IP protection could foster technology transfer, the section completely disregards other studies that have highlighted the barriers that IPRs pose to technology transfer. Examples of such studies are Martin Khor, Climate Change, Technology and Intellectual Property Rights: Context and Recent Negotiations (Research Paper 45, South Centre, June 2012) and Carlos Correa, Mechanisms in International Cooperation in Research and Development: Lessons for the Context of Climate Change (Research Paper 43, South Centre, March 2012)	Taken into account - text revision in response to comment 877 (i.e. new paragraph added at end of 13.9.3.1) is also responsive to this comment - but suggested references in the comment are not in refereed source.

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4637	13	41	18	41	21	Add the following phrase after the words "GHG-reducing technologies": Apart from the intellectual property regime remedying the problem of public goods, producers of innovative products can internalize some of the benefits of their research efforts by requiring purchasers to enter into long term contracts and licensing agreements that prohibit reproduction of the product and dissemination of information embodied in the product.	Taken into account - text revised to include suggested sentence.
6805	13	41	18	41	21	Add the following phrase after the words "GHG-reducing technologies": Apart from the intellectual property regime remedying the problem of public goods, producers of innovative products can internalize some of the benefits of their research efforts by requiring purchasers to enter into long term contracts and licensing agreements that prohibit reproduction of the product and dissemination of information embodied in the product.	Taken into account - text revised to include suggested sentence.
7789	13	42	17		25	In addition to the current description on the options which contribute to technology transfer, also address that international public-private partnership by sector played an important role for technology transfer. (Okazaki and Yamaguchi, "Accelerating the transfer and diffusion of energy saving technologies -steel sector experience-lesson learned. Energy Policy 39,pp.1296-1304, 2011)	Taken into account - text revised and reference added
8774	13	42	18	42	31	There is extensive analysis of the contribution of the CDM to technology transfer. Most analyses are based on statements in the project documents. Technology Transfer and the Clean Development Mechanism (CDM), Erik Haites, Grant A. Kirkman, Kevin Murphy and Stephen Seres, Chapter 9 of Ockwell and Mallett, eds., Low-Carbon Technology Transfer, Routledge, 2012 is the mosrt recent publication, but an updated paper will appear in a special issue of Climate Policy on technology transfer in 2013. A second approach is to use duplicate papetnts as a measure of technology transfer via all channels and then test whether CDM makes a significant contribution. Hasic and Johnstone, CDM and international technology transfer: empirical evidence on wind power, Climate Policy, v. 11, n. 6, 2011, pp. 1303-1314 applies that approach.	Taken into account - reference added to 13.13.
6121	13	42	25	42	25	After "World Bank, 2008a)", add the following sentence. "It is also noteworthy that international public private partnership by sector played an important role for technology transfer (Okazaki and Yamaguchi 2011)". For citationne purpose, refer to Okazaki T, Yamaguchi M (2011) Accelerating the transfer and diffusion of energy-saving technologies steel sector experience – lesson learned. Energy Policy 39:1296–1304	Taken into account - text revised and reference added in section 13.9.4.1.
3267	13	42	26	42	31	This paragraph on the UNFCCC and TT should be updated to better reflect the current state of the negotiations on technology transfer, which have in fact moved beyond calling on "developed countries to finance the transfer of technology to developing countries" in the context of the technology mechanism agreed to in the Cancun Agreements that establish a Climate Technology Center and Network. [Note that as this is mentioned in chapter 14 reference could instead be made to 14.3.3.2.] Would suggest also adding a few lines clarifying the role of the private sector vs. governments in technology transfer in the context of international cooperation and agreements, so as to frame the following section.	Taken into account - reference added to 14.3.3.2, and discussion of role of private sector is already in several places in 13.9.
18019	13	42	27	42	27	More language be reflected including Art. 4.5 of the UNFCCC request the Annex II developed countries to " shall take al practicable steps to promote, facilitate and finance, as appropriate , the transfer of, or access to, environmentally sound technologies and knowhow to other Parites, particularly developing country Parties, to enable them to implement the provision of the Convention. In this process, the developed country Parties shall support the development and enhancement of endogenous capacities and technologies of developing country Parties..." to reflect the nature of legally binding obligation for Annex II in this regard.	Taken into account - text revised in 13.9.3.2 2nd paragraph by using the word 'mandates' and adding direct quote from Article 4.5.

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11469	13	42	27	42	27	The UNFCCC did not merely "called on developed countries to finance the transfer of technology to developing countries." Rather, under Art. 4.5 of the UNFCCC, developed countries listed in Annex II of the UNFCCC "shall take all practicable steps to promote, facilitate and finance, as appropriate, the transfer of, or access to, environmentally sound technologies and knowhow to other Parties, particularly developing country Parties, to enable them to implement the provisions of the Convention. In this process, the developed country Parties shall support the development and enhancement of endogenous capacities and technologies of developing country Parties...." (emphasis added). The treaty language is mandatory (i.e. "shall") rather than discretionary (which is what the "called on" formulation in line 26 implies).	Taken into account - text revised in 13.9.3.2 2nd paragraph by using the word 'mandates' and adding direct quote from Article 4.5.
13599	13	42	35		38	the focus is on intergovernmental initiatives -- which while important in some cases e.g. like Lewis (2010) on China Watson et al. (2011) also on China echo this view http://www.sussex.ac.uk/sussexenergygroup/research/growthinnovationdevelopingcountries/ukindiacollaboration in Phase II India they didn't play much of a role - in that case study suggesting a disconnect between govt-sanctioned endeavours and what's happening on the ground (Mallet et al (2009)	Taken into account - text revised to include reference to private-public partnerships 13.9.4.1 and in response to comment 902. Also role of private sector is discussed frequently in 13.9 elsewhere.
8197	13	42	8	42	9	Might also cite M Levi, E Economy, S O'Neil, and A Segal, "Energy Innovation", CFR Study, 2010.	Rejected - not refereed publication.
3266	13	42	8	42	12	The text says that "research to examine the role of IP rights in the specific context of climate-friendly technologies has been limited, but the Barton 2007 article draws upon several such original studies which could be examined in closer detail here. There have also been several since 2007 including studies looking at technology transfer in the wind industry to China, India and South Korea (Lewis, J. Building a National Wind Turbine Industry: Experiences from China, India and South Korea, Intl. J. Tech. and Globalisation 5:3.4: 2011, pp281-305) and in Chile (Pueyo, A. The Role of Technology Transfer for the Development of a Local Wind Component Industry in Chile, Energy Policy 39:3: 2011, pp 4272-4283) which may be relevant to this section.	Taken into account - text revised by adding clarifying phrase and adding three refereed journal articles.
13598	13	42	8		12	Just to also highlight other studies -- (Comment 34) you'll see in Phase II (Mallett et al. 2009) a few more noted including Harvey (2008) a http://www.sussex.ac.uk/sussexenergygroup/documents/decc-uk-india-carbon-technology-web.pdf . And you'll see references in Chapters 5 and 6 of Ockwell and Mallett (eds) (2012). Krishna Ravi Srinivas has published other work in this area - most recently on agriculture to do with adaptation www.sawtee.org	Rejected - additional suggested references not needed.
4005	13	42	8	42	12	I would like to emphasize that there might of course be problems in further technical development, if there is a key patent which cannot be bypassed. However, international patent law provides for the application of "dependent" patents, which openly admit that the key technology must be used, but, however, can comprise additional features for the technical development, which might make the key invention even more valuable. Very brought patents as mentioned in line 11 are typically reduced to a significantly smaller scope once it comes to discussions on the validity of such patents within annulity actions or infringement cases. Thus, this wording is, in my eyes, a bit too general.	Taken into account - text revised by adding phrase to clarify distinction in comment.

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11105	13	42	8			<p>(1) Please explain the reason why research on IP's role in climate-friendly technologies is limited. To my understanding, it is because most of the related studies, including Barton (2007) cited in this section, only analyze selected cases qualitatively and do not provide quantitative econometric evidence.</p> <p>(2) In addition to Barton 2007, it may be useful to mention other studies and categorize them into three (a) studies that implies that IPRs are not significant barrier on technology transfer (Barton 2007, Copenhagen Economics 2009, Lewis 2007, Ueno 2009), (b) studies that implies that IPRs actually or potentially prevent technology transfer (South Centre 2009, Ockwell 2008), (c) studies that says it is inconclusive whether IPRs prevent technology transfer (UNEP/EPO/ICTSD 2010). Full citations are as follows:</p> <p>Copenhagen Economics (2009). Are IPR a barrier to the transfer of climate change technology?, Copenhagen: Copenhagen Economics.</p> <p>Lewis J. (2007). Technology Acquisition and Innovation in Developing World: Wind Turbine Development in China and India. Studies in Comparative International Development 42, 208-232.</p> <p>Ueno T. (2009). Technology Transfer to China to Address Climate Change Mitigation. Resources for the Future Issue Brief 09-09. Available at: http://www.rff.org/RFF/Documents/RFF-IB-09-09.pdf.</p> <p>South Centre (2009). Accelerating Climate-friendly Technology Innovation and Transfer to Developing Countries: Using TRIPS Flexibilities under the UNFCCC. SC/IAKP/AN/ENV/1, Geneva, Switzerland: South Centre.</p> <p>Ockwell D. (2008). UK-India Collaboration to Overcome Barriers to the Transfer of Low Carbon Energy Technology: Phase 2, Intellectual Property Rights and Low Carbon Technology Transfer to Developing Countries - A Review of the Evidence to Date.</p> <p>UNEP, EPO, and ICTSD (2010), "Patents and clean energy: Bridging the gap between evidence and policy," UNEP, EPO, and ICTSD.</p>	Taken into account - text revised by adding clarifying phrase and adding three refereed journal articles.
7413	13	42	17	42	31	Also cite literature arguing that strict enforcement of IP policies creates a barrier to technology transfer to developing countries by increasing the cost of licensing .	Taken into account - text revision in response to comments 877 and 878 (i.e. new paragraph added at end of 13.9.3.1) is also responsive to this comment.
16049	13	42	18	42	31	need to elaborate more on technology transfer under the UNFCCC, incl. the current status of TT, the gap and means of bridging the gap.	Taken into account - text revised by adding sentence at end of 13.9.3.2 and references to chapters 14 and 15.
17678	13	42	31			After this section, I missed some evaluation: Are the 6 bio. US-\$ enough? What else is needed for effective technology transfer?	Taken into account - text revised by adding sentence at end of 13.9.3.2 and references to chapters 14 and 15.
13600	13	43				wondering if it would be helpful to flag the difficulty in trying to measure innovation / that R&D is still considered to be a key metric in which to do so	Noted. Innovation and R&D are relevant but not for this chapter. The comment is suggested to be sent to Chapter 5 or other chapters.
10216	13	43	18	43	20	Was that goal reached?	Taken into account - text revised to include actual amount achieved relative to goal, and reference added.

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8198	13	43	34	43	36	Why is capacity building only useful to developing countries?	Accepted - text revised.
13648	13	43	34			This section ignores the potential for institution and capacity building for price based measures. For example, countries with solid tax administration measures could assist other countries in adopting exise taxes on carbon. Likewise there are bilaterals on the development of cap and trade measures.	Rejected - outside the scope of this chapter. The focus here is not on the capacity building for a specific instrument such as carbon tax.
6350	13	43	35	43	39	This sentence is not exact. Indeed, Article 10e of the Kyoto Protocol mentions explicitly "national capacity building". More important, although the Climate Convention does not mention explicitly capacity building, articles 4.1 (i) and Article 6 address education and training that are constitutive elements of capacity building. These articles also set the grounds for the further elaboration of capacity building in COP decisions, including the Marrakech accords. (Marrakech accords are part of the many decision adopted by the Parties in the UNFCCC and not something independent).	Accepted - text revised and combined with comments #908-912.
4977	13	43	36		39	As a matter of fact: already UNFCCC: Art. 4.5 "support the development and enhancement of endogenous capacities", KP Art. 11/1 endorsing that provision. These were the initial general sources of reference for c.b.; there were two more specific areas, namely, for observations-research and education-awareness (that is the Art.10.e of KP). That is true that the Marrakech Accords introduced the details for addressing with this item.	Accepted - text revised and combined with comments #908-912.
7136	13	43	36	43	37	Convention do mention capacity building under the functions of the SBSTA, see Article 9 2.d	Accepted - text revised and combined with comments #908-912.
16954	13	43	37			I thought that both UNFCCC and Kyoto contained substantial articles and processes that could only be interpreted as "capacity building"? IN this broad area, an important source of analysis of industry internaitonal flows and policy options are the Carbon Trust reports, Tackling Carbon Leakage: specific approaches in a world of unequal carbon prices (2010); and Global Carbon Flows (2011). The former suggests an evolutionary approach to international strategy that delineates in part along sectoral lines. □	Accepted - text revised and combined with comments #908-912.
12554	13	43	37			The claim is made here that capacity building is not referred to in the UNFCCC or Kyoto Protocol. Article 9(2)(d) of the UNFCCC provides that the Subsidiary Body on Scientific and Technological Advice (SBSTA) shall "Provide advice ... on ways and means of supporting endogenous capacity-building in developing countries." In the Kyoto Protocol, Article 10(b)(2) provides that non-Annex I Parties "shall seek to include in their national communications, as appropriate, information on programmes which contain measures that the Party believes contribute to addressing climate change and its adverse impacts, including the abatement of increases in greenhouse gas emissions, and enhancement of and removals by sinks, capacity building and adaptation measures." Section 10(e) provides that all Parties shall "[c]ooperate in and promote at the international level, and, where appropriate, using existing bodies, the development and implementation of education and training programmes, including the strengthening of national capacity building, in particular human and institutional capacities and the exchange or secondeond of personnel to train experts in this field, in particular for developing countries, and facilitate at the national level public awareness of, and public access to information on, climate change. Suitable modalities should be developed to implement these activities through the relevant bodies of the Convention, taking into account Article 6 of the Convention." The extensive inclusion of programmatic work on capacity building in the Bali Action Plan and subsequent decisions was not therefore plucked out of thin air as the current draft language implies.	Accepted - text revised and combined with comments #908-912.
6351	13	43	40	43	45	The statements of this paragraph are not supported by any bibliographic cite.	Taken into account - additional references incorporated throughout Section 10
11577	13	43	40	43	45	Reference to chapter 4 about response capacity.	Accepted - text revised.

