GREEN GROWTH AT THE OECD: SELECTED AREAS OF ONGOING WORK

In May 2011 the OECD Green Growth Strategy[1] was welcomed by governments from over forty developed and emerging economies as a useful tool for expanding economic growth and job creation through the sustainable use of natural resources, efficiencies in the use of energy, and valuation of ecosystem services.

The Strategy marks the start of OECD's longer term agenda to support national and international efforts to achieve green growth. It aims to help countries foster economic growth and development while ensuring that natural assets continue to provide the resources and environmental services on which our well-being relies.

The OECD sees green growth as a practical and flexible approach for accelerating progress in the economic and environmental pillars of sustainable development, while taking full account of the social consequences of greening the growth dynamic of economies. The focus of green growth strategies is ensuring that natural assets can deliver their full economic potential on a sustainable basis. That potential includes the provision of critical life support services – clean air and water, and the resilient biodiversity needed to support food production and human health.

There is no "one-size-fits-all" prescription for implementing green growth. Greening the growth path of an economy depends on policy and institutional settings, level of development, resource endowments and particular environmental pressure points. Advanced, emerging, and developing countries will face different challenges and opportunities. Building on the work of the Strategy, green growth is being integrated into OECD analytical work to provide concrete, targeted advice as member and partner countries advance with the design and implementation of green growth strategies. The below note provides further details and examples of ongoing work.

Green growth country reports

Building on the general framework developed in the Green Growth Strategy, the OECD is mainstreaming green growth in its national and multilateral policy surveillance exercises to provide policy advice that is targeted to the needs of individual countries. These include the Economic Surveys, Environmental Performance Reviews, Innovation Reviews, and Investment Policy Reviews, as well as the *Going for Growth* annual report and the Green Cities Programme. These analyses will cover advanced, emerging and other economies. Already a number of Economic Surveys and Environmental Performance Reviews have examined selected green growth issues, and can provide some first insights into countries' recent actions to green their economies, for example some recent ones include:

- "Green growth and environmental governance in Eastern Europe, Caucasus, and Central Asia" (forthcoming).
- *OECD Economic Surveys: Russian Federation 2011*, includes a chapter on increasing energy efficiency as a means to achieve greener growth. dx.doi.org/10.1787/eco_surveys-rus-2011-en
- *OECD Economic Surveys: Israel 2011*, includes a chapter on addressing challenges in the energy sector. dx.doi.org/10.1787/eco_surveys-isr-2011-en
- *Greening Public Budgets in Eastern Europe, Caucasus and Central Asia* (2011) dx.doi.org/10.1787/9789264118331-en
- Jones, R. S. and B. Yoo, "Korea's Green Growth Strategy: Mitigating Climate Change and Developing New Growth Engines", *OECD Economics Department Working Papers*, No. 798, (2011) dx.doi.org/10.1787/5kmbhk4gh1ns-en
- Capozza, I., "Greening Growth in Japan", *OECD Environment Working Papers*, No. 28 (2011) dx.doi.org/10.1787/5kggc0rpw55l-en
- Carey, D. (2010), "Implementing Cost-Effective Policies in the United States to Mitigate Climate Change", *OECD Economics Department Working Papers*, No. 807, dx.doi.org/10.1787/5km5zrs4kc6l-en

[1] The Strategy consists of: a *Summary for Policy Makers*, *Towards Green Growth, Tools for Delivering on Green Growth*, and *Towards Green Growth: Monitoring Progress - OECD Indicators*: available from www.oecd.org/greengrowth

- *OECD Economic Surveys: Australia 2010*, including a focus on water management. dx.doi.org/10.1787/eco_surveys-aus-2010-en
- OECD Investment Policy Reviews - China 2008: *Encouraging Responsible Business Conduct,* dx.doi.org/10.1787/9789264053717-en
- OECD work on Green Cities: www.oecd.org/greencities

Green growth indicators and measurement tools

Developing and implementing framework conditions that promote green growth requires a good understanding of the determinants of green growth and of related trade-offs or synergies. It also requires appropriate information to support policy analysis and to monitor progress.

