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STRATEGIES FOR GREEN GROWTH: FRAMING THE ISSUES

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SETTING THE SCENE

1. The world faces two major challenges: meeting the demand for better lives and expanded economic opportunities for a global population set to rise to around 9 billion by 2050; and addressing environmental pressures that, if left unaddressed, could undermine our ability to deliver those opportunities.

2. In 2009, at the height of the global financial crisis and in the run-up to the Copenhagen climate conference, Ministers asked the Organisation to develop a Green Growth Strategy to address these major global challenges. They were not breaking entirely new ground. The history of the OECD's engagement with drawing together economic and environmental issues into a comprehensive policy framework encompassing major social, technological, and developmental challenges goes back to the late 1960s. In a 1969 note entitled "The Problems of Modern Society: Economic Growth, Environment and Welfare" the then OECD Secretary General expressed a:

"... strong conviction that the Organisation should interpret the challenge facing Modern Society in such a way that in defining the growth for the next decade emphasis is placed on the qualitative as opposed to the quantitative aspects of growth. That is, for the 1970s, we should put more emphasis on welfare and less on growth for its own sake [emphasis in original]".¹

3. He also distilled one of the most fundamental challenges that remain to this day:

"The [environment] problem is all the more difficult because what is needed is not only an analysis of what has happened in the past: we need also to look far ahead into the future. For what is unpleasant today can develop into something dangerous to the health of a future generation... What we are facing is the problem of how to direct the process of growth in a way which will be satisfactory from the point of view of welfare in the long term".²

4. Since then, global population has doubled. Global GDP has nearly quadrupled and while progress has been uneven, spectacular rates of development have occurred in large parts of the global population. The environmental threats that absorb policy makers have also widened. In the 1960s the major environmental concern was urban air quality. Today it is global climate change and biodiversity loss. But the fundamental challenge of "directing the process of growth in a way which will be satisfactory from the point of view of welfare in the long term" remains unchanged

5. The OECD returned to these challenges with its report *Sustainable Development: Critical Issues* in 2001. It was in many respects more ambitious than anything undertaken before or since. The project was in response to recommendations from a high-level advisory group in 1997 to reorient work across the Organisation in ways that underpin the policy foundations of sustainability".³

6. A decade or so later, a further one billion people have joined the world population and rapid growth in emerging economies has caused major shifts in the global economic and political environment. Climate science is telling us unequivocally that we have less room to manoeuvre than we might have thought. We also find ourselves in the aftermath of an economic crisis more profound than any experienced in the 50 years since the OECD was founded.

7. But as much as things change, in other ways they remain the same. In 1971, around the time that countries were preparing for the first global environmental summit in Stockholm, a group of eminent economists met at the OECD to consider “the problems of environmental economics”.⁴ At that meeting it was observed that:

*“a conflict does not automatically arise between economic growth and environmental protection; moreover, economic growth with due regard for the environment could enable new technologies to be developed which would themselves contribute to growth”.*⁵

8. Much of the policy discussion at that meeting would be deeply familiar to an OECD audience today. Amongst the discussion were observations that:⁶

- “The economic instruments [needed to address environmental problems] (levying charges, payments, subsidies etc.) are basic”, although administrative costs need to be taken into account and transition periods may be needed.
- Corrective measures need to be taken ‘to ensure that environmental policies “do not simply serve, however unintentionally, as another instrument to make the rich richer and the poor poorer”’.
- There is a need for environmental indicators but “before an integrated approach can be made... biological and ecological statistics have to be assembled”.
- Ways need to be found to better understand “the impacts of environmental policy on trade and trans-frontier pollution” and material flows between nations.

9. This is not to suggest that nothing in policy is new. Our understanding of economic, environmental and technology policies, has advanced over time. However, many of the ideas that were good ideas in the past remain at the centre of sound economic and environmental policy today.

10. In this respect, developing a Green Growth strategy presents both an opportunity and a challenge. It is an opportunity to emphasise good ideas and to build on them. The challenge is to bring freshness to a familiar policy tool box and, more importantly, get a better understanding of what it would take to implement them.

11. It is with this in mind that this paper has been written for discussion at the Round Table on Sustainable Development. The paper discusses some of the issues arising in the Green Growth strategy and ways they might be presented. It touches on how we are framing Green Growth and what that holds for measuring progress towards it; how far governments can and should go in picking winners; and how to deal with the challenges of reform. After each section a question is posed for discussion at the Round Table.

