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AD HOC WORKING GROUP ON FURTHER COMMITMENTS FOR ANNEX I PARTIES UNDER THE KYOTO PROTOCOL
Seventh session
Bonn, 29 March to 8 April 2009

Agenda item 3
Consideration of the scale of emission reductions to be achieved by Annex I Parties in aggregate

Agenda item 4
Contribution of Annex I Parties, individually or jointly, to the scale of emission reductions to be achieved by Annex I Parties in aggregate

Agenda items 5 (d), 5 (e), 5 (f) and 5 (h)
Other issues arising from the implementation of the work programme of the Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol
The coverage of greenhouse gases, sectors and source categories
Common metrics to calculate the carbon dioxide equivalence of anthropogenic emissions by sources and removals by sinks
Possible approaches targeting sectoral emissions
Other issues

Consideration of the scale of emission reductions to be achieved by Annex I Parties in aggregate, of the contribution of Annex I Parties individually or jointly, consistent with Article 4 of the Kyoto Protocol, to the scale of emission reductions to be achieved by Annex I Parties in aggregate, and of other relevant issues arising from the implementation of the work programme of the Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol as contained in document FCCC/KP/AWG/2008/8, paragraph 49 (c)

Submissions from Parties

Addendum

1. In addition to the 17 submissions contained in document FCCC/KP/AWG/2009/MISC.1 and Add.1, three further submissions have been received.

2. In accordance with the procedure for miscellaneous documents, these submissions are attached and reproduced[*] in the language in which they were received and without formal editing.

[*] These submissions have been electronically imported in order to make them available on electronic systems, including the World Wide Web. The secretariat has made every effort to ensure the correct reproduction of the texts as submitted.

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PAPER NO. 1A: AUSTRALIA

Australia's National Ambition

Submission to the AWG-LCA and AWG-KP

This submission provides information on Australia's ambition to mitigate its national emissions to 2020.

Australia's national ambition

Australia is committed to working towards a post-2012 outcome that is comprehensive, effective and fair. Australia recognises that it has an obligation to help shape positively an international agreement that addresses climate change beyond the first period of the Kyoto Protocol. Australia intends to take strong mitigation measures delivered through a comprehensive domestic policy framework. Australia is serious about delivering on its announced emissions reductions.

The Australian Government has made a policy commitment to unconditionally reduce Australia's emissions by 5 per cent below 2000 levels by 2020. This is projected to be a 27 per cent reduction in per capita terms (34 per cent relative to 1990 levels). This sets Australia on an immediate course to stop the growth of, and then reduce, national emissions by 60 per cent on 2000 levels by 2050. Emissions peak in 2010 and fall thereafter.

Should countries reach a global deal that includes commitments by all major economies, including key developing countries, to substantially restrain emissions and by all developed countries to take on comparable emissions reduction targets, Australia will commit to reduce emissions by up to 15 per cent below 2000 levels by 2020. This represents a projected reduction of 34 per cent in per capita terms (41 per cent relative to 1990 levels).

Australia will commit, therefore, to a medium-term (2020) target to reduce Australia's greenhouse gas emissions by between 5 per cent and 15 per cent below 2000 levels.

Australia's national ambition for 2020 represents a 12 to 22 percentage point reduction on Australia's target for 2008-2012. This is the same reduction range as implied by the EU's mid-term ambition. Australia faces higher mitigation costs in the move to a low carbon future than most other countries.[1] Australia is willing to commit to these reductions because it recognises that the costs of inaction will be greater than the costs of action and that a comprehensive global agreement is in our national interest.

Australia welcomes the various indications of national ambition that countries have made to date, including most recently the United States and Sweden. However, many countries are yet to nominate a national ambition. Australia encourages all other advanced economies to specify their ambition for mid-term reductions as early as possible in 2009. This is necessary to build confidence and momentum in the negotiations. Such information should be made available to other Parties through the UNFCCC submission process.

Collective goals

Ambitious global emission goals are in Australia's national interest. It is desirable that countries agree on a mid-term and a long-term global goal for emissions reductions. In terms of collective effort, each

[1] A parallel submission addresses the matter of comparable effort.

collective goal should incorporate a single percentage ambition, a base year from which this ambition is measured against, and a target year by which this global aspiration may be achieved.[2]

If a global agreement does emerge over time involving commitments - by developed and developing countries - that are consistent with long-term stabilisation of atmospheric concentrations of 450 parts per million of CO_2-e or lower, Australia would continue to play its full part in achieving ambitious stabilisation levels by establishing appropriate post-2020 emission reduction targets.

