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Item 4 of the provisional agenda

Scientific, technical and socio-economic aspects of mitigation of climate change

Views on the organization of the in-session workshop on mitigation

Submissions from Parties

1. The Subsidiary Body for Scientific and Technological Advice (SBSTA), at its twenty-first session, requested the secretariat (FCCC/SBSTA/2004/13, para. 20) to organize, under the guidance of the Chair of the SBSTA, an in-session workshop during its twenty-second session in order to continue to exchange information and share experiences and views on practical opportunities and solutions for mitigation that contribute to sustainable development, focusing on the following topics:
 - (a) Factors that affect mitigation technology innovation, deployment and diffusion, including international cooperative efforts, and identification and removal of barriers
 - (b) Socio-economic aspects of mitigation, such as costs and benefits, co-benefits, poverty reduction and economic impacts, including spillover effects.
2. The SBSTA invited Parties to submit to the secretariat, by 14 February 2005, their views on the organization of the in-session workshop, for compilation into a miscellaneous document.
3. The secretariat has received nine such submissions. In accordance with the procedure for miscellaneous documents, these submissions are 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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** This submission is supported by Romania.

PAPER NO. 1: AUSTRALIA

**Submission by Australia to the UNFCCC
18 February 2005**

Views on the Scientific, Technical and Socio-Economic Aspects of Mitigation

The twenty-first session of the Subsidiary Body for Scientific and Technical Advice in June 2004 (SBSTA-21) requested the secretariat to organize an in-session workshop during its twenty-second session (SBSTA 22), and invited Parties to submit their views on the organization of this workshop. Australia welcomes the opportunity to provide views on the topics identified and other information that may be of use to the secretariat and Chair of SBSTA when organising the workshop.

The SBSTA 21 workshop facilitated a useful sharing of views among Parties on mitigation technology innovation, deployment and diffusion, and practical solutions for mitigation that contributes to sustainable development. Key outcomes from the workshop included:

- highlighting a number of developed and developing country Parties' experiences with the development and implementation of a range of technologies that are reducing greenhouse gas emissions, whilst also contributing to sustainable development and a range of other environmental and social benefits; and
- noting the critical importance of international cooperation to the innovation, development and deployment of greenhouse gas reducing technologies. Australia is looking forward to further discussing experiences of international technology cooperation at SBSTA 22.

The two topics agreed for the SBSTA 22 workshop build on SBSTA's recent deliberations under this agenda item and provide a useful framework for Parties to continue to exchange information and share experiences and views on practical opportunities and solutions for mitigation that contribute to sustainable development.

Australia is looking forward to discussing lessons learned and next steps under this agenda item at COP 11.

Factors that affect mitigation technology innovation, deployment and diffusion including international cooperative efforts, and identification and removal of barriers.

New technology development and the deployment of existing mitigation technologies needs to be accelerated to deal with the long term challenges of climate change. International collaboration is one means to do so. The SBSTA 22 workshop will provide an opportunity for all Parties to learn lessons from a range of existing international cooperative efforts on mitigation technology that are occurring both within and outside of the UNFCCC.

There are a range of international bilateral, regional and plurilateral cooperative initiatives that complement work under the UNFCCC on various issues (including technology transfer, adaptation, policies and measures, capacity building). A multiplicity of cooperative mechanisms allows Parties to tailor their work to the objectives and nature of the problem being tackled, as well as giving them the flexibility to respond to their specific circumstances.

Australia supports case study presentations at the workshop that reflect:

- the range of international cooperation on mitigation technology;

- the pros and cons of different approaches; and
- the lessons learned regarding cooperative working arrangements.

Australia supports presentations from Parties as well as business representatives and others involved in these initiatives. Australia suggests that joint presentations from different partners involved in the same initiatives would be a useful way of highlighting different perspectives and lessons learned.

Australia is an active participant in a number of international technology cooperative activities, including:

- the Renewable Energy and Energy Efficiency Partnership;
- the International Partnership for a Hydrogen Economy;
- the Carbon Sequestration Leadership Forum; and
- the Methane to Markets Partnership.

Australia also has a number of bilateral climate change partnerships to take practical action to reduce greenhouse gas emissions, which include working together on technology development and deployment.

Australia is involved in regional initiatives as a way of involving scientists, business and policy makers to share information, and build linkages, on greenhouse gas mitigation. These include:

- the Asia-Pacific Seminar;
- the Asia Pacific Network for Global Change Research; and
- co-hosting an APEC Workshop on integrating climate change issues into long-term business strategies in April 2005.

Australia would welcome the opportunity to share the experience we have gained through these international partnerships at the SBSTA 22 workshop.

Socio-economic aspects of mitigation, such as costs and benefits, co-benefits, poverty reduction and economic impacts, including spillover effects.

