

**AD HOC WORKING GROUP ON FURTHER COMMITMENTS
FOR ANNEX I PARTIES UNDER THE KYOTO PROTOCOL**

Sixth session

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Agenda item 6

Analysis of mitigation potentials and identification of ranges of emission reduction objectives of Annex I Parties

**Workshop on mitigation potentials and ranges of emissions reductions
by Annex I Parties**

Report by the chair of the workshop

I. Introduction

1. The Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol (AWG-KP), at its resumed fourth session, requested the secretariat to organize, under the guidance of the Chair of the AWG-KP, an in-session workshop on the consideration of relevant methodological issues, including the analysis of mitigation potentials and identification of possible ranges of emission reductions by Annex I Parties.¹
2. The approach and objectives of the workshop are clarified in the scenario note on the resumed sixth session of the AWG-KP.²
3. The workshop was held in Poznan, Poland, on 3 December 2008, during the resumed sixth session of the AWG-KP, and was chaired by Mr. Mama Konate, Vice-Chair of the AWG-KP. It provided an opportunity for Parties and international organizations to share information on national and international studies on mitigation potentials and on criteria and approaches for the allocation of emission reduction efforts among developed countries. The workshop was open to all Parties and observers.
4. The AWG-KP also requested the secretariat to update the technical paper “Synthesis of information relevant to the determination of the mitigation potential and to the identification of possible ranges of emission reduction objectives of Annex I Parties: an update”.³
5. In the scenario note referred to in paragraph 2 above, the Chair of the AWG-KP invited interested Parties to make presentations at the workshop. The following Parties or groups of Parties made presentations: the European Community, Japan, the Russian Federation, Tuvalu on behalf of the Alliance of Small Island States, Canada and New Zealand. The workshop also involved input from leading international experts, one the former Co-Chair of Working Group III of the Intergovernmental Panel on Climate Change (IPCC) and one from the International Energy Agency. In order to provide input for the discussion, the Vice-Chair of the AWG-KP invited the secretariat to make a presentation on the updated technical paper referred to in paragraph 4 above.

¹ FCCC/KP/AWG/2007/5, paragraph 19 (d) (iv).

² FCCC/KP/AWG/2008/7.

³ FCCC/TP/2008/10.

6. A question and answer session was held after every third presentation by experts and Parties. After the presentations the chair of the workshop opened the floor for statements by Parties and for further exchange of views. This included statements made and questions asked by Algeria, Belarus, Benin, Brazil, Egypt, China, India, Saudi Arabia and South Africa.

7. At the closing of the workshop, the chair provided a summary of the main points that were presented and discussed.

II. Summary of discussions

8. The presentations and discussion during the workshop covered a number of issues related to mitigation potentials and ranges of emission reductions by Annex I Parties that could be summarized under two main themes:

- Mitigation potentials, emission scenarios and ranges of emission reduction objectives of Annex I Parties;
- Principles and approaches for defining the mitigation potentials, efforts and further commitments of Annex I Parties.

A. Mitigation potentials, emission scenarios and ranges of emission reduction objectives of Annex I Parties

9. There was a recognition that estimates of emission reduction potentials should be based on sound science, including information on the stabilization scenarios from the Fourth Assessment Report (AR4) of the IPCC and taking into account the inherent uncertainties. Most Parties referred to the IPCC stabilization scenarios, with most frequent references to the scenario that would limit greenhouse gas (GHG) concentrations in the atmosphere at 450 ppm. Some Parties also referred to the requirement for Annex I Parties as a group to reduce emission levels within a range of 25–40 per cent below 1990 levels by 2020 in accordance with this scenario. Consensus on the overall level of ambition and related ranges of emission reduction was deemed important given the need to furthering the discussion by the AWG-KP in 2009 on commitments by individual Annex I Parties.

10. Calling for concentrations of GHG emissions to be stabilized below even 450 ppm, some Parties underlined that, in accordance with studies made available since the publication of the IPCC AR4, the impacts from climate change could be even greater than the impacts identified by the IPCC under the 450 ppm stabilization scenarios. This includes impacts on small island nations, including those with atoll populations and exposure to severe weather and sea level rise, on nations with coastal populations that are also exposed to severe weather and sea level rise, and on nations with populations exposed to sea level rise and flooding.

11. The findings of the IPCC AR4 relating to scenarios, emission reduction ranges and mitigation potentials are confirmed by the most recent studies on these topics referred to by the Parties and the other participants in the workshop. These recent studies demonstrate that a major transition in the energy system is needed to achieve stabilization of GHGs in the atmosphere at 550 ppm. Such a transition would require using the full potential of the existing low-carbon energy technologies and energy efficiency. To achieve greater emission reductions that bring the emission concentration level down to 450 ppm, rapid deployment of low-carbon technologies and development of new technologies is deemed necessary. Some Parties drew attention to the uncertainties associated with these scenarios, including the uncertainties associated with the underlying assumptions, and stated that the results from these scenarios should be interpreted cautiously.

12. Most Parties stressed the need for developed countries to show leadership by taking on ambitious emission reduction targets. Many Parties referred to the historical responsibility of developed countries in

this context. One Party noted that it has experienced sustained economic growth while reducing emissions at the same time.

13. Some Parties emphasized the need to maintain a clear focus on commitments of Annex I Parties and avoid linking possible action and commitments by Annex I Parties with possible action by other Parties in the discussions under the AWG-KP, a notion that was raised during the workshop. One Party noted that the successful outcome of the work of the AWG-KP is deemed important for the overall success of the Bali Action Plan (decision 1/CP.13).

14. There was strong emphasis on the need for urgent action on climate change mitigation, given the information from the IPCC AR4 and more recent studies on the current and projected emission levels and associated climate change impacts. In addition, a number of Parties noted that not only should the cost associated with such action be taken into account, but also the cost of not taking any action.

