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LESSONS FROM THE GLOBAL CRISIS AND
THE WAY FORWARD TO JOB CREATION AND GROWTH

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**Issues Paper 3:
SMEs and Green Growth: Promoting
sustainable manufacturing and
eco-innovation in small firms**

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OECD WPSMEE “BOLOGNA +10” HIGH-LEVEL MEETING ON
“SMEs and Entrepreneurship: Lessons from the Global Crisis and the Way Forward to Job Creation and Growth”

SESSION 3

SMEs and Green Growth: Promoting Sustainable Manufacturing and Eco-innovation in Small Firms

ISSUES PAPER

I. Introduction

Green Growth aims at pursuing economic development while preventing environmental degradation...

... and at making investment in the environment a driver of economic growth

Ensuring that SMEs fully participate is key to the large scale uptake of sustainable practices

... and eco-innovation

1. Green Growth is gaining momentum across OECD and non-OECD economies, as a way to pursue economic growth and development, while preventing environmental degradation, biodiversity loss and unsustainable natural resource use. Green growth implies decoupling economic and environmental performances, as well as making investment in the environment a driver of economic growth. This will involve greening traditional sectors and favouring the transition of all economic actors, both producers and consumers, towards sustainable practices. However, it will also and foremost entail seizing the opportunities for development of new green activities, building up new competencies, upgrading skills, transforming and creating jobs. It will require adopting new technologies and business models, developing new products and supporting new patterns of demand. It will also demand managing the structural changes associated with the transition, in particular the reallocation of capital and labour resources within and across sectors, as well as across regions.

2. The prospects and strategies for a green growth economy cannot be entirely understood without taking fully into account the production, technology and management practices of small and medium sized enterprises (SMEs). Ensuring that SMEs fully participate in the efforts towards green growth and benefit from policy changes to promote is a key challenge for the transformation ahead. As SMEs account for approximately 99% of all enterprises and two thirds of employment across the OECD area, their transition to sustainable practices, in both manufacturing and services, is key to the large scale uptake of a green growth model.

3. The transition towards the green growth economy is highly demanding in particular on manufacturing firms, including SMEs, as they account for a large part of the world's consumption of resources and generation of waste. Worldwide, the energy consumption of manufacturing industries grew by 61% from 1971 to 2004 and accounts for nearly a third of the global energy usage. Likewise, manufacturing industries are responsible for 36% of global carbon dioxide (CO₂) emissions (IEA, 2007).

4. Furthermore, SMEs are important for green growth as key drivers of eco-innovation and key players in emerging green industries. Growing opportunities exist in the services associated with greener manufacturing. Highly creative and innovative SMEs in the service industry, such as design and architecture firms or bio-energy solution providers, contribute increasingly to eco-innovation and can sustain diffused transformation across a broad range of industries. SMEs participate actively in the sectors

that are the focus of recent green oriented policies, such as renewable energy production, smart metering, building refurbishment, cleaner cars, wind and solar installations, and battery development (IEA, 2009).

New firms contribute to radical green innovation and challenge traditional business models

5. New and young firms are particularly important for radical green innovations, as they often exploit technological or commercial opportunities which have been neglected by more established companies or even challenge the business models of existing firms (OECD, 2010a). New low impact cars, for example, are being produced by independent manufacturers in India, the USA and UK, using modern technology and end-user platforms. A policy environment that favours exploration and market building in emerging technology fields and supports the start-up and expansion of new firms is important for unleashing the potential for new “green” entrepreneurship.

6. However, for SMEs and entrepreneurs to fully participate in the transition towards sustainable economic patterns and seize the opportunities arising, it is essential that the main barriers to green growth and eco-innovation are identified.

7. It is also crucial that consistent policy strategies are identified and implemented to encourage SME investment in eco-innovation and sustainable practices, in both manufacturing and services.

