

OECD's Recent Work on CLIMATE CHANGE



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OECD's Work on Climate Change

Global climate change threatens to disrupt the well-being of society, deter economic development and alter the natural environment, making it a key policy concern of the 21st century. The long-term impacts of climate change include increased intensity and frequency of heat waves, droughts, storms and floods, which would damage the economic infrastructure, cause crop losses and present new risks to human health and life. The costs of inaction, though somewhat uncertain, are expected to be significant. A central challenge in responding to climate change is the integration of climate policy objectives into economic development strategies and sectoral policies.

The OECD is a multi-disciplinary inter-governmental organisation, tracing its roots back to the post-World War II Marshall Plan. Today, it comprises 30 member countries and the EC committed to democratic government and the market economy. The OECD provides a unique forum and the analytical capacity to assist governments to compare and exchange policy experiences, and to identify and promote good practices through policy decisions and recommendations.

The OECD has been working on climate change economics and policy since the late 1980s. The OECD works closely with governments to assist them to identify and implement least-cost policies to reduce greenhouse gas (GHG) emissions in order to limit climate change, as well as to integrate adaptation to climate change into all relevant policy areas. Given the global nature of the climate change challenge, and its widespread economic, social and environmental impacts, the OECD is in a unique position to assist countries put international climate policy on a solid economic footing consistent with frameworks for development. Work on climate change is underway across the OECD, engaging government representatives from a range of Ministries. This brochure provides an overview of the recent OECD work on climate change.

1

Economic and Policy Analysis on Climate Change

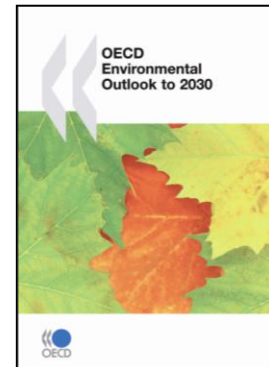
1.1 Climate Change Mitigation *Economic and Environmental Modeling*

Economic models and quantitative assessments of climate change mitigation scenarios, and how these impact on the economy, play a key role in informing policy-makers of costs, benefits and potential tradeoffs.

OECD's modelling assesses how policies can be applied to cost-effectively reduce greenhouse gas emissions in a post-2012 framework. The analysis examines the costs of different mitigation scenarios globally as well as the distribution of these costs across regions, countries and sectors. It focuses on: the pros and cons of different policy instruments (e.g. market instruments, regulatory, and research and development policies) and how they can be combined in cost-effective policy mixes; potential carbon leakage and competitiveness impacts of policies, and how these might be addressed; policies to incentivise technological change in the medium to long-term; the aggregate and distributional impacts of climate change and the co-benefits of climate policies in terms of reduced air pollution and improved human

health; dealing with uncertainty and risk in a post-2012 policy framework. A book on *The Economics of Climate Change Mitigation*, highlighting the results of this work, will be released in early 2009.

Current work partially builds on the modelling-based analysis undertaken for the *OECD Environmental Outlook to 2030* which was released in March 2008. The Outlook provides projections of the economic, social, and technological forces driving development and environmental change. It examines environmental outcomes in depth, including climate change (to 2050), and possible policy responses.



Key links:

www.oecd.org/env

www.oecd.org/env/cc

www.oecd.org/env/outlook

Political Economy Issues: Competitiveness and Carbon Leakage

The OECD modelling work on *The Economics of Climate Change Mitigation* (forthcoming 2009, see above), includes analysis of competitiveness and carbon leakage impacts of climate change mitigation policies, as well as some of the policy approaches that might be used to address these, such as Border tax Adjustments or sectoral approaches.

In recent years, the International Energy Agency (IEA) work on climate policy has also addressed issues related to the competitiveness implications of unilateral emission caps, the interaction between electricity markets and CO₂ markets. "Issues Behind Competitiveness and Carbon Leakage" (Reinaud, 2008) provides a comprehensive review of studies on carbon leakage, statistical analyses of leakage in the EU for main industries, and a survey of possible response measures

The Political Economy of Environmentally Related Taxes (OECD, 2006) addressed political economy issues related to the use of environmentally related taxes, including sectoral competitiveness and income distribution concerns in the context of climate change. A more recent study examined practical differences between taxes and tradable permits, using climate-based policies in the UK as the basis for the comparison.

The Roundtable on Sustainable Development housed at the OECD will hold a High Level Meeting in

2009 to discuss carbon leakage and the policies that could address it (see section 4.5).

Key links:

www.oecd.org/env/taxes

1.2 Adaptation to Climate Change

Recent OECD work on adaptation has focused on three main streams of work: adaptation in domestic policy context; mainstreaming adaptation in development co-operation; and economic aspects of adaptation.

Adaptation in Domestic Policy Context

This line of work focused on two main areas of work: i) an assessment of broad trends in progress on assessment and implementation of adaptation to climate change in developed countries; and ii) an analysis of adaptation to climate change in the winter tourism sector and with respect to natural hazards in the European Alps, resulting in the publication of the book *Climate Change in the European Alps – Adapting winter tourism and natural hazards management*.

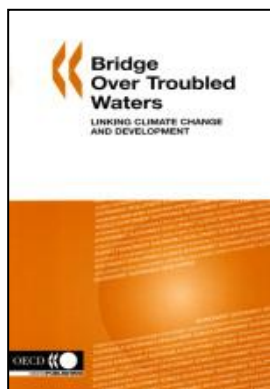
In addition, several reports were published on the role that national policy frameworks for various sectors



play in adaptation to climate change. Case studies were carried out in Annex I countries (United Kingdom, United States, Canada and Finland) and non-Annex I countries (Mexico, Argentina, India and Zimbabwe) for the water sector and in the Gulf of Mexico for coastal zones.