The Australian Government has in place a comprehensive Climate Change Strategy and has implemented a range of measures to reduce Australia's greenhouse gas emissions. As an example of the positive co-benefits of greenhouse gas mitigation, the Australian Climate Change Strategy is delivering a lower greenhouse signature while maintaining a strong and growing economy.

As the co-benefits of mitigation activities improve the attractiveness, and therefore the longevity, of outcomes, it would be useful to hear the experiences of Parties and practitioners with factoring in the consideration of multiple co-benefits when designing mitigation activities. Relevant presenters might include developers of greenhouse gas projects, Parties working cooperatively to transfer technologies to developing countries through bilateral or regional partnerships, and businesses working on greenhouse mitigation activities in developing countries.

It would be useful to focus the workshop on a number of case studies: for example, the co-benefits of energy efficiency and cleaner energy technology development and deployment. This focus is potentially of interest to all Parties as the impact of energy developments on greenhouse gas emissions, air pollution, the land and water are significant, and addressing these impacts is important given their links to a range of serious health problems. In terms of energy efficiency, it is widely acknowledged that energy efficiency activities can deliver greenhouse gas mitigation as well as a host of co-benefits including sustainable economic and broader environmental outcomes, and improved productivity.

PAPER NO. 2: CANADA

**Submission by the Government of Canada
Views on Scientific, Technical and Socio-economic Aspects of Mitigation**

At its twentieth session, the Subsidiary Body for Scientific and Technological Advice (SBSTA21) agreed to continue focusing its work on exchanging information and sharing experiences and views among Parties on practical opportunities and solutions that contribute to sustainable development and facilitate implementation of the Convention.

It requested the secretariat to organize an in-session workshop to continue this work and invited Parties to submit views on the organization of the in-session workshop (FCCC/SBSTA/2004/L.27). Canada welcomes the opportunity to do so.

Canada commends the secretariat for its organization of the workshop on mitigation held at SBSTA21 and notes the value of the material presented there. It demonstrated that there are many existing technologies and practices available to both developed and developing countries that have the potential to reduce greenhouse gas emissions and contribute to sustainable development, and that more effort is needed to overcome the barriers to broader application of these technologies and practices. In particular, Canada noted with interest the need for sustainable energy development, comprised of both technological and/or energy efficiency solutions – and the numerous win-win opportunities pertaining to both.

The workshop should be organized into panels that could include speakers from private sector, NGOs, and governments to address the topics identified by SBSTA21, and highlighted below.

Factors that affect mitigation technology innovation, deployment and diffusion, including international cooperative efforts, and identification and removal of barriers

A sustainable long-term approach to technology is intrinsic to the transition to a lower carbon economy. Canada considers that providing both push and pull incentives to invest in developing, deploying and diffusing transformative environmental technologies to reduce emissions at home and abroad is key. It could be useful to share experiences with R&D incentives as well as demand-side drivers, and to explore solutions that aim to bridge the gap between current technology and solutions for the longer-term.

Canada notes the importance of international technology collaboration, in spurring innovation, as well as deployment and diffusion of both existing and new technologies. Canada participates in several plurilateral initiatives currently underway, as we have particular expertise in many of these areas. In particular, in the area of carbon dioxide capture and storage (CCS), we are advancing knowledge and practice in the areas of monitoring, pilot/demo projects, and technology (through research, development, demonstration and technology roadmaps). We are currently involved in several international efforts that consider the development and/or deployment of CCS technologies, including the Carbon Sequestration Leadership Forum and the IEA GHG R&D Programme. We would also be pleased to share our experiences with other Parties. Several Canadians have been involved in working on the upcoming IPCC Special Report on CCS and we look forward to its release. We consider CCS to have significant potential as a GHG mitigation option and look forward to further dialogue on this issue.

It may also be valuable for Parties to present lessons learned from leveraging the corporate tax system to enhance the deployment and diffusion of innovative mitigation technologies. By providing accelerated depreciation tax incentives for best available technology, the decision to replace outdated equipment with more efficient technology may become financially feasible sooner. The workshop could explore the

extent to which the private sector has utilized such incentives and to identify perceived barriers that may cause low uptake rates. Also, the identification of conflicting tax incentives that may discourage the uptake of best available technology may be of value.

In addition, the technology needs assessment (TNA) process provides a valuable tool that allows countries to engage all relevant stakeholders in order to identify and prioritize technology needs so that finite financial resources can be efficiently allocated to the most urgent needs first. It would be interesting to hear from Parties who have successfully employed TNAs to obtain financing for the highest priority technology needs, for example Ghana.

In addition to other barriers, such as the need to provide an enabling environment, lack of access to financing can be a significant barrier in the deployment of both existing and new technologies. Engaging the international financial community, including the private sector, in helping to find innovative ways to finance projects in order to close the “valley of death” between technology development and commercialization is key to managing this challenge.

