

5 Policies for improving FDI impacts on carbon emissions

This chapter presents a Policy Toolkit to help governments attract foreign direct investment (FDI) that contributes to decarbonisation, both by reducing the emissions associated with foreign investments and inducing low-carbon spillovers to domestic firms. The chapter describes the channels through which FDI affects carbon emissions and the contextual factors determining the magnitude and direction of such impacts. The objective of the Policy Toolkit is to provide an overview of the policy choices that can improve the impacts of FDI on decarbonisation.

Main policy principles

1. Provide strategic direction and promote policy coherence and co-ordination on investment and climate action

- Ensure a coherent, long-term strategic framework to mainstream decarbonisation across economic sectors that is linked to the national vision or goals for growth and development, with clear climate goals (e.g. emissions reductions, renewable energy) that are translated to science-based targets for the private sector.
- Develop a dedicated strategy that articulates the government's vision on the contribution of investment, including foreign direct investment, to decarbonisation. The strategy sets the goals, identifies priority policy actions and clarifies responsibilities of institutions and co-ordinating bodies.
- Strengthen co-ordination both at strategic and implementing levels by establishing appropriate co-ordinating bodies or by considering to expand the mandate and composition of existing ones, such as boards of investment promotion agencies and higher councils for green growth.
- Encourage public consultations and stakeholder engagement to receive feedback and build consensus around policy reforms and programmes to decarbonise investments.
- Design and implement effective monitoring and evaluation frameworks to assess the impact of FDI and related policies on decarbonisation, and to identify bottlenecks in policy implementation, including strategic environmental assessment (SEA) and environmental impact assessment (EIA) systems. Build capacity at national and subnational levels to review environmental assessments, reduce delays in the process, and improve transparency and information systems supporting the review process.

2. Ensure that domestic and international investment regulations are aligned with and reinforce national climate objectives, including commitments under the Paris Agreement.

- Endeavour to join major international agreements and conventions promoting decarbonisation and set domestic environmental standards for investments (e.g. on emissions, fuel economy, appliances) that are aligned with climate objectives and that support climate-friendly business conduct.
- Ensure that international investment and trade agreements are aligned with climate objectives and allow for sufficient domestic policy space to achieve these objectives.
- Develop laws and regulations that level the playing field for climate-friendly investment, including by ensuring an open and non-discriminatory environment for foreign investors in low-carbon technologies, strengthening competition in electricity markets, and ensuring intellectual property protection for low-carbon innovations.

3. Stimulate investment and build technical capabilities related to low-carbon technologies, services and infrastructure

- Phase out subsidies for investments that distort price signals and reduce the competitiveness of low-carbon technologies and consider introducing carbon pricing measures. Address any adverse effects on jobs with appropriate measures to compensate and retrain workers so as to ensure a just transition.
- Ensure that financial support to stimulate low-carbon investment addresses market failures that reduce the competitiveness of low-carbon investments, and is transparent, time-limited and subjective to regular reviews.

- Use financial and technical support to build domestic low-carbon capabilities, and to support the flow of knowledge and technology from foreign to domestic firms.

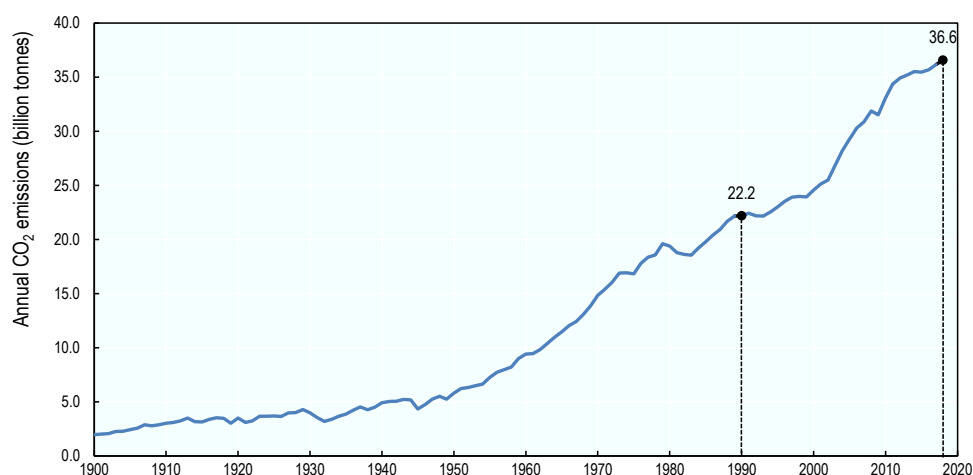
4. Address information failures and administrative barriers that reduce the competitiveness of low-carbon investments

- Raise public awareness on climate priorities and individual actions for investors and consumers to reduce carbon footprint.
- Encourage corporate disclosure of carbon emissions embodied in products and services (e.g. carbon labelling), and facilitate reporting of suspected violations of environmental regulations, or risks of violations, related to their business operations.
- Tailor investment promotion activities and tools raise visibility of low-carbon investment opportunities. Facilitate compliance with environmental permitting. Support foreign investors in identifying domestic suppliers and partners with complementary capabilities. Use IPAs as intermediaries to make policy makers aware of the regulatory needs of low-carbon investors.

5.1. The urgency of reducing CO₂ emissions

Adverse environmental developments are among the gravest global threats of current times. A global economy reliant on fossil fuels and the resulting rising greenhouse gas emissions, now 60% higher than their 1990 level (Figure 5.1), are creating drastic changes to the climate, including more frequent and extreme weather events, land degradation, ocean acidification, and biodiversity loss. Climate change and the resulting migration pressures and threats to food and health security are at the forefront of global efforts to sustain the planet (WEF, 2020^[1]). To address these mounting challenges, on 12 December 2015, 190 countries signed the Paris Agreement to combat climate change, pledging to achieve carbon neutrality by 2050 (UNFCCC, 2015^[2]). This landmark agreement was discussed at the 26st Conference of the Parties (COP26) of the United Nations Framework Convention on Climate Change (UNFCCC) with new impetus and more ambitious pledges to accelerate actions and investments needed for a sustainable low-carbon future.

Figure 5.1. Global annual CO₂ emissions



Source: International Energy Agency's World Energy Statistics.

The climate crisis has serious financial repercussions, including disaster-related damage costs that amount to hundreds of billions of dollars, annually (IPCC, 2018^[3]); adaptation costs associated with protection and reinforcement; and mitigation costs associated with decarbonisation. Climate change mitigation and adaptation will require an estimated USD 7 trillion per year worth of public and private investments alone to meet global infrastructure development needs and climate objectives through 2030 (OECD, 2017^[4]). Of these, USD 4 trillion per year are needed across emerging economies, and USD 1.7 trillion per year in emerging Asia (OECD, 2020^[5]). In the wake of the COVID-19 pandemic, government efforts to support economic recovery are essential but should not undermine actions to limit the climate crisis. Stimulus measures and policy responses must be aligned with ambitions on climate change, biodiversity and wider environmental protection (OECD, 2020^[6]; OECD, 2020^[7]). The window of opportunity for climate action is closing fast and short-term economic measures will have a significant impact on the ability to meet global goals (United Nations, 2015^[8]). This chapter focuses on the potential contribution of FDI to climate change mitigation.¹ Box 5.1 provides some definitions and clarifications for the following discussion.

Box 5.1. Key terms and concepts

CO₂ emissions: Carbon dioxide (CO₂) is the primary greenhouse gas (GHG) responsible for global warming. This Policy Toolkit focuses primarily on CO₂ because it is generated by all economic activities, but its implications can be extended to cover other GHGs. The GHG Protocol jointly developed by the World Resources Institute and the World Business Council for Sustainable Development uses a delineation that has become standard, dividing emissions into three types:

- **Scope 1:** Direct emissions generated by industrial processes and any other on-site activities.
- **Scope 2:** Indirect emissions associated with energy (i.e. electricity, heat or steam) imported from off-site.
- **Scope 3:** All other indirect emissions in the life cycle of the products produced, including those associated with any intermediate goods, transport of goods to market, emissions in end use and disposal of products produced. It includes also emissions associated with leased assets, franchises and investments.

Carbon intensity: the emission rate of CO₂ of a specific economic activity. A common measure used to compare emissions from different sources of electrical power is carbon intensity per kilowatt-hour.

Low-carbon technology: a technology that helps reduce CO₂ emissions by (1) reducing energy use (e.g. energy-saving); (2) reducing or eliminating carbon emissions from production or use (e.g. renewable energy, hydrogen); (3) removing carbon from the atmosphere (e.g. carbon capture); or (4) conserving resources (e.g. recycling). The Policy Toolkit focuses primarily on the first two classes of technologies but can be applied to all four.

Renewable energy: energy from sources that are naturally replenishing. It generally is considered to include six renewable-power generation sectors: geothermal, marine/tidal, small hydroelectric, solar, wind, and the combined sector biomass and waste. Clean energy and renewable energy are used interchangeably for the purpose of this report.

