



ISSUE NOTE

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SESSION 1:

**HOW TO UNLOCK PRIVATE
INVESTMENT IN SUPPORT
OF GREEN GROWTH?**

ISSUE NOTE

SESSION 1, 2013 GREEN GROWTH AND SUSTAINABLE DEVELOPMENT FORUM

“HOW TO UNLOCK PRIVATE INVESTMENT IN SUPPORT OF GREEN GROWTH?”

OECD GREEN GROWTH AND SUSTAINABLE DEVELOPMENT FORUM

The Green Growth and Sustainable Development (GG-SD) Forum is an OECD initiative aimed at providing a dedicated space for multi-disciplinary dialogue on green growth and sustainable development. It brings together experts from different policy fields and disciplines and provides them with an interactive platform to encourage discussion, facilitate the exchange of knowledge and ease the exploitation of potential synergies. By specifically addressing the horizontal, multi-disciplinary aspects of green growth and sustainable development, the GG-SD Forum constitutes a valuable supplement to the work undertaken in individual government ministries. The GG-SD Forum also enables knowledge gaps to be detected, to facilitate the design of new works streams to address them.

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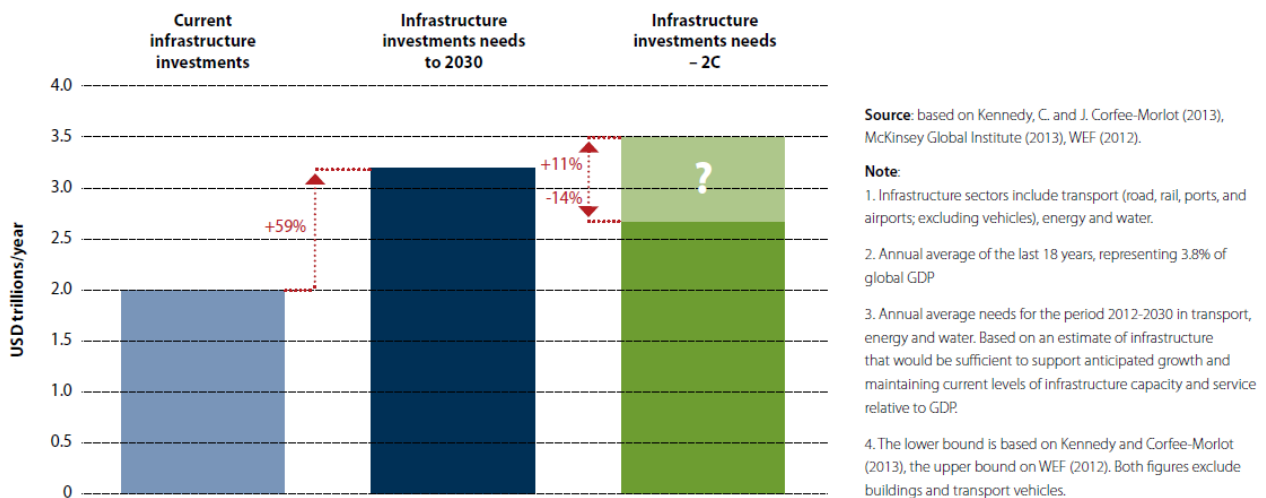
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I. THE CASE FOR GOVERNMENT POLICY ACTION TO UNLOCK PRIVATE INVESTMENT IN SUPPORT OF GREEN GROWTH

Summary

1. The transition to green growth will require smart investment (Figure 1). Approximately USD 2 trillion is currently invested annually in infrastructure, including transport, energy and water (but excluding transport vehicles and buildings). An additional USD 1.2 trillion of annual investment is required to meet global infrastructure needs to 2030, irrespective of environmental constraints. A shift to green infrastructure could require additional spending – an upper-end estimate puts this in the order of 11%, or around USD 350 billion per year, according to one study¹. Yet, it is possible that greening infrastructure investment in these sectors could result in net savings. Another study estimates annual savings of USD 450 billion, or around 14% less than BAU infrastructure spending². Such potential savings could stem from better utilization of electrical systems through full deployment of smart grids and reduction of rail and port infrastructure demands due to decreased fossil fuel trade. Importantly, the estimated savings do not include fuel savings, which can be significant. The IEA estimates that every additional dollar invested today in clean energy can generate 3 dollars in future fuel savings by 2050³. The key challenge for policy makers is to ensure that investment is “smart”, *i.e.* being made in the right kind of infrastructure.