12. This is neither a summary of work produced to date nor an attempt to reflect the views of OECD members. Rather, the objective is to explore with participants whether we are thinking and writing about Green Growth in a way that is useful and can help make an appealing case for practical policy measures.

1. REFRAMING GROWTH

13. Green Growth is conceived first and foremost as a growth strategy. The underlying rationale for this is that growth, at least as we traditionally understand it, is now ingrained in political, economic and social endeavour. For this approach to work, we have to bring together policy agendas that have not always talked well to one another.

14. We observe that although there have been attempts at integrating environmental considerations into economic or growth policy the marriage of the two is incomplete. Further integration of economic and environmental policy thinking is needed to ensure coherent policy making. The “rules of thumb” or heuristics used to guide economic policy, including the statistics we use to monitor progress, need to better incorporate the impacts of policy on human welfare including accounting for environmental services and the costs to growth that arise from environmental damage.

15. While far-reaching environmental policies have been introduced in OECD and other countries to deal with specific issues, environmental considerations have not had a large impact on mainstream thinking about economic growth and economic policy in the broader sense. This means that policy advice about growth and growth strategies does not usually contain a robust environmental component.

16. This is exacerbated when it comes to measuring and managing an economy. Policy makers are used to paying close attention to those parts of the economy that are currently well measured and aggregated in a measure such as gross domestic product. This is a valuable core measure that is unlikely to be dispensed with. But it misses some of the value created in an economy and hides some of the risks and costs to that economy. In some cases the trade-offs between economic growth and environmental protection that are a legitimate source of concern shrink or even disappear when a broader measure of well-being replaces GDP as a measure of growth. For instance, impairment of human health through environmental degradation will directly affect well-being but only indirectly (and ambiguously so) GDP.⁷ Thus, if the notion of ‘growth’ relates to both material well-being and environmental quality of life, there may well be situations where society is better off with lower recorded gains in GDP and reduced environmental pressure.

17. It is not that natural resources and environmental systems do not fit into economic thinking on growth. Rather, the limited integration of economic growth and environmental aspects of policy lies to a large extent in the public good aspects of the environment. They are an exception rather than the norm in growth models. Market and non-market, measured and non-measured aspects of economic activity are treated separately because only the former are routinely and comprehensively measured.

18. Over the last half century we have developed a sophisticated quantitative model of economic activity. GDP, a key output of that model, was once a novel construct ‘owned’ by policy experts. The fact that it has become such a powerful and commonplace measure used by politicians to judge policy success and make inter-country comparisons, may tell us as much about the assimilation of ideas as its usefulness as an indicator of the progress of societies. But its runaway popular success also lies in its apparent simplicity and link to incomes earned by individuals. This might cause us to recall the now famous assertion by Keynes that:

“The ideas of economists and political philosophers, both when they are right and when they are wrong, are more powerful than is commonly understood. Indeed the world is ruled by little else. Practical men, who believe themselves to be quite exempt from any intellectual influence, are usually the slaves of some defunct economist. Madmen in authority, who hear voices in the air, are distilling their frenzy from some academic scribbler of a few years back.”

I am sure that the power of vested interests is vastly exaggerated compared with the gradual encroachment of ideas.”⁸

19. The calls for a Green Growth Strategy flow from a conviction that we need to take better account of things the current model ‘leaves out’. The concern is that ‘practical men’ may be the slaves of a model which is too limited to incorporate the range of policy concerns that need to be addressed nowadays. We are interpreting the demand for Green Growth as a call for practical ways to integrate economic and environmental policies and a matching framework to measure the outcomes of those policies. We discuss each in turn.

Practical and pragmatic policy integration

20. One way to do this in the context of existing policy institutions is to identify those environmental policy instruments that are most conducive to growth and those economic policy instruments that are equally conducive to securing greener outcomes. A central tenet of Green Growth is that the use of policy instruments to “green” the economy cannot by themselves yield a shift to Green Growth although they are necessary. To achieve sustained economic growth requires economic reform as well. The nature of that reform will vary from country to country.

21. This is challenging to the extent that finding the right policy framework for growth has never been straightforward. There is no single prescription for stimulating growth and maintaining growth momentum. However, the experience of OECD countries, confirmed also by the experience of many emerging economies, is that while there is no single recipe for success, there are certainly some important ingredients.

