

Technology development and deployment to address green growth challenges

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Business is fully supportive of the concept of green growth, recognising that environmental challenges and growth need to be addressed in a mutually reinforcing manner. We underline the importance of looking for win-win solutions across the entire economy where sustainability and growth can be achieved in a cost-effective manner. While green growth is currently one of the overarching priorities of the OECD, the role of innovation and the spread of technologies in this process need to be addressed as key issues in this context.

Addressing global challenges through innovation

The scale and urgency of global challenges have become increasingly apparent. Solutions to these challenges can only be found in the widespread application of innovative approaches, derived from better understanding and effective scientific and technological breakthroughs as well as the spread of innovation, driven by market forces. Governments around the world can expect most rapid progress when there are framework conditions in place that encourage these linkages and reflect the new global dimensions of science and innovation.

Innovation is a «must» to work effectively towards this green growth. Achieving green growth requires innovation in a wide range of technologies as well as in non-technological areas, including new business models, major progress in the development and deployment of key technologies, better use of existing knowledge and technologies across sectors and geographical boundaries, and increased international and public-private co-operation in the area of innovation. Likewise, the role that innovation policy instruments, such as public procurement or demand-side activities, could play in addressing green issues should be carefully considered. We encourage the Directorate for Science, Technology and Industry to play an active part in developing green growth policy approaches and in ensuring that the outcome of its analysis becomes an important cornerstone of the Green Growth Strategy.

Fostering a sound investment framework for “greening” the economy

The changes that are needed will call for huge investments in low-carbon technologies, advanced power plants of all types, smart grids, energy efficient manufacturing, equipment, appliances, buildings and transport. Hurdles to business investment need to be addressed, taking into account often long-term investment cycles. Having the right investment framework in place should therefore be an overarching priority for the OECD Green Growth Strategy.

Such a policy framework needs to encourage the private sector to invest and engage in technology cooperation and provide adequate incentives to create and adopt new technologies in all areas that bring environmental improvements while creating growth.

The OECD Innovation Strategy has made a major contribution to understanding how policies should be coordinated to foster innovation-led growth. To achieve green growth, it will be important to ensure equitable treatment of the wide range of low-carbon technologies. However, in addition to seeking for breakthrough technologies, there is significant potential for reducing emissions by using and improving on existing technologies.

Addressing financing needs

Vast amounts of financing will be necessary to spur the development of technology. The majority of the funds required will have to be mobilised through the private sector, underlining the importance of cost-effectiveness of policy measures so that scarce resources can be invested in innovation to address green growth challenges. However, public sector finance will also play an important role, including in the area of basic research and to leverage private investment. Among others, public financing has an important role to play to support low-carbon technologies in early stages of development. At the same time, it is important that active cooperation with the private sector is sought early in the process.

Cost-effectiveness of policy instruments

In particular in the context of slow economic recovery, cost-effectiveness of policy instruments is of utmost importance. BIAC understands that government intervention is necessary in the transformation to a greener economy. However, we encourage policy makers to think carefully about what intervention is appropriate in a particular context to achieve the underlying objective of green growth. Unilaterally introduced green taxes, for example, have the potential to increase costs, thus taking away scarce resources that could be otherwise invested in the research, development and deployment of technology necessary for achieving green growth. Whatever policy instrument is chosen, its impacts should be carefully analysed, taking into account both environmental effectiveness and economic efficiency.

Fostering broad-based education efforts

High quality lifelong education and training are not only necessary to ensure against shortages of highly-skilled workers in key economic sectors, but also to foster innovation and ensure that the necessary skills are available for future job requirements, including for green growth. Close dialogue between the private and public sectors and education institutions is essential in this respect. This requires clear recognition that innovation involves more than just science, technology, engineering and mathematics, and depends on other key skills in areas such as service design, marketing and social sciences. Emphasis should similarly be placed on boosting skills such as critical thinking, collaboration, creativity, ICT, and environmental literacy.

Furthermore, strong efforts should be made to encourage greater access into high quality vocational education and training (VET), as well as facilitated transfer between VET systems and other levels of education, with a strong emphasis on the practical application of knowledge and skills required in the workplace. Recognition of informal learning in the workplace is also important, and this could entail recognising clusters of specific skills

pertaining to green growth issues which an individual has gained either as part of his/her formal education or through his/her learning on the job (micro-credentialing). At the same time, education should be underpinned by objective and fact-based public information to help build demand for a real market where innovation can yield its real potential.