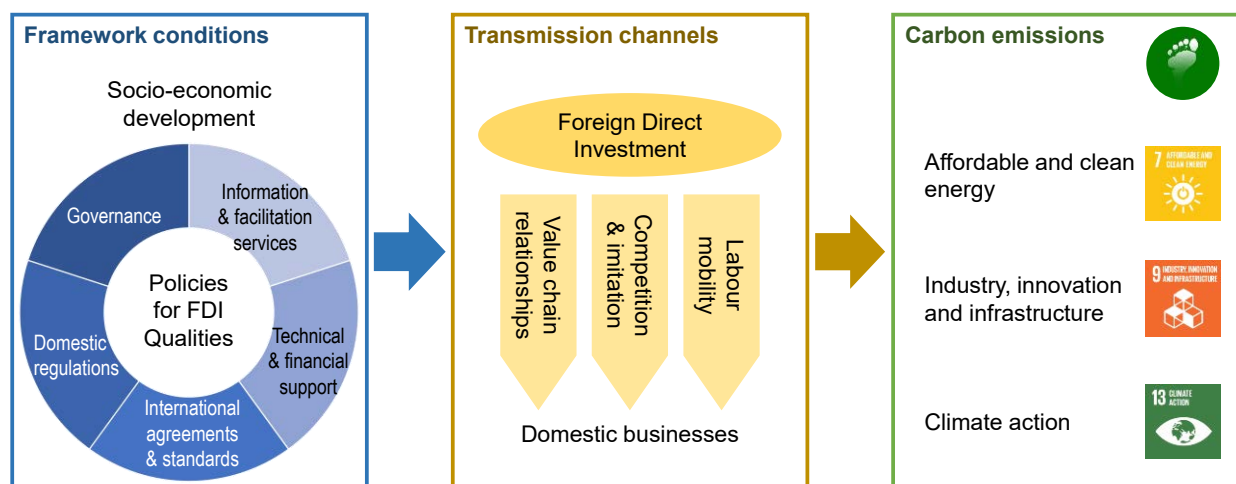
Source: OECD (2020^[9]), *Climate Policy Leadership in an Interconnected World: What Role for Border Carbon Adjustments?*, <https://doi.org/10.1787/8008e7f4-en>; OECD (2019^[10]), FDI Qualities Indicators: Measuring the sustainable development impacts of investment, www.oecd.org/fr/investissement/fdi-qualities-indicators.htm; Ang, Röttgers and Burli (2017^[11]), The empirics of enabling investment and innovation in renewable energy, <https://doi.org/10.1787/67d221b8-en>; WRI/WBCSD (2004^[12]), The Greenhouse Gas Protocol, <https://ghgprotocol.org/sites/default/files/standards/ghg-protocol-revised.pdf>.

5.2. The impact of FDI on carbon emissions

Evidence stemming from the traditional literature on the trade-FDI-environment nexus proposes that FDI affects the host country's carbon footprint in contending ways by expanding the scale of economic activity, changing the structural composition of economic activity and delivering new techniques of production (Grossman and Kruger, 1991^[13]; Copeland and Taylor, 1994^[14]; Porter and van der Linde, 1995^[15]). In isolation, the *scale effect* is expected to increase carbon emissions, since an increase in the size of an economy implies more production and, in turn, more emissions. The *technique effect*, which refers to a change in production methods resulting from FDI inflows and the transfer of technology from foreign to domestic firms, is expected to reduce emissions by helping diffuse less emitting technologies (Pazienza, 2015^[16]). The *composition effect* is associated with a change in industrial structure driven by FDI, and its impact on emissions will depend on the production specialisation of a country. An FDI-driven shift toward services would for instance be associated with a reduction in emissions, while a shift toward heavy manufacturing would deteriorate the host country's carbon footprint.

These various effects underpin the channels through which FDI influences carbon emissions (Figure 5.2, yellow box). Specifically, FDI generates emissions from production processes, energy use, product end use and product disposal that reflect investor characteristics (e.g. sector, technology, and motive). The supply chain relationships that foreign investors forge affect the emissions embodied in the intermediate goods they use, and the emissions generated from the distribution of goods to market. Market interaction with local firms can influence the emissions of domestic business through competition and imitation effects. Similarly, mobility of workers from foreign to domestic firms can influence the business practices and resulting emissions-intensity of domestic firms.

Figure 5.2. Conceptual framework: FDI impacts on carbon emissions



The motivation behind this Policy Toolkit is that, under certain circumstances, FDI can contribute the needed financial and technological resources to advance the low-carbon transition. Developing countries that face greater constraints both in mobilising finance and acquiring and disseminating technologies may draw particular benefits from FDI in their efforts to tackle climate change. Resulting benefits for host countries include (Figure 5.2, green box):

- improving energy security, diversifying energy sources, reducing reliance on energy imports and electrifying remote rural areas (SDG7);
- fostering innovation, creating new industries and jobs, and gaining an edge over competitors and attendant export opportunities in key industries (SDG9);

- and the localised benefits of mitigating climate change, reducing environmental degradation, and improving air quality and associated health impacts (SDG13).

The manner in which FDI affects carbon emissions and the extent to which it can contribute to decarbonisation depend on a number of contextual factors that are the focus of this chapter, including FDI characteristics and spillover potential, socio-economic factors, and the policy environments of home and host countries. Targeted policy interventions can level the playing field for more climate-friendly FDI, and influence spillovers to domestic firms. The next section will look closely at framework conditions and policies that affect the impact of FDI on emissions (Figure 5.2, blue box).

5.2.1. FDI characteristics and impacts on carbon emissions

The carbon intensity of foreign investments depends on a range of characteristics specific to investors, including the technologies they use, the energy they consume, the products and services they offer, their motives for investing internationally, and their corporate cultures and environmental policies. Annex Table 5.A.1 provides the core questions of the Policy Toolkit for governments to self-assess the impacts of FDI on decarbonisation, including through spillovers.

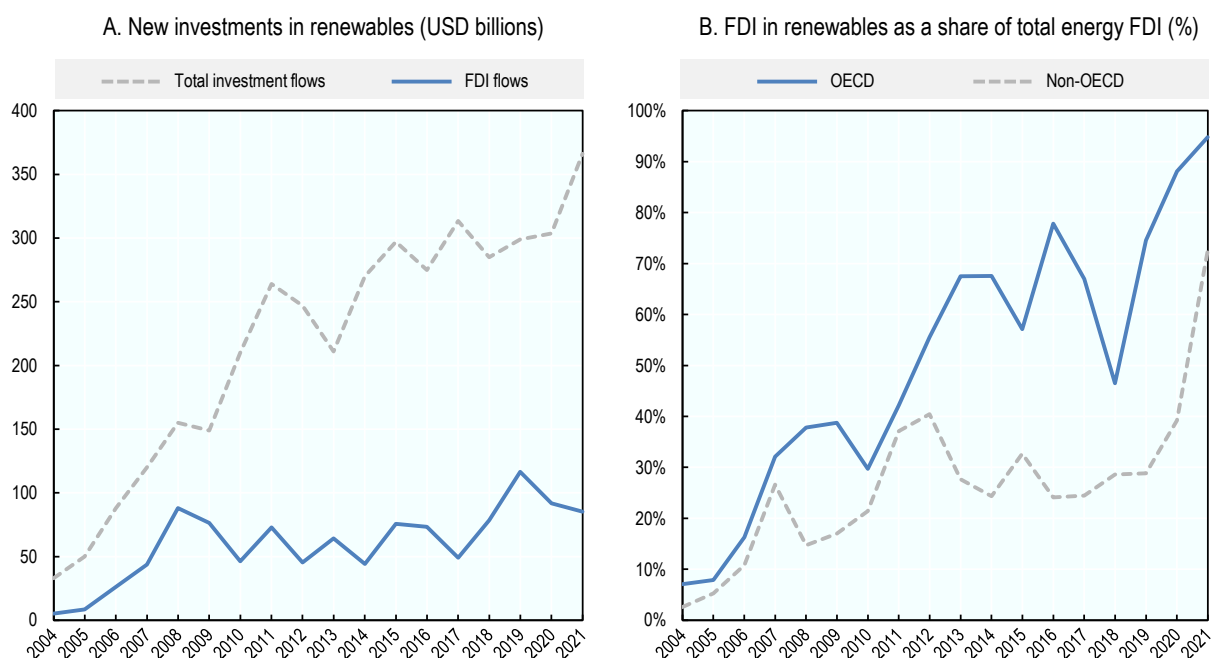
Low-carbon technologies

Low-carbon technologies, by definition, reduce the CO₂ emissions associated with economic activity in any sector and are therefore key attributes that determine the carbon intensity of FDI. Broadly speaking, low-carbon technologies reduce CO₂ emissions by (1) reducing energy use (e.g. energy-saving); (2) reducing or eliminating carbon emissions from production or use (e.g. renewable energy, hydrogen); (3) removing carbon from the atmosphere (e.g. carbon capture); or (4) conserving resources (e.g. recycling).

The energy sector, one of the largest contributors to CO₂ emissions, is a noteworthy example in which FDI can deliver innovations in energy generation, storage, and distribution (e.g. smart grids). Large-scale diffusion of these technologies is particularly important as it reduces the indirect emissions of all electricity-consuming activities. In fact, electrifying other sectors is an important avenue for decarbonisation provided that electricity generation itself is decarbonised. Thanks to their financial and technical advantages, multinational enterprises (MNEs) are key players in the deployment of capital- and R&D-intensive clean energy technologies across borders, accounting for 30% of global new investments in renewable energy (Figure 5.3, Panel A). FDI in the energy sector has also shifted considerably away from fossil fuels and into renewables, particularly in advanced countries, but increasingly also in developing countries (Figure 5.3, Panel B). The contribution of FDI to the energy transition may become increasingly relevant in developing countries, where demand for energy is expected to grow most rapidly in the coming decades.