Moreover, the outcomes of the Workshop on Innovative Options for Financing the Development and Transfer of Technologies (FCCC/SBSTA/2004/11) provided a rich set of actions that both governments and the private sector can apply to remove barriers to the uptake of mitigation technology. It would be useful for finance providers to present experiences in using project development toolkits, including handbooks and risk assessment models. These can all aid project developers seeking to finance and implement best available mitigation technology, which may be associated with greater cost or risks over those of conventional technology. The lessons learned from this workshop could feed into the EGTT as it develops its practitioner's guide to assist project developers in preparing project proposals that will meet the standards of international finance providers.

Socio-economic aspects of mitigation, such as costs and benefits, co-benefits, poverty reduction and economic impacts, including spillover effects

Policies aimed at mitigating greenhouse gases can have positive or negative side effects on society (ancillary effects). Naturally, the objective is to maximize the positive side effects, or co-benefits of climate change policies as they are implemented. Many win-win policy approaches, including technology cooperation, meet sustainable development goals and/or provide added public health benefits such as improved air and water quality, making them more attractive to policymakers, thus easier to implement. Additionally, opportunities to improve energy efficiency and diversify sources of energy supply are viewed as beneficial on all fronts. It would be helpful for Parties to share their experiences in this regard, and to look at investment taken to meet other policy objectives that may also have positive climate change benefits.

Moreover, according to the IPCC TAR, however, there is little agreement on the definition, reach, and size of ancillary benefits, and on methodologies for integrating them into climate policy. It may also be useful to learn of efforts undertaken to develop quantitative estimates of the ancillary benefits and costs of mitigation policies, in order to undertake full cost-benefit analyses of policy.

Spillover effects refer to the effects on one economy of policies implemented in another, and include effects on trade, carbon leakage, as well as transfer and diffusion of environmentally sound technology. Consistent with the focus of this agenda item, it may be worthwhile to examine spillover effects on technology diffusion, as a way of identifying and eliminating barriers to the widespread technology uptake necessary to transition to a lower carbon global economy.

Any discussion of trade-related spillover effects needs to consider the effects on all countries of policies undertaken by other countries, including effects on competitiveness and global emissions. Countries have responded in various ways to the commitments in the Convention and the Kyoto Protocol – some are implementing policies to meet their Annex B commitments while others have chosen not to at this time. In addition to examining the effects of certain abatement policies, any analysis must also examine the effects of not implementing abatement policies on other linked economies.

Canada looks forward to participating fully in upcoming workshops on mitigation and views the continuation of sharing of information and views as central to determining next steps under this agenda item. We therefore hope that as much opportunity as possible will be afforded to do so prior to determining next steps on this agenda item at SB23, a view that will be elaborated in the submissions called for by August 5, 2005.

PAPER NO. 3: CHILE

Submission

Transport and Mitigation

According to the document FCCC/SBSTA/2004/L.27, point 6, Chile presents its submission related to Mitigation as a contribution to the in-session workshop that will be held at the twenty-second session of the SBSTA, in May 2005.

According to updated information, energy production (electricity and heat) is the largest emitter sector of GHG, accounting for 35,3%. The second biggest emitter is Transport sector, which accounts for 24,0% of overall emissions (Source: IEA Statistics, CO₂ Emissions From Fuel Combustion, 1971-2002, IEA-OECD, Paris, 2004 Edition; Table 2002 CO₂ emission by Sector, page II.75. These statistics do not account for LULUCF related emissions). Mitigation efforts must be done upon existing emissions, so options for mitigation in the Transport sector are crucial to control GHG emissions.

Transport emissions are growing all over the world. Trends in this sector show that, although improvements in technology and fuels have reduced the emissions of vehicles on an individual basis, increasing ownership and use of cars and trucks, will pull up overall transport emission from currently 6 to 14 Gigatonnes of CO₂-eq in 2050. (Source: Mobility 2030, The Sustainable Mobility Project, World Business Council for Sustainable Development, Geneve, 2004; page 37, Figure 2.13)

Emissions from transport sector are growing faster in developing countries. This poses major environmental problems to medium and big sized cities in the developing world, affecting the people's quality of life. Transport management related problems are local pollution, time losses, noise, traffic congestion, accidents, etc.

Emissions control strategies for Transport sources are threefold. First, better technologies can improve overall efficiency, needing less fuel consumption for the same amount of miles or kilometres. Second, changes in fuel use including biofuels and hydrogen could reduce significantly emissions by diminishing the use of fossil fuels. This second approach was covered in the in-session workshop at the twenty-first session of the SBSTA. Third, changes in the Transport management system, including mode sharing, travel patterns, dedicated lanes for public transport, etc. could lead to important emission reductions of GHG.

As an example of this third approach, Chile has a Public Transport Project named Transantiago. This project is a whole redesign of the Public Transport system in Santiago of Chile, whose goal is to improve the people's quality of life in the Metropolitan Region of Santiago, through an integrated, efficient, and environmentally sound transport service.