Figure 1. An annual green infrastructure investment gap, or dividend?



2. Scaled-up green investment is critical from an environmental perspective. Current growth pathways in both developed and developing countries are unsustainable. Global carbon dioxide (CO₂) emissions from the energy sector, for example, reached 31.6 Gt in 2012, a historic high. Without further policy action, current trends suggest global energy CO₂ emissions will lead the world towards a 3-6°C

¹ WEF (2012), “The Green Investment Report: The ways and means to unlock private finance for green growth”.

² Kennedy, C. and J. Corfee-Morlot (2013), “Past performance and future needs for low carbon climate resilient infrastructure – An investment perspective”, Energy Policy 59

³ IEA (2012), Energy Technology Perspectives 2012: Pathways to a Clean Energy System, OECD Publishing, Paris. http://dx.doi.org/10.1787/energy_tech-2012-en

temperature increase by 2100 (IEA, 2013). This would have major environmental consequences, including more frequent extreme weather events. The cost implications of such events are substantial. For example, Hurricane Sandy in 2012 cost around USD 75 billion in physical capital, or 0.5% of 2012 US GDP ([CoreLogic Analytics](#)).

Box 1. Green investment

Green investment is a broad term, which can include investment in green infrastructure sectors such as renewable energy, energy efficiency, water sanitation and distribution systems, waste management, sustainable transport and housing—as well as sustainable natural resources management and other relevant activities within the environmental goods and services sector (EGSS). Green investment can be a sub-set of a broader investment theme or closely related to other investment approaches such as sustainable or socially responsible investment. Despite existing efforts, setting the boundaries of “green investment” remains difficult as do its measurement and interpretation. Any green definitions, standards and codes will therefore need to be adjusted over time in view of new scientific and methodological developments as well as a general view of investors through the lens of environment, including climate change, resource efficiency and more broadly green growth.

3. The long life-span of infrastructure adds urgency to the green investment challenge. The estimated lifetime of a coal-fired power station, for example, is 40-60 years. If infrastructure that is built today is not clean, it is likely to be around for a long time, unless future policy changes force a write-off of stranded assets.

4. Green infrastructure investment can generate significant co-benefits. The European Commission estimates, for example, that the European Union’s low-carbon energy, energy efficiency and infrastructure investment needs (around EUR 270 billion per year) could result in fuel savings of EUR 170-320 billion per year, and monetised health benefits of up to EUR 88 billion per year by 2050, on top of energy security and climate benefits. Investment in green infrastructure can also generate value across green value chains, not only in midstream manufacturing, but also in downstream activities with considerable employment effects, including in the Environmental Goods and Services Sector (EGSS).⁴ The renewable energy sector has shown significant employment growth, increasing at an annual pace of 21 % globally. Renewable energy sectors now employ nearly 5 million workers globally (OECD, 2013d *forthcoming*).

5. Government policy action is often needed to unlock private investment in support of green growth. Since tax resources are scarce and hard to raise, meeting green investment funding requirements will entail mobilising large-scale private sector investment. Government cannot assume that capital will flow in the quantities needed and in the timeframe required to achieve the green transition without supporting policy measures. Green infrastructure projects can have higher upfront capital costs, higher risks (*e.g.* due to market and technology uncertainties) and longer investment and payback timelines compared with incumbent, fossil-fuel-based investment alternatives. In addition, green infrastructure projects can be hindered by specific investment barriers, due to market and government failures that fail to account for the benefits of resource-efficient infrastructure and technologies, as well as the full costs associated with fossil-fuel use.

6. Lack of clarity and consistency in government commitments to environmental and climate policy is a key barrier. Investors make investment decisions on the basis of risk-adjusted returns, the regulations that govern them and the information available. Neither regulations nor the information about

⁴ Overall, and despite existing definitions, setting the boundaries for the set of environmental goods and services remains difficult as do their measurement and interpretation. Caution needs to be exerted with interpretation of EGSS trends.

the risks of many clean technologies are ideally aligned with a green future. There is also lack of adequate, targeted and sustained support measures for green infrastructure projects. In addition, fossil-fuel subsidies continue to substantially distort energy markets.

