

Agenda Issues Paper



Meeting of the Environment Policy Committee (EPOC) at Ministerial Level

Environment and Global Competitiveness

28-29 April 2008



For a better world economy

Agenda

ENVIRONMENT AND GLOBAL COMPETITIVENESS

Meeting of the Environment Policy Committee (EPOC) at Ministerial Level

Draft Agenda - 28-29 April 2008

Chair: Italy

Vice-Chairs: Denmark, Japan, Mexico, Portugal, USA

<i>Monday 28 April 2008</i>		
1.	14h00	<p>Welcome and Statement by Chair (5 min) Mr. Alfonso Pecoraro Scanio, Minister for the Environment, Land and Sea, Italy</p>
2.	14h05	<p>Statement by Mr. Angel Gurría, OECD Secretary-General (10 min)</p>
3.	14h15	<p style="text-align: center;">Session I</p> <p style="text-align: center;">Recent Environmental Trends and Projections for the Coming Decades: the <i>OECD Environmental Outlook to 2030</i></p> <p style="text-align: center;">Vice-Chair: Mr. Francisco Nunes Correia, Minister for Environment, Spatial Planning and Regional Development, Portugal</p> <p style="text-align: center;">Lead speakers:</p> <p>Mr. Peter Garrett, Minister for the Environment Heritage and the Arts, Australia Mr. Zhou Jian, Vice Minister of Environmental Protection, China Mr. Jean-Louis Borloo, Ministre d'Etat, Ministre d'Etat, Ministre de l'Ecologie, de l'Energie, du Développement durable et de l'Aménagement du Territoire, France Mr. MAANEE LEE, Minister of Environment, Korea Ms. Jacqueline Cramer, Minister for Environment and Spatial Planning, the Netherlands Mr. Maciej Nowicki, Minister of the Environment, Poland</p> <p>Ministers might discuss their progress in implementing the <i>OECD Environmental Strategy for the First Decade of the 21st Century</i>, adopted by OECD Environment Ministers in 2001. Looking forward, the <i>OECD Environmental Outlook to 2030</i> identified a number of areas where policy actions are needed urgently in order to successfully address the challenges of the coming decades. In this session, Ministers' discussion might focus on the policies to tackle biodiversity loss, water scarcity, health impacts of pollution, and the need to improve resource productivity. The consequences and costs of policy inaction to address these environmental problems would be significant, and are already affecting OECD and non-OECD economies. Early action, on the other hand, can generate multiple benefits. Ministers may discuss how effective and efficient environmental policies can help countries achieve sustainable development goals. Ministers may wish to discuss whether OECD might prepare for the next EPOC Ministerial a revised Strategy for the 2nd Decade of the 21st Century and Outlooks on the priority issues.</p>
	18h00	Cocktail

4.	20h00	<p style="text-align: center;">Session II: Working Dinner Environmental Co-operation between OECD Countries and Emerging Economies</p> <p style="text-align: center;">Vice Chair: Mr. Stephen Johnson, Administrator, Environmental Protection Agency, United States</p> <p style="text-align: center;">Lead speakers: Ms. Ana Lya Uriarte, Minister of Environment, Chile Mr. Erik Solheim, Minister of the Environment and International Development, Norway Mr. Phil Woolas, Minister of State for the Environment, United Kingdom Mr. Jos Delbeke, Deputy Director General for Environment, EC</p> <p>OECD and key emerging economies need to work together to address common environmental goals such as pollution reduction, biodiversity and resource conservation, climate protection and chemical safety. Capacity-building in emerging and developing countries is needed to achieve common environmental goals. Ministers might discuss where dialogue and co-operation between OECD and emerging economies could best be pursued in light of the OECD Enlargement and Enhanced Engagement with key countries.</p>
Tuesday 29 April 2008		
5.	9h00	<p style="text-align: center;">Session III Competitiveness, Eco-innovation and Climate Change</p> <p style="text-align: center;">Vice-Chair: Ms. Connie Hedegaard, Minister for Climate Change and Energy, Denmark</p> <p style="text-align: center;">Lead speakers: Mr. Josef Pröll, Federal Minister of Agriculture, Forestry, Environment and Water Management, Austria Ms. Paula Lehtomäki, Minister for the Environment, Finland Mr. Matthias Machnig, State Secretary, Federal Ministry for Environment, Nature Conservation and Nuclear Safety, Germany Mr. Marthinus Van Schalkwyk, Minister of Environmental Affairs and Tourism, South Africa</p> <p>This session will focus on how competitiveness impacts of ambitious climate policies on certain firms and sectors could be managed without reducing the effectiveness of the policies. Ministers may also discuss how policies to tackle climate change can help to promote the development and diffusion of low-carbon and energy efficient technologies and create business opportunities, and how further EPOC work on eco-innovation might contribute to, and benefit from, the OECD Innovation Strategy. Ministers may also discuss what policy and institutional frameworks are needed to more effectively harness the forces of globalisation -- in particular increased trade and international investment -- to achieve better environmental outcomes.</p>