The project accounts for reductions of more than 300.000 ton of CO₂-eq per year (Source, Transantiago's PDD; Coordinación General de Transantiago, 2004, table E.8).

Given the above information and the importance of the Transport issues for Chile and other developing countries, the Chilean Government requests the UNFCCC secretariat the inclusion of highlights on Transports mitigation options, specially referred to Transport Management Systems, in the in-session workshop that will be held at its twenty-second session,. A comprehensive approach to the mitigation options in the Transport Sector will be very helpful to stakeholders and transport authorities, in both developed and developing countries, in order to improve transport services in their countries and deal with GHG emissions.

PAPER NO. 4: JAPAN

**Submission by the Government of Japan
Views on the Organization of the In-session Workshop on Mitigation**

This submission is in response to FCCC/SBSTA/2004/L. 27. Japan welcomes this further opportunity to share the views on the agenda items on the scientific, technical and socio-economic aspects of mitigation.

I. Organization of the Workshop

Japan highly evaluates the previous in-session workshops on this agenda item as significant occasions to exchange views among different Parties. Japan believes that these workshops provide useful opportunities for exchanging concrete and applicable information as well as respond appropriately to each Party's needs, and therefore should be continuously organized.

The in-session workshop at the SBSTA 22 should focus on exchange of practical information and experiences which facilitate the implementation of the Convention, as noted in FCCC/SBSTA/2004/L.27. From the in-session workshop at the SBSTA 21, Japan learned that there is no "silver bullet" mitigation measure applicable to all countries and it is important to build a portfolio of mitigation measures which are suitable for each Party's circumstance. Therefore, main aim of in-session workshop at the SBSTA22 should be to learn other Party's experience. For that purpose, the workshop should be based on concrete and specific examples, rather than comprehensive discussion, and sufficient time should be allocated for the discussion, as was in SBSTA21.

Japan has accumulated knowledge on various mitigation measures, such as improvement of energy efficiency and succeeded in reducing greenhouse gases emissions. Based on such experiences, Japan will contribute proactively to the work under this agenda item, and would be pleased to make a presentation at the workshop at the SBSTA22.

II. Workshop Topics

(a) Factors that affect mitigation technology innovation, deployment and diffusion, including international cooperative efforts, and identification and removal of barriers

To achieve ultimate objective of the Convention and address climate change, technology plays an important role. Needless to say, it is important for international society to promote both diffusion of existing technology and development and deployment of innovative technology. To this end, Japan proposes that following three points should be taken into consideration for the discussion in the workshop at the SBSTA22.

(1) Separate discussions on existing technologies and innovative technologies

Existing technologies could reduce greenhouse gas emissions in the relatively short term, while development and deployment of innovative technologies should be addressed in the longer and strategic perspective. Therefore different attentions need to be paid in planning policies and measures for each technology, and it is pragmatic to have separate discussions.

For successful discussion, Japan proposes that elements which lead to successes, challenges, and solutions should be extracted from the analysis of specific examples and Parties should discuss on these elements.

(2) Role of government and international cooperation which facilitate the development of innovative technologies

Government plays a critical role for the development of innovative technologies (e.g. carbon sequestration, hydrogen technologies), because it requires longer term and accompanies high risks. For the efficient development of innovative technologies, it is necessary to study how innovative technologies should be developed through international

cooperation efficiently. Therefore exchanging information and views on the role of both government and international cooperation is useful. For international cooperation, it is informative to focus on its future challenges on development and utilization of innovative technologies and measures for promoting them, taking into consideration progress of existing international initiatives.

Among possible topics, Japan proposes that successful examples of energy efficiency and renewable energy (e.g. photovoltaics, biomass) technologies should be demonstrated, and exchange of information and views should be made based on analysis of factors which bring about successes (e.g. governmental policies on technology development, laws or regulations, initiatives by private sectors).

(3) Successful examples of diffusing existing technologies through international frameworks

Potential of greenhouse gas emission reduction with existing technologies is quite large, given the fact that global diffusion of existing technologies is not yet enough.

For promoting diffusion of existing technologies, Japan considers that measures to aim at achieving the world highest energy efficiency or highest energy intensity in specific social areas (e.g. industry, transport, residential, etc.) or industrial sectors (e.g. steel, cement, power, etc.) will be effective and exchanging information and views on these measures will be useful.

Furthermore, for global diffusion of existing technologies it is essential to establish a framework which provides developed countries with incentive for technology transfer, and also contributes to developing countries' sustainable development. From this viewpoint, CDM scheme should be, if necessary, examined for further improvement, including its institutional reform, as well as Parties take advantage of opportunities provided by the existing CDM scheme.