In the industrial sector, decarbonising production processes requires switching to lower-carbon fuels for production and making more efficient use of materials. According to some studies, 20% of the energy consumed in industry is electricity, while it is already technologically possible to electrify up to half of the industrial fuel consumption (McKinsey, 2020^[17]). In the transport sector, new low-carbon vehicles are being developed for road transport, rail, waterborne transport and aviation, including vehicles that run on electricity, hydrogen fuel cells, and compressed or liquefied natural gas. In the construction sector, advanced building materials and energy-efficient home appliances are being developed and existing technologies improved. As multinationals are key players in these emissions-intensive activities, they can make an important contribution to furthering electrification or developing altogether new breakthrough technologies for emissions reductions (e.g. hydrogen fuel cell, carbon capture utilisation and storage), as well as integrating climate action into their risk management processes, business models and supply chains.

Figure 5.3. Renewables as a share of total FDI in the energy sector



Source: OECD elaboration based on Financial Times (2022^[18]), FDI Markets: the in-depth crossborder investment monitor from the Financial Times, <https://www.fdimarkets.com/>; and BloombergNEF (2022^[19]), Energy Transition Investment Trends 2022, <https://about.bnef.com/energy-transition-investment/>.

Investor attributes

FDI motives are among the factors that push firms to invest abroad in low-carbon technologies, or alternatively to transfer high-carbon production to foreign locations. Foreign markets offer opportunities to sell new low-carbon products and services designed in relatively small or saturated home jurisdictions. Scarcity of production factors (e.g. labour), natural resources (e.g. wind power) or strategic assets (e.g. infrastructure) in home countries may also drive MNEs to seek cross-border opportunities for their low-carbon investments, while accumulated technical knowhow related to low-carbon technologies in home countries can give investors a competitive edge internationally.

Investor entry modes also have implications on the carbon intensity of FDI activities. Mergers and acquisitions entail changes in corporate ownership, structure and governance, which in turn can affect the environmental policies and implications of existing establishments in host countries, for better or worse. Yet, greenfield investments involve new economic activity or expansions of existing activities and will typically result in greater (positive or negative) impacts on host countries. From a climate perspective, the direction of the impact will depend on the carbon intensity of the new investments and the technologies they generate and deploy.

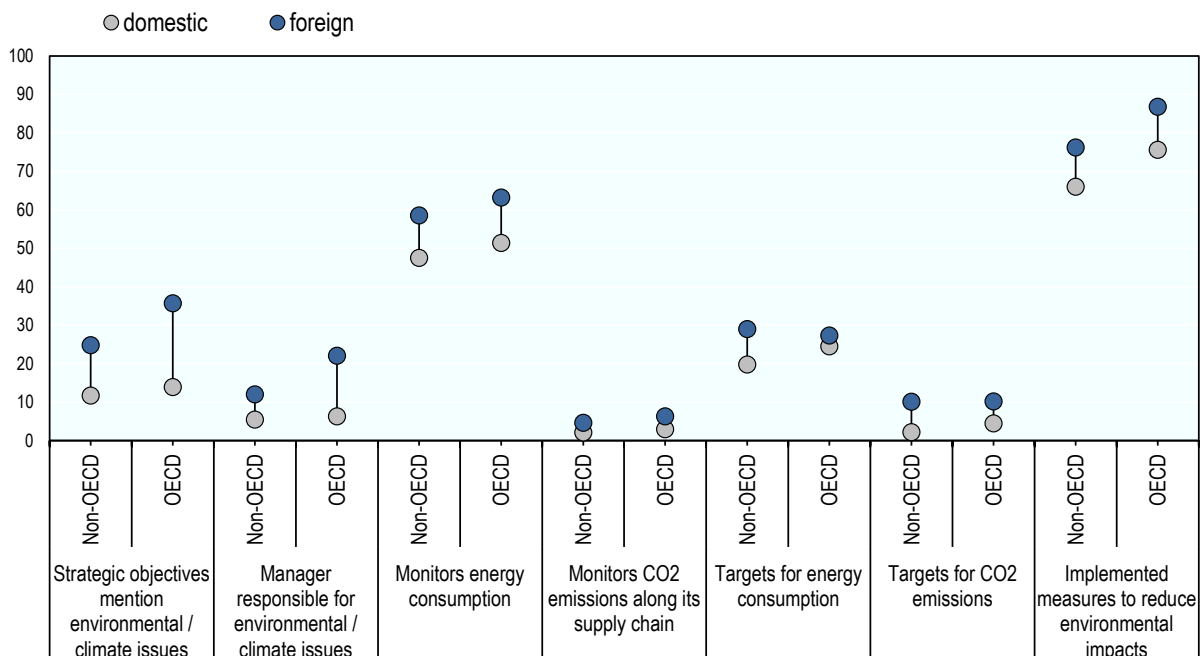
Home country consumer and shareholder expectations and pressures from civil society can further contribute to green branding strategies and drive MNEs to reconsider their foreign operations and supply chains, strengthen environmental reporting or adopt carbon labelling. These considerations are consistent with the 'Pollution Halo' hypothesis, whereby, MNEs apply a universal environmental standard across borders and, in so doing, tend to spread their greener technology to their affiliates in host countries (Porter and van der Linde, 1995^[15]).

5.2.2. FDI spillovers on carbon emissions

The premise behind FDI spillovers is that multinational firms have access to innovative technologies and operating procedures, which, if applied, could help raise environmental performance overall and induce the broader uptake of low-carbon technologies. The realisation of these spillovers hinges on the transfer of knowledge from foreign to domestic firms, through their market interactions and through the mobility of workers. The spillover potential varies across technology and spillover channels. FDI spillovers on carbon emissions are likely to be negative, if, for instance, foreign investors are attracted by weaker environmental regulation (i.e. the pollution haven hypothesis) and they induce a race to the bottom with respect to environmental standards.

The OECD FDI Qualities Indicators, developed using the green economy module of the EBRD-EIB-World Bank Enterprise Surveys, suggest that foreign manufacturing companies outperform domestic peers in terms of green business practices, and indeed have the potential to contribute to greening the business practices of domestic businesses. This potential may be especially large in developing countries. According to the surveys, a minority of firms incorporate environmental or climate change issues into their strategic objectives (11-36%), and even fewer employ a manager responsible for environmental issues (5-22%). More substantial shares of companies monitor energy consumption (48-63%) and introduce measures to save energy (34-51%), and over 60% of companies seek measures to control pollution, while still very few companies specifically monitor or seek to reduce carbon emissions (2-6%). In general, companies in OECD countries tend to outperform companies in non-OECD countries, and foreign firms perform at least as well as domestic firms across all environmental dimensions (Figure 5.4). The gap between foreign and domestic firms is often wider in non-OECD countries than in OECD countries, particularly when it comes to addressing carbon emissions.

Figure 5.4. Green performance of foreign and domestic firms



Note: The OECD and non-OECD averages are based on a subset of countries from Europe, Middle East, North Africa and Central Asia.

Source: OECD based on EBRD-EIB-WB (2022^[20]), World Bank Enterprise Surveys, <https://www.enterprisesurveys.org/en/enterprisesurveys>.

Value chain spillovers

The supply chain decisions of foreign investors influence the emissions embodied in the intermediates they use in production; similarly, their choices of distributors will influence the emissions associated with the delivery of goods to market. In practice, there is evidence that very few firms monitor carbon emissions along their supply chains, even though the practice is more common among foreign firms, suggesting that these emissions are rarely internalised by investors (Figure 5.4). At the same time, the bulk of MNE impacts on emissions originates from their supply chains in many industries. For instance, in the garment industry the supply chains of global leaders in the garment industry account for 70% of emissions in the sector (McKinsey-GFA, 2020^[21]). Encouraging foreign investors to engage with sustainable suppliers and partners, both locally and in their foreign operations, can further support emissions reductions objectives.

Moreover, advancing the low-carbon transition and maximising its contribution to employment generation depends on countries' abilities to build and strengthen domestic supply chains (IRENA, 2013^[22]). Linkages with local suppliers and buyers are an important channel of knowledge and technology diffusion. In the context of the low-carbon agenda, these types of spillovers can take many forms, ranging from increased compliance with environmental regulations to innovations in energy use and industrial processes. Broadly speaking, these spillovers are more likely to occur in manufacturing industries and services sectors, as the opportunities for local linkages are greater than in the energy, building and transport sectors. A key requirement for these spillovers to materialise is that local businesses have sufficient absorptive capacity to meet the demands of foreign investors. This means that the realisation of FDI's low-carbon spillovers through value chain linkages requires a parallel evolution of skills and shifts in the labour force, which also helps ensure a just transition (OECD, 2015^[23]).

In addition to supplier and buyer linkages, a key conduit for FDI's low-carbon spillovers is through local partnerships, strategic alliances and joint ventures. This may be the most important transmission channel of R&D-intensive investments in the development and commercialisation of breakthrough technologies, where research collaborations across a number of private and public sector actors are common.

Other spillover effects

The entry and establishment of foreign investors heightens the level of competitive pressure on domestic companies, inducing them to innovate or imitate in order to keep up and remain competitive. As noted previously, foreign multinationals may be particularly successful in catering to end users that are responsive to environmental performance and green branding. As companies compete to serve growing consumer demands for low-carbon products and services, foreign competition can catalyse low-carbon innovation across domestic businesses in their efforts to retain customers or tap into new markets. Thanks to these competitive pressures, low-carbon technologies and operating procedures can disseminate to the wider business sector and make a significant contribution to reducing its environmental and carbon footprint.

A special case in which monopolistic markets can inhibit decarbonisation is the energy sector, traditionally dominated by incumbent utilities that control power generation, transmission and distribution, and have little incentive to diversify energy sources. Unbundling the power sector by separating power generation, transmission and distribution functions can help create more space for foreign investment in renewable power, which in turn can exert competitive pressures toward conventional power generators, and spur the wider diffusion of renewable power investments across domestic actors.

