GREEN GROWTH: SELECTING POLICY INSTRUMENTS

Chair's opening comments at the OECD Workshop on Green Growth,
Session on Instrument Selection[1]

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Today's roundtable session is an opportunity to have a full discussion on the design and selection of environmental policy instruments, with the twin objectives of raising environmental performance and to promote growth. I hope that all countries represented here will contribute their experiences, and that we can draw on insights from the NGOs in the room too.

To start the debate, I will set out the context, what we are trying to achieve through green growth, and how that relates to choosing the right policy instruments.

What is green growth?

Sustaining economic growth in the long term requires sustainable management and use of natural assets. For growth to be green, we need to understand the quality and condition of our natural asset base, because a decline in the base of environmental assets raises the risk that we will not be able to consume the services they provide in the quantities we are used to – for example, climate regulation, flood risk management, the quality and quantity of water. This in turn runs the risk that economic and social activity will be jeopardised in the future.

[1] Organisation for Economic Cooperation and Development, Green Growth Strategy Workshop, Paris 8-9 February 2011.

This paper reflects comments and contributions from Tim Everett, Mallika Ishwaran and Jonathan Travis of Defra's Economics of Growth and the Environment Team. Any errors are entirely my own.

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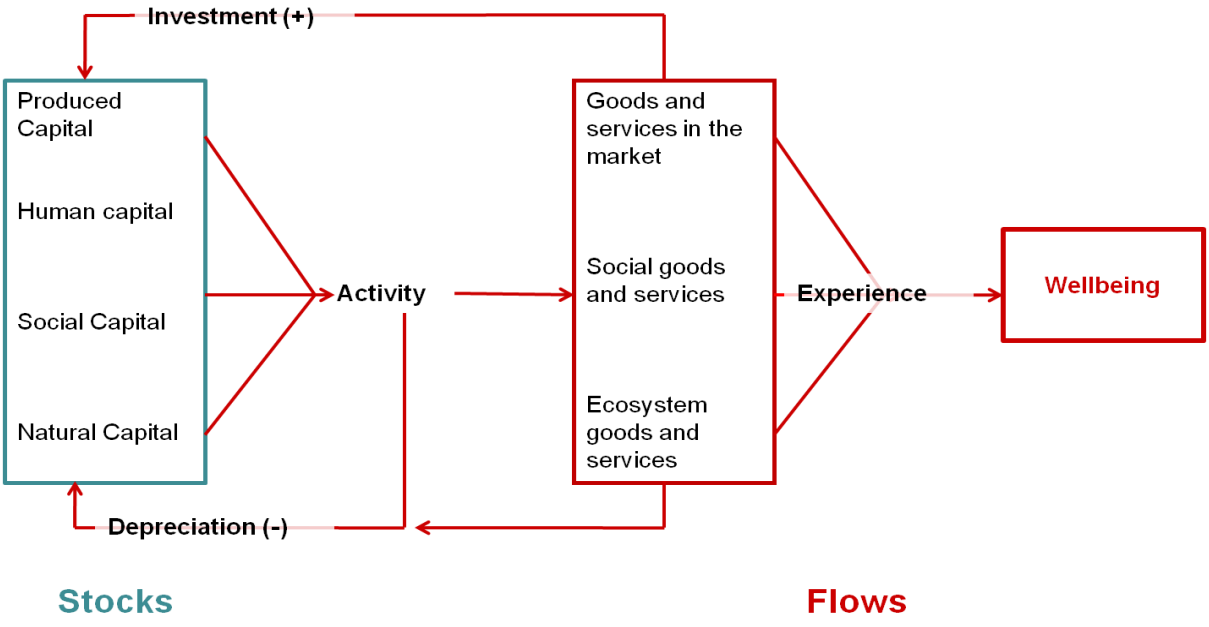
The transition to green growth will entail both adjustment costs and opportunities for growth. So the principle objective of instrument selection is to **minimise the costs and maximise the benefits** of the transition to green growth.

As the OECD's Synthesis report[2] puts it, green growth is about maximising economic growth and development while avoiding unsustainable pressure on the quality and quantity of natural assets. Figure 1 tries to capture the way production draws on our stocks of assets and through production processes transforms them into goods and services which we consume, and which affect our wellbeing. Natural assets are part of the productive capacity of an economy. Alongside produced capital, human and social capital, a decline in natural capital will lead to losses in the growth potential of the economy and in wellbeing in the long term. The components of the asset base incidentally reflect the broad social aspects of sustainable development, beyond the environment and the economy.