Australia is committed to playing its full, fair and constructive part in forging such an agreement. Indeed, the Prime Minister has said that the Government would be prepared to reconsider Australia's 2050 target of reducing emissions by 60 per cent below 2000 levels, if this is required to play our full and fair part, and that the Government would seek an explicit mandate at the next election for this change to our 2050 target.

Domestic action to mitigate climate change

The foundation of Australia's whole of economy strategy to tackle climate change emissions is the Carbon Pollution Reduction Scheme (CPRS). The Government intends to commence the Scheme on 1 July 2010.

The CPRS will put a price on carbon in a systematic way throughout the Australian economy. It employs a 'cap and trade' emissions trading mechanism to limit greenhouse gas emissions. As a market-based solution, the CPRS is the lowest cost way to move Australia to the low carbon economy of the future. Implementing the CPRS represents the biggest structural economic reform since the opening up of Australia's economy in the 1980s and 1990s.

The Government has announced that the Scheme should have maximal practical coverage of greenhouse gas emissions and sectors. All greenhouse gases listed under the Kyoto Protocol will be covered from Scheme commencement. The CPRS will cover around 75 per cent of Australia's emissions. It will cover emissions from stationary energy, transport, fugitive, industrial processes, waste and forestry sectors.

The Government will also undertake a work program to enable it to determine whether or not it is practical to include agricultural emissions from 2015. The Government does not intend to include deforestation in the Scheme. Australian deforestation emissions have reduced markedly since 1990, largely due to increased protections against land clearing. Given the sporadic nature of remaining land clearing emissions, covering deforestation under the scheme would pose large practical difficulties. It also raises the risk of pre-emptive land clearing.

The Government will auction the majority (around 70 per cent) of the Schemes permits. The Government intends for all money raised from the Scheme to be used to help Australian households and businesses adjust to the Scheme and to invest in clean energy options.

The Government intends to guard against the risk of carbon leakage and provide some transitional assistance to emissions-intensive, trade-exposed (EITE) industries. The Scheme will provide assistance to EITE industries in the form of an administrative allocation of permits, linked to the EITE industry's output. Such assistance will be consistent with Australia's international trade obligations.

Complementary Policies

In addition to the CPRS, the Government's emissions reduction strategy has three other elements: the Renewable Energy Target, carbon capture and storage, and energy efficiency.

[2] The desirability of such goals were discussed in greater detail in Australia's submission on mitigation made to the AWG-LCA and AWG-KP in November 2008.

The Renewable Energy Target (RET) will ensure that 20 per cent of Australia's electricity is generated from renewable sources by 2020. This represents a four-fold increase on Australia's current commitments. While the CPRS will help bring renewable energy technologies into the market over time, the RET will accelerate their use. The RET is an important transitional measure that will support the development of a domestic renewable power industry and prepare the electricity sector for its contribution to the significant emissions reductions needed to tackle climate change. The RET is to be phased out between 2020 and 2030.

Carbon capture and storage (CCS) will be a key component of the global solution to climate change. The Government is supporting several projects currently underway in Australia and has also launched the Global Carbon Capture and Storage Initiative to accelerate the scaling up and deployment of CCS technology across the world.

Energy efficiency represents a significant opportunity to achieve low-cost abatement and could help cut future energy demand growth by as much as half. Australia's recent economic stimulus package included $3.9 billion towards improving energy efficiency in 2.7 million Australian homes. This represented the largest single investment in energy efficiency by any Australian Government to date. The Government will announce further energy efficiency measures before the start of the Scheme.

International carbon market linkages

The CPRS has been designed to link with international carbon markets with a preference for open trade within an effective global emissions constraint. No quantitative restrictions will apply to the use of eligible Kyoto units for compliance in the Scheme. However there will be constraints on the types of Kyoto units that will be eligible for acceptance in the Scheme.

The Government will allow entities to use eligible Kyoto units for compliance with Scheme obligations, in particular from the clean development mechanism (with the exception of tCERs and LCERs[3]) and the joint implementation (JI) mechanism. Initially, Australia will not host JI projects in sectors that are covered by the Scheme. In 2013 the Government will consider the scope for domestic offsets and JI projects in sectors that cannot be included in the Scheme.