22. Some of the ingredients of growth include: increasing human capital through education and labour market policy, capital deepening assisted by sound macroeconomic policy, and improving institutional quality which allows competition, innovation and entrepreneurship to flourish while protecting the social fabric and rule of law.⁹ Notice that depleting natural capital does not feature on this list.

23. The OECD’s work on *Going for Growth* provides many of the elements of the kinds of policy tools and objectives that can deliver and sustain growth through policy reforms that improve institutional quality, the functioning of markets and raises labour productivity and labour utilisation. Some policies will need to be accorded higher priority than others in the context of Green Growth. However, general growth policy principles will have wide application in Green Growth strategies. Thus, the policy framework in *Going for Growth* becomes a core part of any Green Growth strategy.¹⁰

24. One general example is the extent to which structural reform that boosts growth can also enable technology transfer. This is especially so for the developing world which will be the centre of environmental pressures in the future. New technologies need to be deployed in these countries to help resolve environmental challenges. Transfer of technology is dependent on the absorptive capacity of recipient countries. Absorptive capacity is related to infrastructure, adequate levels of human and physical capital, investment in research and development, and also institutional quality. These are also key ingredients for growth. Thus, growth and improving absorptive capacity and greener growth will go hand in hand. More generally, countries that do not achieve growth are unlikely to have the capacity or perhaps even the desire to green their economy.

25. Similarly, improving competition is a central theme of the OECD’s and others’ work on policies for growth. Improved competition yields one-off efficiency improvements (described as “static gains”) from better resource allocation and from less slack in the use of inputs in response to greater pressures to

perform. Most importantly, ongoing (or “dynamic”) gains also arise from enhanced efforts to innovate and faster diffusion of innovations.

26. This is important for promoting Green Growth to the extent that it facilitates more efficient resource use and, in conjunction with other policy instruments, leads to innovation that raises the efficiency with which we use natural resources and lowers the costs of pollution abatement. It is made more so by the fact that competition is often least robust in network industries which have large environmental impacts (the electricity sector) or control strategic environmental services (such as water).

27. Policy reform for improving competition also means paying attention to environmental regulations that have, in the past, tended to yield to the preferences of incumbent firms. While these preferences can provide regulators with a quiet life, they may well entail negative impacts on both environmental quality and productivity growth.

28. Taking this approach offers the most promise for describing policies that can be effective in delivering on the desire for growth which is green. However it does not eliminate all tensions. Genuine trade-offs do arise between managing environmental risks and boosting material wealth and these are made complicated by immense uncertainties. Moreover the intergenerational trade-offs that need to be made when pursuing environmental improvement also exist in the case of conventional growth policy. In this regard, marrying the two spheres of policy may not make the politics of these trade-offs any easier.

29. Another issue is that from an economic point of view, approaching Green Growth in this fashion is only partial. The policy framework has to be built up piece by piece. This can be done with reasoned analysis but there is no grand model or radical new paradigm. As a consequence there is no big number that can be attached to Green Growth. There is no obvious way around this. But the OECD’s *Going for Growth* tool will need to be able to consider the ‘green’ dimension.

A matching framework for measuring progress

30. A practical and pragmatic way of integrating economic and environmental policies requires a matching framework to measure progress. At a very high level, the most important question that needs to be answered is whether growth is getting greener and green is still delivering desirable rates of growth. A check on the second part of this question would almost certainly suggest some measure of material wellbeing. At this time, the most obvious candidate for such a measure would be growth in production (i.e. GDP per capita) or a variant on this which provides a measure of growth in income (such as Net National Disposable Income per capita).

31. In the case of environmental measures it is clear that, in terms of aggregates, the challenge is to find a small set of measures that can proxy as many of the important systemic environmental issues as possible. At the same time, the usefulness of such measures will be improved if they link to economic activities. It might also be useful to focus on environmental risks facing all countries.

32. In this context, the claim may be made that there is a need for all countries to future proof their economies with respect to climate change and the need to reduce greenhouse gas emissions. The most important aspect of this, in terms of economic commonality, is in reducing emissions of CO₂ largely from energy use. Prioritising action in the energy sector will also be important given the fundamental role that energy plays in the economies of the developed world and for development in poorer countries. However, direct energy use may not tell the whole story when for instance greenhouse gases are emitted in emerging economies to produce goods that are subsequently exported to high-income countries. This would suggest measures which track direct and indirect CO₂ intensity relative to some income measure.