Considering relationship between development/diffusion of mitigation technologies and laws, administrative tools and economic incentives etc is also essential. While the cases where standards or target-setting by government activate innovation were reported in the in-sessional workshop at SBSTA21, collections and studies on above-mentioned institutional aspects is necessary for encouraging development and diffusion of mitigation technologies and promoting mitigation measures at global scale.

(b) Socio-economic aspects of mitigation, such as costs and benefits, poverty reduction and economic impacts, including spillover effects

At the SBSTA21, many countries referred to the importance of socio-economic aspects of mitigation. Among various aspects, Japan thinks that co-benefit is a key.

Mitigation could provide co-beneficial opportunities such as improvement of energy security through efficient energy use or introduction of renewable energy sources, improvement of atmospheric environment by reducing NOx and SOx emissions, and higher industrial competitiveness through more efficient energy use as well as emission limitation of greenhouse gases. Especially actions related to energy efficiency, which attracted interests from both developed and developing Parties at the previous in-sessional workshop, can provide win-win opportunities which contribute to both curbing greenhouse gas emissions and sustainable development. To facilitate mitigation measures which contribute to broad social benefits, examples of co-benefits derived from energy efficiency improvement should be demonstrated in an easily understandable way (e.g. use of specific figures). Besides, other examples where mitigation measures are effective for overcoming environmental problems such as air pollution, should be also introduced.

There are some win-win cases of climate change policy and other policies. Such examples could be collected for the reference by Parties so that they will help countries develop and select appropriate policies that will lead to sustainable development and mitigation in different Parties.

SUBMISSION BY LUXEMBOURG ON BEHALF OF THE EUROPEAN COMMUNITY AND ITS MEMBER STATES

This submission is supported by Romania.

Brussels, 11 February 2005

**Subject: Scientific, Technical and Socio-economic Aspects of Mitigation.
Views on the organization of the in-session workshop to be held during the
22nd session of the SBSTA (document FCCC/SBSTA/2004/L.27).**

Luxembourg, on behalf of the European Community and its Member States, welcomes the opportunity to submit its views regarding the organization of the in-session workshop, as requested in document FCCC/SBSTA/2004/L.27.

Introduction

The EU is strongly committed to combating the causes of anthropogenic climate change jointly with other Parties through the UN Framework Convention on Climate Change and the Kyoto Protocol. We consider the exchange of information, which is taking place through the in-session workshops process started at SBSTA20, to be a useful contribution to collective learning and sharing of experiences and views on mitigation. We encourage Parties to use this process to facilitate the implementation of the Convention.

As regards the in-session workshop at SBSTA22, the EU wishes to share the following with others.

Format and organization

The EU found the in-session workshop held during SBSTA21 to be well formatted and appreciated the time made available for discussion. The EU therefore proposes keeping the same format for the coming workshop ensuring that a report is presented at the end of it on possible conclusions drawn from the presentations and discussion to follow, so to assist Parties in the continuation of their work in this area at SBSTA22 and later.

However, if required, the EU proposes to extend the in-session workshop to a full day.

Content

The SBSTA's work under the agenda items on mitigation, and impacts, vulnerability and adaptation, is providing valuable material to enable lessons to be learned. The EU expects that SBSTA will be able to inform CoP11 on these lessons, including practical opportunities and solutions in mitigation, and levels of mitigation necessary to avoid reaching limits to adaptive capacity.

The agreed topics by the SBSTA22 workshop will provide an opportunity to explore more deeply issues related to the implementation of the Convention, in terms of both shorter and longer term action.

Innovation in mitigation technology is already partially guided by the international community's awareness of climate risk. The EU recognizes that targets and goals as well as relevant policy instruments are fundamental factors in driving technology innovation, deployment and diffusion and in creating an environment favourable for such development. There are many types of instruments including subsidy schemes, fiscal measures, regulations, emissions trading schemes, voluntary agreements, direct public investments, R&D support, infrastructure planning, and labeling.

The EU believes there is great value in looking more deeply into the socio economic aspects of mitigation. Since climate change is a serious risk to sustainable development, the issue merits comprehensive consideration that covers social, economic and environmental costs, benefits and co-benefits at different locations and time scales.

Where relevant, the presentations should note the connections between the two topic areas 5(a) and 5(b) of document FCCC/SBSTA/2004/L.27. The socio-economic ramifications of implementing different policy instruments is one example of such a case.

The EU has some suggestions for the presentations for the next SBSTA22 workshop. In considering these ideas, the EU has attempted to cover areas or sectors that may not have received enough attention in the previous workshops. The EU will be happy to share its experiences on the areas below:

- policy mechanisms and regulatory frameworks to encourage deployment and diffusion in the near term of existing technologies, in particular renewable energies and energy efficiency, that also have potential for substantial GHG reductions in the long term;
- the role of urban planning and associated transport and housing policies to reduce GHG emissions and to promote sustainable development (cleaner air, safer roads, a better mobility, ...).
- rate of increase in energy efficiency and current and future technical and socio-economic potentials to further improve energy efficiency.

