



**IPCC Synthesis Report
Fourth Assessment Report**

Formal Government and Expert Review of First Order Draft

EXPERT and GOVERNMENT COMMENTS – TOPIC 4

All Batches (July 27, 2007)

Review Editors:

Abdelkader Allali, Morocco
Ismail Elgizouli, Sudan

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Running number	Topic - Comment	Batch	Page	Line	To Page	To Line	Comment	Considerations by the writing team
4-1	E-4-1	A	0				This section should have somewhere reference to disaster risk reduction activities, and how there are synergies between disaster prevention and adaptation activities. There is an enormous amount of intellectual input, practical experience and money on/in disaster risk reduction, and this needs to happen in parallel with adaptation to climate change activities. (Lisa Schipper, Southeast Asia START Regional Centre, Chulalongkorn University)	Noted– already addressed in Section 4.2.
4-2	E-4-2	A	0				This section has some good charts but overall does not seem to contribute much. I know this is a non-helpful comment - unless others have the same perception. (John Everett, Ocean Associates, Inc.)	Noted – too general to respond to.
4-3	E-4-3	A	0				The report is not consistent in the sequence of how aspects of 'adaptation' and aspects of 'mitigation' are tackled. I strongly recommend to critically review the entire text dealing with 'adaptation' and 'mitigation'. I suggest to mention first the aspects of 'mitigation', which then are followed by aspects dealing with 'adaptation'. It might also be necessary to clearly emphasize that in the case of inadequate or no mitigation measures, the adaptation costs will exceed any costs which would have been necessary to keep greenhouse gas emissions at a certain level. (Gian-Reto Walther, University of Bayreuth)	Rejected – The title puts Adaptation first, so it should be addressed first.
4-4	E-4-4	A	0				Should try to emphasise more the importance of energy efficiency in mitigating climate change (Philippine de T'Serclaes, International Energy Agency)	Rejected – Figure 5.3 shows that while energy efficiency is important, it is not dominant. Energy efficiency is mentioned in 5 of the 7 end-use sectors in Table 4.2.
4-5	E-4-5	A	0				Overall when reading the paper not sure the reader will get the sense of why those cost efficient technologies are not being applied. Might think of underlining better the presence of barriers in the markets which justify the case for policy intervention + helps understand why it will not happen alone, although numerous cost-benefit technologies have been identified for a long time. IEA, 2006 Energy Technology Perspectives to 2050 (Philippine de T'Serclaes, International Energy Agency)	Rejected – Constraints addressed in Table 4.2.
4-6	E-4-6	A	0				no Comment (Ian Church, Yukon Government)	Noted.
4-7	E-4-7	A	0				message is clear. It is fine with the draft (Hisayoshi Morisugi, Japan Research Institute)	Noted – with thanks.
4-8	E-4-8	A	0				I think the report would benefit from looking a little more "joined up" in terms of WG1, 2, 3 aspects. In particular in this topic on mitigation, you should discuss how understanding of physical climate, impacts and carbon cycle will affect choice of mitigation targets, as well as discussing options for mitigation practices themselves. For example if climate sensitivity is higher than expected, or carbon cycle feedbacks are strong, then mitigation policies must be much tougher to achieve a given stabilisation target.	Rejected – Discussion of mitigation targets is outside the scope of topic 4, which is limited to mitigation options.

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							(Chris Jones, Met Office Hadley Centre)	
4-9	E-4-9	A	0				I had a slight sense that some of the tone of the wording in Topic 4 bordered on the advocacy of policy, rather than advice to policymakers - the wording in the SPM studiously avoided any such implication of advocacy, and I would suggest that the wordings, noted later, do likewise. (Keith Shine, University of Reading)	Noted – Reviewer does not supply specifics of which language he finds bordering on advocacy.
4-10	E-4-10	A	0				Generally speaking, if population increases, CO2 production should increase as well... Should the world's population be limited? (hm...) (Michel Rixen, NATO Undersea Research Center)	Rejected – Not relevant to Topic 4
4-11	E-4-11	A	0				Chapter 4 and 5 might be checked for redundancies, especially chap. 4.4 Relationship between adaptation and mitigation options and relationship with sustainable development and chap. 5.3 The relationship between adaptation and mitigation (Markus Erhard, European Environment Agency)	Accepted – have coordinated with Topic 5.
4-12	E-4-12	A	0				Because adaptation and mitigation options are discussed in two topics (4 and 5), although for different time horizons, it is better to give the principal statements on this issue in the beginning of Topic 4. This allows escaping iteration and, sometimes, different interpretations of these concepts that best of all are given in the Glossary. (Roman Corobov, Modern institute for humanities)	Accepted – have coordinated with Topic 5.
4-13	E-4-13	A	0				Adaptation and mitigation options and responses are clearly explained - no specific comments (Michael Brady, Natural Resources Canada - Canadian Forest Service)	Noted – with thanks.
4-14	E-4-14	A	0				— Comment: Topic 4 is flawed in a physical and thermodynamic sense. — Explanantion: Not mentioned are: • the vital role energy (production and use) has in coping with the effects the IPCC describes, in any scenario, • the extent and quality of the mineral resources of energy production, • the thermodynamic limits humankind will meet in exploiting mineral resources (and consequently exhaustable resources) at an ever increasing rate. •• Also missing from the report is the concept of lifetime costs, prerequisite to compare different energy systems on the same criteria and in the long run. (Jan Willem Storm van Leeuwen, Ceedata Consultancy)	Rejected – the Topic presentation is consistent with the approved SPMs of WG II and WG III.
4-15	G-4-1	A	0				What happened to the “no regrets” concept that speaks to benefits of energy efficiency independent of contributions to climate change mitigation? (Government of United States)	Accepted – footnote added about reasons for net negative costs that includes “no regrets”
4-16	G-4-2	A	0				We suggest the scope and structure of the topic be set out briefly in introductory text, before section 4.1, e.g.: "In this topic we consider, at the global and regional level, the possible societal response to climate change, the adaptation and mitigation options and the relationship between these and sustainable development." (Government of New Zealand)	Rejected – this would simply be a repeat of the Topic title.

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4-17	G-4-3	A	0				The constructs of "vulnerability" and "key vulnerability" need to be carefully and consistently used across the SYR. In Topic 4 we are provided with a definition of "vulnerability to climate change", then in Topic 5, we are provided with criteria for determining what a "key vulnerability" is. The discussion in Chapter 19 of WG2 (section 19.1.2.1) explains how the concepts are linked and needs to be included in the SYR. In addition, we suggest that the following is added to footnote 1 (drawn from section 19.1.2.1): "The term "vulnerability" may therefore refer to the vulnerable system itself (e.g., low-lying islands or coastal cities), the impact to this system (e.g., flooding of coastal cities and agricultural lands or forced migration), or the mechanism causing these impacts (e.g., disintegration of West Antarctic Ice Sheet)." Due to the importance of these terms the authors should consider including a definitional box on vulnerability at the start of the SYR. (Government of Australia)	Noted – will take care to ensure that terms are used correctly
4-18	G-4-4	A	0				It is noted that the paragraph on role of government support in effective technology development, innovation and deployment which appears in the WG III Summary for Policymakers (pp. 31-32) does not appear in this Synthesis Report. It is believed that there could be some value in including this point in the Synthesis Report. (Government of Australia)	Rejected – The detail requested by the reviewer is inappropriate for the SyR.
4-19	G-4-5	A	1	1	1	2	The title of this topic is too long. We suggest the title be simply "Adaptation and mitigation" and that the detail of the scope and structure of the topic be removed from the title and set out briefly in introductory text, before section 4.1, e.g.: "In this topic we consider, at the global and regional level, the possible societal response to climate change, the adaptation and mitigation options and the relationship between these and sustainable development." (Government of New Zealand)	Rejected – We cannot change the title which was agreed upon by the Panel.
4-20	G-4-6	A	1	1	1	2	The agreed heading for this Topic is: "Adaptation and mitigation options and responses, and the inter-relationship with sustainable development, at global and regional levels". (Government of Australia)	Accepted – and inserted into the title.
4-21	E-4-15	A	1	1			I don't like the title or the manner you have mixed mitigation and adaptation, adaptation is a response, mitigation is a way of avoiding the damages. Both reduce the effects of climate change but they are not both responses to climate change (mitigation is a reaction to past climate change and a desire to reduce future projected change). i would retitle and rework around a title like "Avoiding and reducing climate change implications" (Bruce McCarl, Texas A&M Univesity)	Rejected – We cannot change the title that was agreed upon by the Panel.
4-22	E-4-22	A	1	7	1	7	Add: ".....and reducing vulnerabilty1 AND RISK, or by reducing...." (Cristobal Felix Diaz Morejon, Ministry of Science, Technology and the Environment)	Noted – In light of numerous comments, this sentence has been rewritten.

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4-23	E-4-23	A	1	7	1	7	"or" should be "and" - need to underscore that both adaptation and mitigation are necessary up front. (Janice Lough, Australian Institute of Marine Science)	Noted – In light of numerous comments, this sentence has been rewritten.
4-24	G-4-8	A	1	7	1	7	Replace "or" with "and" near the end of the line. (Government of United States)	Noted – In light of numerous comments, this sentence will be rewritten.
4-25	G-4-9	A	1	7	1	7	Replace "or" with "and" since both strategies are necessary (Government of Australia)	Noted – In light of numerous comments, this sentence will be rewritten.
4-26	E-4-19	A	1	7	1	8	It is incorrect to say "or"--society has to adapt no matter what--and it can choose to adapt, so this needs to be "and, if it chooses to limit future warming," (Michael MacCracken, Climate Institute)	Noted – In light of numerous comments, this sentence has been rewritten.
4-27	E-4-20	A	1	7	1	8	Is it really a choice between 'adapting and reducing vulnerability' and 'reducing greenhouse gas emissions'??? I strongly disagree. Society can respond to climate change by adapting and reducing vulnerability AS WELL AS by reducing greenhouse gas emissions. Even better would be to change the two options and say: Society can respond to climate change by reducing greenhouse gas emissions and by adapting and reducing vulnerability. (Gian-Reto Walther, University of Bayreuth)	Noted – In light of numerous comments, this sentence has been rewritten.
4-28	G-4-7	A	1	7	1	8	We suggest to change sentence to "Society can respond to climate change by adapting and reducing vulnerability and by reducing greenhouse gas emissions". (Government of Norway)	Noted – In light of numerous comments, this sentence will be rewritten.
4-29	G-4-10	A	1	7	1	8	Presentaion of adapatation and mitigation as alternative options to address climate change is questionalble, other phrasing may be better (Government of Ireland)	Noted – In light of numerous comments, this sentence will be rewritten.
4-30	E-4-21	A	1	7	1	11	As we found these sentences confusing we propose the following instead: "Society can respond to climate change by reducing greenhouse gas emissions and adapting to unavoidable climate change impacts. Both responses are needed to reduce vulnerability to climate change and variability." Also, we suggest adding "perception of risk" among the determinants of capacity to respond as access to information alone does not change behaviour. (Silvia Llosa, International Strategy for Disaster Reduction)	Noted – In light of numerous comments, this sentence has been rewritten.
4-31	E-4-18	A	1	7	1	12	Society can also promote environmental adaptation as a means of reducing the environmental impacts. (Michael MacCracken, Climate Institute)	Rejected – too much detail for this introduction – not supported by WG II SPM language.
4-32	E-4-1	B	1	7	1	12	The relationship between adaptation and mitigation and the need for both is understated here and in Section 4.4. From Chapter 2, WGII regarding the different part of the range of future	Noted – this is text has been rewritten – it is an introduction,

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							<p>uncertainty that both deal with. This is a critical point:</p> <p>Mitigation reduces the rate and magnitude of changing climate hazards; adaptation reduces the consequences of those hazards. Mitigation also reduces the upper bounds of the range of potential climate change, while adaptation copes with the lower bounds. Hence they are complementary processes, but the benefits will accumulate over different time scales and, in many cases, they can be assessed and implemented separately.</p> <p>In the real world, when uncertainty collapses into one future, adaptation will be required for the climate change experienced and mitigation will have been implemented for that climate change which has been avoided.</p> <p>(Roger Jones, CSIRO)</p>	and therefore brief.
4-33	E-4-16	A	1	7			<p>To add 'mitigating' before 'reducing' and to have: ...or by mitigating (reducing) greenhouse gas emissions.</p> <p>(Roman Corobov, Modern institute for humanities)</p>	Noted – In light of numerous comments, this sentence has been rewritten.
4-34	E-4-17	A	1	7			<p>substitute "and/or" for "or"</p> <p>(Hartmut Grassl, Max Planck Institute for Meteorology)</p>	Noted – In light of numerous comments, this sentence has been rewritten.
4-35	G-4-11	A	1	7			<p>Footnote to define variability should not be needed here as it has been used extensively in previous sections.</p> <p>(Government of Canada)</p>	Noted – Assume that the reviewer means vulnerability rather than variability. Defintiion moved to glossary.
4-36	G-4-12	A	1	7			<p>After “or by” insert “climate change mitigation, e. g. by”</p> <p>(Government of Russian Federation)</p>	Noted – In light of numerous comments, this sentence will be rewritten.
4-37	E-4-24	A	1	8	1	8	<p>"it is clear that both responses are needed" - isnt this policy advocacy?</p> <p>(Keith Shine, University of Reading)</p>	Noted – sentence has been deleted.
4-38	E-4-25	A	1	9			<p>To add 'potential' before future impacts</p> <p>(Roman Corobov, Modern institute for humanities)</p>	Noted – text was deleted.
4-39	E-4-26	A	1	10	1	10	<p>Again, "or" is incorrect--it needs to say "and", as is said in line 9</p> <p>(Michael MacCracken, Climate Institute)</p>	Noted – In light of numerous comments, this sentence has been rewritten.
4-40	G-4-13	A	1	10	1	10	<p>The authors should consider whether at this point it would be useful to note that while the capacity to adapt is dependant more on national circumstances, the capacity to respond effectively to climate change through mitigation is dependant to a large extent on international factors.</p> <p>(Government of Australia)</p>	Noted – In light of numerous comments, this sentence will be rewritten.

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4-41	E-4-28	A	1	11	1	11	Add: "...and the availability AND TRANSFER POSSIBILITY of information..." (Cristobal Felix Diaz Morejon, Ministry of Science, Technology and the Environment)	Rejected – technology availability includes transfer possibility
4-42	E-4-27	A	1	11			Footnote 2: What is meant under hardware and software? If they are used in today's computer meaning only, such a technology is insufficient to provide adaptation and mitigation. (Roman Corobov, Modern institute for humanities)	Noted – Footnote deleted – definition in glossary.
4-43	G-4-14	A	1	14	1	14	Editing: replace "is" with "are". (Government of Australia)	Noted – this text has been deleted
4-44	E-4-29	A	1	14	1	15	This sentence is an example of a non-contributory sentence. It has been summarized to nothingness. (John Everett, Ocean Associates, Inc.)	Rejected – This is an introduction where broad statements are needed
4-45	E-4-30	A	1	14			"is" should be "are" in "A wide range of measures is available" (Bruce McCarl, Texas A&M Univesity)	Noted – sentence has been deleted.
4-46	E-4-31	A	1	16	1	17	There are also adaptation measures that can be enacted nationally, for example, such as setting up policies about retreat from coastlines. Given the many sizes of countries and the many types of adaptation, this sentence seems far too absolute in its assertion that everything must happen locally. (Michael MacCracken, Climate Institute)	Noted – this sentence has been deleted
4-47	G-4-1	B	1	17	1	18	What about mitigation measures also generating long-term co-benefits, e.g. from investment in energy infrastructure or technologies? (Government of United Kingdom)	Noted – unclear what change the reviewer is requesting. Long-term aspects are covered in Topic 5.
4-48	E-4-32	A	1	18	1	21	It also needs to be said that in some situations, adaptation is not possible--like protecting all coastlines against tropical cyclone storm surges and sea level rise, or like protecting biodiversity and all species--and this point needs to be made. (Michael MacCracken, Climate Institute)	Noted – sentence has been deleted.
4-49	G-4-15	A	1	18	1	21	It would be more accurate to say that known information about the cost and effectiveness of adaptation measures is more locally specific and less universally applicable than in the case of mitigation. (Government of United States)	Noted – more detail than appropriate for the SyR
4-50	E-4-33	A	1	19	1	21	The wording needs checking - "... costs ... can be enhanced" does not make sense. (Jouni Paavola, University of Leeds)	Noted – sentence has been deleted.
4-51	E-4-34	A	1	20			"sustainable" is an over-used word - any development that involves impacts or use of finite resources cannot be described as sustainable (which removes such things as mineral or "old forest" exploitation, most water exploitation, most fisheries, etc etc); the word has been misused so much in political and media circles as to now carry no value, and its use often weakens the logical justification of a report such as this	Rejected – the sentence used the generally accepted definition of sustainable development.

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							(Peter Convey, British Antarctic Survey)	
4-577	G-4-1	D	1	23	2	35	Vulnerability can also increase if Adaptation does not have a global approach. It could be zones, countries or social groups while adapting themselves, could cause a des-adaptation in other regions, countries or social groups.. (Government of Argentina)	Rejected – This concept is not discussed in either WG II's or WG III's report.
4-52	E-4-35	A	1	23			Section 4.2 'Adaptation options' should be ordered after 'Mitigation options' (Gian-Reto Walther, University of Bayreuth)	Rejected – The title puts Adaptation first, so it should be addressed first.
4-53	E-4-42	A	1	25	1	25	Change "reduce vulnerability" to "reduce some aspects of vulnerability" (Michael MacCracken, Climate Institute)	Noted – see definition in Glossary
4-54	E-4-43	A	1	25	1	25	Add: "... can reduce vulnerability AND RISK, especially..." (Cristobal Felix Diaz Morejon, Ministry of Science, Technology and the Environment)	Noted – Risk is redundant
4-55	E-4-36	A	1	25	1	26	What is the basis for the assertion that adaptation can reduce vulnerability? It is not explained in the subsequent paragraphs. (Robert Siveter, IPIECA)	Noted – the definition of adaptation is actions and measures to reduce vulnerability – See Glossary
4-56	E-4-37	A	1	25	1	26	This statement could be reworded, as any attempted adaptive activity that did not reduce vulnerability could be argued not to be an "adaptation", ie an action is only an "adaptation" if it actually works. The statement could be slightly amended in the following way: "There is high confidence that vulnerability can be reduced by adaptation, especially in the short term and where adaptation complements broader development initiatives." Same comment has been made on SPM. (Adrian Simmons, European Centre for Medium-Range Weather Forecasts)	Noted – statement reworded eliminating the confidence assessment
4-57	E-4-38	A	1	25	1	26	The possibilities of adaptation to reduce vulnerabilities should not be limited to those in short term. (Keigo Akimoto, Research Institute of Innovative Technology for the Earth)	Noted – statement says "especially in short term" implying that adaptation is also effective in the longer- term
4-58	E-4-39	A	1	25	1	26	The phrase "especially in the short term" is not needed, and may mislead decision-makers into thinking that adaptation investments will only be needed once. Effective adaptation will also reduce vulnerability in the long term. The case for short term action is made well in the subsequent paragraphs. (Donald Lemmen, Natural Resources Canada)	Noted – the emphasis on the short-term is consistent with WG II's report. See comment E-4-41.
4-59	E-4-41	A	1	25	1	26	I think it's important to keep the 'in the short term' phrase in this sentence. I actually believe that adaptation can only happen once vulnerability reduction takes place, because vulnerability reduction has to do with far more underlying development issues that will enable a more sustainable response, rather than adaptation responding to the impacts as you write here. But	Accepted. Phrase retained.

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							as long as you qualify the time frame (short time), this sentence is ok. (Lisa Schipper, Southeast Asia START Regional Centre, Chulalongkorn University)	
4-60	E-4-44	A	1	25	1	26	Adaptation also can increase resilience to climate change. Given the importance of resilience in the adaptation context, the concept should appear in this sub-section 4.2. Reference to WGII 20.5 could be added here or on line 35. (Silvia Llosa, International Strategy for Disaster Reduction)	Noted – the concept of resilience is redundant to reduced vulnerability.
4-61	G-4-16	A	1	25	1	26	This chapeau text underplays the constraints on adaptation and so leaves a misleadingly optimistic impression of the degree of behaviour change that is necessary. We suggest: "There is high confidence that adaptation can reduce vulnerability, especially in the short-term. However in many cases effective adaptation action has not been taken to date, for a range of institutional, behavioural and other reasons. {WGII 17.2, 17.4, 18.1, 18.5, 20.3, 20.8} (Government of New Zealand)	Accepted – High confidence deleted.
4-62	G-4-17	A	1	25	1	26	This chapeau could not be found in any of the bracketed cites provided. Please provide subsection callouts to third level headers. (Government of United States)	Noted – The chapeau is not intended to be a direct quotation from the text. It is synthesis.
4-63	G-4-18	A	1	25	1	26	Add in this bold text the important information from WG II and from topic 5 (page 14, line 22) that there are barriers, limits and costs to implementation of adaptation. (Government of Germany)	Noted – Barriers are discussed in Topic 5.
4-64	G-4-1	C	1	25	1	26	Is this not so evident that it should be given very high confidence ? Could it be possible that adaptation would not reduce vulnerability at all even in the short term ? (Government of Belgium)	Accepted – reference to high confidence removed.
4-65	E-4-40	A	1	25	2	35	Section 4.2 discusses adaptation and refers to Table 4.1 which indicates that some adaptation options have synergies with mitigation. There is no real discussion in section 4.2 on what is meant by synergies with mitigation and there is only limited discussion of this in section 4.4. It is important to clearly state that some measures employed to adapt to climate change may also contribute to the mitigation of climate change through modifications to carbon emissions/balance, reductions in feedbacks to the climate system etc. (see comments on SPM). This would help the reader to understand why synergies are indicated in the table - eg. adaptation to deal with increased erosion such as land management, revegetation etc. may result in uptake of CO2 or may have impacts on water balance and other feedbacks to climate system. (Sharon Smith, Geological Survey of Canada)	Rejected – reviewer is asking for more detail than is appropriate in SyR.
4-66	G-4-21	A	1	28	1	28	Many readers may not be familiar with the term "exacerbated". We propose to replace with a more familiar term. (Government of Norway)	Rejected – Exacerbated is a standard English word.