6.	12h30	<p style="text-align: center;">Session IV: Working Lunch Strengthening Co-operation across Government for Ambitious Climate Change Policies</p> <p style="text-align: center;">Vice Chair: Mr. Fernando Tudela, Vice Minister for Planning and Environmental Policy and Principal Negotiator of Climate Change Issues, Mexico</p> <p style="text-align: center;">Lead speakers: Ms. Liana Bratasida, Assistant Minister for the Environment, Indonesia Mr. Toshiro Kojima, Vice Minister for Global Environmental Affairs, Japan Mr. Andreas Carlgren, Minister for the Environment, Sweden Mr. Bruno Oberle, State Secretary, Federal Department of the Environment, Transport, Energy and Communication, Switzerland</p> <p>Many of the policies to address climate change will need to be either implemented by, or with, the co-operation of other Ministries. Climate change is not only an environmental problem, but a macroeconomic challenge. Moving towards a low-carbon society will require significant shifts in the structure of the economy, and policies will be needed to smooth the transitions required, for example for workers or other affected social groups. Environment Ministers might discuss how to enhance co-operation across government to integrate climate change concerns into economic, sectoral and development co-operation policies, and how the OECD as an interdisciplinary economic organisation can support countries with this objective. Ministers may also discuss what message they would like to send to Finance and Economy Ministers who will discuss the economics of climate change at the OECD Ministerial Council Meeting on 4-5 June 2008.</p>
8.	15h00	Conclusion: Chair's Summary
9.	15h15	End of the Meeting
10.	15h15 16h00	Press Conference (Secretary-General, Chair, and Vice Chairs)

Issues Paper

SESSION I

Recent Environmental Trends and Projections for the Coming Decades: the *OECD Environmental Outlook to 2030*

OECD countries have made significant progress in addressing many environmental problems in the past decades. The second review of the implementation of the *OECD Environmental Strategy for the First Decade of the 21st Century* [ENV/EPOC(2008)9/FINAL] shows that, with total environmental expenditure amounting to 1-2% of GDP, environmental policies in OECD countries have brought significant benefits at a reasonable cost to their economies.

However, countries are not “on track” to achieve the goals of the *Strategy* by 2010. While environmental policies have been successful in reducing certain environmental pressures per unit of GDP (or “relative decoupling”), the absolute scale of economic activity continues to increase, outweighing efficiency gains and placing additional pressure on the environment. The remaining environmental challenges are increasingly complex. Ambitious policy reforms are needed to avoid an otherwise grim environmental prospect over the next few decades. The *OECD Environmental Outlook to 2030* demonstrates that ambitious environmental goals are both achievable and affordable.

Setting priorities for the coming decades

The *Environmental Outlook* highlights four key areas where urgent actions are particularly needed: climate change (which will be discussed in Sessions III and IV, see also Box 1), biodiversity loss, water scarcity and health impacts of pollution.

Biodiversity Many OECD and non-OECD countries have made significant efforts to establish and expand natural protected zones, whose number and area have increased worldwide in the past decade to now cover 12% of land area worldwide. However, countries have not made sufficient progress in protecting tropical forests and marine resources, and illegal logging is widespread in some countries. The *Outlook* suggests that continued population and economic growth will increase pressure on biodiversity to 2030, with further extinction of known animal and plant species and further reductions in the Earth’s capacity to provide the valuable ecosystem services and to enable sustainable use of natural resources that support economic growth and human wellbeing. The pressure on terrestrial biodiversity is projected to come largely from expanding agriculture and infrastructure, as well as climate change. For example, to meet increasing demands for food and biofuels, world agricultural land use will need to expand by an estimated 10% to 2030.

Water Significant water scarcities already exist in some regions of OECD countries and many non-OECD countries. Nearly half of the world population, or more than 3.9 billion people, are expected to live in areas with severe water stress by 2030, mostly in non-OECD countries. This is 1 billion more people than living in such areas today. Water scarcity is exacerbated by pollution of water resources, in particular increasing pollution of groundwater resources. Agriculture is the largest water user worldwide, and a major water polluter. Countries will also increasingly need to address emerging challenges caused by climate change impacts on water systems and hydrology.

Health and environment Concerns about the impacts of environmental pollution on health have led to the implementation of measures to reduce emissions of the most harmful pollutants. Despite these measures, the health impacts of air and water pollution are not likely to decrease in the years ahead, unless further policy action is undertaken. Moreover, health issues associated with other widespread environmental hazards, such as chemicals in the environment and products, need to be addressed. Progress has been made in assessing chemical safety and OECD countries have developed together an efficient harmonised chemical safety framework, in which a growing number of emerging economies are

participating. However, there is still insufficient information to fully assess the risks to health and the environment posed by many chemicals.

Furthermore, as the scale of activity in the global economy continues to increase, countries need to improve “resource productivity”, reduce the negative environmental impacts associated with the production, use and end-of-life management of natural resources, and avoid loss of valuable materials contained in waste. This will require stronger emphasis on redesign and reuse of products, waste prevention (reduction of both amount and hazard) and recycling. OECD work to date has contributed to improving the knowledge base and analytical capacity concerning resource productivity, but knowledge gaps remain [C(2008)40]. Further work is needed to analyse how different materials flow through the economy (from their extraction or import to their final disposal) and how these flows relate to environmental risks.