33. Similarly, the central importance of food systems to all countries implies the need for all countries to prioritise improvements in the productivity and sustainability of food systems including through the reduction of waste in supply chains, better management of fisheries, attention to land management practices, and the need to better management nutrient inputs. More efficient management of food systems is also a key ingredient in stemming the rate of biodiversity loss in the world. Finding measures that link activity to food or agricultural systems would be more challenging but might include measures of the impact of food production on water quality and biodiversity relative to output.

34. Simple indicators along these three dimensions – material wellbeing, energy and greenhouse gas intensity of production, and the use of natural resources in food systems – would help to track an economy’s progress in terms of green growth. One would aim for an upward trajectory in the first measure and a downward trajectory in the second two.

35. ***Questions for Discussion:*** *The OECD is articulating Green Growth as a conscious attempt to augment the ‘standard’ model of economic growth. This involves identifying environmental and economic policies that complement one another in delivering growth as we have traditionally understood it as well as maintaining environmental services and improving human well-being. This is a pragmatic approach – not a radical new paradigm. It recognises that trade-offs exist but it does not emphasise them in light of fundamental uncertainties. (1) Does this approach make advocacy of green growth policies any easier? (2) What sort of indicators set alongside GDP would make this pragmatic approach easy to understand?*

2. CREATING OPPORTUNITIES ¹¹

36. Many governments have already implemented policies to promote cleaner production, green business and green innovation. Others are considering whether they should join this “green race” or adopt a “fast follower” strategy. In all cases, there is a desire to discover and articulate the opportunities arising from Green Growth policy.

37. There is no shortage of studies showing commercial opportunities and net economic benefits from environmental policy measures. Many of these are in the energy sector or related to energy use. The International Energy Agency (IEA), for example, estimates that the 17% (USD 46 trillion) increase in energy investment required globally between 2010 and 2050 to deliver low-carbon energy systems would yield cumulative fuel savings equal to USD 112 trillion.¹² A review of green jobs by UNEP notes that between 2001-06 a building retrofitting scheme in Germany stimulated investment of USD 20.9 billion and created 140,000 jobs on the back of \$5.2 billion of public subsidies.¹³

38. These kinds of studies are usually sector-specific and rarely consider dynamic interactions with the wider economy, which limits their general interpretation in terms of growth. But governments are well advised to try and understand these opportunities. Irrespective of policy changes, sectors of the economy with strong links to environmental quality are already large centres of economic activity, major employers and the site of important commercial opportunities for the future. Underlying demand dynamics imply that these sectors will continue to be centres of major economic activity in the future:

- Irrespective of government responses to rising environmental pressure, demand for energy, food and primary materials will continue to grow. On the current trajectory, a 70% increase in global

food production will be needed to meet the needs of 9 billion people in 2050 and energy demand is expected to rise by over 80% compared with 2007 levels.¹⁴

- The IEA expects that meeting growing energy demand will mean a total investment in the energy sector, between 2010 and 2050, of USD 270 trillion.¹⁵
- OECD expects the costs of maintaining and expanding water infrastructure to 2030 to be around 1% of GDP in the OECD and higher outside. Transport infrastructure spending, roads and rail, is expected to be in the order of 0.4% of world GDP.¹⁶

39. Furthermore, policies which shift the flow of resources through the economy towards cleaner forms of production and lower impact goods and services will doubtless create new commercial opportunities. The World Business Council on Sustainable Development has estimated that in natural resource sectors alone, additional commercial opportunities related to sustainability could be between 2.1 and 6.3 trillion US dollars by 2050 - assuming that sufficient changes are made to ensure that standards of living can be sustained within the limits of available natural resources and without further harm to biodiversity, climate and other ecosystems.

40. There was, following the recent economic and financial crisis, a period when large scale fiscal stimulus programmes provided governments with the possibility of greening public investments. That window is now closing. In many countries fiscal consolidation is the order of the day. While green taxes and the removal of environmentally harmful subsidies can help with that process, longer term growth will not be able to rely on emergency measures. Ultimately, any new “green” economy will have to be self-sustaining. In this regard, the challenge for governments is to ensure that commercial opportunities opened by green policies actually translate into growth.