Movement of workers between foreign and domestic firms and corporate spin-offs originating from foreign MNEs can further propagate knowledge spillovers from foreign to domestic firms. The low-carbon transition creates many new jobs related to low-carbon technologies (IRENA-ILO, 2021^[24]). Foreign MNEs play an important role as employers in developing skills related to these new technologies and in creating a capable low-carbon workforce (Chapter 3). As such, labour mobility is a key conduit for the diffusion of these skills

and low-carbon operating procedures more broadly to domestic companies. Labour mobility also allows new foreign entrants to seek out talent and hire the skilled workers needed to run their businesses, and can therefore contribute to additional low-carbon FDI attraction.

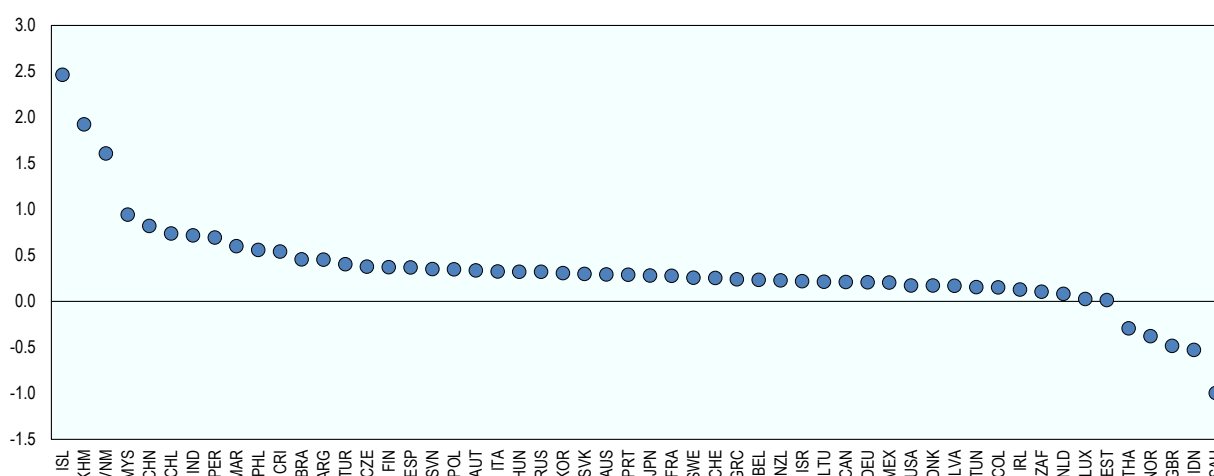
5.2.3. Socio-economic determinants of FDI's carbon impacts

The level of socio-economic development determines a country's production specialisation, industrial structure, positioning in global value chains, and the sophistication of its infrastructure and technology. Some theories conjecture an inverted-U relationship between output growth and the level of emissions (known as the 'Environmental Kuznets Curve'), expected to increase as a country develops and the economy grows, but begin to decrease as rising incomes pass a turning point and create demands for tougher environmental regulation, bringing forth cleaner techniques of production (Grossman and Kruger, 1991^[13]). According to these theories, differences in comparative advantage of advanced and developing countries result in differing FDI profiles, with developing countries attracting relatively more polluting investments in heavy manufacturing and extraction activities, and advanced economies attracting less polluting investments in services and high-tech manufacturing. Though exceptions exist, empirical studies are consistent with this hypothesis, as they find evidence of positive FDI effects on emissions more frequently in low- and middle-income countries than in high-income countries (Hoffman et al., 2005^[25]; Pao and Tsai, 2010^[26]; Behera and Dash, 2017^[27]).

The OECD FDI Qualities Indicators also suggest that differences in the carbon intensity of FDI can be explained in part by differences in comparative advantages. According to the indicators, only resource-rich countries, where fossil fuels constitute a large share of GDP, tend to attract carbon-intensive FDI (Figure 5.5). This is likely because extraction and energy transformation offer lucrative investment opportunities for large multinationals with the requisite capacity for these heavily capital- and energy-intensive activities.

Figure 5.5. FDI and CO₂ emissions

Is greenfield FDI concentrated in cleaner activities? (yes if value > 0; no if value < 0)



Note: See OECD (2019^[10]) for explanatory details.

Source: Update of OECD (2019^[10]), *FDI Qualities Indicators: Measuring the sustainable development impacts of investment*, www.oecd.org/fr/investissement/fdi-qualities-indicators.htm.

Locational pull factors specific to low-carbon investments are related to the characteristics of FDI discussed above, and in particular to investor motives. Countries with underdeveloped electricity grids outside of

urban centres offer viable untapped markets for producers of small-scale low-carbon electricity alternatives, compared to those with more extensive and dependable grids. Consumers that are aware of and responsive to green credentials such as carbon labels provide attractive markets for producers of low-carbon consumer goods. Countries that enjoy an abundance of wind, sun or tidal bays are the most profitable destinations for investments in wind turbines, solar plants, and tidal generators. Industry and technology clusters appeal to producers of low-carbon equipment seeking to gain from agglomeration effects, and other strategic assets such as skills or technologies similarly attract investors seeking to acquire knowledge and technical capabilities (UN, n.d.^[28]; Hanni et al., 2011^[29]).

5.3. Policies that influence FDI impacts on carbon emissions

The host country's policy framework influences its business environment, including the FDI entering the country and its carbon implications (Figure 5.2, blue box). A policy framework for low-carbon investment is in many respects comparable to an enabling environment that is conducive to investment in general. Policies conducive to FDI, however, will not automatically result in a substantial increase in low-carbon FDI. A policy framework for investment is thus a necessary but insufficient condition for low-carbon investment. Policy makers will also need to improve specific enabling conditions for low-carbon investment by developing policies and regulations that systematically internalise the cost carbon emissions, and facilitate low-carbon FDI and its knowledge and technology spillovers (OECD, 2015^[30]).

This Policy Toolkit aims to provide a comprehensive policy framework for countries to maximise positive impacts of FDI on carbon footprint while mitigating adverse effects, in line with the OECD Guidelines for Multinational Enterprises. It builds on Chapter 12 on “Investment framework for green growth” of the OECD Policy Framework for Investment, and on the OECD Policy Guidance for Investment in Clean Energy Infrastructure, and complements these instruments by offering a comprehensive mapping of policies and institutional settings that influence FDI's carbon impacts across selected advanced and developing countries (see Chapter 1). The Toolkit is structured around four broad principles and the policy instruments that support these principles (Table 5.1). Annex Table 5.A.2 provides the core questions of the Policy Toolkit for governments to self-assess policies that influences the impacts of FDI on decarbonisation.

Table 5.1. Overview of FDI Qualities Policy Toolkit for reducing FDI impact on carbon emissions

Principle 1: Provide strategic direction and promote policy co-ordination and coherence on investment and climate action	Governance	National strategies and plans
		Oversight and co-ordination bodies
		Public consultation, data, M&E
Principle 2: Ensure that domestic and international investment regulations and standards reinforce climate objectives	International agreements & standards	International agreements on climate change
		International agreements on RBC
		Environmental provisions BITs & RTAs
	Domestic regulations	Legal framework for investment
		Environmental standards & requirements
		Regulatory incentives
Principles 3: Stimulate investment and build technical capabilities related to low-carbon technologies, services and infrastructure	Financial support	Carbon pricing instruments
		Subsidies and tax relief for green investments
		Public procurement of green investments
	Technical Support	Business & supplier development services
		Green technology parks
		Training and skills development services
Principle 4: Address information failures and administrative barriers to level the playing field for low-carbon investors	Information & facilitation services	Green investment promotion & facilitation
		Public awareness campaigns
		Corporate environmental disclosure

5.3.1. Provide strategic direction and promote policy coherence on investment and climate

Ensure coherence across climate, sectoral and investment strategies and plans

Strong government commitment to combat climate change and to support low-carbon growth, underpinned by a coherent policy framework and clear decarbonisation targets, provides investors with encouraging signals regarding the government's climate ambitions. Setting a clear, long-term transition trajectory that is linked to the national vision or goals for growth and development is critically important to build capacity for investors to understand transition risks, and to attracting foreign investment that contributes to the country's climate agenda (Box 5.2). Given the cross-cutting nature of climate change, a strategic framework for addressing climate change should include a comprehensive and coherent multi-sector approach, integrating environmental targets and ambitions into sector strategies and plans. For instance, incorporating climate considerations in national infrastructure development plans and priorities can help avoid locking-in environmentally unsustainable infrastructure for decades. This may require the establishment of new connections between national sectoral planning processes in order to avoid repackaging existing sectoral plans into a climate strategy.

Box 5.2. The EU Green Deal's integrated framework for the climate transition

The European Green Deal sets out a detailed vision to make Europe the first climate-neutral continent by 2050, safeguard biodiversity, establish a circular economy and eliminate pollution, while boosting the competitiveness of European industry and ensuring a just transition for affected regions and workers. Under the EU Green Deal, the European Commission pledged to raise the GHG emissions reduction targets to 55% by 2030, compared to the previous target of 40%. To implement the increased ambition, on 14 July 2021 the Commission presented the 'Fit for 55' package, which contains legislative proposals to revise the entire EU 2030 climate and energy framework, including the legislation on effort sharing, land use and forestry, renewable energy, energy efficiency, emission standards for new cars and vans, and the Energy Taxation Directive. The Commission proposes to strengthen the emissions trading system, extend it to the maritime sector, and reduce over time the free allowances allocated to airlines. A proposed new emissions trading system for road transport and buildings should start in 2025, complemented by a new social climate fund with a financial envelope of EUR 72.2 billion to address its social impacts. New legislation is proposed on clean maritime and aviation fuels. To ensure fair pricing of GHG emissions associated with imported goods, the Commission proposes a new carbon border adjustment mechanism.