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10957	13	43	11	43	33	Confer: Torvanger and Meadowcroft (2011), The political economy of technology support: Making decisions about carbon capture and storage and low carbon energy technologies, Global Environmental Change, 21(2), 303-312. Confer also: Fischer, Torvanger, Shrivastava, Sterner, Stigson (2012), How should support for climate-friendly technologies be designed?, Ambio, 41(Suppl. 1), 33-45.	Taken into account - text revised and references added at end of 13.9.4.2 end of 1st paragraph.
15394	13	44				see separate file: "wdavidmontgomery - general comments on chapter 13 p44.doc"	The file suggested need to be checked but the revisor has not seen it.
8199	13	44	18	44	19	"capacity-building agents know what works": I doubt that this is always true.	Accepted - text revised by introducing the original sentence in the reference paper.
6353	13	44	2	44	3	The statement summarizing the views of Armitage, 2005; J.Barnett, 2008) needs to be expanded. As it stands now is contradictory and does not provide information to the reader to understand the	Noted - Section 10 has been heavily revised, but this specific revision will be held for the next round.
11470	13	44	25	44	25	The assertion that the "climate regime provided capacity-building support to create an enabling environment ..." is not supported by any empirical evidence or studies. In the context of the UNFCCC negotiations in relation to climate change actions-related capacity-building, there continues to be multilateral consensus among UNFCCC Parties that "gaps still remain in addressing the priority issues identified in the framework for capacity building in developing countries as contained in decision 2/CP.7" (see UNFCCC COP decision 13/CP.17) – i.e. that the support for capacity building provided by Annex II Parties continues to fall far short of what the expressed needs for capacity building are under the UNFCCC.	Accepted - text revised.
6354	13	44	26	44	29	The process of developing and implementing NAPAs by LDC and the preparation of national communications of developing countries supported by the Consultative Group of Experts from have been very important in enhancing capacity building on adaptation and mitigation in developing countries. Consider to mention these two element that have been more instrumental in enhancing capacity building in developing countries.	Accepted - text revised for the first case. However, reference papers on the preparation of national communications of developing countries supported by the Consultative Group of Experts have not been searched.
10217	13	44	29	44	32	"require patience" is mentioned twice in this sentence	Accepted - text revised.
6355	13	44	33	44	34	Capacity building for REDD+ has also been important in supporting mitigation.	Accepted - text revised.
4978	13	44	33			It did not solely focused on CDM, but e.g. also to assist to monitor the ghg-emissions at national level, to develop national mitigation policies (lately the NAMAs, as already correctly referred to at the end of this para.).	Accepted - text revised.
16391	13	44	33	44	34	It could be argued that capacity building has focused on much more than setting up DNAs. Notably World Bank initiatives such as Carbon Market Dialogue but also many developed country initiatives working on emissions inventories, specific emissions factors in developing countries, developing robust national baseline scenarios (eg search for Danish Energy Agency baselines workstream)	Accepted - text revised. The World Bank's role has been referenced. However, referenced papers on developed country initiatives on emissions inventories and etc have not been searched.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
5688	13	44	1	44	8	I do not see the connection between the social change theory discussed in this paragraph and any capacity-building designed to address climate change. In addition, the paragraph is very confusing. It seems to be referring to development aid, and suggests that such aid (1) cannot be expected accomplish development; and (2) can be effective under certain conditions. But what is the measure of development aid effectiveness, if not development? How is this relevant to aid targeted at climate change mitigation or adaptation?	Taken into account - Section 10 heavily revised
5689	13	44	9	44	23	Similar to lines 1-8, this paragraph just does not make sense here. By definition, investments in capacity-building for climate mitigation or adaptation would have an externally-imposed goal -- climate mitigation or adaptation. How would one operationalize "collective reflection, struggle and engagement with power relations" with respect to these goals?	Accepted - text revised by adding two explanation sentences in the paragraph, one at the top and one at the end, to facilitate understanding the meaning of the paragraph.
16241	13	44	32			Suggest adding the following two sentences at end of paragraph: "The most important source of multilateral funding for adaptation is the Global Environment Facility. Donations to its adaptation funds have been insufficient and, in general, demand for adaptation financing far exceeds the supply (Global , 2010, p. 89). The situation should improve with the newer Adaptation Fund, which is financed mainly by a tax on certified emission reduction credits generated under the CDM." Reference is to: GEF (2010). OPS4: Progress toward Impact. Global Environment Facility Evaluation Office, Washington, D.C. Available at http://www.thegef.org/gef/OPS4 .	Noted. This section is on capacity building issue within the climate regime context. However, the comment is on financial issue and beyond the scope of this section. Therefore, it is suggested that this comment be sent to Chapter 16
17096	13	45				the statement "international cooperation has brought about political agreement on limiting global temperature increase to no more than 2 degrees C above pre-industrial levels" is not factually correct. The Cancun Agreement specified that this will be achieved in conjunction with equitable access to sustainable development. Ignoring the equity dimension of the negotiations around international cooperation is a serious gap in this chapter and affects other sections also. The different approaches in terms of burden sharing and resource sharing need to be specified. Please see my articles in 'Climate and Development' and 'Climate Policy'.	Taken into account - text has been completely restructured
2170	13	45	11ff			Mabe some distinction could be made between Green Climate Fund (GCF) and the 100bn USD pledge (Cancun). At least it should be better explained how GCF and 100 bn USD pledge are related (and that they differ).	Taken into account - GCF now covered in section 13.11.1 .1 on UNFCCC-related vehicles, while 100 billion is discussed in the introduction to section 13.11.1
8775	13	45	12	45	17	Buchner, B., Falconer, A., Hervé-Mignucci, M., Trabacchi, C., Brinkman, M. (2011a) The Landscape of Climate Finance, A CPI Report, 27 October 2011 provides an essential overview of current climate finance.	Accepted - now cited in the intrdution (albeit full coverage only in Ch. 16.2.2.2)
4980	13	45	20			{Add} "Financial support is provided {}primarily to developing countries under .. ~ some GEF and SCCF sources can also directed to EITs (and indeed there were quite a few such GEF-funded projects).	Accepted, - countries in transition now mentioned as possible recipients in 13.11.1.1
8776	13	45	20	45	30	Climate finance has no agreed definition, either overall or under the UNFCCC. Buchner et al estimate current climate finance at \$97 billion per year. Under the UNFCCC Annex II Parties can provide finance through bilateral and multilateral channels. The last summary (UNFCCC, 2011) of Annex II reports of climate finance provided for the 6 years from 2005 through 2010 totalled \$58.4 billion, an average of just under \$10 billion per year. The funds mentioned in this paragraph are operating entities of the financial mechanism of the UNFCCC. The funds disbursed by those entities is less than \$1 billion per year. In short climate finance under the UNFCCC is about 10% of total climate finance and climate finance channeled through the operating entities of the UNFCCC is less than 1% of total climate finance.	Taken into account - literature on definition of climate finance now cited. Numerical estimates of climate finance are covered in Ch. 16.2.2.2.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
2172	13	45	21	22		Maybe there should also be an explanation about the "development" aspects of SCCF and LDCF.	Rejected - discussion at this level of detail would blow up the text beyond the allotted page volume.
2171	13	45	25			I suggest replacing "focusing on mitigation" by "focusing on global benefit augmentation". The GEF funding has global benefit orientation but is not only dedicated to climate but also to other fields (biodiversity etc.).	Taken into account - text has been fully restructured
13193	13	45	28			I suggest removing all the text after "Cancun" (line 28) and include the following: "...Cancun and launched at COP-17 in Durban. The GCF is linked to the commitment by developed countries to jointly mobilise \$100 billion per year by 2020. At present, the Fund is preparing to begin operations. Together with the long term financing commitment, developed countries also committed to provide new and additional resources through existing international institutions, approaching \$30 billion for the period 2010-2012. This short term pledge is known as "Fast-Start Finance".	Taken into account - FSF and 100 billion now mentioned in introduction to section 13.11.1
7378	13	45	28	35	30	In referencing "fast start financing" it would be useful to be explicit to the extent to which that represented "repackaged" ODA rather than new finance, as was detailed in the ACPC report of 2011, http://new.uneca.org/Portals/acpc/documents/Fast-Start-Finance-lessons-for-long-term-climate-finance-under-UNFCCC.pdf	Taken into account - question of new and additional covered in introduction to 13.11
6050	13	45	37	45	45	It would nice to see something like this in the previous section.	Rejected - due to lack of clarity
6356	13	45	38	45	38	Delegated by whom? Not clear the meaning of the cited statement.	Taken into account - problematic text has been deleted
4979	13	45	4			There was a rather significant multiyear program reaching very many countries by GEF addressing the national institutional capacities for the "Rio Conventions": "National capacity self-assessment for global environmental management (NCSA)"	Noted - discussion of the GEF in Section 11 has been revised
6357	13	45	43	45	48	This cited statement needs to be expanded. It is not clear for the readers the reasons behind.	Taken into account - text moved into section 13.11.2 on private finance and linked to question whether public financial institutions leverage private finance.
13928	13	45		47		This section should emphasize the necessity 1) to analyse the impacts of financing decisions, 2) to reallocate budget and redirect investments (instead of looking for new money). See for example for transportation sector Sakamoto, K., Dalkman, H., Palmer, D., 2010, A paradigm shift towards sustainable low-carbon transport. Financing the vision ASAP , ITDP	Rejected - section 13.11 does only look at international collaboration for financing, not the sector-specific impacts. These are discussed in Chapter 16.
10820	13	45				Somewhere in this section it would seem to be important to have a discussion on the tricky concept of financial additionality, the demand from some countries that climate finance not represent a deviation of funds from development expenditures, and the tricky conceptual and implementation issues this poses.	Taken into account - Stadelmann et al. (2011) discussion on baseline definition quoted in the introduction, and Michaelowa and Michaelowa (2007) regarding deviation of ODA.
16392	13	45				This section is very important and deserves to be beefed-up and made more comprehensive. I would bring current section 13.11.4 right to the front - that is the crux of the issue, notably the important role of private sector capital, and how to leverage it effectively with public funds. A good reference to introduce the section could be Buchner et al. (2011), The Landscape of Climate Finance http://climatepolicyinitiative.org/wp-content/uploads/2011/10/The-Landscape-of-Climate-Finance-120120.pdf . In general would be good to highlight when you are talking about finance (structures to provide funding for upfront capital etc) and when you mean funding (the money flow itself). See my specific comments on subsections that follow	Taken into account - section deleted and relevant material shifted into the introduction. Buchner (2012) now cited, but the full coverage of that report is now in Ch 16.2.2.2 - thus not duplicated here.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
13930	13	45	11	47	39	This section should mention the emergence of carbon markets at the local level (Local Emission Trading Schemes) and their links with regional carbon markets. See Kolher, G., Lefevre, B., 2011, Cities and Emission Trading Schemes, A comparative analysis, jointly, International Journal of Global Energy Issues, special issue "Carbon Markets: An International Perspective", vol 35, n°2/3/4	Rejected - the reference is not relevant for international finance. It may be relevant for Ch. 15
12816	13	45	11			The structure of subsection 13.11 is not clear because different dimensions of structuring the issue are used: subsections 13.11.1 and 13.11.2 refer to multilateral vs. bilateral climate finance while 13.11.3 refers to private sources of finance; lastly, subsection 13.11.4 provides a general overview about public and private finance of mitigation and adaptation. It would be better to follow a general structure (public vs. private flows), and create further subsections which deal with, e.g. bilateral vs. multilateral public sources. The structural relationship of subsection 13.11.4 is to be determined. As it provides an overview of public and private sources it might serve as an introductory part, i.e. at the beginning of 13.11 or 13.11.1.	Accepted - section now restructured into subsections on public and private flows, and text substantially rearranged.
15665	13	45	12		17	The discussion of financing in the context of international cooperation would benefit from significantly elaborating the theoretical justifications for providing finance. Finance may not only create direct benefits (e.g. via low-cost mitigation in areas not suitable to market-based mechanisms) but may also create indirect benefits through generating trust in negotiations. Mitigation and adaptation finance show important differences in this regard, particularly due to their characteristics as global and primarily local / regional public goods respectively. For more on these issues see: Rübelke, D.T.G. 2011. International Support of Climate Change Policies in Developing Countries: Strategic, Moral and Fairness Aspects. Ecological Economics 70 (8):1470-80. Indeed given the emphasis of the chapter it may make sense to focus this section (13.11) primarily on the role of finance in the context of broader international cooperation, and leave detailed discussion of funding arrangements to Chapter 16, in order to avoid overlap.	Taken into account - Reference Abadie et al. (2012) quoted regarding bias towards mitigation. Reference Rübelke (2012) regarding adaptation financing should be covered in Working Group II..
16393	13	45				Would be good to see a fuller discussion of the GCF, higher up in the paragraph. It is likely to be much more important than the LDCF etc. Would be good to mention here too the \$100bn commitment under the UNFCCC, and the difficulties with measuring and tracking progress (see Clapp et al (2012) Tracking climate finance: what and how, http://www.oecd.org/env/climatechange/50314405.pdf).	Taken into account - 100 billion commitment now mentioned in Intro to section 13.11.1. So far no peer-reviewed literature on GCF performance exists.
11471	13	45		45		The treaty commitment of Annex II Parties to provide financing to developing countries pursuant to Art. 4.3 of the UNFCCC is completely ignored in this section, notwithstanding that such treaty commitment is the underlying multilateral policy regime basis for climate finance to take place.	Taken into account - this commitment has never been operationalized. Voluntary financing to the different UNFCCC-based vehicles is now mentioned in section 13.11.1.
17679	13	45	30			After this section, I missed some evaluation: Was the money for the fast start finance really delivered? Was it additional? See e.g. BNEF – Bloomberg New Energy Finance (2011): Have Developed Nations Broken Their Promise on \$30bn 'Fast-Start' Finance? Bloomberg New Energy Finance White Paper. London: BNEF.	Rejected - this is covered in Ch. 16.2.2.2. However, emerging literature should be watched.
14997	13	45	31			This or the following section should address the World Bank's Forest Carbon Partnership Facility, which is emerging as a major locus of activity and potential funding for building capacity for implementing REDD+ strategies as well as consensus around key elements of those strategies.	Rejected - discussion at this level of detail would blow up the text beyond the allotted page volume.
11594	13	46	1	46	35	There should be a discussion on direct access and countries setting up institutions to deal with climate funds	Taken into account - Section 13.11.1 mentions direct access
6352	13	46	18	46	18	This statement is valid for the Adaptation Fund only. The GEF Council does not have majority of developing countries members.	Accepted - text corrected
4981	13	46	18			GEF Council: of the 32 members 16 repr. developing countries (32=16+14+2 where 2 are from EITs)	Accepted - text corrected