Monitoring progress towards green growth requires indicators based on internationally comparable data. The report *Towards Green Growth: Monitoring Progress - OECD Indicators* proposes a preliminary set of twenty-five indicators on the basis of existing work in international organisations, and in OECD and partner countries. The proposed set is neither exhaustive nor final, and has been kept flexible so that countries can **adapt it to different national contexts**. It has been structured to capture the main features of green growth:

Indicators groups and topics covered

1 The environmental and resource productivity of the economy	• Carbon and energy productivity • Resource productivity: materials, nutrients, water • Multi-factor productivity
2 The natural asset base	• Renewable stocks: water, forest, fish resources • Non-renewable stocks: mineral resources • Biodiversity and ecosystems
3 The environmental dimension of quality of life	• Environmental health and risks • Environmental services and amenities
4 Economic opportunities and policy responses	• Technology and innovation • Environmental goods & services • International financial flows • Prices and transfers • Skills and training • Regulations and management approaches
Socio-economic context and characteristics of growth	• Economic growth and structure • Productivity and trade • Labour markets, education and income • Socio-demographic patterns

In the coming years, the OECD will work with countries to advance the green growth measurement agenda, fill some of the most important information gaps, and contribute to the implementation of the System of Environmental and Economic Accounting (SEEA) in areas relevant to green growth. The aim is to:

- Fill gaps in environmental-economic data at the **industry level**.
- Develop and improve the physical data for key stocks and flows of **natural assets**, including information **on land resources and non-energy mineral resources** that often constitute critical inputs into production.
- Further develop physical data to help improve **material flow analyses**.
- Improve information on **biodiversity**.
- Develop **monetary values** to reflect prices and quantities for (changes in) key stocks and flows of natural assets. Such valuations, even if incomplete and imperfect are required for **extended growth accounting models**, more comprehensive balance sheets and for adjusted measures of real income.
- Produce information on how environmental concerns trigger **innovation** in companies.
- Develop indicators on **environmental regulation** to complement indicators on economic instruments.
- Improve measures on both the objective and the subjective dimensions of **quality of life**, in particular measures of environmentally induced health problems and related costs; and public perceptions.
- Identify a small set of '**headline' indicators** to track central elements of green growth and which are representative of a broader set of green growth issues.

Further information and key documents

- *Towards Green Growth: Monitoring Progress - OECD Indicators* (2011) www.oecd.org/dataoecd/37/33/48224574.pdf
- Sustainable Manufacturing Toolkit (2011) www.oecd.org/innovation/green/toolkit
- Measuring sustainable development, UNECE, OECD, Eurostat (2009) www.oecd.org/dataoecd/30/20/41414440.pdf
- Measuring the Relationship between ICT and the Environment (2009) www.oecd.org/dataoecd/32/50/43539507.pdf
- Environmental Statistics and Indicators: www.oecd.org/env/indicators
- Better Life Initiative: Measuring Well-being and Progress: www.oecd.org/measuringprogress

Green growth and development

To realise global sustainable development, the collective efforts of all nations are needed. Developing countries are particularly important in meeting this objective because these countries will increasingly be sources of economic and population growth, and this will be accompanied by new pressures on the environment and natural resources. Given the importance of natural assets in low-income economies, green growth can help foster more resilient economic growth and better livelihoods for the poor.

The OECD is exploring how green growth strategies can be applied in the context of developing countries, taking into account differences in natural resource endowments, levels of socio-economic development, sources of economic growth, and institutional capacity. A preliminary report on *Green Growth and Developing Countries* will be part of the OECD contribution to the Rio+20 Conference in June 2012. It will identify promising areas in which green growth objectives could be achieved and the policies, regulations, technology transfer and new market and innovation opportunities that could help to deliver them. The report will recognise the importance of international co-operation and the mutual benefits between the advanced and developing economies in striving for greener growth.