7. In addition to a lack of supportive policies, barriers to international trade and investment hamper green investment. International investment represents an important share of new-build green infrastructure investment. Between 2004 and the first half of 2012, international investment represented about one-third of asset finance for investment in green energy generation. The global financial crisis has resulted in an increasing use of trade remedy measures restricting investment and trade, such as antidumping and countervailing duties in renewables

8. How to unlock private investment in support of green growth? To frame discussions in Session 1 of the 2013 Green Growth and Sustainable Development Forum, this issue note looks at how governments might implement comprehensive support measures for private investment in green growth, providing examples of current government efforts (Section II); the need to address barriers to international trade and investment to optimise green global value chains (Section III); and research gaps and possible areas for future work (Section IV).

II. DOMESTIC POLICY FRAMEWORKS FOR GREENING INVESTMENT

9. Comprehensive government support for green investment requires action across multiple fronts. Key measures to facilitate green investment include: strong government commitment to green growth; targeted investment promotion and facilitation measures, such as incentives for green investment; and respect for core investment principles such as investor protection and appropriate competition policy. Certain governments have taken steps to implement support for green investment (Box 2), but as demonstrated by current investment levels, much more needs to be done.

Strong government commitment to green growth

10. Clear government commitment to green growth can promote private investment in green sectors. Uncertainty about the policy and regulatory frameworks that affect business opportunities and the risk-return profile of investment is a key barrier to private sector engagement in green infrastructure. Clearly linking economic growth and environmental policy aims and highlighting areas identified by government as priority sectors for green growth – whether through formal “green growth agendas” or as part of national development plans, climate change or waste management strategies – can therefore help governments unlock public and private investment, both foreign and domestic. This is particularly critical in the case of green infrastructure, due to the long timeframes associated with infrastructure projects that make investors vulnerable to policy or regulatory changes that might occur over the investment lifetime.

Investment promotion and facilitation

11. Eliminating fossil-fuel subsidies is a threshold measure to reduce market distortions and shift investment from carbon-intensive or environmentally harmful activities towards greener activities. An OECD inventory of subsidies and tax breaks for fossil fuel production and use identifies over 550 such measures, amounting to a total of about USD 55-90 billion per year in 2005-2011 (OECD, 2013). When these are added together with the IEA estimates of fossil fuel consumer subsidies in emerging

and developing countries (USD 544 billion in 2012; IEA, 2013), it amounts to over USD 600 billion per year. In comparison, global subsidies to renewables are estimated to be about USD 101 billion according to the IEA.

12. Market-based instruments can serve to address market failures relevant to green infrastructure sectors. Robust carbon pricing from an emissions trading system or carbon tax is the cornerstone of an investment-grade clean energy policy.

13. Transitional support to green investment and green technologies, for instance through specific investment incentives, is also required. This is because of the absence of strong carbon pricing mechanisms in most regions today and political uncertainty over their future development or stringency. In addition, short-run incentives for research, development and demonstration in green technologies and eco-innovation can help foster innovation, tackle barriers to technology and knowledge transfer costs, improve technology performance, ramp-up production and address market barriers. Barriers to technological innovation and knowledge transfer can be particularly high in green infrastructure sectors, as infrastructure markets are traditionally monopolistic, with high entry barriers and few incentives for incumbents to embrace new technologies.

14. To attract investors, targeted incentive schemes must be predictable and stable, and avoid the “stop-and-go” pattern to policy decision-making that has recently weakened investors’ confidence in the renewable energy sector. The challenge for policy makers is to ensure that incentives for green investment are sufficiently long-term to enable sizeable investment decisions, while flexible enough to adapt to potentially fast-changing market environments and ensure markets are not distorted in the long-run, once technologies become technologically mature and competitive.