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4-67	G-4-20	A	1	28	1	30	Suggest adding "poverty" to the list of non-climatic stressors to be consistent with WGII Chapter 20, Executive Summary. (Government of Canada)	Accepted – change made
4-68	E-4-46	A	1	28	1	35	This paragraph does not seem appropriate under this heading as this paragraph addresses only the vulnerability issue and does not touch upon adaptation at all. Infact this paragraph could be under a separate heading by itself. (Upasna Sharma, Indian Institute of Technology, Bombay)	Accepted – the paragraph has been rewritten
4-69	G-4-19	A	1	28	1	35	This paragraph appears to pull fragments from multiple parts of the underlying AR4 and combine them with new elements not in the AR4. The AR4 material is also jumbled, such that it is difficult to evaluate whether the statements in the text are an accurate reflection of AR4 findings. For example: The non-climate stresses are a different set than those provided in Chapter 20. We were unable to find a reference to “traditional coping skills” in the reference chapters. We also were unable to find any mention of “unsustainable consumption and production” in any of the reference chapters. Such phrases should therefore be deleted from the paragraph. The terms “economic globalization and market change” are not necessarily stresses and should also be removed from this list or qualified appropriately. The list of “stresses” does not match that in Chapter 17, which doesn’t describe them as stresses, but as factors that “effect exposure to climate risks and capacity to adapt”. Overall, it was extremely difficult to evaluate the information in this paragraph. The U.S. Government requests authors provide more specific citations as to the source of the language in this paragraph, and remove elements that are not also included in the reference chapters. In addition, it would be helpful if the authors indicated how “total vulnerability” is defined. How does one ‘sum’ vulnerabilities? Would it be more appropriate for “impacts” to be changed to “stresses” at the end of the paragraph? (Government of United States)	Accepted – WG II, Chapter 16.5.1 provides reference.
4-70	E-4-45	A	1	28	1		Vulnerability to climate change can be exacerbated by non-climate stresses' - I do not agree with the way this is written. Vulnerability is CAUSED by all of those stresses. The risk posed by climate change is caused by the HAZARD. Climate change does not cause vulnerability. (Lisa Schipper, Southeast Asia START Regional Centre, Chulalongkorn University)	Rejected – text is consistent with presentation in WG II’s report
4-71	E-4-47	A	1	29	1	29	Add: “... Growth and urbanisation , A DEVELOPMENT AT ALL COST, deforestation...” (Cristobal Felix Diaz Morejon, Ministry of Science, Technology and the Environment)	Rejected - in appropriate wording. What constitutes acceptable development is a political decision.
4-72	G-4-22	A	1	30	1	30	What are “traditional coping skills”? (Government of United States)	Taken into account – See comment -4-69.
4-73	E-4-48	A	1	31	1	32	Consider adding "disaster risk" in the parenthesis, as disasters caused by natural hazards often reverse development gains.	Noted – Disaster risk is addressed in a subsequent paragraph.

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							(Silvia Llosa, International Strategy for Disaster Reduction)	
4-74	G-4-23	A	1	31	1	32	"Climate change can be the source of multiple stresses, and it can interact with non - climate stresses (eg. Diseases,including HIV/AIDS" comment: with diseases, inc. HIV/AIDS - this statement needs some further clarification for non-medial experts - how does climate change effect HIV infection (Government of Hungary)	Noted – text modified to indicate that diseases such as HIV/AIDS reduce the capacity of communities to respond to climate change.
4-75	E-4-49	A	1	31	1	33	Bit ambiguous. Does this mean climate change interacts with multiple stressors to create a larger vulnerability profile? Or climate change can cause and exacerbate others stresses. It could be made clearer. (Jon Barnett, University of Melbourne)	Noted – Paragraph has been redrafted.
4-76	G-4-24	A	1	32	1	32	Why is economic globalization or market change necessarily a stress? (Government of United States)	Noted – it is a stress in many cases
4-77	E-4-50	A	1	32	1	33	social inequality and poverty (Germán Poveda, Universidad Nacional de Colombia)	Rejected – No basis offered for change.
4-78	E-4-51	A	1	32			Delete "HIV/AIDS" (Yola Verhasselt, VUB (Vrije Universiteit Brussel))	Rejected – no basis offered for deletion of stress which is mentioned in WG II report.
4-79	E-4-52	A	1	33	1	25	sum of vulnerabilities? This is really confusing and seems way too reductionist. Can you add vulnerabilities? I don't remember this specific phrase from the other chapters, but even so I really think it needs to be rephrased. The idea is difficult to grasp. (Lisa Schipper, Southeast Asia START Regional Centre, Chulalongkorn University)	Noted – Paragraph has been redrafted.
4-80	E-4-53	A	1	33	1	33	replace “unsustainable” with “non-sustainable”. (Michel J. Rossi, Ecole Polytechnique Fédérale de Lausanne)	Noted – Paragraph has been redrafted.
4-81	E-4-54	A	1	33	1	33	Add: “.....and violent conflict WITH THEIR CONSEQUENCES) ” (Cristobal Felix Diaz Morejon, Ministry of Science, Technology and the Environment)	Rejected – no basis is offered for change.
4-82	G-4-25	A	1	33	1	35	Vulnerability to climate change is usually expressed qualitatively (e.g., as low/medium/high) and can therefore not be added. Even if a quantitative metric was applied, this sentence were not necessarily true. For instance, if an ecosystem faces a 50% risk of destruction by climate change, and a 50% risk due to other stressors, the combined risk would not be greater than 100%. Therefore, this sentence should be deleted. (Government of European Community)	Accepted – sentence deleted
4-83	G-4-26	A	1	33	1	35	The authors should reconstruct this sentence to avoid using the artificial construct of a "sum of vulnerabilities". The key point which should be made here is that the impacts of	Accepted – sentence deleted

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							climate change can increase susceptibility to further impacts, thus increasing and compounding the vulnerability of a region to climate change. (Government of Australia)	
4-84	E-4-55	A	1	34	1	35	Well, once a species dies, more insults cannot kill it multiple times; once a coastline is lost, again, it cannot be lost again. This sentence needs to indicate that this is the case for small changes up until loss of a system occurs. (Michael MacCracken, Climate Institute)	Noted – Paragraph has been redrafted.
4-85	E-4-56	A	1	34	1	35	The term "total vulnerability" is problematic (it is not obvious that it exists or can exist) and the sentence should be reworded. If the intent is that vulnerabilities to different impacts compound each other, this can be stated directly. (Jouni Paavola, University of Leeds)	Noted – Paragraph has been redrafted.
4-86	E-4-57	A	1	37	1	38	This statement is far too positive--while some adaptation has occurred, deaths due to weather related disasters are still the greatest cause of death from natural disasters--we certainly don't do well at protecting ourselves from floods. So, be more limited in this statement and note that not all adaptation has been successful. (Michael MacCracken, Climate Institute)	Noted – statement is consistent with WG II report.
4-87	E-4-59	A	1	37	1	38	Maybe a too general statement; Have these adaptations always been succesful? Also population growth, increased populations in coastal zones etc have made current world population more vulnerable to extremes than in the past. (Janice Lough, Australian Institute of Marine Science)	Noted – text acknowledges that current adaptations are inadequate.
4-88	E-4-58	A	1	37	2	35	There are some points need to be added. 1) Societies have long experience to adapt with the hazards, especially with the extreme flood events in the GBM River basins. Please see attached the conference papers and publications (Younus, 2007a 2007b, 2006, 2005a and 2005b; Prashad, K. et al., 2004; Ahmad, et al., 2004; Paudel and Sharma, 2004). Farmers in Soth Asia have a long experience to adapt with the extreme flood events. 2) the intensity and frequency of extreme flood events have increased in this region over time; 3) farmers are very resilient in their responses to the extreme flood events but multi-peak and longer duration floods terminate their capacity for autonomous crop adaptations; 4) the failure effects of Autonomous Crop Adaptations are huge in the perspective of the socio-economic, demographic and bio-physical settings of the GBM River basins; d) the autonomous crop adaptation capacity is become weaker due to the longer persistence of Failure Effects Autonomous Crop Adaptations; 5) extreme flood events, which might have a strong link with global climate change, accelerate food insecurity and ultimately human insecurity. References: • Younus, M. (2007a): Failure Effects of 'Autonomous Adaptation' in Relation to Extreme Flood Events in Bangladesh: Should It Be Addressed Without Delay? Hawaii International Conference on Social Sciences organised by University of Louisville: Centre for Sustainable Urban Neighbourhoods, USA, 30th May – 2nd June, Hawaii. http://www.hicsocial.org/ http://www.hicsocial.org/Tentative%20Program.xls ; • Younus, M. (2007b): 'Do Failure Effects of 'Autonomous Adaptation' in Relation to Extreme Flood Events in South Asia Cope With	Noted – This level of detail cannot be accommodated in the SyR.

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							<p>Future Climate Change? - A Case of Bangladesh', Presented the paper in the 2007 ANZSEE Conference on " Re-inventing Sustainability: A climate for change" 3-6 July 2007, Noosaville, Queensland, Australia. http://www.anzsee.org/ (attached herewith the full paper) • Younus, M., Bedford, R., and Morad, M. (2006): Adaptation to Extreme Flood Events in Ganges-Brahmaputra-Meghna River Basins - A Case Study in Bangladesh, paper presented in International Geographical Union Conference (IGU) in Brisbane, Australia, organized by Institute of Australian Geographers and NZGS, 3-5 July, pp 128, http://www.geoscape.cz/pdf/igu_ab_1.pdf. • Younus, M, Bedford, R and Morad, M. (2005a): Not so High and Dry: Examination of the Patterns of 'Autonomous Adjustment' to Major Flooding Events in Bangladesh. Geography, Vol 90 (2). Geographical Association, UK. http://www.geography.org.uk/Journals/Journals.asp?articleID=117 • Younus, M. A. F., Bedford, R and Morad, M. (2005b): Climate-Induced Flooding, Autonomous Adjustments and Human Security in Bangladesh – A Geographical Assessment, An International Workshop on Climate Change & Human Security, Organized by Centre for the Study of Civil War (CSCW), International Peace Research Institute, Oslo (PRIO) & Centre for International Environmental and Climate Research at the University of Oslo (CICERO) for the Global Environmental Change and Human Security Program (GECHS), Oslo, 22–23 June, available at http://www.gechs.org/pdf/Younus_et_al.pdf, http://www.cicero.uio.no/humsec/list_participants.html • Ahmad, Q. K., Ahmed, A., Karim, Z. (2004): Manual for Community-Based Flood Management in Bangladesh, Asia Pacific Journal on Environment and Development, Vol 11, No 1 & Vol 11 No 2, BUP; (Referred articles available on request).</p> <p>(Md Younus, BUP and The University of Adelaide)</p>	
4-89	E-4-60	A	1	38	1	38	<p>I agree, but is it worth noting that some don't sometimes, which is why droughts and floods can trigger famine?</p> <p>(Jon Barnett, University of Melbourne)</p>	Noted – text acknowledges that current adaptations are inadequate.
4-90	E-4-61	A	1	40	1	40	<p>"will be urgently required" - policy advocacy?</p> <p>(Keith Shine, University of Reading)</p>	Accepted - redraft uses more neutral language.
4-91	G-4-27	A	1	40	1	41	<p>It would be useful if the authors could provide some explanation as to why "urgent" adaptation action is required to address "projected" impacts, as there seems to be a temporal disconnect between the impacts and the action to address the impacts. It is assumed that the authors have used the word "urgent" as adaptation actions can have long lead times and some scenarios of future impacts may already be of sufficient concern to justify building adaptation into planning. The authors should consider rephrasing this sentence to more closely reflect this.</p> <p>(Government of Australia)</p>	Noted – word “urgent” deleted
4-92	E-4-63	A	1	41	1	41	<p>Change "may be" to "are in some cases"--really should not be using the word "may" as it provides essentially no useful information.</p> <p>(Michael MacCracken, Climate Institute)</p>	Noted – sentence rewritten

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4-93	E-4-62	A	1	41	1	42	What are the "other effects" for which adaptation may not be feasible or cost effective? This report needs to provide specifics, not just generalized statements. (Robert Siveter, IPIECA)	Accepted – text changed
4-94	E-4-64	A	1	41	1	42	"However, there maybe bo feasible.....long-term." This statement seems too generic. At least some indication should be given about what 'other' effects are being referred to here.. If possible then, please attach a likelihood or confidence level to this statement. (Upasna Sharma, Indian Institute of Technology, Bombay)	Noted – sentence rewritten
4-95	G-4-28	A	1	41	1	42	What are the "other effects" for which adaptation may not be feasible or cost effective? This report needs provide specifics, not just generalized statements. Since "other effects" are not specified, the sentence is meaningless and should be removed. (Government of United States)	Noted – Other effects refer to effects caused by large scale GHG concentrations. The text has been revised.
4-96	G-4-29	A	1	41	1	43	It is not clear what the term "other effects" refers to in this context. (Government of European Community)	Noted – Other effects refer to effects caused by large scale GHG concentrations. The text has been revised.
4-97	G-4-30	A	1	41	1	43	Clarify what is meant by other effects in line 42. (Government of Germany)	Noted – Other effects refer to effects caused by large scale GHG concentrations. The text has been revised.
4-98	G-4-31	A	1	42	1	42	What does "other effects" mean? (Government of Sweden)	Noted – Other effects refer to effects caused by large scale GHG concentrations. The text has been revised.
4-99	G-4-32	A	1	42	1	42	It is unclear what is meant by "other effects" (Government of Norway)	Noted – Other effects refer to effects be caused by large scale GHG concentrations. The text has been revised.
4-100	G-4-33	A	1	42	1	42	For consistency replace "effects" with "impacts". (Government of Australia)	Noted – Other effects refer to effects caused by large scale GHG concentrations. The text has been revised.
4-101	E-4-65	A	1	42			other effects' is ambiguous. Is this trying to say there are limits to adaptation. EG SLR in low lying coasts? (Jon Barnett, University of Melbourne)	Noted – sentence rewritten
4-102	G-4-34	A	1	47	1	47	In Footnote 2, wouldn't "physical capital" be more meaningful than "hardware?" (Government of United States)	Noted – footnote deleted

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4-103	E-4-66	A	1				footnote 1: the definition of vulnerability given in glossary is different and more appropriate. For consistency, it should be used here as well. (Stephan Halloy, Conservation International)	Accepted – definition moved to Glossary
4-104	G-4-35	A	2	1	2	1	'Adaptation' is not a noun (in this context), so does not exist in the plural form. This sentence would be better rephrased as: "Many adaptation actions have ..." (Government of New Zealand)	Accepted – change made
4-105	E-4-67	A	2	1		17	Text supported (Robert Kay, Coastal Zone Management Pty Ltd)	Noted – with thanks.
4-106	G-4-37	A	2	2	2	2	"(...) broader development and sectoral AND REGIONAL/LOCAL planning initiative (...)" (Government of Hungary)	Accepted – text redrafted
4-107	G-4-36	A	2	2	2	5	Line 5 seems to duplicate lines 2-3. Suggest deleting lines 5-7 and replacing "planning." with "planning. Examples include the Bangladesh Water Management Plan and the coastal defence plans of The Netherlands and Norway". (Government of Australia)	Accepted – text redrafted
4-108	E-4-71	A	2	3	2	3	Add "Adaptation is not synonymous with economic development and poverty alleviation, however, as these development can also increase vulnerability to climate change in some circumstances if specific consideration of adaptation is not taken". (Siri Eriksen, University of Oslo)	Noted – text does not imply that adaptation is synonymous with development or poverty mitigation. Also, see section 4.4.
4-109	E-4-70	A	2	3	2	4	Needs to make the point that adaptation typically is not good to extremes, especially new extremes created by climate change--instead, adaptation is to relatively rare events, but not usually to the real extremes. (Michael MacCracken, Climate Institute)	Noted – text states that more adaptation is needed
4-110	E-4-68	A	2	3			substitute "prevention" for "planning" (Hartmut Grassl, Max Planck Institute for Meteorology)	Rejected – this is approved text from WG II SPM
4-111	E-4-69	A	2	3			Please replace disaster "planning" with disaster "risk reduction" as agreed in plenary in the review of WGII report and subsequently corrected in the chapters (as per WGII SPM and WGII chap.17 & 20) (Silvia Llosa, International Strategy for Disaster Reduction)	Accepted – change made
4-112	G-4-38	A	2	4	2	4	To more clearly articulate that some adaptation is not planned, suggest that "autonomously" is inserted after "occur". (Government of Australia)	Noted – text modified
4-113	E-4-72	A	2	5	2	7	Do these plans deal just with higher sea level, or also with all of the other types of factors changing, like heavier rains, ocean acidification that will destroy reefs (eventually), more intense storms, etc.? Likely, they deal with only some aspects of changes. (Michael MacCracken, Climate Institute)	Noted – reviewer is asking for more detail than is appropriate for SyR.

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4-114	G-4-39	A	2	5		7	The following sentence should be moved - "Many of these will be embedded as part of sectoral planning initiatives such as the Bangladesh National Water Management Plan, and the coastal defence plans of The Netherlands and Norway, which incorporate specific climate change scenarios." - to directly after 'disaster planning.' but before "Over Time". Further it should be modified to read "Specific initiatives include the Bangladesh..." This will make the paragraph flow better - i. you note that many adaptation measures will be streamlined into existing work, ii. you specify some examples, then iii. you note that further adaptation will occur as economies develop. The paragraph will read more logically this way. (Government of Canada)	Noted – text redrafted
4-115	E-4-73	A	2	10	2	13	Although the adaptation cost and benefit estimates at the regional level is growing, it should still be mentioned that there is relatively larger uncertainty in the regional climate change projections making such estimates also to be mired with larger uncertainties. (Richard Anyah, Rutgers University)	Noted – not supported by underlying text.
4-578	G-4-2	D	2	10	2	17	The Electrical Household Appliances Quality Programme developed by the National Energy Department, the National Institute of Industrial Technology and the Argentinean Institute of Standardization establishes the standards for the labelling of lighting fixtures, food preservation and electric motors both imported and made in the country. Besides, the Program adopts strategies for the diffusion of these regulations and training for the implementation of the current Program standards. (Government of Argentina)	Noted – interesting input, but specifics of national policies are too detailed for inclusion in the SyR
4-116	E-4-74	A	2	11	2	13	Punctuation in this sentence is rather strange (Michael MacCracken, Climate Institute)	Accepted – change made.
4-117	G-4-40	A	2	11	2	13	This sentence is awkward as written, and “agriculture” and “water resource management and infrastructure” are not impacts. (Government of United States)	Accepted – text redrafted
4-118	G-4-41	A	2	11	2	13	Editing: suggest "...estimates is growing..." (Government of Australia)	Accepted – change made
4-119	E-4-75	A	2	12	2	13	This seems to mix impacts and sectors. The same problem occurs in the SPM. (Jon Barnett, University of Melbourne)	Accepted – text rewritten to clarify
4-120	E-4-77	A	2	12	2	13	Please add "renewable energy ". Reason: see justification in comment 5 and Topic 4, Page 3, Line 1, Table 4.1. (Christian Kjaer, European Wind Energy Association (EWEA))	Noted – no justification for addition in underlying report
4-121	G-4-42	A	2	12	2	13	There needs to be better consistency in this list of “impacts.” Sea-level rise is an impact, but agriculture is not. (Government of United States)	Noted – text redrafted

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Running number	Topic - Comment	Batch	Page	Line	To Page	To Line	Comment	Considerations by the writing team
4-122	E-4-76	A	2	12			substitute comma for semicolon after "impacts" (Hartmut Grassl, Max Planck Institute for Meteorology)	Accepted –change made
4-123	E-4-2	B	2	12			impacts, (Effiom Antia, University of Calabar)	Noted – No explanation of comment
4-124	E-4-78	A	2	13	2	15	There need to be some qualifications to this statement--I doubt there is high confidence that can protect coastal cities from long-term sea level rise that might be set in motion this century. In addition, rebuilding the building stock of cities to protect against new heat extremes will be very costly. In some cities, the building cannot even contain the air, so buildings would need to be entirely rebuilt--this is not inexpensive. Agriculture going without irrigation water due to limited supplies being needed by cities may be what seems like a straightforward adaptation, but we know from the trade negotiation experiences that governments do not easily just pull the economic rug out from under farmers--may seem economically obvious, but is not politically feasible in many cases--the complications need to be recognized, or limitations stated. And, as indicated in lines 19-21, there are a number of especially vulnerable groups, and it simply is not correct that their adaptation can be accomplished at low cost. (Michael MacCracken, Climate Institute)	Accepted – sea level rise deleted from text
4-125	E-4-79	A	2	15	2	17	sentence not clear (Zoltán Somogyi, Hungarian Forest Research Institute)	Rejected – Reviewer does not explain what is not clear.
4-126	G-4-43	A	2	15	2	17	sentence not clear (Government of Hungary)	Noted – text redrafted
4-127	E-4-80	A	2	17			I do not understand 'retrofitting: definition needed in the glossary? (Michel Rixen, NATO Undersea Research Center)	Noted – term in Glossary
4-128	E-4-81	A	2	18	2	18	Add "In addition to sectoral adaptation, measures to enhance the capacity of households and communities to cope with climatic variability may strengthen long term adaptation. Such measures are typically multi-sectoral. Measures targeted at reducing non-climatic stressors such as conflict or the spread of infectious diseases can also reduce vulnerability" (Siri Eriksen, University of Oslo)	Noted – more detail than appropriate for SyR
4-129	E-4-86	A	2	19	2	19	Add: "...is intimately conneted to social, economic development, AND ENVIRONMENTAL PROTECTION, but it is not evenly....." (Cristobal Felix Diaz Morejon, Ministry of Science, Technology and the Environment)	Rejected – already sufficiently explained
4-130	E-4-83	A	2	19	2	21	Indeed, they do--and the housing stock they are in and their capacity to upgrade it are very limited. Many people in the developing world cannot even afford clean water, much less face the additional stresses of climate change. This assertion of high confidence at low cost is wishful academic thinking that does not seem to recognize that many needs are already not being met for many in various societies, and additional stresses will only make the situation worse. (Michael MacCracken, Climate Institute)	Noted – Comment does not refer to cited text.