OECD countries make up the main donor countries, and have been working with partner countries to identify how development assistance can best support sustainable development. The OECD has been tracking aid for environmental purposes for over a decade. It has used "Rio-markers" to track international public finance flows that support the Rio Conventions on biodiversity, desertification, and climate change. At the same time, the OECD also collects data on aid flows to key sectors related to green growth and sustainable development such as energy, water, agriculture and forestry. Forthcoming OECD work in early 2012 includes comprehensive guidance on capacity development for environmental management. It consists of recommendations to help build the necessary capacity for implementing green development policies and facilitating environmental governance, finance and planning in both developing countries and by development support providers.

Further information and key documents

- *Greening Development: Capacity Development for Environmental Management* (forthcoming) www.oecd.org/document/39/0,3746,en_2649_34421_40859367_1_1_1_1,00.html
- *Integrating Adaptation to Climate Change into Development Co-operation: Policy Guidance* (2009) www.oecd.org/env/cc/adaptation/guidance
- *Natural Resources and Pro-poor Growth: The Economics and Politics,* DAC Guidelines and Reference Series (2008) dx.doi.org/10.1787/9789264060258-en
- *Environmental Fiscal Reform for Poverty Reduction,* DAC Guidelines and Reference Series (2005) dx.doi.org/10.1787/9789264008700-en
- Statistics on Environmental Aid: www.oecd.org/document/59/0,3746,en_2649_34421_46670203_1_1_1_1,00.html

Innovation and technology transfer

Innovation is key to green growth. It helps decouple growth from natural capital depletion and contributes to economic growth and job creation. Business is the driver of innovation, but governments need to provide clear and stable market signals, for example through carbon pricing. Recent OECD work explores policy actions for the deployment and transfer of new technologies and innovations as they emerge. Some of the key findings include:

- **Investing in energy and environmental R&D is not enough.** Only a small share of the key green growth inventions emerge from energy or environmental R&D. R&D in fields such as chemistry, material sciences and engineering are also important sources of scientific research for green technologies.

- **Carbon and resource prices are essential to stimulate green innovation.** Putting a price on carbon is critical for incremental improvements to clean tech and the take up of low-carbon technologies, but it will not necessarily lead to breakthrough innovations. Public and private investment in research is also needed, including in emerging and developing economies that may need to adapt existing technologies to their own local context.

- **Emerging and developing economies have opportunities to leapfrog, *e.g.* by an effective use of ICT.** ICT offers important opportunities for greening growth in countries that are still developing their infrastructure, *e.g.* in integrating ICT in electric grid systems, and in using ICT to enhance access to information and markets.

- **Not all policies for green innovation cost money.** Removing regulatory barriers to the growth of new firms can help spur entrepreneurship and generate new business models that challenge incumbent firms. OECD's work on innovation has found that young firms account for a large share of patenting.

- **A key factor in facilitating technology transfer is the absorptive capacity in recipient countries.** The higher the level of domestic human capital, the higher the level of technology transfer as well as the positive local spillovers from trade and foreign direct investment. This illustrates the importance of long-term capacity building and education in technical and scientific areas.

- **Technology-neutral domestic policy regimes and international policy co-ordination are important factors for increasing the flow of technologies across borders.** If environmental policy is too prescriptive and un-co-ordinated this can result in fragmented technology markets, with the potential market for the innovations induced split across different policy jurisdictions.

- To accelerate the diffusion of innovation, **new mechanisms for enhancing technology transfer to developing countries** are currently being explored *e.g.* voluntary patent pools and other collaborative mechanisms for leveraging intellectual property. Some good practice already exists but significant scale-up is required. Governments need to underpin such new mechanisms by supporting investments in the required knowledge networking infrastructure, fostering the sharing of public-sector knowledge, and developing guidance and soft rules to underpin these mechanisms.