41. The most robust advice in this regard is that delivering environmental improvements and sustained growth demands relatively “hands-off” market-based policy instruments which embed policy signals into every day market decisions. This means, amongst other things, use of price based instruments such as taxes or tradable permits as they increase the likelihood that resources flow to highest value use and pollutants are abated where it is least cost to do so. This also encourages innovation in ways that other instruments do not.¹⁷ This has been the OECD’s advice for some time.

42. Yet we have to recognise that some governments have had a hard time implementing this kind of advice whether for political reasons or from a lack of institutional capacity. And, at the same time, using market instruments to price pollutants or natural resource use will not be enough to support innovation and the technical and system-wide changes needed for Green Growth. Without public intervention, market failures, i.e. market prices that do not fully reflect the environmental degradation generated by economic activity, learning-by-doing and R&D spill-over effects, may delay or even prevent the development of environmentally-friendly technologies.

43. Furthermore, in sectors such as electricity, network effects arising from existing infrastructures create additional barriers to the adoption of alternative sources of power, further hampering incentives to invest in new technologies. Appropriate pricing of externalities and general innovation policies can go a long way in addressing these market failures, but the emergence of new technologies – especially breakthrough technologies - is a process that generally requires considerable and long-term investment, often initiated in public research institutions before being picked-up by firms. Hence, more specific and possibly temporary direct support for clean technologies may be needed to break path dependence effects that favour existing, dirtier technologies.

44. Direct support can cover measures to promote the development or deployment of technologies such as public investment in environment-related R&D, public funding for private R&D, and the use of public procurement to foster green activities. It may also include subsidies to foster the uptake of immature technologies.

45. Many of these options, especially subsidies, are politically quite attractive. While governments are seen to be taking action, the fiscal costs are often overlooked by the general public. The existence of identifiable technologies, projects, or long term commercial opportunities can make direct support an attractive proposition; such as funding the establishment of recharge networks for electric cars.

46. This aspect of policy is, however, one of the most difficult of all to deal with from a technical perspective. To deploy support, judgements need to be made as to what should be supported, how much support is required and how long that support needs to last. In some cases these judgements can be made with a reasonable degree of certainty but there will be many instances where this is not the case. There is, therefore, a risk of promoting activities that may have occurred anyway and this could impede growth. On the other hand, too little support can preclude the achievement of environmental objectives. Similarly, there is a risk that more appropriate technologies or practices will emerge that should have been supported but policy has locked the economy into a less desirable pathway. This presents both costs to the environment and potentially costs to growth.

47. To minimise this problem, governments might focus attention on basic research, on general purpose technologies such as ICT, biotechnology and nanotechnology or on infrastructure or other basic structures that will facilitate the development of green innovations. Portfolios of projects can also help to minimise some risks as can using competitive selection processes. This may not, however, be a complete solution. In many cases, such as driving low carbon growth or decarbonising energy systems, large scale system-wide changes need to happen in a relatively short space of time. Governments with limited fiscal resources will reasonably wonder if it is better to buy an outcome rather than fund a tournament.

48. Thus there remains a dilemma. On the one hand “picking winners” may be tempting for resolving significant market failures and major environmental issues but it is clearly risky, not least in terms of risks to growth from a misallocation of resources or paying “over the odds” for environmental improvements. On the other hand, policies that are likely to be kindest to growth and most likely to boost innovation are those which cannot on their own affect a transition to green growth and may also be some of the more politically difficult policies to implement.

49. ***Questions for discussion:*** *The OECD has consistently counselled against governments directing technical change or, in the extreme, “picking winners”. Yet we know that most countries do precisely that and not without good reasons. Is OECD caution on the pitfalls of “picking winner” strategies likely to be welcomed? Could the OECD develop advice in a way that is more helpful? Implicit in this, what alternative strategies might be implemented in terms of directed public support to clean technologies? What priority should be given to recommendations on “getting the prices right”?*

3. MAKING REFORM HAPPEN

50. Whether we enter Green Growth from the perspective of economic policy or environmental policy, the recommendations remain somewhat familiar. This suggests that the politics of reform and the

prospect of structural adjustment are a major constraint on policy change. Indeed one need look no further than climate policy to find examples where this is certainly the case. One reaction to this is to devote considerable thinking to the issues underlying the political economy of adjustment and ways to help assist reform.