The EU hopes to see the role of renewable energies explored in relevant presentations due to their large mitigation potential and numerous co-benefits.

New Zealand submission on the SBSTA workshop on: Scientific, technical, and socio-economic aspects of mitigation of climate change

This submission responds to FCCC/SBSTA/2004/L.27.

New Zealand welcomes the opportunity to further exchange information and share experiences and views at the in-session workshop to be held at Bonn, during SBSTA 22.

Participation and structure of the workshop

New Zealand sees the workshop as an appropriate forum to share lessons about different mitigation activities applied in a variety of developmental contexts and national circumstances with a view to informing SBSTA as it proceeds to establish a work programme under the mitigation agenda item.

New Zealand considers wide ranging participation in the workshop, including involvement by industry and NGO representatives, as critical to its success. Sharing experiences by practitioners involved in implementing mitigation activities and discussion of those experiences usefully disseminates and encourages replication of lessons learned from mitigation efforts carried out to date. Ensuring presentations are delivered by representatives from countries in all stages of development will help to add value to the mitigation plans of as many participants as possible. Real-world case-studies will help to reinforce the value of mitigation technology innovation, deployment, and diffusion.

Organising discussion of mitigation technologies by sector type may enable presentations to be more focused. Including LULUCF mitigation options amongst these may interest countries with natural resource based economies and better reflect the diversity of future mitigation challenges.

Content of presentations

(a) Factors that affect mitigation technology innovation, deployment, and diffusion, including international cooperative efforts, and identification and removal of barriers

New Zealand considers that the decision-making process underpinning investment in mitigation could usefully be explored by the workshop. Many Parties may benefit from a better understanding of the barriers and co-benefits that could influence investment decisions. New Zealand sees *timing* of technology innovation, deployment, and diffusion as a critical aspect to address in the workshop. Investment decision making with regard to energy infrastructure and other facilities with a long-life cycle imply choices about which greenhouse gas emissions pathways remain feasible. Discussion of barriers and co-benefits at the workshop may assist to encourage more informed choices to be made.

New Zealand and many other Parties have a particular interest in discussing the innovation, deployment, and diffusion of agricultural emissions mitigation technologies as these emissions are significant for many Parties. Presentations could usefully focus on sharing information on emerging agricultural emissions mitigation technologies, including possible co-benefits of mitigation technologies such as increased agricultural productivity and resilience against climate variability and change.

Small scale mitigation efforts might also be addressed by the workshop, particularly given that agricultural technologies and forestry initiatives are often small scale. As a result, recognition of agricultural technologies and forestry impacts on greenhouse gas emissions profiles require wide-scale uptake. Small scale agricultural and forestry mitigation initiatives need encouragement to up-scale to the point where they are recognised by, and reported to, the UNFCCC. Facilitating the uptake of, and reducing barriers to, such activities by multiple small players should be an aim of the workshop.

(b) Socio-economic aspects of mitigation, such as costs and benefits, co-benefits, poverty reduction and economic impacts, including spillover effects

New Zealand considers that serious mitigation action requires a change in thinking about costs. The workshop presents a good opportunity to explore these new ideas. New Zealand sees discussion about accounting for the costs of investment decisions *over their life cycle* including climate change, public health, and socio-economic impacts as important. These considerations are particularly relevant to the costs, benefits, and co-benefits, of clean energy deployment and transport infrastructure. An example to consider would be ‘What are the longer-term implications of creating a dependence on private car transport for a rapidly growing urban centre?’

New Zealand believes each Party should be free to meet its mitigation responsibilities in a manner appropriate to its national circumstances and with a view to minimising cost, which needs to encompass socio-economic costs for both the present and future generations. Mitigation should therefore also be considered in terms of securing economic resilience for future generations. Consideration of presently faced mitigation costs needs to be balanced by consideration of the cost, or avoided cost, of future impacts of climate change.

Coordination of decision-making across governmental structures and funding agencies will help reduce barriers to action. New Zealand sees discussing environmental co-benefits as a further necessary consideration in discussing socio-economic aspects of mitigation. The integrity of ecosystems and the value of the services they provide can be protected and enhanced by mitigation efforts. Presentations at the workshop should therefore include methods of valuing these benefits, and how these values can be integrated into cost-benefit assessments of mitigation actions.

New Zealand sees value in discussing the costs, benefits, and co-benefits of different levels and timing of global mitigation for different regions. Such a discussion would be especially valuable for regions made up of small island developing states that are in many cases the most vulnerable to the impacts of climate change. This sub-theme may also present an opportunity to compare current mitigation commitments’ impacts on developing country Parties with the impact of climate change on developing country Parties in the absence of any mitigation effort.