Mainstreaming Adaptation in Development Co-operation

This work focusing on putting adaptation to climate change within the mainstream of development co-operation efforts represents joint work by the Environment and Development Co-operation Directorates. An early output from this work was the book *Bridge Over Troubled Waters – Linking Climate Change and Development*,



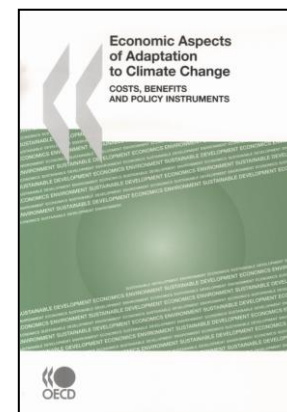
which was based on country studies in six developing countries (Tanzania, Bangladesh, Nepal, Uruguay, Fiji and Egypt). In 2006, Development and Environment Ministers from OECD Countries endorsed a 'Declaration on Integrating Climate Change Adaptation into Development Co-operation', in which they called for "meaningful co-

ordination and sharing of good practices on integrating climate change adaptation in development co-operation".

Follow-up work to this Ministerial Declaration includes a report which takes stock of the progress made on integrating adaptation into development co-operation activities, as well as a forthcoming Policy Guidance in 2009 on how to integrate adaptation into these activities. In addition, in 2008, the OECD Development Assistance Committee (DAC) produced a High Level statement noting the progress made by donors on integrating adaptation and also highlighting that much more remains to be done.

Economic Aspects of Adaptation

Efforts to reduce greenhouse gas emissions need to move hand-in-hand with policies and incentives to adapt to the impacts of climate change. How much adaptation might cost, and how large its benefits might be, are issues that are increasingly relevant both for on-the-ground projects and in international contexts. Ongoing OECD work in this area focuses on a critical assessment of adaptation



costs and benefits, both at sectoral level as well as in national and global contexts. Economic modelling work is also underway to better examine the synergies and trade-offs between mitigation and adaptation policies. This work is also examining the potential for economic and policy instruments to incentivise and motivate adaptation actions. Outputs of this work include the book *Economic Aspects of Adaptation to Climate Change — Costs, Benefits and Policy Instruments* (2008), and a forthcoming report on reflecting adaptation in Integrated Assessment Models.

Key links:

www.oecd.org/env/cc/adaptation

www.oecd.org/env/cc/ecoadaptation

www.oecd.org/env/cc/aixg

1.3 Post-2012 Framework

Much of the OECD's work on assessing options for a post-2012 climate change framework is undertaken via the Annex I Expert Group (AIXG), run jointly between the OECD and IEA (see section 4.3).

Past analytical work from this Group has played an important role in building understanding and support for the use of market instruments (e.g. emissions trading and Clean Development Mechanism in the Kyoto Protocol) and for harmonised monitoring, reporting and compliance assessment in international climate policy responses. More recent work focuses on the post-2012 climate change framework and includes analyses on key parts of the Bali Action Plan (such as measurement, reporting, and verification (MRV) of mitigation actions

and commitments, differentiation of countries, and sectoral approaches for mitigation). Other recent analysis includes reducing emissions from deforestation and forest degradation in developing countries (REDD), sustainable development policies and measure, policies targeting climate-friendly technology development and diffusion, and adaptation in a post-2012 framework.

Measurement, Reporting and Verification (MRV)

The Bali Action Plan introduces the phrase "measurable, reportable and verifiable" (MRV) in the context of countries' post-2012 GHG mitigation actions and/or commitments and in the context of support of such actions. A growing body of work is examining possible interpretations of such language, and their implications for the post-2012 framework. A paper on "Measurement, Reporting and Verification of Mitigation Actions and Commitments", released for COP14, explores what "MRV" could mean for mitigation actions and commitments and how current guidance would need to change in order to ensure that post-2012 actions and commitments are "MRVable". Ongoing work is exploring how MRV requirements could differ depending on the GHG mitigation actions undertaken, as well as the linking of MRV of actions with support for developing countries.

Differentiation

The Bali Action Plan calls for nationally appropriate mitigation commitments or actions by developed country Parties and nationally appropriate mitigation actions by developing country Parties bearing in mind their differences in national circumstances. A recent paper “Differentiating Countries in terms of Mitigation Commitments, Actions and Support” (2008) explores approaches and possible indicators for a post-2012 differentiation framework.

Reducing Emissions from Deforestation and Forest Degradation in Developing Countries (REDD)

Emissions from deforestation and forest degradation are estimated to account for up to 17% of global greenhouse gas emissions and analysis suggests it is a low-cost mitigation option. OECD work on REDD has examined issues including the drivers and causes of deforestation; what lessons can be learned from existing environmental policies such as the Payments for Ecosystem Services



programmes in Costa Rica and Mexico for a REDD mechanism; and how to design and implement REDD financing mechanisms (whether fund or market based) to ensure environmentally — and cost-effective emission reductions.

Adaptation in a Post-2012 Framework

Adaptation has been identified as one of the key building blocks of a post-2012 climate change agreement. Recent OECD work on adaptation in a post-2012 framework includes the report on ‘Adaptation to climate change: international agreements for local needs’.

Sectoral Approaches

Sectoral approaches offer the potential to scale up greenhouse gas mitigation, and so are a potentially attractive — although as yet undefined — option for future mitigation actions.