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
15667	13	46	18			The role of developing countries in GEF governance is not directly comparable to that under the Adaptation Fund. Whereas under the AF developing countries have an absolute majority, under the GEF developing countries have an equal number of seats (16) to the combination of "developed countries" (14) and "economies in transition" (2). Under the Green Climate Fund, economies in transition such as Russia, Poland, Hungary and the Czech Republic are classed as "developed countries", suggesting that the balance of representation under the GEF is more like the GCF than the AF.	Accepted - text corrected
2173	13	46	25ff			The size of the funds (AF, LDCF, SCCF) should be stated in order to put them into perspective (against the recent funding pledges (Cancun).	Taken into account: Ch. 16.2.2.2 lists the current size of the funds
15668	13	46	37			The text could clarify that ODA is not just provided through bilateral channels, but may also be provided through multilateral channels. Indeed most of the multilateral channels referred to in the previous section (with the exception of the Adaptation Fund) are largely ODA-funded. Therefore any concerns about additionality would likewise apply to multilateral channels to the extent that they are ODA-funded.	Noted - Section 11 has been heavily revised.
12555	13	46	40			A useful reference is Robert L. Hicks, Bradley C. Parks, J. Timmons Roberts, and Michael J. Tierney, 2006. Greening Aid? Understanding the Environmental Impact of Development Assistance, Oxford University Press.	Taken into account - text on bilateral aid flows has been deleted, issue is covered in Ch. 16 .6.2.3 (albeit not with that reference)
2174	13	46	41			With respect to the level of aid flows (mitigation) official data might be a better source?!? Or does such a source not exist (I am uncertain in this point)?	Taken into account - text on bilateral aid flows has been deleted, issue is covered in Ch. 16 .6.2.3
15669	13	46	43		46	The concern about diversion of ODA is presented in a somewhat simplistic fashion. In principle it would be possible to avoid diversion as long as climate-related ODA is 'additional' to a business as usual level of ODA. Part of the difficulty is that it is practically complex to develop an accurate baseline. This is an area of public debate that is frequently muddled, and there is an opportunity for the IPCC to clarify these issues. For a nuanced discussion see: Stadelmann, M., J.T. Roberts, and A. Michaelowa. 2011. New and Additional to What? Assessing Options for Baselines to Assess Climate Finance Pledges. Climate and Development 3 (3):175-92.	Accepted- reference inserted in introduction
8200	13	46	8	46	8	There are formulaic approaches to allocation other than "performance based allocation".	Taken into account - Actual allocation modes of GEF and AF explained in section 13.11.1.1
15666	13	46	8			Allocation of public finance may be "formulaic" without being "performance-based", e.g. if adaptation finance is allocated on the basis of a formula for vulnerability.	Taken into account - Actual allocation modes of GEF and AF explained in section 13.11.1.1
13194	13	46				I suggest incorporating in this Section some information about the Standing Committee, since it is another key financial outcome of the COP-16	Rejected - discussion at this level of detail would blow up the text beyond the allotted page volume.
14998	13	46	1			This and/or the preceding section should address the World Bank's Forest Carbon Partnership Facility, which is emerging as a major locus of activity and potential funding for building capacity for implementing REDD+ strategies as well as consensus around key elements of those strategies. The FCPF is distinctive for a decisionmaking body that includes strong representation from countries receiving funds as well as from the donors.	Rejected - discussion at this level of detail would blow up the text beyond the allotted page volume.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
11472	13	46		46		The section relating to bilateral climate finance conflates ODA with the required climate finance under Art. 4.3 of the UNFCCC. In doing so, such section reflects the practice of developed countries even if such practice is not consistent with the multilateral consensus that climate finance must be “new and additional” (see e.g. paragraphs 18, 95, 97 of COP decision 1/CP.16 and paragraph 59, and paragraphs 13 and 18(f) of Annex I, of COP decision 2/CP.17)	Taken into account - Section 13.11.1.1 addressed diversion of ODA.
14999	13	46	36			This chapter and/or chapter 16 should include discussion of the major bilateral commitments that some countries have made to climate mitigation. Norway's contributions to Brazil's Amazon Fund and to Indonesia to support REDD+ activities stand out in this regard as cases where a major bilateral investment is supporting significant mitigation activity and stimulating the development of climate mitigation policy and practice across an entire sector.	Taken into account - these aspects are covered in Ch. 16, as Ch. 13 will only cover fully international collaboration.
12818	13	47	18	47	35	The sentence of p. 35 II. 18f. is repeated verbally on the same page I. 35. This might have happened because section 13.11 is not clearly structured and can be part of both subsections 13.11.3.2 (private sector flows) as well as 13.11.4 (sources of finance of mitigation and adaptation). Section 13.11 should be restructured as proposed in a previous comment.	Taken into account - text substantially restructured
8777	13	47	2	47	14	The revenue generated by the sale of CERs is estimated using the quantity of CERs transferred from the CDM registry - transferred to the buyer - and information on CER prices. Over 750 million CERs had been transferred from the CDM registry by the end of 2011. This was over 92 per cent of the CERs issued over the same period. The total revenue from the sale of CERs is at least \$9.5 billion (primary market prices) and could be as high as \$13.5 billion (secondary market prices).	Taken into account - numerical information on different instruments is covered in Ch. 16.2.2.2
10821	13	47	22	47	25	This discussion of export credit agencies needs a sentence or two more to show how significant these agencies are to the landscape of finance, and the challenges of governing them and coordinating their functioning. Since AR4 the new challenge is the rise of ECAs outside the OECD, and therefore outside the OECD's Export Credit Arrangement, the existing governing mechanism. See Christopher Wright, Export Credit Agencies and Global Energy. Vol 2, special issue (September 2011).	Taken into account - ECAs are not an issue of international collaboration. Therefore, text has been deleted.
8201	13	47	25	47	25	Not everyone agrees that MBD efforts lack legitimacy. I would write "some argue..."	Taken into account - text has been deleted
18244	13	47	41			“international responses to climate change depend on private sector action”, can have prescriptive interpretation. International response to climate change is part of a global effort of States within the framework of an international instrument, the United Nations Framework Convention on Climate Change (CMNUCC), and the international response will depend of the fulfillment of responsibilities and obligations established in this instrument, particularly the commitments of the Parties which are an Annex of the Convention.	Taken into account - text has been substantially rephrased.
18021	13	47	41			The reference that “international response to climate change depend on private sector again” is not consistent with the international agreement as well as the reality.	Taken into account - text has been substantially rephrased.
18020	13	47	41	47	41	Incorrect statements regarding the UNFCCC’s status. UNFCCC is widely recognized as the primary multilateral institution and central channel for climate negotiation as well as major forum for international cooperation.	[draft single response will be made in line for comment #983]
16395	13	47	41	48	11	This intro para is written as though the private sector are enemies of the climate “regime”. Would be better to rephrase this in terms of economic incentives - the private sector recognises and responds to long-term trends in regulatory changes, as well as short-term regulatory requirements.	Taken into account - text has been substantially rephrased.
11474	13	47	41	47	41	The statement that “international responses to climate change depend on private sector again” implicitly shifts the legal obligation to spur climate change action away from States (where such obligation is currently located under the UNFCCC) to non-State actors. This could create questions of legal and policy accountability, considering that the locus of such obligations would then become diffused given the large number of private sector actors. It furthermore disregards the essential role that State regulation can play in terms of shaping private sector actions and activities.	Taken into account - text has been substantially rephrased.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
8202	13	47	43	47	44	"private companies will generate most of the investment...." Not obvious that this is true given the large role of SOEs in some major emitters.	Taken into account - text has been substantially rephrased.
6358	13	47	9	47	14	The reference supporting this statement is missing.	Accepted - text deleted
12817	13	47				There is little message, here. In case you have to shorten the chapter, you may find potential, here.	Accepted- text shortened significantly
16394	13	47				This section would benefit from restructuring and expanding: call it Private sector finance. Market mechanisms should just feature as one mechanism governments have used to increase private sector action, rather than appearing on an equal footing with "private sector flows". Para on private flows (13.11.3.2) needs much more detail (eg sentences such as "financing will follow if policy makers continue to focus on climate change" need substantiating). More importantly, the discussion should be based around a discussion of how public finance can leverage the necessary finance flows, see Buchner et al and Clapp et al refs above. Socially responsible investment is just a small part of the funding pool that could contribute to climate finance. See Kaminker et al (2012), Role of institutional investors in financing clean energy http://www.oecd.org/sd-roundtable/publications/50363886.pdf	Accepted - text restructured; sub-sections deleted.
7414	13	47	15	47	25	Under market based mechanism private sector flows will be directed to activities that result in highest returns, which may not be the activities that have the highest return from climate perspective. This makes comment 18 above more compelling in relation to the role and scope of private sector financing to climate change.	Taken into account: leverage discussion added in section 13.11.2
11473	13	47		47		This entire section relating to market mechanisms and private sector flows confuses the role of market mechanisms and private sector investments in climate change-related activities as climate finance under the UNFCCC. Private sector investment in carbon markets or in climate change-related activities are not climate financing that falls under Art. 4.3 and Art. 11 of the UNFCCC. Carbon market private sector investments, for example, such as the provision of financing in projects that generate carbon credits that can then be sold in the carbon markets are not climate financing but rather compensatory payments to the host country for assisting the investor's country in meeting its mitigation commitments by having the host country undertake emission reductions on behalf of the investor's home country. By conflating private sector climate-related investments as equivalent to Annex II Parties' climate financing, this section gives that impression that Annex II Parties may then comply with their treaty commitments on climate financing by taking the credit for their private sector's investments in climate activities in developing countries.	Rejected - the introduction to section 13.11. now specifies clearly that there is no universally accepted definition of climate finance. Section 13.11.2 provides the literature on leveraging private sector investment through different types of climate finance flows.
7415	13	47	26	47	39	Assess the adequacy of climate financing in view of the requirements (Copenhagen Accord) that such funding be additional, new, adequate, and predictable and the extent to which private finance may satisfy these requirements	Taken into account - new and additional issue covered in the introduction to section 13.11
15670	13	47	27		39	The discussion of potential financing sources is extremely superficial and is perhaps best omitted and cross-referenced to the more extensive discussion in 16.2.3.	Taken into account - section deleted and references to Ch. 16 made in the introduction to section 13.11
15000	13	47	40			Given the interest that has emerged in private sector contributions to international climate finance (governments have referred to private sector contributions as important to meeting the \$100 billion pledged in annual climate finance for 2020), it would be particularly interesting if this section could provide some additional thinking about various means of stimulating private sector finance.	Some ideas on stimulating private sector finance have been added
5691	13	47	40	49	9	Some of the material in section 13.12 overlaps with the discussion in section 13.5.2. It is not clear to me which is the better place for the discussion of certification schemes, etc., but can these sections be combined and shortened?	Links with Section 13.5 made to avoid repetition
3180	13	47	1			section 13.13 is the most crucial section of this chapter but not possible to review at this stage. The material on CDM is repetitive from before. I worry about leaving 13.13 to the SOD when this is likely to be the most radioactive part of the chapter.	Comment not relevant to this sections