For prudential reasons and as a way of reducing potential upside price risk, no exports of carbon pollution permits will be allowed at Scheme commencement. The Government's intention is to relax restrictions on linking with credible schemes and mechanisms as the Australian scheme matures. Exports will only be introduced with five years' notice.

Direct bilateral linking opportunities, including mutual recognition of compliance units and harmonization with the schemes of other countries and regions, will be considered on a case-by-case basis after the Scheme has been established. Such a link could be entered into with less than five years' notice where this was unlikely to lead to a significant change in carbon prices.

[3] tCERs – temporary Certified Emission Reductions, LCERs – Long-term Certified Emission Reductions.

PAPER NO. 1B: AUSTRALIA

Economic cost as an indicator for comparable effort

Submission to the AWG-KP and AWG-LCA

This submission addresses the economic costs of mitigation as one of the relevant indicators for comparable effort. It presents results of economic modelling by the Australian Treasury, which was an important input into Australia's decision to reduce emissions by between 5 and 15 per cent on 2000 levels by 2020.

All developed countries should make mitigation commitments that represent a comparable effort, taking account of national circumstances, as part of the post-2012 outcome. Numeric indicators can play a useful role in aiding understanding of comparable effort, including national circumstances, and in assessing the relative ambition of country's mitigation commitments.

It is important that indicators for comparable effort are robust, relevant, impartial and credible. Getting 'comparable effort' right will be crucial to the success of the post-2012 outcome, and is therefore critical to achieving the ultimate objective of the Convention to prevent dangerous anthropogenic interference with the climate system.

A number of factors are relevant to assessing comparability and no single indicator can by itself provide a comprehensive picture of the particular national circumstances of each Party. We note recently published European Council Conclusions, which list indicators such as capacity to pay, emission reduction potential, domestic early action and population trends.[1] With respect to cost metrics, such as capacity to pay and economic costs, Australia notes that the cost of mitigation needs to be considered in the context of a country's capacity to pay, and alongside other relevant indicators. Australia's November 2008 submission to the AWG-LCA and AWG-KP on mitigation identified the aggregate economic cost of meeting national mitigation targets as one important measure.[2]

Economic cost of mitigation as an indicator of comparable effort

The 'economic cost of mitigation' refers to the overall impact on national economic welfare arising from meeting national mitigation commitments. While impacts vary across sectors within an economy, it is the aggregate (whole-of-economy) costs that are directly relevant to assessing comparability of effort of countries' national-level commitments. Aggregate economic cost reflects the size of a country's structural adjustment task; that is, the effort required by a country to move to a low-carbon economy.

The flexibility mechanisms of the Kyoto Protocol allow countries to meet national commitments through a cost-effective mix of domestic and overseas abatement. In this environment, aggregate economic cost (the cost to the economy as a whole) is more relevant to assessing comparability of effort than marginal cost (the cost of reducing emissions per tonne) of domestic mitigation opportunities. This is because the market can equalise the marginal costs of all participating countries. As a result, countries that have fewer opportunities for low cost domestic mitigation may meet ambitious targets at low cost to the economy as a whole by purchasing credits in the market.

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[1] See *Council Conclusions on the further development of the EU position on a comprehensive post-2012 climate agreement* 2928th Environment Council Meeting Brussels, 2 March 2009.

[2] This submission can be accessed at http://unfccc.int/resource/docs/2008/awg6/eng/misc04a01.pdf

It is also important to note that in a market environment, the overall cost to an economy is a function of both domestic action and transfers from international trade in emission rights. As a result, measures of comparable effort need to capture the effect of international emissions trading. This means that national production or income (GNP/GNI) is more relevant than domestic production (GDP).[3]

The economic costs of mitigation vary significantly across countries, due to differences in national circumstances, including industry profile, resource endowment and mitigation potential.[4] The share of energy- and emission-intensive industries in an economy determines the extent of economic restructuring and/or technological transformation required. This may be reflected in the economic cost of meeting a given national commitment.

One way to better reflect comparability of effort is to differentiate national emission reduction commitments according to relative economic costs.

