



SUMMARY OF THE WORKSHOP ON BEST PRACTICES IN POLICIES AND MEASURES: 11-13 APRIL 2000

The Workshop on Best Practices in Policies and Measures under the Framework Convention on Climate Change (FCCC) was held from 11-13 April 2000, at the Eigtvedts Pakhus, Ministry of Foreign Affairs, Copenhagen, Denmark. The Workshop aimed to: clarify the concept of best practices in policies and measures; identify the criteria used by countries to select, monitor and evaluate these practices; and enable countries to improve and enhance their reporting on best practice policies and measures.

The workshop was co-sponsored by Denmark and France and organized by the FCCC Secretariat in cooperation with the Chair of the Subsidiary Body on Scientific and Technological Advice (SBSTA). Over 140 participants attended, including representatives of governments, inter-governmental organizations (IGOs) non-governmental organizations (NGOs) and local governmental organizations (LGOs). Participants met in seven working groups to discuss national programmes, cross-cutting issues, indicators, methodological and institutional issues and best practices in policies and measures to address CO₂ emissions from energy supply and industry, CO₂ emissions from transport, household and commercial sectors, and emissions of non-CO₂ gases from energy, industry, agriculture, forestry and waste. A Chair's report of the Workshop will be presented to SBSTA-12, scheduled for 12-16 June 2000 in Bonn.

A BRIEF HISTORY OF THE FCCC AND THE KYOTO PROTOCOL

The FCCC was adopted on 9 May 1992, and was opened for signature at the UN Conference on Environment and Development in June 1992. It entered into force on 21 March 1994, 90 days after receipt of the 50th ratification. It has currently received 181 instruments of ratification.

COP-1: The first Conference of the Parties to the FCCC (COP-1) took place in Berlin from 28 March - 7 April 1995. In addition to addressing a number of important issues related to the future of the FCCC, delegates reached agreement on the adequacy of commitments and adopted the "Berlin Mandate." Delegates agreed to establish an open-ended *Ad Hoc* Group on the Berlin Mandate (AGBM) to begin a

process toward appropriate action for the period beyond 2000, including the strengthening of Annex I Parties' commitments through the adoption of a protocol or another legal instrument. COP-1 also requested the Secretariat to make arrangements for sessions of the subsidiary bodies on scientific and technological advice (SBSTA) and implementation (SBI). SBSTA serves as the link between the information provided by competent international bodies, and the policy-oriented needs of the COP. SBI was created to develop recommendations to assist the COP in the review and assessment of the implementation of the Convention and in the preparation and implementation of its decisions.

AD HOC GROUP ON THE BERLIN MANDATE: The AGBM met eight times between August 1995 and COP-3 in December 1997. During the first three sessions, delegates focused on analyzing and assessing what the possible policies and measures to strengthen the commitments of Annex I Parties could be, how Annex I countries might distribute or share new commitments and whether commitments should take the form of an amendment or a protocol. AGBM-4, which coincided with COP-2 in Geneva in July 1996, completed its in-depth analysis of the likely elements of a protocol and States appeared ready to prepare a negotiating text. At AGBM-5, in December 1996, delegates recognized the need to decide whether to permit Annex I Parties (developed country Parties and Parties with economies in transition) to use mechanisms that would give them flexibility in meeting their quantified emissions limitation and reduction objectives (QELROs).

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As the protocol was drafted during the sixth and seventh sessions of the AGBM, in March and August 1997, respectively, delegates streamlined a framework compilation text by merging or eliminating some overlapping provisions within the myriad of proposals. Much of the discussion centered on a proposal from the EU for a 15% cut in a basket of three greenhouse gases (GHG) by the year 2010 compared to 1990 emissions levels. In October 1997, as AGBM-8 began, US President Bill Clinton called for "meaningful participation" by developing countries in the negotiating position he announced in Washington. In response, the G-77/China distanced itself from attempts to draw developing countries into agreeing to new commitments.

COP-3: The Third Conference of the Parties (COP-3) was held from 1-11 December 1997 in Kyoto, Japan. Over 10,000 participants, including representatives from governments, IGOs, NGOs and the media, attended the Conference, which included a high-level segment featuring statements from over 125 ministers. Following intense formal and informal negotiations, Parties to the FCCC adopted the Kyoto Protocol on 11 December 1997.

In the Protocol, Annex I Parties to the FCCC agreed to commitments with a view to reducing their overall emissions of six GHGs by at least 5% below 1990 levels between 2008 and 2012. The Protocol also established emissions trading, Joint Implementation (JI) between developed countries, and a Clean Development Mechanism (CDM) to encourage joint emissions reduction projects between developed and developing countries. To date, 84 countries have signed and 22 have ratified the Protocol. The Protocol will enter into force 90 days after it is ratified by 55 States, including Annex I Parties representing at least 55% of the total carbon dioxide (CO₂) emissions for 1990.

COP-4: The Fourth Conference of the Parties (COP-4) was held from 2-13 November 1998 in Buenos Aires, Argentina, with over 5,000 participants in attendance. During the two-week meeting, delegates deliberated decisions for the COP during SBI-9 and SBSTA-9. Issues related to the Protocol were considered in joint SBI/SBSTA sessions. A high-level segment, which heard statements from over 100 ministers and heads of delegation, was convened on Thursday, 12 November.

Following hours of high-level closed door negotiations and a final plenary session, delegates adopted the Buenos Aires Plan of Action (BAPA). Under the BAPA, the Parties declared their determination to strengthen the implementation of the FCCC and prepare for the future entry into force of the Protocol. The BAPA contains the Parties' resolution to demonstrate substantial progress on: the financial mechanism; the development and transfer of technology; the implementation of FCCC Articles 4.8 and 4.9, as well as Protocol Articles 2.3 and 3.14 (adverse effects); activities implemented jointly (AIJ); the mechanisms of the Protocol; and the preparations for the first Conference of the Parties serving as the meeting of the Parties to the Protocol (COP/MOP-1).

SBI-10 AND SBSTA-10: The subsidiary bodies to the FCCC held their tenth sessions in Bonn, Germany, from 31 May - 11 June 1999, and began the process of fulfilling the BAPA. SBSTA considered topics such as Annex I communications, methodological issues and the development and transfer of technology. SBI discussed, *inter alia*, administrative and financial matters and non-Annex I communications. SBI and SBSTA jointly considered the mechanisms of the Protocol, AIJ and compliance.