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Running number	Topic - Comment	Batch	Page	Line	To Page	To Line	Comment	Considerations by the writing team
4-131	G-4-44	A	2	19	2	21	This sub-section should provide some information about the limited adaptive capacity of natural systems. (Government of Australia)	Rejected – The focus is on the adaptive capacity of human systems
4-132	E-4-82	A	2	19	2	35	Rather than stating that social and economic and development is not evenly distributed, shouldn't the argument be made that development should apply to all sectors of the population to be effective. Katrina, for example, didn't discriminate. (Robert Molinari, University of Miami)	Noted – Not consistent with underlying WG II text
4-133	E-4-84	A	2	19	2	35	In the underlying report, the logical conclusion is drawn that development policy has a high priority. Why is this omitted here? (Richard Tol, ESRI)	Accepted – reference to development policy added
4-134	G-4-45	A	2	19		21	Some arguments are needed why women have less capacity to adapt. (Government of Hungary)	Rejected – More detail than appropriate for the SyR
4-135	E-4-85	A	2	19			I'm not sure what social development is, does this mean social, economic, human and natural capital? If its social and economic development then maybe some statement like 'intimately connected to, but includes more than social and economic development'? (Jon Barnett, University of Melbourne)	Rejected – social development is a commonly used term that does not need to be defined here.
4-136	E-4-87	A	2	20	2	20	The addition of "women" in this section appears to be extremely sexist - my impression is that women have as much adaptive capacity as men (and possibly more)!! In many societies , women are the main drivers of economic and family development as well as the primary workers. (Nick Campbell, ARKEMA SA)	Rejected – reference to women is supported by WG II report
4-137	E-4-88	A	2	20	2	21	Add "children" to list. (Janice Lough, Australian Institute of Marine Science)	Accepted – change made
4-138	G-4-46	A	2	20	2	21	This sentence is poorly written : an indigeneous, old woman can have high adaptive capacity, provided she is not poor and sick. Being a woman is a disadvantage in some societies only ! (Government of France)	Noted – Text is consistent with WG II report
4-139	G-4-2	C	2	20	2	21	" This sentence suggest that only elderly poor women are concerned " (Government of Belgium)	Noted – Text is consistent with WG II report. Other groups now mentioned.
4-140	E-4-90	A	2	21	2	21	Add "The effects of adaptation are uneven since adaptation by one group or sector may also increase the vulnerability of others" (Siri Eriksen, University of Oslo)	Noted – more detail than appropriate for SyR
4-141	E-4-89	A	2	21			No need to specify indigenous populations unless they are poor or neglected, which are already stated in the previous line; 20.	Noted – reference to indigenous populated is supported by WG II

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							(Ben Muirheid, International Fertilizer Trade Association (IFA))	report
4-142	G-4-47	A	2	21			Is statement on " indigenous populations" correct in all cases? (Government of Ireland)	Rejected – The statement is that indigenous people TYPICALLY have less adaptive capacity. This allows for cases in which they have more capacity.
4-143	E-4-91	A	2	23	2	26	Indeed, many complications--and it is not clear any type of society can really respond: free market systems tend not to protect all classes; controlled market systems tend to be too inflexible to get needed work done. (Michael MacCracken, Climate Institute)	Noted – unclear what change reviewer is suggesting
4-144	G-4-48	A	2	23	2	26	The "capacity to adapt" is a capacity, not a process. (Government of European Community)	Accepted – Text changed.
4-145	E-4-93	A	2	28	2	29	"adaptation will be vital" - policy advocacy? (Keith Shine, University of Reading)	Noted – word "vital" eliminated
4-146	E-4-92	A	2	28	2	30	These factors are not necessarily "constraints" that "limit" but may also provide opportunities to increase potential implementation and effectiveness. (Elizabeth L Malone, Pacific Northwest National Laboratory)	Noted – text consistent with WG II report
4-147	G-4-50	A	2	28	2	30	The first sentence contains a long technical list of barriers. The sentence could be shortened and put in plain language. (Government of Australia)	Rejected – It is important for policymakers to be aware of the types of barriers/constraints that exist.
4-148	G-4-49	A	2	28	2	35	This paragraph aims to correctly point out that effective action depends not only on the availability of economic resources but also on other factors such as governance. However, these factors are often included in the conceptualization of adaptive capacity. Hence, the current text is only correct with a very narrow conceptualization of adaptive capacity. A clearer formulation would be "Without good governance and effective institutions, economic resources do not automatically translate into effective action, as highlighted by the large damage caused by recent extreme climate events in high-income countries. (Government of European Community)	Noted – text rewritten
4-149	E-4-94	A	2	30	2	31	There is something missing here that is not quite captured by 'effectiveness'. Can there be a sentence added that says 'the effectiveness of an adaptive action is best determined by the communities in which that action occurs' - as a way to suggest that some things that may seem to be adaptations may not be 'effective or successful' - i'm thinking here of forced migration, often understood as an adaptation but rarely understood as such by the migrants	Noted – more detail than appropriate for the SyR

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Running number	Topic - Comment	Batch	Page	Line	To Page	To Line	Comment	Considerations by the writing team
							themselves. (Jon Barnett, University of Melbourne)	
4-150	E-4-96	A	2	31	2	31	Need to say have "high potential adaptive capacity"--it is all only potential until implemented, and experience indicates that societies rarely are as adaptable as the ideal analysis would suggest. Also, the phrase have "the necessary financial resources" is very misleading--expenses rise to meet income and all resources are typically allocated--there is just not free money sitting around to use for adaptation as it has already been allocated to something else--or are adverse to using taxing powers to assemble what might seem available resources if one has some egalitarian view of society--nice ideal, but typically not how the real world works. (Michael MacCracken, Climate Institute)	Noted – capacity exist whether it is implemented or not
4-151	E-4-95	A	2	31	2	35	There should be a counter-statement that many societies in the developing world have low adaptive capacity, exacerbated by the listed constraints. (Richard Anyah, Rutgers University)	Rejected – would add very little to the text.
4-152	G-4-51	A	2	31	2	35	These sentences should be deleted as they make a political judgement and unhelpfully could lead policy makers to believe that extreme weather events such as Hurricane Katrina are directly attributable to climate change. (Government of Australia)	Rejected – the statement only refers to the damages caused by the storm, not its cause.
4-153	G-4-52	A	2	31	2	35	Delete “but have not taken effective action...” through the end of the sentence, and replace with “but remain vulnerable”. The authors need to be careful that specific extreme weather events are not attributed to climate change, even implicitly. (Government of United States)	Accepted – change made
4-154	E-4-97	A	2	32	2	34	These are examples of just the opposite of what was intended. To deal with the heat waves in European cities will require a fundamental rebuilding of many buildings to make them air tight and suitable for air conditioning--this is not easy in that the whole city has been built for the present climate. For New Orleans, there is likely no way to protect New Orleans against all storms, no matter how much is invested--rising sea level will eventually put the sea at the edge of a lot of cities and one cannot always easily deal with it--New York City being an example of this (and the US simply do0es not have the resources to build a Dutch type dike around the whole shoreline). (Michael MacCracken, Climate Institute)	Rejected – authors do not accept the reviewer’s premise
4-155	G-4-53	A	2	32	2	35	It isn’t clear if the action was to be taken before or in response to these events. (Government of United States)	Noted – Text redrafted
4-156	E-4-3	B	2	32			variability and extremes of climate change (Effiom Antia, University of Calabar)	Noted – No explanation of comment
4-157	G-4-54	A	2	33	2	34	Can “high levels” and “large” be expressed more quantitatively? (Government of United States)	Noted – It is difficult to quantify these terms because of a lack of

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								consistently reported figures.
4-158	E-4-98	A	2	33			Delete "cities" (Yola Verhasselt, VUB (Vrije Universiteit Brussel))	Rejected – Reviewer provides no basis for proposed change
4-159	E-4-4	B	2	33			example, (Effiom Antia, University of Calabar)	Noted – No explanation of comment
4-160	E-4-99	A	2	34	2	34	The statement would imply that Katrina was caused by climate change, although this has not been confirmed. (Motoyoshi Ikeda, Hokkaido University)	Rejected – the statement only refers to the damages caused by the storm, not its cause.
4-161	E-4-100	A	2	34	2	34	I would write "and in 2005 Hurricane Katrina" rather than "and Hurricane Katrina". (Marco Mazzotti, ETH Zurich)	Accepted – change made
4-162	E-4-101	A	2	35	2	35	Add "In other societies, social, political and economic development is leading to declining adaptive capacity" (Siri Eriksen, University of Oslo)	Rejected – redundant
4-163	G-4-55	A	2	36	2	26	Adaptive capacity is not "affected" by climate stresses. Rather, vulnerability to climate change is determined by the interaction of climate stresses and adaptive capacity. (Government of European Community)	Noted
4-164	E-4-102	A	3	1	3	1	Several notes: (a) In first column, row for water: increasing rainwater harvesting reduces water available for nature--whether in rivers as runoff, in estuaries, etc.; (b) In first column, row for human health: This will all be very difficult for cities as storm intensity and sea level rise; (c) First column, tourism: The recent city of Aspen study would suggest it is not so easy to adapt--ski slopes already go to the tops of mountains, and it is hard to get access to the water needed for snowmaking; (d) First row, transport: Realignment and relocation of transportation infrastructure is very costly and very disruptive--as hurricane Katrina is indicating. (e) In rightmost column, water: Changes in water allocation for cities will have impacts on land cover, natural uses, natural ecosystems, river flow, etc.--at least indicate that there will be increased problems; (f) rightmost column, transport: often there are not rights of way available without significant societal disruption--at least acknowledge that availability of land is a barrier, and intricacies of meshing transportation infrastructures is not easy. (Michael MacCracken, Climate Institute)	Noted – these examples are supported by the text of WG II's report The table now contains references to the sections of the report that discuss the options.
4-165	E-4-103	A	3	1	3	1	Heat stress alerts and, in general, establishing timing health early warning systems (Germán Poveda, Universidad Nacional de Colombia)	Noted – table entry on human health reworded
4-166	E-4-104	A	3				The table [TSU Comment: Table: 4.1] includes "artificial snow-making" as an "adaptation" in the tourism sector. However, this is presumably an energy-consuming process, so it presumably increases vulnerability in other sectors (cf the statement in lines 25 and 26 of page 1 of Topic 4). The point that adaptation within a certain sector can make things worse in other sectors (by requiring additional energy generation) is made only several pages later.	Accepted – table entry identifies increased energy use as a constraint

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Running number	Topic - Comment	Batch	Page	Line	To Page	To Line	Comment	Considerations by the writing team
							Consideration could perhaps be given to the overall presentation of this topic. (Adrian Simmons, European Centre for Medium-Range Weather Forecasts)	
4-167	E-4-105	A	3				Table 4.1: Water - Adaptation option/strategy: Add 'increased efficiency of water use in irrigated crops conservation of groundwater resources' (David White, ASIT Consulting)	Accepted – text added
4-168	E-4-106	A	3				Table 4.1: Transport - Adaptation option/strategy: Add '; sail- or solar-assisted ocean transport' (David White, ASIT Consulting)	Noted – not supported by WG II report
4-169	E-4-107	A	3				Table 4.1: Tourism: Where are the negative side effects of ski tourism on biodiversity (wildlife, alien plant introductions)? (Ulf Molau, Göteborg University)	Noted – more detail than appropriate for SyR
4-170	E-4-108	A	3				Table 4.1: Tourism - Adaptation option/strategy: Add 'adaptive ecotourism' (David White, ASIT Consulting)	Noted – what does this term mean – it is not used by WG II
4-171	E-4-109	A	3				Table 4.1: This table is useful (Lisa Schipper, Southeast Asia START Regional Centre, Chulalongkorn University)	Noted – with thanks
4-172	E-4-110	A	3				Table 4.1: Third row. I would argue that the first column 'option/strategy' should also include policy measures - like caveats on land titles, differential land taxes, land use zoning. (Robert Kay, Coastal Zone Management Pty Ltd)	Rejected – would be policy prescriptive
4-173	E-4-111	A	3				Table 4.1: the perspective from the "North" is predominant. (Yola Verhasselt, VUB (Vrije Universiteit Brussel))	Noted
4-174	E-4-112	A	3				Table 4.1: For "agriculture", an "adaptation option/strategy" listed is "Diversification by adding livestock". This seems counter-intuitive. Adding livestock not only increases methane emissions from enteric fermentation, but may also increase N2O and CH4 emissions from increased manure production. Please verify. (Henry Janzen, Agriculture and Agri-Food Canada)	Accepted – removed option
4-175	E-4-113	A	3				Table 4.1: Agriculture: The asteric at the end is not defined. Adjustment of crop rotation should be added under Adaptation. Opportunities: in many temperate and norther latitudes, higher mean temepartures and slightly less precipitation could offer benefits for potential crop yields, not just longer growing seasons. Constraints: see above, limiting factors such as increased pest and disease risks, pollutants etc. (to be added) (Fuhrer Juerg, Agroscope Research Station ART)	Accepted – asterisk removed
4-176	E-4-114	A	3				Table 4.1: Agriculture - Adaptation option/strategy: Add 'stocking decisions based on soil and pasture monitoring and/or climate (3-6 month) forecasts' (David White, ASIT Consulting)	Noted – The table contains selected examples only

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Running number	Topic - Comment	Batch	Page	Line	To Page	To Line	Comment	Considerations by the writing team
4-177	E-4-115	A	3				Table 4.1: In agriculture irrigation should be added as adaptation strategy (María Isabel Travasso, Instituto Nacional de Tecnología Agropecuaria)	Noted – The table contains selected examples only
4-178	E-4-116	A	3				Table 4.1: Add 'robust, resilient, smart, self healing grid' as an adaptive measure. (Paul Epstein, Harvard Medical School)	Noted – The table contains selected examples only
4-179	E-4-117	A	3				Table 4.1. Although it has been mentioned under the specific section on water, I think it would also be better in the section on Agriculture under the column headed 'Underlying policy framework' to add 'water management' as it is so critical for this sector. (George Walker, Aon Re Asia Pacific)	Noted – authors disagree with reviewers suggestion
4-180	E-4-118	A	3				Table 4.1. In the section on Agriculture the item 'crop insurance' under 'Adaptation option/strategy' should be moved to the column headed 'Underlying policy framework'. This will make it consistent with other sections where insurance is mentioned, and recognises that the availability of insurance will not mitigate losses, only the impact on individuals, by transferring the losses to somewhere else in the overall economy. (George Walker, Aon Re Asia Pacific)	Accepted – change made
4-181	E-4-119	A	3				Table 4.1, row 8, column 2 (Energy). — Comment: 'reduced dependence on single sources of energy' excludes nuclear power from the future options. — Explanation: Reasons: the very large unit size of nuclear power stations (1.5 GW), concentration of NPPs in small regions and exceedingly heavy distribution grid needed to connect the NPPs and the extremely large quick-starting backup power (gas-fired or oil-fired) needed to compensate for planned and unplanned outages. (Jan Willem Storm van Leeuwen, Ceedata Consultancy)	Rejected – text supported by WG II report
4-182	E-4-120	A	3				Table 4.1, 4th column to the right, Line "Infrastructure/settlement": should add Integrated coastal zone management (like integrated water resources management in case of water) as mentioned in Agenda 21. This would require adding in the report glossary the proposed following definition of Integrated coastal zone management (ICZM; above the existing IWRM): "Integrated coastal zone management has been defined by GESAMP (1996) as a process that unites government and the community, science and management, sectoral and public interests in preparing and implementing an integrated plan for the protection and development of coastal ecosystems and resources. Frequently used synonyms for ICZM are integrated coastal management (ICM), integrated coastal area management (ICAM) and Integrated coastal and ocean management (ICOM)." (Yves Henocque, Department of Fisheries)	Noted – suggestion is already covered by integrated policy management
4-183	E-4-121	A	3				Table 4.1 Line concerning infrastructure, last column : in the beginning of the italic text add management to integrated policies i.e. integrated policies and management (Nicole Lenotre, BRGM)	Accepted – change made
4-184	E-4-122	A	3				Table 4.1 Comment: There appear to be remarkably little asterisks indicating potential synergies between adaptation and mitigation, which runs counter to intuition, popular belief and, indeed, the contents of the many sections cited. Here are some to be considered: 1)	Noted – table revised

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Running number	Topic - Comment	Batch	Page	Line	To Page	To Line	Comment	Considerations by the writing team
							Water, left hand box, insert asterisk (e.g. energy saved through less water use and pumping. 2) Energy, left hand box, insert asterisk (e.g. Reduced dependence on single sources of energy implies distributed renewable energy networks, which themselves are unambiguously mitigative. 3) Energy, right hand box, insert asterisk (e.g. Use of local resources implies distributed locally suitable renewable energy sources and networks, which are unambiguously mitigative. On the other hand, it should be noted that in Tourism, lefthand box, there is a need for some sort of reverse asterisk or counter mark, since artificial snow-making is unambiguously anti-mitigative . (Pat Finnegan, Grian)	
4-185	E-4-123	A	3				Table 4.1 - it would be useful to indicate for each sector what the reference is rather than just giving the list in the caption. (Sharon Smith, Geological Survey of Canada)	Accepted –references provided
4-186	E-4-124	A	3				Tab 4.1 'new varieties' Is this calling for GMOs? Precaution principle... (Michel Rixen, NATO Undersea Research Center)	Rejected – no reference to GMOs
4-187	E-4-125	A	3				Tab 4.1 'artificial snow making' not very effective, expensive, additional energy consumption... (Michel Rixen, NATO Undersea Research Center)	Taken into account – see comment 4-166
4-188	E-4-126	A	3				Please add inappropriate housing structures and uncontrolled urban migration to key constraints for human health. (Lourdes Tibig, Philippine Atmospheric, Geophysical and Astronomical Services Administration)	Noted – The table contains selected examples only
4-189	E-4-127	A	3				in table 4.1. a sector such as nature or biodiversity conservation; as option/strategy you may add e.g. corridors between protected areas; monitoring for early warning (Harald Pauli, University of Vienna & Austrian Academy of Sciences)	Noted – The table contains selected examples only
4-190	E-4-128	A	3				In table 4.1 under "adaptation option" for all sectors please add 'early warning' as extreme events can greatly impact all of them. At a minimum please add "early warning" under "infrastructure adaptation option" and under "underlying policy framework" add 'disaster risk management and urban planning'. (Silvia Llosa, International Strategy for Disaster Reduction)	Noted – The table contains selected examples only
4-191	E-4-129	A	3				In Table 4.1 I propose to add in column of Adaptation option/strategy the following: in Water add WASTEWATER REUSE AND EARLY WARNING SYSTEMS; in Agriculture include EARLY WARNING SYSTEMS AND ADVANCED IRRIGATION TECHNOLOGIES; in Human health include: DRINKING WATER AND SANITATION IMPROVEMENT. (Cristobal Felix Diaz Morejon, Ministry of Science, Technology and the Environment)	Accepted – water reuse added to table
4-192	E-4-130	A	3				How much are the adaptation costs? As shown in Figure 4.1, mitigation costs are tries to be estimated. (Toshihiko Masui, National Institute for Environmental Studies)	Noted – cost information is not available on a global scale

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Running number	Topic - Comment	Batch	Page	Line	To Page	To Line	Comment	Considerations by the writing team
4-193	E-4-131	A	3				"Human health" row and "Adaptation option/strategy" column should read "Early warning systems, including heat stress alerts; improved climate sensitive disease surveillance and control; strengthened emergency medical services; distribution of bottled water; specifically designated public 'cooling centres' (Hisashi Ogawa, World Health Organization Regional Office for the Western Pacific)	Accepted – text of human health row revised
4-194	G-4-56	A	3				Transport - "Realignment/relocation" is synergistic with mitigation. (Government of Canada)	Noted
4-195	G-4-57	A	3				Table 4.1: In present column 4 a number of the "Key constraints" are so broad as to be of little assistance to readers (e.g. in row 2 "human barriers" is listed as a key constraint.). If the authors cannot find more descriptive terms for the constraints, the provision of examples would at least provide some explanation. (Government of Australia)	Accepted - Text modified to be more specific
4-196	G-4-58	A	3				Table 4.1: In present column 2 it would be useful if (along with noting where a possible synergy exists between mitigation and an adaptation strategy arises), the authors could note where a disynergy arises (e.g. desalination, due to increased energy consumption). (Government of Australia)	Accepted – potential trade-offs now indicated
4-197	G-4-59	A	3				Table 4.1. Among sectors natural ecosystems are not mentioned (Government of Hungary)	Rejected – This table addresses only socio-economic factors
4-198	G-4-60	A	3				Table 4.1, Row: Energy, Column: Underlying policy framework: "(...) in design the standards AND BUILDING CONSTRUCTION AND MAINTENANCE" (Government of Hungary)	Noted – Table is only illustrative
4-199	G-4-61	A	3				Table 4.1, left column, row "tourism": What are "non-traditional sectors and groups?" (Government of European Community)	Accepted – text modified
4-200	G-4-62	A	3				Table 4.1 is fairly ineffective. Please consider the following suggested improvements: (1) Separate the last column into two new ones – one for constraints and one for opportunities – rather than using italics. It's also sometimes unclear whether an entry is one or the other. (Why are cross border agreements a constraint?) It needs to be clearer that constraints are negative and opportunities are positive. 2. Add rows for "Art and culture" and for "Education" if there is support in the AR4. 3. Why is there no mention of reducing energy use or use of renewable energy sources in the energy sector adaptation option box? 4. Why list "climate forecasts" as an underlying policy framework? 5. Why include regional and international cooperation only in the health sector? (Government of United States)	Noted - This suggestion is already explained in the Table, which is illustrative only. Cross-border agreement removed. Energy-efficiency and renewable sources added. Climate forecasts deleted.
4-201	G-4-63	A	3				Infrastructure/settlement - "Standards and regulations that integrate climate change considerations into design" is synergistic with mitigation.	Noted – Table is only illustrative

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Running number	Topic - Comment	Batch	Page	Line	To Page	To Line	Comment	Considerations by the writing team
							(Government of Canada)	
4-202	G-4-64	A	3				Inertia is probably a constraint to the implementation of adaptation options and strategies. (Government of United States)	Noted – inertia is a poorly defined term in t his context
4-203	G-4-65	A	3				In Table 4.1, would it be possible to include an example of a non-heat-related adaptation option, such as options related to changes in disease vectors? (Government of United States)	Accepted – non-heat-related example added
4-204	G-4-3	C	3				" Table 4.1: Need to add a column with the impacts (e.g. table 3.2.) on the sectors and then give the adaptation measures for them" (Government of Belgium)	Acpted- but in existing column.
4-205	G-4-4	C	3				" Table 4.1 : Should add a footnote about the adverse effects of artificial snow-making" (Government of Belgium)	Acpted – added to text of table
4-579	G-4-3	D	3				The National Law 26,190 was established to foster the use of renewable energy sources destined for the production of electric power. Its objective is to achieve an 8% contribution of renewable sources in its consumption in ten years' time. This law establishes tax benefits for electricity producers who make use of technologies that use solar, wind, geothermal and tidal energy, biomass, landfill gases, purification-plant gases, biogas, and hydro electric power plants of 30 mega watts. (Government of Argentina)	Noted – interesting input, but specifics of national policies are too detailed for inclusion in the SyR
4-580	G-4-4	D	3				Table 4.1: In agriculture irrigation should be added as adaptation strategy (Government of Argentina)	Noted – Table provides examples only
4-206	G-4-66	A	4	1	8	13	The message to policy makers that we see here is that mitigation is relatively inexpensive and that there are policy instruments available. In reality, considerable and strong policy efforts are needed to get even parts of the potential reductions. It should be stated somewhere that avoiding considerable risks, which start at 1.5-2.5 C requires stabilisation at low levels. These require global average reductions of 50-85% in 2050 but presumably greater reductions in Annex-1 countries and lower in Non-Annex 1 countries. Such reductions would be a major shift away from present trends and would require strong and sustained policy efforts in all sectors. This factual information can be stated in a non-policy prescriptive way. (Government of Sweden)	Noted – This discussion seems more appropriate for Topic 5 than for Topic 4.
4-207	G-4-5	C	4	1	8	13	" The stabilisation scenarios could be combined with topic 2 SRES scenarios" (Government of Belgium)	Rejejtcd – Topic 2 does not discuss mitigation potential, which is the subject of this text.
4-208	E-4-132	A	4	1			Section 4.3 'Mitigation options' should be ordered before 'Adaptation options' (Gian-Reto Walthe`r, University of Bayreuth)	Rejected – The title puts Adaptation first, so it should be