Figure 1: Conceptual framework: capitals, production, consumption and wellbeing



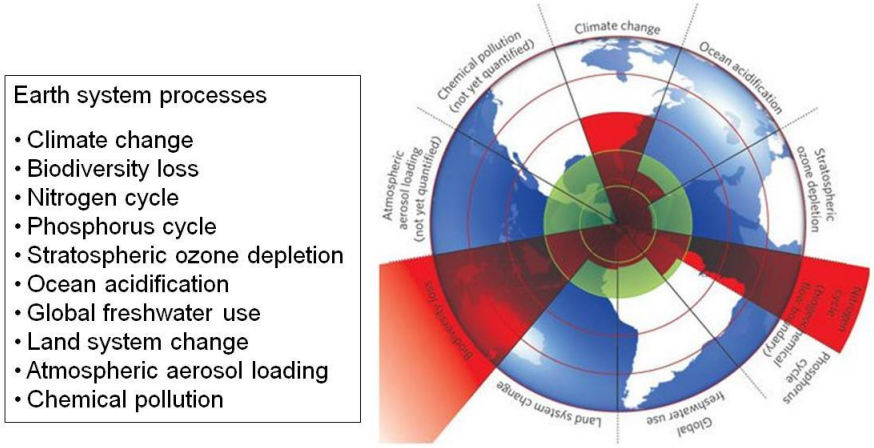
Source: Harper and Price (2011)[3]

[2] OECD (2011): Green Growth Strategy Synthesis Report

[3] Gemma Harper and Richard Price (2011): *A framework for understanding the social impacts of policy and their effects on wellbeing – a discussion document*, Defra/Social Impacts Taskforce

In Figure 2, Rockstrom and colleagues[4] set out the range of environmental assets and ecosystem services we derive from them. We need to maintain these assets at some level to risks to future growth and wellbeing. Sometimes the relationships are smooth and you can think of the effects of depleting natural capital on wellbeing as linear. But we also need to take into account non-linearities, disproportionate costs, and uncertainties in complex environmental systems, reflected in the concept of environmental limits. This approach also suggests that there are limits to the substitutability of some kinds of environmental capital.

Figure 2: Earth system processes



Source: Rockstrom et al (2009)

Green growth aims to achieve three things, and instrument choice is the key to determining how close we get to achieving them.

Firstly, efficiency. Choosing the right instruments can increase economic efficiency by ensuring natural assets are correctly valued in economic decisions. In the process opportunities can be created for businesses through the development of new markets as relative prices change.

Second, resilience - managing risks to future growth from the depletion of natural assets, taking account of critical limits and thresholds.

[4] Johan Rockström, Will Steffen, Kevin Noone, Åsa Persson, F. Stuart Chapin, III, Eric F. Lambin, Timothy M. Lenton, Marten Scheffer, Carl Folke, Hans Joachim Schellnhuber, Björn Nykvist, Cynthia A. de Wit, Terry Hughes, Sander van der Leeuw, Henning Rodhe, Sverker Sörlin, Peter K. Snyder, Robert Costanza, Uno Svedin, Malin Falkenmark, Louise Karlberg, Robert W. Corell, Victoria J. Fabry, James Hansen, Brian Walker, Diana Liverman, Katherine Richardson, Paul Crutzen & Jonathan A. Foley (2009): "*A safe operating space for humanity*" Nature, volume 461, pp472-475; (24 September 2009)

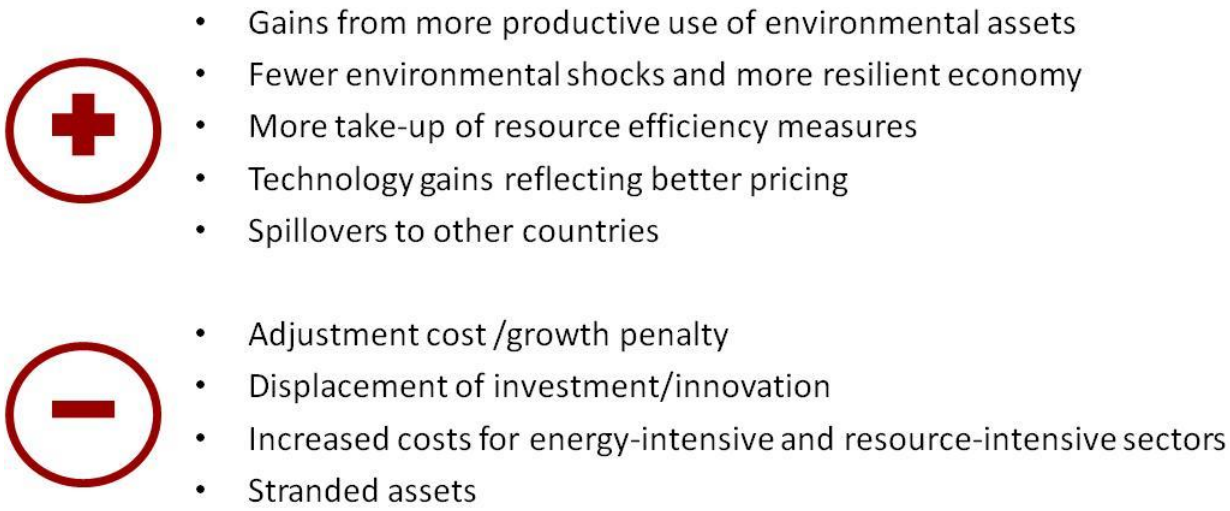
And thirdly, cost-effectiveness – choice of policy instruments is central to minimising the costs of adjustment in the move to green growth.