COP-5: The Fifth Conference of the Parties (COP-5) met in Bonn, Germany, from 25 October - 5 November 1999. With over 3000 participants in attendance and 165 Parties represented, delegates continued their work toward fulfilling the BAPA. During the two-week meeting,

delegates deliberated decisions for the COP during SBI-11 and SBSTA-11. Ninety-three ministers and other heads of delegation addressed COP-5 during a high-level segment held from 2-3 November. COP-5 adopted 32 draft decisions and conclusions on, *inter alia*, the review of the implementation of commitments and other FCCC provisions, and preparations for COP/MOP-1.

Denmark offered to host a workshop on policies and measures and COP-5 accepted the offer in its conclusions and decided to consider the report of the workshop at SBSTA-12, and report the results to COP-6. Since COP-5 several other workshops have also been held in preparation for COP-6.

REPORT OF THE WORKSHOP

Svend Auken, Minister for Environment and Energy for Denmark, opened the Workshop on Best Practices in Policies and Measures on Tuesday, 11 April 2000. He welcomed participants and said the workshop provided an opportunity to share experiences on policies and measures. He supported the use of the Kyoto Mechanisms, but stressed the importance of domestic policies and measures. He said concrete measures are needed to engage the public in the developed world, and that technologies should be adapted to conditions in the South to promote global partnership. He highlighted the Danish National Climate Change Strategy, saying it had led to technological advantages and job creation.

Dominique Voynet, Minister for the Environment for France, said Annex I countries are signaling their commitment to climate change mitigation by implementing a variety of national policies and measures. She said that the use of the Kyoto Mechanisms must be supplemental to domestic action. She stressed the importance of identifying measures with ancillary economic and social benefits, as well as the value of developing indicators.

Claire Parker, Coordinator of the Implementation Programme, FCCC Secretariat, highlighted the Workshop's role as part of the FCCC process. She noted that policies and measures constitutes one of several issues scheduled for resolution at COP-6. She noted that a successful outcome could in part trigger the ratification of the Kyoto Protocol by Annex I countries, and motivate non-Annex I countries to participate. She emphasized the links between policies and measures and the Kyoto Mechanisms through the issue of supplementarity, and the connection to adverse effects due to the impacts of mitigation measures. She expressed hope that discussion at the workshop would define "best practices" and consider evaluation criteria and methodological issues including indicators.

Bert Metz, Co-Chair of the Intergovernmental Panel on Climate Change (IPCC) Working Group III, made a presentation on policies and measures as a tool to achieve FCCC and Kyoto Protocol objectives. He drew attention to relevant IPCC reports, including the Second Assessment Report and special reports on aviation and the global atmosphere, technology transfer, and emissions standards. He considered barriers and actions relating to policies and measures in several economic sectors, and policies designed to encourage technology transfer. He supported linking sustainable development strategies with climate mitigation policies. In considering preparatory work on the IPCC's Third Assessment Report, he noted the existence of a considerable amount of new literature on emissions trading and the CDM, but less on other policies and measures.

Jonathan Pershing, International Energy Agency (IEA), noted that, given differing national circumstances, the focus should be on good practices rather than best practices. He categorized policy actions of countries into several groups including: fiscal policies and market



mechanisms; regulatory policies; research and development (R&D) policies; and processes where countries are developing outreach programmes or consultative processes to develop, review and implement proposed policies. He suggested that good practice policies should maximize economic efficiency, be politically feasible, minimize administrative complexity and costs, and have minimal or positive feedback effects on other policy areas. He said developing good practice solutions could include: getting the prices right; utilizing the market; correcting market failures through other policies; establishing strong institutions; and focusing on international cooperation.

Ryutaro Yatsu, Global Environment Department, Environmental Agency of Japan, presented the main conclusions of the Group of Eight (G8) Environmental Forum on domestic best practices. He noted that the Forum, held in February 2000 in Japan, had identified and evaluated best practices, considered barriers to adopting best practices, and made recommendations for their future development. The Forum recommended that G8 countries, *inter alia*: continue information exchange and evaluations on best practices; employ comprehensive and integrated policies resulting in multiple benefits; promote and increase emphasis on community-based approaches and local initiatives; and make efforts to share experiences with other countries. The Forum also recommended that G8 governments involve all stakeholders at an early stage in the policy development process, and set positive examples in areas such as green procurement.

WORKING GROUPS ON BEST PRACTICES IN POLICIES AND MEASURES

Following the opening speeches and presentations, participants met in seven working groups on 11 and 12 April to hear presentations and discuss the following: national programmes; cross-cutting issues; best practices relating to CO₂ emissions from energy supply and industry; best practices relating to transport, household and commercial sectors; best practices to address emissions of non-CO₂ gases from energy, industry, agriculture, forestry and waste; indicators used in the assessment of policies and measures; and methodological and institutional aspects of best practices.

NATIONAL PROGRAMMES: The working group on national programmes met on Tuesday, 11 April, and was chaired by Harald Dovland (Norway). Gabrielle Edwards, UK Department of Environment, Transport and the Regions, made a presentation on the UK climate change programme and examples of best practice. She outlined policies and measures including:

- the Non-Fossil Fuel Obligation mechanism requiring electricity suppliers to purchase a portion of their electricity from renewable sources;
- a climate change levy on energy use to encourage business energy efficiency;
- a pilot emissions trading scheme;
- annual increases of the fuel duty;
- an integrated transport policy that includes legislation to allow for local congestion charging;
- a new energy efficiency standards-of-performance scheme for the domestic sector; and
- policies and measures relating to non-CO₂ gases.

Maciej Sadowski, Polish National Fund for Environmental Protection and Water Management, drew attention to the special circumstances of economies in transition with regard to climate policy, energy and environmental policies. He suggested that policies related to technological change, financial incentives and market reforms be undertaken simultaneously. He stressed the importance of improving energy

efficiency, and of considering both total emissions reductions and emissions intensity improvements. He noted that emissions have been most successfully reduced in privatized sectors.