OECD/IEA have been working on sectoral approaches to GHG mitigation since 2005, under the aegis of the Annex I Expert Group. Several different papers have explored various aspects of different potential sectoral approaches in detail, for example, different ways of designing “sectoral crediting mechanisms”, institutional implications of different design choices, and exploring how different sectoral approaches could be integrated into a post-2012 climate regime. Since Bali, and its report on *Sectoral*

Approaches to Greenhouse Gas Mitigation — Exploring Issues for Heavy Industry, the IEA has continued its analysis of this issue. Sectoral approaches is featured in the climate policy scenarios of the *World Energy Outlook 2008*. The IEA plans further quantification of the possible role of sectoral approaches, based in part on its detailed energy efficiency and CO₂ indicators for industry. Ongoing OECD work on economic and environmental modeling also includes analysis of the potential and scope of sectoral approaches in a post-2012 climate regime.

The Roundtable on Sustainable Development will hold a High Level Meeting in early 2009 to discuss sectoral approaches (see section 4.5).

Key links:

www.oecd.org/env/cc/aixg

www.oecd.org/env/cc/pbm

www.worldenergyoutlook.org

1.4 Cost of Policy Inaction and Benefits of Action

Cost of Inaction

The costs of not responding to climate change can be considerable, representing a significant drag on OECD economies. A 2008 book — *Costs of Inaction on Key Environmental Challenges* — contributes to our understanding of the climate change costs of inaction, offering a framework for the interpretation of recent estimates from the literature and highlighting a range of issues that need to be considered to better

understand these costs. These include characterising uncertainty; thresholds and irreversibilities; the long-run nature of environmental problems; the degree of substitutability between environmental resources and other inputs into the economy; the distribution of environmental impacts, and their links to social concerns about equity; and the endogeneity of responses to changing environmental conditions (e.g. adaptation). The 2008 book — *Economic Aspects of Adaptation to Climate Change* — includes a review of how modelling estimates of the costs of climate change, by impact sector, treat adaptation.



Impacts and Benefits of Action

Other work on the benefits of Climate Change policies has focused on methods and metrics to assess the climate change impacts under scenarios of inaction and action by selected impact sector (i.e. in agriculture and coastal zones) and across different scales (from global to local scale).

Recent OECD analyses focus on assessing the economic impacts of climate change at local scale, including a conceptual framework for local integrated assessment of impacts and policies to practical

applications. First analysis — “Ranking Port Cities with High Exposure and Vulnerability to Climate Extremes” — shows that the impact of climate change could more than triple the number of people in port cities around the world that are exposed to coastal flooding by 2070. This work is followed by two in-depth case studies on the port cities of Copenhagen and Mumbai.

Key links:

www.oecd.org/env/cc/cities



2

Sector-Specific Analysis

2.1 Agriculture

Recent OECD work in this area includes a report published in 2008 on the *Environmental Performance of Agriculture in OECD Countries Since 1990*, which provides comparative data on agriculture's GHG emissions. A 2008 study entitled *Biofuel Support Policies: an Economic Assessment* examines inter alia the effects on GHG emissions of policies to promote biofuels. In particular it estimates the policy cost of avoiding GHG emissions, and applies a modeling approach to analyse the environmental effects of agricultural policies that lead to a shift in land use to the production of feedstocks for biofuels. The study also includes work by the IEA on life cycle analysis of feedstocks for biofuels, focusing on the GHG impacts.

The Committee for Agriculture held a Policy Forum on Agriculture and Climate Change in November 2008, which provided an opportunity for countries to share experiences on analysis underway and policy thinking in OECD countries, including on the possibilities for incorporating agriculture in carbon trading schemes. The OECD Joint Working Party on Agriculture and the Environment will focus on agriculture's role in mitigating GHG emissions and adaptation of agriculture to climate change in 2009-10. A report reviewing the latest evidence on the

effects of climate change on agriculture will provide context to these projects. The aim of the mitigation study is to identify potential trade-offs and synergies between GHG mitigation and other environmental objectives, such as water and air quality and biodiversity; and to analyse alternative agricultural policy and market approaches that have the potential to be cost-effective in delivering those multiple environmental benefits. Various reports will be prepared, with a final report by mid-2010. The aim of the adaptation study is to analyse the role of OECD agricultural policies in facilitating or hindering adaptation of the sector, building on modelling different policy scenarios of shifts in land use and production patterns due to climate change and alternative agricultural support measures.

2.2 Energy

The International Energy Agency (IEA) has been providing analytical work on the energy dimension of climate change since the early 1990s, originally with a focus on the implications of the UNFCCC and its Kyoto Protocol for the energy sector. The IEA also studies options for the future evolution of the international

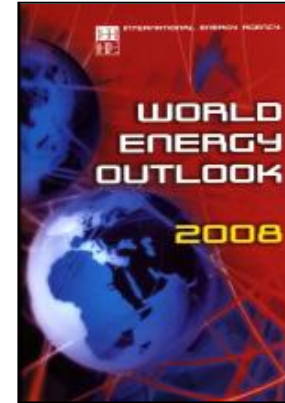
climate change mitigation regime, including for the OECD/IEA Annex I Expert Group on the UNFCCC (see section 4.3). The current IEA work covers areas such as emissions trading and other flexibility mechanisms, international sectoral approaches, policies and measures, and international technology collaboration.