PAPER NO. 7: SAUDI ARABIA

SAUDI SUBMISSION ON
“SCIENTIFIC, TECHNICAL AND SOCIO-ECONOMIC ASPECTS OF
MITIGATION”

Saudi Arabia would like to thank the UNFCCC Secretariat for the successful preparation of the in-session workshop on scientific, technical and socio-economic aspects of mitigation and the continuation of this workshop during its twenty-second session (May 2005) in order to continue to exchange information and share experiences and views on practical opportunities and solutions for mitigation that contribute to sustainable development. We welcome the opportunity to submit our views on the topics referred to in Paragraph 6 of document FCCC/SBSTA/2004/L.27 and on the upcoming workshop to be held during the 22nd session of the SBSTA.

Saudi Arabia would like to emphasize that any exchange of information regarding Scientific, technical and socio-economic aspects of mitigation must be done within the context of Article 4 of the Convention, where commitments for Annex I and non-Annex I have been clearly outlined and identified. The Principle of Common but Differentiated Responsibilities is an essential element for any scientific or technical assessment under mitigation. Non-Annex I commitment under mitigation must be confined to Article 4, Paragraphs 1 and 7 of the Convention and should be in accordance with their specific national and regional development priorities, objectives and circumstances, **without introducing any new commitments**, taking into account the provisions of Article 4, Paragraphs 4, 5, 7, 8 and 9 of the Convention. Any development on mitigation shall be aimed at ANNEX-I Parties meeting their commitments under the Convention, in particular Article 4 paragraphs 2 and 7. Hence, the ground must be provided to share experiences and to take up practical opportunities and solutions for mitigation that contribute to sustainable development plans precisely in the area of the negative impacts of Annex I Parties response measures on non-Annex I Parties including **negative spillover effects** from potential mitigation measures taken by Annex I parties according to Paragraph 5 (b) of document FCCC/SBSTA/2004/L.27. Discussions under this agenda item must be limited to the mandate of SBSTA as described in Article 9 of the Convention.

Saudi Arabia believes that an essential part of this agenda item is to advance robust solutions and opportunities to minimize the negative impacts of Annex I Parties response measures on non-Annex I Parties including negative spillover effects from potential mitigation measures taken by Annex I parties. This agenda item needs to further elaborate on the work of the IPCC-TAR and WGIII on spillover effects and impacts of response measures. This agenda item shall advance options to reduce impact of response measures and spillover effects.

The cost of mitigation must be addressed in such a manner as to minimize the potential economic impacts on developing countries that are heavily dependent on fossil fuel export. Developing countries have raised concerns about the potential climate change related energy policies undertaken by developed countries to mitigate greenhouse gas emissions as emphasized in Article 4, Paragraph 8 of the Convention, as well as Article 2, Paragraph 3 and Article 3, Paragraph 14 of the Kyoto Protocol, which mainly stipulate that Annex I parties should meet the specific needs and concerns of developing countries arising from the impact of the implementation of response measures.

Saudi Arabia believes that any exchange of information under this agenda item must include information needed, and identification of possible measures that would cut emissions at the same time have minimal effects on oil producing developing countries such as removal of subsidies, restructuring the tax systems, enhancement of sinks, sequestration technologies and others. Hence, SBSTA needs to promote the exchange of information on **win-win** type policies and measures.

PAPER NO. 8: UNITED STATES OF AMERICA

**Submission of the United States
FCCC/SBSTA/2004/L.27
Views on the Scientific, Technical and Socio-economic Aspects of Mitigation
February 15, 2005**

The Twenty-first Session of the Subsidiary Body for Scientific and Technical Advice in December 2004 (SBSTA-21) requested the secretariat to organize an in-session workshop during its twenty-second session, and invited Parties to submit their views on the organization of this workshop. The United States welcomes the opportunity to provide its views.

The United States considers that the goal of this work should be to provide SBSTA participants with information regarding opportunities at the practical level, so as to better inform SBSTA's future work. We believe that SBSTA can promote mitigation activities by helping identify opportunities and solutions in areas that can reduce greenhouse gas emissions and address other sustainable development objectives.

We found the in-session workshop on mitigation at SBSTA-21 to be helpful in facilitating the sharing of experiences and views among Parties. We noted with interest the presentations on energy efficiency programs, which can reduce greenhouse gas emissions at a net negative cost, while also helping to meet other important sustainable development objectives, such as environmental protection, public health, and employment. Several workshop presentations spoke to the common challenges and circumstances of many countries, including the reliance on coal for electricity generation. These strong commonalities between countries underscore the value of these workshops in sharing experiences and learning from each other. Workshop presentations also highlighted the critical role of technology in addressing climate change, and we look forward to more discussion on the factors that further technology development.