John Lowe, Acting Director General, Energy Policy Branch, Natural Resources Canada, made a presentation on good practice in policies and measures in the context of national circumstances. After considering Canada's situation and experience, he concluded that no single or universal best practice formula exists for domestic policies, but he supported exchanging information and sharing lessons in the development of good practices.

Gwenyth Andrews, Chief Executive Officer, Australian Greenhouse Office, introduced Australia's Greenhouse Gas Abatement Programme, which aims at flexible support of the most cost-effective abatement opportunities across all economic sectors. She said measures should be: integrated into a comprehensive national strategy aimed at achieving emissions targets cost-effectively; tailored to national interests and circumstances; consistent with other government commitments; equitable; cost-efficient; and able to provide multiple benefits, based on partnerships involving all levels of society, and informed by research and best available knowledge.

Daniela Stoytcheva, Ministry of Environment and Waters, Bulgaria, highlighted the need to implement a package of climate change mitigation measures, including administrative, legislative, economic and educational measures, as well as conduct research on their application. She said non-technical measures were gaining importance, and that technical and non-technical measures should be applied together. She outlined the Bulgarian experience with AIJ, and said Bulgaria and the Netherlands were about to undertake three JI projects on district heating and heat supply.

Ryutaro Yatsu, Environmental Agency of Japan, outlined Japan's legislative framework and coordination mechanism. He said the Global Warming Prevention Headquarters had been established following COP-3 and had developed guidelines for specific action to be undertaken by 2010. The guidelines outlined measures on energy supply and demand, limiting GHG emissions other than CO₂, promoting measures for CO₂ sinks, strengthening research and development, and fostering international cooperation. Yatsu also discussed legislative initiatives, including the 1998 law to promote policy and measures on climate change and recent amendments to the law on energy use.

Chair Dovland noted a preference among some participants for a focus on good rather than best practice. While pointing to similarities in approaches taken by different countries, he noted that national circumstances must be taken into account. He drew attention to national programmes' emphasis on the energy, residential, commercial and transport sectors, as well as the focus on renewable sources of energy.

In the ensuing discussion, several participants highlighted the difficulty of implementing effective measures in the transport sector and some called for "public acceptance" to be a criteria for determining good practice in policies and measures.

CROSS CUTTING ISSUES: The working group on cross cutting issues met on Tuesday, 11 April, and was chaired by Lambert Gnapelet (Central African Republic). Marianne Wenning, Deputy Head of Unit, European Commission, highlighted three sectors where the EU was considering common and coordinated policies and measures, namely, energy efficiency, renewables and transport. She highlighted a list of issues that merited consideration, *inter alia*: whether the IPCC framework for evaluating best practices, presented at COP-5, would provide



sufficient guidance; methods to minimize the influence of national circumstances in best practices; and ways to ensure that best practices are taken up by other Parties.

On the implementation of Protocol Article 2.1(a)(v) (reduction of market imperfections), Mohammed Al Sabban, Saudi Arabia, advocated the progressive reduction or phasing out of market imperfections, fiscal incentives, tax and duty exemptions and subsidies in all GHG emitting sectors. He identified several distortions in the market, including the discriminatory taxation of petroleum transport fuels compared to other fuels, and the provision of subsidies to coal and nuclear industries. He stressed the need for Annex I Parties to design policies and measures to minimize adverse effects. He said implementation of Protocol Article 2.1(a)(v) should result in:

- restructuring of Annex B tax systems to reflect GHG content in all GHG-emitting sectors and removal of subsidies;
- discouraging the production of fossil fuels in Annex B countries;
- discouraging the use of nuclear energy to reflect its significant externalities;
- removing existing barriers (political and regulatory) to the use of more oil in the electricity sector; and
- encouraging a wider use of CO₂ sequestration technologies.

In the ensuing discussion, TUVALU questioned the logic of the presentation and asked if the recent restrictions by OPEC on its oil exports could be considered a market imperfection. Al Sabban responded that it was better for the producers of the product to tax it than the consumers.

Haroldo de Oliveira Machado Filho, Ministry of Science and Technology, Brazil, presented on the steps taken in the Brazilian energy and transportation sectors, focusing on the ethanol and the energy conservation programme. He said the ethanol programme employs subsidies to promote the use of hybrid ethanol from sugar cane as an automotive fuel. The energy conservation programme promotes the rationalization of electric power production. Its main objectives are to increase efficiency, reduce consumption, eliminate waste and ensure the overall reduction of costs and investments. He forecast that the energy conservation field would witness: privatization, more competition and participation of private capital in energy supply, and deverticalization of power supply

Peer Stiansen, Ministry of Environment, Norway, presented on how economic instruments such as taxes and emissions trading could be used domestically and internationally to reduce GHG emissions. He explained that Norway currently taxes 65% of its CO₂ emissions, with different rates for each activity. While taxes address prices, trading schemes could address emissions quantities. Norway established its trading scheme in 1998 to ensure compliance with the Kyoto Protocol. He said that the degree of reliability and expansion of inventories necessary for a trading scheme needed to be addressed and stressed the need for a simple system. He called for linking the scheme to an international one and see how other countries follow with similar policies.

Kimiko Hirata, Climate Action Network, on behalf of NGOs at the Workshop, noted that there was significant delay in taking action in developed countries caused by political inertia, resistance of some business and international financial institutions and the possibility of using the Kyoto Mechanisms. She opposed the inclusion of nuclear power in measures to address climate change. She suggested several key measures for best practices including taxes, subsidies and other financial incentives, green procurement, public awareness, standards and R&D.

Chair Gnapelet asked participants to focus on the appropriate context for discussion of policies and measures, the concept of best fit,

and the criteria for the determination of cross cutting issues. The EU stressed the need to reach a common understanding on the criteria. SAUDI ARABIA highlighted the need to focus not just on the best practices but also on bad practices with a view to eliminating them. The ENERGY CHARTER SECRETARIAT pointed out that cultural differences must be taken into account. The US suggested that, although many countries agreed on several elements, these could be attributes of the policies rather than common criteria.