By offering a holistic and integrated approach to mainstream decarbonisation across a multi-sector regulatory framework, the Green Deal provides investors with a clear long-term trajectory for Europe's climate transition. This long-term commitment and direction reduces uncertainty about regulation and taxation to advance the transition, and allows investors to better understand the transition risks associated with their operations going forward, and to take steps to mitigate these risks.

Source: <https://www.europarl.europa.eu/legislative-train/theme-a-european-green-deal/package-fit-for-55>

The investment promotion strategy must also reflect national climate objectives across priority sectors in alignment with the multi-sector strategic framework for addressing climate change. Concretely, it should translate national level emissions targets to science-based targets for the private sector in order to drive responsible climate action by business. In this regard, it is important that the investment promotion strategy and its main features are developed in co-ordination with other key ministries, including for instance the ministry of environment and the ministry of energy. The investment promotion strategy should be very clear

and specific about targets, tools to reach the set targets, and performance indicators to measure progress. It should provide clear indications on its implementation, including how staff should be organised internally, what the main activities are that it should focus on, what the key performance indicators to measure outputs and outcomes are, and what procedures are in place to collaborate effectively with other relevant public agencies and stakeholders (e.g. the private sector). Clearly delineating the role of private investors, both domestic and foreign, in achieving climate objectives can help adequately tailor investment promotion efforts to target investors that help further these objectives. The government should consult with the private sector and other local stakeholders in the design and implementation of strategies and plans that are relevant for low-carbon investment, and regularly evaluate their effectiveness.

Ensure inter-ministerial and inter-agency co-ordination and alignment

As is the case for other policy areas covered by the Policy Toolkit, a complex system of institutions design and implement investment, climate and sectoral strategies, and it is important for co-ordination mechanisms to be in place to ensure their coherence and consistency, and to achieve desired outcomes related to FDI and carbon emissions. Overlapping and sometimes conflicting rules, procedures and regulations across ministries and levels of government, including between the central and provincial levels can create administrative burdens on investors (OECD, 2015^[30]). Although co-ordination is a fundamental and longstanding problem for public administrations, there is still no standardised method for approaching co-ordination issues, and much of the success or failure of attempts to co-ordinate appear to depend upon context. Overall, co-ordination approaches and instruments should be matched to circumstances and policy areas. Instruments of co-ordination can be based on regulation, incentives, norms and information sharing. They can be top-down and rely upon the authority of a lead actor or bottom-up and emergent (Peters, 2018^[31]). Common approaches for co-ordination are summarised in Box 5.3.

Box 5.3. Examples of inter-agency co-ordination approaches and instruments

National strategies and action plans typically involve wide consultation and deliberation, and provide diagnostic overviews of the strengths, weaknesses, opportunities, and threats associated with their stated objectives. If properly designed, national strategies and plans can set a shared vision of the goals pursued across climate and investment policy domains, and how one can contribute to the other. Costa Rica's National Decarbonisation Plan, for instance, explicitly states that the priorities related to FDI attraction for decarbonisation will be addressed in co-operation with the Ministry of Trade and Commerce (COMEX), the investment promotion agency (CINDE) and the export promotion agency (PROCOMER).

Dedicated agencies or ministries assume the leadership of the national policy agenda in some policy domains (e.g. environment, energy, investment) and often responsibility of co-ordination. At the same time, inter-agency joint programming can draw together a number of interested agencies and facilitate co-ordination and other aspects of governance as agencies share agenda and action.

The *Centre of government* (e.g. the President's or Prime Minister's Office) can bridge political interests and bureaucratic boundaries. *High-level policy councils* can also deal with aspects of policy co-ordination although they have variable roles and composition across countries. In Jordan, for instance, the higher steering committee for green growth, responsible for the overall strategic framework for green growth, reports directly to the prime minister, who also sits in the high-level investment council, responsible for the country's investment strategy, ensuring that the strategic directions of the two are aligned.

Informal channels of communication between officials or job circulation (of civil servants, but also experts and stakeholders) can play a role and suggest a relatively well-developed culture of inter-

agency trust and communication. Such arrangements tend to work best where there already exists a relatively well-developed culture of inter-agency trust and communication.

Source: OECD (2022^[36]), FDI Qualities mapping: A survey of policies and institutions that can strengthen sustainable investment.

Design and implement effective environmental assessment processes and ensure stakeholder involvement and consultation

Environmental assessment processes, including Strategic Environmental Assessment (SEA) and Environmental Impact Assessment (EIA), are structured analytical and participatory approaches for obtaining and evaluating environmental information prior to its use in decision-making. This information consists of assessments of how the environment will be affected if certain alternative actions are implemented and advise on how best to manage environmental implications if one alternative is selected and implemented. SEA focuses on strategic and policy actions such as new or amended laws, policies, programmes and plans. EIA focuses on proposed investment projects such as highways, power stations, water resource projects and large-scale industrial facilities, which are sometimes linked to the implementation of a policy or plan (e.g. extended highway network may be an outcome of a new transport policy). Environmental assessment systems are fundamental to ensure that international investments contribute to sustainable development, and in particular to climate and environmental goals. As an integral part of the policy programme and plan life-cycle, SEAs guarantee that the policies, regulations and standards that influence the attraction and environmental performance of investments are aligned with national climate objectives. In Senegal, for instance, to ensure the success of the new energy policy, the government has set up a monitoring and evaluation system for major energy projects through an inter-ministerial committee chaired by the Prime Minister. EIA systems, additionally support investors in minimising environmental risks associated with their investment projects.

Strong political will is important for the effectiveness of EIA systems in mitigating potential adverse environmental impacts of FDI. When the EIA authority is under financial pressure or politically inferior to other government institutions that support the investment project, EIAs may be used to rationalise predetermined outcomes, rather than to provide independent and rigorous analysis, upon which the approval is based. In such cases underestimation of the role and impact of EIA can negatively influence the impact of foreign investments on the host country's environment (Dung, 2019^[32]). Strengthening the implementation of EIA systems is essential for their effectiveness in greening FDI and reducing its carbon impacts. In some countries investment proponents face major delays in the review and approval of EIAs due to lack of human and financial resources. Another factor exacerbating delays may be the lack of quality of EIA documents submitted to the authority, as a result of lack of capacity in the environmental assessment industry. Relevant authorities at national and subnational levels may also lack the capacity to monitor and audit implementation of investments to ensure compliance with EIA results (OECD, 2020^[33]). Building capacity at national and subnational levels to review EIAs and reduce delays in this process, and improving the transparency and information systems supporting EIAs can significantly improve the environmental impacts of foreign investments.

Public consultation is a vital component of successful EIA/SEA systems and specific EIA/SEA studies. Timely and well-planned public consultation programmes will contribute to the successful design, implementation, operation and management of proposal actions. Stakeholder engagement also enhances the effectiveness of the EIA/SEA process. Stakeholders, including foreign multinationals, provide a valuable source of information on key impacts, potential mitigation measures and the identification and selection of alternatives. Their consultation further ensures the EIA/SEA process is open, transparent, and robust, and also that individual EIAs/SEAs are founded on justifiable and defensible analyses.

Collect data to monitor the impact of FDI on carbon emissions

Measuring and tracking the impact of FDI on carbon emissions, and its potential contribution to decarbonisation can help identify appropriate policy responses. The first section of this chapter presents a framework for understanding FDI impacts on emissions, and factors that may influence these impacts. The collection and production of timely and internationally comparable data on FDI by sector, is important for monitoring its contribution to decarbonisation. Supplementing this with firm-level surveys that capture different aspects of their environmental practices can provide policy makers with a valuable tool for self-assessment of FDI impacts on carbon emissions, and green growth more generally. Annex Table 5.A.1 provides a set of core questions and indicators that can guide policy makers in this self-assessment.

5.3.2. Adhere to international agreements and standards that reinforce climate objectives

Ratify major international agreements promoting climate action

Carbon emissions have global effects, regardless of where they were released, meaning that the impact of one country's climate policies is dependent on the climate policies of other countries. Given the short-term economic costs of climate policies, the ambition of domestic policies depends on the perceived economic impacts those policies may create, as well as the perceived risks of carbon leakage that may render domestic climate action vain. Policy makers, as well as industry and the general public, seek reassurance of commensurate action from their trade partners, through treaties or other forms of international agreement, whether bilaterally or multilaterally (OECD, 2015^[23]). The international agreements that directly or indirectly influence carbon emissions and the economic activities that generate them include multilateral environmental agreements (MEAs) negotiated at the global level, under the auspices of the UN. These MEAs span several environmental fields, including GHG emissions reductions, cross-border air pollution, soil and desertification, and environmental governance (Table 5.2).

The UNFCCC is the central forum for global negotiations on climate change and for international co-ordination of climate policies, and plays a crucial role in advancing national climate policies. In December 2015, 196 states negotiated a landmark climate change agreement at the 21st Conference of the Parties (COP21) of the UNFCCC in Paris. The resulting Paris Agreement aims to limit climate change to 1.5°C global mean temperature change, and expects progressively more ambitious climate mitigation commitments from all parties over the coming decades. As of January 2021, 190 members of the UNFCCC are parties to the agreement, and 187 states and the EU, representing about 79% of global greenhouse gas emissions, have ratified or acceded to the Agreement (UNFCCC, 2015^[2]). The central mechanism of the Paris Agreement is a 'pledge-and-review' process. Every five years the parties submit increasingly ambitious nationally determined contributions (NDCs) that lay out mitigation plans, and may include ones related to adaptation. Parties are left to establish their own national policy framework to achieve the commitments outlined in such NDCs, but are required to report emissions, with progress reviewed by an independent review system. The Paris Agreement is instrumental in providing political space for policy makers to strengthen climate action domestically. Fulfilling the Paris Agreement will require substantial new domestic climate policies in each state party to the treaty, including pollution controls that also result in GHG mitigation, land use regulations, clean infrastructure investment targets, or policies aimed at fostering low-carbon innovations.