15. Strong environmental regulation and enforcement is meant to increase abatement efforts, which could in turn back investment shifts towards greener projects. Investors seek a stable policy environment to support long-term investment plans. Regulations should not add to costs of doing green business – even more so when the sheer scale of required investments is large, as for example to curb local air pollutants in China amidst the tightening of its environmental regulations. The predictability of measures also plays a significant role in triggering green investment flows, as shown by Johnstone et al. (2010) for the case of renewable energy innovation. Opening markets to competition and lowering entry barriers can further help to crowd-in green investment, though empirical evidence is inconclusive of the overall growth effects.⁵

Table 1. Investment framework for green growth: the case of Tunisia, Malaysia and Costa Rica in selected green sectors

Country	Country’s commitment to green growth	Policies and regulations for green investment	Incentives to promote green investment
Tunisia: energy	• <i>Economic and Social</i>	• Ratification of the <i>United</i>	• <i>Pollution Cleanup Fund (FODEP),</i>

⁵ For example, Kalamova and Johnstone (2011) find a relatively small effect of environmental policy stringency on foreign direct investment patterns compared to other factors, including the quality of regulatory frameworks. Environmental regulation inducing “abatement investment” may as well crowd out ‘non-environmental investment’ into productive capital, potentially putting future productivity at risk. However, current empirical evidence tells little about the efficient level and optimal design of such environmental regulations which need to be carefully considered by policy-makers in order to prevent welfare-reducing displacement of efforts from other productive uses of inputs. Nevertheless, a coherent policy mix is argued to be needed to incentivise a shift to green investments (e.g. Ang and Marchal, 2013).

efficiency and renewable energy	<p><i>Development Strategy-2012-2016 (2011)</i></p> <ul style="list-style-type: none"> • <i>National Strategy for Sustainable Development (2011, provisional version)</i> 	<p><i>Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol</i></p> <ul style="list-style-type: none"> • 2009 amendment of the <i>Energy Conservation law</i> to authorise self-generation of electricity based on renewable energies • <i>National Energy Conservation Fund (FNME)</i> • <i>Tunisian Solar Programme (PROSOL)</i> to attract private sector participation through a capital grant qualifying for a VAT exemption, customs duty reduction and a bank loan with a reduced interest rate. 	<ul style="list-style-type: none"> • Grants and lines of credit • <i>Clean Development Mechanism (CDM)</i>, created by the Kyoto Protocol • <i>Environmental protection tax, the energy conservation tax, and the oil products tax.</i> • <i>Investment Incentives Code of 1993</i>
Malaysia: renewable energy	<ul style="list-style-type: none"> • <i>2010 New Economic Model</i>, which included sustainable growth in the Strategic Reform Initiatives • <i>National Green Technology Policy (2009)</i> • Inclusion of environmental protection clauses and environmental cooperation initiatives in a few economic cooperation and free-trade agreements 	<ul style="list-style-type: none"> • <i>National Renewable Energy Policy and Action Plan (2010)</i> • <i>Renewable Energy Act and Sustainable Energy Development Authority Act (2011)</i> • Ratification of the <i>UNFCCC</i> and the <i>Kyoto Protocol</i> • <i>Renewable Energy Policy</i> • Creation of the <i>Ministry of Energy, Green Technology and Water</i>, the <i>Sustainable Energy Development Authority</i>, and the <i>National Green Technology and Climate Change Council</i> to strengthen the country's institutional framework, in application of the <i>National Green Technology Policy</i> 	<ul style="list-style-type: none"> • <i>2009 budget law</i>, which set up tax exemptions, investment tax allowance, import duty exemptions and low-interest loans in support of renewable energy • 2011 feed-in-tariff scheme, coupled with a power purchase agreement and financed through a surcharge on consumer electricity bills • 2010 <i>Green Technology Financing Scheme</i> (USD 500 million initial endowment plus USD 680 million in 2012) • 169 Clean Development Mechanism (CDM) projects as of mid-2012 (mostly in biomass) • Acquisitions and joint ventures by the government's strategic investment fund Khazanah • Incentive programmes targeted at local research institutes and universities to promote environmental research
Costa Rica: sustainable tourism	<p>Although, Costa Rica has no formal green growth agenda in place, it has developed a range of policies to increase private investment in support of environmental objectives.</p>	<p><u>General policies for green investment:</u></p> <ul style="list-style-type: none"> • In 1997, Costa Rica became the first country to initiate a national <i>Programme of Payments for Environmental Services (PES)</i> • <i>National Development Plan (2011-14)</i> • <i>National Climate Change Strategy (2009)</i> • <i>National Climate Change Strategy Action Plan (2012)</i> • <i>National Energy Plan (2012-30)</i> <p><u>Policies for sustainable Tourism:</u></p>	