Australia's economic modelling of post-2012 mitigation action

Australia has an established tradition of using quantitative economic analysis as an important input to major policy decisions. In setting its 2020 target range, the Australian Government drew on one of the largest and most complex economic modelling projects undertaken in Australia.[5] This project, led by the Australian Treasury, contributes to a growing and evolving body of international analysis of comparable effort and cost metrics.[6] The project investigated the potential economic impacts of reducing emissions over the medium and long term, through analysis spanning global, national and sectoral scales.

The Treasury used economic models to examine illustrative global mitigation scenarios and a "no-mitigation" reference case, examining the economic costs to various countries and regions. Two of the mitigation scenarios, CPRS -5 and CPRS -15 (CPRS – Carbon Pollution Reduction Scheme), assume a gradually evolving global framework, with national commitments and international emissions trading developing over time. For the purposes of the modelling, it was necessary to make assumptions about country actions. For simplicity, national commitments reflect each country and region making an equal reduction in emissions, relative to the no-mitigation reference case. Atmospheric greenhouse gas concentrations stabilise at 550ppm and 510ppm carbon dioxide-equivalent respectively.

Table 1 below sets out the modelling assumptions and results for some national and regional targets in the CPRS scenarios, and the associated economic costs. The targets are shown as a percentage change relative to both the existing Kyoto Protocol commitments for the first commitment period, and relative to 1990. The economic costs are shown as the percentage change in GNP relative to the no-mitigation reference case. It is important to note that these costs do not include the economic costs of climate change impacts, or the economic benefits of reducing climate change risks. Nor do they in anyway reflect on the suitability of 550ppm or 510ppm as appropriate levels of global ambition.

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[3] Australian Government 2008 *Australia's Low Pollution Future – the Economics of Climate Change Mitigation*, p. 18.

[4] This difference in economic costs is well established in the literature, for example IPCC 2007 *Fourth Assessment Report, Working Group 3 Summary for Policy Makers*, p. 11; Netherlands Environmental Assessment Agency 2008 *Exploring comparable post-2012 reduction efforts for Annex I countries*, p. 61; and, Pew Centre 2008 *Interim results on Modelling post-2012 climate policy scenarios*, available at http://www.pewclimate.org/post2012modeling.

[5] Full and summary versions of the modelling report *Australia's Low Pollution Future – the Economics of Climate Change Mitigation* are available online at http://www.treasury.gov.au/lowpollutionfuture/.

[6] See footnote 4. Other literature on this issue includes (but is not limited to) OECD 2008 *DRAFT Metrics to measure mitigation potential and to compare mitigation effort: exploring the fundamental questions*.

TABLE 1: Targets and costs: modelling assumptions and results at 2020[7]

	Target *percentage of 1990 emissions*		**Cost**
CPRS-5	**change from Kyoto commitment**	**change from 1990**	***% change from reference GNP***
Australia	-12	-4	-1.1
Canada	+17	+11	-1.1
Japan	-15	-21	-0.2
United States	n.a.	+5	-0.3
European Union	-27	-34	-0.4
Russia and CIS	-25	-25	-3.6
World			-0.7
CPRS-15			
Australia	-22	-14	-1.6
Canada	+5	-1	-1.5
Japan	-23	-29	-0.4
United States	n.a.	-6	-0.4
European Union	-34	-41	-0.6
Russia and CIS	-33	-33	-5.3
World			-0.9

Differentiation of targets helps reduce cost differences, ensuring greater comparability of national efforts. The analysis shows that Australia faces high economic costs, relative to most other developed countries, due to its large share of emission- and energy-intensive industries and a dominance of low-cost coal in electricity generation. Despite this, Australia is willing to commit to strong action because it recognises that the costs of inaction will be greater than the costs of action. Australia's costs are higher than both Japan's and the European Union's, despite being allocated smaller percentage reductions from 1990 levels in all of the scenarios. These broad results are typical of modelling by other groups. They highlight that while the reduction from 1990 is a convenient common way to express an emission target, it is not necessarily informative about the degree effort required to achieve that target.

If Australia had equal targets to those of Japan and the European Union (in percentage reductions on a 1990 baseline), the cost differences would be even greater. This is also the case for fossil-fuel producing countries like Canada and Russia, which would face comparable or higher economic costs than Australia.

During the course of 2009, Australia intends to provide further input on the matter of comparable effort by all countries, including all advanced economies, as part of a comprehensive, effective and fair post-2012 outcome.

