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DRAFT

## Overall remarks

### Remarks re specific paras

para	Original wording	Comment
<b>13, in connection with Fig 1.1</b>	<p>„ The evidence that this (climate) change is being induced by human activity is growing ever stronger. Climate models now show with a very high degree of confidence that human-induced increases in carbon dioxide and other greenhouse gases are responsible for much of the recent warming we have observed.”</p> <p>Subtitle before para 12: substitute by:</p> <p>Subtitle before para 20: substitute by:</p> <p>Substitute in Technical Annex para 6</p> <p>“... locked into some climate change”</p> <p>by:</p>	<p>Here as well as at many other occasions, anthropogenic climate change is defined only implicitly, and obviously by global temperature increase. Scientifically, anthropogenic climate change is defined by the human induced increasing radiative forcing. The change of global mean temperature is only one of the responses to the so defined (anthropogenic) climate change.</p> <p>If you would accept this terminological differentiation, consequences in many paras have to be drawn. E.g.:</p> <p>“The nature of evidence that anthropogenic climate change induced so far is already beginning to show up in detectable global warming”</p> <p>“What are the drivers of global warming?”</p> <p>“... locked into some increase in global warming”</p>
<b>14</b>	<p>“What is new in the last 150 years is</p>	<p>“What is new in the last 150 years is the rapid increase in greenhouse gas concentration or its ra-</p>

the rapid increase in greenhouse gases that has accompanied industrialisation.” substitute by:

diative effect respectively. This development has accompanied industrialisation and imperialism/colonisation.”

#the reason for the last insertion: There is an huge amount of CO2 emissions from DCs due to ‘land use change’, especially deforestation, in former colonies, now Developing Countries. Cf. fig A (attached)#

15 “Scientists are now able to assess the likely range of warming for a given level of carbon dioxide in the atmosphere (Figure 1.2)” insert and add:

“Scientists are now able to assess the likely range of warming for a given level of carbon dioxide **and other greenhouse gases** in the atmosphere (Figure 1.2), **but not for any degree of GHG concentration – with credibility, such an assessment is only feasible up to an upper ceiling, only in the ‘neighbourhood’ of accessible geological experience.**”

#the reason for the last insertion: to introduce the possibility of future specific effects which are mentioned in para 17.

17 Positive feedback effects

You should be ‘exhaustive’ or ‘comprehensive’ in mentioning such effects, including negative feedback effects; if you would accept my advise to define climate change via radiative forcing, the decreasing trapping of accumulated (‘marginal’) CO2 should also be mentioned.

18 “More plausible outcomes (judged by their representation of current climate) ...”

#you should not assert this common praxis. Instead you should critically mention the ‘trade off’ relationship, that given the task of simulating constellations in a future of an ‘unprecedented state’ (IHDP Amsterdam declaration), complying the criterion ‘representing current climate’ is not really assuring “more plausible outcomes”#

20 “Emissions of greenhouse gases have been the key factor in climate change for at least the past 50 years.” substitute by:

“Increase of greenhouse gases concentrations due to anthropogenic greenhouse gas emissions has been the key factor in climate change for at least the past 50 years – measured in rfc, natural factor is in the range of contribution.”

20 “Total global emissions, including all greenhouse gases, agriculture and land use change may now be ap-

“Total global emissions, including all six typically industrial Kyoto basket greenhouse gases, as well as GHGs from agriculture and land use change (mainly deforestation) may now be approaching 45 Gt CO-equivalent per year.” # the 45 Gt figure, which I fully indorse, contradicts to what is shown

proaching 45 Gt CO-equivalent per year.” Substitute by:

in Fig. 1.4 as well as is cited in para 21. My advise is to substitute Fig. 1.4 which includes incorrect numbers by the two figures attached, which are fully in line with your 45 Gt in 2004. The future oriented perspective (instead of the fact-oriented one) followed there is furthermore much more in line with the required approach to sketch the amount of the problem (in future) we are obliged to solve.#

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“There is no reason to believe that energy markets will by themselves bring about sharp drops in the carbon-intensity of energy usage without any policy intervention; estimates of fossil-fuel stocks – particularly of coal 15 - available at moderate marginal extraction costs suggest that they are easily sufficient to generate the emissions projected in fossil-fuel-intensive scenarios.”

#there is, as far as I know, but I am not the really sophisticated expert with respect to this subject, a severe omission in the IPCC scenarios developed for the TAR: They have not been checked with respect to the feasibility of the so called peak oil availability restrictions – what is easily to understand, as this argument came up when the scenarios were still essentially drawn. So, seen from todays viewpoint, there could be expected a drop at least in hydrocarbon availability which may have to be overcome ‘without policy intervention’ and which would supply a hugh synergy potential which is to be counted for in estimates of cost of deviation from the bau-path.#

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“Emissions of greenhouse gases will continue to rise for some time, and at current rates of growth ..., we are likely to see at least a doubling of concentrations relative to pre-industrial levels by the middle of this century.”

#there must be a mistake in the calculation: given the current rate of increase, as implied in Your own mentioning in para 20, there is no chance to get to a doubling of GHG concentration (measured in CO2-e) only. Cf. the Meinshausen contribution in the Exeter conference proceedings, fig. 7. The concluding sentence therefore should be: # “All in all, we are embarked to emissions trajectories which will lead us far beyond the ceiling legally implemented by Art 2 UNFCCC. We are at the brink of an illegal performance of mankind as a whole.” #this kind of legal judgement may reveal as being decisive in the economic chapters of the paper.#

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#required reduction efforts are only made subject relative to 1990 levels as well as bau scenarios#

#You should insert some remarks about required reduction efforts relative to the end of the Kyoto period as well as about the mathematical relationship between required reduction efforts at both moments in time: The global 15 percent reduction commitment relative to the Kyoto baseline as endorsed by the European Council in March 2005 e.g. is equivalent to a 50 percent reduction

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commitment relative to the 'end of the Kyoto period'-baseline.#