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Running number	Topic - Comment	Batch	Page	Line	To Page	To Line	Comment	Considerations by the writing team
								addressed first.
4-209	G-4-68	A	4	3	4	3	The reader should be provided with the definition of bottom-up and top-down studies, at least in a footnote (Government of France)	Noted – bottom-up and top-down are defined in the glossary. A footnote has been added indicating this
4-210	G-4-69	A	4	3	4	3	Suggest removing “from both bottom-up and top-down studies” from the chapeau. It distracts from the main message of the chapeau about substantial economic potential, and it is unnecessary since it is already covered in the text below the chapeau. (Government of United States)	Rejected – the text is a direct quote from approved text of the WG III SPM.
4-211	G-4-71	A	4	3	4	3	For the SYR readership it would be of assistance if a definition of the difference between top-down and bottom-up studies was footnoted. (Government of Australia)	Noted – bottom-up and top-down are defined in the glossary. A footnote has been added indicating this
4-212	E-4-133	A	4	3	4	6	This summary statement indicates correctly that there are many promising opportunities for reducing the growth of emissions or even, perhaps, reducing them somewhat below current levels. It may be helpful, further, to remind readers here that merely reducing emissions to current levels or slightly less is not enough to forestall potentially-serious climate change. As it now reads, the statement might imply that offsetting the "projected growth of global emissions" or reducing them "below current levels" is sufficient to resolve future climate change problems. (Table 5.1 says otherwise). (Henry Janzen, Agriculture and Agri-Food Canada)	Rejected – A discussion of mitigation targets is beyond the scope of Topic 4. It belongs in Topic 5.
4-213	E-4-134	A	4	3	4	6	The economic potentials can be defined by an explicit or implicit carbon price. The assumed carbon price for achieving the reductions should be described. (Keigo Akimoto, Research Institute of Innovative Technology for the Earth)	Accepted – text on carbon price has been added later in the Topic.
4-214	E-4-135	A	4	3	4	6	Somewhere in this section there needs to be mention that additional considerations arise in situations of urgency, such as the climate change issue poses--basically as the Stern report notes, in some types of situations, discount rates are not fully applicable, the evaluation of what should be done depends on what can be done and not on its economic comparability to coming environmental threats, etc. What is needed here is a full explanation of what can be done technologically, even at costs above some arbitrary balance now (especially in that most studies cannot plausibly include estimates of the costs of impacts). (Michael MacCracken, Climate Institute)	Rejected – the discussion of urgency appears in Topic 5. WG III's analysis was limited to mitigation options costing up to \$100/t CO ₂ -eq. so information at what can be done at costs above that level is not available.
4-215	E-4-137	A	4	3	4	6	It may be worthwhile to have a footnote briefly describing what is meant by top-down and bottom-up studies (max. 1-2 sentences). For non-economists the difference may not be clear. (Martin Welp, University of Applied Sciences Eberswalde)	Noted – presentation of this information has been rewritten

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4-216	G-4-67	A	4	3	4	6	This chapeau text is rather optimistic and mentions only the economic potential, not the market potential. Please balance the statement by adding to the chapeau the sentence: "Appropriate and effective measures are required to address the institutional and behavioural barriers if this economic potential for mitigation is to be met." OR "Successful offset will require appropriate and effective measures to address the institutional, behavioural, and other barriers to meeting this economic potential for mitigation." Note the reference for this statement is WG III SPM Section 19. (Government of New Zealand)	Noted – a comment about market potential has been added.
4-217	E-4-136	A	4	3			replace the word "much" with the word "medium" to be consistent with wording in line 7 of page 8 in the SPM for WGIII. (Mustafa Babiker, Saudi Aramco)	Rejected – The text is consistent with the approved text of Para. 5 of WG III's approved SPM.
4-218	G-4-70	A	4	3			replace "much" with "medium" as explained in comment 15 above. [TSU note: "Comment 15" reads: "This strong statement does appear only appended to a table footnote in the SPM of WGI (SPM for WGI, page 8, table SPM.2)!"] (Government of Kingdom of Saudi Arabia)	Rejected – the text is a direct quote from approved text of the WG III SPM.
4-219	E-4-138	A	4	4	4	8	The footnote to the definition of economic potential should appear on line 4, when the term is first used, not on line 8. (Robert Siveter, IPIECA)	Noted – presentation of this information has been rewritten
4-220	G-4-72	A	4	4	4	8	The footnote reference to the definition of economic potential should appear on line 4 when the term is first used, not on line 8. (Government of United States)	Accepted – change made
4-221	G-4-74	A	4	6	4	6	Change "or reduce" to "and even reduce" (Government of United States)	Rejected – the text is a direct quote from approved text of the WG III SPM.
4-222	G-4-73	A	4	6	4	9	Need to make more prominent and explicit the fact that the estimates presented are "economic potential," which is higher than "market potential." Economic potential is higher than market potential because it assumes that barriers have been removed, technologies are commercially available, and social values (co-costs and co-benefits, and social discount rates) are accounted for. Market potential does not account for these costs and factors. Therefore, the U.S. Government proposes two simple changes: 1. Adding an additional sentence at the end of the chapeau to clarify for the reader that the mitigation potential described is economic potential, and to distinguish it from market potential — such as: "However, market potential is less than economic potential." 2. Inserting the following approved WGIII SPM page 10 text (slightly rearranged) after the sentence on lines 8-9: "However, the economic potential is generally greater than the market potential. Studies of market potential can be used to inform policy makers about mitigation potential with existing policies and barriers, while studies of economic potentials show what might	Noted - a comment about market potential has been added.

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							be achieved if appropriate new and additional policies were put into place to remove barriers and include social costs and benefits. [WGIII SPM]" The current footnote 3 could be moved to the end of the sentence above. Also, the following third sentence would be helpful: "The literature does not currently provide enough estimates of market potential for estimating global total or sector market potential." (Government of United States)	
4-223	E-4-144	A	4	8	4	9	delete the first sentence 'The global... studies (Figure 4.1).'	Rejected – Reviewer gives no justification for the deletion.
4-224	G-4-75	A	4	8	4	9	After the first sentence a very important footnote is needed that defines bottom-up and top-down modeling and explains their uses. The WGIII Box SPM-2 provides useful text for this purpose, and has the added benefit of already being approved: "Mitigation potential is estimated using different types of approaches. There are two broad classes – "bottom-up" and "top-down" approaches, which primarily have been used to assess the economic potential. Bottom-up studies are based on assessment of mitigation options, emphasizing specific technologies and regulations. They are typically sectoral studies taking the macro-economy as unchanged. Sector estimates have been aggregated, as in the TAR, to provide an estimate of global mitigation potential for this assessment. Top-down studies assess the economy-wide potential of mitigation options. They use globally consistent frameworks and aggregated information about mitigation options and capture macroeconomic and market feedbacks. Bottom-up studies in particular are useful for the assessment of specific policy options at sectoral level, e.g. options for improving energy efficiency, while top-down studies are useful for assessing cross-sectoral and economy-wide climate change policies, such as carbon taxes and stabilization policies. [WGIII SPM]" (Government of United States)	Noted – bottom-up and top-down are defined in the glossary. A footnote has been added indicating this
4-225	E-4-140	A	4	8	4	10	The unit GtCO ₂ -eq is not clear and could be misleading, so as the costs. A fundamental question is why emission is measured by CO ₂ in the fourth report, whereas it was measured by C in the third report. (Motoyoshi Ikeda, Hokkaido University)	Rejected – The use of GtCO ₂ -eq. is consistent with the approach used in the WG III SPM.
4-226	E-4-143	A	4	8	4	13	Not clear what the studies are; confusing to the reader (Philippine de T'Serclaes, International Energy Agency)	Noted – presentation of this information has been rewritten
4-227	E-4-142	A	4	8	4	22	The term 'economic potential' is only understandable by people who already know what it means. I doubt this was your intention. The definition does not make it understandable. Maybe an example ? (David Fisher, NRCan)	Noted – presentation of this information has been rewritten
4-228	E-4-139	A	4	8	5	12	There needs to be some explanation of the quantities <20, <50, etc in Figures 4.1 and 4.2. It may be obvious to climate change scientists but many lay people would struggle to explain	Noted – presentation of this information has been rewritten

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							what they mean. (George Walker, Aon Re Asia Pacific)	
4-229	E-4-141	A	4	8	5	23	The text in pages 4-5 does not make any reference nor does it interpret figures 4.1 and 4.2. In the minimum, a few sentences would be needed to summarise the key insights that can be drawn from the figures, in particular as they appear to offer insights but yet be not completely self-evident. (Jouni Paavola, University of Leeds)	Noted – presentation of this information has been rewritten
4-230	E-4-145	A	4	8			correct "economic potentials" to "economic mitigation potentials" (Hartmut Grassl, Max Planck Institute for Meteorology)	Noted – presentation of this information has been rewritten
4-231	G-4-78	A	4	9	4	9	It is unclear why the authors are using the 2000 figure for emissions when the 2004 emissions total is used at Topic 2.1 and in the WG3 SPM. (Government of Australia)	Rejected – Figures used are from WG III SPM.
4-232	G-4-79	A	4	9	4	9	Insert after "studies" the phrase " , though there are considerable differences on the sectoral level", and delete the sentence beginning on line 20 "While top-down . . . level" and bring sentence beginning on line 19 ("Sectoral estimates . . .") to the end of this paragraph. (Government of United States)	Noted – reworded text addresses comment
4-233	G-4-6	C	4	9	4	9	43 GtCO ₂ -eq should be /yr (Government of Belgium)	Noted – now clarified as emission level in 2030
4-234	G-4-76	A	4	9	4	10	This sentence is misleading in suggesting that these are the baselines for the results in Figure 4.1. A simple rephrasing can resolve this problem: "For reference, emissions in 2000 were equal to 43 Gt CO ₂ -eq yr ⁻¹ , while projected emissions for 2030 using SRES B2 and A1B marker scenarios are 49 and 68 Gt CO ₂ -eq yr ⁻¹ , respectively. Multiple baselines were used across the various bottom-up and top-down mitigation studies." (Government of United States)	Noted – figure deleted
4-235	G-4-77	A	4	9	4	10	Textual: indicate that projected 2030 emissions range from 49 to 68 GtCO ₂ in SRES B2 rep. A1B. (Government of European Community)	Noted – Table shows these numbers
4-236	E-4-146	A	4	10	4	10	Why is reference made to projected emissions by 2030 only under two of the SRES? Is this because of the studies referred to are based to B2 and A1B alone, or are they stated as examples. In both cases, please clarify. (Markku Rummukainen, Swedish Meteorological and Hydrological Institute (SMHI))	Noted – presentation of this information has been rewritten
4-237	E-4-147	A	4	13	4	13	The notation "<0\$" is not clear: with no costs? (Zoltán Somogyi, Hungarian Forest Research Institute)	Noted – presentation of this information has been rewritten

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Running number	Topic - Comment	Batch	Page	Line	To Page	To Line	Comment	Considerations by the writing team
4-238	E-4-148	A	4	15	4	15	See SPM comment on this figure. [TSU Note: "SPM Comment" reads: "Figure SPM-7: It needs to make clear that the values in the legend refer to a "per tonne" basis (see also the figure in the actual Topic)"] (Keith Shine, University of Reading)	Noted – Figure has been replaced
4-239	E-4-149	A	4	15	4	15	It is not clear from the graph that the bars represent mitigation potentials for different cost per UNIT CO2 categories. Also, instead of two sets of bars, only one set should be used: for each cost category, one bar is enough that show both the low as well as the high end estimates. (Zoltán Somogyi, Hungarian Forest Research Institute)	Noted – Figure has been replaced
4-240	G-4-80	A	4	15	4	15	which economic potential is meant? the "mitigation" potential? Please clarify. (Government of Germany)	Accepted –it is "economic mitigation potential"
4-241	G-4-81	A	4	15	4	16	Need to add a sentence to the caption clarifying that the top-down estimates are from long-term stabilization scenarios and not near-term policy runs. Suggest using the WGIII SPM text (modified to note top-down): "The top-down estimates were derived from stabilization scenarios (i.e., runs towards long-run stabilization of atmospheric GHG concentration) [3.6]. Most scenarios assume universal emissions trading, transparent markets, no transaction cost, and thus perfect implementation of mitigation measures throughout the 21st century. Global modeled costs will increase if some regions, sectors (e.g. land-use), options, or gases are excluded (or delayed)." (Government of United States)	Noted – figure deleted
4-242	G-4-82	A	4	18	4	18	Something needs to be said about negative costs in Figure 4.1. The WGIII SPM provides the following useful text that could be included just after Figure 4.1: "Studies suggest that mitigation opportunities with net negative costs have the potential to reduce emissions by around 6 Gt CO2-eq yr-1 in 2030. Realizing these requires dealing with implementation barriers [11.3]." (Government of United States)	Noted – figure deleted
4-243	G-4-83	A	4	19	4	19	For clarity, change the "mitigation potential" to "economic potential". (Government of United States)	Accepted –it is "economic mitigation potential"
4-244	E-4-150	A	4	19	4	21	As most top-down models do not distinguish sectors, I am surprised by the comment "...there are considerable differences at the sectoral level". This is probably based on a few models. If so, I propose to delete this statement. (Ernst Worrell, Ecofys)	Rejected – the statement is from the approved text of WG III's SPM.
4-245	G-4-84	A	4	19	5	23	Add the important information from WG III that the additional investment requirement arising from the need to mitigate GHG emissions is projected to be negligible to 5-10% compared to the investments which are needed in any case. (Government of Germany)	Accepted – sentence added.

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4-246	E-4-154	A	4	20	4	20	change 'Figure 4.2' to 'Figure 4.1' (Suam Kim, Pukyong National University)	Noted – Figures renumbered
4-247	E-4-151	A	4	20	4	21	This gives the impression that it is pure coincidence that the bottom-up and top-down studies agree--if there are considerable differences at the sectoral level, then it would seem that there is just a lucky balancing of the differences. To responsibly assert there is agreement, one needs to have agreement by sector, or explain why not. Otherwise, it would be like relying on a happenstance of similar investment returns by a professional and an amateur investor who have completely different investment strategies--it is not at all clear that a continuation of similar returns should be expected. (Michael MacCracken, Climate Institute)	Noted – the statement is from the approved text of WG III's SPM, which does not address the reviewers point.
4-248	E-4-152	A	4	20	4	21	It would be good to add some detail on how the differences appear at the sectoral level between these two types of studies, not least as the example shown in Figure 4.2 is apparently exclusively from the bottom-up results. (Markku Rummukainen, Swedish Meteorological and Hydrological Institute (SMHI))	Noted – the statement is from the approved text of WG III's SPM, which does not address the reviewers point.
4-249	E-4-153	A	4	20			double counting' of what? (Michel Rixen, NATO Undersea Research Center)	Accepted – explanation added
4-250	G-4-85	A	4	23	4	23	The definitions in footnote 3 are not applied consistently across the various sectors and studies. In many cases it isn't even known what discount rate was used. Furthermore, few, if any, studies actually capture the economic potential defined here that requires consideration of non-market costs and benefits. And there are very few market potential studies that consider the costs of removing barriers. (Government of United States)	Rejected – treatment is consistent with approved WG III SPM.
4-251	E-4-155	A	4				To improve the readability of the text, I suggest to briefly specify in the footnotes differences between top-down and bottom-up models (Stefano Caserini, Politecnico di Milano)	Noted – presentation of this information has been rewritten
4-252	E-4-156	A	4				In Fig.4.1 indicate the meaning of the different dollar values. (Robert Jefferies, University of Toronto)	Noted – Figure has been deleted
4-253	E-4-157	A	4				Figure 4.1 is not clear. What is 'low end of range' etc How does this potential translate in percentage of emissions? (Michel Rixen, NATO Undersea Research Center)	Noted – Figure has been deleted
4-254	E-4-158	A	4				Figure 4.1 and 4.2 need better explanation. A few sentences with examples would help to understand the figure. E.g. what does bottom up and top down exactly mean in this context, what does <0 \$ means in bottom up studies(fig. 4.1)? Layout is also different from other chapters (see notes for Figure 4.2) (Markus Erhard, European Environment Agency)	Noted – Figure 4.1 has been deleted. Notes have been added to Figure 4.2, which is now exactly as approved for the WG III SPM.

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4-255	E-4-159	A	4				Fig. 4.1: the low end and high end plots require more explanation, and the dollar values corresponding to each bar also require explanation (I assume that these are values for tonnes of carbon). (James Crampton, GNS Science)	Noted – Figure has been deleted
4-256	E-4-160	A	4				Fig. 4.1: Question: Carbon prizes per ton CO2? (Hartmut Grassl, Max Planck Institute for Meteorology)	Noted – Figure has been deleted
4-257	E-4-161	A	4				Fig. 4.1: correct "economic potentials" to "economic mitigation potentials" (Hartmut Grassl, Max Planck Institute for Meteorology)	Noted – Figure has been deleted
4-258	E-4-162	A	4				delete Figure 4.1 (Suam Kim, Pukyong National University)	Accepted. Figure has been deleted
4-259	G-4-86	A	4				The notation "<0\$" is not clear: with no costs? (Government of Hungary)	Noted – figure deleted
4-260	G-4-87	A	4				Section 4.3 comment: This section, on mitigation options, is rather optimistic about the role technology can play and skims over the behavioural and institutional barriers to change. It is silent on market potential. How does the "substantial economic potential" compare to the available market potential? Some reference to these issues is needed to balance the section. Unless the section addresses the distinction between technologies that are technically feasible and cost effective, and those that might actually be adopted, it will be of limited practical use to policymakers. (Government of New Zealand)	Noted – text has been added pointing out that economic potential is generally higher than market potential has been added. Market potential is defined in the glossary.
4-261	G-4-88	A	4				It is not clear from the graph that the bars represent mitigation potentials for different cost per UNIT CO2 categories. Also, instead of two sets of bars, only one set should be used: for each cost category, one bar is enough that show both the low as well as the high end estimates. (Government of Hungary)	Noted – figure deleted
4-262	G-4-89	A	4				Figure 4.1: The caption needs to explain the \$ (price of carbon per tonne?) legend and define low end and high end of range (range of what - SRES emissions B2 and A1B?) (Government of Australia)	Noted – figure deleted
4-263	G-4-90	A	4				Figure 4.1 is difficult to interpret. This figure needs some more explanation or should be eliminated. In particular, apparently the units along the top are actually dollars per ton of carbon. It should be stated in plain English that this graph is attempting to answer the question, "If I am willing to spend \$x per ton for mitigation of emissions, how much emissions can I eliminate?" The bottom-up analysis indicates that if \$100 or less per ton	Noted – figure deleted

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							of CO ₂ -eq is spent, 16-31 Gt CO ₂ -eq would be removed in 2030. This interpretation seems flawed because, if \$0 are spent, 5-7 Gt CO ₂ -eq would be removed. A better explanation of this figure would be helpful. (Government of United States)	
4-264	E-4-163	A	5	2	5	2	See SPM comment on this figure. [TSU Note: "SPM Comment" reads: "Figure SPM-6: As a natural scientist, I am not fully familiar with such plots. Whilst I think I understand them (e.g. for energy, emissions of 2 GtCO ₂ can be avoided by spending less than \$20 per tonne CO ₂), what is unclear is whether the bars are cumulative or not. i.e. whether the \$100 bar includes the \$20 and \$50 bars or whether it is the emissions that can be avoided by spending between \$50 and \$100 per tonne."] (Keith Shine, University of Reading)	Noted – Figure has been deleted
4-265	E-4-164	A	5	2	5	2	change 'Figure 4.2' to 'Figure 4.1' (Suam Kim, Pukyong National University)	Noted – Figures renumbered
4-266	G-4-91	A	5	4	5	6	If the note 2 gives the way how the uncertainty ranges in Figure 4.2 are estimated, what is the way to estimate the uncertainty range to the panel on "Energy supply"? How can the uncertainty range be also towards decreasing direction in other panels? (Government of Finland)	Noted – Authors unable to understand the comment
4-267	E-4-165	A	5	4			correct "economic potentials" to "economic mitigation potentials" (Hartmut Grassl, Max Planck Institute for Meteorology)	Accepted – change made
4-268	G-4-92	A	5	9	5	9	If sectors use different baselines, can one reasonably compare across these sectors? If not, it is misleading to present them in this fashion. This needs to be addressed in the text, by noting that there are different baselines across sectors and that they are not directly comparable. (Government of United States)	Rejected – The approved text of WG III's SPM did not address this point.
4-269	G-4-93	A	5	9	5	9	"Sectors used different baselines" of what? (Government of United States)	Rejected – approved text from WG III SPM.
4-270	G-4-94	A	5	15	5	16	It should be added that these studies (specifically, the bottom-up studies) assume that certain high-efficiency and low-carbon technologies will become available in the coming decades. There is considerable uncertainty about when and if they will be available for large-scale deployment. (Government of United States)	Accepted – Wording added to figure caption to cover availability of technology. Uncertainty is shown by error bars.
4-271	E-4-166	A	5	15	5	23	The document states that widespread diffusion of low-carbon technologies may take many decades. It is a completely correct prediction, while the key constraints related to this point are limited to 'Stability of national policy important in view of international competitiveness' in Industry (Table 4.2). This is too little to point out the current behavior that industries hesitate to spread the available technologies from OECD countries to the others such as China. In	Noted – Topic 4 is limited to a 2030 timeframe – the discussion of mitigation potential in 2050 is covered in Topic 5.

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							addition, if the widespread diffusion takes many decades, the technology development will not be sufficient for the CO2 stabilization by 2050. This should be noted. (Motoyoshi Ikeda, Hokkaido University)	
4-272	E-4-167	A	5	15	5	23	The above comments are relevant here too. The section should also note that there is a parallel move away from reliance on a small number of large powerplant to a larger number of small powerplant. This helps to utilize multiple sources, reduces transmission losses, allows a number of intermittent sources (such as wind) to be counter-balanced in the grid, and reduces the need to have additional large plant as 'insurance' capacity. (Anthony Clayton, University of the West Indies)	Noted – unclear which comment the reviewer is referring to. The discussion of centralized vs. decentralized power generation is too detailed for the SyR.
4-273	E-4-168	A	5	19	5	20	It may be useful to also provide the current figure for energy infrastructure investments as a baseline comparison for the USD 20 trillion figure estimated for 2030. (Upasna Sharma, Indian Institute of Technology, Bombay)	Noted – text added about baseline.
4-274	G-4-95	A	5	19	5	23	There is room for a more definitive statement on energy infrastructure option (Government of Ireland)	Noted – the reviewer does not make a specific suggestion
4-275	E-4-169	A	5	21	5	23	Please see comment n° 6. [TSU note: See Comment E-SPM-923-A] (Christian Kjaer, European Wind Energy Association (EWEA))	Rejected – Approved WG III SPM Text
4-276	G-4-2	B	5	21	5	23	Need to mention that a strong carbon price - and a global framework to support it - is necessary to encourage the diffusion of low-carbon technologies. (Government of United Kingdom)	Accepted – text on carbon price has been added
4-277	E-4-170	A	5				Note 1 to figure 4.2 is not fully satisfactory and raises more questions than it provides answers. If emissions of electricity use had been counted towards the end-use sectors not to the energy supply sector how could it possible to show such large amount of reduction potential from the energy supply? What comes to mind are reductions from upstream oil and gas and refinery emissions - which are not of this order of magnitude. Note 1 should rather read "the ranges for industry and buildings sector include emission reduction potential from reduced electricity use, while the range for energy supply includes emission reduction potential in the production of electricity after the reductions in electricity use have taken place"; this language would be more compatible with the text in WGIII 11.3.1.3 supporting this figure. [If there remains a reduction potential in upstream oil and gas sector and refineries shown in this energy supply emission reduction potential, this should be indicated as well]. I understand the current text is the text in WGIII SPM Figure 6 - but this should not be a sufficient reason... (Cédric Philibert, International Energy Agency)	Rejected – This is approved text from WG III's SPM.
4-278	E-4-171	A	5				If possible, include Human Health in Figure 4.2 (Germán Poveda, Universidad Nacional de Colombia)	Rejected – Human health was not one of the end-use sectors assessed by WG III.
4-279	E-4-172	A	5				Figures 4.2 is obscure to me. What is the x-axis exactly. Caption should be expanded here. Why is the transport plot different (this is only explained later on in topic 4)?	Rejected– This figure is a reproduction of approved WG III

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							(Michel Rixen, NATO Undersea Research Center)	Figure SPM 6. The notes and/or title include all of the text approved by WG III.
4-280	E-4-173	A	5				Figure 4.2: The figure shows that buildings have the largest potential for mitigation. However, in topic 2, figure 2.1, buildings contribute only 7.9% to the emissions which is implausible. I presume that different definitions for emissions related to buildings in both figures is used. Could this be clarified? Perhaps in fig. 2.1 the contributions from sources as given in fig.4.2 could be added, or replace 2.1c. (Jürgen Willebrand, Leibniz Institut für Meereswissenschaften)	Rejected– This figure is a reproduction of approved WG III Figure SPM 6. The notes and/or title include all of the text approved by WG III.
4-281	E-4-174	A	5				Figure 4.2: Legend is not complete. The same legend as for Figure SPM-6 should be used. (Fuhrer Juerg, Agroscope Research Station ART)	Accepted. The notes and/or title include all of the text approved by WG III.
4-282	E-4-175	A	5				Figure 4.2: I believe this figure is not clear at all, and should be replaced by something else or better explained (Marco Mazzotti, ETH Zurich)	Rejected– This figure is a reproduction of approved WG III Figure SPM 6. The notes and/or title include all of the text approved by WG III.
4-283	E-4-176	A	5				Figure 4.2 is not well enough explained. For instance, does it show per capita values? If not, why is the bar for "World" smaller than some of the others? (Jon Egill Kristjansson, University of Oslo)	Rejected– This figure is a reproduction of approved WG III Figure SPM 6. The notes and/or title include all of the text approved by WG III.
4-284	E-4-177	A	5				Figure 4,2 The exact meaning of OECD countries or EIT countries is unclear. The list of countries of OECD or considered EIT is not explained in the Glossary. I suggest to list in the Glossary the country included. (Stefano Caserini, Politecnico di Milano)	Noted –terms are defined in glossary
4-285	G-4-96	A	5				OECD and EIT need to be defined in Figure 4.2. (Government of United States)	Noted –terms are defined in glossary
4-286	G-4-97	A	5				Figure 4.2's legend and explanation are unclear. Please re-insert captions and explanations included in WG3 Figure SPM-6 that had been carefully crafted after extensive discussion in plenary. (Government of United States)	Accepted - Notes reinserted.
4-287	G-4-98	A	5				Figure 4.2. Add after "World total" a footnote "Valid for transport only where differentiation by regions is not available" (Government of France)	Rejected – Approved WG III SPM text.
4-288	G-4-7	C	5				Figure 4.2 : please explain how the range should be interpreted : do we know how likely it is to be in that range ? Should we assume 100% ? If possible explain also the kind of measures	Rejected – Figure 4.2 is approved text from WG III's SPM.