15. Most Parties and other participants in the workshop stressed the significant mitigation potential that is available to reduce emissions and ensure a transition to stabilization scenarios within the lower range of concentration of GHG emissions in the atmosphere as included in the IPCC AR4. This is confirmed by a number of studies that considered the mitigation potential at an international and national level and the potential by sector. In particular, a number of Parties emphasized the mitigation potential from energy saving. One Party noted that the potential for energy saving amounts to 35–40 per cent of its current energy consumption levels.

16. A broad portfolio of options is needed to translate fully the estimated mitigation potential into actual emission reductions. For example, fully realizing the mitigation potential in the energy sector will require a wide range of technology options such as energy efficiency in buildings and motor systems, heat pumps, fuel cell vehicles and renewable energy. Estimates, including those provided in document FCCC/TP/2008/10, suggest that options with a cost of up to USD 100 per tonne of carbon dioxide (t CO₂) need to be implemented for Annex I Parties as a group to reduce their emissions 25–40 per cent. The cost could be reduced to USD 50 per t CO₂ with the use of Kyoto Protocol mechanisms.

17. Co-benefits of climate mitigation, such as health benefits from reduced air pollution, energy security, improved balance of trade, provision of modern energy services to rural areas, sustainable agriculture and positive impacts on employment, could offset a large share of mitigation costs. Finally, it was mentioned that in the effort to realize the estimated mitigation potential, technology options that could lock economies into further fossil fuel dependence should be discouraged.

B. Principles and approaches for defining the mitigation potentials, efforts and further commitments of Annex I Parties

18. Most of the Parties elaborated on their approaches to how to define mitigation potentials at the national and international levels. At the national level, such potential could be defined taking into consideration:

- (a) Key drivers for GHG emissions, such as population, gross domestic product (GDP) growth, energy intensity of the economy and the share of fossil fuels in primary energy supply;
- (b) Mitigation potential by sector, for example the power, iron and steel, cement, aluminium and transportation sectors;
- (c) Costs of emission reductions, such as economic cost, marginal abatement cost and cost of emission reduction as a percentage of GDP and of welfare loss;
- (d) National circumstances, including economic structure, natural resource endowment, climate and population distribution, including heating degree days and the distance

between major cities, availability of clean electricity production, and the import and export balance of fuels.

19. Other considerations noted by some Parties include analysis of mitigation potential by sector in Annex I Parties, including sectors for which this potential could be addressed mainly through domestic effort (e.g. in the residential and commercial sectors), through international cooperative effort (e.g. in the iron and steel, cement and aluminium sectors) and through a combination thereof (e.g. in power generation and road transportation).
20. Many of these considerations could be formulated as indicators that are already used or could be used by Parties to define mitigation efforts in a comparable way. These include indicators at the national level, such as carbon intensity of the economy, marginal abatement costs and total costs of emission mitigation as a percentage of GDP, and bottom-up sectoral indicators. A common understanding and transparency in how the Party is taking into consideration the indicators and factors listed above in defining its mitigation potentials was deemed essential.
21. In discussing further commitments for Annex I Parties under the Kyoto Protocol, all Parties that spoke referred to commitments in the form of quantified emission limitation and reduction objectives (QELROs). Several Parties reiterated their domestic targets, actions, goals and objectives. The European Community has committed to reducing GHG emissions by 20 per cent in 2020 compared with 1990 levels, and to reducing the emissions by an additional 10 per cent under a possible international agreement through the use of Kyoto Protocol mechanisms. Estimates of the impacts on the GDP of these emission reductions are within the range of -0.09 to -0.19 per cent annually. Progress towards the emission reduction target for the first commitment period of the Kyoto Protocol underlined the confidence expressed by the European Community that the new 20 per cent reduction target is achievable.
22. Belarus is considering an emission reduction target of 5-10 per cent in the post-2012 period, subject to ratification of the amendment to Annex B of the Kyoto Protocol, which contains QELROs for Belarus for the first commitment period. Japan provided information on its ongoing work to set, in 2009, a quantified domestic target, based on scientific and theoretical analysis, and taking into consideration the timing of the ongoing international negotiations. Canada provided information on its estimate of a cost of 75 Canadian dollars per t CO₂ to achieve its domestic emission reduction target of 20 per cent by 2020 compared with 2005 levels.
23. Mitigation potentials, capabilities, including willingness to cover the cost of mitigation effort, and responsibilities should be given due consideration, according to a number of Parties, when defining the QELRO by individual Annex I Parties. For example, countries with higher GDP per capita could take on more ambitious commitments than other countries with lower GDP. This should be done in a transparent, fair and comparable manner. Given the historical responsibility of Annex I Parties, their political willingness is deemed crucial by some Parties for transforming the mitigation potential into sizeable emission reductions.
24. Some Parties noted the need to refine and enhance the understanding of the rules that guide the treatment of the land use, land-use change and forestry sector and the Kyoto Protocol mechanisms in the process of setting ambitious QELROs. On the Kyoto Protocol mechanisms, possible strengthening of the rules relating to the treatment of additionality under the clean development mechanism was mentioned. The need to maintain the focus on domestic emission reductions in Annex I Parties in accordance with the principle of supplementarity of the use of the Kyoto Protocol mechanisms to domestic action was also noted.

C. Other issues

25. One Party suggested that the base year should be the same for all Annex I Parties and the length of the second commitment period should be the same as that of the first commitment period. Another

Party suggested that the second commitment period should be extended to 2020, in line with the IPCC AR4 scenarios.

26. Some Parties indicated the need for further work by the AWG-KP to advance Parties' understanding of issues relating to mitigation potentials, such as possible criteria to estimate these potentials and associated costs, and QELROs.