BEST PRACTICES TO ADDRESS CO₂ EMISSIONS FROM ENERGY SUPPLY AND INDUSTRY: This working group met on Wednesday, 12 April, and was chaired by Terry Carrington (UK). Gene McGlynn, OECD, made a presentation on the lessons from the OECD experience, focusing on cost effectiveness. He suggested that cost effectiveness calculations include non-generation costs, lifecycle impacts, ancillary impacts and allocation of costs, and said deviations from cost-effectiveness should be transparent. He stated that measures can be competing or complementary and that subsidy reform can be significant no-regrets measure. He advocated careful design of the policy package.

Ole Odgaard, Danish Energy Agency, outlined the Danish green electricity market, focusing on the green certificate market for renewable energy. He identified high transaction costs and possible market distortions due to few market actors as barriers to the success of a national certificate market. He advocated instead an international certificate market, which would require, *inter alia*: a common certificate procedure; a common definition of renewables; transparency of national subsidies; quotas in international trade; and certification of origin, country, producer, and production date.

Gwen Andrews, Chief Executive of the Australian Greenhouse Gas Office, gave a presentation on the Australian programme of efficiency standards for power generation. She said a programme of efficiency standards was a key measure, as it was a technically-sound approach that balanced both economic and environmental concerns.

Jeffery Dowd, Senior Policy Analyst, US Department of Energy, highlighted a few key US policies that embody best practice qualities and identified several factors underlying these policies. These include:

- recognizing sub-sectoral and regional diversity;
- promoting win-win measures;
- matching policy designs to key attributes of the end use markets and technologies;
- promoting cost-effective implementation;
- supporting public education and outreach;
- ensuring accountability;
- ensuring continuity on long-term changes in technology;
- facilitating policy coordination at all levels of government; and
- providing the industry with a sense of ownership in the process of technological change and market transformation.

Okko van Aardenne, Ministry of Economic Affairs of the Netherlands, gave a presentation on Dutch long-term agreements with industry to achieve energy efficiency. He identified the characteristics of their long-term agreements, including: targets for energy-efficiency improvement; yearly reporting by sector based on monitoring of individual companies; and schemes for financial stimulation of energy efficiency improvement. He said long-term agreements work, as the industry is motivated; the industry's structure and organization is suitable for long-term agreements; energy saving potential is higher than expected; and the long-term agreements approach is accepted by environment authorities.

Meher Aziz Bedrous, Director of Environmental Studies, Egyptian Electricity Authority, outlined energy efficiency measures undertaken



in Egypt that have been directed at: fully utilizing hydroelectric power; promoting natural gas; encouraging power system efficiency; supporting energy conservation; enhancing renewable energy utilization; and reforming energy prices. He identified barriers to effective policies and measures, including a lack of financing mechanisms for energy efficiency and the absence of government incentives to enhance energy efficiency. He concluded that only options that have no adverse effect on economic development should be considered.

Majella Kelleher, Finance and Contracts Manager, Irish Energy Center, introduced the Irish self-audit scheme. She said companies involved in the scheme commit to regular energy audits, energy saving targets and action plans, annual energy statements and information sharing. Benefits to members include: improved competitiveness; ease in meeting environmental regulatory requirements; a platform for positive public relations; and opportunities for information sharing. Key benefits to the national programme include cost effectiveness and development of a set of competences to serve the entire industrial sector.

BEST PRACTICES TO ADDRESS CO₂ EMISSIONS FROM TRANSPORT, HOUSEHOLDS AND COMMERCIAL SECTORS:

This working group took place on Wednesday, 12 April, and was chaired by Maciej Sadowski (Poland). Fridtjof Unander and Lewis Fulton, IEA, made a presentation on CO₂ emissions trends and reduction opportunities in the transport, domestic and commercial sectors. Unander noted the existence of numerous opportunities to reduce emissions, and emphasized the need for vigorous policy action now, given the time horizon for meeting Protocol commitments. Fulton considered transportation options for light duty vehicles, based on case studies of Germany, Denmark and the US. He suggested fuel consumption-based fees and rebates and the promotion of next generation technologies.

Jotaro Horiuchi, Deputy Director of the Environmental Division, Japanese Ministry of Transport, outlined policies and measures in the transport sector in Japan, focusing on the freight sector. He noted national support for a shift to shipping and rail, as these modes emit less CO₂ than commercial trucks.

Kevin Green, General Engineer, US Department of Transportation, discussed the US experience with transport-relevant policies and measures. He noted that US transportation goals are safety, mobility, economic growth and trade, a healthy human and national environment, and national security. He said policies should contribute to these goals and demonstrate a compelling cost/benefit ratio. He stated that a fundamental question for transport policy was the limits of control exercised by governments.

Britt Wendelboe, Head of the Energy Data and Models, Transportation and Emergency Preparedness Section of the Danish Energy Agency, outlined an energy efficiency labeling scheme introduced in Denmark that ranks all new passenger vehicles based on fuel efficiency. The scheme allows consumers to compare different vehicles' fuel efficiency, using an absolute comparison rather than a ranking by size of car.

Joe Powell, Director of the Atlanta Regional Office of the US Department of Energy, made a presentation on enhancing energy efficiency in the US building sector. He described several relevant US government programmes, including Building America and the Building Energy Code. He stressed the need for flexibility in addressing the varying circumstances affecting different regions within the US. He said best practice will vary in each case.

Jun Arima, Chief Intendant for Energy Efficiency, Ministry of International Trade and Industry of Japan, described his country's Top

Runner Programme, which is part of its efforts to reach its GHG emissions targets under the Protocol. He said the programme sets energy efficiency targets for consumer products based on the standard set by the most energy efficient model in that product category. For instance, computers must improve energy efficiency 83% by 2005 from a base year of 1997, while different levels are set for other products.

In the ensuing discussion, Chair Sadowski took note of participants' comments that national circumstances were a significant factor. The IEA stressed that the development of ideas on good or best practice is an ongoing process. The US said consensus had not been reached on what constitutes best practices or what the specific criteria for identifying best practices should be. JAPAN, supported by the US, said the aim of this workshop was to share ideas on policies and measures, and participants will draw their own conclusions on the information made available. IRELAND noted that best practices generally have an integrated, multi-faceted approach and are inclusive, cross-sectoral and dynamic.