		<ul style="list-style-type: none"> • <i>National Plan for Sustainable Tourism 2010-16</i> with: <ul style="list-style-type: none"> ○ Co-ordination from the <i>Tourism Board</i> and the <i>Ministry of Environment and Energy</i> ○ Co-operation of the <i>Tourism Board</i> with national parks administrator to implement a <i>Sustainable Tourism Programme</i> in Wildlife Protected Areas • Granting by the <i>Tourism Board</i> of the <i>Certification for Sustainable Tourism (CST)</i> to qualifying companies
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Further information is available at: <http://www.oecd.org/investment/countryreviews.htm>.

Respect for core investment principles

16. Core investment principles such as investor protection, intellectual property rights protection and non-discrimination are essential to underpin private investment in green infrastructure investment, as they are across all sectors of investment. Generally, such principles should be compatible with green growth policy objectives. Yet, core principles such as non-discrimination *vis-à-vis* foreign investment can be challenging in some areas of green infrastructure. The energy sector, for example, is often more restricted to foreign direct investment than other sectors due to local content requirements or limits on permitted levels of foreign ownership of key national assets and infrastructure. Where exceptions to these core principles are made in areas relevant for green investment, they should be clearly justified and regularly evaluated, given their potential impact on investment levels (see Section III).

17. Ensuring a level playing field between public and private investors is also essential. State-owned enterprises (SOEs) often play a primary role in the provision of green infrastructure services – either as monopolistic or oligopolistic utility providers, clients or bidders for green infrastructure procurement, or as the public sector counterpart in public-private partnership projects. Opening green infrastructure markets to greater private participation and ensuring sound competition policy and competitive neutrality can therefore play a crucial role in facilitating private sector participation in green infrastructure projects.

Table 2. Policy areas that impact on private investment in clean energy infrastructure

Policy areas	Questions/issues for policy-makers' consideration	Overall objective
1. Investment policy	<ul style="list-style-type: none"> • Non-discrimination of foreign versus domestic investors • Intellectual property rights • Contract enforcement 	The quality of investment policies directly influences the decisions of all investors, be they small or large, domestic or foreign. Transparency, property protection and non-discrimination are investment policy principles that underpin efforts to create a sound investment environment for all.
2. Investment promotion and facilitation	<ul style="list-style-type: none"> • Carbon pricing and removal of fossil-fuel subsidies • Long-term policy goals • Policy incentives for investment • Licensing • Policy coherence and co-ordination 	Investment promotion and facilitation measures, including incentives, can be effective instruments to attract investment provided they aim to correct for market failures and are developed in a way that can leverage the strong points of a country's investment environment.
3. Competition policy	<ul style="list-style-type: none"> • Electricity market structure • Non-discrimination in access to finance 	Competition policy favours innovation and contributes to conditions conducive to new investment.

	<ul style="list-style-type: none"> • Competition authority 	Sound competition policy also helps to transmit the wider benefits of investment to society.
4. Financial sector development	<ul style="list-style-type: none"> • Access to finance • Specific financial tools and instruments • Strengthened domestic financial markets 	Well-functioning financial markets can strongly contribute to enhancing investment opportunities for both domestic and foreign investors.
5. Public governance	<ul style="list-style-type: none"> • Regulatory quality of the electricity market • Multi-level governance 	Regulatory quality and public sector integrity are two dimensions of public governance that critically matter for the confidence and decisions of all investors and for reaping the development benefits of investment.
Cross-cutting issues	<ul style="list-style-type: none"> • Regional co-operation • Public-private partnerships (corporate governance) • Trade policy 	

Source: OECD (2013), *Policy Guidance for Investment in Clean Energy Infrastructure: Expanding access to clean energy for green growth and development*, An OECD report to the G20, with contributions by the World Bank and UNDP. Further information is available at: www.oecd.org/daf/inv/investment-policy/clean-energy-infrastructure.htm.

The role for innovative financing mechanisms

18. Novel financing mechanisms and vehicles may also have a role to play in promoting private investment in support of green growth. The German Government, for example, is working through its national development bank KfW Bankengruppe to support private investment in energy efficiency and renewable energy (Box 2).