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							that are included, e.g. for transport : is it only the cost of using (Government of Belgium)	
4-289	G-4-8	C	5				" Figure 4.2 Should indicate the baseline scenarios and explain which emission categories are excluded" (Government of Belgium)	Accepted – Footnotes have been expanded to include this information
4-290	E-4-178	A	6	1	6	1	in the last setence of the first box under Energy supply it should be 'wave power' , not 'waves power' (Steve Sawyer, Global Wind Energy Council)	Accepted – corrected
4-291	E-4-179	A	6	1	6	1	general: I think the italicization of the distinction between commercially available technologies and those projected to be available by 2030 is a bit obscure, and would recommend putting them in separate colums as per table SPM-3 in the WG III SPM (Steve Sawyer, Global Wind Energy Council)	Noted – adding another column would not allow the chart to fit on one page.
4-292	E-4-180	A	6	1	6	1	A number of comments on Table 4.3: (a) Energy supply, key constraints: need to mention that going to non-fossil liquid fuels will create competition for land, water, and other resources. (b) On Transport, it is possible to consider permit systems that would cover the whole vehicle fleet of a manufacturer (that is, all the vehicles they ever made) so that this strategy could work-- and doing it would actually increase the flexibility provided to the manufacturer for keeping within some permit limit--see proposal by MacCracken for the Climate Institute on Web site of US Representative Dingell, for example. (c) on buildings, and for other examples where standards are set, need to mention that living to standards leads to doing the minimum and leads vested interests to keep the standards from rising rapidly. (d) In buildings, key technologies that should be mentioned are motion sensitive lighting and more efficient standby power for electronics. (Michael MacCracken, Climate Institute)	Rejected – Table 4.2 is an amalgam of WG III Tables SPM.3 and SPM.7, and only includes items included in those tables.
4-293	G-4-99	A	6		6		This is a strong synthesis of the material in WGIII, and we applaud the authors on this. (Government of Canada)	Noted – with thanks
4-294	E-4-181	A	6				The table [TSU Comment: Table 4.2] includes "cleaner diesel engines" as a mitigation technology. Although clearly desirable on health/air-quality grounds, is the case for this mitigating global warming that clear cut? The list already has "More fuel efficient vehicles". (Adrian Simmons, European Centre for Medium-Range Weather Forecasts)	Rejected – Table 4.2 includes all options from the approved text of WG III Table SPM.3. Cleaner diesel vehicles were listed there and need to be listed here.
4-295	E-4-182	A	6				Table Sector 6.5 (buildings); Column on Policies and measures. Think that the two first solutions should be merged in the same line "Appliance standards and labelling" & "Building codes and certification"; Also think that several important efficient policies are missing: Financial Incentives (such as tax credit, zero interest loans etc); As well as Public Private Partnerships (PPPs), have proven very effective in triggering more energy efficient investments in refurbishments in existing buildings. Should really be quoted here. ESCOs for the moment have not been as convincing as PPPs, because they do not always provide the	Rejected – The list includes all items in the approved text of WG III, Table SPM.7. It is a selection, not meant to be comprehensive.

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							sufficient amount of capital and equity to back up the risk. See Sturn of the World Bank, 2007; and de T'Serclaes, 2007 IEA (Philippine de T'Serclaes, International Energy Agency)	
4-296	E-4-183	A	6				Table 4-2 would be strengthened by including synergies with adaptation, perhaps in the righthand column. (Elizabeth L Malone, Pacific Northwest National Laboratory)	Accepted – Synergies with adaptation will be indicated with an *
4-297	E-4-184	A	6				Table 4.2: Under "Sector": Forestry/forests" and Lines 3 and 4 under "Key mitigation technologies....", the term "carbon sequestration" is used. It is not defined in the Glossary. Shouldn't this term be defined as a type of a CCS or will the uptake of CO2 in forest systems and agriculture (or the ultimate capture of carbon as and end state via photosynthesis) be differentiated from other types of sequestration, such as in the geologic environment or mineralization? Also, if there is is going to be differentiation, there should be a separate definition provided in the Glossary. (Veronica Brieno Rankin, GeoSeq International LLC)	Accepted – carbon sequestration will be defined in Glossary
4-298	E-4-185	A	6				Table 4.2: Under "Sector": "Energy Supply" and Line 3 under the "Key mitigation technologies....", statement should read "Carbon Dioxide Capture and Storage" (or "CO2 Capture and Storage") as opposed to "Carbon Capture and Storage". Also, CCS is used as an acronym in earlier words without defining what CCS is (i.e, Carbon Dioxide Capture and Storage). Thus, if CCS is to be defined, Line 3 should read: "...Carbon Dioxide Capture and Storage (CCS) (e.g. storage of removed CO2 from natural gas); CCS for gas, biomass...." This would need to be consistent with Glossary and perhaps the IPCC SRCCS. (Veronica Brieno Rankin, GeoSeq International LLC)	Accepted – corrected
4-299	E-4-186	A	6				Table 4.2: sector "buildings", column "key mitigations": correct "recycle" to "recycling" (Hartmut Grassl, Max Planck Institute for Meteorology)	Accepted – corrected
4-300	E-4-187	A	6				Table 4.2: sector "agriculture", column "key mitigation" and "policies": correct "fertilizer" (Hartmut Grassl, Max Planck Institute for Meteorology)	Accepted – corrected
4-301	E-4-188	A	6				Table 4.2: second column of the first row: write "Carbon Dioxide Capture and Storage" rather than "Carbon Capture and Storage". (Marco Mazzotti, ETH Zurich)	Accepted – corrected
4-302	E-4-189	A	6				Table 4.2: Row Agriculture (8.4), 2nd column Typo error. "Fertilizer" (José Moreira, Institute of Eletrotechnica and Energy)	Accepted – corrected
4-303	E-4-190	A	6				Table 4.2: In Agriculture : Improved crop and grazing land management is a key mitigation technology to increase soil carbon storage but also "to reduce CH4 and N2O emissions" and it is not mentioned. In policies: efficient use of fertilizers is OK but of irrigation?? (María Isabel Travasso, Instituto Nacional de Tecnología Agropecuaria)	Rejected - The technologies and their benefits listed in this table are limited to those in the approved text of WG III Table SPM.3.

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4-304	E-4-191	A	6				Table 4.2: I can't see a reference to hydrogen fuel cells, or to second-generation biofuels (cellulosic ethanol) or third-generation biofuels (synthetic organisms). These should be added, as they are potentially very significant. The reference to nuclear power should be expanded slightly to note that the next generation of pebble-bed reactors are intrinsically safe, unlike the old Magnox and AGR series, and that fusion might become available at some point (probably not until the second half of the century). (Anthony Clayton, University of the West Indies)	Rejected - The technologies listed in this table are limited to those in the approved text of WG III Table SPM.3.
4-305	E-4-192	A	6				Table 4.2: Buildings - Adaptation option/strategy: Add 'with surplus electrical energy sold to the grid' after 'solar PV integrated in buildings' (David White, ASIT Consulting)	Rejected - The technologies listed in this table are limited to those in the approved text of WG III Table SPM.3.
4-306	E-4-193	A	6				Table 4.2: Agriculture: 'fertilizer' is not correctly spelled. Mitigation: It is not just nitrogen fertilizer application techniques that needs to be improved, but also the amount applied and the nitrogen use efficiency of the whole system. Improvements for crop yields should be specified: it is not clear how improved yields can act as mitigation measure. Measures to avoid erosion should be added. (Fuhrer Juerg, Agroscope Research Station ART)	Noted – misspelling corrected. The technologies listed in this table are limited to those in the approved text of WG III Table SPM.3.
4-307	E-4-194	A	6				Table 4.2: Agriculture - Adaptation option/strategy: Replace 'fertilizers' with either 'fertilisers' or 'fertilizers' (also in the next column). Add 'and water use efficiency' after 'Improvements of crop yields' (David White, ASIT Consulting)	Noted – misspelling corrected. The technologies listed in this table are limited to those in the approved text of WG III Table SPM.3.
4-308	E-4-195	A	6				Table 4.2: "Restoration of cultivated peaty soils" is listed as a "Key mitigation technology" Such restoration, however, because it involves flooding, can significantly enhance methane emissions. I am not sure that the WGIII chapter actually recommends this practice. Please verify. (Henry Janzen, Agriculture and Agri-Food Canada)	Rejected - The technologies listed in this table are limited to those in the approved text of WG III Table SPM.3.
4-309	E-4-196	A	6				Table 4.2: Add 'robust, resilient, smart, self healing grid' as a mitigative measure. [No worries -- won't mention it again!] Under Energy Supply and Transport – Policies: Add Procurement policies and practices, as under buildings. Under Buildings technologies – add 'geothermal' heat pumps. (Paul Epstein, Harvard Medical School)	Rejected – this technology is not one of the ones listed in the approved text of WG III, Table SPM.3
4-310	E-4-197	A	6				Table 4.2. I think in Energy supply should be included Hydrogen energy (Dionisio Rodriguez Alvarez, Xunta de Galicia)	Rejected – hydrogen is an energy carrier, not an energy supply
4-311	E-4-198	A	6				Table 4.2. Forestry / forests (9.4) - Comment: exploitation of forest resources under a multiple use perspective should be mentioned - this approach can contribute to poverty alleviation. (Maria Rosa Paiva , Universidade Nova de Lisboa [New University of Lisbon])	Rejected – the table is just a listing of technologies, not a discussion of their implications

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4-312	E-4-199	A	6				Table 4.2, Row Industry: include energy management in top/first cell (of three) in the column policies (Ernst Worrell, Ecofys)	Rejected – energy management was not included in the approved text of WG III Table SPM.3
4-313	E-4-200	A	6				Table 4.2, row 2, column 2 (Energy supply). Regarding advanced nuclear power as key mitigation technology projected to be commercialised before 2030. — Recommendation: delete nuclear power from the short list — Explanation: • The information IPCC has based on his findings regarding nuclear power is provided exclusively by institutions and organisations with a vested interest in nuclear power (e.g. IAEA, WNA, NEI, NEA, UIC), These institutions are not necessarily scientifically independent. • With 'advanced nuclear power' the nuclear industry refers to breeders. The first operating breeder will not come on line before 2030, if ever. Fifty years of intensive research in seven countries around the world, with investments of a hundred billion dollars, proved that the breeder essentially is not feasible. • The choice for more nuclear power will seriously delay the transition to any sustainable energy supply of the world, owing to several specific features of nuclear power, such as: very long lead times (10 years or more), very large and essentially uncontrollable and ever-escalating costs, the tiny contribution to the mitigation of CO2 emissions (significantly less than 2.2% in the current situation) and the limited resources for the future. The economic ability to cope and the amount of human skills needed to pursue a nuclear scenario will absorb a disproportionately large share of the funds available for new developments of sustainable energy, which can last forever. (Jan Willem Storm van Leeuwen, Ceedata Consultancy)	Rejected – Nuclear power is listed as one of the technology options in the energy sector in the approved text of Table SPM.3.
4-314	E-4-201	A	6				Table 4.2, row 2, column 2 (Energy supply). — Recommendation: delete nuclear power from the short list — Explanation: • The emission of greenhouse gases other than CO2 by nuclear power are most likely never been investigated and published. Such emissions are conceivable in view of the huge amounts of halogen-based chemicals consumed in the processes needed to fabricate nuclear fuel from uranium ore. Before nuclear power could be classified as a greenhouse gas mitigating technology, all emissions by nuclear-related processes must be investigated and published. • The current generation of nuclear power technology emits about 80-130 gram CO2 per kWh (lifetime average). As pointed out above, the emissions of other GHGs are unknown. The absence of published data does not entail absence of emissions. • Even if nuclear power were free of greenhouse gas emissions (which it is not) the current nuclear contribution to the world GHG emission is some 2.2%. If the world nuclear capacity were to grow at a sufficiently fast rate to keep its share of 2.2% constant in the future, the known recoverable uranium resources will run out by about 2050, well within the lifetime of new nuclear build. By that time the specific CO2 emissions by nuclear will surpass that of fossil-fuelled power generation. At the same time the net energy balance of the nuclear system approaches zero: the energy cliff. • Absent from the prognoses published by the nuclear industry are the uranium ore properties determining the thermodynamic quality of the ore. Uranium-bearing rocks below a certain critical thermodynamic level ore not energy resources, if the recovery of a kilogram uranium consumes as much useful energy as can be generated from that same kilogram uranium. The	Rejected – Nuclear power is listed as one of the technology options in the energy sector in the approved text of Table SPM.3.

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							thermodynamic limits are set by fundamental physical laws, not by the state of technology. • The outlook of discovering significant new uranium resources of the same thermodynamic quality as the currently known, are slim. Likely new uranium deposits will be found. But the high quality new finds might be small, and the large ones likely will be deep and of poor ore grades. (Jan Willem Storm van Leeuwen, Ceedata Consultancy)	
4-315	E-4-202	A	6				Table 4.2 / Sector / Buildings (6.5): The substantial increase of CO2 emission is predicted in the developing countries as the increase of population and the economical growth. These countries are mainly exists in low latitudes. The more consideration of the CO2 mitigation measures in these hot and humid developing countries is absolutely essential. For example, solar shading, cross ventilation, natural draft, and solar water heater, should be refered here. (Takashi Inoue, Tokyo Univ. of Science)	Rejected – the list of technologies for the buildings sector is from the approved text of WG III Table SPM.3.
4-316	E-4-203	A	6				Table 4.2 (line2,column3) Please add ",incentives for CCS" after "Reduction of fossil fuel subsidies; Taxes or carbon charges on fossil fuels", as incentives for CCS are vital for deep mitigation. (Hitoshi Koide, Waseda University)	Rejected – incentives for CCS is not listed as an environmentally effective policy in the approved text of WG III Table SPM.7.
4-317	E-4-204	A	6				Table 4.2 - synergies with adaptation could be identified here as well (eg. Agriculture or Forestry - land management etc. may be utilized to adapt to climate change impacts such as increased erosion but also may be used as mitigation techniques to increase carbon storage). (Sharon Smith, Geological Survey of Canada)	Accepted - synergies with adaptation will be indicated with an *
4-318	E-4-205	A	6				Table 4.2 - Forestry section. Improved remote sensing technology is not really a mitigation technology. It is a tool that can be used to help monitor the effectiveness of mitigation or to facilitate assessments of carbon sources/sinks. (Sharon Smith, Geological Survey of Canada)	Rejected – item is a direct quote from the approved text of WG III Table SPM.3.
4-319	E-4-206	A	6				Tab 4.2 I do not understand 'Partial coverage of vehicle fleet' (Michel Rixen, NATO Undersea Research Center)	Rejected – the term is in the approved text to WG III Table SPM.7
4-320	E-4-207	A	6				Tab 4.2 'fertiliSzer'? (2x) (Michel Rixen, NATO Undersea Research Center)	Accepted – Corrected
4-321	E-4-208	A	6				Tab 4.2 energy supply, key mitigation: are the options 'fule switching...nuclear power' in any order of priority. May have some political implications... (Michel Rixen, NATO Undersea Research Center)	Rejected – no attempt has been made to list technologies in order of priority. The options are presented in the same order as approved for the WG III SPM.

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4-322	E-4-209	A	6				Include the Human Health Sector in Table 4.2 (Germán Poveda, Universidad Nacional de Colombia)	Rejected – Human health was not one of the end-use sectors assessed by WG III.
4-323	E-4-210	A	6				Include Design, Planning and Management of Cities in Table 4.2 (Germán Poveda, Universidad Nacional de Colombia)	Rejected – this approach was not included in the approved text of WG III, Table SPM III
4-324	E-4-211	A	6				In Table 4.2. In column of Key mitigation technologies in Sector Agriculture is added a "s" in fertilizer (Cristobal Felix Diaz Morejon, Ministry of Science, Technology and the Environment)	Accepted – corrected
4-325	E-4-212	A	6				in table 4.2, under sector "Transport", "biofuels" is listed - this may be critical owing to possible detrimental side effects, which do not seem to be discussed further below (Harald Pauli, University of Vienna & Austrian Academy of Sciences)	Rejected – biofuels were one of the technologies listed for the transport sector in the approved text of WG III Table SPM.3.
4-326	E-4-213	A	6				in table 4.2, under sector "Forestry", "tree species improvement" is listed - this may be critical owing to detrimental side effects (e.g. with exotic species) (Harald Pauli, University of Vienna & Austrian Academy of Sciences)	Rejected – "tree species improvement to increase biomass productivity and carbon sequestration" is listed in the approved text of WG III Table SPM.3.
4-327	E-4-214	A	6				in table 4.2, under sector "Energy supply", "nuclear power" is listed - this may be critical owing to a number of unsolved difficulties associated, which do not seem to be discussed further below (Harald Pauli, University of Vienna & Austrian Academy of Sciences)	Rejected – nuclear power was one of the technologies listed in the approved text of WG III Table SPM.3
4-328	E-4-215	A	6				in table 4.2, under sector "Buildings": lighting and daylighting ? (Harald Pauli, University of Vienna & Austrian Academy of Sciences)	Rejected. This is the terminology used in the approved text of WG III Table SPM.3
4-329	E-4-216	A	6				In Table 4.2 under Agriculture: fertilizers not fertilizers (2X). Tradable or tradeable? (Robert Jefferies, University of Toronto)	Accepted – spelling of fertilizers corrected. Tradable is the correct spelling.
4-330	E-4-217	A	6				In table 4.2 in the energy supply box change "advanced nuclear power" to "advanced fission and fusion power" (David Jackson, McMaster Institute for Energy Studies)	Rejected – fusion power is not envisioned by 2030, which is the timeframe of this table.
4-331	E-4-218	A	6				In column 'Key constraints or opportunities', maybe distinguish both (e.g. opportunities in Italic) (Michel Rixen, NATO Undersea Research Center)	Accepted – change made.
4-332	E-4-219	A	6				in agricultural section of table [TSU Comment, Table 4.2] crop should be singular in "Improvements of crops yields" (Bruce McCarl, Texas A&M University)	Accepted – corrected.

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4-333	E-4-220	A	6				For the sector energy in the 3rd column "Policies, measures ..." in the 2nd cell: tradable emission permits should be added. In case of CCS technology in the EU this instrument is regarded to be very powerful. Nevertheless, adequate emission reduction targets must be specified for a carbon price to be high enough for technology promotion. (Wilhelm Kuckshinrichs, Research Centre Juelich)	Rejected – tradable permits are not listed as an environmentally effective policy for the energy sector in the approved text of WGIII Table SPM.7.
4-334	E-4-221	A	6				Concrening forests/forestry: the "key mitigation technology" "Tree species improvement to increase biomass productivity" is: - a dream, - is nowhere in the horizon, - questionable theoretically from the viewpoint of the laws of forest carbon cycle; - potentially very dangerous from an environmental point of view; - and there is by far NO CONSECUS on its application among scientists and foresters. This sentence SHOULD BE REMOVED from this science-policy publication. (Zoltán Somogyi, Hungarian Forest Research Institute)	Rejected – “tree species improvement to increase biomass productivity and carbon sequestration” is listed in the approved text of WG III Table SPM.3.
4-335	E-4-222	A	6				[TSU Note:Table 4.2]: Second to last line of "Buildings": What does "solar PV" mean? (Jon Egill Kristjansson, University of Oslo)	Accepted – PV replaced with photovoltaic
4-336	E-4-223	A	6				[TSU Note:Table 4.2]: Last line of "Energy supply": What does "solar PV" mean? (Jon Egill Kristjansson, University of Oslo)	Accepted – PV replaced with photovoltaic
4-337	E-4-224	A	6				[TSU Note:Table 4.2]: Last line of "Energy supply": "waves energy" should be 'wave energy'. (Jon Egill Kristjansson, University of Oslo)	Accepted – corrected
4-338	E-4-225	A	6				[TSU Note:Table 4.2]: "fertiliszer" is misspelled twice. Should be 'fertilizer' (Jon Egill Kristjansson, University of Oslo)	Accepted – corrected
4-339	E-4-226	A	6				[TSU Note:Table 4.2]: "crops yields" should be 'crop yields' (Jon Egill Kristjansson, University of Oslo)	Accepted – corrected
4-340	E-4-227	A	6				[TSU Note: Table 4.2] Column "Policies, measures ..." under energy supply, first box, after "Reduction of fossil fuel subsidies; Taxes or carbon charges on fossil fuels" add: "Tradable permits". This is most promising if there is adequate scarcity of allowances and an effective allocation methodology. Ref. EU ETS, California ETS, RGGI, etc. (Vianney Schyns, Utility Support Group, provider for a.o. DSM and SABIC)	Rejected – tradable permits are not listed as an environmentally effective policy for the energy sector in the approved text of WGIII Table SPM.7.
4-341	G-4-100	A	6				The italicized text in the header of Table 4.2's second column isn't a very effective way of communicating that the italicized text below refers to technologies projected to be commercialized. Propose replacing the header with "Key sectoral mitigation technologies and practices currently commercially available and projected to be commercialized before 2030. (Technologies in the later group are italicized.)" (Government of United States)	Rejected – This approved text from WG III's SPM.