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
6122	13	48	19	48	19	Add after "McGee and Taplin, 2009" the following literature. " (Okazaki and Yamaguchi 2011)". For citation purpose, refer to Okazaki T, Yamaguchi M (2011) Accelerating the transfer and diffusion of energy-saving technologies steel sector experience – lesson learned. Energy Policy 39:1296–1304.	The reference has been added, since the paper is relevant and looks at the steel sector.
6123	13	48	20	48	20	Add after "Fujiwara, 2012" the following literature. " (Okazaki et al. 2012). For citation Okazaki, T., Yamaguchi, M., Watanabe, H. Ohata, A., Inoue, H. Amano, H. (2012), Technology Diffusion and Development. In: Climate Change Mitigation, A Balanced Approach to Climate Change. M. Yamaguchi, (ed.), Springer, London pp. 179–221.	This reference has not been added as the comment does not suggest any new element highlighted by the literature
9522	13	48	27	48	30	Please, replace the whole paragraph with the following; International PPPs have a significant role to facilitate development and commercial deployment of low carbon technologies as governments remove barriers to the entry and provide stakeholders with new business frameworks and industries also demonstrate leadership through active involvement with regards to their technologies, investments and know-how. (ETP 2010, p52 and p469)	Elements of the proposed sentence have been merged with existing text and referenced. The reference has been included.
6359	13	48	38	48	41	This statement is valid for the voluntary carbon market, but not (at least entirely) for the carbon market supported directly by UNFCCC. The main registry for emission trading, CDM and Joint Implementation exchanges are based on the international transactional log, that is not governed by private sector actors or NGOs.	The sentence has been rephrased accordingly
4244	13	48	9-11			The last sentence of this paragraph implies a connection that is not obvious. The setting of a target, especially if it is aspirational, does not have any necessary connection with the commitments of the "largest international companies." However, if governments have indeed taken action to internalize the externality, such as in a cap-and-trade system or a carbon tax, it is a matter of enforcement and not "commitment" by large international companies. Moreover, to the best of my knowledge, where carbon taxes have been implemented (Norway) or cap-and-trade systems instituted (EU ETS), I don't know of any cases in which large multinational companies are out of compliance in not paying the tax or surrendering permits.	This section has been accordingly been modified
16396	13	48				This sub-section is interesting as it is but would benefit from further para on PPPs introduced to construct and maintain infrastructure in various countries, as this could be important for green investment (see Corfee-Morlot et al (2012 forthcoming), Towards a Green Investment Policy Framework: the Case of Low-carbon Climate-Resilient Infrastructure.	Within the space limits, this section has been strengthened and a figure included from the suggested author
6790	13	48	26	48	27	Suggest to add the following text: "At the same time, Public-Private-Partnerships have also been adapted to suit rural energy needs. For instance, United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) promotes the Pro-Poor PPP (5P) approach to power rural areas using locally available renewable energy resources"	A few words were included to this effect.
16397	13	48				The title of this subsection is a bit misleading, perhaps " private sector-led initiatives" instead. Also, whilst CDP is an excellent initiative, it is not an example of institutional investors requiring reporting	The title has been amended as recommended. The text on the CDP has been amended
11694	13	49	10	52	11	I feel in this section, the structure of the sub-section is not very clear, why pick CDM, Cancun Agreements, Kyoto Protocol and policies outside of UNFCCC, it is not clear to me what are the criteria to choose these sub-tier contexts, for instance, why not EU ETS included, why CDM, and CDM is also part of the Kyoto Protocol flexible mechanisms?	Noted - all issues are covered and broken into subsections for clarity and based on the size of the available literature. The ETS is covered in Chapter 14
8204	13	49	20	49	20	"induced by": How does one determine which reductions were induced by the KP and which would have occurred anyhow?	Taken into account - text revised

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
9310	13	49	27	50	11	I fully recognize that CDM is one of the international offset mechanisms to facilitate clean technology transfer from developed country to developing country. However, in spite of high potential projects to reduce the CO2 emissions, CER acquired by the cement industry is only less than one per cent of all CER from CDM projects due to severe definition of "Additionality". Therefore, it is absolutely unattractive for the cement industry. (https://cdm.unfccc.int/UserManagement/FileStorage/HT5JLR43VZ12BUFQ0XKMCW7OP9IDS6)	Noted
11475	13	49		49		While firms are legally accountable to States only in the jurisdictions in which they are registered and legally recognized as juridical persons, the statement that "direct regulation of firms at the international level is unavailable" is not necessarily accurate. Firms can be regulated at the international level if, for example, a sufficient number of States agree to common regulatory frameworks in relation to corporate activities that they would then implement at the national level using common modalities or policies. By outright dismissal of such possibilities for international regulation, the statement implicitly downgrades the possibility of using the UNFCCC, for example as the framework through which multilateral regulation of corporate activity in relation to climate change can take place.	Noted - this comment is too detailed for the length of the chapter.
9523	13	49	5			Please, mention motivation of public sector likewise private sector, such as reduction of fiscal burden and means to stimulate economy.	Taken into account - new text prepared
8203	13	49	10			It is odd that there is a subsection devoted to Cancun but not one to Copenhagen.	Noted - The section on the Cancun Agreements is basically on the reduction proposals under the Copenhagen Accord and Cancun Agreements.
16398	13	49				Would be good if future version of this section separated issues to do with the KP itself, from wider global emissions effects such as developing country emissions growing faster than expected. Could also include some text currently earlier in the chapter, eg in section 13.5.	Accepted
6592	13	49	16	49	24	This section is well written as an objective finding. Should not be deleted.	Noted
16399	13	49				First para as it stands is not very clear, would be good to restructure to focus on where are the key areas that CDM has "worked" (renewables as well as HFC/N2O) and where it hasn't worked. Could also regroup some of the CDM analysis earlier in the chapter which would be relevant here instead.	Taken into account - Text adjusted. However, all empirical evidence on CDM should remain in this section, whereas earlier sections discuss theoretical properties.
2342	13	49				According to the Peter Newell et. al argument (2009), the governance in practice in CDM is rather different from the expected framework realization with good governance which provide strong state, functioning market and active, free civil society. Contrary, there are not well established good governance principles in many parts of world. Under these circumstances, they identified "recipients" and "Providers" in the many countries (Newell et al. 2009:6). The "Providers" include private sectors that constitute private finance. Gold Standard of CDM, the Voluntary Carbon Standard and the Carbon Disclosure Project are significant private governance mechanism of private finance. These private governance schemes govern the CDM by adapting regulation and standards (Newell et al. 2009:10). Reference:- Newell,P., Jenner, N. Baker,L.(2009) Governing Clean Development: A Framework for Analysis. Working Paper 001, The Governance of Clean Development Working Paper Series. School of International Development, University of East Anglia UK. □	Taken into account: a paragraph on CDM governance exists in section 13.4.1.3

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
13929	13	49	27	50	28	This section should mention the consensus that project-based approach such as CDM do not work for key urban sectors (such as transport and building). See Zegras, C., 2007. As if Kyoto mattered: The clean development mechanism and transportation. Energy Policy, 35; Dalkmann, H., Stek, W., Bongardt, D., Wittneben, B., Baatz, C., 2007, The sectoral Clean Development Mechanism – A contribution from a Sustainable Transport Perspective, JIko Policy Paper, Wuppertal Institute for Climate, Environment and Energy, Wuppertal, Germany	Taken into account - used more recent reference for CDM problems in the transport sector (Millard-Ball and Ortolano 2010)
3962	13	5		52		Overall, references to international law material and literature in the Draft Chapter 13 are very poor in spite of the fact that it is dealing with international law problems. I must say, regrettably, that this section is poorly drafted from the viewpoint of international law.	Noted
8162	13	5	11	5	11	Benefits of emissions reductions are distributed globally regardless whether or not there is cooperation.	Taken into account - text revised to add additional nuance
10802	13	5	14	5	18	The global commons framing does indeed suggest that there is little incentive to reduce emissions in the absence of cooperation. However, in the last 5 years there has been growing efforts to construct a different framing around the complementarities between emissions reductions and other social and environmental goods. Under this narrative, countries, firms and individuals would act in the absence of an agreement. While the dominant framing remains the global commons, this alternative framing, appropriately contextualized as one on which there is NOT High agreement (and indeed controversy), should perhaps also be mentioned. I am thinking here of the work of Victor, the Hartwell House document, and others. See specific cites in comments on Sec 13.2.1.1.	Taken into account - text revised to include the notion of co-benefits
10798	13	5	18			It is not always that commons face the tragedy of disappearance. According to late Nobel Laureate Dr. Elinor Ostrom in her worldwide survey, commons are not in peril when they are run by a three-parts cooperation among communities, market forces and government. She called it polycentric governance of complex economic systems. Left to markets and government only, commons run the risk of damages and impacts. Commons linked to climate change, such as rivers, forests, fisheries, water could be run by a polycentric governance.	Noted - however this is too detailed for the ES In Section 13.2, taken into account. The point is right. Because of space limitations we decided not to add it to the ES. However, following the comment, we have changed the title of section 13.2.1.1 from "The tragedy of the commons and the need for international cooperation" to "The global commons and the need for international cooperation".
4793	13	5	19	5	23	Please take care of mentioning difference between economic performance and financial performance. There is a gap between those 2 performances, which need to be overcome. It is necessary to recognise all benefits and to associate an economic value to all of them)	Noted
2262	13	5	2	52	42	There is no evidence that emissions of greenhouse gases have any harmful effect on the climate. This information is thus not a cause for concern so the whole Chapter is unnecessary. It is also surprising that while the supposed, unproven theory relies on changes in the atmospheric concentration of greenhouse gases, you seem here to be exclusively concerned with emissions, which are not necessarily related to concentrations	Rejected - beyond the mandate of WG III - comment refers to the science of climate change
3731	13	5	2			:synthesizes" chapter doesn't yet synthesize. At best it selectively summarizes. To "synthesize" it will require more attention to the mechanisms associated with each of the governance approaches, and the extent to which they complement or interfere with one another. This will require a new section 13.4.4 (should be 13.4.3 with the existing 13.4.3 becoming 13.4.4) that discusses the social mechanisms associated with approaches to climate change governance - namely coercion, inducements, political economy market factors, norms, and learning.	Taken into account - covered in Section 13.3 and 13.4