Technology transfer is a crucial element of the new international climate regime. Developing countries, led by India, advocated for strong technology transfer provisions, and in particular the increased availability of free intellectual property for the purpose of faster diffusion of clean technologies. The Paris Agreement also creates scope for further development of a regime for technology transfer: it establishes as norms the 'strengthening of co-operative action' and 'promoting and enhancing access,' and builds on the 'Technology Mechanism' established under its predecessor treaty, the 2010 Kyoto Protocol. While little

detail is provided as to how these norms should be pursued in practice, international trade and investment are likely to play a pivotal role in fostering the needed technology transfer.

Table 5.2. Summary of MEAs that influence GHG emissions

Year	Title	Theme	Objective	Parties
1979	Geneva Convention on Long-Range Transboundary Air Pollution (CLRTAP)	Air pollution	To protect human health and the environment against air pollution and to limit and, as far as possible, gradually reduce and prevent air pollution including long-range transboundary air pollution.	51
1991	Espoo Convention on EIA	Governance	To prevent, reduce and control significant adverse transboundary environmental impact from proposed activities.	44
1992	Framework Convention on Climate Change (UNFCCC)	Climate change	To achieve stabilisation of greenhouse gas concentrations in the atmosphere at a level that prevents dangerous anthropogenic interference with the climate system.	197
1994	Convention to Combat Desertification (UNCCD)	Soil	To combat desertification and mitigate the effects of drought, particularly in Africa, with a view to contributing to the achievement of sustainable development in affected areas.	196
1994	International Tropical Timber Agreement (ITTA)	Nature and biodiversity	To promote and apply comparable and appropriate guidelines and criteria for the management, conservation and sustainable development of timber-producing forests.	74
1997	Kyoto Protocol	Climate change	To ensure that greenhouse gas emission do not exceed the assigned amounts, with a view to reducing overall emissions of such gases by at least 5% below 1990 levels in the commitment period 2008 to 2012.	192
1998	Aarhus Convention on Access to Information	Governance	To guarantee the rights of access to information, public participation in decision-making, and access to justice in environmental matters	47
2015	Paris Agreement	Climate change	The Paris Agreement builds upon the UNFCCC Kyoto Protocol and commits all to undertake ambitious efforts to combat climate change and adapt to its effects, with enhanced support to assist developing countries to do so.	192

Adhere to international agreements on RBC and promote environmental due diligence

Home country governments can also influence the impacts of outward FDI on global emissions by implementing international agreements on responsible business conduct (RBC), and encouraging environmental due diligence across supply chains. The OECD's Guidelines for Multinational Enterprises (OECD Guidelines) recommends that businesses take due account of the need to protect the environment, including improving environmental performance in their own operations and supply chain and addressing any adverse environmental impacts of their own operations and their supply chains, within the framework of laws, regulations and administrative practices in the countries in which they operate, and in consideration of relevant international agreements, principles, objectives, and standards. In particular, Chapter 6 of the Guidelines on "Environment" addresses aspects such as environmental management systems, continual improvement of corporate environmental performance, training of workers on environmental matters, and raising environmental awareness. Adherence to the Guidelines and efforts to facilitate corporate compliance with the Guidelines is therefore instrumental in minimising any adverse environmental impacts associated with FDI, and increasing its contribution to climate and environmental objectives.

The OECD Due Diligence Guidance for Responsible Business Conduct provides practical support to enterprises on the implementation of the OECD Guidelines for Multinational Enterprises, by providing plain language explanations of its due diligence recommendations and associated provisions (OECD, 2018^[341]). Implementing these recommendations helps enterprises avoid and address adverse impacts related to workers, human rights, the environment, bribery, consumers and corporate governance that may be associated with their operations, supply chains and other business relationships. Further tailored guidance for businesses on addressing climate risks in sector supply chains is included in the OECD Due Diligence Guidance for Responsible Supply Chains in the Garment and Footwear Sector (OECD Garment Guidance), which has a risk module dedicated to GHG emissions, and the OECD-FAO Guidance for Responsible Agricultural Supply Chains. These guidance advocates a risk-based approach to addressing

GHG emissions in a company's supply chain, using leverage with suppliers to encourage suppliers to reduce emissions and to support suppliers directly in implementing measures to reduce GHG emissions.

Growing demands to hold corporations accountable for their climate impacts are leading some courthouses to draw heavily on international instruments like the OECD Guidelines award legal victories to citizens, by ordering multinational giants to cut GHG emissions of their operations and those of their supply chains independently of their home and host country regulations (Box 5.4). Such rulings raise questions on the need for mandatory due diligence legislation that defines the obligations of companies to prevent environmental damage, and enables public regulators and judges to enforce such legislation.

Box 5.4. The Shell climate ruling

Basing its verdict on the United Nations Guiding Principles on Business and Human Rights (UNGPs) and OECD Guidelines for Multinational Enterprises (OECD Guidelines), in May 2021, a Dutch court ruled that Royal Dutch Shell (Shell) must reduce its CO₂ emissions by 45% by 2030 (compared to 2019), regardless of the policies of the Dutch Government. The ruling asserts that Shell's total CO₂ emission levels, from its own operations and from those of its supply chain and end users, present a breach of the company's legal obligation to prevent climate change, explicitly linking climate change to human rights. It also emphasises the responsibility Shell headquarters has over the entire Shell group, thereby acknowledging the parent companies' responsibility for subsidiaries. The ruling makes clear that the severity of the impact of climate change on human rights justifies the economic sacrifices Shell will be required to make. This historic ruling is the first to impose a clear and measurable emissions reduction target on a company and its value chain, making clear that preventing climate change harm is an essential element of responsible business conduct as defined by the UNGPs and the OECD Guidelines.

Source: <https://www.business-humanrights.org/en/blog/the-shell-climate-verdict-a-major-win-for-mandatory-due-diligence-and-corporate-accountability/>

Ensure that investment and trade agreements reinforce domestic environmental laws and allow for sufficient domestic climate policy space

Trade and investment agreements can promote and facilitate trade and investment in environmental goods and services. However, depending on the way in which they address or fail to address environmental concerns, these treaties may in some cases be perceived to conflict with climate objectives and with the measures taken by governments to implement the Paris Agreement.

WTO rules may prevent governments from regulating traded goods on the basis of the climate impacts of their production (OECD, 2020^[9]). Governments may seek to protect low-carbon industries as a means of achieving long-term decarbonisation targets, and these trade protections may run contrary to free trade principles. Investment treaty rules and interpretations of them can allow investors to claim damages and lost profits in investor-state arbitration from governments that take measures to decarbonise their economies (Financial Times, 2022^[35]). Governments with both an interest in seeing robust climate action and a deep involvement in investment and trade negotiations are in an important position to ensure alignment and mutual reinforcement across climate, trade and investment regimes.

Comprehensive free trade agreements (FTAs) seek to reconcile trade, investment and environmental policy objectives and often address issues related to the environment in a dedicated chapter. Some existing environment chapters include obligations such as effective enforcement of environmental laws, domestic procedural protections, or promotion of public participation in environmental matters. In addition, FTAs increasingly seek to promote international co-operation on a variety of policy objectives, including climate

action. References to specific climate objectives, such as the removal of tariff and non-tariff trade barriers related to climate-friendly goods and services, or the reduction of fossil fuel subsidies, are sometimes included in hortatory provisions about shared government goals and imperatives (e.g. EU-Singapore FTA 2018, Art. 7.1 and 12.11). In other cases, FTA treaty parties commit to specific measures of co-operation, such as international responses to climate change; exchanging expertise on environmental regulations and their implementation; sharing investor records of compliance with the home state environmental laws; or establishing a committee to supervise the enforcement of environment and trade matters covered in the agreement (USMCA 2018, Art. 24.26).

In international investment agreements (IIAs) – defined as standalone investment treaties (e.g. BITs) and the investment provisions included in regional FTAs – the nature, design, context and interpretation of treaty provisions used for claims and dispute settlement arrangements are of key importance for impact on environmental and climate action. For example, investment protection obligations, if not carefully drafted and interpreted, may come into conflict with several principles and performance standards included in multilateral environmental agreements (e.g. precautionary principle, polluter pays principle). Measures to safeguard the implementation of multilateral environmental agreements (MEAs) can therefore include clarifications of hierarchy in the event of a conflict to the advantage of the environmental agreements.

Poorly drafted investment agreements or broad arbitral interpretations that remain unaddressed may limit the ability of governments to restrict new fossil fuel investment projects, or increase the perceived costs of phasing them out. Investment agreements can be adjusted to preserve policy space to regulate on environmental matters. The scope of absolute protections and government action with regard to their interpretation are key factors affecting policy space for non-discriminatory regulation. A number of recent treaties limit protection to discrimination or to direct expropriation and discrimination. Other recent treaties provide for state-state dispute settlement (SSDS) rather than investor-state dispute settlement (ISDS) for investment protection claims.