Box 2. KfW Bankengruppe support for energy efficiency and renewable energy initiatives

KfW offers subsidised loans for energy efficiency. Its business model consists of an “on-lending-system”, enabling KfW to support promotional loans working through the network of German commercial banks. The programme is designed to ensure that commercial banks pass on attractive interest rates to private investors. To do so, KfW’s stipulates a compulsory maximum interest rate that on-lending commercial banks are allowed to charge, which is based on its own an attractive refinancing rate and a margin for the commercial bank partner. KfW benefits from its AAA-credit rating and refinancing capacity via capital markets to minimise the financial costs of these interest subsidies.

In the housing sector, KfW’s Energy Efficient Construction and Rehabilitation (EECR) programme provides subsidised lending as well as grants for new buildings and rehabilitation of existing building stock. The interest rate subsidy is set according to the level of energy efficiency achieved. The “KfW-Efficiency House” new building performance standard, which was defined according to the German 2009 Energy Savings Ordinance, serves as a reference. From 2001 until 2010, KfW promoted 1.8 million housing units under the EECR programme, and committed about 630,000 loans worth a total of EUR 40 billion.

KfW is active in promoting other forms of green investment through several other programmes with strong results to date. For example, it offers energy financing schemes for SMEs, through the Environmental and Energy Efficiency Programme of the 2009 European Recovery Plan, in addition to providing an expert-platform for energy efficiency advice to SMEs. It also has a strong renewable energy financing programme. KfW actively monitors the results of its programmes through regular ex-post assessment and reporting to the government on the costs and the benefits of its domestic “green” financing programmes in energy sector.

Sources: Corfee-Morlot et al., 2012; adapted from Pfliegner, Schuberth and Gumb 2012.

III. ADDRESSING BARRIERS TO INTERNATIONAL TRADE AND INVESTMENT TO OPTIMISE GREEN VALUE CHAINS

19. Green value chains – the activities that firms engage in to bring a product to the market, from conception to final use – are increasingly global. Green industries such as solar photovoltaic (PV) or wind energy are characterised by global production networks that allow firms to optimise production costs by sourcing activities such as equipment manufacturing or electricity generation based on efficiency and location-specific factors. Solar PV trade intensity – trade as a percentage of gross domestic production in the solar PV sector – was estimated to be about 60-90 % in 2006-2008. International trade in environmental goods has grown faster than trade in merchandise generally. It was estimated at USD 776 billion worldwide in 2009, a 34 % increase from 2004 levels. As a result and as noted above, international investment represented around one-third of investment in green energy generation between 2004 and the first half of 2012.

20. Trade and investment restrictions appear to have increased since 2008 as part of global financial crisis response measures. Certain governments have implemented measures to boost domestic production following the global financial crisis, which can potentially distort international trade and investment. Such measures include: differentiated access to financing; trade restrictions, including tariffs and trade defence measures; technical barriers such as divergent or cumbersome standards; and local content requirements, which require project developers to source a specific share of components, equipment or total project costs or jobs from domestic or regional suppliers. Preliminary OECD research shows that there has been an increasing use of restrictions to international trade and investment in the case of solar and wind energy in particular (Box 3). Similarly, several countries have implemented policy measures to protect domestic biofuel producers.

21. Barriers to international trade and investment can dampen green investment. Given that domestic production and delivery of environmental goods and services rely on an increasing share of imported inputs, trade and investment restrictions aimed at supporting manufacturing of intermediate goods may hinder the optimisation of green value chains by raising the cost of inputs and reducing demand for downstream activities such as infrastructure construction, operations and management and other related environmental services. Such measures may even ultimately hinder domestic manufacturing by impeding cost reduction in some sectors. In addition, they could hamper the relative competitiveness of green investment *vis-à-vis* possible alternative investments, thereby resulting in sub-optimal investments across green value chains. Governments should ensure that investment policy promotes equal treatment of foreign and domestic investors, so that private investment is not discouraged by such barriers.

22. Free international trade and investment in green technology components can accelerate the optimisation of green value chains. It is likely to provide access to cheaper goods and services, facilitate diffusion, aid with technology development and green innovation, increase economies of scale, encourage competition and result in faster job creation.