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
6325	13	5	20	5	23	It would be important to add that these criteria consider the principles on which the UNFCCC is based such as, "equity", "common but differentiated responsibilities and different capabilities", "precaution", "cost-effectiveness so as to ensure global benefits at the lowest possible cost" and "sustainable development".	Taken into account in Section 13.2.
13651	13	5	26	5	27	Modify the sentence as -- the landscape of proposed mechanisms of international cooperation on climate	Rejected - the suggested text is too specific
13652	13	5	27		28	A significant literature is now devoted to studying an increasingly broad range of policies, and institutions, which span all scales of governance	Noted
6326	13	5	30	5	40	This comparison in the summary between three approaches without the arguments presented in the section 13.4 could be misleading in the sense that the reader can interpret that the three approaches could be equally effective. It would be necessary to mention that the strong multilateralism is perceived as the more effective way to address climate change due to characteristics of climate change.	Taken into account - with text under a new subheading at the end of the ES synthesizing Section 13.13
3733	13	5	30	5	32	approaches rather than models. Some bullets indicating what they are would help, as well as a discussion of which are complementary and which operate at cross purposes	Taken into account - by switching the word to "approaches." Further elaboration left to the rest of the chapter.
6984	13	5	32	5	34	At least to my ears, "coordination" isn't something I would associate with "strong multilateralism" (though I've never heard of that term before). To a game theorist, coordination doesn't require enforcement, and I would think that "strong multilateralism" must involve some measure of enforcement. Harmonization of standards, mentioned later in the paragraph, normally does involve coordination.	Accepted - text revised
13628	13	5	36			the end of the extreme shouldn't be characterized as cooperation at all. But it is action.	Taken into account - text revised to be more specific
2404	13	5	36	5	36	Comment on specific text: 'Harmonized' is a strong word implying a high level of centralization and little if any room for differentiation. Might 'coordination' of national policies capture the idea better here? This also comes up as an issue on p. 24 (line 35) where you imply that harmonization connotes similar or equivalent policies. Harmonization implies more than equivalence, the latter being instead is a form of mutual recognition.	[respond to this comment after making changes in 13.4 and reflecting these changes in the ES]
18240	13	5	37			"harmonized carbon taxes" This example should not be used within the document because for national legal and political structure of some countries, as Venezuela, this tax harmonization is not accepted, nor in the context of international negotiations, neither in local policy. There should be a consideration of implication of its use as a prescriptive policy of the IPCC report.	Rejected - harmonized carbon taxes are offered only as an example not as a policy prescription.
8091	13	5	42	5	42	Recommend changing "the only climate policy institution with virtually" to "the only climate policy institution with both virtually"	Accepted
8163	13	5	42	5	44	It is not clear that the UNFCCC is the only institution with "the authority" to serve as a negotiating forum. (It is not clear who would give or deny other institutions such authority.) Perhaps is the only institution whose charter explicitly acknowledges that function? Suggest a weaker statement.	Taken into account - combined with comment 8091
6830	13	5	42			Need to define institution - why characterize the UNFCCC as an 'institution' rather than a regime, for instance. Need more generally to define the terms "institution", "agreements," "instruments" and "regime" - UNFCCC is for instance arguably an agreement, an instrument, an institution and a regime. How then are different modes of cooperation being characterized and delineated.	Taken into account - definitions for these terms are cross-cutting issues to be covered by the Glossary
11790	13	5	44	5	47	International cooperation has brought about not political agreement but recognize. It should be amended to correct expression.	Accepted - text revised
9516	13	5	44			Please, replace political agreement with international goal.(Copenhagen Accord)	Taken into account - combined with comment 11790
10668	13	5	44	5	47	Refer my comment No. 3.	Noted

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
6566	13	5	44		45	Explain when and where such a "political agreement" was brought about or modify the description, as e.g. in Cancun Agreements COP only "recognizes that deep cuts [...] are required [...], with a view to reducing global greenhouse gas emissions so as to hold the increase in global average temperature below 2 degrees C" but not agreed on limiting temperature increase to no more than 2 degrees C.	Taken into account - combined with comment 11790
2942	13	5	45	5	47	"level of mitigation ..appears inadequate [to limit temperature increase to no more than 2 degrees]". This just about the weakest form of words that could be used to describe this fact. It would be more accurate (in my view) to say something like "Comparing the growth in GHG emissions from 2000 to 2010 to Figure 5.1 of the AR4 Synthesis Report strongly suggests that current mitigation measures are clearly inadequate to achieve this goal, and therefore that stronger actions are needed".	Rejected - no scientific evidence/publication provided to support changes suggested by the reviewer. The text is sufficiently nuanced
3734	13	5	47			effects rather than consequences?	Taken into account - text revised
4510	13	5	8	5	18	This paragraph needs to be qualified to include the point that the very large emitting countries and blocs (e.g., the U.S., China, the EU) could unilaterally bring about dangerous climate change if they were to undertake a course of unabated emissions. Thus it is not strictly true that individual countries have no incentive to abate because the benefits to themselves would be negligible. The global benefits are greater than the benefit to an individual country, but the individual country benefits are not insignificant.	Rejected - text is already sufficiently nuanced
2263	13	5	8	5	9	This is not true. None of the greenhouse gases, including the most important, water vapour, mix uniformly with the atmosphere and this fact is concealed by restricting the sites where they are measured to places where the wind blows from the sea. .	Taken into account with comment 6944
3732	13	5	8			"global commons problem" this claim is repeated in a subsequent section. It is actually a k-group problem, as collective action by 10 countries would solve the problem. Discussion needs to recognize this fact - and justify why discussions of technology transfers and equity with developing countries is necessary.	Taken into account. But, this discussion belongs to Section 13.2.1 and not to ES. Literature on unilateralism is now cited.
13624	13	5	8	5	18	This section conflates action with cooperation. I would say that there's little incentive to reduce emissions in the absence of emissions reductions by other major emitters. That abatement doesn't necessarily have to derive from international cooperation.	Taken into account - text revised to add additional nuance
15123	13	5	8	5	9	Climate change is a global commons problem, because greenhouse gas (GHG) emissions from any source mix uniformly in the atmosphere and have global impacts mainly in most vulnerable regions.	Noted
4567	13	5	10	5	16	After "mitigating climate change", add the following sentence "The inherent characteristics nature of climate protection as a public good with taxonomical features of non-rivalrous competition, non-excludability, and non-appropriability, presents an economic difficulty". What follows up to "As a result" is an explanatory to this added sentence.	Rejected. Text does not seem to improve readability of the Executive Summary.
4636	13	5	10	5	16	After "mitigating climate change", add the following sentence "The inherent characteristics nature of climate protection as a public good with taxonomical features of non-rivalrous competition, non-excludability, and non-appropriability, presents an economic difficulty". What follows up to "As a result" is an explanatory to this added sentence.	Rejected. Text does not seem to improve readability of the Executive Summary.
6804	13	5	10	5	16	After "mitigating climate change", add the following sentence "The inherent characteristics nature of climate protection as a public good with taxonomical features of non-rivalrous competition, non-excludability, and non-appropriability, presents an economic difficulty". What follows up to "As a result" is an explanatory to this added sentence.	Rejected. Text does not seem to improve readability of the Executive Summary.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
10801	13	5		7		The ES does not, to my mind, sufficiently capture the full range of issues that characterize understandings and interpretations of international cooperation on climate change over the last five years. There is insufficient representation of and distinction between the legal status of various instruments, insufficient discussion of the Kyoto Protocol, insufficient treatment of the challenges to the global commons frame, an over-emphasis on market instruments as a form of cooperation as compared to other, notably information based regulatory instruments, a failure to represent political analyses of the challenges to cooperation, exemplified by thin treatment of the principle of common but differentiated responsibility, and weak attention to non-mitigation aspects of cooperation, notably adaptation.	Noted
13907	13	5	10	5	16	This sentence could also make the point that, in comparison with other environmental externalities, responsibility is highly diffuse and therefore unilateral emissions reduction by any one individual, firm or country is unlikely to have any significant climate benefits. Yes climate stabilization is a non-excludable public good, but the real challenge is that it can only be provided by coordinated global action, with the potential exception of geo-engineering.	[draft single response will be made in line for comment #112]
6943	13	5	2	5	2	"scholarly literature"? Is this meant to be an acronym for peer-reviewed? Please be specific and use the IPCC terminology used in the cross-WG "General Guidance on the Use of Literature in IPCC reports".	Taken into account - text revised by deleting the word "scholarly"
13908	13	5	35	5	40	It is not sure that the single classification criteria "central organization and management" is sufficient. International approaches to cooperation can contain different permutations along multiple axes: multilateral vs. plurilateral/unilateral geometries of participation; targets and timetables or policies and measures, or both; deep coordination and management. The single criteria of central organization and management makes it difficult to reflect the actual variety of international regimes (e.g. Kyoto, EU climate and energy package), and the evolution of the international regime from Kyoto to Copenhagen and Cancun.	Taken into account - text revised with text to make clear that there are other dimensions
14638	13	5	45	5	45	Technically, the Copenhagen Accord is ambiguous about the baseline for the 2 degrees C goal. Paragraph 2 of the Accord simply states "We agree that deep cuts in global emissions are required according to science, and as documented by the IPCC Fourth Assessment Report with a view to reduce global emissions so as to hold the increase in global temperature below 2 degrees Celsius, and take action to meet this objective consistent with science and on the basis of equity."	Taken into account - text revised to reflect the Copenhagen Accord more accurately
16230	13	5	9			should specify that "widespread" international cooperation is necessary	Accepted - text revised to include the word "broad"
18434	13	5				I liked the frame of global commons and the acknowledgment of other scales of governance in terms of climate policy. However, there is again a moderate vision regarding UNFCCC (page 5 last paragraph: "appears inadequate")	Noted
18435	13	5		7		And when it talks about linkages between climate and other policies, the emphasis is too much on institutions and agreements, and does not acknowledge the reality, for example unilateral trade barriers based on carbon intensity (pages 6 and 7).	Rejected - this topic is too detailed for the ES
12473	13	5	1			The Executive Summary should focus on the policy-relevant key findings of the text in the chapter. Some of the text is more of a descriptive nature.	Noted

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
16177	13	5	41			The ozone agreements (Vienna, Montreal) should be included in the discussions of existing international agreements. The approach of using a framework agreement implemented by a protocol is historically relevant to the UNFCCC and Kyoto Protocol and may continue to be a useful approach to designing narrower operational agreements. The Montreal Protocol has provided both significant GHG reduction benefits, albeit the intent was to protect the ozone layer not the climate. The Montreal Protocol's influence on the use of certain chemicals (e.g., HFC-134a) may also provide an example of the unintended consequences of pursuing one goal (reducing ozone-damaging chemicals) without taking into consideration the impacts on another (reducing climate-damaging chemicals).	Accepted - text revised to include the Montreal Protocol as an example of other fora.
17104	13	50	29		46	Assessments of Cancun have been in terms of seeing the "mitigation gap" in terms of the carbon budget - see literature from UNEP, for example. The term used in the text "emissions gap" does not reflect this work or the negotiations, or even Cancun, and should be replaced with the term "carbon budget gap". Even in terms of science there is no such thing as the 'emissions gap'!!K44	Rejected - the emissions gap is clearly defined in the UNEP gap reports and in other literature. As we are assessing the literature, we keep the same terminology.
6361	13	50	3	50	28	These 2 paragraphs describe in detail the shortcomings of CDM. The section is finalized with two comparisons in which the authors found that some projects certified by Gold Standards outperform CDM projects. This might lead to the perception that projects from the voluntary market certified by Gold Standard are better than CDM projects and this might not be real in many cases. The samples are limited: for the initial comparison 39 projects, and for the second 18, respectively, were used. By the way, in this later comparison it is not clear the meaning of "projects otherwise certified". Were they CDM projects or other projects from the voluntary market?	Taken into account - Text clarifies that Gold Standard projects are registered as CDM as well.
18245	13	50	31			"Copenhagen Accord", in 2009 during COP XV there was no agreement among the Parties on the document entitled "Copenhagen Accord", it is therefore suggested to delete references to reduction of emissions of this document and include only those of the Cancun Accords.	Rejected - Ananlysis of the reduction proposals under the Copehagen Accord are clearly described in the UNEP gap reports and in grey and peer-reviewed literature.
18246	13	50	39		46	This paragraph, besides prescriptive, must kept the principle of common but differentiated responsibilities and the historical debt that developed countries have in the accomplishment of an ambitious quantified goal of carbon, whose solution is not the commercial exploitation of nature through forest markets, but through domestic reductions. This is a paragraph which directly depends on the international negotiations and should, therefore, be deleted.	Rejected - The text reflects the available peer-reviewed literature and does not make policy recommendations
6362	13	50	47	51	2	The idea of this important paragraph seems incomplete. It would be important to expand it.	Taken into account - new text prepared
12028	13	50	6	50	10	Supplemental explanation of why there is a negative correlation should help understand the problem.	Taken into account - shortened the text here
18440	13	50				Even when the segment is under construction, the actual information is quite pessimistic regarding global climate policy; this should be the central message of the chapter, especially in relation to the little effectiveness of UNFCCC. There is some kind of optimism regarding then national pledges included in cop 15 and 16: it is also like the chapter assumes that those targets will be implemented, and does not even acknowledge that some of them are very uncertain. (Pag 50 par 5). It would be key to compare the pledges of the Copenhagen Accord and the trajectory of emissions between 2010 and 2012 in the major players. My guess is that the outcome is very poor.	Noted - the text reflects the available scholarly literature and key messages will be presented in the executive summary of the chapter