Further information and key documents

- *Fostering Innovation for Green Growth* (2011) *dx.doi.org/10.1787/9789264119925-en*
- *Invention and Transfer of Environmental Technologies* (2011) dx.doi.org/10.1787/9789264115620-en
- *Eco-Innovation in Industry: Enabling Green Growth* (2010) dx.doi.org/10.1787/9789264077225-en

Environmental fiscal reform

Environmental taxes and other policy instruments

Green growth will require large scale changes in the behaviour of households, business and governments. Taxes and other market-based instruments are key policy instruments for providing clear and sustained incentives to reduce environmental damage. Businesses need a reasonable degree of certainty that innovation and investment to reduce the scale of environmental damage will be worthwhile. Similarly, a clear and sustained price signal can provide an important incentive for households, for example to reduce their energy consumption or to increase the extent to which they recycle waste. This can be supported by other policy instruments such as information campaigns or the wider use of 'smart' meters for water, gas and electricity. Increased use of environmentally related taxes can also play a role in growth-oriented tax reform; by helping to shifting (part of) the tax burden away from more distortive corporate and personal income taxes and social contributions.

For many years, the OECD has been collecting information on, and analysing the environmental effectiveness and economic efficiency of, various instruments used for environmental policy – including looking at how different instruments interact when they are used in combination. Recent analysis also looked at the impacts of environmentally related taxes and similar instruments on innovation activity in firms and households.

Further information and key documents

- “Interactions Between Emission Trading Systems and Other Overlapping Policy Instruments”, General Distribution Document, Environment Directorate (2011) www.oecd.org/dataoecd/11/51/48188899.pdf
- *Taxation, Innovation and the Environment* (2010) dx.doi.org/10.1787/9789264087637-en
  Ensuring Environmental Compliance: Trends and Good Practices (2009) dx.doi.org/10.1787/9789264059597-en
- OECD/EEA instruments database: www2.oecd.org/ecoinst/queries/index.htm

Fossil fuel subsidies

Reforming or eliminating inefficient support for the consumption or production of fossil fuels can contribute to achieving these economic and fiscal objectives, while also helping to tackle environmental problems like climate change. At the global level, reforming fossil-fuel subsidies would contribute to curbing emissions of greenhouse gases such as CO_2 by removing major incentives to produce or use such fuels. At the country level, reforming fossil-fuel support would also help reduce public spending and increase tax revenues, thereby improving fiscal balances. It could free up scarce government resources for other priorities, such as protecting vulnerable households, stimulating employment creation, or helping to address climate change at home or in developing countries.

Building on previous OECD work on environmentally-harmful subsidies, four main areas of work on fossil fuel subsidies are underway:

- Development of a methodology for identifying and estimating producer and consumer energy subsidies, based on the Producer and Consumer Subsidy Estimates used by the OECD in other sectors, such as agriculture.
- Preliminary estimates of fossil fuel subsidies in OECD countries, to complement work by others – such as the IEA – to estimate subsidies in developing and emerging economies.
- Modelling-based analysis of the economic, trade, and GHG emission impacts of phasing-out fossil fuel subsidies.
- Advice and recommendations on the phase-out of fossil fuel subsidies, especially on how to address social or competiveness impacts, drawing lessons learned from experiences with country subsidy reforms.

In addition, some of the Economic Surveys and Environmental Performance Reviews that OECD regularly produces of OECD and emerging economies include sections on fossil fuel subsidy reform to assess country progress and provide targeted advice for reforms.

Further information and key documents

- *Environmental Outlook to 2050* (forthcoming) www.oecd.org/environment/outlookto2050
- "An update of the G20 Pittsburgh and Toronto Commitments", joint report by IEA, OPEC, OECD and World Bank on fossil-fuel and other energy subsidies, prepared for the G20 Meeting of Finance Ministers and Central Bank Governors (Paris, 14-15 October 2011) and the G20 Summit (Cannes, 3-4 November 2011) www.oecd.org/dataoecd/21/11/49090716.pdf
- *Inventory of Estimated Budgetary Support and Tax Expenditures for Fossil Fuels* (2011) dx.doi.org/10.1787/9789264128736-en
- Burniaux, J-M. and J. Chateau, “Mitigation Potential of Removing Fossil Fuel Subsidies: A General Equilibrium Assessment”, *OECD Economics Department Working Paper* No. 853 (2011) dx.doi.org/10.1787/9789264128736-en
- *OECD Economic Surveys: Mexico 2011*, includes a focus on energy subsidies dx.doi.org/10.1787/eco_surveys-mex-2011-en
- *OECD Economic Surveys: India 2011*, chapter on phasing out energy subsidies dx.doi.org/10.1787/eco_surveys-ind-2011-en
- *OECD Economic Surveys: Indonesia 2010*, includes a chapter on phasing out energy subsidies dx.doi.org/10.1787/eco_surveys-idn-2010-en