[7] Sources: KP base year data for 1990 emissions were used except where unavailable; UNFCCC 1990 emissions including LULUCF was used for Belarus and the United States; European Union excludes Bulgaria and Romania, and includes Cyprus and Malta; European Union base year data uses the 23 countries which are in Annex I (ie excludes Cyprus and Malta); the Russia and CIS (Commonwealth of Independent States) target has been calculated using data for the Russian Federation, Belarus and Ukraine only. No target is shown for the United States as it has not ratified the Kyoto Protocol.

PAPER NO. 2: JAPAN

Information on Japan's consideration of quantified emission limitation and reduction commitments (QELROs)

1. Overview

Japan's mid-term target is now being considered by the "Mid-term Target Committee" (hereinafter referred to as the "Committee"), composed of experts and established under the "Council on Global Warming Issue" chaired by the Prime Minister (hereinafter referred to as the "Council"). Six options were presented by the Committee on 27th March, 2009, one of which is still being studied. After receiving comments from the public with regard to these options, the Government of Japan (GOJ) intends to announce Japan's mid-term target by June 2009, which should not be a declaration without backing, but should be viable from an economic perspective and serve as a contribution to global warming countermeasures for the entire planet.

2. Establishment of the Committee and its objectives

In October 2008, the Committee was established as a working group under the Council. The objectives of the Committee are as follows:

(1) It was necessary for Japan to start considering its mid-term target, bearing in mind that the fifteenth session of the Conference of the Parties (COP15) at the end of 2009 is set as a deadline for the negotiations on a future international framework beyond 2012, as well as to present internationally the know-how on such methods as sectoral bottom-up approaches which were to be used in the process of considering this target and, by doing so, to contribute to the progress of relevant international negotiations.

(2) The study of this target should be conducted in a scientific and theoretical manner by using elaborate model analyses, so as to present the results of this study at home and abroad in a persuasive way. Moreover, this target should be considered comprehensively, so that issues, such as solution of global warming, sustainability of economic growth, and natural resources and energy, can be mutually consistent.

(3) In the process of considering the target, the Committee sets several provisional targets so as to make the following elements clear:

- costs related to relevant measures for realizing these provisional targets, including changes in lifestyle and arrangement for emission reductions by international offset and removal by forest sinks;
- economically positive impacts resulting from the above-mentioned measures;
- costs incurred when these measures are not taken

These provisional target figures will then be presented to the Japanese public in the form of options.

3. Current status of consideration by the Committee

The Committee is composed of leading experts in the areas of economy, natural resources and energy, and environment, including the heads of the most authoritative research institutes in Japan. The Committee has already held six formal meetings including hearings from Japanese industries. The Committee considers the following points:

(1) The Committee presents options to the Japanese public.

(2) The elements which constitute each option are stated below ((i)～(v)).

(i) Level of emissions

- Volume of emissions, reduction rates

(ii) Comparison of Japanese target level with those of other countries

- Comparison by the Marginal Abatement Costs (MAC) with;
  - EU target (20% reduction below 1990 level)
  - US target (14% reduction below 2005 level)
- Volume of emissions of Japan in the case where the developed countries in aggregate are to reduce their emissions by 25% below 1990 level with (a) equal MAC and (b) equal total abatement costs as percentage of GDP for each developed country

(iii) Measures and policies to be introduced

- The measures and relevant policies to be introduced in order to achieve each option are specified with regard to such major advanced technologies as solar power generation, next generation vehicles and energy-efficient houses.

(iv) Impacts on Japanese society and economy

- Growth or decline of GDP in each option, impact on employment and household burden, when the target in each option is to be achieved

(v) Relationship with the long-term goal, costs incurred when relevant measures are not taken

(3) Three types of models described as follows are combined and analyzed. The outputs of these analyses lead to formulating options:

(i) Models comparing the Japanese target with those of other countries by way of MAC

These models put emphasis on optimization of costs and consistency among regions by way of sectoral bottom-up models which encompass the whole world, and evaluate fairness based on indicators including MAC.

- DNE21+ --- Model established by RITE (Research Institute of Innovative Technology for the Earth)
- AIM/Enduse [Global] --- Model established by NIES (National Institute for Environmental Studies)

(ii) Models accumulating domestic technologies in a detailed manner

These models analyze the state of energy utilization and the prevalence of relevant technologies in each sector, by rigorously applying sectoral bottom-up approaches.