Selecting policy instruments to maximise benefits, and minimise costs

Green growth policies which take natural capital into account can offer significant gains in the long run, but they have both costs and benefits in the short term, summarised in figure 3. In making a transition to green growth, it is not all upside in the short run, as assets become stranded and old less efficient businesses shut down as new greener sectors expand. Investment in new greener technologies is not wholly additional and is likely to be largely displaced from other sectors.

Good instrument selection aims to minimise the costs and maximise the benefits of the transition to green growth.

Figure 3: Green growth policies which take natural capital into account will have both costs and benefits in the short-term



This brings us to possible criteria for selecting instruments.[5] Policies across the economy – macroeconomic, competition policy, trade and investment – are all important for green growth. But in this session we will focus on selecting the best

[5] A list of possible selection criteria can be found in the Annex to this paper.

mix of instruments in policies more directly related to the management of natural assets. Regulation, fiscal instruments, spending and behavioural interventions all have a potential role to play, and it helps to be clear about the rationale for government intervention in each specific case.

Economics generally suggests that governments should intervene only where there is a market failure, for example:

- **public good characteristics** of the natural environment – for example, using farmland as a natural flood break provides flood defences for an entire region, and individuals cannot be excluded from enjoying its benefits;
- **external costs and benefits** where the use of the resource by one party has impacts on others – for example, sewage companies discharging effluent into waterways will not face the full social cost of their activities;
- **difficulties in capturing the full benefits** of business investment in environmental R&D; and
- **information failures** occurring because the necessary information require to make an optimal decision is unavailable. This is a problem particularly for environmental systems, which are inherently complex and non-linear, and reflect a wide range of interdependencies.

Different instruments can help to address different market failures, so sometimes a combination of instruments can offer the best solution.

Figure 4 summarises a useful table in the Synthesis Report setting out what the evidence suggests are the pros and cons of different types of instrument in dealing with different issues. We will want to come back to this in the discussion so that we can look at what countries have found works in practice – and what doesn't work.

Figure 4: Different policy instruments can help to tackle different issues

	Pros	Cons
Cap-and-Trade	Efficient reduction in damage without requiring information in advance	Steep learning curve, potentially high start-up and admin costs, concerns of competiveness
Taxes or charges on pollution	Efficient reduction in damage without requiring information in advance	Potentially high start-up and admin costs, concerns of competiveness. Lower predictability of future policy adjustments
Taxes or charges on proxy for pollution	Lower monitoring and admin costs (relative to permits/direct taxes)	Loss of static and dynamic efficiency relative to charges at the source
Subsidies	Can be used to encourage innovation or investment	Can involve deadweight loss
Performance standards	Flexibility to search for cheapest option to meet standard. Give certainty	Don't tend towards equalisation of abatement costs. Require information to set
Technology standards	Low monitoring costs. Give certainty over pollution levels	Give no flexibility to search for cheaper options. No incentives to innovate
Voluntary approaches	Contribute to information gathering and dissemination	Uncertainty about outcomes. Risk of collusion among participants

Source: Adapted from OECD (2011), Green Growth Strategy Synthesis Report

The Synthesis Report looked in more detail at the range of options for the use of fiscal instruments, and found major variations in uptake across OECD members.

Non-market instruments including information provisions, voluntary agreements, corporate social responsibility and the threat of future state regulation all have a role. Information based instruments such as rating and eco-labelling can usefully supplement other environmental policies when information about the environmental impact of products is lacking. Voluntary instruments or agreements can be can be useful in revealing information about abatements costs and environmental damages. By tapping into firms concern for CSR, or by accompanying with the threat of future regulation, they can be effective in achieving environmental outcomes. Voluntary instruments can also be an important response to political economy constraints.

The annex summarises possible criteria for instrument selection.

I have already said that there is a rationale for selecting a mix of policy measures in response to multiple market failures. This is especially the case for most policy

problems issues involving several market imperfections and/or multiple and varied sources of pollution. For example:

- **information-based instruments** can be useful and effective in strengthening the responsiveness of agents to price signals.
- where there are **multiple and varied sources of pollution** a combination of taxes, tradeable permits and/or performance standards may be optimal.

However using multiple instruments can be problematic if they are inconsistent with each other or with different policies; if policies or instruments are frequently modified or withdrawn increasing uncertainty and risk and dulling agents' incentives to respond; or if bad policy design and a lack of policy coherence raises overall costs and mitigates some or all of the potential gains from using a mix of instruments.