Factors that affect mitigation technology innovation, deployment and diffusion

It is important to learn from the experiences of practitioners in industry and government on how they overcame barriers and transformed commercial markets to spur technological innovation and diffusion. We would like to hear in detail how emerging technologies have been successfully taken from idea to commercialization. Industry practitioners could, for example, present their experiences in the practical process of developing new technologies, describing how they perceived risks and opportunities, whether and how they overcame challenges and barriers, and the role governments might play in this process. For example, at a COP10 side event, American Standard highlighted the necessary conditions for investment and technology transfer. This presentation helped make clear that investors are more likely to invest in countries with attractive enabling environments. Real-life, practical examples such as this should be shared with a broader audience.

We would also like to hear from government and other experts who have helped industries spur innovation and overcome barriers to present their experiences on effective measures to further the development and deployment of new technologies. The U.S., among others, is working to further develop tools to quantify and verify emissions reductions at the national, corporate and project level. These tools help overcome some of the barriers to implementing renewable and energy efficiency projects, including by helping to attract financing, as well as ensuring that the results of actions can be credibly quantified. In addition, public-private partnerships have proven successful in assisting in the deployment of new technologies: successful efforts could be shared through the workshop.

Numerous innovative international cooperative activities are helping to further the innovation, deployment, and diffusion of mitigation technologies. The workshop could examine some of these

activities and reflect on the lessons learned to date. Several international fora have undertaken important work in furthering international cooperation on technology innovation and deployment, including the International Energy Agency, through its implementing agreements, and the Asia-Pacific Economic Cooperation forum. One such implementing agreement is the Climate Technology Initiative (CTI), under which the U.S., Austria, Canada, Denmark, Finland, Germany, Japan, Norway, and the U.K. work to facilitate the more rapid development and diffusion of climate-friendly technologies and practices in developing and transition countries.

The U.S. is involved in several multilateral initiatives to develop and deploy innovative mitigation technologies, and other countries and organizations have initiated activities at the regional or global level. There are also a significant number of bilateral relationships that are working to further mitigation technologies. It would provide an interesting perspective for countries involved in these partnerships to present their work, especially from those partnerships between developing and developed countries.

Considering case studies outside the climate arena of successful technology development may provide insights into factors that help further climate mitigation technologies. It is also useful to examine failures as well as successes, as exploring the reasons behind failures can help illuminate the path to success.

Socio-economic aspects of mitigation

During the course of SBSTA's consideration of this agenda item, many presentations have emphasized the importance of undertaking climate activities that contribute to other sustainable development goals. It is, however, often difficult to identify activities that have significant co-benefits. In our view, it would be useful to learn more about the kinds of tools and activities that could help identify significant opportunities order to help decision makers and practitioners more accurately characterize the benefits of their actions. In addition, a number of tools and methodologies have been developed to help decision makers at the local level identify such opportunities, and some of these are being applied internationally at this time.

Technology needs assessments (TNAs) provide one means to identify co-benefits and overcome barriers. Many developing countries have conducted TNAs, whereby they have engaged relevant stakeholders to ensure that a proposed technology path provides for multiple socio-economic benefits consistent with their sustainable development goals. For example, the TNAs conducted by Bolivia and Ghana with the assistance of the CTI illustrate how they have identified and overcome barriers, leading to project development and/or policy change with associated socio-economic and climate benefits.

The workshop and subsequent discussions should more fully explore the suite of costs and benefits of representative mitigation activities. A broader perspective on costs and benefits, including co-benefits, would provide a more complete understanding of the desirability of pursuing various mitigation options. This information could be provided through presentations that provide an overview of the anticipated costs and benefits of various climate mitigation options, and explores the implications of various assumptions, including discount rates, and of other benefits foregone.

PAPER NO. 9: UZBEKISTAN

The opinion on the scientific, technical and social-and economical aspects of climate change mitigation

The Republic of Uzbekistan supports the efforts of FCCC Secretariat in the area of scientific, technical and social-and economical aspects of climate change mitigation (FCCC/SBSTA/2004/L.27 paragraph 6). We think it to be expedient to hold the inter-session workshop during the 22nd session to proceed with the exchange of information, experience and opinions on the practical possibilities and decisions in the area of climate change mitigation. The technologies using solar collectors for the heat energy supply of population and for the green houses heating are being introduced into practice in the Republic of Uzbekistan. In the remote places difficult of access the photo-electric installations are used which supply the shepherd farms with the electric power that was impossible before. The joint use of the solar and wind power installations provides for the sufficient power supply for TV relay in recreation area. Another area which is under development is the use of bio gas produced from the excessive active silt on the sewage plants as well as the domestic wastes as the low-calorie fuel. To our mind, besides the important and necessary exchange of opinions and experience in a form of dialogue communication the availability of the following items:

- reference books and information materials on the innovation and non-innovation financing of projects in the field of technology transfer
- tools for the risk management
- demonstrational projects

will ensure the successful implementation of the projects on the climate change mitigation.