Delegates have the opportunity to discuss barriers and policies

8. The OECD “Bologna +10” High-level Meeting provides an opportunity for participants to exchange views and respond to the following questions:

- *What are the main barriers to green growth and eco-innovation for small firms, especially for the enhancement of new growth and job opportunities?*
- *What policies could encourage SMEs in investing in green growth and eco-innovation especially for promoting opportunities for employment creation and retention in both manufacturing and services?*

II. The case for a Green Growth Strategy

The environment and the economy can no longer be considered in isolation

9. Growing concerns about the environmental sustainability of past economic growth patterns and increased awareness of a potential future climate crisis have made it clear that the environment and the economy can no longer be considered in isolation. Without a global shift to a low-carbon, resource-efficient economy, the world is on track for increasing greenhouse gas (GHG) emissions by 70% by 2050, and temperature increases of 4-6 °C by the end of the century. To feed the expected world population in 2050, food production will need to be increased by 70% (FAO, 2009) putting additional pressure on already over-used natural resources. A further 1 billion people are expected to live in severe water-stressed areas by 2030, raising a challenge in terms of the policies and financing needed to ensure access to clean water (OECD, 2010a).

Green Growth demands changes in consumption behaviour, industry structures and technologies.

10. These concerns point to the need for a substantial transformation of consumption behaviour, industry structures and technologies. The costs of inaction on these challenges to the economy, to human health and welfare and to the environment would be extremely high. The greatest environmental impacts will be felt by developing countries, which are less equipped to manage and adapt. However, the economic and social costs of policy inaction or delaying action in these areas are significant and are already affecting economies — including in OECD countries — directly (*e.g.* through public health service costs) as well as indirectly (*e.g.* through reduced labour productivity) (OECD, 2008a).

The crisis has created room for renewed growth on more sustainable grounds

11. At the same time, the financial and economic crisis has created room for a change in public policies, providing the opportunity for interventions aimed at encouraging recovery and renewed growth on more environmentally and socially sustainable grounds. Many countries have adopted explicit climate change targets and considerable sums have been allocated to climate policy objectives as part of the stimulus package adopted by countries around the world in response to the financial crisis. Green funds in the European Union countries accounted for up to 8.5% of stimulus funds (HSBC Global Research, 2009). In the United States, projects in renewable energy generation and transmission, energy efficiency and transit categories are expected to account, by 2012, for most of the 720.000 job-years saved or created by the USD 90 billion Recovery Act investments. Korea has been implementing its “Low Carbon Green Growth” policy since August 2008. China’s stimulus package includes the largest green stimulus programme enacted by any country, accounting for almost 40% of the total USD 586 billion package (OECD, 2010a).

Box 1. OECD Green Growth Strategy

At the Meeting of the OECD Council at Ministerial Level in June 2009, Ministers of Finance, Economy and Trade from 34 countries endorsed a mandate for the OECD to develop a Green Growth Strategy, a strategic vision that brings together economic, environmental, social, technological and development aspects into a comprehensive framework. In fact, to ensure that green growth is not just a short term response to the crisis but a transforming dynamic for both production processes and consumer behaviour, green growth policies need to be embedded in a coherent, integrated strategy, covering demand and supply aspects.

The OECD Green Growth Strategy, whose Synthesis Report will be delivered at the 2011 OECD Ministerial Council Meeting, will make the case for a green growth model, examine the political economy of reform, outline the policies that will be required to make the transition, provide a set of indicators to evaluate the efficiency of measures undertaken and assess progress toward greener growth.



Green Growth transition will require a combination of policy instruments, a multi-dimensional approach and

12. The debate set in motion by the OECD on a comprehensive Green Growth Strategy (Box 1) has emphasized that the green growth transition will require a mix of policy instruments, including:

- i. market based approaches, which target market failures and aim at internalizing environmental externalities (i.e. getting the prices right through environmentally-related taxes and tradable permits);
- ii. regulations and standards, when market failures result in a weak response of agents to price signals or when a complete ban on certain activities is deemed necessary, although the costs of regulation (i.e. additional administrative burden and compliance costs) should not exceed its expected benefits;
- iii. support to green technologies and innovation, especially in technological areas where entry costs are high, but large market prospects and learning-by-doing can trigger a positive dynamics of R&D investments;
- iv. information-based instruments, to raise producers' and consumers' awareness.