Energy Efficiency and Security

The Agency has an extensive work on energy efficiency, a major possible contribution to greenhouse gas mitigation and to energy security objectives. At their meeting in Gleneagles (2005), the G8 leaders mandated the IEA to provide advice on a range of energy policy issues linked to climate change. In 2008, the IEA made energy efficiency recommendations over 25 areas. Its key outcomes in this area include: *Mind the Gap – Quantifying Principal-Agent Problems in Energy Efficiency* (2007), which is the first quantification of how market barriers and failures hamper rational energy use; *Promoting Energy Efficiency Investments* (2008) provides insightful case studies in the residential sector, based on IEA Member country experience. Of more direct interest to climate policy-makers, the IEA published: *Energy Security and Climate Policy – Assessing Interactions*, a quantitative framework to evaluate synergies and conflicts between these two pillars of energy policy; *Climate Policy Uncertainty and Investment Risk* addresses the effect of policy design on investment choices based on risk-analysis.

World Energy Outlook and Energy Technology Perspectives

The IEA also contributes to two major scenario exercises, the *World Energy Outlook* (WEO) and the *Energy Technology Perspectives* (ETP). WEO (2008) for the first time considers various policy scenarios to achieve climate change goal, consistent with stabilisation of CO₂ in the atmosphere at 450 and 550 ppm, with insights on a possible international framework to support action in the energy sector. ETP (2008) describes various technology development scenarios that would allow returning global CO₂ emissions to current levels, or half of these, by 2050. ETP also describes technology road maps that identify priorities for action if ambitious emission goals are to be realised by 2050. Both ETP and WEO include estimates of capital requirements and energy/cost savings of their scenarios.



Key links:

www.worldenergyoutlook.org

www.iea.org/Textbase/techno/etp/index.asp

Carbon Capture and Storage (CCS)

The IEA explores a range of technology options, including CO₂ capture and storage from energy-using installations such as power plants. *CO₂ Capture and Storage (CCS) – A key carbon abatement option* (2008) evaluates a range of issues related to this promising, yet-to-be-deployed technology: cost projections, transport and storage, the appropriate demonstration efforts, as well as support measures, regulatory frameworks and public awareness for broader adoption of CCS as part of an effective climate change mitigation strategy.

OECD/IEA have also assessed issues relevant to the inclusion of CCS in the Clean Development Mechanism.

Key links:

www.iea.org/textbase/publications/index.asp

Nuclear Energy Outlook

Many governments are now giving further consideration to the use of nuclear energy, particularly because of its very low full life-cycle carbon emissions and for reasons of security of energy supply. The Nuclear Energy Agency provides factual studies to assist in these evaluations. The *Nuclear Energy Outlook* is one such study examining all the issues affecting the future of this energy source, including its potential role in reducing greenhouse gas emissions.

Key links:

www.nea.fr/neo/index.html

2.3 Transport

The International Transport Forum (ITF) together with the Joint Transport Research Centre (JTRC) of the OECD have recently held roundtables on GHG abatement potential and costs of biofuels, on the impact of oil prices and dependency for transport and on the cost and effectiveness of policies to reduce vehicle CO₂ emissions.



ITF's recent work focussing on policies and measures to reduce CO₂ emissions from the transport

sector have resulted in the reports *Cutting Transport CO₂ Emissions: What Progress?* and *Making Cars more Fuel Efficient* (with the IEA). Other recent reports from the ITF and JTRC include *Can Cars Come Clean? Strategies for Low Emission Vehicles* and *Strategies to Reduce Greenhouse Gas Emissions from Road Transport: Analytical Methods*.

The ITF held the first full Ministerial meeting of the Forum on 28-30 May 2008 in Leipzig on the theme "Transport & Energy: The Challenge of Climate Change". In collaboration with the IEA, the ITF has looked at fuel efficiency improvements in heavy goods vehicles and held a workshop on Eco-driving. Finally, the JTRC has set up a working group on "Transport

Sector GHG Reduction Strategies” that has prepared a preliminary report to the ITF Forum. The working group’s final report will be released early 2009.

An OECD/ITF Global Forum (2008) is examining transport and environment integration, in the context of the global economy. Much of this meeting will focus on policies and instruments for dealing with transport-based greenhouse gas emissions.

Key links:

www.internationaltransportforum.org

2.4 Waste

The OECD Working Group on Waste Prevention and Recycling is carrying out work in 2009-10 that will examine the potential for greenhouse gas mitigation from an integrated (life-cycle) approach to materials/waste management.

Key links:

<http://www.oecd.org/sti/ict/green-ict>



3

Cross-Cutting Issues

3.1 Development

Ongoing work in this area has focussed on putting responses to climate change within the mainstream of development co-operation efforts (see section 1.2). A particular focus has been on adaptation to climate change. In May 2008, the OECD Development Assistance Committee (DAC) endorsed a Statement of Progress on Integrating Climate Change Adaptation into Development Co-operation at its High Level Meeting. Work is also currently underway to develop Policy Guidance for integrating adaptation considerations within development policies and projects.

The OECD collects data on levels of official development assistance (ODA) targeting the objectives of the UNFCCC through the so-called "Rio markers". In June 2008, after a three-year trial period, DAC members approved the inclusion of "Rio markers" as permanent items of the DAC statistical reporting requirements. The data collection relates to climate change mitigation only, with no data currently available on ODA spending on adaptation. Possibilities for recording the latter will be discussed in 2009.

Key links:

www.oecd.org/dac/stats/crs

3.2 Eco-Innovation

Innovation in Energy Technology

The OECD Innovation Strategy focuses on innovation for global challenges, including climate change as part of its whole-of-government approach to innovation; a range of work is underway in this area under the auspices of the Committee on Scientific and Technological Policy (CSTP). One such study is on the role of innovation in energy technology. *Innovation in Energy Technology* (2006) for instance examines the barriers to innovation in energy, particularly focusing on fuel cells. The *Compendium of Patent Statistics 2007* includes indicators on environmental technology, nuclear energy, wind energy, and fuel cells.