Box 3. The rise of international trade and investment restrictions: the case of solar PV and wind energy

Governments from developed countries and emerging economies have provided substantial support to domestic manufacturers in the solar PV and wind energy sectors in the past few years: granting preferential access to financing (e.g. via preferential loans or loan guarantees); improving export performance of solar PV and wind energy components through targeted measures; encouraging domestic and foreign firms to purchase solar or wind-turbine equipment manufactured locally (e.g. by imposing local content requirements (LCRs) as a precondition to benefiting from feed-in tariffs or to win a public tender); or restricting imports (e.g. through tariffs and other trade barriers).

The majority of the measures aim at developing a domestic manufacturing base in solar and wind energy, or protecting domestic manufacturers against the alleged use of trade distorting subsidies by countries seeking to support their own exports. LCRs have been planned or implemented at national or sub-national levels in at least 15 developed countries and emerging economies, for the most part since 2009. Several countries have also used direct financial transfers and tax credits to provide preferential access to finance for domestic producers of solar PV and wind turbine equipment. Other policy impediments to international trade and investment, such as foreign direct investment restrictions and regulatory restrictions exist but remain relatively limited in the solar PV and wind energy sectors. More research is needed to assess the importance of technical barriers (e.g. divergent standards in wind energy) and operational obstacles (e.g. differentiated treatment in tenders, and preferential access to the grid or to land).

The widespread use of LCRs in solar and wind energy has resulted in several WTO disputes – five out of a total of 51 WTO disputes since September 2010. The alleged use of dumping or harmful subsidies has resulted in an escalation of unilateral trade defence actions in solar PV and wind energy. WTO rules authorise countries to undertake temporary countervailing measures whenever an investigation determines that the imported goods benefited from subsidies and caused injury. Since 2012, developed countries and emerging economies have launched four WTO investigations and imposed four anti-dumping duties and two countervailing duties on products associated with solar PV and wind energy.

Source: OECD (2013a, forthcoming), “Achieving a level playing field for international investment in green energy”.

IV. RESEARCH GAPS AND PRIORITIES FOR FUTURE WORK

23. Provide further policy guidance on design and implementation of domestic policy frameworks for green investment. Policy guidance aimed at addressing country-level impediments to green investment and evaluating and designing policies to mobilise private investment from various types of investors (including institutional investors) in sectors across green value chains could help to optimise green growth investment potential at country-level. This includes a better understanding of how environmental regulation regimes can best contribute to long run productivity growth and investment flows.

24. Improve tracking and monitoring of trade and investment restrictions in green sectors. Despite existing monitoring of trade and investment measures across sectors, such as the OECD, WTO and UNCTAD *Reports on G20 Trade and Investment Measures*, there is no single source that tracks all trade and investment measures in solar and wind energy, for instance. This is despite what seems to be a substantial increase in restrictive measures over recent years. Improved tracking of restrictive measures would enable better analysis of their impacts.

25. Examine implications of restrictive trade and investment measures for both national and domestic investment, across green value chains. While there is much analysis on impacts of restrictive trade and investment measures on international trade generally, little work has addressed possible implications of such measures for specific green sectors such as solar and wind energy. Drawing on the forthcoming OECD report on *Achieving a Level Playing Field for International Investment in Green Energy*, future work could consider ways of sharing lessons learned and encouraging good practices in designing incentives aimed at promoting green investment and optimising green value chains, without distorting international trade and investment.

26. Enhance international co-operation to assess ways to optimise green value chains at the global level. Further research is needed to better assess the impact of policy restrictions such as divergent

standards, local content requirements, differentiated access to finance and domestic trade remedies on domestic and international investment flows. For example, harmonising inconsistent and cumbersome industrial standards and certification requirements can help reduce technical barriers to trade and investment, and thus promote the global integration of green industry supply chains and job creation.

27. Better define and measure “green” foreign direct investment. Despite the fact that FDI appears to represent a significant proportion of green investment, there is a lack of an operational definition of and OECD statistics on green FDI. The OECD Investment Committee and its subsidiary bodies have started working on issues related to the definition and measurement of green FDI. In the short term, countries have agreed to draw up an inventory of national initiatives and efforts to define and measure green FDI. Medium and long-term priorities could include developing agreed and internationally comparable methodological standards, collecting relevant data and presenting meaningful and reliable indicators.

FURTHER READING

Mobilising Private Sector Investment in Green Infrastructure

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