BEST PRACTICES TO ADDRESS EMISSIONS OF NON-CO₂ GASES FROM ENERGY, INDUSTRY, AGRICULTURE, FORESTRY AND WASTE:

This working group met on Wednesday, 12 April, and was chaired by Marianne Wenning (EC). Leo Meyer, Deputy Head of the Climate Change Department, Ministry of Housing, Spatial Planning and the Environment of the Netherlands, presented best practices in policies and measures to prevent or limit emissions of hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulfur hexafluoride (SF₆). He outlined the EU's experience and stressed the importance of working on a national as well as a transnational level to reach emissions limitation standards. He recommended that the IPCC assist in improving the data, and highlighted the need to exchange and disseminate information on alternatives to ozone-depleting substances. He emphasized the potential application of Protocol Article 13.4(d) (coordination of measures adopted) in establishing international actions to limit emissions.

Frank Jensen, Chemicals Division of the Danish Environmental Protection Agency (EPA) highlighted the Danish proposal for regulation of HFCs, PFCs and SF₆. The Danish plan involves phase-out at specific dates in some new plants and products, while other uses such as air conditioning in cars and medical inhalers are allowed "until further notice." The proposal is under review by stakeholders.

Sally Rand, US EPA, presented on the US voluntary regulation approaches to methane and emissions with high global warming potential. She highlighted the criteria and characteristics on which establishment of programmes are based, including: cost effectiveness; maintenance of health and environmental safety; close cooperation with industry; and setting technically aggressive goals. She stressed that the experience of the US could be considered by other countries.

Christophe Ewald, French Ministry of the Environment, highlighted two French initiatives, one to reduce nitrous oxide emissions in nylon production, the other to cut PFC emissions in aluminum production. The first was based on a local decree mandating the reduction of nitrous oxide, while the second was a voluntary agreement with industry. Ewald stressed the importance of: close cooperation between the local administration and industry; a comprehensive approach to GHG emissions reduction in the industrial process; the capture of ancillary benefits; and incentives for technological development.

Christopher Lamport, Ministry of Agriculture, Forestry, Environment and Water Management of Austria, presented on waste management and the effect of landfill regulations on GHG mitigation. He highlighted options for reducing the impacts of waste on the environment and climate, including improved technical solutions for landfill



management and residual waste treatment. He stressed that these could be considered best practice policies since all targets promote GHG emissions reductions in several sectors and promote sustainability.

In the ensuing discussion, participants noted that: there are fewer examples of best practices for the reduction of non-CO₂ GHGs than for CO₂; many parties are in the early stages of developing policies in this area; criteria related to health, safety and emissions from energy use in the industrial process need to be considered; stakeholder involvement is important in developing policies; and the role of voluntary agreements is controversial.

INDICATORS USED IN THE ASSESSMENT OF POLICIES AND MEASURES: This working group met on Wednesday, 12 April, and was chaired by Francois Moisan (France). Lee Schipper, IEA Senior Scientist, made a presentation on the motivation, methodologies and applications of energy indicators research by the IEA. He said energy indicators are significant for developing a framework for reporting GHG emissions in the context of the FCCC. He concluded that the international use of energy indicators is a new concept, and that some problems remain related to data and a lack of transparency. He noted anxieties about the costs of the process and about energy efficiency being confused with energy intensities.

Yonghun Jung, Vice President of the Institute of Energy Economics of the Asia Pacific Energy Research Center, presented on energy efficiency indicators for industry in the Asia Pacific region. He outlined the results from trend analyses evaluating energy saving potentials of selected member countries in relation to average use for the iron, steel and pulp and paper industries. He noted that the work is limited by incomplete and inconsistent data. He indicated future work that was required, including the development of a database, the disaggregation of data, additional analysis of household and transport sectors, the development of environmental impact indicators and research on the application of indicators for CDM projects.

Didier Bosseboeuf, French Agency for the Environment and Energy Management, made a presentation on monitoring energy efficiency policies and lessons to be learned from indicators. He discussed ODYSEE, a monitoring tool for energy efficiency assessment used by EU member States. He noted the need for transparency and consensus in the methodology. He stated that, while indicators are not sufficient to assess the real impact of specific measures, they can be used to assess the efficiency of a set of measures aimed at a source of GHGs. He noted that detailed indicators provide a better link between individual measures and CO₂ emissions.

Professor Julia Seixas, Universidade Nova de Lisboa, made a presentation on a methodological framework to assess policies and measures, looking at the case of renewables, cogeneration and energy efficiency in Portugal. She outlined Portugal's ongoing evaluation of policies and measures, which is being carried out by sector and by instrument. She stated that it is difficult to learn from other countries' experiences because each country has its own specific circumstances. She highlighted the need for greater comparability and transparency in order to learn from criteria used by other countries to identify practices most appropriate to their specific circumstances. She called for a common framework to report on the assessment of best practices identified by each country.

In the ensuing discussion, the NETHERLANDS endorsed the need for a comparable framework and suggested that these form a part of national communications. He recommended that the conclusions of this working group note that indicators can play an important role in achieving compliance with the Protocol, and that the future adaptation of indicators for national communications should be considered. The

IEA noted differences in the levels of resources made available by different countries to help fill information gaps, and stated that the cost of not having the relevant information could be significant.

The US suggested listing specific data problems and said agreement had not been reached on these problems. He also said agreement had not been reached on setting targets. He noted differing views on the adequacy of inventories.

METHODOLOGICAL AND INSTITUTIONAL ASPECTS OF BEST PRACTICES: This working group met on Wednesday, 12 April, and was chaired by John Lowe (Canada). Tudor Constantinuscu, Energy Charter Secretariat, highlighted the Protocol on Energy Efficiency and Related Environmental Aspects (PEEREA). He said this instrument, which has been ratified by most Annex I countries, promotes cooperation between OECD countries and countries with economies in transition. It establishes a review process to analyze energy efficiency measures in participating countries, focusing on, *inter alia*, policy aims, strategies/programmes, energy prices, financing mechanisms, legislation/regulations and institutions. Recommendations are provided as a result of the reviews. He stressed the synergy between the actions under the PEEREA and obligations under the Kyoto Protocol and called for further coordination.