Cost of inaction is high, while ambitious policy action is affordable

The economic and social costs of policy inaction to address environmental problems are significant and are already affecting OECD economies directly (e.g. through health care costs) as well as indirectly (e.g. through reduced labour productivity) [ENV/EPOC(2007)16/FINAL]. For example, air pollution can lead to reduced agricultural yields, degradation of physical capital, and broader impacts on ecosystem health. Many negative health impacts are also associated with unsafe water supply, lack of sanitation – and a large majority of these problems affect children more than they do adults. Many households around the world devote significant resources (time and money) to securing access to clean water, in order to reduce these health impacts. Inaction on environment-related industrial hazards (e.g. oil spills and land contamination), as well as on protecting citizens from natural hazards (such as floods) is already generating significant economic costs, and these costs are trending upwards. The *Outlook* also points out that failure to halt biodiversity loss could lead to further losses in essential ecosystem services, such as carbon sequestration, water purification, protection from meteorological events, and the provision of genetic material. These ecosystem services provide economic benefits to society and their reduction/loss would represent a significant cost.

Some of these costs are already being reflected in government, household, or firm budgets. Examples from the public sector include increased public expenditures on health services due to air and water pollution; increased unemployment benefits for out-of-work fishers; remediation costs for contaminated sites; and the dykes needed to protect against flooding. Other components of these costs are at least partly reflected in existing markets. Examples include the effects of contaminated sites on adjacent property prices, the effects of air pollution on agricultural yields, or the cost of property insurance in coastal areas. Still other costs of environmental policy inaction are not reflected in identifiable market variables. Examples include the costs associated with the continued loss of marine and terrestrial biodiversity; as well as the pain and suffering associated with poor health.

On the other hand, ambitious policy actions to address some of the most urgent environmental challenges are affordable, when compared with the expected economic growth of the next few decades and the expected costs of inaction. As an example, a hypothetical global policy mix was simulated for the *OECD Environmental Outlook* that could address several key environmental problems simultaneously. While world GDP is projected to grow by nearly 100% to 2030, implementing the “*OECD Environmental Outlook policy mix*” (EOP) would cost just over 1% of that growth. However, if less cost-effective policy options are chosen, the cost of achieving a similar environmental improvement would go up significantly.

The EOP --consisting of actions to reduce agricultural subsidies and tariffs by 50%, tighten regulations to address air pollution, speed up the introduction of second-generation biofuels, and introduce a global carbon tax (USD 25 per tonne of CO₂ equivalent)-- would result in significant environmental benefits. Global nitrogen and sulphur oxides emissions would be cut by 31% and 37% respectively between 2005 and 2030, while growth of GHG emissions would be contained to 12% during the same period, compared to a 37% increase with no new policies. The reduced air pollution and an increase in sewerage connections would result in less environment-related health problems and associated economic and social costs.

Towards effective and efficient environmental policies

The costs of delaying action could be significant, especially where policy inaction has long-term or irreversible environmental implications. Governments have the responsibility to create the right incentives for businesses and consumers to make choices that can help prevent future environmental problems. In doing so, governments need to choose policy solutions that are both economically efficient and environmentally effective. The OECD has provided considerable leadership in the past in suggesting integrated economic-environmental solutions that are both effective and efficient. Based on this past OECD work, a *Framework for Effective and Efficient Environmental Policies* [ENV/EPOC(2008)6/FINAL] has been developed, for use by governments in the design and implementation of their environmental policies.

Questions for discussion

What policy innovations have been introduced or are being planned to address biodiversity loss, water scarcity, health problems related to pollutions or other environmental challenges?

What could be done to make environmental policies more cost-effective? Are there examples of policy approaches that can solve one environmental problem with co-benefits of achieving other environmental, social or economic objectives (e.g. those that help protect biodiversity while improving the livelihood of local communities)?

Are policy reforms for environmental progress hampered by concerns that their implementation would be too costly? Could better understanding of costs and consequences of policy inaction for different regions, economic sectors and ecosystems help to overcome such obstacles?

Do Ministers wish to ask the OECD to prepare a new OECD Environmental Outlook and a revised OECD Environmental Strategy? Should the further OECD work focus on particular challenges highlighted by the 2008 OECD Outlook?

Ministers are requested to:

- note the OECD Framework for Effective and Efficient Environmental Policies, and welcome its publication.
- note and welcome the OECD Council Recommendation on Resource Productivity.

SESSION II-Working Dinner

Environmental Co-operation between OECD countries and Emerging Economies

Working together to achieve common environmental goals

The global nature of many environmental problems, as well as the environmental impacts of economic globalisation (particularly increased trade and international investment), require enhanced international environmental co-operation. It is especially important for OECD and major partner countries to identify together environmentally effective and economically efficient solutions for pollution reduction and nature protection. For example, efficient and least-cost solutions to climate change will require the participation of all major emitters. Many of the biodiversity “hotspots” are located in developing countries, but benefits of their conservation extend globally. With the rapidly growing chemicals production and trade, especially in non-OECD countries, chemical safety for human health and the environment affects global markets. OECD countries have a responsibility to show leadership, but these efforts will not be effective without the active participation of major emerging economies.

Brazil, Russia, India, Indonesia, China and South Africa (the “BRIICS”), in particular, are essential partners in finding international solutions to global environmental challenges, given their increasing role in the world economy and rapidly growing impacts on the global environment. The *OECD Environmental Outlook to 2030* suggests that further environmental co-operation between OECD countries and major emerging economies is essential to achieving ambitious environmental goals at lower costs (see Box 1 on the *Outlook* climate policy simulations).