... multi-level governance

13. While green growth strategies will be mostly articulated at the national level, the international and the local dimension should be fully considered, as well as the multi-level governance implied. International co-operation and co-ordination will be critical for ensuring the overall effectiveness of policies and for avoiding green protectionism or fears of competitiveness losses. This is particularly the case for environmental challenges that are global in nature, such as climate change and biodiversity. Local authorities have a key role to play in the reduction of emissions levels within their areas, in the creation of opportunities for the expansion of green activities and investments, especially by SMEs, and in the adaptation of the labour market to the new economic environment.

Appropriate metrics are needed for informing policies and measuring progress

14. Developing and implementing framework conditions that promote green growth requires a good understanding of determinants, tradeoffs and synergies. It also requires appropriate information to support policy analysis. New indicators and data will be needed to measure progress towards green growth, including to reflect environmental quality, natural resource scarcity and quality-of-life beyond material wellbeing.

III. SMEs face additional challenges to green growth and eco-innovation

15. Moving to a greener economy may be more difficult for SMEs than large firms, although SMEs can be more flexible than large businesses in adapting to the fast changing market environment. The willingness and capability of SMEs to adopt sustainable strategies or seize green business opportunities generally meet with size-related resource constraints, skills deficits and knowledge limitations, not to mention the crucial business of survival, especially in the aftermath of a grave crisis.

Lack of awareness

SMEs and entrepreneurs have limited awareness of the scale and implications of the low-carbon transition

16. The degree of SME awareness about the environmental impact of their production activities has been increasing over the last years, following information campaigns, standards and regulations, engagement with social and environmental issues, though mostly at an informal level and in the local community. However, in spite of generic awareness about the costs-benefits of eco-efficient practices, SMEs and entrepreneurs are little aware of the scale of the change to come and the full business benefits of eco-efficiency and sustainability. For example, results from an OECD survey of SMEs in New Zealand and the

UK indicate that most SMEs have little awareness of the impact of environmental regulation in their industry and future needs for new green skills. Furthermore, SMEs lack the capacity to invest in acquiring the relevant knowledge from the market to anticipate this change (OECD, 2010a, 2010b).

Limited access to information, knowledge and technology

... and limited knowledge about integrated and systematic methods to improve sustainability performance

17. The capacity of SMEs to reduce their carbon footprint largely depends on access to information about environmental impact of their activities as well as on the availability of clean alternatives. Furthermore, improving environmental performance would need a substantial change in focus, from end-of-pipe technical solutions, to rather thinking in terms of lifecycles and integrated environmental strategies and management systems. The adoption of more integrated and systematic methods to improve sustainability performance has laid the foundation for new business models or modes of provision which can potentially lead to significant environmental benefits. This however meets, for the large majority of SMEs, with little knowledge about how to reduce the “whole-life” environmental impact of their products, from raw material acquisition, through production and finally to recycling and disposal. The deficit does not amount only to lack of knowledge about technical solutions, but also to understanding of “eco-design” and consistent organizational changes (OECD, 2009a).

Meeting regulatory requirements

Regulatory changes imply burdens on SMEs

18. Regulation, together with taxation and expenditure, is one of the key levers governments can use to promote green growth (OECD, 2010a). Regulatory changes, however, can generate a significant information burden and adaptation cost for resource-constrained SMEs, which need to invest time and resources for acquiring relevant information, understanding the implications of new regulation and consistently adapt their products and processes. The capacity to respond to stricter regulation can be a problem above all during the transition. Mainly, SMEs are generally short of the competences required for monitoring a fast changing regulatory environment and for filtering and understanding the relevant information.