Lisbeth Nielson, Danish Energy Agency, presented an outline of the Danish Green Tax scheme, noting that it involved the levying of taxes on the energy use of trade, industry and services. She explained that all additional revenue is recycled, primarily through lowering non-wage labor costs and subsidizing energy efficiency investments. An evaluation of the tax showed that it had a significant environmental effect, modest macro-economic impact and unexpected distribution consequences, which resulted in more stress on some sectors and less on others. The package was adjusted accordingly by providing subsidies for energy saving in industry, subsidies for cleaner technology and adopting an agreement scheme for space heating.

Thomas Burki, Switzerland, presented two neutral evaluations to measure the success of the Swiss Energy Model, a programme that encourages companies to commit to certain energy efficiency goals. He said the evaluations focused on the efficiency and functioning of the model, as well as on its membership, expansion and future role. The evaluation methods included interviews, analysis of documents and process attendance. He noted that these evaluations have been a valuable instrument in helping develop and improve the model.

Merilee Bonney, Dutch Ministry of Housing, Spatial Planning and the Environment, gave a presentation on the climate change policies in the Netherlands. Based on lessons learned, she noted that increasing analytical transparency and analytical rigor facilitated the policies and measures process. She added that a synergy in the mix of instruments would increase the likelihood that the measure would be accepted and the result achieved. She elaborated on two cost-calculation methods: the financial cost method, which looks at costs for end-users; and the national cost method, which assesses the costs for the entire country. She stressed the importance of cost effectiveness, but noted that it was not always the driving force, as other factors were also significant.

Valery Sedykin, Deputy Director of the Global Climate and Ecology Institute, Russian Federation, said best practices in terms of policies and measures could be defined across countries, noting an example from the EU. He also presented ideas on best practices for the Kyoto mechanisms, and highlighted aspects of the Russian Climate Action Plan.

Suzie Baverstock, Director of Global Environmental Issues at BP-Amoco, outlined the process and results of the company's GHG audit and verification project. Key lessons from the project included: retro-



spective estimation of emissions can be problematic, while recent data is more accurate; rigorous data is needed to build market confidence for trading between entities and across nations; and reporting protocols and assurance processes should be developed as an integral part of emissions trading.

Virginia Sonntag-O'Brien, International Council for Local Environmental Initiatives, elaborated on the Cities for Climate Protection (CCP) campaign aimed at building a global movement of local governments to address the challenge of climate change. She identified five CCP milestones: emissions inventories and forecasts, reduction targets, local action plans, implementation, and monitoring and reporting. The emissions analysis consists of both corporate analysis and community analysis, focuses on CO₂ from fossil fuel combustion and methane from landfills, identifies big emitters, and forecasts estimates for emissions growth under business-as-usual scenarios. She suggested that national governments forge a partnership with local governments and use them in implementing policies and measures.

The subsequent discussion among participants focused on the improvement of data quality, transparency of the data production process, comparability of data and indicators, need for diverse indicators to apply to diverse contexts, importance of local input and linkage of national commitments with the local government initiatives. In summarizing the discussion, Chair Lowe highlighted issues raised in the presentations and discussions, including the importance of synergy among policy measures, analytical capacity, multiple factors as opposed to a cost focus, exchange of information, and local or regional factors. He also noted participants' interest in market instruments.

REPORTS FROM THE CHAIRS OF THE WORKING GROUPS

On Thursday, 13 April, participants met in a plenary session to hear and discuss reports from the Chairs of the seven working group sessions held on 11 and 12 April.

NATIONAL PROGRAMMES: In his report of the working group on national programmes, Chair Dovland noted convergence among participants on:

- the usefulness of the ongoing exchange of information and sharing of experiences;
- the need for comprehensive strategies and a mix of policies and measures;
- the importance of national circumstances and variability of design and implementation of policies in different countries;
- the prevalence of solutions in the energy and energy efficiency sector;
- environmental effectiveness, cost efficiency and ancillary benefits as criteria for good practice;
- national differences in terms of importance attached to the criteria; and
- the importance of stakeholder involvement.

CROSS CUTTING ISSUES: Chair Gnapelet summarized the discussions of the working group on cross cutting issues by highlighting that:

- broad criteria for assessing best practices should be based on the extent to which they effectively fulfill the objectives of the FCCC and the Protocol in a cost-effective manner;
- lack of comparability of policies and measures across different countries and sectors make it difficult to establish common criteria or indicators;
- fiscal policies should aim to remove any market imperfections, within the context of fulfilling the desired emissions reductions; and
- CO₂ sequestration should be encouraged.

Next steps identified by participants included defining the appropriate context in which best practices could be assessed and encouraging information sharing.

BEST PRACTICES TO ADDRESS CO₂ EMISSIONS FROM ENERGY SUPPLY AND INDUSTRY: Working group Chair Carrington noted this working group's discussion on various issues including: the concepts of best practice, good practice and good fit; cost effectiveness; stakeholders; specific climate policies; and learning by example. On energy supply, he highlighted the support for cogeneration, market reforms and renewables. He referred to the discussion on the green electricity market, performance standards, and national and local circumstances. On industry, he noted the discussion on regional diversity, win-win measures, cost effectiveness, policy coordination, long-term agreements and voluntary agreements.

BEST PRACTICES TO ADDRESS CO₂ EMISSIONS FROM TRANSPORT, HOUSEHOLDS AND COMMERCIAL SECTORS: Chair Sadowski noted participants' comments that national circumstances are a significant factor in determining best or good practices, indicating that the most appropriate package of policies or measures will differ between and within countries. He noted that there had been no agreed view on what the criteria should be for determining best practices. He observed that the use of historical data and experience had been identified by some participants as being valuable in developing best practices. He said this session had focused primarily on the transport sector, and suggested that future workshops focus on the residential and commercial sectors. Further action could include: the establishment of an ongoing programme for exchange of experiences and information through workshops or other appropriate mechanisms; and the elaboration of criteria for identifying or assessing best practices.

BEST PRACTICES TO ADDRESS EMISSIONS OF NON CO₂ GASES FROM ENERGY, INDUSTRY, AGRICULTURE, FORESTRY AND WASTE: Working group Chair Wenning noted that convergence in the working group had begun to emerge on:

- the need for further investments in research and development, and for information sharing including collating existing data and identifying gaps and links to the Montreal Protocol;
- the possible value-added of cooperation across regions and internationally on chlorinated gases;
- the possible usefulness of Voluntary Agreements in specific industrial sectors;
- the need to take a comprehensive approach so that gains are not offset by increased energy use; and
- the importance of public acceptance as a criterion for policies and measures.