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
6360	13	50		51		To facilitate the understanding of the reader on CDM it is needed to describe in numbers the magnitude achieved by this mechanism, in terms of emission reductions and financially. A table with this information would be illustrative or, at least, refer to the related information provided in section 13.5.5.1. This would contribute to frame the theoretical analysis of this section. It also would be convenient to know how many projects have been certified with the Gold Standards, which 57 of them have been used in the comparisons referred to in this session.	Taken into account: Data on CDM are available in section 13.5.1.1.
6363	13	51				The characteristics of conditional and unconditional pledges are necessary to be explained. .	Rejected - discussion at this level of detail would blow up the text beyond the allotted page volume. We refer to the UNEP gap report, which explains this in more detail.
12819	13	51				Range of gap should be explained in the text.	Taken into account - we extended the text in the caption of the Figure of the emissions gap
12820	13	51	12			CDP (abrev. firstly explained later)	Rejected - CDP already explained in 13.12
6364	13	52	1	52	5	What is the source of the first sentence of the paragraph? In accordance with the GHG Guidelines used to prepare national GHG inventories all GHG reductions that takes place in a territory will be reflected in the national GHG inventory.	Taken into account - text revised
17105	13	52	13		15	My peer reviewed work in 'Climate and Development' is relevant for this section.	Rejected - not able to find assessment in this body of work and no specific references are provided
11695	13	52	26	52	42	It seems there will be a very detail literature review on the burden-sharing, section 13.4.1.2 also discussed on burden-sharing methods, so these two parts need to coherently integrated, otherwise might have some repetition	Taken into account - however the coverage of burden sharing arrangements has moved to Chapters 4 and 6
6055	13	52	5			Various publications by Harriet Bulkeley and Kristine Kerr would seem of relevance here.	Taken into account - these authors are cited in this chapter already
18247	13	52	9			"developed in private sector agreements may then become incorporated into government regulations (Knox-Hayes and DL Levy, 2011)", this will depend on the legal system of each State and on respect of national interests.	Rejected - text is already sufficiently nuanced
7416	13	52	12	52	42	Suggestions include: 1- assess targets achieved vs. costs, 2- Exante vs Expost 3- spillover and burden sharing/shifting among broad groups of countries classified by level of vulnerability	Taken into account - new text prepared

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
15671	13	52	16		42	This is arguably one of the most important contributions that the IPCC can make to furthering the literature on burden-sharing arrangements (and an unenviable task). One aspect that would be useful to consider is whether net costs across different regions could also be presented not only once emissions trading is incorporated, but also once any further financial transfers (outside the scope of emissions allowances, eg grants and loans) stipulated by the particular burden-sharing proposal are accounted for. The IPCC SAR's chapter on equity (WG III, Ch 3) provides a useful precedent for the value of considering trading and financing as separate components. Some assessment of the technical feasibility of different burden-sharing proposals would be useful (in a similar vein to EMF 22 studies that have explored the implications of different participation regimes: see eg Russ, P., and T. van der Linde. 2009. Insights on Different Participation Schemes to Meet Climate Goals. Energy Economics 31, Supplement 2:S163-S73 and other articles in the same journal issue). Finally, it would also be useful to compare the implications of different proposals in 2020 with the implications of <u>_current_</u> burden-sharing arrangements under the Cancun Agreements (on both mitigation and finance).	Taken into account - the text will reflect these issues per the available peer-reviewed literature; however the coverage of burden sharing arrangements has moved to Chapters 4 and 6
17106	13	52	16			the assessment of burden sharing arrangements MUST consider both cost sharing and resource sharing. That is sharing the carbon budget. The approach suggested of comparing the GHG emissions reduction targets is not appropriate because it is a response to a particular decision in the negotiations and does not reflect the "potential burden sharing arrangements". Equitable access to sustainable development, or sharing the carbon budget, should be included as an example. Since two different principles are involved - emissions and concentrations - it is not possible to put them together. They need to be looked at separately and the implications for countries compared in a single table, but the concentration based approach cannot be reduced to an emissions based approach. The question is not only about emissions reduction targets but also about sharing the carbon budget equitably to determine the emission allowances, even if they are negative. This section must capture the recent peer reviewed literature, including my papers in 'Climate Policy' and 'Climate and Development'.	Taken into account - the text will reflect these issues per the available peer-reviewed literature; however the coverage of burden sharing arrangements has moved to Chapters 4 and 6. The concepts for structuring an agreement, including carbon budgets is covered by 13.4 and 13.5
6124	13	52	16			Just for team's information, I would draw your attention on burden sharing issue to the following literature that proposed different sharing for Annex I and non-Annex I countries. "Akimoto, K., (2012). Mitigation Targets and Effort-Sharing Among Regions and Countries. In: Climate Change Mitigation, A Balanced Approach to Climate Change. M. Yamaguchi, (ed.), Springer, London pp. 43-62.	Taken into account - however the coverage of burden sharing arrangements has moved to Chapters 4 and 6
3471	13	58	17			Bossetti V should be Bosetti	Editorial - copyedit to be completed prior to publication
9517	13	6	1			Please, clarify the meaning of agreeing to reduction targets for 2012 and 2020 and actions for 2020.	Taken into account - covered in Section 13.5
6567	13	6	1		2	Explain when and where such "consequences [...] agreeing to reduction targets for 2012 and 2020 and actions for 2020" took place, as such targets seem to be agreed on only in the Kyoto Protocol for period between 2008 and 2012.	Taken into account - text revised and also covered in detail in Section 13.5
7368	13	6	1	6	2	Is it correct to say that reduction targets have been "agreed" to for 2020 in the same way they were for 2012? Given the continued work of the AWG-LCA and the lack of a finalised second commitment period for the Kyoto Protocol (to 2017 or 2020), it may be more correct to say: "agreed to targets for 2012, and negotiated possible targets through to 2020" or something similar.	Accepted - text revised with additional nuance
6831	13	6	1			No reference to the Kyoto Protocol here - the 2012 targets are not under the UNFCCC but the Kyoto Protocol. Need to introduce the KP here	Accepted - text revised with additional nuance
13639	13	6	12			Empirically, leakage estimates aren't all that big. Check out the new work by the Energy Modeling Forum on border adjustments, for example.	Taken into account - text revised to take into account additional nuance

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
3736	13	6	14			linkages- need to disaggregate between vertical linkages between levels of scale, including the application of global norms; and horizontal linkages that take the form of regime complexes, and synergies. These linkages can either be positive or negative, so more empirical attention is necessary.	Taken into account - covered in Sections 13.6 and 13.7
6327	13	6	15	6	27	Consider to briefly explain to the reader to what credits are referred to in this section.	Taken into account - text revised
18241	13	6	15		34	regarding paragraph "Linkages between Climate Policies" is considered a prescriptive paragraph because it present carbon markets as the solution implemented to promote mitigation. However, this is a mechanism for commercial exploitation of natural resources that should be seen in the perspective of national environmental policies of States.	Rejected - text is already sufficiently nuanced
10804	13	6	15	6	27	The Linkages section seems to focus very heavily on market linkages. But there are other literatures, that suggest information mechanisms, framing devices and procedural mechanisms all provide means for international law to affect domestic policy. See specific comments below on secs 13.3,4,5	Taken into account - combined with comment 13910
11439	13	6	15	6	15	The reference to "absence of ... a binding international agreement on climate change" is factually incorrect as the UNFCCC and its Kyoto Protocol are, in fact, such binding international agreements.	Taken into account - text revised to correct the original text
15721	13	6	17	6	17	and "can" function as a de facto international policy. Better: "may" function as de facto international policy. We don't know whether in the absence of a binding international agreement bottom-up approaches will lead to substantial emissions cuts...	Taken into account - combined with comment 13909
8165	13	6	18	6	18	"the scale effects": This sort of jargon won't mean anything to many ES readers	Taken into account - text revised to improve clarity
5240	13	6	21			What is the unit for 1 billion? Tonnes of CO2 or dollars?	Taken into account - text revised with additional detail
4795	13	6	22	6	27	It could be interesting to mention that the Australian government and the European Commission announced that Australia and Europe will be linking their emissions trading systems (ETS), and the full-way link is to commence no later than 1 July 2018.	Taken into account - combined with comment 11145
8752	13	6	22	6	25	The sentence is not clear. In addition to the EU ETS there are operating ETS in Switzerland, Japan and New Zealand. The EU, Japanese and NZ ETS have used Kyoto units for compliance. Switzerland allows Kyoto units for compliance, but none have been used. RGGI would allow international units for compliance if the RGGI price exceeds \$10/ton CO2. Alberta has no links with any other ETS. In addition to the California - Canadian provinces link, other near term developments include negotiation of a link of the Swiss ETS with the EU ETS, announcement of a 2015-2018 link between the Australian ETS and the EU ETS, and possible links for ETS in China, Korea, Mexico, Kazakhstan, Ukraine, etc.	Taken into account with further nuance here and more detail in Sections 13.6 and 13.7
12918	13	6	22	6	22	Note the agreement between EU and Australia on linking their emissions trading systems.	Taken into account - combined with comment 11145
12919	13	6	22	6	22	California is not 'national level'	Taken into account - text revised with clarifying language
15073	13	6	24			The new Australian carbon policy will link to the ETS by 2018	Taken into account - combined with comment 11145
16359	13	6	25	6	27	California and WCI is itself example of sub-national policy linkage, so last sentence not needed	Accepted - text revised
15722	13	6	26	6	26	"Another recent development has been experimentation in policy linkages at the subnational level": there are plans, but not so much experimentation so far...	Taken into account - sentence deleted, combined with comment 16359
8753	13	6	28	6	29	In addition the larger market created by linked ETS can lead to introduction of additional financial instruments (options, forwards) and lower transaction costs (exchange trading). Linked ETS also reduce leakage, output losses in countries with the ETS, and lower welfare losses. See ALTERNATIVE APPROACHES FOR LEVELLING CARBON PRICES IN A WORLD WITH FRAGMENTED CARBON MARKETS, Elisa Lanzi, Jean Chateau and Rob Dellink, OECD Environment Directorate, 2012.	Taken into account - covered in Section 13.6

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13625	13	6	28	6	34	This paragraph importantly fails to mention an important drawback of linkages: the transmission of shocks. If two countries have linked cap-and-trade programs and one experiences a macro shock, that can be transmitted to the other via permit prices. See "Expecting the Unexpected: Macroeconomic Volatility and Climate Policy", by Warwick McKibbin, Adele Morris, and Peter Wilcoxen, in J Aldy and R. Stavins (eds), Implementing Architectures for Agreement: Addressing Global Climate Change in the Post-Kyoto World, Cambridge University Press.	Taken into account - covered in Section 13.6
12920	13	6	28	6	28	Linking also signals international collaboration and a commitment to long-term climate policy and multilateralism. This may in turn provide larger predictability for investors in carbon intensive industries. Linking carbon markets from different regions may equalize carbon prices and hereby reduce competitive distortions between the regions. I can provided references if needed.	Taken into account - covered in Section 13.6
3735	13	6	3	7		private governance is a huge topic that has to be addressed. Look at the work by Biermann, Abbott&Snidal, and Gereffi/Meyer.	Taken into account - covered in Section 13.12
8164	13	6	3	6	7	The first sentence seems to be at best tenuously related to the rest of this paragraph. Yes, climate change is addressed in other forums, but the text here incorrectly implies that those other forums are primarily ones that have nothing to do with sovereign states.	Taken into account - text revised with clarifying language
16360	13	6	30	6	34	Para refers only to market-based linkages; need to specify this or broaden the sense of the para	Taken into account - combined with comment #13910
9518	13	6	31	6	34	Good comment	Noted
12975	13	6	31	6	34	I suggest rewording lines 31-34. It is not correct to say that "linked systems are only as stringent as the weakest among them". In case of two cap-and-trade systems linkage increases efficiency but does not change the aggregate level of abatement. Abatement increases in the system with lower marginal abatement cost and decreases elsewhere. Maybe the authors mean to say that the system with lax certification rules of emission credits would introduce "hot air" in the larger market.	Taken into account - text revised with additional nuance
12921	13	6	31	6	31	A problem of linking two regions with different political objectives may be the loss of control and compromising of the original policy priorities in each system. With linking, the scope for regulatory interventions of the single system is reduced. I can provided references if needed.	Taken into account - covered in Section 13.6
4233	13	6	32			The sentence in parentheses makes no sense. Linking two systems of differing stringency will cause the price in the less stringent system to rise and the price in the more stringent system to fall. The only circumstance in which the price of the linked systems would fall to the level of the less stringent system is when the latter is very large and the more stringent system is very small. As a general statement, what is asserted here is wrong.	Taken into account - combined with comment 12975
8166	13	6	35	7	6	This section seems to be missing interactions with international security policy, which can be large.	Accepted - text revised
6029	13	6	36	6	37	Delete "sustainable development...public health" since these issues aren't mentioned in the subsequent text.	Rejected - okay to mention these here even if not subsequently fleshed out
16361	13	6	36	6	38	Important to mention fossil fuel subsidies and fuel taxes (excise duty etc) here as important other interactions	Accepted - text revised
11331	13	6	36	6	38	Interactions also exist between climate change mitigation policy and environmental protection, human security, human rights etc. For example, literature has examined synergies and conflicts in the context of the law of the sea and ocean fertilisation proposals. Other policy linkages relatign to geoengineerign may also be relevant. These issues are not addressed in the corresponding sections of the report.	Accepted - text revised
18242	13	6	39		42	Climate change issue and actions in the multilateral level should stay in its natural forum, that is the framework of UNFCCC. In this forum, is under discussion financing for climate change and a new legal international instrument, thus, discussion should not be diverted to WTO and ICAO. This paragraph can be read as prescriptive.	Rejected - text is already sufficiently nuanced