Green growth and enabling change in consumer behaviour

Developing growth strategies that encourage greener practices requires a good understanding of the determinants of household and consumer environmental behaviour. Recent work based on periodic surveys of more than 10 000 household across selected OECD countries and five areas (energy, food, transport, waste and water) offers new insights on the challenging question of what policy measures really work to enable change in consumer behaviour. Related work on the environmental claims made by business on their products identifies measures that governments and other stakeholders can take to enhance the value and effectiveness of such claims for consumers.

Further information and key documents

- *Greening Household Behaviour: The Role of Public Policy* (2011) dx.doi.org/10.1787/9789264096875-en
- *Consumer Policy Toolkit* (2010) dx.doi.org/10.1787/9789264079663-en
- "Environmental Claims: Findings and Conclusions of OECD Committee on Consumer Policy", (2011) www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DSTI/CP(2010)16/FINAL&docLanguage=En

Investment for green growth

Green growth will require a shift in both public and private investments, with the limited public funds available carefully targeted and accompanied by the right policy frameworks to help leverage private financing.

Little is known about the magnitude of the contribution of foreign direct investment (FDI) to green growth at a time when strategies for achieving greener growth are high on the policy agenda in many countries. OECD work aims to document efforts to define and measure green FDI, investigates the feasibility of different definitions, and identifies investment policy restrictions to green FDI.

At the same time, as part of the Organisation's broader work on engaging the private sector in support of a low carbon future, the OECD surveys responsible business practices addressing climate change and driving the shift to a low-carbon economy. It summarises policies, regulations and other instruments in support of greener growth, and analyses corporate responses to these drivers.

Ahead of the Rio+20 Conference in June 2012, the OECD has partnered with a range of organisations – the UN Conference on Trade and Development (UNCTAD), the Climate Disclosure Standards Board (CDSB) and the Global Reporting Initiative (GRI) - in a project designed to support greater consistency of approach to the demand for and supply of corporate climate change-related information. The timing for this project is right, as climate change disclosure is still developing, and countries are not yet completely locked-in into a specific regulatory path. It follows up to OECD's previous work on the *Transition to a Low Carbon Economy* and the *Guidelines for Multinational Enterprises*, updated in May 2011, which encourage enterprises to disclose environmental information to high quality standards.

Further information and key documents

- "Defining and Measuring Green FDI: an Exploratory Review of Existing Work and Evidence", *OECD Working Paper on International Investment* No. 2011/2 (2011) dx.doi.org/10.1787/5kg58j1cvcvk-en
- *Transition to a low-carbon economy: public goals and corporate practices* (2010) dx.doi.org/10.1787/9789264090231-en
- "The role of pension funds in financing green growth initiatives" *Working paper on Finance, Insurance and Private Pensions* (2011) dx.doi.org/10.1787/5kg58j1lwdjd-en
- Private Sector Participation in Water Infrastructure: OECD Checklist for Public Action (2009) www.oecd.org/daf/investment/water
- *Environment and the OECD Guidelines for Multinational Enterprises: Corporate Tools and Approaches* (2005) dx.doi.org/10.1787/9789264009394-en
- OECD Guidelines for Multinational Enterprises www.oecd.org/daf/investment/guidelines/
- OECD work on investment for green growth: www.oecd.org/daf/investment/green

Ensuring freedom of investment for green growth and preventing protectionism

Work at the OECD on "Harnessing Freedom of Investment for Green Growth" addresses how the international investment policy community can help countries achieve green growth. It underscores the importance of continued monitoring by governments of their investment treaty practices with regard to environmental goals. It is also important that new environmental measures observe key international law principles such as non-discrimination (creating a level playing field for domestic and international investors). International investment arbitration is assuming a growing role in resolving disputes involving environmental issues, placing special responsibility on the investment policy community to ensure the integrity and competence of arbitral tribunals and to improve their transparency.