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4-342	G-4-101	A	6				Table 4.2. Among sectors natural ecosystems are not mentioned (Government of Hungary)	Rejected – Mitigation applies only to managed systems
4-343	G-4-102	A	6				Table 4.2, Row: Energy Supply. Change order of technologies: Nuclear Power definitely has to be mentioned after Renewables, according to its lower mitigation potential, cf. Figure 5.3 and Figure SPM-9, and with respect to the special discussion on these topics. (Government of Germany)	Rejected – the options are presented in the order they appeared in the approved text of WG III Table SPM.3.
4-344	G-4-103	A	6				Table 4.2 needs better labeling. Suggest adding “key sectoral mitigation...” to the title. The table only addresses sectoral policies and not cross-sectoral policies (e.g., economic instruments, RD&D policies). Also, the wording in the table needs to be more consistent, both conceptually and grammatically. (Government of United States)	Accepted - inserted “sectoral.” Did not change rest of table since it is approved WG III SPM text.
4-345	G-4-104	A	6				Table 4.2 comment: This is a very useful table and we congratulate the authors on providing it in such compact form. We note the caption to the underlying table WG III Table SPM 3 and the statement that "Non-technological practices, such as lifestyle changes, which are cross-cutting, are not included in this table (but are addressed in paragraph 7 in this SPM)." and would like to suggest that the SYR offers a very good opportunity to include such cross-cutting practices in the table. (Government of New Zealand)	Noted – Lifestyle change are mentioned in the text. Table 4.2 is an amalgam of the approved text of WG III Tables SPM.3 and SPM.7. Redesign of the table is not appropriate when the work of only one WG is involved.
4-346	G-4-105	A	6				Table 4.2 comment: Row 6 (Agriculture), Column 4 (Key constraints): Please include the sentence "Mitigation technologies and practices may not be applicable to some agricultural systems." (Government of New Zealand)	Rejected – the text is the approved text of WG III Table SPM.3
4-347	G-4-106	A	6				re row 'Agriculture': suggest change to ...regulations for improved land and livestock management... by including 'and livestock' (Government of Switzerland)	Rejected – the text is the approved text of WG III Table SPM.7
4-348	G-4-107	A	6				Need to explain somewhere in the Table 4.2 synthesis what is the PV and refer to that explanation in the text. (Government of United States)	Accepted – Spelled out photovoltaic.
4-349	G-4-108	A	6				In the agricultural section of Table 4.2, crop should be singular in “Improvements of crops yields. (Government of United States)	Accepted – corrected
4-350	G-4-109	A	6				In the “Policies, measures and instruments shown to be environmentally effective” column of Table 4.2 for the “Energy Supply” sector (Row 2), change text to read “Feed-in tariffs for clean energy technologies; Clean energy obligations; Producer subsidies.” (Government of United States)	Rejected – the text is the approved text of WG III Table SPM.7

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4-351	G-4-110	A	6				Concreting forests/forestry: the "key mitigation technology" "Tree species improvement to increase biomass productivity" is: nowhere in the horizon; questionable theoretically from the viewpoint of the laws of forest carbon cycle; potentially very dangerous from an environmental point of view; and there is by far no consensus on its application among scientists and foresters. Thus, this sentence should be deleted. (Government of Hungary)	Rejected – "tree species improvement to increase biomass productivity and carbon sequestration" is listed in the approved text of WG III Table SPM.3.
4-352	G-4-111	A	6				change 'fertiszer' to 'fertiliser' or 'fertilizer' (Government of Switzerland)	Accepted – corrected
4-353	G-4-9	C	6				" Table 4.2: Transport mitigation technologies: for air traffic mitigation Air traffic management (ATM) changes (e.g. single European sky) could be implemented before 2030" (Government of Belgium)	Rejected – the table is approved text from WG III Tables SPM 3 and SPM 7
4-581	G-4-5	D	6				The National Law 26,093 that was introduced on 19 April 2006 regulates and promotes the sustainable use and production of bio fuels. It is understood by bio fuels bio ethanol, bio diesel and bio gas produced from organic waste and raw materials of agricultural and agro-industrial origin. The law establishes that every liquid fuel sold on the market should contain at least 5% of bio diesel. This law permits the application of tax benefits to bio fuels producers. (Government of Argentina)	Noted – interesting input, but specifics of national policies are too detailed for inclusion in the SyR
4-582	G-4-6	D	6				The Hydrogen Promotion Act introduced on 2 August 2006 declares of national interest the development of technology, production, use and applications of hydrogen as fuel and also as energy vector. It creates a national fund to promote hydrogen and it fosters private participation in hydrogen generation and production giving priority to those ventures which benefit national industry development. It promotes the development of a national educational plan to make people aware of the need of diminishing pollution, and the use and scope of hydrogen as a vector. This act also fosters research on the acquisition of hydrogen from the use of renewable and non renewable energies and the construction of pilot plants which could generate energy from hydrogen by non polluting means. (Government of Argentina)	Noted – interesting input, but specifics of national policies are too detailed for inclusion in the SyR
4-583	G-4-7	D	6				Table 4.2: In Agriculture : Improved crop and grazing land management is a key mitigation technology to increase soil carbon storage but also "to reduce CH4 and N2O emissions" and it is not mentioned. In policies, after efficient use of fertilizers add irrigation. (Government of Argentina)	Rejected – the approved text of WG III Table SPM.3 did not include this options.
4-354	E-4-228	A	7	1	7	2	this sentence appears to be a bit confusing - you may slightly reformulate (Harald Pauli, University of Vienna & Austrian Academy of Sciences)	Accepted – sentence rewritten
4-355	E-4-229	A	7	1	7	5	It is not sufficient to just be looking at 550 ppmCO2equivalent--need to also be looking at 500 and 450. (Michael MacCracken, Climate Institute)	Rejected – text is from the approved version of WG III's SPM

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4-356	G-4-112	A	7	1	7	5	This paragraph contains a lot of information and needs to be simplified. At present it is unclear why two ranges for the possible carbon prices at 2030 and 2050 are used. Suggest that these figures be placed in a table and the authors provide some further explanation of the importance of induced technological change in reducing cost. In addition, this information seems to appear "out of the blue". It would be helpful if some additional information were included to provide context. The paragraph which appears prior to this text in the WGIII Summary for Policymakers should also appear here: "Policies that provide a real or implicit price of carbon could create incentives for producers and consumers to significantly invest in low-GHG products, technologies and processes. Such policies could include economic instruments, government funding and regulation" (Summary for Policymakers, IPCC Fourth Assessment Report, Working Group III p 29). (Government of Australia)	Accepted – text rewritten to eliminate references to 2050 and 2100
4-357	G-4-113	A	7	1	7	5	The induced technological change (ITC) studies are said to have lowered the price range from \$60-80 to \$5-65 for 2030 and from \$30-155 to \$15-130 for 2050. However, it doesn't appear that these ranges are sensitivities from the same set of studies/models. If that is the case, then the comparison isn't very meaningful. The authors should provide the without-ITC price ranges from the same studies/models as the ITC price ranges. (Government of United States)	Rejected – the information needed to respond to the comment is not available.
4-358	G-4-114	A	7	1	7	5	It's not clear what is different in these two sentences to account for the lower price ranges in the second sentence. Is it 2100 vs. 2050? Or is it "induced technological change"? (Government of United States)	Noted – references to 2050 and 2100 deleted
4-359	G-4-115	A	7	1	7	5	Insert after "Modeling studies" the phrase "since the TAR" and strike on line 3 the phrase "since the TAR". (Government of United States)	Rejected – Phrase is text from approved WG III SPM
4-360	G-4-116	A	7	1	7	5	Importantly this paragraph does not explain the assumptions of the modelling studies that have derived these prices for t/CO ₂ -e. The authors need to explain these important assumptions in a footnote. (Government of Australia)	Rejected – Comment asks for a level of detail that is inappropriate for the SyR. Details in WG III report.
4-361	G-4-3	B	7	1	7	5	Page 7 lines 1 to 5 - Unclear from the text what the implications of this are. Should be made clearer that sustained, credible carbon prices are needed. (Government of United Kingdom)	Accepted – text on carbon price has been added
4-362	E-4-230	A	7	3	7	5	The meaning of this sentence is unclear to me (James Crampton, GNS Science)	Accepted – sentence rewritten.
4-363	G-4-117	A	7	3	7	5	Authors need to reflect that there is a debate about conceptual issues associated with modeling induced technological change.	Rejected – Comment asks for a level of detail that is

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							(Government of United States)	inappropriate for the SyR. Details in WG III report.
4-364	E-4-231	A	7	7	7	10	This statement, while not incorrect, may leave an excessively optimistic impression, implying that the mitigation options have mostly positive benefits, with few costs or trade-offs. I suggest the authors may want to look at the statement again to ensure that readers do not get the misperception that mitigation will be entirely easy and painless. For example, they may want to say "some mitigation options" in place of "many mitigation options" and "offset a fraction of mitigation costs" in place of "offset a substantial fraction of mitigation costs". (The terms "many" and "substantial" are ill-defined and subject to misinterpretation.) (Henry Janzen, Agriculture and Agri-Food Canada)	Rejected – the text is consistent with the approved text of WG III's SPM.
4-365	E-4-233	A	7	7	7	10	Sentence is difficult to read, as it is not clear (due to "such as ..which ...and ...") what each clause is qualifying. It could be split in two. Same comment has been made on SPM. (Adrian Simmons, European Centre for Medium-Range Weather Forecasts)	Rejected – the text is consistent with the approved text of WG III's SPM.
4-366	E-4-234	A	7	7	7	10	Please see comment n° 7. [TSU note: See Comment E-SPM-925-A] (Christian Kjaer, European Wind Energy Association (EWEA))	Noted – shorter text is more appropriate for SyR
4-367	E-4-235	A	7	7	7	10	just a comment or additions: "but some may not co-benefit (e.g. nuclear power) (Harald Pauli, University of Vienna & Austrian Academy of Sciences)	Rejected – the text is consistent with the approved text of WG III's SPM. Also, the use of the word "many" implies that some options do not have co-benefits. The addition is unnecessary.
4-368	G-4-118	A	7	7	7	10	This text (in bold) is confusing. We suggest omitting the example of air pollution, thus: "There is high agreement and much evidence that many mitigation options can provide co-benefits to human health, agriculture". Good and clear examples are given in the text that is immediately following. (Government of New Zealand)	Noted –text has been rewritten to clarify.
4-369	E-4-232	A	7	7	7	16	There is also evidence that climate change is an ancillary cost to cleaning up air pollution, and that air pollution has a higher priority than climate change. Please include. (Richard Tol, ESRI)	Rejected – the reviewer's point is not found in WG III's SPM, or discussed in WG III Chapter 11.
4-370	E-4-236	A	7	12	7	12	Why to limit "energy efficiency and utilization of renewable energy in buildings". The sentence is much more general and could be replaced by "energy efficiency and utilization of renewable energy". (José Moreira, Institute of Eletrotechnica and Energy)	Accepted – "in buildings" deleted
4-371	E-4-239	A	7	12	7	12	Insert 'improved' before 'energy efficiency' (David White, ASIT Consulting)	Accepted – change made

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4-372	E-4-238	A	7	12	7	13	Please remove the term "in buildings". Reason: it is not only the utilisation of renewable energy in buildings that can offer "synergies with sustainable development in both developed and developing countries". (Christian Kjaer, European Wind Energy Association (EWEA))	Accepted – "in buildings" deleted
4-373	E-4-240	A	7	12	7	13	For some regions in the world, renewable energy for building is very costly. Whether it offers synergies with sustainable development should be discussed more thoroughly to that respect. (Wilhelm Kuckshinrichs, Research Centre Juelich)	Noted – The reviewer is asking for more detail than can be accommodated in the SyR
4-374	E-4-237	A	7	12	7	17	Underline the difficulty of quantifying these ancillary benefits (i.e. reduction of indoor air pollution, better sanitation, reduce workload for women and children etc) which explains the wariness of financial institutions to lend on preferential loans or invest in energy efficient refurbishments. (Philippine de T'Serclaes, International Energy Agency)	Noted – interesting comment but no suggestion for change.
4-375	G-4-119	A	7	14	7	14	Replace "morbidity" with "health-effects"? (Government of Sweden)	Rejected– morbidity is a standard term
4-376	G-4-120	A	7	15	7	16	"energy substitution...decrease the use of scarce natural resources." This isn't part of section WGIII 11.8; it is in WGIII 11.9, where it is also not well justified. We also suggest changing the language to "...decrease the use of natural resources." (Government of Canada)	Accepted –Section 11.9 added
4-377	E-4-243	A	7	18	7	18	It is surprising in the extreme that there is little evidence "life style" changes have little effect on mitigation. Surely life style and being motivation to change it are critical in the west ? (David Fisher, NRCan)	Rejected – the text says that life style changes can have an effect on mitigation.
4-378	G-4-121	A	7	18	7	18	The use of "but only" in this sentence is pejorative. Suggest using more neutral language, for example by replacing "but only" with "and". (Government of Australia)	Accepted – change made
4-379	G-4-122	A	7	18	7	18	Change "but only" to "and medium evidence" to be consistent with the other confidence statements in this section and with WGIII SPM. (Government of Canada)	Accepted – change made
4-380	E-4-244	A	7	18	7	19	Change life style and behaviour patterns by PRODUCTION AND CONSUMPTION PATTERNS (Cristobal Felix Diaz Morejon, Ministry of Science, Technology and the Environment)	Rejected – the text is consistent with the approved text of WG III's SPM.
4-381	E-4-241	A	7	18	7	20	Without clear description of changes in life style and behavior patterns, the statement is misleading so that any type of life style changes may be considered to play a secondary role in mitigation. For example, the changes in behavior patterns could be defined to include more public support for the governmental policy to implement strong guidance for reduction in carbon emission by industries. This is a necessary basis for a successful policy.	Rejected – the text is consistent with the approved text of WG III's SPM.

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							(Motoyoshi Ikeda, Hokkaido University)	
4-382	E-4-242	A	7	18	7	20	There is no doubt that changes in life style and behaviour patterns contribute to climate change mitigation. Evidence is largely missing because changes in life style and behaviour patterns haven't happened so far and that's why it is impossible to verify the effects. The way this statement is formulated, allows a completely wrong interpretation of 'only medium evidence' and thus, also of the full statement. (Gian-Reto Walther, University of Bayreuth)	Rejected – the text is consistent with the approved text of WG III's SPM.
4-383	E-4-245	A	7	18	7	20	Another sentence that is a bit problematic. There seems little doubt that changes in life style can (in principle) mitigate climate change - the issue is whether such changes in life style will actually be adopted. Is the sentence trying to convey that there is high agreement that changes in life style can mitigate climate change, but only medium evidence that the required changes in life style are likely to be adopted? Same comment has been made on SPM. Same comment has been made on SPM. (Adrian Simmons, European Centre for Medium-Range Weather Forecasts)	Rejected – the text is consistent with the approved text of WG III's SPM.
4-584	G-4-8	D	7	18	7	20	It is not clear that it is strictly true that there is only medium evidence about this issue. If there is not enough evidence related to the possibilities of mitigating by changing the life styles is only due to the lack of extensive research and studies in these areas. In fact, many of these studies were related to: switch between individual to public transport mainly in regards to modal changes (railway instead trucks), energy efficiency and labelling, fuel savings due to best practices in driving, reutilization and recovering of certain materials, etc. (Government of Argentina)	Noted – the approved text of WG III's SPM states that there is only medium evidence.
4-384	E-4-246	A	7	19			should read "contribute significantly" (it is obvious that they can contribute) (Leonard Allen Smith, London School of Economics)	Rejected – WG III's SPM text does not include the word "significantly."
4-385	E-4-247	A	7	22	7	26	There is also evidence that a number of countries are messing up their climate policies, such as Germany, the UK and the EU. Please include. (Richard Tol, ESRI)	Noted – Comment is too general to respond to.
4-386	E-4-248	A	7	22	7	26	I personally think that "growth" being equated to a healthy economy is central to the mess of greenhouse and overpopulation. Growth and population control are central to this discussion and could be given even more attention it has been given. (David Fisher, NRCAN)	Noted – Comment is too general to respond to.
4-387	G-4-123	A	7	24	7	26	This text is confusing. We suggest adding 'their' before 'stringency' and 'on' before 'monitoring', thus: "Their effectiveness depends on how well they are designed, national circumstances, an understanding of their interactions, their stringency, and on monitoring to improve implementation." (Government of New Zealand)	Noted – sentence changed – comment no longer applicable

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Running number	Topic - Comment	Batch	Page	Line	To Page	To Line	Comment	Considerations by the writing team
4-388	G-4-124	A	7	24	7	28	Strike the sentence that begins on line 24 and ends on line 26, and insert the following new sentence from the WG3 SPM (page 28, item E.22): "Their applicability depends on national circumstances and an understanding of their interactions, but experience from implementation in various countries and sectors shows there are advantages and disadvantages for any given instrument." Between lines 26 and 28, insert the first paragraph from that string of WG3 SPM bullets (p. 28), as follows: "Four main criteria are used to evaluate policies and instruments: environmental effectiveness, cost effectiveness, distributional effects, including equity, and institutional feasibility." (Government of United States)	Accepted – Text added
4-389	G-4-125	A	7	28	7	28	The authors need to explain the basis of the findings on the performance of policies (i.e. from WG3: environmental effectiveness, cost effectiveness, distributional effects and institutional feasibility). (Government of Australia)	Accepted – Text added
4-390	E-4-249	A	7	28			Section on aligning drivers of development well done. (Paul Epstein, Harvard Medical School)	Noted – with thanks.
4-391	G-4-126	A	7	29	7	29	in' should be 'into', thus: "Integrating climate policies into broader development policies ..." (Government of New Zealand)	Rejected – Approved WG III SPM text
4-392	G-4-127	A	7	29	7	30	"(...) development policies, ESPECIALLY IN NATIONAL, CROSS-BORDER AND REGIONAL SCALES, makes (...)" (Government of Hungary)	Rejected – Approved WG III SPM text
4-393	E-4-250	A	7	29	8	7	I found that one important policy is missing here, i.e. abolition of environmentally harmful subsidies. I know that the synthesis report should be written based on each working group's report, and in the WG3 SPM, abolition of EHSs is missing. However this should not be excluded. (Mitsutsune Yamaguchi, The University of Tokyo)	Rejected – This is approved text from WG III's SPM.
4-394	E-4-251	A	7	30	7	30	Change "easier" to "more cost effective"--nothing is ever easy. (Michael MacCracken, Climate Institute)	Rejected – This is approved text from WG III's SPM.
4-395	E-4-5	B	7	30			Write ... easier ; (punctuation) (Ibouraïma Yabi, LECREDE/DGAT/FLASH/UAC)	Rejected – this is approved text from WG III's SPM
4-396	E-4-252	A	7	33	7	34	Qualify statement that standards may not induce innovations. This really depends on the design of the standards. I suggest the following: "Depending on the design of the standards, they may induce innovations and more advanced technologies" (Ernst Worrell, Ecofys)	Rejected – This is approved text from WG III's SPM.

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Running number	Topic - Comment	Batch	Page	Line	To Page	To Line	Comment	Considerations by the writing team
4-397	G-4-128	A	7	33	7	34	Delete this sentence that would remain true if the word "not" was deleted and that would be valid for any policy. (Government of France)	Rejected – Approved WG III SPM text
4-398	E-4-6	B	7	34			write ... technologies ; (Ibouraïma Yabi, LECREDE/DGAT/FLASH/UAC)	Rejected – this is approved text from WG III's SPM
4-399	G-4-129	A	7	35	7	37	The statement "Literature identifies taxes as an efficient way of internalizing costs of greenhouse gas emissions" will depend on sectors and national circumstances. (Government of United States)	Rejected – Approved WG III SPM text
4-400	E-4-7	B	7	37			Write ... gaz missions ; (Ibouraïma Yabi, LECREDE/DGAT/FLASH/UAC)	Rejected – this is approved text from WG III's SPM
4-401	E-4-255	A	7	38	7	41	Consider following change of the text of this bullet: "Tradeable permits will establish a carbon price. The environmental effectiveness is determined by the scarcity of allowances as well as by the methodology of the allocation of allowances, which has also distributional consequences. A meaningful price of carbon should be carefully managed and supported by the possibility of banking of allowances to future trading periods". Ref. Carbon Trust - Cambridge University presentation of Prof. Michael Grubb and the annual Point Carbon conference in Copenhagen, 13-14 March 2007 and statements of Mr Jos Delbeke, Director Climate & Air, European Commission on the same conference. (Vianney Schyns, Utility Support Group, provider for a.o. DSM and SABIC)	Rejected – This is approved text from WG III's SPM.
4-402	E-4-253	A	7	38			Tradable or Tradeable? (Robert Jefferies, University of Toronto)	Noted – tradable is the spelling used in the approved text of WG III's SPM.
4-403	E-4-254	A	7	38			This seems at best a short term measure - in a world where "development" is a watchword, it seems likely that carbon producers will rapidly run out of "less developed" countries with which to trade their "excess" (Peter Convey, British Antarctic Survey)	Rejected – This is approved text from WG III's SPM.
4-585	G-4-9	D	7	40	7	41	Some reference to the lack of market transparency as a confusing factor for the estimation of the cost of compliance could be included. (Government of Argentina)	Rejected – This is approved text from WG III's SPM
4-404	E-4-256	A	7	41	7	41	This is a rather strange remark on the costs of complying with emission permits. I would suggest tho change it to: "Permit prices may fluctuate due to various causes. The fluctuation makes it hard to estimate ex-ante the compliance costs with a given emission ceiling" (Ernst Worrell, Ecofys)	Rejected – This is approved text from WG III's SPM.
4-405	E-4-257	A	7	41	7	41	Should not "permits" be "limits"? (Michael MacCracken, Climate Institute)	Rejected – This is approved text from WG III's SPM.

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Running number	Topic - Comment	Batch	Page	Line	To Page	To Line	Comment	Considerations by the writing team
4-406	E-4-8	B	7	41			Write ... emission permits ; (Ibouraïma Yabi, LECREDE/DGAT/FLASH/UAC)	Rejected – this is approved text from WG III's SPM
4-407	E-4-258	A	7	42	7	43	The sentence should be read as follows: "(...) to stimulate the development and diffusion of new and low carbon energy technologies." (Christian Kjaer, European Wind Energy Association (EWEA))	Rejected – This is approved text from WG III's SPM.
4-408	E-4-259	A	7	42	7	45	The major problem with this policy tool is that free-riders (those who would have undertaken the change or purchased the technology without subsidy or credits) make this a very expensive option to undertake. (John Nyboer, Simon Fraser University)	Rejected – This is approved text from WG III's SPM.
4-409	E-4-260	A	7	44			generally higher <than> for intruments listed above'. Should 'than' be removed? (Michel Rixen, NATO Undersea Research Center)	Rejected – This is approved text from WG III's SPM.
4-410	E-4-9	B	7	45			Write ... barriers ; (Ibouraïma Yabi, LECREDE/DGAT/FLASH/UAC)	Rejected – this is approved text from WG III's SPM
4-411	E-4-261	A	7	46	8	2	Strongly support retention of this paragraph as it stands. (Nick Campbell, ARKEMA SA)	Noted –with thanks.
4-412	E-4-262	A	7	48	7	48	The majority .. 'have' not (David White, ASIT Consulting)	Accepted – change made.
4-413	G-4-130	A	7	48	7	48	has' should be 'have', thus: "The majority of agreements have not achieved ...". (Government of New Zealand)	Rejected – Approved WG III SPM text
4-414	E-4-263	A	7	49	7	49	What is meant by "business as usual"? (Jon Egill Kristjansson, University of Oslo)	Noted – Business as usual is a commonly used term and should not need definition here.
4-415	E-4-264	A	7	49	7	49	Delete "some recent" There have been successful VA in the period 1990-2000 in The Netherlands as well as Denmark. The qualifier "recent" is not correct (Ernst Worrell, Ecofys)	Rejected – This is approved text from WG III's SPM.
4-416	E-4-265	A	7	49	7	49	Add an example of good voluntary agreement of Japan described in Chapter 13, '13.2.1.4 Voluntary agreement' p. 23, line 24. The new sentence now reads, "However, some recent agreements, in a few countries such as Japan, have" (Shinichi Nakakuki, Tokyo Electric Power Company)	Rejected – This is approved text from WG III's SPM.
4-417	G-4-131	A	7	49	8	2	It should be helpful to illustrate concrete country name where voluntary agreement works well, which is described in IPCC Fourth Assessment Report, Working Group III, Chapter 13, '13.2.1.4. Voluntary agreement' p23, line 24 to 25; "Japan, for example, has a history of cooperation between government and industry that facilitates the operation of 'voluntary' programmes." The new sentence now reads, "However, some recent agreements, in a few countries such as Japan, have accelerated the application of best	Rejected – Approved WG III SPM text. Adding country names would lead to adding more information on each of the bullets, and exceed the topic's word limit.