- Model established by the Institute of Energy Economics
- AIM/Enduse [Japan] --- Model established by NIES

(iii) Models analyzing impacts on economy

These models analyze economic impacts when the target of each option is achieved.

(General equilibrium model)

- General equilibrium model established by JCER (Japan Center for Economic Research)
- AIM/CGE [Japan] --- Model established by NIES
- KEO Model

(Macro model)

- Macro model established by JCER

※ Schedule related to the progress of discussion at the Committee

- 1st meeting (November 25, 2008)
  Whole procedure of consideration at the Committee
- 2nd meeting (December 18, 2008)
  Perspective on possible multiple “options”
- 3rd meeting (January 23, 2009)
  Report on the result of provisional analysis
  Consideration of options to be officially analyzed

- February 12, 2009
  Interim report to the Council
  Decision on options to be officially analyzed
- 4th meeting (February 19, 2009) & 5th meeting (February 24, 2009)
  Hearing from stakeholders, including those of Japanese industries
- 6th meeting (March 27, 2009)
  Report on the result of official analysis
  Submission of multiple options

4. Result of official analysis

Options presented at the 6th meeting of the Committee held on March 27, 2009, are in the annex to this submission:

It should be noted that, in each option, not only emission reductions but also international comparison, measures and policies, and impacts on economy are analyzed.

These analyses indicate options related to domestic emission reduction targets of greenhouse gases (GHG) only. They do not include either removals by forest sinks or emission reductions by offset. Just for a reference, Japan's target in the first commitment period of the Kyoto Protocol is 6% reduction below 1990 level, which amounts to 0.6% reduction below 1990 level when it comes to domestic mitigation efforts of GHG emissions, along with 3.8% removals by forest sinks and 1.6% emission reductions by flexibility mechanisms.

5. Future schedule

With respect to the options presented by the Committee, the GOJ will hear opinions from the public through public comments and the discussion by the Council. Through this process, the GOJ will decide and announce Japan's mid-term target by June 2009.

ANNEX

Option	Emission Reductions by 2020			Policies & Measures	Impacts on Economy				
	GHG emissions (Mn t-CO2e)	From 2005 (%)	From 1990 (%)		Accumulated GDP reduction by 2020 (%)	Increase of private capital investment in 2020 (trillion yen, %)	Increase of unemployment in 2020 (thousands person, %)	Decrease of household disposable income in 2020 (thousand yen, %)	Increase of household utility cost in 2020 (thousand yen/year, %)
1. Continuation of current efforts ("Long-term Outlook on Energy Supply and Demand") / comparable to targets of EU and US	XXX	-4	+4	Improve efficiency of equipments based on the trend of current technology development ; replace equipments by new ones with such efficiency at the time of service life	Baseline in relation to Options 3, 5 and 6				
2. 25% reduction by developed countries in aggregate with equal MAC	XXX	-6 ~-11	±0 ~-3						
3. Maximum introduction of technology (revised) ("Long-term Outlook on Energy Supply and Demand") (Strengthened measures for flow)	XXX	-14	-7	Replace equipments by the most advanced ones when introducing new ones (flow) with some regulations	-0.5~ -0.6%	-1~+3 (-0.8~+3.4%)	+110~+190 (+0.2~+0.3%)	-40~-150 (-0.8~-3.1%)	+20~+30 (+13~+20%)
4. 25% reduction by developed countries in aggregate with equal total abatement costs as percentage of GDP	XXX	※	※						
5. Strengthened and compulsory measures for stock and flow	XXX	-21 ~-22	-15 ~-16	Replace equipments by the most advanced ones when introducing new ones with compulsory measures; replace even existing equipments (stock) by the most advanced ones before service life	-0.8~ -2.1%	±0~+8 (-0.2~+7.9%)	+300~+490 (+0.5~+0.8%)	-90~-390 (-1.9~-8.2%)	+60~+80 (+35~+45%)
6. 25% reduction by each developed country	XXX	-30	-25	Replace almost all new/already existing equipments by the most advanced ones; decrease activities (production amounts) by carbon pricing policy	-3.2~ -6.0%	-13~+11 (-11.9~+12.5%)	+770~+1200 (+1.3~+1.9%)	-220~-770 (-4.5~-15.9%)	+110~+140 (+66~+81%)

※ Option 4 is still being studied.