Tackling the global distributive question

The greatest obstacle for global action is uncertainty about who should take action and who should bear the costs of that action. This is especially so for global environmental challenges like climate change and biodiversity loss for which the costs and the benefits of policy action are unevenly distributed amongst countries and generations. Historically, the majority of greenhouse gas emissions have come from developed countries, but the consequences of climate change are expected to be most severe in the poorest of developing countries where vulnerability is highest. Looking forward, CO₂ emissions from non-OECD countries are projected to double to 2030, accounting for over 70% of the total increase to 2030. However, on a per-capita basis, OECD country emissions will still on average be much higher. Without new policy, OECD per capita emissions are projected to be more than three times higher than those of non-OECD countries in 2030. The *Outlook* demonstrates the need to agree on a burden-sharing mechanism to fairly share the cost of protecting the climate (see Box 1). As much of the value of biodiversity is global, not local, international co-operation is needed to share the costs of its protection. The issue of the distribution of the costs of environmental protection measures, if left unsolved, may prevent major advances in meeting environmental goals. OECD and non-OECD countries need to work more closely to find practical interpretations of the principle of “common but differentiated responsibilities” in different environmental areas and to implement them.

Enhancing international environmental co-operation

At the May 2007 meeting of the OECD Council at Ministerial level, OECD Members agreed to open accession discussions with five countries; Chile, Estonia, Israel, the Russian Federation and Slovenia. In addition, the OECD Council also identified Brazil, China, India, Indonesia and South Africa as key countries with which they wish to intensify their co-operation and to enhance their engagement in the work of the Organisation. OECD is committed to deepening its engagement with emerging economies in order to work together to find solutions to the global and other environmental challenges. The most effective way to do this may be to engage partner countries directly in the OECD work on environment. This process has already begun with some of these countries.

The OECD provides a forum for exchanging best practices and carrying out peer reviews of Member and non-Member countries alike. OECD Environmental Performance Reviews have already been carried out for Chile, China and Russia, using the same methodology as for OECD countries. This has shown that peer-learning is two-way, and that OECD Members can learn from best practices in partner countries, for example Chile's experience with water trading and China's new policy to move towards a "harmonious society". Meanwhile, developing countries have opportunities to "leapfrog" to more energy- and resource-efficient and greener development paths, taking advantage of new know-how and technologies. OECD Members and their main partner countries need to work together to spread knowledge, best practices and technologies for sustainable production and consumption patterns worldwide.

Developing countries are among the most vulnerable to many environmental challenges and they have limited capacity in many areas of environmental protection, including adaptation to climate change and sound management of chemicals and hazardous wastes. National initiatives within developing countries are clearly central, but international co-operation has an important role to play. For example, following a 2006 joint Meeting between Development Co-operation and Environment Ministers, the OECD is developing guidance on integrating adaptation to climate change into development co-operation activities; to support the development of realistic and sustainable financing strategies for water supply and sanitation; and to develop new approaches to enhance capacity development for environmental management in light of the Paris Declaration on Aid Effectiveness. OECD countries are also working to help strengthen the policy frameworks that support the development and transfer of environmentally friendly technologies, and encourage private sector investment in infrastructure. In the area of chemical safety, the Strategic Approach to International Chemicals Management (SAICM), recently adopted in the UN context, can provide a good foundation for co-operation with non-OECD governments to share information and help build capacity for effective chemicals management [C(2008)32].

Questions for discussion

How could OECD further support environmental dialogue and co-operation between OECD and emerging economies, particularly through the Enhanced Engagement programmes? Which areas or activities should be prioritised?

How could OECD, Accession and Enhanced Engagement Countries work more effectively together to support environmental capacity development in developing countries?

Ministers are requested to:

- note and welcome the OECD Council Resolution on the Implementation of the Strategic Approach to International Chemicals Management (SAICM).

SESSION III

Competitiveness, Eco-innovation and Climate Change

Globalisation, including increased trade and international investment, can enhance the efficient use of resources, stimulate improved environmental performance and contribute to the diffusion of cleaner technologies, provided that robust environmental policy and institutional frameworks are in place [ENV/EPOC(2007)18/FINAL]. In their absence, globalisation can amplify market and policy failures and intensify the related environmental pressures. Effective policies are therefore required at local, national, regional and global levels. Globalisation can intensify concerns about possible competitiveness impacts of policies to tackle climate change, but it can also enhance the opportunities for increased collaboration to limit the costs of achieving climate change goals, as well as to enhance eco-innovation and growth in new business sectors.

Competitiveness impacts and risk of carbon leakage can be managed

With negotiations for a post-2012 international climate change framework now underway, discussions on the potential competitiveness impacts of ambitious climate change policies are intensifying. Governments are strengthening their efforts to mitigate climate change, but the introduction of policies, such as emission reduction targets, emissions trading schemes and carbon taxes, has already been hampered in some cases by fears of possible negative impacts on industrial competitiveness, particularly in energy intensive sectors. There are also concerns that, if policies are put in place in only some countries, there is a risk of “carbon leakage” — the relocation of firms to countries without strong climate policies—, resulting in a displacement in global emissions rather than a reduction.