51. This stands to reason to the extent that firms and individuals who have benefited from the status quo tend to resist change and mobilise against it. At the same time, the benefits of change are often diffuse and the beneficiaries less likely to mobilise in support of change, especially where benefits accrue some years in the future. Even when net benefits to society from policy changes seem clear, it can be difficult to communicate this to or convince constituencies.

52. The prospect of policy changes naturally raise concerns about how to manage adjustment costs and questions about how large these costs might be. Attempts have been made to estimate the potential magnitude of sectoral reallocation based on complex modelling of, for example, CO₂ pricing. Findings suggest policy reform could drive substantial increases in the pace and scale of sectoral reallocation. They also suggest that sectors like the construction and services sectors benefit from green growth. Sectors likely to contract are, somewhat predictably, the fossil-based electricity and transport sectors.

53. The extent to which this sort of modelling can help policymakers is questionable. Findings from forward-looking models are not always supported by historical empirical evidence.¹⁸ Data suggests that most of the dynamism and competition and therefore adjustment in economies occur within industries or between firms in those industries. This is reflected in a considerable body of research showing that workers reallocation across firms in the same industry plays a big role in the introduction of novel technologies and overall productivity growth. Also embedded in this is the observation that economies are evolving constantly regardless of policy change. In summary, adjustment costs may not be the issue that we think they are at least in terms of economy wide adjustment costs.

54. There is, however, potential for large adjustment costs at regional or local level in terms of employment. This is one spatial example of concentrated costs versus diffuse benefits in conducting policy reform. Regional adjustment costs should not, therefore, deter the implementation of reform. Rather, labour market and training policies need to be used to facilitate labour market adjustment while at the same time minimising the associated social costs.¹⁹

55. Concerns about the potentially regressive nature of taxes on households, particularly taxes on water and energy use for heating, have made it difficult to implement these taxes in many countries. While progressivity is a consideration, it is the progressivity of the entire tax/social system that is important. Therefore, such concerns are best addressed by means such as lower personal income taxes, tax credits and increased social benefits rather than by reducing or exempting low-income households from the environmentally-related tax, and thus removing their incentives to use water or energy more efficiently.²⁰

56. In the case of businesses concerned about their competitiveness when different jurisdictions have different Green Growth policies, research generally suggests that domestic policy options for dealing with these issues can be very costly.²¹ Multilateral policy coordination is often put forward as an alternative but differences in national circumstances and domestic policy choices mean that this is only ever a partial solution.

57. All this suggests that solutions to political economy problems have a distinct “grin and bear it” flavour. This is not necessarily very helpful for policy makers worried about making reform happen. The OECD has produced a considerable amount of research into the political economy of reform. This research suggests that there are some general lessons that can be learned and ingredients needed in making reform happen. These include:²²

- **Strong leadership** at the political and technical levels. Leaders need to gain the respect of constituencies, whether the public at large or cabinet colleagues. When an electorate is being asked to make sacrifices for a brighter future, trust is important. Furthermore, the importance of having an electoral mandate for reform has come up as one of the strongest findings from the analysis of earlier reforms.
- **Strong Institutions.** The ability, credibility, cohesion, and firmness of purpose of the political structure need to be emulated throughout the country's institutions (legislative, operational and informational). Treasuries and finance ministries in particular play pivotal roles.
- **Good economics is not necessarily bad politics.** OECD case studies cast doubt on the oft-repeated claim that voters tend to punish reforming governments. Many of the governments that successfully adopted and implemented reforms for which they had prior electoral mandates subsequently went on to win re-election.
- **Employ change agents at all levels.** The communication process can be aided by having change agents at all levels – sometimes called “points of light” – people across society, ranging from business people to journalists to NGOs, who complement the top-down approach with more diverse, and more local, elaboration and support.
- **Sequencing may be a luxury that political feasibility cannot afford.** OECD and IMF econometric evidence supports the view that the most promising time for reform is immediately after a recession or election. In reality however there is never a truly good time to implement reform, and economies often have to live with the consequences that emerge from sub-optimal policy sequencing.