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
11330	13	6	4			The reference to 'international agreements not centred on sovereign states' is difficult given that terminologically 'international agreements' is generally taken to refer precisely to agreements between states. Better terminology would be to refer to the broad range of other arrangements and initiatives as 'international arrangements not centred on ...'.	Taken into account - text revised with clarifying language
2405	13	6	4	6	4	Comment on specific text: The term 'international agreements' does not seem quite right here to capture the practices you describe below. Transnational initiatives would be better.	Taken into account - combined with comment 11330
4794	13	6	8	6	13	I fully support this statement. However there is potential competition distortion	Noted
10803	13	6	8			The term "regime complex" is not sufficiently widely used to merit inclusion in the executive summary, and without definition. Indeed, later in the text, too, the term appears well before it is defined. Moreover, Keohane and Victor's work on this term has been robustly critiqued by Abbot (cited later in the chapter). While the concept certainly deserves mention in this chapter as an important new idea, it should not be introduced in the ES, and it should be well defined when introduced, and the criticisms of the concept aired.	Taken into account - text revised
6832	13	6	8			Term 'regime complex' introduced here with no definition, explanation or justification	Taken into account - combined with comment 10803
17097	13	6	8			the new regime complex includes discussion around sharing the carbon budget. Recent analyses are now arguing that what really matters is the total greenhouse gas budget we allow ourselves, because of the scientific uncertainty associated with emission rates and concentration targets", which cannot be accurately inferred from quantities we can observe . The United Kingdom already has legislation establishing a national carbon budget , and the National Academy of Sciences of the United States concludes that the "policy goal must be stated as a quantitative limit on domestic GHG emissions over a specified time period – in other words a GHG emissions budget national shares of global emissions need to be agreed at the multilateral level as the basis for developing and assessing domestic strategies" . The scientific analysis notes that its efforts are "based on 'global least cost' economic efficiency criteria for allocating global emissions among countries, and using other criteria, different budget numbers could be suggested; for instance, based on global 'fairness' concerns, a more aggressive U.S. emission reduction effort is warranted – and this is what equity is all about.	Taken into account in Section 13.4

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
14699	13	6	8			The term "regime complex" that is first mentioned here (but never defined) and then predominantly used in chapter 13 to depict the institutional complexity of global climate governance. However, 'regime complex' is but one concept used in the literature to depict this growing complexity. Other terms - that have been established earlier and have also been used by communities other than international relations (e.g. international law) - include: "institutional fragmentation" and "institutional complexity". The simple but crucial advantage of these other terms is that they speak of institutions, not just regimes. This does justice to a well-established, classical typology in international relations - for example reflected in the works by Robert Keohane who uses "institution" as the generic term and then distinguishes different types of institutions, including organizations and regimes (see: R.O. Keohane (1989). International Institutions and State Power. Essays in International Relations Theory. Westview Press, Boulder, CO, p. 3). 'Regime' is hence just one type of institution, describing sets of connected agreements, or, in Keohane's words: sets of "explicit rules, agreed upon by governments" (see: R.O. Keohane (1993). The Analysis of International Regimes. Towards a European-American Research Programme. In: Regime Theory and International Relations. V. Rittberger, (ed.), Clarendon Press, Oxford, UK, pp. 23-45, p. 28). Thus, the term 'regime complex' may suggest to many readers that the intricate governance architecture on climate change consists only of (intergovernmental) regimes. However, as chapter 13 clearly stresses, the institutional complexity of climate governance is much more diverse - and also includes other types of international institutions, namely international organizations (e.g. the UN and several of its bodies) and transnational or hybrid institutions (such as public-private partnerships). Given this diversity of institutions involved, it would be much more accurate to speak of an "institutional complex" here, not just of a "regime complex". One reference for the term "institutional complexity" is: S. Oberthür and O.S. Stokke, (eds.) (2011). Managing Institutional Complexity: Regime Interplay and Global Environmental Change. The MIT Press, Cambridge MA.	Taken into account - combined with comment 10803
11145	13	6	15	6	27	Please add EU- Australia linkage	Accepted - text revised
13909	13	6	15	6	17	There seems to be an inappropriate normative judgement implied in the sentence "...can function as a de facto international policy": it seems that it would be just as effective as an international binding agreement.	Taken into account - text revised by deleting this phrase
13910	13	6	28	6	34	Further benefits of linkage could be mentioned: reduced risk of carbon leakage; economies of scale and positive spill-overs from innovation and changing markets. Further disadvantages of linkage could also be mentioned: increased transaction costs and policy complexity in the linked systems. A general comment: this discussion of linkage seems to focus exclusively on linkage of carbon markets. Policy linkage may however take other forms, some of which are discussed in the text such as joint product standards, free trade agreements for low carbon products, harmonized taxes etc. These may have other benefits/advantages which are not discussed here.	Taken into account - text revised to include additional nuance
14639	13	6	3	6	7	It seems odd to note other fora (line 3), and then immediately pivot to public-private partnerships, private sector governance initiatives, etc., and fail to mention other important plurilateral and multilateral fora, including the Major Economies Forum, the G20, the G8, APEC, the Montreal Protocol, the Arctic Ministerial, etc. The ES should include some reference to these other fora.	Accepted - text revised with clarifying language
16231	13	6	3	6	7	After discussing UNFCCC-based agreements, this paragraph covers "other fora" but only mentions private and transnational initiatives. You might first mention the variety of regional intergovernmental initiatives, such as the Regional Greenhouse Gas Initiative in the North America and, of course, the EU. At a minimum, perhaps the second sentence of the paragraph could begin like this: "In addition to a number of intergovernmental efforts at the regional level, a prominent development since AR4..."	Rejected - regional initiatives are discussed in Ch. 14
18243	13	7	5			Should insert the subject of research and investment for adaptation to climate change, and not consider exclusively the subject in the mitigation level.	Accepted - text revised

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
16362	13	7	5	7	6	Not clear what this refers to, please clarify	Taken into account - this paragraph has been expanded
14416	13	7	6			Should emphasize the breakthrough at Copenhagen through enlisting China and other major emerging market economies in undertaking mitigation goals, in contrast to the earlier exclusion of all developing countries from mitigation efforts in Kyoto	Taken into account - covered in Sections 13.3 and 13.5
8968	13	71	1		3	<p>IPCC (201b) is a flawed report that does not consider the history of the field, its link to military technologies, or its social implications. Here are my detailed comments on that report. "The concept of geoengineering can be traced back to the 1960s." (p. 2) -- It is in fact an ancient concept, rooted in classical myth and hubris, and discussed throughout history, including the 1830s when building an "artificial volcano" was being discussed. Geoengineering was widely discussed after 1945 and practiced in fact (not a concept) in 1958 and 1962 in projects Argus and Starfish Prime using nuclear weapons to intervene in Earth's magnetosphere. The USSR made similar efforts. Note that this was high atmospheric and near space geoengineering.</p> <p>References:</p> <p>J.R. Fleming, Fixing the Sky: The checkered history of weather and climate control. Columbia University Press, 2010. J.R. Fleming, "Iowa Enters the Space Age: James Van Allen, Earth's Radiation Belts, and Experiments to Disrupt Them." Annals of Iowa 70 (Fall 2011), 301-24; available in America: History & Life with Full Text.</p> <p>"There are basically three ways to change the climate." (p. 19) -- Yet according to climatologist C. E. P. Brooks writing in 1950, "There are at least nine and sixty ways of constructing a theory of climatic change, and there is probably some truth in quite a number of them."</p> <p>Reference:</p> <p>J.R. Fleming, Historical Perspectives on Climate Change. Oxford University Press, 1998.</p> <p>"Are there some aspects of SRM that require expertise that is missing from the author teams of Working Group I, II and III? Are there other things the author teams can do to improve their ability to develop a high quality assessment? The BOG felt that there is no obvious missing expertise amongst the lead authors. For specific questions that may need further consideration, it is advisable to involve others as contributing authors." (p. 93) -- Obviously, there was no sense of history in the report, and seemingly a rather perfunctory discussion of ethics.</p>	Noted - discussion of SRM has been updated with support from Working Group I
3973	13	71	22	71	23	Please insert the following: ILA Committee on Legal Principles relating to Climate Change, First Report, 2010, Second Report, 2012, http://www.ila-hq.org/en/committees/index.cfm/cid/1029	Rejected - not peer reviewed
3974	13	72	23	72	24	Please insert the following: Japan Branch of ILA, Report of the National Committee, "Legal Principles relating to Climate Change: Preliminary Issues on the Methodology and Scope of the Work", Japanese Yearbook of International Law, vol. 52, 2009, pp. 500-537.	Rejected - commentator did not suggest where this reference would fit into the chapter