However, there is no convincing evidence that environmental policies to date have had a negative impact on competitiveness at the macro-economy level. There may be negative impacts at the level of specific firms, sectors or regions as a result of more ambitious environmental policies, but these losses tend to be off-set by positive effects elsewhere in the economy. Looking forward, the *OECD Environmental Outlook* also confirms these conclusions. It suggests that ambitious climate change policies harmonised across countries could lead to large decreases in the value-added of energy production and small decreases in energy-intensive sectors (e.g. steel, aluminium and cement) while other sectors would be expected to expand (see Box 1). More thorough analysis of this issue is needed to assess how innovation and other measures could reduce these impacts, to look across different policy packages, and to evaluate the distributions of costs and benefits across global and local economies. Improving public awareness of the overall costs and benefits of proposed measures can also make an important contribution to the policy debate.

Governments may decide to take action to compensate or mitigate possible negative impacts on competitiveness of climate change policies. In general, announcing policy measures early and phasing them in to provide a transition period, for example to allow firms to implement least-cost measures, would help to reduce such impacts. Early consultation with affected business sectors would also be helpful. Harmonising policy approaches among countries, in particular those with trade-exposed and energy intensive sectors, can help to level the playing field among competing firms. Integrating measures to address climate issues as part of a broader reform of industry or sectoral policies could also help to off-set negative competitiveness impacts. In situations where ambitious policies are not implemented sufficiently widely, additional measures might be considered to address the problem of potential carbon leakage. Specific measures that are being applied or considered by some countries include:

- When an energy or carbon tax is applied, recycling some of the tax revenues back to affected sectors.
- When a permit system is applied, allocating some initial permits to affected sectors free of charge. If permits (or allowances) are auctioned, a proportion of revenues could be recycled to address competitiveness concerns.

- Developing international sectoral agreements or approaches to reduce emissions, which can also help to support mitigation action in developing economies that may not be subject to economy-wide emissions reduction targets.
- Applying border tax adjustments, if these can be demonstrated to be environmentally effective and economically efficient (including in light of the likely administrative costs), as well as being in compliance with WTO regulations.

Tackling climate change can provide opportunities to promote eco-innovation

Further technological developments and wider diffusion of existing technologies will be essential to keep the costs of reducing greenhouse gas emissions affordable. Ambitious climate change policies can act as a catalyst to promote eco-innovation, for example, by creating new markets for low-carbon technologies. The environmental technology, goods and services sector is already large, and it is likely to expand significantly in the future. Indeed some OECD governments are promoting this sector as a key element in their future economic development. Many companies are already moving ahead, encouraged by stakeholder and consumer demands for “green” innovation and products as well as recent policy developments.

Business has a central role in leading eco-innovation, but governments need to provide a clear and consistent long-term policy framework to provide the right incentives to private actors to make long-term investments in green R&D and deployment of clean technologies. A range of policy instruments exist to promote eco-innovation. Policies that put a price on greenhouse gas emissions (e.g. through carbon taxes or emissions trading) provide powerful incentives for eco-innovation by enabling low-carbon technologies to be cost-competitive vis-à-vis carbon-intensive technologies. These instruments are especially effective when combined with longer-term target setting, as this sends a strong signal about the stringency of future policies.

Many OECD countries still subsidise fossil fuel industries. Removal of subsidies for “dirty” technologies should be a first step before considering subsidies to promote “clean” technologies. The latter, if not designed carefully, could lock-in inefficient technologies or practices. While several countries have been successful in promoting clean technologies with support schemes, subsidising the “good” is more costly to taxpayers than taxing or removing subsidies for the “bad”.

Nevertheless, carbon pricing alone is unlikely to be sufficient to induce the necessary shift towards cleaner technologies, given market and information failures. Government support is important to ensure sufficient investment in basic green R&D, which still represents a relatively small share of overall public R&D budget. Payments to business to lower the costs of developing new technologies (e.g. support for the development of wind or solar power), or subsidies to consumers to lower the price they pay for climate-friendly goods and services are therefore often used in practice to support new technologies, such as those for renewable energy. In addition, many OECD countries are developing mechanisms for using public funds to leverage private finance to accelerate the commercialisation of new environmental technologies. Other policies to promote eco-innovation include eco-labelling and information campaigns to raise consumer awareness (e.g. with respect to the energy intensity of appliances or fuel efficiency of cars), and progressively strengthening energy-efficiency standards to the level of best performers for each product category. The mix of policies used will need to reflect national circumstances and avoid inefficient overlap of different types of policies for similar goals.

International frameworks are also needed to promote and diffuse low-carbon technologies

At the international level, most OECD countries are involved in partnerships for technology co-operation, for example to share the investment costs of developing major new technologies to reduce greenhouse gas emissions. Some OECD countries are actively using trade and investment policies to disseminate environmental technologies, for example promoting the liberalisation of trade in environmental goods and services in the WTO and in bilateral trade agreements through the reduction or elimination of tariff and non-tariff barriers. At the same time, competition for markets and concerns about intellectual

property rights constrain international co-operation on the wider dissemination of cleaner technologies. Further work on how to best address these concerns are needed in order to implement the Bali Strategic Plan for Technology Support and Capacity-Building and identify more effective approaches to improve access to energy efficient and low-carbon technologies in developing countries.