A number of OECD governments and firms are now placing a strong emphasis on eco-innovation to address priority environmental issues, including climate change, while addressing concerns about the competitive impacts of environmental policies. In conjunction with the European Commission's

Environmental Technology Action Plan, the OECD is reviewing the policies and programmes that OECD countries have put in place to promote eco-innovation; country profiles will be available at the end of 2008.

On-going analytical work assesses how different policy instruments affect the incentives for firms and households to develop and adopt environment-friendly technologies (see the Policy Brief “Business, Eco-innovation and Globalisation”, 2008). More work is underway, for instance on indicators for eco-innovation in such areas as climate change, based on patent counts.

Framework and Policy Overview on Eco-Innovation for Tackling Climate Change

Under the auspices of the Committee on Industry, Innovation and Entrepreneurship (CIIE), a project on Sustainable Manufacturing and Eco-innovation was launched in the second quarter of 2008. A key objective of this project is to promote the concept of eco-innovation as a new vision that will enable the creation of wealth and business opportunities through stimulating new technological



and systemic solutions to climate change. The project is developing an analytical framework of sustainable manufacturing and eco-innovation and reviewing eco-innovation examples, relevant policy initiatives, sustainable manufacturing indicators and eco-innovation measurement. For the coming years, this project is likely to be developed into an international platform that encourages horizontal collaborations among different sectors and stakeholders for creating innovative solutions to climate change and other global challenges.

Key links:

www.oecd.org/sti/innovation/sustainablemanufacturing

Economics of Eco-Innovation

Part of a 2008-10 project being carried out by the OECD Working Party on National Environmental Policies is developing indicators of innovation in several policy areas that relate to climate change. Another part of the work is examining how environmental policy design (including policy design in areas related to climate change) affects opportunities for technology transfer.

A second project is examining the effects of environmental policy design on the adoption of innovative behaviour at the level of households. Part of this project is focussing on transport and energy efficiency — both of which are directly relevant to the climate change problem.

Biotechnology and Climate Change

Another on-going project focuses on the use of industrial biotechnology with effects on climate change, focusing on R&D, human resource and globalisation issues in relation to bioproducts, bioprocesses, and biofuels. Further work on the role and impacts of nanotechnology in the area of water, which has links to bio-energy issues, and in the role of nanotechnology in helping address energy and climate challenges will continue in 2009-2010.

Information Technology and Climate Change

The Committee for Information, Computer and Communications Policy (ICCP) plans work on "ICTs and Environmental Challenges" to identify opportunities, best practices and evidence-based policy to make the most of ICTs, the Internet and sensor networks in energy efficiency, environmental management and climate change in particular.

The *Seoul Declaration for the Future of the Internet Economy* — adopted by OECD member countries, nine non-member economies and the European Commission in 2008 – invites the OECD and relevant stakeholders to explore the role of Information and Communication Technologies (ICTs) and the Internet in improving energy efficiency and addressing climate change. The Committee for Information, Computer and Communications Policy (ICCP) and the Working Party on the Internet Economy, is carrying out work to develop a framework

for analysis, to survey national policies on ICTs and climate change, and to improve the availability of official statistics.

The OECD held a workshop on this topic in May 2008 with the Danish Ministry of Science, Technology and Innovation, National IT and Telecom Agency. An OECD Conference on ICTs, the Environment and Climate Change will be held in May 2009 in Denmark, hosted by the Danish Ministry of Science, Technology and Innovation. It will bring together policy-makers and major stakeholders and will contribute to the United Nations Climate Change Conference in 2009 (COP15).

Key Links:

<http://www.oecd.org/FutureInternet>

Taxation on Innovation and Climate Change

The OECD Joint Meeting of Tax and Environment Experts (JMTEE) is currently undertaking a series of studies on the links between taxation, innovation and the environment. Some of these are related to climate change, such as a study on environmentally-related taxation on innovation in the motor vehicle industry, as well as country studies on the effects of innovation of the UK' Climate Change Levy and on Turkey's recent steep increase in fuel taxes.

3.3 Multilevel Governance and Cities

How cities develop will affect both global emissions (and the pace of climate change) and the vulnerability of nations to unavoidable climate changes. Work at OECD aims to introduce climate change challenges in regional development policies as both the impact of climate change and strategies for mitigation and adaptation have an important territorial dimension. A number of meetings have been organised as part of this activity including: a roundtable discussion on "climate change and cities" in the meeting of the Working Party on Territorial Policy in Urban Areas held in June 2007 in Rome; a workshop on "Competitive Cities and Climate Change" in November 2007 focussed on policy design and governance to mitigate and adapt to climate change at city level, as well as better collaboration between central and local governments; and an International Conference of Competitive Cities and Climate Change held in Milan in October 2008 discussed the environmental dimension of city competitiveness, focusing on the relationships between urbanisation and climate change, and the implications in terms of urban policy making and multi-level governance (see section 4.6).

In 2009, further OECD work will assist governments by:

- pooling and systematising knowledge around the local policy experience, including tools and

monitoring to make progress in cost-effective climate protection;

- assessments of collaboration between local and national government for climate change action; and
- providing an essential sounding board for the urban dimension in current global climate change policy processes.

The OECD is also advancing work on citizen-centred policies and public services where the issue of citizen engagement in climate change is taken up as an important theme.