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							available technology and led to measurable emission reductions." (Government of Japan)	
4-418	G-4-132	A	7	49	8	2	Delete sentence "However...reductions". (Government of Germany)	Rejected – Approved WG III SPM text
4-419	E-4-266	A	7	49			"has" should be "have" in "The majority of agreements has not" (Bruce McCarl, Texas A&M Univesity)	Rejected – This is approved text from WG III's SPM.
4-420	E-4-10	B	8	2			Write reduction ; (Ibouraïma Yabi, LECREDE/DGAT/FLASH/UAC)	Rejected – this is approved text from WG III's SPM
4-421	G-4-133	A	8	3	8	4	What does "environmental quality" refer to here? So far, only emissions have been discussed. (Government of United States)	Rejected – Approved WG III SPM text
4-422	E-4-267	A	8	3	8	5	Information instruments should be extended to public understanding of right reasons and more reliable future prediction. (Motoyoshi Ikeda, Hokkaido University)	Rejected – This is approved text from WG III's SPM.
4-423	G-4-134	A	8	5	8	5	Add "and will vary with the public awareness of the global change problem" (Government of France)	Rejected – Approved WG III SPM text
4-424	E-4-11	B	8	5			Write ... yet ; (Ibouraïma Yabi, LECREDE/DGAT/FLASH/UAC)	Rejected – this is approved text from WG III's SPM
4-425	E-4-268	A	8	6	8	6	spell-out RD&D (Suam Kim, Pukyong National University)	Accepted – now defined
4-426	E-4-269	A	8	6	8	6	replace RD&D with R&D (Zoltán Somogyi, Hungarian Forest Research Institute)	Rejected – RD&D is the used in the approved text of WG III's SPM.
4-427	E-4-271	A	8	6	8	6	RD&D needs to be defined here (currently defined on page 10 of Topic 5) (David White, ASIT Consulting)	Accepted – now defined
4-428	E-4-272	A	8	6	8	6	RD&D is not defined here. It is defined only later, but ut us absent from the glossary. I would define it here, and in the glossary (Marco Mazzotti, ETH Zurich)	Accepted – now defined
4-429	E-4-275	A	8	6	8	6	Explain the acronym RD&D introduced here (the explanation appears first on p. 10, line 2-3, however without any further information of its deeper meaning). (Ulf Molau, Göteborg University)	Accepted – now define
4-430	G-4-135	A	8	6	8	6	replace RD&D with R&D (Government of Hungary)	Rejected – Approved WG III SPM text

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Running number	Topic - Comment	Batch	Page	Line	To Page	To Line	Comment	Considerations by the writing team
4-431	G-4-138	A	8	6	8	6	“RD&D” needs to be spelled out. (Government of United States)	Accepted
4-432	E-4-274	A	8	6	8	7	Need to mention that R&D typically has a long-term payoff--unlikely to be of significant near-term help. (Michael MacCracken, Climate Institute)	Rejected – This is approved text from WG III’s SPM.
4-433	G-4-136	A	8	6	8	7	Remove: "and enable progress toward stabilisation". This is valid for all listed policies. RD&D as such is not a policy, so add instead: "Government support of RD&D can steer research and development towards technologies that may contribute to climate change mitigation in the more longer term." (Government of European Community)	Rejected – Approved WG III SPM text
4-434	G-4-137	A	8	6	8	7	It would be useful to add the words 'of greenhouse gas concentrations in the atmosphere' after 'stabilisation' to improve the clarity. (Government of New Zealand)	Rejected – Approved WG III SPM text
4-435	E-4-270	A	8	6			RD&D...As the first mentioning, this term should be explained. (Roman Corobov, Modern institute for humanities)	Accepted – now defined
4-436	E-4-273	A	8	6			Question: Is it "R&D" or "RD&D"? (Hartmut Grassl, Max Planck Institute for Meteorology)	Noted - RD&D is the used in the approved text of WG III’s SPM.
4-437	E-4-277	A	8	10	8	11	The sentence should be read as follows: "(...) encourage the deployment of new, low carbon and renewable energy technologies." (Christian Kjaer, European Wind Energy Association (EWEA))	Rejected – This is approved text from WG III’s SPM.
4-438	E-4-276	A	8	10			variety of voluntary actions which may limit...' (Michel Rixen, NATO Undersea Research Center)	Rejected – This is approved text from WG III’s SPM.
4-439	E-4-278	A	8	11	8	12	The work of such efforts should not be so lightly dismissed--such examples often show that a change is possible and demonstrate potential. So it was with the atomic bomb--once it was known it could be done, a lot of groups figured out how to do it. (Michael MacCracken, Climate Institute)	Rejected – This is approved text from WG III’s SPM.
4-440	G-4-139	A	8	14	8	14	The authors should note that the more comprehensive treatment of mitigation as compared to adaptation reflects a bias in available literature. The authors also need to make it clear that adaptation actions can provide immediate benefits while mitigation provides delayed benefits (with some immediate co-benefits like reduced air pollution). (Government of Australia)	Accept: 1 st issue covered in topic 4 introduction, 2 nd in conceptual discussion in topic 5
4-441	E-4-12	B	8	15	8	31	Re point 8 - the attribution of high confidence in the headline statement is at odds with the statement "It is clear that both adaptation and mitigation are needed ...). Please try to increase the confidence here as far as the underlying WGII and III reports allow. I believe this is certain, rather than having high confidence. WGII 2.2.6 also supports this point. It also appears at odds	Rejected – the comment does not refer to the text on Pg 8, lines 15-31, and it is unclear what text the reviewer is referring to.

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							with the headline statement in Section 5.3 (Roger Jones, CSIRO)	
4-442	E-4-279	A	8	15	8	41	There is some overlap with section 5.3. (Elizabeth L Malone, Pacific Northwest National Laboratory)	Accepted. Integrate 1 st and 4 th paragraph into topic 5
4-443	G-4-140	A	8	15	9	20	In Section 4.4, it should be made clear that adaptation largely reduces the risks of climate change to human societies and managed ecosystems, not natural ecosystems. (Government of United States)	Noted - Conceptual issue: to topic 5
4-444	E-4-280	A	8	15			In this topic, what is the sustainable development is not clear. For example, achievement of MDGs is a kind of sustainable development? (Toshihiko Masui, National Institute for Environmental Studies)	Noted – text moved to Topic 5
4-445	G-4-10	C	8	18	8	18	Why only "high confidence" ? This seems quite evident. (Government of Belgium)	Rejected – this is approved text from WG III SPM
4-446	G-4-141	A	8	18	8	20	Topic 5, p. 4, lines 25-26 makes a very similar statement with "very high confidence". Please consolidate the confidence assessments. (Government of European Community)	Noted - Integrate into topic 5
4-447	G-4-142	A	8	18	8	20	Strike the phrase "There is high confidence that..." What is the purpose of the confidence range for what is essentially tautological? Don't adaptation and mitigation necessarily reduce risks? In addition, strike "reduce" and insert "help manage and reduce". (Government of United States)	Accepted - reword (in topic 5)
4-448	E-4-281	A	8	18	8	31	These paragraphs are of central importance and must be placed at a much more prominent, but at least earlier position within the entire topic. Maybe they serve as an appropriate introduction to the sections dealing with 'Mitigation options' and 'Adaptation options'. (Gian-Reto Walther, University of Bayreuth)	Rejected - statements are conceptual, address both short and long term and will be integrated into topic 5
4-449	E-4-284	A	8	22	8	22	The phrase "reduce future levels of climate change" is perhaps not the best wording and the meaning is not clear. It might be better to say "reduce the magnitude of future warming". One of the desired results of mitigation is a change in climate, i.e. the intent would be to reverse the changes that have already occurred. (Sharon Smith, Geological Survey of Canada)	Taken into account in integration with topic 5 and rewording
4-450	G-4-143	A	8	22	8	23	What is "the risk of possible future impacts"? Suggest to replace by "future risks" or "future impacts". (Government of European Community)	Accepted -reword (in topic 5)
4-451	G-4-11	C	8	22	8	23	Formulation is inappropriate : it may suggest that (all) future impacts are only "possible". Impacts are already observed and are not just a possibility for the future - they are a fact. Suggestion : replace end of the sentence by "reduce the risks assoc (Government of Belgium)	Rejected – The comment does not refer to the text on Pg. 8, lines 23-23, and it is unclear what text it addresses.

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4-452	E-4-282	A	8	22	8	26	This principal statement is better to give in the beginning of this topic (see remark 21). (Roman Corobov, Modern institute for humanities)	Take into account in integration into topic 5
4-453	E-4-283	A	8	22	8	31	These two bullets are well written, clear and succinct. We suggest including them as they are in the SPM to strengthen the statement in the relevant section. (Silvia Llosa, International Strategy for Disaster Reduction)	Noted
4-454	G-4-12	C	8	23	8	25	Adaptation is required to respond (...) to the warming projected for SRES : this is really inappropriate, since it assumes no mitigation at all. Suggestion : (...) and, to the extent possible, to the further warming that might possibly not be avoided (Government of Belgium)	Rejected – The comment does not refer to the text on Pg. 8, lines 23-25, and it is unclear what text it addresses.
4-455	G-4-144	A	8	23			After “future” delete “impacts” and insert “adverse affects” (Government of Russian Federation)	Accepted - reword (in topic 5)
4-456	E-4-285	A	8	24	8	25	This sounds wrong. Instead of "to the further warming that is projected for the range of SRES scenarios", one would think that "to the further warming due to present and future unavoided emissions" or something of that sort. (Markku Rummukainen, Swedish Meteorological and Hydrological Institute (SMHI))	Taken into account in integration with topic 5/rewording
4-457	G-4-145	A	8	24	8	25	To be clear the authors should note that the impacts projected for the SRES scenarios are in the absence of further mitigation. (Government of Australia)	Rejected - SRES defined elsewhere but removed here as suggested by other reviewer
4-458	G-4-146	A	8	24	8	25	Instead of “warming” it` s better to use “climate change” (Government of Russian Federation)	Accepted - reword (in topic 5)
4-459	E-4-286	A	8	24			add "potential" at the end of line (Hartmut Grassl, Max Planck Institute for Meteorology)	Rejected - potential is captured in “projected”
4-460	G-4-147	A	8	25	8	25	Drop “for the range of SRES scenarios” since some scenarios are no-reaction scenarios. (Government of United States)	Accepted
4-461	E-4-287	A	8	25			I would drop the wording "for the range of SRES scenarios." since some scenarios are no reaction scenarios (Bruce McCarl, Texas A&M Univesity)	Accepted – change made
4-462	G-4-148	A	8	27	8	27	Add after the first sentence ; "and such a mix would any way require a complex international agreement to be implemented" (Government of France)	Rejected - Not in WG II or WG III reports
4-463	E-4-288	A	8	27	8	31	The opening sentence of the chapter says the opposite--it says one can do one "or" the other-- here it indicates both must be done, as my comment called for. (Michael MacCracken, Climate Institute)	Accepted - should be “and”

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4-464	E-4-289	A	8	27			"mix" -> "single choice"? The argument here is towards a mix and against a one-or-the-other choice. (Leonard Allen Smith, London School of Economics)	Noted
4-465	E-4-290	A	8	29	8	29	The phrase "mitigation alone can avoid significant climate change impacts" should be revised to "...alone can lead to reduction/elimination of significant climate change impacts". Mitigation/adaptation can't avoid impacts, society can avoid them by taking appropriate action. (Sharon Smith, Geological Survey of Canada)	Taken into account in integration with topic 5/rewording
4-466	G-4-149	A	8	30	8	30	Insert "the expected" between "reduce" and "damages" to make it clear that these damages are based on projections. (Government of Australia)	Accepted - reword (in topic 5)
4-467	E-4-291	A	8	33	8	41	This paragraph would be better placed under the immediately following heading "Broader sustainable Development" rather than the current heading "there is high confidence that adaptation change." Please provide some other example for the current heading. (Upasna Sharma, Indian Institute of Technology, Bombay)	Accepted - after moving the first paragraph to topic 5, this becomes the first paragraph requiring a new bold heading
4-468	E-4-292	A	8	33	8	41	This comment about synergies or interaction between adaptaion and mitigation is an important point to make but it isn't made all that clearly. Perhaps there should be a clear statement that says that some measures employed to adapt to climate change may also contribute to the mitigation of climate change through modifications to carbon emissions/balance, reductions in feedbacks to the climate system etc and alternatively some adaptation measures may enhance emissions and climate warming. Perhaps a statement should also be made that adaptation strategies also need to be careful chosen to ensure that they do no result in enhancement of climate change (or also cause other environmental impacts) through modifications in carbon emissions, feedbacks to climate system etc. (i.e. shouldn't we make choices to avoid trade-offs mentioned?) or at the very least mention that consideration of the consequence of actions need to be considered when chosing an adaptation strategy. (Sharon Smith, Geological Survey of Canada)	Accepted: - text revised
4-469	E-4-293	A	8	33	8	41	Even though the synergistic effect of reducing energy use in buildings, for example, will not have a significant effect in reducing global emmissions, won't the psychological effect of getting the global population thinking about such issues potentially lead to mankind taking other actions that can have larger-scale impacts. If so, the psychological effects should be listed. (Robert Molinari, University of Miami)	Accepted - sentence deleted
4-470	G-4-150	A	8	33	8	41	Drop this paragraph. The paragraph is unnecessary given what is covered in text that immediately follows. The paragraph is poorly written with multiple ideas and poorly presented examples. (Government of United States)	Reject dropping, but accept rewriting those parts that are not approved text from SPMs

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Running number	Topic - Comment	Batch	Page	Line	To Page	To Line	Comment	Considerations by the writing team
4-586	G-4-10	D	8	33	8	41	The Rural Markets Renewable Energies Project (PERMER), financed by the National Government and carried out by the National Energy Department, has as its main objective the supply of electricity to a vast number of people in rural homes and around 6,000 public services of all types (schools, police stations, health stations, etc.) which are not reached by energy distribution centres. Energy is supplied by technologies which make use of renewable energy sources, such as small hydroelectric power plants, wind turbines, hybrid power plants, and individual photovoltaic systems. This will allow the supply of electrical systems to rural homes and the development of small businesses. (Government of Argentina)	Noted – interesting information but not applicable to text.
4-471	G-4-151	A	8	34	8	37	Swap "energy use in buildings" and "forestry" to avoid misunderstanding. (Government of European Community)	Rejected - approved SPM text
4-472	G-4-152	A	8	35	8	36	The word 'between' appears to be missing after 'for example', thus: "... for example, between properly designed biomass ...". (Government of New Zealand)	Rejected - approved SPM text
4-473	G-4-153	A	8	36	8	36	The authors need to explain what they mean by "formation of protected areas". (Government of Australia)	Rejected - approved SPM text
4-474	G-4-154	A	8	36	8	36	The authors need to explain how "energy use in buildings" can assist adaptation efforts. (Government of Australia)	Rejected - approved SPM text
4-475	G-4-155	A	8	36	8	36	It is not clear what is meant by "formation of protected areas". Do the authors mean the 'designation' of the areas, in a legal sense, or their 'construction' in a mechanical sense? (Government of New Zealand)	Rejected - approved SPM text
4-476	G-4-156	A	8	36	8	36	Add urban and transport planning here (before energy use in buildings), using as a reference WGIII 5.5. (Government of Canada)	Rejected - approved SPM text
4-477	E-4-294	A	8	37	8	38	you may omit this sentence (Harald Pauli, University of Vienna & Austrian Academy of Sciences)	Accepted - sentence deleted
4-478	E-4-295	A	8	37	8	38	The argument in this sentence is not logic according my understanding. 1st: Redúction of green houes gas emissions has to start at very local level as it si bound to human actions. And global success in this sense can only be achieved if human actions in this sense take place at every locality. The sentence should be skipped as undermines local endeavors and replced by a sentence with a positive notion. (Wilhelm Windhorst, Ecology Centre, Kiel University)	Accepted - sentence deleted
4-479	G-4-13	C	8	37	8	38	unlikely to contribute significantly : where does this comes from ? We do not know evidence for this and suggest removing (Government of Belgium)	Rejected – The comment does not refer to the text on Pg. 8, lines 37-38, and it is unclear what text it

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Running number	Topic - Comment	Batch	Page	Line	To Page	To Line	Comment	Considerations by the writing team
								addresses.
4-480	G-4-157	A	8	40	8	40	Editing: Suggest this sentence is restructured along the following lines, ".. Adaptive responses, e.g. increased air conditioning to reduce heat stress" (Government of Australia)	Rejected - approved SPM text
4-481	E-4-296	A	8	43	8	43	Change affect by INFLUENCES OVER climate change (Cristobal Felix Diaz Morejon, Ministry of Science, Technology and the Environment)	Rejected. Poor language
4-482	G-4-160	A	8	43	8	43	Delete: "Broader sustainable development", Insert: "THE SOCIO-ECONOMIC TRANSITION TO SUSTAINABLE DEVELOPMENT decisions (...)" (Government of Hungary)	Reject, but reword taking into account approved SPM text and accepted TS
4-483	G-4-159	A	8	43	8	44	Please delete these lines. Sustainable development decisions generally improve the adaptive capacity, but don't increase the mitigation capacity in many cases. If these decisions lead to an increased GNP, they tend to induce larger emissions and induce additionnal efforts ta achieve mitigation. In this context, it is misleading to treat on the same footing adaptation and mitigation. These 6 lines are very confusing, and we suggest to delete them altogether. (Government of France)	Noted - reword taking into account approved SPM text and accepted TS
4-484	G-4-158	A	8	43	8	48	The important information from WG II that "climate change could impede nations' abilities to achieve sustainable development" is missing and should be added as a bold statement (also in the SPM). (Government of Germany)	Noted – This discussion belongs in Topic 5
4-485	G-4-162	A	8	44	8	44	Suggest replacing "respond" with "address and respond to climate change" in order to reflect both potential mitigation and adaptation responses. (Government of United States)	Accepted - reworded taking into account approved SPM text and accepted TS
4-486	G-4-161	A	8	44	8	45	The authors need to rephrase this sentence as it currently carries the implication that climate change policies are necessarily a sub-set of broader sustainable development policies. Suggest that "other" is deleted. (Government of Australia)	Accepted - reworded taking into account approved SPM text and accepted TS
4-487	G-4-163	A	8	45	8	48	Reformulate for clarity. (Government of European Community)	Rejected - approved SPM text
4-488	E-4-297	A	8				Criteria as above – i.e., energy in and energy out life cycle analysis (EIO-LCA) of technologies and practices ('stabilization wedges) needed before binging potentially risky technologies up to scale. (Paul Epstein, Harvard Medical School)	Noted; proposal not clear and not covered in main messages underlying reports

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Running number	Topic - Comment	Batch	Page	Line	To Page	To Line	Comment	Considerations by the writing team
4-489	G-4-164	A	9	1	9	2	This sentence is not clear. How can a "set of factors ... match well with the goals of sustainable development"? (Government of European Community)	Accepted – reworded (in topic 5)
4-490	G-4-165	A	9	2	9	4	Development increases the GHG emissions and reduce the vulnerability to climate change. This sentence is confusing. (Government of France)	Accepted – reworded (in topic 5)
4-491	G-4-166	A	9	3	9	4	The phrase "vice versa" in this context is not clear. (Government of Australia)	Accepted – reworded (in topic 5)
4-492	G-4-167	A	9	5	9	5	Suggest a small change: "through the pursuit of sustainable development policies could promote both adaptation and mitigation." (Government of Canada)	Rejected – sustainable development policies are not the only relevant policies
4-493	G-4-168	A	9	6	9	6	WG III 2.5 clearly stresses the differences between adaptation and mitigation policies which are here artificailly wiped out (see e.g. WG III, chapter 2, page 36, lines 21-24 "Building more highways, for example, can generate more traffic and more GHG emissions. However, the highways can also improve market access, make agriculture less vulnerable to climate change, help in evacuation prior to big storms, and can support general economic growth and thereby investments in new efficient production technologies." (Government of France)	Rejected - uncertainty and exceptions covered by "could"
4-494	E-4-298	A	9	8	9	12	This statement concerning integration of climate change into development decisions only appears to consider mitigation (i.e. reduction of emissions) but adaptation should be (and perhaps has been) integrated into development decisions. (examples might include incorporating climate change into engineering design of major projects to ensure that adaptation strategies are incorporated at the beginning to deal with anticipated climate change) (Sharon Smith, Geological Survey of Canada)	Noted - true but not explicitly treated in WG II
4-495	E-4-299	A	9	8	9	12	There is no automatism that electricity market reform significantly reduces emissions. In most cases electricity market reforms aims to promote liberalised and privatised markets. Only in case of clear political framework conditions aiming at emission reduction within the context of liberalisation and privatisation, market forces will reach this goal. (Wilhelm Kuckshinrichs, Research Centre Juelich)	Noted. No changes will be made: table is condensed version of WG III TS table
4-496	E-4-300	A	9	8	9	12	It would be useful to provide at least one example of the emission reductions possible by the integration of climate change into development decisions. This would appear to be one of the most important policy-relevant points in this Topic, but no detail is provided for policymakers. (Robert Siveter, IPIECA)	Noted -Those examples are already in Table 4.3