Express language addressing the environment is also increasingly used in investment agreements to seek to avoid conflicts with climate objectives, although concrete impact in preserving policy space has been difficult to demonstrate. A growing number of IIAs include clauses in the body of the treaty that seek to reserve the host state's right to regulate environmental matters. The scope of the environmental concern that the clauses describe varies in specificity. In some cases, provisions limit treaty coverage, and potential recourse to international arbitration, to investments made in accordance with applicable laws, including environmental law. A recent treaty carves out non-discriminatory and legitimate environmental measures from the scope of ISDS and provides governments with the power to jointly apply the clause (China-Australia FTA, 2015, Section B). The fear of a race to the bottom in the competition to attract foreign investment has motivated the inclusion of clauses in IIAs that discourage or prohibit the lowering of environmental standards for the purpose of investment attraction. Such clauses have appeared in IIAs since 1990 but have only recently been subject of a few claims.

Trade and investment agreements can also help to reinforce domestic laws and regulations related to the climate and strengthen environmental governance. For example, some agreements require the parties to ratify and effectively implement their obligations under an MEA. For instance, in the recently signed agreement between the EU and UK, each signatory commits to effectively implementing the UNFCCC and the Paris Agreement (EU-UK Trade and Co-operation Agreement 2020, Art. 8.5). A similar proposal has been made by the EU in relation to the modernisation of the Energy Charter Treaty.

Recent IIAs have begun to seek to influence business conduct, generally through hortatory provisions. More demanding provisions in a few treaties may require business to comply with environmental assessment and screening processes; maintain an environmental management system; observe RBC standards related to the environment; or conduct an environmental impact assessment (e.g. Morocco-Nigeria BIT 2016, Arts. 14; 18, 24).

Going forward, investment and trade agreements should form part of wider policy efforts to create incentives for investments that help transition to low-carbon energy infrastructure, reform the current reliance on fossil fuels or correct regulations that weaken the business case for investment and innovation in low-carbon infrastructure. Efforts to understand the impact of investment treaties on the environment and climate action are therefore vital. These effects are under consideration in ongoing OECD work on the future of investment treaties, which will focus in particular on climate change. Results from this work will be reflected in future iterations of this Policy Toolkit.

Table 5.3. Illustration of how FTAs and IIAs explicitly refer to environmental protection

Policy objective	Type of reference	Example
Encourage international co-operation	General promotion of progress in environmental protection and co-operation	EU-Singapore FTA (2018), Arts. 7.1, 12.11 (Trade and Sustainable Development)
	Commitment to co-operate on environmental matters	USMCA (2018), Art. 24.25 (Environment)
Reinforce domestic law	Explicit safeguards or enhancements of international environmental agreements	CARIFORUM-EU FTA (2008), Art. 72
	Non-lowering of environmental standards for the purpose of attracting investment	Japan – Jordan BIT (2018), Art. 20
Preserve domestic policy space	Explicit affirmation of environmental regulatory power of host state	Korea – Uzbekistan (2019), Art. 17
	Carve-out clauses for environmental measures with respect to treaty provisions	China – Australia FTA 2015, Art. 9.8
	Exclusion of non-discriminatory environmental measures from ISDS	China – Australia FTA 2015, section B
Influence investor conduct	Investor obligations related to environmental protection	Morocco – Nigeria BIT (2016), Arts. 14(1), (3); 18(1), (4), 24(1)

Note: This table contains selected examples of FTA and IIA provisions, based on the OECD (2022^[36]) FDI Qualities Mapping. The impact of these references is uncertain and is likely to depend on factors like treaty design, context and interpretation.

5.3.3. Ensure that domestic regulations reinforce climate objectives

Ensure transparency, openness and non-discrimination

A fair, transparent, clear and predictable regulatory framework for investment is a critical determinant of investment decisions and their contribution to decarbonisation (OECD, 2015^[30]). Transparency and predictability matter even more when considering returns on investments with long time horizons, to ensure planning certainty and clear expectations on investment and climate policies and actions. Strong government commitments at both the international and national level are necessary to catalyse low-carbon green investment. With clear, long-term and ambitious signals and emission goals, nationally and internationally, investors and markets will have a better view on where to invest (OECD, 2015^[23]). While these signals are important for all business, they are crucial for giving the confidence to multinational investors with the requisite capacity and skills to invest in risky new technologies that are highly capital- and R&D-intensive.

The non-discrimination principle provides that investors are treated equally, irrespective of their ownership. Discriminatory restrictions on the establishment and operations of foreign investors can deter FDI in general, and diminish its low-carbon impacts. While manufacturing industries have undergone significant FDI liberalisation worldwide, over the last three decades, some sectors that present significant opportunities for decarbonisation efforts remain partly off-limits to foreign investors in many countries – notably, transport, electricity generation and distribution, and construction. Many services, typically associated with lower carbon emissions and in some cases crucial for energy-saving technologies (e.g. digital services), are also more frequently restricted to foreign participation (Gaukrodger and Gordon,

2012^[37]). Restrictions on FDI in these sectors are likely to result in sub-optimal flows of investment, limit the transfer of know-how and hamper the deployment of low-carbon technologies.

Discriminatory measures can also be used to actively target low-carbon investments, enhance their spillover potential, or deter carbon intensive-investments. Technology transfer obligations could support low-carbon spillovers to domestic firms. However, trade-distorting discriminatory measures, such as local content requirements (LCRs) and subsidies, even if targeting low-carbon products, can hinder international investment across the value chains by raising the cost of inputs for downstream activities. Particularly in small developing countries with low domestic demand and relatively poor supporting infrastructure, policies of this type could increase the costs of domestically purchased environmental goods (OECD, 2015^[30]).

The opportunities presented by international investment can sometimes bring risks, including for security interests of host countries. Since 2016, governments are taking these risks increasingly seriously and most OECD countries now have screening mechanisms allowing them to intervene in a much broader section of the economy if international investment may threaten their essential security interests (OECD, 2020^[38]). Investment screening could conceivably affect the energy transition and low-carbon innovation in several ways: energy infrastructure (e.g. energy storage) is itself considered “critical infrastructure” in many countries (EU, 2019^[39]); advanced technologies (e.g. semiconductors) are likewise typically included under investment review mechanisms, with knock-on effects on energy-related technologies (e.g. solar panels, smart grids). Finally, foreign-funded research and international R&D co-operation, which may be needed or accelerate the energy transition, have come under scrutiny for their national security implications as well, and governments may heighten their attention to such arrangements. Policymakers need to balance the benefits of international investment and international co-operation with the potential implications for essential security interests and seek to mitigate and manage the associated risks. While scrutiny of investment in sensitive sectors is necessary and legitimate, governments should ensure that such screening remains closely tailored to risk and that it is guided by the principles of transparency, predictability, proportionality, and accountability as described in the OECD Guidelines for Recipient Country Investment Policies relating to National Security (OECD, 2009^[40]).

Strengthen competition and property rights

Competition rules are designed to promote and protect effective competition in markets, encouraging firms to invest efficiently and to innovate and adopt more energy-efficient technologies. Such competitive pressure is a powerful incentive to use scarce resources efficiently and complements climate policies and regulations aimed at internalising the environmental costs of carbon emissions. By helping to achieve efficient and competitive market outcomes, competition policy hence contributes in itself to the effectiveness of climate policies. These pressures not only influence the foreign investor’s operations and direct carbon impacts, but also push local businesses to imitate or improve foreign low-carbon technologies in order to remain competitive.

Competition policy may be especially important for supporting decarbonisation of the power sector, which is traditionally characterised by vertically integrated monopolies. Unbundling the power sector by separating power generation, transmission and distribution functions can help create more space for foreign investment. Moreover, by opening competition in power generation, unbundling provides more space for clean energy technologies to enter the market and can therefore stimulate changes in the national energy mix. The decentralised nature and the smaller generation capacity of clean energy projects compared to their fossil fuel counterparts, makes independent power production well-suited for mainstreaming clean energy technologies. In the areas of transmission and distribution, increased competition can also render the national energy network more flexible, increasing its capacity to accommodate both on- and off-grid renewable energy (OECD, 2015^[41]). Even where structural separation has been implemented, dominant incumbent enterprises may deter independent renewable power producers from entering a market through tender procedures (Ang, Röttgers and Burli, 2017^[11]). Therefore,

countries in which regulators adequately address anticompetitive practices by incumbent utilities, including state-owned enterprises (SOEs), are likely to be more attractive destinations for multinationals seeking investment opportunities in renewable power. In general, policy makers need to ensure that producers of low-carbon electricity benefit from non-discriminatory access to the grid, as uncertain grid access increases project risk; investment in the grid is open to private investment, including foreign investment (potentially through joint ventures); private developers benefit from non-discriminatory access to finance, e.g. from state-owned banks; tenders for public procurement are carefully designed with clear and transparent bid evaluation and selection criteria (OECD, 2015^[23]).

Intellectual property rights (IPRs) create strong incentives for innovation as they ensure that investors earn a fair return on their technological innovations. IPRs can be used to generate revenues from licences, encourage synergistic partnerships, or create a market advantage and be the basis for productive activities, and are especially important for the development of low-carbon technologies, which are both research- and capital-intensive (IRENA, 2013^[22]). At the same time IPRs can be perceived as an obstacle to the transfer of low-carbon technologies from developed and emerging economies to developing countries. Defining an IPR regime conducive to low-carbon innovation is particularly challenging as it needs to strike a balance between providing a secure environment for investment in innovation, while ensuring that small investors can afford valuable technologies. The importance and impact of IPRs on the transfer of technology are likely to be context specific. In remote areas of low-income countries, the need to expand energy access requires the rapid deployment of well-known renewable energy technologies, for which IPR protection might be less critical. In some African markets very few low-carbon technologies are protected under IP regimes (Haščič, Silva and Johnstone, 2012^[42]). By contrast, a strengthening of the IPR regime is likely to play a positive role in emerging economies, responsible for a third of global patenting in clean energy technologies, and representing most of the projected growth in energy demand in the coming decades. With two-thirds of the patenting in clean energy technology being submitted by foreign companies, consolidating the IPR regime could give more incentives to foreign developers to transfer technologies to these emerging markets (OECD, 2015^[41]).