Another strand of work on *Competitive Cities and Climate Change* addresses local and regional development green policies with a particular focus on linkages between environmental sustainability and economic development, through renewable energy, public transportation, and climate friendly R&D initiatives. It also addresses urban governance issues with a particular focus on the role of cities to design and deliver mitigation and adaptation action in the context of national policy frameworks.

Key links:

www.oecd.org/gov/urbandevelopment/climate_change
www.oecd.org/env/cc/cities

3.4 Trade

Within the OECD's Joint Working Party on Trade and Environment, two studies are currently being conducted on trade and climate change. The first investigates trade barriers affecting diffusion of climate change technologies and potential implications of liberalising trade in these technologies. The second analyses the extent to which trade liberalisation and subsequent changes in global transportation impact on climate change.

On-going OECD work in this area includes "The measurement of CO₂ embodiment in international trade: Evidence from the OECD Input-Output Tables for the mid-1990s - early 2000s", which examines the changes in national levels of carbon emissions that may occur as a result of globalisation.



4

Fora for Climate Change Discussion

4.1 Advisory Unit to the Secretary-General

The International Futures Programme under the Secretary-General has several relevant projects under way. First, it is co-ordinating a project across the OECD on "The Bioeconomy to 2030: Designing a Policy Agenda". An integral part of this exercise is a prospective analysis of biofuels and the role these might play in addressing climate change. Second, in collaboration with numerous space agencies in the OECD area, work is underway on the use of space-based tools (earth observation, navigation) in monitoring climate change and its long-term impacts, notably in the fields of water management and maritime activities. A final report in late November 2008 will examine "Space Technologies and Climate Change: Implications for water management, marine resources and maritime transport". Third, a two-year project on Infrastructures to 2030 has been completed which assesses *inter alia* the impact of climate change on water and water treatment requirements worldwide, as well as the level of investment needed to meet those requirements. Finally, reviews of risk management policies are under preparation which will help assess selected member countries' capacity for managing major floods, which are expected to

increase as a result of climate change. The latest review includes a report on managing the risks of major flooding in Japan, and will be published early 2009.

Key links:

www.oecd.org/futures

www.oecd.org/sti/gsf

4.2 Africa Partnership Forum

The Africa Partnership Forum's (APF) mission is to strengthen partnership efforts in favour of Africa's development. Following the decision by African leaders to call on member states and Regional Economic Communities to integrate climate change considerations in their development strategies and on development partners for their support, "Climate Challenges to Africa: A Call to Action" prepared under the auspices of the APF looks at the impact of climate change in Africa focusing on three main components (adaptation and risk management, mitigation and clean energy development and finance and other cross-cutting issues) and six key areas (water;

energy; agriculture, forestry and fisheries; health; peace and stability; and financial mechanisms). It calls for urgent actions to be taken both by the wider international community and by African governments, acting both at national level and through their regional and continental institutions. Two additional reports were prepared by the APF: *Carbon Finance and Africa* which lays out the background and key recommendations and actions that can be taken by African governments to improve capacity to take advantage of the CDM; and a brief note examining various current proposals for generating additional revenue either from the current carbon finance market, or through broader charges, levies or taxes.

4.3 Annex I Expert Group on the UNFCCC

The OECD and the International Energy Agency (IEA) jointly provide the secretariat for the Annex I Expert Group (AIXG) on the United Nations Framework Convention on Climate Change (UNFCCC). Established in 1994, the AIXG meets twice a year to discuss analytical reports on topical issues in the climate change negotiations and provides a forum for Annex I countries to share experiences with climate change policies and views on how to address the climate change challenge. Work in 2008 has included analyses and publications on country differentiation, sectoral approaches and what the Bali Action Plan's language of "measurable, reportable and verifiable" could mean in terms of GHG mitigation actions. Once a year the AIXG organises a seminar bringing together developed and developing countries to exchange information on

climate change policies and issues. (See also section 1.3).

Key links:

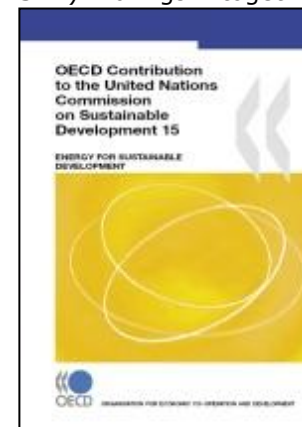
www.oecd.org/env/cc/aixg

4.4 Annual Meeting of Sustainable Development Experts (AMSDE)

The OECD Annual Meeting of Sustainable Development Experts (AMSDE) brings together

delegates from across different policy areas to discuss issues of a cross-cutting nature related to sustainable development. An ongoing focus for the work of AMSDE is policies to encourage sustainable consumption and production, including with respect to reduced GHG emissions and improved energy efficiency. Two recent publications are *Promoting Sustainable*

Consumption: Good Practices in OECD Countries and *Measuring Sustainable Production*. The AMSDE produces an annual report on OECD work to support discussions at the UN Commission on Sustainable Development (UN CSD), the last biennium focused on climate change and energy issues, as contained in



OECD Contribution to the UN CSD 15: Energy for Sustainable Development, (2007).

Key links:

www.oecd.org/sustainabledevelopment

4.5 Roundtable on Sustainable Development

The OECD regularly hosts a Round Table on Sustainable Development that brings together Ministers and other high-level stakeholders from OECD and non-OECD countries for informal discussion on various topics on the climate change agenda. Since 2006, the Round Table has organised meetings on the possibilities for sectoral agreements to reduce GHG emissions, the potential of biofuels and the cost-effectiveness of policies that support them and, most recently, strategies for mobilising adequate investment in low GHG emissions energy technologies.