Ongoing OECD work is reviewing different policy options to promote eco-innovation, with the aim of identifying successful approaches and good practices. This work will contribute to, and benefit from the preparation of an OECD Innovation Strategy that will be presented to the 2010 Meeting of the OECD Council at Ministerial Level¹. The objective of the OECD Innovation Strategy is to assist Member countries to find more effective ways to promote innovation in an increasingly globalised and knowledge-based economy.

Questions for discussion

How can governments best address concerns about competitiveness impacts and possible carbon leakage as a result of ambitious climate change mitigation policies, without reducing the effectiveness of the climate policy or raising the costs of action?

What types of national measures, including public-private partnerships, have successfully promoted the development and deployment of low-carbon or energy efficient technologies? How could the OECD help countries to meet this objective?

What kind of international framework would promote climate change mitigation and accelerate private sector investment in the development and transfer of low-carbon or energy efficient technologies to developing countries?

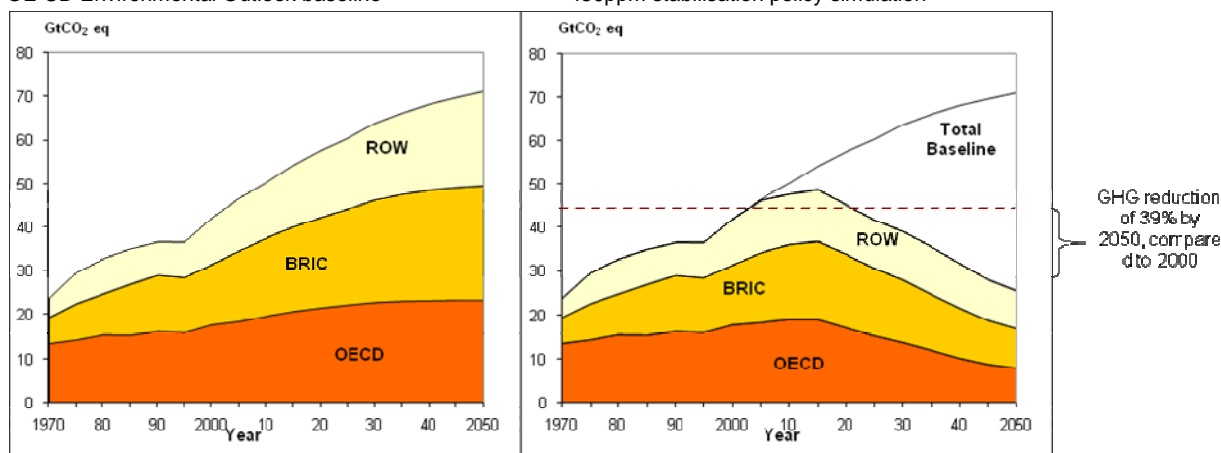
¹ The 2007 Ministerial Council Meeting called for the development of an OECD Innovation Strategy.

Box 1. The OECD Environmental Outlook policy simulations on climate change

Without new policies, global GHG emissions are projected to grow by 37% to 2030 and by 52% to 2050. This will lead to long-term impacts including increased heat waves, droughts, storms and floods, resulting in severe damage to key infrastructure and crops in some areas. Some of these impacts are already starting to be observed, and others will emerge more prominently in the coming decades. The *OECD Environmental Outlook to 2030* examines a range of hypothetical policy simulations to address climate change, which demonstrate the following:

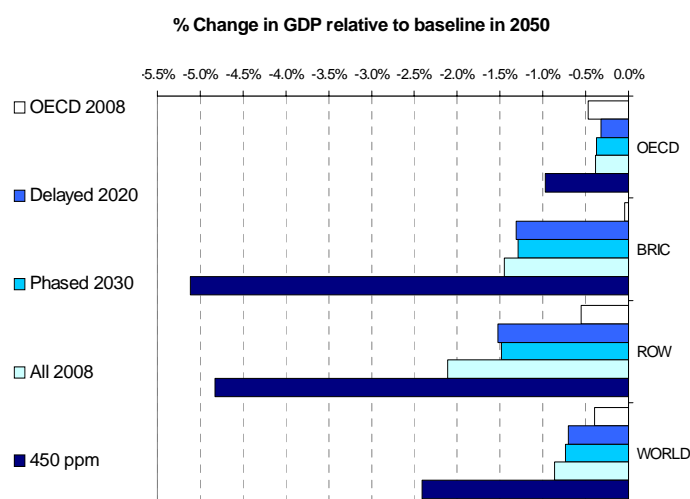
OECD and BRIC countries need to work together to effectively curb GHG emissions in the coming decades and achieve atmospheric stabilisation in the long term to limit climate change. Non-OECD countries are projected to account for almost 80% of the increase in GHG emissions to 2050. The stabilisation target of 450 ppm CO_{2eq} is among the lowest of targets considered to date in international discussions, reflecting an interest to keep global warming to a minimum. To achieve such a target, actions by both OECD and non-OECD countries will be required to achieve a reduction of roughly 40% in global emissions by 2050 relative to 2000 levels (Figure 1, Figure 3).