58. **Questions for discussion:** *As much as strategies and policy advice can shed light on how to deal with these issues there will always remain an element of “political courage” in any response. What sort of analysis and advice in the Green Growth Strategy would be most useful to help unlock the case for reform?*

ENDNOTES

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- ¹ OECD (1969) “The Problems of Modern Society: Economic Growth, Environment and Welfare”, C(69)168, p.2.
- ² *Ibid*, p.5.
- ³ OECD (2001) *Sustainable Development: Critical Issues*, OECD, Paris, p.3. For a book length treatment of environmental issues at the OECD see Long, B. (2000) *International Environmental Issues and the OECD 1950-2000: A historical perspective*, OECD, Paris.
- ⁴ OECD (1972), *Problems of environmental economics: record of a seminar held at the OECD in summer 1971*, OECD, Paris.
- ⁵ *Ibid* p.8.
- ⁶ *Ibid*, see summary pp.7-16.
- ⁷ For further discussion of this see de Serres, A, F. Murtin and G. Nicoletti (2010), “A Framework for Assessing Green Growth Policies”, OECD Economics Department Working Papers, No. 774, OECD, Paris.
- ⁸ Keynes, J. (1936) *The General Theory of Employment, Interest and Money*, MacMillan, London, p. 383.
- ⁹ See e.g. Jones, C. and P. Romer, (2009). "The New Kaldor Facts: Ideas, Institutions, Population, and Human Capital," NBER working paper 15094, <http://www.nber.org/papers/w15094>.
- ¹⁰ See www.oecd.org/economics/goingforgrowth. For background see OECD (2003) *The Sources of Economic Growth in OECD Countries*, OECD, Paris. For applications of *Going for Growth* in non-member economies see, e.g.: de Mello, L. and P. C. Padoan, (2010) “Promoting Potential Growth: The Role of Structural Reform”. OECD Economics Department Working Paper No. 973; and Conway, P., S. Dougherty, and A. Radziwell (2010) “Long Term Growth Challenges in the Large Emerging Economies”. OECD Economics Department Working Paper No. 755.
- ¹¹ Discussion of policy instruments and options in this section draws heavily and in some cases directly from de Serres et al. (2010).
- ¹² IEA (2010) *Energy Technology Perspectives*, International Energy Agency, OECD/IEA, Paris.
- ¹³ UNEP (2008) “Green Jobs: Towards Decent Work in a Sustainable, Low-carbon World”, United Nations Environment Programme, www.unep.org/labour_environment/features/greenjobs.asp.
- ¹⁴ IEA (2010) and FAO (2009), "Feeding the World in 2050", <ftp://ftp.fao.org/docrep/fao/meeting/018/k6021e.pdf>.
- ¹⁵ IEA (2010).
- ¹⁶ OECD (2006) *Infrastructure to 2030: Telecom, Land Transport, Water, and Electricity*, OECD, Paris.
- ¹⁷ This is not the final word on the matter. The best choice of policy instrument to will vary according to the nature and size of the predominant market failures as well as to the differences in institutional capacities of respective

countries. Given that environmental issues often result from several interacting market failures, it is likely that the most appropriate policy response will in many cases involve a mix of instruments. Nonetheless, where feasible, market instruments like taxes and charges can be more closely associated with growth.

- ¹⁸ See e.g. World Bank (2010) *Trade Adjustment Costs in Developing Countries: Impacts, Determinants and Policy Responses*, World Bank, Washington D.C.; OECD (2005a) “Trade Adjustment Costs in OECD Labour Markets: A Mountain or a Molehill?” in *OECD Employment Outlook 2005*, OECD, Paris.; and OECD (2005b) “Trade and Structural Adjustment” <http://www.oecd.org/dataoecd/58/40/34753254.pdf>.
- ¹⁹ See e.g. OECD (2006) *Boosting Jobs and Incomes: Policy Lessons from Reassessing the OECD Jobs Strategy*, OECD, Paris <http://www.oecd.org/dataoecd/47/53/36889821.pdf>.
- ²⁰ De Serres et al. (2010)
- ²¹ See e.g. OECD (2009a), *The Economics of Climate Change Mitigation: Policies and Options for Global Action Beyond 2012*, Paris.
- ²² OECD (2009b), *The Political Economy of Reform: Lessons from Pensions, Product Markets and Labour Markets in Ten OECD Countries*, OECD, Paris. See also OECD (2010) *Making Reform Happen: Lessons from OECD Countries*, OECD, Paris; and OECD.