... whose capacity to adapt and anticipate is constrained

19. Widespread information about green regulation and the capacity to process it are of key relevance also for SME growth and entrepreneurial dynamics. In fact, smart regulation can open up new business opportunities. Private estimates suggest that the Low carbon and Environmental Goods and Services (LCEGS) sectors, which include traditional environmental services (e.g. water supply and waste water treatment, waste management, recovery and recycling), renewable energies, as well as emerging low carbon activities, such as building technologies and carbon finance, was valued at approximately (nominal) £3.2 trillion (USD 5.9 trillion) in 2008-2009, and forecast to grow by approximately 4% per year over a five year time-horizon. These sectors were estimated to involve 1.4 million companies globally and employ over 28 million people, although recent economic uncertainty subdued increases in the labour force in spite of business sales increasing (Innovas, 2010). The labour intensity and niche orientation of some of these developments is likely to favour small businesses and new firms, although their capacity to seize the opportunity is greatly related with their innovation orientation and skills.

Lack of skills and qualified personnel

Jobs are transforming and new skills are required

20. Greening the economy and seizing opportunities along the path to a low-carbon system requires transforming jobs, occupational profiles and business operations in ways yet quite uncertain. New skills are required not just for innovation and competitiveness but also for adjusting to climate change related policies and regulations. Evidence from a number of countries shows that skill shortages have already developed in certain sectors or occupations, which are not well served by traditional training institutions (OECD, 2010b). SMEs generally rely on on-the job forms of training and learning-by-doing, which exhibit important limitations at a time of substantial shifts in the skills required for responding to new competitive and institutional settings. In addition, most SMEs have little awareness about the future needs for new green skills and their investments in green training and knowledge-intensive activities are very limited.

Limited access to finance

Financial constraints limit SME technology adoption and innovative green entrepreneurship

21. Access to financing continues to be one of the most significant challenges for the creation, survival and growth of SMEs, especially innovative ones (OECD, 2009b). SMEs and entrepreneurs have special vulnerabilities in the post crisis environment, as they have suffered from a double shock: a drastic drop in demand for goods and services and a tightening in credit terms. Easing SME access to finance is crucial for their adoption of greener technology and investment in sustainable business practices. It is also crucial for supporting SMEs' and entrepreneurs' contribution to eco-innovation. Financial constraints are especially high for new entrants into the innovation process, since they have no history of success and often only limited access to internal finance. Furthermore, in the case of green innovation, technological and market uncertainty are particularly high, raising risk premiums.

Barriers to markets

SMEs facing barriers to access the markets opened by the low-carbon transformation

22. The expansion of markets for green goods and services, through the adjustment of price signals, regulation, public procurement, innovation support and investment in green infrastructure, is a key policy objective of green growth policies across countries. Furthermore, the global dimension of the green growth shift opens up new opportunities for firms to expand in international markets. However, SMEs meet with several barriers to enter international markets, especially at a time of fast changing and increasingly complex competitive environments. These barriers are largely related with SME constraints in terms of time, competency and financial resources, and lack of knowledge on the best way to enter or make greater use of commercial engagement in foreign markets (OECD 2008b). In addition, SMEs face relevant limitations for accessing public procurement, which is playing an important role in building up green markets.

Changes along global value chains implied by stricter green regulation and quality standards are highly demanding for SMEs

Participation in global value chains

23. Low-carbon and other environmental regulations and green technologies are also impacting on global value chains, modifying the requirement to access them and the opportunities stemming from them. SMEs broadly participate in global value chains. This insertion can bring them opportunities for a transition towards sustainable practices, enhancing their access to environmentally conscious large firms, knowledge flows and global markets. However, SMEs’ involvement in value chains usually entails great demand on their managerial and financial resources (OECD, 2008b). Furthermore, it may impose cost pressures that, on the other hand, reduce SME commitment to investment in sustainable practices and environmental upgrading. In this regard, the green-led changes can be particularly demanding for SMEs, as they are requested to fulfill stricter green standards, while resisting the increasing pressures from large firms to reduce costs.