INDICATORS USED IN THE ASSESSMENT OF POLICIES AND MEASURES: In his report on the working group session on indicators, Chair Moisan noted that while indicators could help develop policies and evaluate progress on whether targets and commitments are being met they are not a perfect tool to capture every relevant detail, and that there are other useful tools available. He drew attention to some participants' view that disaggregated data may be more useful than aggregated indicators. Regarding follow-up actions, he said further work would be useful on methodological approaches, cooperation involving international organizations, and information sharing.

METHODOLOGICAL AND INSTITUTIONAL ASPECTS OF BEST PRACTICES: Chair Lowe highlighted the importance of synergies among policies, analytical capacity, multiple factors—including cost effectiveness and perceptions of fairness—and informa-



tion exchange. He noted working group participants' interest in market instruments. He identified the next step as improving data and analytical capacity and more fruitful information sharing between countries.

PLENARY DISCUSSION: In the ensuing discussion on the working groups, several participants raised elements they wished to have the Chair include in his report of the workshop. These included the need to:

- encourage awareness creation;
- adopt a cautious approach in considering the utility of indicators;
- consider if subsidies need to correct market imperfections to promote energy efficiency;
- address the possibility of good practices being offset by other practices;
- adopt a common and coordinated approach;
- exercise caution in determining market reform as positive for CO₂ reduction; and
- link activities at different levels of government and the private sector.

Workshop Chair Dovland concluded by highlighting the suggestion that the phrase "best practice" be replaced with the phrase "good practice," and the importance of information sharing.

PANEL DISCUSSION ON BEST PRACTICES IN POLICIES AND MEASURES

On Thursday, 13 April, participants met in plenary to hear panel presentations and discuss issues raised at this workshop. Panelists included representatives from Nigeria, Portugal, Australia, Poland, Tuvalu, the Netherlands, Japan, Brazil and France.

PRESENTATIONS: NIGERIA said policies and measures should consider national circumstances. He said criteria should be driven by environmental effectiveness, economic efficiency, political feasibility, administrative simplicity, incentives for technological development, and equity. He called for the minimization of adverse impacts of measures on developing countries.

PORTUGAL stressed the exchange of information as an avenue to hasten implementation. Commenting on the lack of transparency and comparability in the current information sharing process, she noted the need for a common framework, building on work at the IEA, OECD and IPCC. She said further technical and sectoral workshops should be held with support of international agencies.

AUSTRALIA said good practices need to be set within the context of national circumstances, and that attempting to create a hierarchy of practices may be unproductive. She stressed the utility of developing common framework principles, and called for further sharing of experiences, which could also inform developing countries.

POLAND suggested that some sectors, including the residential, agricultural and forestry sectors, required further consideration. He stated that economies in transition have significant potential to reduce emissions, but that this requires international support, particularly in the area of policy-making capacity and public awareness.

TUVALU noted that referring to something less than best practice could be considered a euphemism for inaction. He said policies and measures could be divided into four categories, namely those that are unacceptable, weak, good or excellent. He said unacceptable policies included those that rely on the use of nuclear power, and there should also be concern about proposals to include sinks within the mechanisms. He said voluntary measures were an example of a poor measure, as studies suggested that it was often an ineffective instrument for change. He endorsed the need to ensure that policies and

measures are considered within the context of additionality and suggested the establishment of a clearinghouse of information on countries' experiences.

The NETHERLANDS supported reference to good rather than best practice. He emphasized that this is a "learning by doing" experience, and supported periodic meetings of specialists from both Annex I and non-Annex I countries at the sectoral level. On next steps, he supported: continuing the exchange of information on policies and measures; identifying information gaps and ways to address them; exploring the potential benefits of transnational cooperation on national policies; and continuing and strengthening work on indicators and qualitative information to review policies and measures.

JAPAN supported more active cooperation with developing countries. He recognized the importance of effective indicators, but noted some reservations and lack of agreement.

DENMARK supported the need for further development of tools for assessing and evaluating policies and measures. He called for consideration of how the development of policies and measures could be used in coordination with technology transfer and capacity building in developing countries.

The US said the best policies and measures for reducing GHG emissions are those tailored to national circumstances. She preferred reference to best fit rather than best practice. She cautioned that, although indicators can provide useful insights, they should not be used exclusively in developing methodologies. She did not support proposals to develop common indicators, but endorsed a continuing of information sharing.

BRAZIL highlighted the common but differentiated responsibility of countries and said that some developing countries were taking steps to reduce emissions even though they did not have emissions reduction commitments. He underscored the importance of considering national circumstances and development priorities, "learning by doing," and international cooperation.

FRANCE said sustained good practices in industrial countries could hasten access to best technologies for developing countries. He suggested holding workshops involving developing countries and moving from an analytical to a synthetic approach. He advocated, *inter alia*: coordinating training; strengthening the ability of developing countries to set up projects; collective thinking about regulatory mechanisms; and adapting regulatory tools to different contexts.

DISCUSSION: In the subsequent discussion, UNEP encouraged developing countries to approach UNEP for help in building capacity *inter alia*, to develop policy packages to phase out harmful subsidies.

An NGO spokesperson suggested that the FCCC Secretariat evaluate policies and measures based on environmental effects, transferability and potential for coordination. He suggested convening sectoral workshops that would enhance transparency and help operationalize coordination of policies and measures.

GERMANY said indicators should be used as one of several tools to provide the most accurate possible picture of implemented policies and measures. He said indicators will increase transparency and provide up-to-date comparative information.

The US, JAPAN and CANADA cautioned against the use of common indicators, stressing the influence of national circumstances and limits to international comparability. AUSTRALIA noted that national inventories and communications represent a form of existing common indicators. CANADA called for concrete action and sharing of experiences of good practices in policies and measures, rather than



theoretical development of indicators, while DENMARK and the NETHERLANDS noted the usefulness of further developing and utilizing indicators.

FRANCE emphasized that countries seem to agree on the utility of using indicators in a national context, but that disagreement existed on trans-national use of indicators.