The Freedom of Investment Roundtable (FOI)[2] hosted at the OECD also addresses concerns expressed by some countries that investment could be affected if the green growth policy agenda were captured by protectionist interests. However, to date, none of the 42 OECD and emerging economies that report regularly to the Roundtable about investment measures have reported overt discrimination against non-resident or foreign investors in relation to environmental policy. Nonetheless, vigilance is encouraged. Environmental policy measures that appear to be neutral may potentially involve de facto discrimination or create barriers to trade which constrain development. Some environment-related state aids (such as grants, loan guarantees or capital injections for individual firms), may potentially pose risks to competition. The FOI Roundtable will continue to monitor investment measures to ensure that they are not used as disguised protectionism.

Further information and key documents

- "*Harnessing Freedom of Investment for Green Growth*" (2011) www.oecd.org/document/0/0,3746,en_2649_34887_47721600_1_1_1_1,00.html.

Green growth sectoral studies: energy, food and agriculture, water

It is important to understand the implications of green growth for key sectors and themes such as energy, food and agriculture, and water. The key message from OECD sector-specific work to date is that, over the longer term, greening these sectors can reinforce environmental sustainability, economic growth and social well-being. Indeed, green growth is essential to meet the energy, food and nutrition, and water and sanitation requirements of future generations. Some of the priority areas where coherent action is required include:

- Increase productivity in a sustainable way. If resources are used more efficiently throughout the supply chain, production can be increased to meet the demands of an expanding population with changing dietary and consumption habits while natural resources are used sustainably and natural capital is conserved. Higher priority needs to be given to research, development, innovation, education and information.

- Ensure that well functioning markets provide the right signals. Prices that reflect the scarcity value of natural resources will contribute to greater efficiency. Economically inefficient and environmentally harmful subsidies should be phased-out. The Polluter Pays Principle needs to be enforced through charges and regulations. Incentives should be provided for maintaining biodiversity and environmental services.

- Establish and enforce well-defined property rights. Over-exploitation can result when marine resources, land and forests lack clearly defined rights and ownership.

- Address the political economy of reform. Ensuring involvement by all relevant stakeholders and phasing-in policy reforms will be important for successful implementation. Addressing the distributional and competitiveness aspects of policy reform to meet green growth objectives is essential. A multi-level approach integrating international, national and local decision-makers and stakeholders can help identify challenges and formulate coherent policy responses.

[2] The OECD-hosted Freedom of Investment Roundtable is an intergovernmental forum that brings together OECD member and non-member governments from around the globe at regular meetings. It helps governments design better policies to reconcile openness to international investment with legitimate regulation in the public interest.

Further information and key documents

- OECD, IEA, *Green Growth Studies: Energy* (2011) dx.doi.org/10.1787/9789264115118-en
- *Green Growth Studies: Food and Agriculture* (2011) dx.doi.org/10.1787/9789264107250-en
- OECD work on green growth for food, agriculture and fisheries www.oecd.org/agriculture/greengrowth
- *Meeting the Challenge of Financing Water and Sanitation: Tools and Approaches*, OECD Studies on Water (2011) dx.doi.org/10.1787/9789264120525-en
- *Water Governance in OECD Countries: A Multi-level Approach*, OECD Studies on Water (2011) dx.doi.org/10.1787/9789264119284-en
- OECD work on Water: www.oecd.org/water

For more information: see www.oecd.org/greengrowth

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International Green Growth Dialogue (IGGD)

Join the discussion on the secure website: https://community.oecd.org/community/greengrowth

To register, please email your contact details to: greengrowth@oecd.org. Registered users will receive a regular newsletter on green growth topics.