Encouraging cooperation

Cooperation needs to be further strengthened on many fronts: between companies, between public and private actors, and between OECD and major emerging economies. Increased cooperation will allow us to use the potential of a broader range of knowledge, share costs, and benefit from the latest scientific developments. Cooperation will thus be crucial to speed up the innovation process and address global challenges more effectively and in a truly global manner. Moreover, it needs to be ensured that business is aware of developments in university research and can use them in a way that is of mutual benefit. The barriers that exist need to be addressed, and the players need to learn to cooperate effectively. Public-private partnerships can play a major role in promoting cooperation and in building knowledge infrastructure. International cooperation is particularly important to foster green growth throughout the world. The success of the Green Growth Strategy will depend on the active involvement of all parts of society, including governments, business broadly, consumers and key stakeholders.

From technology development to deployment

While innovation is crucial for green growth, equal attention should be given to the spread of innovative approaches and technologies. It should be borne in mind that the main vehicle for the deployment of technology will be the private sector, through its day-to-day business activities of technology development, foreign direct investment and technology sales and dissemination. In many cases, technology dissemination takes place in the context of commercial transactions. Governments must be aware of the commercial nature of technology deployment when setting policies to facilitate the spread of environmentally friendly technologies. A company's decision to invest in a major project in a developing country will be directly influenced by the conditions in the host country.

A well-functioning market economy, a stable economic system, an attractive investment environment for investing partners as well as open trade and markets are therefore key for the deployment of new technologies. Non-discriminatory policies in supporting green growth are essential, and green protectionism must be avoided.

The importance of effective intellectual property protection for technology transfer

One fundamental requirement for the spread of technologies is effective intellectual property protection. An effective and efficient IPR regime serves as a critical enabling tool for innovation. It provides incentives to take risks and encourages the creation and adoption of new technologies in all areas. This requires a robust IPR regime to maintain the balance between exclusive protection for a defined period and disclosure of IP in accordance with internationally established IPR policies. At the same time, the access and diffusion of IPR for innovation can increasingly be accelerated through a range of new collaborative mechanisms as well as through the emergence of global knowledge and innovation networks and markets.

The role of voluntary patent pools

Business is strongly opposed to compulsory licensing, which according to the OECD's own analysis, has not proven to be effective in forcing technology transfer. However, in order to assist with the transfer of technology, voluntary patent pools and voluntary licensing can play an important role. In cases where transactions are difficult from a point of view of business and would not result in any profit-making, government support would be essential. For example, this could happen in the form of international public funds or ODA. The OECD could play an important role in this area.

The importance of taking a "system approach"

OECD analysis shows that high technological capacity in a recipient country is a key factor in encouraging transfers. It should be borne in mind that technology transfers as such do not necessarily help developing countries address green growth challenges. To address a specific issue, key technologies need to be supplied together with related technologies as well as know-how. A "system approach" is necessary instead of focusing on individual technologies to solve a specific challenge in isolation. Further discussions among governments and with the private sector about such a "system approach" and more effective cooperation, including in the area of capacity building, are necessary to achieve long-lasting and substantive progress.

In some cases, policy recommendations are made that directly interfere with the free market. A thorough assessment of the consequences of such interventions is essential beforehand. Picking of winners and losers must be avoided. The focus should be on exploring the potential of all business sectors to develop green growth approaches.

Measurement and indicators

Through its Innovation Strategy, the OECD has made a major contribution in presenting new measures and new ways of looking at traditional indicators and measuring the new dimensions of innovation. BIAC has actively supported these efforts. Likewise, the development of measures used to demonstrate the progress made with respect to greener growth is equally important. BIAC underlines that agreed indicators should be well-balanced and well-rounded. There is a need to ensure that indicators are able to capture both growth and the greening of the economy at all levels, taking a long-term and forward-looking perspective. Business should be actively involved in these discussions.

Exploring the potential of specific technologies

The OECD has major work programmes on specific technologies, such as ICT, biotechnology and nanotechnology. These technologies can play a major role in moving towards a greener economy by offering efficiency improvements in a range of sectors as well as a range of environmental benefits. BIAC recommends that the contribution of these technologies to the Green Growth Strategy be given due attention.