IV. What can Governments do?

24. Governments can provide crucial support for SMEs to overcome the main barriers for their transition towards the green growth economy and encourage entrepreneurial investment and firm creation in the green markets taking shape. Priorities include initiatives such as: raising SMEs’ and entrepreneurs’ awareness of the scale and implication of the transition towards a green and low carbon economy; tackling SME knowledge and skill gaps in relation to green technologies, practices and business models; and enhancing SME access to the emerging markets of environmental goods and services.

Proposed Recommendations

Policies and Programmes

Provide information and knowledge of the needs ahead

Increasing SMEs’ and entrepreneurs’ awareness and connecting them to knowledge networks is crucial for favouring adaptation to or anticipation of green-led changes, as well as for enhancing their active role in the low-carbon economy, as producers, users, integrators of skills and technologies, innovators and trainers. Local ecosystems of firms, institutions and organizations constitute important players for the implementation of strategies that better link the different stakeholders at the local level.

Reduce uncertainty

Taking action to put green growth on an even playing field with conventional growth, by designing consistent and predictable regulation and by providing clear market signals, is essential to establish the market certainty needed by firms to plan long-term investments in sustainable practices and eco-innovation, as well as for providing incentives for new entrants.

Enhance access to finance

Access to appropriate types of financing structures and facilities are especially required to allow SMEs and entrepreneurs to respond to the investment needs implied by the transition to a green, low-carbon economy and to take advantage of the opportunities provided by innovation. Enhancing venture capital markets is key to the entry of new firms, particularly high-growth ones, in the emerging green markets.

Support the skill transformation

The transition towards a low carbon economy demands that workers' skills are adapted and that new generations are educated to take-up appropriate skills to meet the changing demand. Labour markets and training policies can play a key role in facilitating the structural adjustment required by the transition to green growth, while, at the same time, minimizing the associated social costs. Flexibility in the delivery of training and skills development programs is crucial to reach SMEs.

Support the adoption of new business models and modes of provision

Cost reduction is currently the main driver for eco-efficiency among SMEs and is generally pursued through end-of-pipe solutions. Policies should favour a greater focus on integrated environmental strategies and responsible management practices, which involve a large amount of non-technological changes and innovations.

Enhance the green focus of local production and innovation systems

The local level can play an important role in the broad technological, organizational and cultural change demanded by the transition to a green economy. In particular, there is the need to consolidate the efforts of local governments, universities and public research centres to engage with SMEs, providing problem-solving and auditing services, and to favour clustering and networking around green-related activities.

Improve access to markets

Regulatory reforms, standards and public procurements can strengthen emerging green markets and open new ones. Demand side measures, such as information campaigns and eco-labelling, are receiving increasing attention. SME access to these emerging markets should be encouraged, while avoiding distortive effects to competition and trade. Policies should also be oriented at removing barriers to SME's participation in expanding global green markets and value chains that are undergoing a transition towards more sustainable practices and business models.

Foster entrepreneurship and new firms

Arranging a proper environment for promoting entrepreneurship, especially oriented towards innovative ventures, is essential to accelerate green growth, in light of the evidence that young firms represent a large source of more radical innovations. Policies should be directed at reducing entry barriers as well as the costs incurred when exiting markets. Education also plays an important role for diffusing entrepreneurial values and fostering aspirations.

Further Work by the OECD

- Identify the main challenges SMEs will face in adapting to the requirements of a greener economy and the opportunities they offer, drawing lessons from past adjustments to environmental problems and from the responses by policy makers and the business sector. Highlight best practice policies in tackling these challenges.
- Develop a framework to measure SMEs' progress towards green growth, identifying indicators that are relevant and useful to policy making. In particular, conceptual advancement is needed in the metrics concerning the skills for transition to a low-carbon economy and the "greening" of jobs. This requires a stock-taking of existing measures and gaps in different development contexts.

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