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
3975	13	78	2	78	3	<p>Please insert the following:</p> <p>Murase, Shinya, "International Lawmaking for the Future Framework on Climate Change: A WTO/GATT Model", in S. Murase, International Law: An Integrative Perspective on Transboundary Issues, Sophia University Press, 2011, pp. 167- 180.</p> <p>Murase, Shinya, "Conflict of International Regimes: Trade and the Environment", in S. Murase, International Law: An Integrative Perspective on Transboundary Issues, Sophia University Press, 2011, pp. 130- 166.</p> <p>Murase, Shinya, "Protection of the Atmosphere", Annex B, Report of the International Law Commission, Sixty-third session, 2011, General Assembly, Official Records, Sixty-sixth session, Supplement No. 10(A/66/10), pp.315-329, http://www.un.org/law/ilc/;</p> <p>Shinya Murase, "Protection of the Atmosphere and International Law: Rationale for Codification and Progressive Development", Sophia Law Review, vol. 55, nos. 3-4, 2012, pp. 1-58, http://www.sophialaw.jp/faculty/paper/index.html;</p> <p>Murase, Shinya, "Protection of the Atmosphere and International Lawmaking", in Miha Pogacnik, ed., Challenges of Contemporary International Law and International Relations: Liber Amicorum in Honour of Ernest Petric, The European Faculty of Law, Nova Gorica, Slovenia 2011, pp. 279-297.</p>	Taken into account - references by this author are included already, but the commentor did not suggest where additional references would fit into the chapter
18695	13	8	18	8	21	The summary of section 13.3 does not mention that 13.3 discusses conclusions from formal modeling of possible agreements.	Rejected - the introduction will not include this level of detail
2264	13	8	2	8	3	This is not true. None of the greenhouse gases, including the most important, water vapour, mix uniformly with the atmosphere and this fact is concealed by restricting the sites where they are measured to places where the wind blows from the sea.	Taken into account - combined with comment 6944
7137	13	8	2	8	4	This is one reason, but the need for international cooperation has a broader basis. It is not only a matter that everyone has to mitigate, because a common good is affected, but it is also necessary to consider the very different contribution – historical and current – to the GHG problems, and the very different capacity of each country in order to deal with those problems. There are also differences in the degree and gravity in which the climate change problems affect each country, depending on the vulnerability (environmental, but also socio and economic vulnerabilities), in this situation the international cooperation is critical, to create global conditions to deal with this problem. That's why international cooperation is not only about mitigate, but also related with finance, technology, capacity building, and, of course, adaptation."	Taken into account - covered in Section 13.2
11332	13	8	28	8	30	What is the difference between multi/bi-lateral agreements and transnational agreements?	Taken into account - text revised with clarifying language
6031	13	8	35	8	36	I assume someone will check for consistencies between this chapter and chapter 15 on national and sub-national policies.	Noted
6944	13	8	2	8	3	This opening sentence to the introduction seems to oversimplify the point it's trying to make and I would argue it's even partly incorrect from a WGI physical science perspective. Even if GHG were not mixed uniformly in the atmosphere, GHG-induced changes in the regional radiation balance of the Earth could certainly induce global scale changes due to atmospheric and oceanic dynamics which connects remote locations on the globe (c.f. teleconnections). Suggest to delete the first sentence and to start with "International cooperation is necessary for mitigating (global) climate change".	Taken into account - text revised by replacing the word "uniform" with the word "global"
12474	13	8	1			This is an elaborate description of what all the sections in the Chapter will discuss. Much of it can be read from the list of Content, hence most of it can be considered redundant. Please consider to delete parts.	Rejected - the introduction is meant to describe what will be discussed in the rest of the chapter
3472	13	9				Section 13.2 is in general very clear	Noted. No action required.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
11140	13	9	22	9	22	Use of the word "tragedy" is over-emotive and must be removed.	Accepted. The title in section 13.2.1.1. was changed and "tragedy" was eliminated everywhere.
3737	13	9	22	26		see comment 7, climate engineering belongs in a separate section on responses. See comment 1.	Taken into account. The reference to the regional nature of SRM impacts have been clarified. Since the literature on SRM is so new, the local (and not global) impacts of such policies was stated as hypothetical and a reference to chapter 6 was added (section 6.9 discusses SRM with more "scientific" detail).
12040	13	9	22	10	46	The tragedy of the global commons and the current state of international political deadlock is well explained.	Noted. No action required.
18690	13	9	22	9	25	This point is very specific, surely some references can be given.	Taken into account. Sentence was rephrased following other comments too.
13626	13	9	22	10	7	It is not technically free riding if a country would not experience costs from climate change and accordingly chooses not to mitigate emissions.	Taken into account. The text on free riding was revised following also another comment.
2265	13	9	23	9	24	This is not true. None of the greenhouse gases, including the most important, water vapour. mix uniformly with the atmosphere and this fact is concealed by restricting the sites where they are measured to places where the wind blows from the sea..	Accepted. "uniform" was removed. Same for FAQ 13.1.
2266	13	9	23	9	24	There is again the curious emphasis on emissions when the supposed effect is changes in atmospheric concentrations, which are not necessarily related to emissions	Rejected. The relationship is explained elsewhere in IPCC reports.
6985	13	9	28		29	You should explain how solar radiation management could create excludable benefits. That's an entirely new idea that I can't comprehend.	Taken into account. This issue of regional impacts of SRM is discussed extensively in 6.9.2. Section 13.4.2. already discusses the international governance aspects of SRM. A link to those two sections was added here. Text was rephrased here and references on excludability of benefits in simultaneous with costs to others was added.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
5912	13	9	28	9	29	<p>It is not be possible to geographically limit the effects of solar radiation management (Robock, A, Oman, L and Stenckov, GL. 2008. Regional climate responses to geoengineering with tropical SO₂ injections. Journal of Geophysical Research–Atmospheres, 113(D16) D16101), a claim supported by literature on climate system feedbacks. Uncertainty around the effects of SRM and associated rapid rates of change to ecosystems is a key argument for employing the Precautionary Principle with regards to geoengineering (Brewer, PG. 2007. Evaluating a technological fix for climate. Proceedings of the National Academy of Sciences, 104(24): 9915–9916; Trenberth, KE and Dai, A. 2007. Effects of Mount Pinatubo volcanic eruption on the hydrological cycle as an analog of geoengineering. Geophysical Research Letters, 34(15) L15702; Nancy Tuana, Ryan L. Srivastava, Toby Svoboda, Roman Olson, Peter J. Irvine, Jacob Haqq-Misra, Klaus Keller (2012) Towards Integrated Ethical and Scientific Analysis of Geoengineering: A Research Agenda, Ethics, Policy & Environment, 15, 2).</p>	Taken into account. More on this to be covered in section 13.4.2. There is literature on risk and SRM and ethics and SRM. More detail on the benefits excludability is added here (section 13.2).
2161	13	9	28			the benefits are not global public goods, but mitigation is a global public good providing benefits globally	Accepted. Phrase was clarified because benefits are not public goods but mitigation and sinks actions towards climate are.
12795	13	9	29			Solar radiation management is firstly explained on p.13 ll. 13f. ; you may like to make a cross reference	Taken into account. A general definition of SRM was added here.
2162	13	9	29			I do not understand to which word "These" refers.	Accepted. Text was reorganized to make it clearer.
16179	13	9	39	10	22	A discussion of sectoral policies (discussed later in the chapter) inserted here, with some analysis of how Ostrom's criteria for collective action apply more effectively within a sector than between states, will integrate the sectoral approach more logically into the discussion.	Taken into account. Sectoral approach was cited and referenced to 13.4.1, where it is discussed in more depth.
2406	13	9	42	9	42	Comment on specific text: I think you need to clarify what you mean by legal remedies here and how these relate to the broader point about internalising externalities. Is law an instrument to bring about such an internalisation here or something else?	Accepted. Text has already changed slightly in response to another similar comment.
8085	13	9		13		<p>In this text, a cascade of concepts is proposed to approach (and supposedly understand) the complex phenomenon of international cooperation. The exposition goes</p> <ul style="list-style-type: none"> – from six “principles” (economic efficiency, precaution, sustainable development, common but differentiated responsibilities, fairness) – to four “criteria” (environmental effectiveness, aggregate economic performance, distributional impacts, institutional feasibility) – the last one of which (institutional feasibility) further contains four “sub-criteria” (participation, compliance, legitimacy, and flexibility). <p>The reason for the above listing is to express the surprise that among the so many aspects of the phenomenon, the word “stability” (group-wise, as well as time-wise) is never mentioned. Of course, specialists understand that this is part of the “participation” sub-criterion. But for the non specialist, this is not so evident. Shouldn't that notion (a principle, a criterion or a sub-criterion, I am not sure) appear somewhere? A main reason for that is that, the factual lessons that will be reported on further down the text (in particular p. 26, lines 32-47 and 1-2 of p.27 on the fate of the Kyoto Protocol) bring in the forefront the issue of the stability (group-wise, as well as time-wise) of the agreement.</p> <p>It is suggested here that some room be made in this section for the stability notion, integrating it in the otherwise interesting “cascade” just reviewed.</p>	Accepted. Stability was explicitly mentioned in the text together with participation. Specific references on stability of coalitions were added.

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Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
17665	13	9	16	9	20	Another important feature of climate change is that emission reduction strategies create high costs for certain industries/countries; it requires the change of whole economic systems and lifestyles, which makes international cooperation extremely difficult	Taken into account. For discussion on climate change impacts within countries, refer to chapter 15. A reference to differential costs among countries was introduced at the end of 13.2.1.1.
11587	13	9	28	9	31	This statement should be removed. Free riding is all over by developed countries on the attempts to deal with climate change. This section is also skewed as it does not also take into consideration of the suffering of countries that have not contributed to the climate change problem.	Accepted. A statement about consequences of free riding (i.e. "...and thus imposing harm to others") has been added.
10805	13	9	22	10	46	As noted above, the discussion of the global commons frame should also include some discussion of a counter frame that seeks rationales for action in the complementary gains from climate mitigation and various other economic growth or development focused actions. This idea creeps in at the very end of the section in lines 20-22 of p. 10, but perhaps deserves a short para in the section, to note that this perspective has grown in significance, perhaps as a reaction to the challenges of winning political agreement around the global commons frame. David Victor's work (http://www.cfr.org/climate-change/madisonian-approach-climate-policy/p8885), the Harwell House document (http://eprints.lse.ac.uk/27939/1/HartwellPaper_English_version.pdf), Stephen Rayner "How to eat an elephant: a bottom-up approach to climate policy" (2010) in Climate Policy Vol 10 are all good references. This counter frame is controversial for sure, but represents a new current since AR4 and as such is worth mentioning as a subsidiary theme. In my own work, I have argued the usefulness of such a co-benefits frame to induce developing country actions, although contra the papers above, I am at pains to point out I don't think this frame is suitable for industrializing country actions (Dubash, "Climate Change and Development" in Stewart, Kingsbury and Rudyk eds., Climate Finance, NYU Press, 2009).	Accepted. Mention was more explicit with respect of other policies that generate co-impacts for climate (suggested literature on bottom-up approaches was included). A sentence was added with respect of co-impacts that climate has on other policies (those are analyzed in depth in section 5.10).
3963	13	9	22	9	22	The word "tragedy," being an expression sounding rather emotional to non-economists who are not familiar with externality problems, is not appropriate for an IPCC report.	Accepted. The title in section 13.2.1.1. was changed and "tragedy" was eliminated everywhere.
6945	13	9	23	9	24	See comment to introductory section 13.1 above. The uniform mixing contributes, but is not the only reason for local emissions having global impacts, c.f. teleconnections through atmospheric and oceanic dynamics. Need to revise this non-precise statement.	Accepted. "uniform" was removed. Same for FAQ 13.1.
6946	13	9	23	9	31	The sentence "overuse of the atmosphere as a depository of GHGs is likely" is awkward (i) as it seems to imply we are purposely "using" the atmosphere as a DEPOSITORY of GHGs rather than unintentionally polluting it, and (ii) the uncertainty assessment "likely" is unsupported by evidence or reference to, e.g., the WGI contribution to AR5. Please note that depository commonly refers to a place where something is stored for safekeeping (e.g., a bank).... Furthermore, the subsequent focus on geoengineering and the link to mitigation further confuses the purpose of this opening paragraph. Considering all our comment on this particular first paragraph, we suggest a careful revision. As it currently stands, it provides in our view a very bad start into this chapter/section.	Accepted. Change the word "depository" such as with the word "receptor". Same for FAQ 13.1.

Expert Review Comments on the IPCC WGIII AR5 First Order Draft – Chapter 13

Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
3964	13	9	24	9	24	<p>The term "atmosphere" used here and elsewhere in the Draft is not defined. It is crucial to define the term appropriately in order to address the linkages of climate change with other atmospheric problems such as ozone depletion and transboundary air pollution. See (1) Shinya Murase, "Protection of the Atmosphere", Annex B, Report of the International Law Commission, Sixty-third session, 2011, General Assembly, Official Records, Sixty-sixth session, Supplement No. 10(A/66/10), pp.315-329, http://www.un.org/law/ilc/; (2) Shinya Murase, "Protection of the Atmosphere and International Law: Rationale for Codification and Progressive Development", Sophia Law Review, vol. 55, nos. 3-4, 2012, pp. 1-58, http://www.sophialaw.jp/faculty/paper/index.html; (3) Shinya Murase, "Protection of the Atmosphere and International Lawmaking", in Miha Pogacnik, ed., Challenges of Contemporary International Law and International Relations: Liber Amicorum in Honour of Ernest Petric, The European Faculty of Law, Nova Gorica, Slovenia 2011, pp. 279-297.</p> <p>I would suggest the following definition of the Atmosphere: "Atmosphere" means the layer of gases surrounding the earth in the troposphere and the stratosphere, within which the transport and dispersion of airborne substances occurs."</p> <p>Commentary</p> <p>(1) While the relevant conventions and legal documents have refrained from defining the term "atmosphere" or "air," (although the definition of "air pollution" is given in a number of conventions and documents (e.g., Article 1 (a) of the 1979 ECE Convention on Long-Range Transboundary Air Pollution; 1987 Institute of International Law Resolution on Air Pollution across National Frontiers).</p> <p>(2) The definition is not intended to be an "objective" definition but simply to be a practical "use of term(s)". It is nonetheless considered appropriate to formulate a legal definition in such a way as to reasonably correspond to the scientific definition. The major international issues to be dealt with by the present Draft are transboundary air pollution, ozone layer depletion and climate change as they relate to the troposphere (up to 18 km from the surface of the earth) and the stratosphere (up to 50 km), which scientists call "lower atmosphere". Eighty per cent of air exists in the troposphere and twenty per cent in the stratosphere. The present Draft is concerned only with these two layers. Since virtually no air exists in the upper atmosphere (mesosphere and thermosphere) and outer space, they are of little concern for the present Draft.</p> <p>(3) It is necessary to address not only the substantive aspect of the atmosphere as the layer of gases but also the functional aspect of the atmosphere as a medium for transporting and dispersing airborne substances (pollutants). This latter aspect of the atmosphere as a medium for transporting pollutants is extremely important: even if some of the pollutants are relatively innocuous while in the atmosphere, they can accumulate in Polar Regions and have serious concentrated effects on fauna and flora, and, through food chains, on humans, as in the cases of persistent organic pollutants (POPs) and mercury (Hg). It is not appropriate to identify specific "pollutants" in the Draft. That is an exercise that should be left to the provisions of specific conventions and domestic laws. Therefore, the more neutral term "substances" is employed here.</p> <p>(4) Currently, gaps in the existing treaty regime are significant; the lack of a treaty regime addressing the link between transboundary air pollution and climate change despite growing scientific evidence in recent years that so-called "tropospheric ozone" and "black carbon" in the atmosphere directly threaten both air quality and climate change. It has been said that the so-called greenhouse gases identified in the UNFCCC are responsible for only 60 to 65 percent of climate change, while these other substances are responsible for some 35 to 40 percent. This</p>	Rejected. There is a clear definition of atmosphere in the glossary.
6947	13	9	36	9	36	Re "global nature of climate change": Could refer to WGI and WGII reports here, providing the link to the underlying assessments of the physical science basis and impacts and adaptation of climate change.	Taken into account. The TSU will handle this.
5683	13	9	42	9	43	It is not clear to me how legal remedies can solve the public goods problem. Can the authors explain this further?	Taken into account. Text was rephrased to make it clearer.
3483	13	all				SRM is defined five times in the chapter (p. 2, line 24; p. 13, line 13; p. 23, line 26; p. 23, line 31; and p. 23, line 33). This is only necessary once.	Taken into account - text revised to reduce repetition