Figure 1. Total GHG emissions (by region) to 2050: baseline compared to 450 ppm CO₂-eq stabilisation
OE CD Environmental Outlook baseline 450ppm stabilisation policy simulation



The costs of mitigation are affordable. The global economic costs of mitigation, even for the most ambitious mitigation case are affordable and manageable if countries work together to implement cost-effective policies. Simulations suggest that achieving stabilisation of GHG concentrations at 450ppm CO_{2eq} through a harmonised global carbon tax starting today would reduce world GDP by about 0.5% in 2030 and by less than 2.5 percent in 2050 relative to baseline (Figure 2). This would be equivalent to slowing world GDP growth rates by less than 0.1 percentage points annually over the 2005 to 2050 timeframe.

Figure 2. Economic cost of mitigation policy cases by major country group*



But the cost of global action would be unevenly distributed across regions. In such a policy case, where emission reductions to meet an ambitious stabilisation goal are achieved through a globally-harmonised tax, costs to OECD countries are estimated to be lowest (about 1% loss in GDP in 2050), while the GDP losses in Brazil, Russia, India and China (BRIC) would be roughly 5 times this level, and those in the rest of the world (ROW) about four times as high (Figure 2). This suggests the need for a burden-sharing mechanism within an international collaborative framework to protect the global climate. Other *Outlook* policy simulations (see Note below) would lead to lower rates of GDP loss in all regions (Figure 2), but would result in less ambitious global emission reductions, or even increases (Figure 3), and thus increased impacts of climate change.

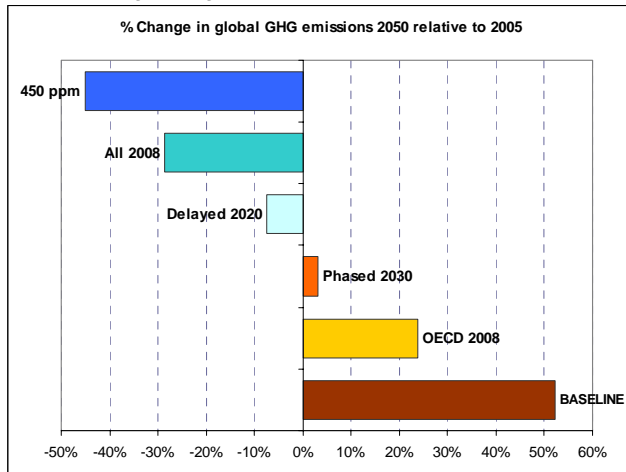
* **Note:** OECD 2008 = all OECD countries apply a GHG tax of USD 25 per tonne of CO₂-eq; Delayed 2020 = all countries apply the tax, starting only in 2020; Phased 2030 = OECD countries apply the tax in 2008, BRIC in 2020 and Rest of the World (ROW) in 2030; All 2008 = all countries apply the tax, starting in 2008; 450ppm = scenario to stabilize GHG concentrations in the atmosphere at 450 ppm CO₂-eq; For all USD 25 tax cases, the tax is escalating by about 2% per year after the initial year of introduction.

Box 1 The *OECD Environmental Outlook* policy simulations on climate change (continued)

The more countries, sectors and greenhouse gases that are covered, the cheaper it will be to curb global emissions. If OECD countries alone were to implement a hypothetical carbon tax starting at USD 25/tonne of CO₂-eq in 2008 (see Note), this would lead to a projected 43% reduction in OECD greenhouse gas emissions. However, global emissions would still be 38% higher in 2050 compared to the 2000 levels. If Brazil, China, India and Russia follow suit with the same policy in 2020, and the rest of the world in 2030, global greenhouse gas emissions could be brought down to the 2000 levels (0% increase) in 2050.

Figure 3. Global GHG emissions: baseline and mitigation cases

Changes in global GHG emissions over time



Competitiveness effects of policy actions are manageable.

The Outlook analysed changes in value added in different sectors for the most stringent mitigation case simulated. As the energy sector is a principal source of mitigation, value added in this sector would be reduced significantly in all regions in 2030 relative to the baseline. This would be followed by smaller reductions in energy-intensive industry and by other industry (non-energy intensive). On the other hand, value added in the service sector is projected to grow in all regions, but most significantly in BRIC countries even under the most stringent mitigation case. This is because in a carbon-constrained world the service sector is much more attractive for investment than other sectors, notably those based on fossil energy. In the BRIC countries, the gain in value added in the services sector would offset the loss in the energy sector. Growth in new sectors that provide goods and services for a low-carbon future, not included in this analysis, could further offset the loss in other sectors.

There are significant local co-benefits to reducing GHG emissions. There are numerous local and national co-benefits of taking steps to reduce CO₂ and other GHG emissions other than avoiding climate change, such as reduced air pollution, healthier cities and people, and improved energy security. At the global level, action to limit certain greenhouse gases (PFCs and HFCs) will benefit both climate and ozone layer protection efforts.

SESSION IV-Working Lunch

Strengthening Co-operation across Government for Ambitious Climate Change Policies

Structural changes to the economy are needed to move towards a low-carbon society

The OECD Environmental Outlook shows that the policies and technologies to address climate change are available and they are affordable, when compared with the expected economic growth in the next few decades (see Box 1). But this does not mean that implementing climate change policies will be either cheap or easy. Moving to a low-carbon society will require significant shifts in the structure of the economy. To date, resistance by consumers and producers to change has generally resulted in relatively weak climate change policies with, for example, the major energy-intensive industries being exempted from policy action.