Regulation: moving from command and control to economic instrument

It is worth pausing a moment on the potential role of regulation - but perhaps not as we know it. It is hard to see how businesses can make sense of the huge amount of detailed, technology-specific, sometimes overprescritive, complex and overlapping regulation with which they are often confronted at the moment.

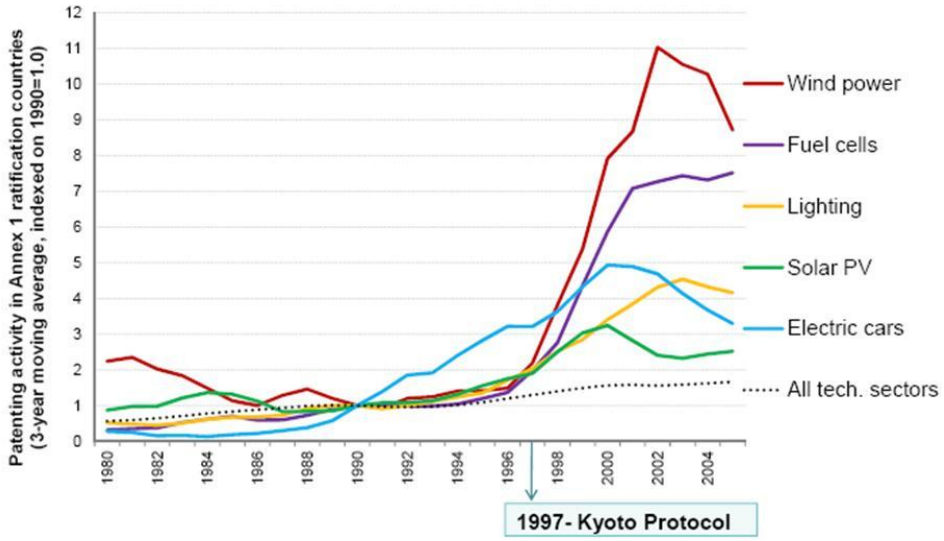
Simplifying regulation to send much clearer signals – long loud and legal - to businesses on the environmental parameters that matter, setting standards for environmental impact or natural resource use many years in advance, can give businesses and clear, credible framework, giving businesses the stability they need to invest and innovate, with a reasonable chance that their investments will pay back.

This also raises the potential that by promoting innovation, giving simple forwards signals through regulation can yield lower-cost options for protecting the environment and decoupling, reducing adjustment costs, or enabling us to achieve even better environmental outcomes.

Sending simpler signals through regulation absolutely does not mean accepting weaker environmental outcomes.

Figure 5 shows the response to the headline targets in the Kyoto Protocol, and points to what can be achieved – the prospect of tighter limits on carbon emissions prompted an explosion in innovation activity across the whole range of low-carbon technologies, bringing down the abatement cost curve.

Figure 5: The Kyoto Protocol - a regulatory regime providing clear and long-term signals



Source: OECD (2010), *The Invention and Transfer of Environmental Technologies*

Done well, simpler regulation which strips out redundant complexity and sends clear signals for the longer them is effectively an economic instrument – it rests on allowing businesses the flexibility to respond to the market, but it achieves this by setting quantities in the market rather than prices.

The secretariat has set us a few questions for the development of the analysis in the Synthesis Report. We are asked in this working group to consider, for market and non market instruments, what are the most promising ways of selecting policies in order to promote better environmental and growth prospects, and where are the trade-offs most acute?

The key aim at the heart of instrument selection for green growth is to minimise the costs, and maximise the benefits, of the mix of policies which help us to achieve environmental outcomes which contribute to the growth of the economy and to the wellbeing of citizens. It could be argued that this objective should run through the OECD's Going for Growth strategy overall. The OECD's Synthesis Report marks progress towards this aim, and I hope contributions from countries' and NGOs' experiences will help us to strengthen the report and make it very practical.

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Defra – United Kingdom, February 2011

ANNEX: Performance criteria for instrument selection

- **Results:** dependability of outcome, regard to environmental limits, responsiveness to behavioural realities, collateral effects
- **Cost and VFM**: economic efficiency, cost-effectiveness, admin burden minimisation, impact on public finances
- **Implementation:** compliance and enforceability, information requirements
- **Wider economic effects**: stimulus to invest and innovate, effects on productivity and competitiveness
- **Social equity**: distribution of harm and policy impact
- **Performance through time**: long-run influence of instrument, incentives for continuous innovation
- **Performance under uncertainty**: loss of efficiency when information uncertain, flexibility as 'facts' (information, conditions, targets) change
- **Acceptability**: simplicity, transparency and accountability
- **Trade-offs and co-benefits** between different policy areas