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Running number	Topic - Comment	Batch	Page	Line	To Page	To Line	Comment	Considerations by the writing team
4-497	G-4-169	A	9	8	9	12	Please include 'land use change and its management' in the list of decision areas, thus: "Integration of climate change into development decisions. There is growing evidence that decisions about macroeconomic policy, agricultural policy, multilateral development bank lending, insurance practices, electricity market reform, energy security, forest conservation, and land use change and its management, for example, which are often treated as being apart from climate policy, can significantly reduce emissions (Table 4.3). {WGIII 12.2} (Government of New Zealand)	Rejected - Not included in the underlying report in this context
4-498	G-4-170	A	9	8	9	12	It would be useful to provide at least one example of the emission reductions possible by the integration of climate change into development decisions. This would appear to be one of the most important policy-relevant points in this topic, but no detail is provided for policymakers. (Government of United States)	Rejected - examples already in Table
4-499	G-4-171	A	9	8	9	12	It could also be noted that these strategies could also enhance resilience, which is a form of adaptation. (Government of Australia)	Noted – the concept of resilience is redundant to reduced vulnerability
4-500	G-4-172	A	9	8	9	12	Add to the list of decisions: "Small and medium size enterprise's and smallland owner's supporting schemes" (Government of Hungary)	Reject. While probably important, it is not included in the underlying report in this context
4-501	G-4-173	A	9	8	9	12	In the paragraph 'Integration of climate change into development decisions,' it only mentions the issue of mitigation, whereas in page 20 of the WG2 SPM, it mentions that 'A portfolio of adaptation and mitigation measures can diminish the risks,' and 'One way of increasing adaptive capacity is by introducing consideration of climate change impacts in development planning.' It is suggested that the importance of adaptation is mentioned here as well. (Government of Japan)	Noted – This text has been moved th Topic 5.
4-502	E-4-302	A	9	8	9	13	Integration of climate change into legislation and judiciary decisions : Adaptation and mitigation regional and local laws can be developed (Leila Devia , National industrial technology)	Rejected -Not included in the underlying report
4-503	E-4-301	A	9	8			International trade should be included here (Mercedes Bustamante, University of Brasilia)	Rejected - Not included in the underlying report in this context
4-504	E-4-303	A	9	8			Add "international trade" to list. (Paul Epstein, Harvard Medical School)	Rejected - Not included in the underlying report in this context
4-505	E-4-305	A	9	10	9	10	Add: "... energy security WITH INCREASE IN RENEWABLE ENERGY USE, and forest conservation...."	Rejected - Not included in the underlying report in this context

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Running number	Topic - Comment	Batch	Page	Line	To Page	To Line	Comment	Considerations by the writing team
							(Cristobal Felix Diaz Morejon, Ministry of Science, Technology and the Environment)	
4-506	E-4-304	A	9	10	9	11	singling out multilateral loans as the only International Financial transaction seems a bit odd - could add 'and other international financial transfers' - there is remittances, aid, FDI..... Transport and land use planning must also surely be included. (Jon Barnett, University of Melbourne)	Rejected - Not included in the underlying report in this context
4-507	G-4-174	A	9	10	9	11	The term 'forest conservation' is ambiguous, it can be interpreted in different ways. We suggest it may be better to replace 'forest conservation' with 'sustainable forest management', as this is the term used in WG III Ch 9. (Government of New Zealand)	Rejected - is broader issue
4-587	G-4-11	D	9	10			This sentence has an ideological bias that makes the statement little serious from the scientific point of view. In Argentina and Latin American's general experience it is not true that liberalization in electricity markets has let to emission reductions. In many cases liberalization implied the switch from a model mainly based in non, low or cero-GHG-emission sources (hydro or nuclear and hydro) to models based mainly in thermo electrical supply. These processes have had deep impacts in emissions but in many cases towards increasing them (at least in specific terms, tCO2/GWh, for example). (Government of Argentina)	Noted – text includes concepts of distributional considerations and equity.
4-508	G-4-175	A	9	12	9	12	Replace “reduce” with “affect” (Government of United States)	Accepted - change made
4-509	E-4-306	A	9	15			We suggest to add 'governance' to issues list. (Silvia Llosa, International Strategy for Disaster Reduction)	Rejected - Not included in the underlying report in this context
4-510	E-4-308	A	9	22	10	30	This section is weak overall and does not really make much in terms of a contribution. In particular, the last paragraph in lines 27-30, p. 10 could be deleted as it is vacuous. If there really isn't anything more to bring up, the section could end with a new short paragraph about research needs and gaps in this area. (Jouni Paavola, University of Leeds)	Rejected – Approved SPM text
4-588	G-4-12	D	9	22	10	30	In point 4.5. it is necessary to highlight that not always a lower cost in global terms implies a lower cost for each actor. All depends on what are the implementation costs involved and if the total social and other eventual external costs that may be produced are included or not (increasing prices of basic goods and services, indirect loss of jobs, etc.). Global cost-efficiency (the way in which usually is measured the efficiency in these processes) not always implies that the best or the most cost-effective option from the host country point of view is being implemented. Many times this situation hinders the fact that the disparity in income distribution and property rights of the resources at international level (and within the own countries) makes that the resources belonging to the poor are cheaper than those belonging to the reach and hence is cheaper to affect and/or use (or over use) these resources.	Noted – cost effectiveness as a criterion is discussed in Section 4.3. Introducing global cost vs. local cost efficiency is more detail than appropriate for the SyR.

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							(Government of Argentina)	
4-511	E-4-309	A	9	22	10		Section 4.5: Technology transfer for both mitigation and adaptation must surely be a key message of section 4.5. Indeed this whole section seems rather narrowly focussed on the UNFCCC regime. There are all sorts of flows that matter.. for example trade and the harmonisation of trade regimes with environmental objectives is critical. (Jon Barnett, University of Melbourne)	Rejected – too detailed for SyR
4-512	E-4-307	A	9	22			This sub-section focuses exclusively on international opportunities for cooperation on mitigation and does not address the many options for adapting to climate change through regional and international cooperation. WGII Chapter 20.5 contains relevant information on disaster risk management that should be included. Also please see our third comment above citing WG II Ch 20.8. [TSU note: See Comment E-SPM-855-A] (Silvia Llosa, International Strategy for Disaster Reduction)	Noted – Text is consistent with weight of material in WG II and WG III reports
4-513	G-4-176	A	9	24	9	24	The chapeau should reflect WG3 SPM language ie: "There is high agreement, but medium evidence, that notable achievements of the UNFCCC and its Kyoto protocol are..." (Government of Australia)	Accepted – approved text of SPM says much evidence. Much evidence added to text.
4-514	G-4-177	A	9	24	9	24	The chapeau should reflect WG3 SPM language ie: "There is high agreement, but medium evidence, that notable achievements of the UNFCCC and its Kyoto protocol are..." (Government of Australia)	Noted – approved text of WG III SPM says much evidence. Much evidence added to text.
4-515	G-4-178	A	9	24	9	24	Strike "the notable achievements of...." This is normative phraseology and should not be combined with confidence statements. (Government of United States)	Rejected – approved WG III SPM text
4-516	G-4-179	A	9	24	9	28	Instead of current text it may be worthwhile noting that the UNFCCC and Kyoto Protocol were instrumental in providing the institutional framework that allowed governments and private sector entities to create carbon markets. As currently worded the text reads as if it was the UNFCCC and Protocol that created the markets. Suggested text: an array of policies which in turn led to the creation of an international carbon market..." We suggest changing "global" to "international carbon market" to be consistent with the WGIII SPM. (Government of Canada)	Rejected – approved WG III SPM text
4-517	E-4-310	A	9	24	9	29	Similar comment to what I stated for the SPM, page 16, lines 13-15. [TSU note: See Comment E-SPM-984-A] This statement is not correct. The Kyoto Protocol did not "create a global carbon market." The Kyoto Protocol, in its Article 17, laid out emissions trading among Parties in Annex B. Article 12 set out the clean development mechanism (CDM). Article 6 set out the provisions that would govern a joint implementation project between Annex I Parties. While rules have been laid out separately for these three mechanisms, and that an international	Rejected – approved WG III SPM text

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							transaction log is indeed taking shape, there is no single global carbon market as the statement says. CDM projects and JI projects have different governance structures. Emissions trading in the EU is governed by the rules and directives of the Commission and laws of the Member States. Countries such as Japan and Canada which are in Annex I and Annex B have yet to establish any national emissions trading system, and certainly there is yet to be any linkage. There is talk of linking emerging systems with the EU ETS, but that is not yet mature. This statement on page 9 section 4.5 also presumptively states that there is a "global response" to the climate change issue. I think that most impartial observers would disagree with this notion. As yet, there is no commitment from a large number of the top-emitting nations in the world. I recommend revising the statement like so: "The UNFCCC and its Kyoto Protocol stimulated an array of policies, stimulated the emergence and operation of carbon markets, and helped to spur new institutional mechanisms for adaptation and mitigation actions." (Arthur Lee, Chevron Corporation)	
4-518	G-4-180	A	9	27	9	27	Strike the word "the" at the end of line 27 and insert in its place the word "a". (Government of United States)	Rejected – approved WG III SPM text
4-519	G-4-181	A	9	30	10	2	The most recent economic impacts associated with the Kyoto Protocol in Annex B countries should be provided, rather than repeating the estimates from the TAR. (Government of United States)	Rejected – approved WG III SPM text
4-520	E-4-311	A	9	30			It is not clear what "relative to global emissions" means. Is the sentence referring to the impact "on global emissions". (Adrian Simmons, European Centre for Medium-Range Weather Forecasts)	Rejected – Approved WG III SPM text
4-521	E-4-312	A	9	31	9	31	The list of countries included in Annex B (and differences to Annex 1) is not explained, neither in the Glossary. Although one could refer to the Kyoto Protocol, I suggest to list (at least in the Glossary) the country of every Annex (Stefano Caserini, Politecnico di Milano)	Noted – term defined in Glossary
4-522	E-4-314	A	9	31	9	32	I find bias in the statement "Its economic impacts on participating Annex-B countries are projected to be 32 smaller than presented in Third Assessment Report," those simulations assumed full participation and the US, Canada, and Australia on the sidelines mean these results do not apply (Bruce McCarl, Texas A&M University)	Rejected – Approved WG III SPM text
4-523	E-4-313	A	9	31	10	2	Some detail should be provided to support the claim that the economic impact of the Kyoto Protocol on participating Annex B countries will be smaller than projected in the TAR, especially since the TAR provided a relatively large range for potential economic impacts. (Robert Siveter, IPIECA)	Rejected – Approved WG III SPM text

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Running number	Topic - Comment	Batch	Page	Line	To Page	To Line	Comment	Considerations by the writing team
4-524	E-4-315	A	9	31	10	2	After stating that economic impact will be smaller than what presented in the TAR, it is not possible to add the new projected amount of them ? (Stefano Caserini, Politecnico di Milano)	Rejected – Approved WG III SPM text
4-525	G-4-182	A	9	31	10	2	Some detail should be provided to support the claim that the economic impact of the Kyoto Protocol on participating Annex B countries will be smaller than projected in the TAR, especially since the TAR provided a relatively large range for potential economic impacts. If there are different assumptions in more recent studies, this should be reflected. (Government of United States)	Rejected – approved WG III SPM text
4-526	E-4-316	A	9	32	9	32	"the" needs to be inserted before "Third Assessment Report" (Jon Egill Kristjansson, University of Oslo)	Accepted – correction made.
4-527	G-4-183	A	9	32	9	32	Why doesn't this para actually state the projected figures from the AR4 on the protocol's impact on GDP rather than only saying they are lower than in the TAR and then restating the TAR figures? (Government of Australia)	Rejected – approved WG III SPM text
4-528	E-4-317	A	9				Table 4.3: Add grid to electricity line to demand side management. And, as this is focused on development policies, the essential nature for (clean) energy for (clean) development. Thus, where energy is scarce and grids are few, stand-alone systems – augmented with human power and stored in improved batteries -- can pump water, irrigate fields, power clinics, light homes, cook food and drive development. (Paul Epstein, Harvard Medical School)	Rejected - not included in the underlying report in this context
4-529	E-4-318	A	9				Table 4.3. Sector "Electricity". Add the word "cost effective energy efficiency technologies in electricity generation, " between "management programs," and "and transmission and distribution loss reduction". In the original reference WG III Chapter 12, p47, L25, there is a description mentioning the "generation". The new sentence now reads, ".. management programs, cost effective energy efficiency technologies in electricity generation, and transmission and distribution loss reduction." (Shinichi Nakakuki, Tokyo Electric Power Company)	Rejected - Not included in the underlying report in this context
4-530	E-4-319	A	9				Table 4.3, 4th item on petroleum imports is addressing supply security issues. This was contested several times in several meetings and shown that it does not relate to the issues of adaptation and mitigation. (Mohammed Alfehaid, Ministry of Petroleum)	Rejected. Not included in the underlying report in this context
4-531	E-4-320	A	9				In Table 4.3 under "Forestry", I suggest adding 'tree planting' which could be important in some areas (Jon Egill Kristjansson, University of Oslo)	Rejected - Not included in the underlying report in this context

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4-532	G-4-184	A	9				Table 4.3: the title of this table needs to be reconsidered as some of the policies listed in column 2 do not seem accurately characterised as "development policies". (Government of Australia)	Rejected -caption from WG III Tables SPM 3 and SPM 7
4-533	G-4-185	A	9				Table 4.3. Sector "Electricity". Add the word "cost effective energy efficiency technologies in electricity generation, " between "management programs," and "and transmission and distribution loss reduction". In the original reference WG III Chapter 12, p47, L25, there is a description mentioning the "generation". The new sentence now reads, "... management programs, cost effective energy efficiency technologies in electricity generation, and transmission and distribution loss reduction." (Government of Japan)	Rejected -from WG III TS
4-534	G-4-186	A	9				Table 4.3, add a new row: Selected sectors: LAND USE, policy instruments: LOCAL, TERRITORIAL PLANNING, REGIONAL DEVELOPMENT PLANS (Government of Hungary)	Rejected - Not included in the underlying report in this context
4-535	G-4-187	A	9				Table 4.3, 4th item on petroleum imports is addressing supply security issues. This was contested several times in several meetings and shown that it does not relate to the issues of adaptation and mitigation. (Government of Kingdom of Saudi Arabia)	Rejected - from WG III TS text, the current text does not say if the result is positive or negative
4-536	G-4-188	A	9				Table 4.3 second column contains purely mitigation measures not "Non-climate change policy instruments and actions" (Government of France)	Accepted -Evident in WG III, not in SYR
4-537	G-4-189	A	9				Table 4.3 comment: Row 5 (Petroleum): We suggest the column 1 be more appropriately 'Petroleum use' rather than 'Petroleum imports'; that in column 2 the words 'imported and domestic' could be omitted; and that in column 3 could read 'Emissions from petroleum products' rather than 'Emissions from crude oil and product imports' (Government of New Zealand)	Rejected - imports discussed in underlying report
4-538	G-4-190	A	9				Table 4.3 (column 3 / row 2): the authors should define or expand "SD". (Government of Australia)	Rejected - SD used several times before this entry
4-539	G-4-191	A	9				Table 4.3 (column 3 / row 2): as this table is discussing national policies it is not appropriate to suggest that such policies could have an impact on "Total global GHG emissions". (Government of Australia)	Accepted – added "potential"
4-540	G-4-192	A	9				In Table 4.3, under "Non-climate change policy instruments and actions" for the "Electricity" sector, change text to read "Adoption of cost-effective clean technologies,..." or other language to include other electricity-producing technologies that meet energy for development needs and do not emit greenhouse gases.	Rejected - Examples not in underlying report

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							(Government of United States)	
4-541	G-4-193	A	9				In Table 4.3, replace “SD” (second row, middle column) with “sustainable development” (or provide explanatory footnote). (Government of United States)	Accepted
4-542	G-4-194	A	10	3	10	3	Insert sentence: "Financial flows to developing countries through Clean Development Mechanism projects have the potential to reach levels of the order of several billion US\$ per year (WG III 13.3)." (Government of Germany)	Rejected – more detail than appropriate for this section.
4-543	E-4-321	A	10	4	10	5	This sentence is redundant to the sentence on Pg. 9, lines 30-31. It's an important point but doesn't need to be made twice in such a short section of text. (Robert Siveter, IPIECA)	Accepted – sentence deleted.
4-544	G-4-195	A	10	4	10	5	This sentence is redundant with that of sentence on p. 9, lines 30-31. It's an important point but doesn't need to be made twice in such a short section of text. Delete it. (Government of United States)	Accepted – sentence deleted
4-545	E-4-322	A	10	4	10	8	This paragraph is written in a provocative manner from a political and negotiation standpoint. Would suggest re-wording the 2nd sentence to read: "Further measures will be required to achieve deeper reductions etc.". This eliminates the over-emphasis on these measures being under the Kyoto Protocol. (Nick Campbell, ARKEMA SA)	Noted –text reworded
4-546	E-4-323	A	10	4	10	8	There is indeed agreement that the Kyoto Protocol has failed. Please include that it was in fact predicted (by Barrett, Carraro, Nordhaus, Schelling) in the early 1990s that the Kyoto Protocol would fail. The IPCC is a scientific body, and should be proud of correct predictions. (Richard Tol, ESRI)	Noted – Approved WG III SPM text.
4-547	G-4-196	A	10	4	10	8	It is noted that this sentence on the Kyoto Protocol does not appear in the WG3 Summary for Policymakers and was removed from an earlier draft because it was policy prescriptive. More neutral language such as that included in the WG3 SPM would be preferable here. (Government of Australia)	Noted – text ha been reworded.
4-548	G-4-197	A	10	4	10	8	Insert the underlined words: “...impact of the Kyoto Protocol...” Replace second sentence with “Future mitigation efforts would be more effective with measures to promote the development and deployment of technologies and practices to achieve deeper reductions covering a higher share of global emissions.” (Government of United States)	Accepted – modified text used

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4-549	E-4-326	A	10	4	10	9	Also enhance cooperation between MEAs and other environmental bodies to help to achieve Kyoto Protocol (Leila Devia , National industrial technology)	Rejected – not covered by underlying report
4-550	E-4-324	A	10	4			Might be worth considering the situation after the first phase of Kyoto protocol ending in 2012. Especially if this treaty is not extended or replaced by a similar mechanism. (Ben Muirheid, International Fertilizer Trade Association (IFA))	Rejected – not the topic of this section
4-551	E-4-325	A	10	4			It is surely more constrained by the simple fact that some of the planet's major carbon dioxide producers (notably USA) have consistently refused to sign up to it) - this may be politically inconvenient, but cannot be ducked in a credible report. (Peter Convey, British Antarctic Survey)	Noted – rewritten text calls for coverage of larger share of global emissions.
4-552	E-4-327	A	10	6			Change "deeper" to "larger". (Adrian Simmons, European Centre for Medium-Range Weather Forecasts)	Rejected – deeper is the commonly used adjective
4-553	G-4-198	A	10	7	10	7	The authors should cross reference Topic 5 regarding the need for deeper cuts (to prevent dangerous climate change, as per Article 2 of the UNFCCC) (Government of Australia)	Accepted –cross-reference
4-554	E-4-328	A	10	7	10	8	"covering a higher share" - this is a bit vague - do you mean that more countries need to be included in agreements, or more climate gases need to be included? (Keith Shine, University of Reading)	Noted – either definition would serve purpose
4-555	E-4-329	A	10	10	10	19	This text makes it sound as if developed nations can simply keep buying their way out of doing anything--this is simply not the case. (Michael MacCracken, Climate Institute)	Rejected – Approved text from WG III SPM
4-556	G-4-199	A	10	12	10	12	For accuracy insert "multilateral environment" before "agreements". (Government of Australia)	Rejected – approved WG III SPM text
4-557	E-4-330	A	10	12	10	14	The sentence states that so and so agreements are so and so. Would it not be more straightforward to write on the form 'in order to be effective ... agreements need to have the following features.....'? (Kenneth Mollersten, Swedish Energy Agency)	Rejected – Approved text from WG III SPM
4-558	E-4-331	A	10	12	10	14	Please add "The literature suggests that ... institutionally feasible" AND THAT THE KYOTO PROTOCOL IS NONE OF THE ABOVE. (Richard Tol, ESRI)	Rejected – Approved text from WG III SPM
4-559	E-4-332	A	10	16	10	30	This paragraph must be completed to fully capture the ideas of WG III chapter 13. See for example the corresponding paragraph in WGIII Technical Summary, from p.99 line 45 to page 100 line 3. It would be enough to add in line 19 "and facilitate technology transfert", and to insert "sectoral targets, and limits on prices (capping the costs of compliance at a given level)" in line 29.	Rejected – Approved text from WG III SPM

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Running number	Topic - Comment	Batch	Page	Line	To Page	To Line	Comment	Considerations by the writing team
							(Cédric Philibert, International Energy Agency)	
4-560	G-4-200	A	10	17	10	17	Suggest the following text: "Greater cooperative efforts are expected to help to reduce global costs for achieving a given level of mitigation, and improve the environmental effectiveness of mitigation efforts." (Government of Canada)	Rejected – approved WG III SPM text
4-561	E-4-333	A	10	17	10	18	delete the commata after "improving" and before "market" (Hartmut Grassl, Max Planck Institute for Meteorology)	Accepted – change made
4-562	G-4-201	A	10	19	10	19	The authors should define CDM. (Government of Australia)	Accepted – spelled out
4-563	G-4-202	A	10	19	10	19	Spell out CDM. (Government of United States)	Accepted – spelled out
4-564	E-4-336	A	10	21	10	23	The sentence should be read as follows: "Efforts to address climate change can include diverse elements such as emission targets; (...); promoting renewable energy policy instruments and targets; (...)." (Christian Kjaer, European Wind Energy Association (EWEA))	Rejected – Approved text from WG III SPM
4-565	E-4-334	A	10	21	10	25	This para repeats several of the bullets on p7 of Topic no 4 (Kenneth Möllersten, Swedish Energy Agency)	Rejected – Approved text from WG III SPM
4-566	E-4-335	A	10	21	10	30	This chapter seems to lack coverage of: (a) issues of equity; (b) the different availabilities of different forms of renewable energy in different places--if one has hydropower or geothermal or wind or whatever--there are real potential inequities given the way nations have developed across the Earth; (c) relative costs to different nations of various pathways. (Michael MacCracken, Climate Institute)	Noted – Equity is mentioned as one of the characteristics of successful agreements. Other issues are beyond the scope of this section.
4-567	E-4-337	A	10	22			what is RD in "RD & D programmes" is this R&D? I note term defined in topic 5 page 10, missed and earlier definitions (Bruce McCarl, Texas A&M Univesity)	Noted – RD&D defined earlier
4-568	E-4-338	A	10	22			Question: Is it "R&D" or "RD&D"? (Hartmut Grassl, Max Planck Institute for Meteorology)	Noted – RD&D defined earlier
4-569	G-4-203	A	10	23	10	23	"or" should be "and" in this line (Government of United States)	Rejected – approved WG III SPM text
4-570	E-4-339	A	10	23			"or" should be "and" in this line (Bruce McCarl, Texas A&M Univesity)	Noted – The comment is correct, but the text is as approved by WG III

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4-571	E-4-340	A	10	27	10	30	Whilst I agree with the sentiment, this sounds like a Policy recommendation, particularly the 2nd sentence!! (Nick Campbell, ARKEMA SA)	Rejected – Approved text from WG III SPM
4-572	E-4-341	A	10	27	10	30	Please skip, as the sentences give no additional information in addition to the preceding clause. (Wilhelm Windhorst, Ecology Centre, Kiel University)	Rejected – Approved text from WG III SPM
4-573	E-4-342	A	10	27	10	30	A very weak statement, which is not really necessary. (Gian-Reto Walther, University of Bayreuth)	Rejected – Approved text from WG III SPM
4-574	E-4-343	A	10	30	10	30	"vary" should be 'variable' (Jon Egill Kristjansson, University of Oslo)	Rejected – Approved text from WG III SPM
4-575	G-4-204	A	14	1	14	1	It is suggested to clarify with the help of a footnote the linkage between "high risk areas" and "particularly vulnerable regions" (see page 12, line 44 to page 13, line 7). If different areas/regions should be addressed this should be indicated as well (unfortunately chapter 4.2 of the Technical Summary does not include more information on this issue). (Government of Austria)	Noted – should be topic 5
4-576	G-4-205	A	14	10	14	10	It is suggested to substitute "sea level rise" by "coastal zone management" because only the latter is a sector but not the former. (Government of Austria)	Noted – should be topic 5