ICELAND noted that considerable action to further develop policies and measures is already taking place nationally and regionally, and that this issue should not further burden the political process in the lead-up to COP-6. GEORGIA called for greater attention to the needs and concerns of developing countries and economies in transition.

CLOSING PLENARY

On Thursday afternoon, 13 April, Chair Dovland outlined some of the issues raised during the workshop. He took note of participants' comments that this had been a useful meeting and that work on this issue should continue, with possible future workshops tailored to specific issues. He observed, however, that further workshops on policies and measures would not be possible prior to COP-6. He noted the wide range of views on indicators, and expressed a personal view that a technical discussion would be the most beneficial way to approach this issue. He drew attention to comments on the need to ensure that relevant work is carried out in preparation for future workshops, and noted the suggestion that international organizations—such as the IEA and OECD—should be involved in these activities. He asked participants to reflect on the information and views presented at this workshop, and hoped that the positive approach adopted by participants would continue through the process leading to COP-6. He thanked the Governments of Denmark and France for co-sponsoring this event and drew the meeting to a close at 3:35 pm.

THINGS TO LOOK FOR BEFORE COP-6

CLIMATE POLICY WORKSHOP: FROM KYOTO TO THE HAGUE - EUROPEAN PERSPECTIVES ON MAKING THE KYOTO PROTOCOL WORK:

This workshop will be held from 18-19 April 2000, in Amsterdam, and is being organized by the European Forum on Integrated Environmental Assessment. For more information, contact: Albert Faber, RIVM; tel: +31-30-274-3683/3728; fax: +31-30-274-4435; e-mail: albert.faber@rivm.nl; Internet: http://www.vu.nl/english/o_o/instituten/IVM/research/efiea/announce.htm

CONFERENCE ON INNOVATIVE POLICY SOLUTIONS TO GLOBAL CLIMATE CHANGE: This Conference will be held from 25-26 April 2000, in Washington, DC, and is being co-hosted by the Pew Center on Global Climate Change and the Royal Institute of International Affairs. For more information, contact: Michelle Pilliod; tel: +1-202-544-7900; fax: +1-202-544-7922; e-mail: pilliodmp@aol.com; Internet: http://www.pewclimate.org/forms/innov_conf.html

11TH GLOBAL WARMING INTERNATIONAL CONFERENCE AND EXPO: This meeting, entitled "Kyoto Compliance Review - Year 2000 Conference," will be held from 25-28 April 2000, in Boston. It is being sponsored by the Global Warming International Programme Committee and the Global Warming International Center. For more information, contact: Sinyan Shen; tel: +1-630-910-1551; fax: +1-630-910-1561; e-mail: syshen@megsinet.net; Internet: <http://globalwarming.net/gw11.html>

SECOND CTI/INDUSTRY SEMINAR FOR EASTERN EUROPE ON CLIMATE FRIENDLY TECHNOLOGY AND THE INTERNATIONAL ENERGY AGENCY FINANCE

FORUM: This seminar will be held from 11-12 May 2000, in Warsaw, Poland, in cooperation with the Baltic Chain Initiative and the Polish Ministry of the Environment. For more information, contact: Michael Rucker; tel: +33-1-4057-6522; fax: +33-1-4057-6759; e-mail: rucker@iea.org; Internet: <http://www.climatetech.net/conferences/warsaw/>

MILLENIUM INTERNATIONAL MEDIA CONFERENCE ON THE ENVIRONMENT: This conference will be held from 5-9 June 2000, in Suva, Fiji in conjunction with the 12th Asia Pacific and 3rd Commonwealth Congress of Environmental Journalists. It is organized by Asia Pacific Forum of Environmental Journalists, the Commonwealth Environmental Journalists Association and Pina Pacific Forum on Environmental Journalists. For more information, contact: Nina Ratulele; tel: +679-303-623; fax: +679-303-943; e-mail: pina@is.com.fj.

12TH SESSION OF THE FCCC SUBSIDIARY BODIES: SB-12 will be held from 12-16 June 2000, in Bonn. It will be preceded by one week of informal meetings, including workshops. For more information, contact: the FCCC Secretariat; tel: +49-228-815-1000; fax: +49-228-815-1999; e-mail: secretariat@unfccc.de; Internet: <http://www.unfccc.de/sessions/sessions.html>

INTERNATIONAL ENERGY WORKSHOP: This workshop will be held from 20-22 June 2000, in Stanford, California, USA. For more information, contact: International Institute for Applied Systems Analysis; tel: +43-2236-8070; fax: +43-2236-71313; e-mail: info@iiasa.ac.at; Internet: <http://www.iiasa.ac.at/Research/ECS/june99/fc2000.html>

WORKSHOP ON RENEWABLE ENERGY FOR THE DEVELOPING WORLD: This workshop will be held from 26-30 June 2000, in Carbondale, Colorado, USA, and is being organized by Solar Energy International. For more information, contact Solar Energy International; tel: +1-970-963-8855; fax: +1-970-963-8866; e-mail: sei@solarenergy.org; Internet: <http://www.solarenergy.org/solarck.html>

WORLD RENEWABLE ENERGY CONGRESS VI: This event, entitled "Renewable Energy 2000," will be held from 1-7 July 2000, in Brighton, Sussex, UK. It is organized by the World Renewable Energy Network. The event features presentations on renewable energy technologies from industry experts around the world. For more information, contact: A Sayigh; tel: +44-1189-611365; fax: +44-1189-611364; e-mail: asayigh@netcomuk.co.uk

FIFTH INTERNATIONAL CONFERENCE ON GREENHOUSE GAS CONTROL TECHNOLOGIES: This conference will be held from 12-16 August 2000, in Cairns, Australia. For more information, contact: Colin Paulson; tel: +61-2-9490-8790; fax: +61-2-9490-8819/8909; e-mail: cpaulson@det.csiro.au; Internet: <http://www.ieagreen.org.uk/ghgt5.htm>

13TH SESSION OF THE FCCC SUBSIDIARY BODIES: SB-13 will be held from 11-15 September 2000. It will be preceded by one week of informal meetings, including workshops. For more information, contact the FCCC Secretariat.

SIXTH CONFERENCE OF THE PARTIES TO THE FCCC: COP-6 will be held from 13-24 November 2000, in The Hague, the Netherlands. For more information, contact the FCCC Secretariat.