Over 2007-2010, the Round Table will be devoting its programme to climate-related subjects. In March 2009, a meeting is planned to evaluate the practical consequences of attempting sectoral agreements in cement production and power generation. In June 2009, a meeting is planned to assess the consequences for trade and the environment of border tax adjustments designed to mitigate 'carbon leakage'. The Round Table is a unique forum that enables Ministers, senior private sector executives and experts from the inter-governmental and NGO

communities to conduct a detailed examination of complex issues to one side of the crowded negotiating process. It draws on the full policy capability of the OECD and the IEA, and provides an invaluable opportunity for 'back channel' dialogue.

Key links:

www.oecd.org/sd-roundtable

4.6 Roundtable on Urban Development Strategy

The OECD Roundtable on Urban Strategy of Mayors and Ministers, which was created in March 2007 at the initiative of the Mayor of Madrid, is a global platform involving both high-level national and local governments with the mandate to discuss urban development issues in a global perspective. The agenda of the 2nd annual meeting of the Roundtable that was held in Milan in October 2008 was on climate change issues. Mayors and Ministers endorsed continued policy dialogue and action that strengthens relationships between city competitiveness and climate change and invited the OECD to continue pooling and systematising knowledge around local climate change policies, collaboration between mechanisms between local and national government for climate change action and to provide an essential sounding board for the urban dimension in current global climate change policy processes. Results of this activity will be discussed at the 3rd meeting of the Roundtable planned in late 2009.

Key links:

www.oecd.org/gov/urbandevelopment

4.7 Sahel and West Africa Club

Together with governments, regional institutions and civil society/private sector organisations, the Sahel and West Africa Club (SWAC) supports the development and implementation of action-oriented policies and investments that take into account the complementarities between local, national and regional

levels. The Sahel region is the most ecologically fragile zone. The SWAC has produced a regional analysis on climate change and its impacts on West Africa. The SWAC helps raise awareness of national farmers' organisations in the region on climate change issues and develop their common positions on them.

Key links:

www.oecd.org/swac



5

Relevant Recent or Forthcoming Publications/Reports

ECMT (2007): *Cutting Transport CO₂ Emissions: What Progress?*

ECMT (2006): *Cost Effectiveness of CO₂ Mitigation in Transport: An Outlook and Comparison with Other Sectors.*

IEA (2008): *CO₂ Capture and Storage — A Key Carbon Abatement Option.*

IEA (2008): *Energy Efficiency Policy Recommendations.*

IEA (2008): *Energy Technology Perspectives 2008. Scenarios and Strategies to 2050.*

IEA (2008): *Promoting Energy Efficiency Investments — Case Studies in the Residential Sector.*

IEA (2008): *World Energy Outlook 2008.*

IEA (2007): *Climate Policy Uncertainty and Investment Risk.*

IEA (2007): *Energy Security and Climate Policy — Assessing Interactions.*

IEA (2007): *Mind the Gap – Quantifying Principal-Agent Problems in Energy Efficiency.*

IEA (2007): *Tracking Industrial Energy Efficiency and CO₂ emissions.*

OECD (2009, forthcoming) *Citizens in Focus: Public Engagement for Better Policies and Services.*

OECD (2009, forthcoming): *Mumbai, Climate change and Future Flood Risk: Exposure, Economic Losses and Adaptation Options.*

OECD (2009, forthcoming): *Policy Guidance on Integrating Adaptation to Climate Change into development co-operation*

OECD (2008, forthcoming): *Carbon Emissions Embodied in International Trade.*

OECD (2008, forthcoming): *Copenhagen, Sea Level Rise and Future Flood Risk: Exposure, Economic Losses and Adaptation Options.*

OECD (2008): *Costs of Inaction on Key Environmental Challenges.*

OECD (2008, forthcoming): *Delivering the Biobased Economy*.

OECD (2008): *Economic Aspects of Adaptation to Climate change: Costs, Benefits and Policy Instruments*.

OECD (2008, forthcoming), *Environmental Innovation and Global Markets*.

OECD (2008): *Environmental Policy, Technological Innovation, and Patents*.

OECD (2008): *OECD Environmental Outlook to 2030*.

OECD (2008): *Statement of Progress on Integrating Climate Change Adaptation into Development Co-operation*. (DAC)

OECD (2007): *Business Contribution to MEAs: Suggestions for Further Action*. ENV/EPOC/GSP(2007)1/FINAL

OECD (2007): *Climate Change in the European Alps: Adapting Winter Tourism and Natural Hazards Management*.

OECD (2007): "Environmentally Related Taxes and Tradeable Permits in Practice". Document COM/ENV/EPOC/CTPA/CFA(2007)31/FINAL.

OECD (2007): *OECD Contribution to the United Nations Commission on Sustainable Development 15: Energy for Sustainable Development*.

OECD (2007): *Stocktaking of Progress on Integrating Adaptation to Climate Change into Development Co-operation Activities* (also available in French).

OECD (2006): *The Political Economy of Environmentally Related Taxes*.

OECD (2006): *Metrics for Assessing the Economic Benefits of Climate Change Policies in Agriculture*.

OECD (2006): *Progress on Adaptation to Climate Change in Developed Countries: An Analysis of Broad Trends*.

OECD (2005): *Bridge Over Troubled waters: Linking Climate Change and Development*.

OECD (2004): *The Benefits of Climate Change Policies: Analytical and Framework Issues*.

NEA (2008, forthcoming): *Nuclear Energy Outlook*.