While adjusting or fine-tuning the design of climate policies to address competitiveness concerns (as discussed above) can provide short-term solutions to political bottlenecks, over the longer term the cost of protecting often inefficient industries while achieving ambitious emissions reductions will be high. Transitional measures -- such as retraining of workers and compensation to low-income families through social security systems -- should be part of any reform package to smooth the transition of structural changes on particular segments of the economy.

Climate change cannot be solved by Environment Ministries alone

Climate change is not just an environmental problem, but a macroeconomic challenge. Moving towards a low carbon society will require restructuring the economy, and policy solutions that cut across economic sectors. While Environment Ministries are generally charged with the main responsibility for addressing climate change, many of the policies needed to successfully reduce greenhouse gas emissions or to adapt to climate change will need to be either implemented by, or with the co-operation of, other Ministries (e.g. Energy, Agriculture, Industry, Science and Technology, Tourism, Construction and not least Finance and Economy Ministries). This will require stronger co-operation across government, including across different levels of government (central, regional, state, local).

Relevant Ministries need to work together to develop better co-ordinated policies so that climate change mitigation and adaptation are integrated into other sectoral policies. These may include: strategies to promote the potential economic benefits of eco-innovation from climate change policies; measures to address the impacts of climate change policies on affected industries, workers or specific income groups; support to R&D and the technological transition toward a low-carbon society; or to emphasise the benefits of action (or costs of inaction) on climate change to the populations or sectors likely to be affected by climate impacts.

Partnering with businesses, workers and civil society will also be crucial. The private sector has an important role to play as the main engine for the development and diffusion of clean technologies. Labour unions can provide valuable insights into worker retraining, which will be part of transitional measures in the necessary shift to a low carbon society. And NGOs can be a powerful change agent for public awareness and support for ambitious policies to address climate change.

Message to Finance and Economy Ministers at the OECD Ministerial Council Meeting

The "economics of climate change" is one of the key themes of the upcoming OECD Ministerial Council Meeting (4-5 June 2008), with a focus on the aspects of climate change policies that are directly within the remit of Finance and Economy Ministers. In their discussions at the Meeting of EPOC at Ministerial Level, Environment Ministers may wish to discuss a message to highlight specific issues for the attention of their counter-parts, the Ministers of Finance and Economy, for consideration when they meet at OECD in June 2008. For example, this might include:

- There is increasing evidence that implementing policies to mitigate climate change is affordable and manageable if least-cost policies are used and when compared to the expected high costs of policy inaction. How can Finance and Economy Ministers help raise awareness that acting on climate change is economically rationale?
- Environment Ministers asked the OECD in 2004 to carry out work on the costs of inaction in various environmental areas. Work done since then has demonstrated that inaction on environmental problems is already generating significant economic and budgetary costs. Further work on the cost of inaction on climate change is therefore needed, particularly to obtain more precise information on their impacts on government budgets, as well as on the distributive effects on households. How could Finance and Economy Ministers work together with Environment Ministers on this through the OECD?
- Tackling climate change successfully will require ambitious policy action. A comprehensive policy framework to reduce greenhouse gas emissions, enhance energy efficiency in key sectors (e.g. transport, industry and housing) and promote renewable energy will require the use of policies for which Finance and Economy Ministers are responsible, such as for example carbon taxes, subsidy reform (particularly the removal of environmentally harmful subsidies for the fossil energy sector) and emissions trading schemes. Economic instruments can help to keep the costs of climate change policy action low, yet they are often unpopular with industry and even the public. How can Finance and Economy Ministers help to build support for such policies?
- Countries that are using energy taxes, carbon taxes and emissions trading schemes often provide exemptions or reduced tax rates to the most energy-intensive industries. This raises the costs of policy action and reduces its effectiveness. How can concerns about the competitiveness effects of climate change policies on these industries be addressed, while ensuring effective and least cost action to reduce greenhouse gas emissions?
- Many support programmes for technology development already exist to promote low carbon-technologies and practices. But designing support programmes that simultaneously improve environmental conditions, respect the need for economic efficiency and are also socially acceptable can be a challenge. Discussions about the wider socio-economic impacts of subsidies for biofuels illustrate this well. How can Environment, Finance and Economy as well as other relevant Ministers work together to ensure that support programmes for low-carbon technologies deliver positive environmental results and are socially just, while also using taxpayers' money cost-effectively?
- Moving to a low-carbon society will require a restructuring of the economy, reducing the value of greenhouse gas-intensive industries and providing opportunities for growth in other industries, particularly those related to services and clean technology. How can Economy and Finance Ministers help to smooth this transition?

Questions for discussion

How have Environment Ministries successfully built support in other Ministries and levels of government, with relevant stakeholder groups (the private sector, workers and civil society groups) and at the highest political levels for ambitious climate change mitigation and adaptation policies?

What message would Environment Ministers wish to send to Finance and Economy Ministers, given the potentially key role these Ministries have in managing the structural transition to a low-carbon society?

As a multidisciplinary economic organisation, what role could the OECD play to contribute to a sound post-2012 climate architecture? Do Ministers think that a possible future joint meeting of Environment Ministers and Finance and Economy Ministers would be useful to address this challenge?