NEA (2008, forthcoming): *Uranium 2007: Resources, Production and Demand*.

NEA (2007): *Risks and Benefits of Nuclear Energy*.

Baron, R. and I. Barnsley, J. Ellis (2008): *Options for Integrating Sectoral Approaches into the UNFCCC*, OECD/IEA.

Baron, R. and J. Reinaud, M. Genasci, C. Philibert (2007): *Sectoral Approaches to Greenhouse Gas Mitigation – Exploring Issues for Heavy Industry*.

Baron, R. (2006): *Sectoral Approaches to GHG Mitigation: Scenarios for Integration*, OECD/IEA.

Baron, R. and J. Ellis (2006): *Sectoral Crediting Mechanisms for GHG Mitigation: Institutional and Operational Issues*, OECD/IEA.

Buchner, B. (2007): *Policy Uncertainty, Investment and Commitment Periods*, OECD/ IEA.

de Bruin K. *et al.* (2009, forthcoming), "Economic aspects of adaptation to climate change: Integrated assessment modelling of adaptation costs and benefits".

Doornbosch R., D. Gielen and P. Koutstaal (2008): *Mobilising investments in low-emission energy technologies on the scale needed to reduce the risk of climate change*. OECD Round Table on Sustainable Development Background paper, 27-28 April.

Doornbosch R. and R. Steenblik (2007): *Biofuels: is the cure worse than the disease?* OECD Round Table on Sustainable Development Background paper, 11-12 September.

Doornbosch R. and S. Upton (2006): *Do we have the right R&D priorities and programmes to support the energy technologies of the future?* OECD Round Table on Sustainable Development Background paper, 14-15 June.

Ellis, J. and Larsen, K. (2008): *Measurement, Reporting and Verification of Mitigation Actions and Commit-ments*, OECD/IEA.

Ellis, J., Baron, R. and Buchner, B. (2007): *SD-PAMs: What, Where, When and How?* OECD/IEA.

Ellis, J. and Kamel, S. (2007): *Overcoming Barriers to Clean Development Mechanism Projects*, OECD/IEA/UNEP Risø Centre.

Ellis, J. and Tirpak, D. (2006): *Linking GHG Emission Trading Systems and Markets*, OECD/IEA.

Hallegatte, S., Henriët, F., Corfee-Morlot, J. *The Economics of Climate Change Impacts at City Scale: A Conceptual Framework*, OECD.

Hunt, A. and P. Watkiss (2007) *Literature Review on Climate Change Impacts on Urban City Centres: Initial Findings*. ENV/EPOC/GSP(2007)10, OECD.

Karousakis, K. Philibert, C. and Guay, B. (2008): *Differentiating Countries in terms of Mitigation Commitments, Actions and Support*, OECD/IEA.

Karousakis, K. and Corfee-Morlot, J. (2007): *Financing Mechanisms to Reduce Emissions from Deforestation: Issues in Design and Implementation*, OECD/IEA.

Karousakis K. (2007): *Incentives to Reduce GHG Emissions from Deforestation: Lessons Learned from Costa Rica and Mexico*, OECD/IEA.

Karousakis, K. (2006): *Joint Implementation: Current Issues and Emerging Challenges*, OECD/IEA.

Lefèvre, N., De T'Serclaes, P. & Waide, P. (2006): *Barriers to Technology Diffusion: The Case of Compact Fluorescent Lamps*, OECD/IEA.

- Levina, E. (2007): *Adaptation to Climate Change: International Agreements for Local Needs*, OECD/IEA.
- Levina, E., Jacob, J.S., Ramos, L.E., and Ortiz, I. (2007): *Policy Frameworks for Adaptation to Climate Change in Coastal Zones: The Case of the Gulf of Mexico*, OECD/IEA.
- Levina E. (2006): *Domestic Policy Frameworks for Adaptation to Climate Change in the Water Sector, Part II: Non-Annex I Countries (Lessons learned from Mexico, India, Argentina and Zimbabwe)*, OECD/IEA.
- Levina E. and Adams, H. (2006): *Domestic Policy Frameworks for Adaptation to Climate Change in the Water Sector, Part I: Annex I Countries (UK, Finland, Canada, USA)*, OECD/IEA.
- Nicholls, R., S. Hanson, C. Herweijer, N. Patmore, S. Hallegatte, J. Corfee-Morlot, J. Chateau, and R. Muir-Wood (2007): *Ranking Port Cities with High Exposure and Vulnerability to Climate Extremes: exposure estimates*. OECD Environment Working Paper 1, ENV/WK(2007)1, OECD.
- Philibert, C., Ellis, J. and Podkanski, J. (2007): *Carbon Capture and Storage in the CDM*, OECD/IEA.
- Philibert, C. (2007): *Technology Penetration and Capital Stock Turnover: Lessons from IEA Scenario Analysis*, OECD/IEA.
- Philibert, C. (2006): *Barriers to the Diffusion of Solar Thermal Technologies*, OECD/IEA
- Reinaud, J. (2008): *Issues behind Competitiveness and Carbon leakage – Focus on heavy Industry*, OECD/IEA.
- Reinaud, J. (2008): *Climate policy and carbon leakage—Impacts of the European Emissions Trading Scheme on Aluminium*, OECD/IEA.
- Reinaud, J. and Philibert, C. (2007): *Emissions Trading: Trends and Prospects*, OECD/IEA.
- Steenblik, R. (2006): *Liberalisation of Trade in Renewable Energy and Associated Technologies: Biodiesel, Solar Thermal and Geothermal Energy*, OECD Trade and Environment Working Paper No. 2006-01, OECD.

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