The ability to enforce contracts and minimise transaction costs associated with litigation plays an important role in investment decisions in general, but may be crucial for largescale low-carbon infrastructure projects, which typically require a set of complex and interlinked contractual arrangements. The potential costs of litigation are magnified by the many risks associated with low-carbon infrastructure projects (e.g. completion risk, technology risk, revenue risk, supply risk, weather risk, etc.), and may disproportionately affect smaller investors (OECD, 2015^[41]). Securing land use rights is similarly vital for large-scale utility projects, which so far have dominated renewable energy investment in developing countries. Most renewable energy plants demand more surface per megawatt installed than their fossil-fuel counterparts, and will require the company leading the project to engage with more than one landowner. Therefore, although not strictly related to low-carbon investments, inadequate property registration systems can increase the transaction costs associated such projects, particularly in the area of clean energy investments. At the same time, governments need to ensure that land concessions do not undermine the subsistence of vulnerable members of the population, which may depend on plots of land that offer the critical natural renewable resources. Prior mapping of natural resources and stakeholder consultations can help minimise these risks.

Set environmental standards that are aligned with national climate objectives

Environmental performance standards, such as emissions standards, restrict the emissions or energy use of vehicles, power plants, buildings, appliances and industrial processes. For instance, fuel economy standards apply to the fuel efficiency of new road vehicles, and blending mandates apply to the use of biofuels in transport. Building standards apply to the thermal insulation of new buildings or to the retrofiting of old ones. Emissions standards of power plants regulate the carbon intensity of their electricity mix. Efficiency standards for consumer appliances remove certain products from the markets. Given that

performance standards require, the uptake of more efficient technologies, but do not make their use more expensive, not all energy-efficiency improvements result in net energy savings (OECD, 2019^[43]). Counter to the pollution haven hypothesis, there is little and often conflicting empirical evidence that investors locational decisions are driven by differences in stringency of environmental standards and regulations. Indeed adopting regulations and standards that reinforce climate goals can help level the playing field for foreign investments in low-carbon technologies, services and infrastructure. Countries should indeed regularly assess whether their technology and performance standards are in line with long-term climate goals, as strong vested interests may result in targets set at the most feasible level rather than the optimal level necessary to meet objective (OECD, 2015^[23]).

Environmental screening and approvals regulation refers to all government environmental regulation that companies need to comply with before they can gain environmental approval for a new, or expanded, investment project. This includes legislation and policy in the areas of environmental impact assessment (EIA) and environmental licensing and permitting, typically applied to investments with potentially significant environmental impacts. These regulations can help mitigate any adverse effects of FDI on emissions, and the environment more broadly, although there is some disagreement on how these regulations affect the attractiveness of a country to foreign investors. The environmental approvals process for proposed investments is considered by some industry representatives and academics to be burdensome because it is perceived as causing delays and increased uncertainty, and therefore likely to discourage FDI. At the same time, empirical evidence on international mining companies in Canada and Australia suggests that investors tend to see EIA as a catalyst for integrating environmental design into the early planning of an investment project, thereby alleviating the need to spend money on overcoming environmental problems once a poorly designed project has been commissioned (Annandale and Taplin, 2003^[44]).

5.3.4. Stimulate investment and building technical capabilities related to green technologies, services and infrastructure

Ensure that price signals reflect environmental costs of emissions

Carbon pricing is a core climate policy instrument that provides a technology-neutral case for low-carbon investment and consumption. Carbon pricing raises the cost of carbon-intensive assets and behaviours and effectively encourages the required shift of production and consumption decisions towards low- and zero-carbon options. Carbon pricing can internalise the climate costs of carbon emissions. Not reflecting the full costs that carbon emissions impose on society results in extensive consumption of carbon-intensive goods, such as fuels or final products, as well as investment in production processes that risk becoming stranded in a net-zero carbon economy. Policies that keep the price of carbon artificially low, such as direct transfers and preferential tax treatment granted to the consumption, extraction and production of fossil fuels run counter to effective carbon pricing, and should be gradually phased out.

While carbon pricing policies do not specifically target FDI, they are a necessary first step to send the socially optimal price signals to all investors, including foreign ones, and raise the returns on low-carbon relative to high-carbon investments. Moreover, carbon pricing is pro-competitive as it prepares companies for strong performance in a low-carbon economy (OECD, 2018^[45]). At the same time, carbon pricing policies are, by design, intended to reduce the competitiveness of carbon-intensive industries, and ultimately downsize these industries. While many new jobs are created, this can result in job destruction as some jobs cease to exist, and workers may struggle to find alternative employment opportunities (Chapter 3). Appropriate measures to mitigate these adverse social effects, such as direct compensation or retraining of workers, are necessary to ensure a just transition, as set out by the ILO Guidelines for a Just Transition (ILO, 2015^[46]).

Taxes on energy use (notably fuel excise taxes and explicit carbon taxes) increase the final price of the taxed energy products, encouraging businesses and consumers to use less energy and, if appropriately designed, to switch to cleaner energy sources.² Taxes that are designed based on the carbon content of the fuel, irrespective of whether the resulting carbon price is uniform across fuels and uses, provide abatement incentives in support of decarbonisation objectives. Recent evidence shows that countries are not deploying energy and carbon taxes to their full potential. Across 44 OECD and G20 countries accounting for over 80% of carbon emissions from energy use, taxes on polluting sources of energy are not set anywhere near the levels needed to reduce the risks and impacts of climate change and air pollution. While all countries tax road fuel, 85% of energy-related CO₂ emissions take place outside the road sector, where taxes only cover 18% of emissions, leaving a tax of zero for the remaining 82% (OECD, 2019^[43]).

Some countries implement emissions trading (or cap-and-trade) systems to price carbon emissions in addition or instead of carbon and fuel taxes. The price of tradable emission permits represents the opportunity cost of emitting an extra unit of carbon regardless of the method to allocate pollution permits. Authorised bodies set a cap on GHG emissions and allocate or auction a limited number of tradable permits that allow a discharge of a specific quantity of a specific pollutant (e.g. CO₂) over a set time period. Emitters are required to hold permits in amount equal to their emissions, but can increase their emissions by buying permits from others willing to sell them. Carbon pricing through taxes or emissions trading provides incentives for emissions abatement where it can be done at least cost, but setting the cap too high results in a low carbon price that provides little incentive to invest in carbon abatement.

Domestic climate policies, such as carbon pricing, can reduce the competitiveness of locally established firms (both foreign and domestic) as they raise costs of carbon-intensive production. In theory, this can discourage new FDI in carbon-intensive operations in some countries or push existing investors to relocate carbon-intensive operations to countries with less stringent climate policies (i.e. the ‘Pollution Haven’ hypothesis). Indeed, there are growing concerns that cross-country differences in climate policy stringency can lead to changes in countries’ comparative advantages, trade flows, and the geographic distribution of production. For a global pollutant like CO₂, this implies that the abatement efforts of one country are offset by a rise in emissions in other countries (i.e. carbon leakage), both undermining the efficacy of domestic climate policies and diminishing domestic competitiveness.

Foreign multinationals may be particularly susceptible to relocating emissions-intensive activities to other countries given their networks of affiliates spread across the world. A recent study on the role of the European Union’s Emissions Trading System (EU ETS) as a possible driver of outward FDI by Italian manufacturing firms in the automotive industry suggests that the EU ETS had a weak effect on the number of new subsidiaries abroad, while it had a larger impact on production taking place in foreign subsidiaries, especially in trade-intensive sectors (Borghesi, Franco and Marin, 2020^[47]). As countries consider more ambitious climate policies in order to curb GHG emissions, securing buy-in by domestic consumers and producers will require carbon leakage and competitiveness effects to be addressed (OECD, 2020^[9]).

A border carbon adjustment (BCA) is a “measure applied to traded products that seeks to make their prices in destination markets reflect the costs they would have incurred had they been regulated under the destination market’s greenhouse gas emission regime” (Cosbey et al., 2012^[48]). BCA regimes have long been discussed, but only recently started gaining traction in the EU and US as a potential instrument to address carbon leakage and competitiveness issues. A number of design and implementation challenges associated with such regimes that will need to be overcome include compatibility with WTO rules, scope of coverage, carbon embodiment measurement issues, and use of revenues (OECD, 2020^[9]). Potential conflicts between climate, trade and investment objectives must be taken into consideration in designing a suitable policy mix to promote low-carbon FDI.

Ensure that financial support is transparent and subjective to regular reviews

Private investors do not internalise the positive spillovers of low-carbon investments and are likely to underinvest in related technologies and skills compared to socially optimal levels. Targeted financial and technical support by the government is therefore warranted, but must be, transparent time-limited and subject to regular review. Studies have shown that the variations in the cost-effectiveness of these technology support policies depend on the country context rather than on the specific tool used. In general, government support should decrease over time as the renewable energy sector matures (Box 5.6). In certain countries foreign investors need to limit their equity in clean energy projects to certain thresholds in order to benefit from financial support, which may limit the potential for FDI to contribute to decarbonising the energy sector. Minimum investment size thresholds for securing financial support can also discourage investment by smaller foreign and domestic enterprises, despite their high innovation potential (OECD, 2015^[41]). In some cases countries provide investment incentives to both green and non-green substitutes, limiting their overall effectiveness in reducing environmental impacts of FDI (Box 5.5).

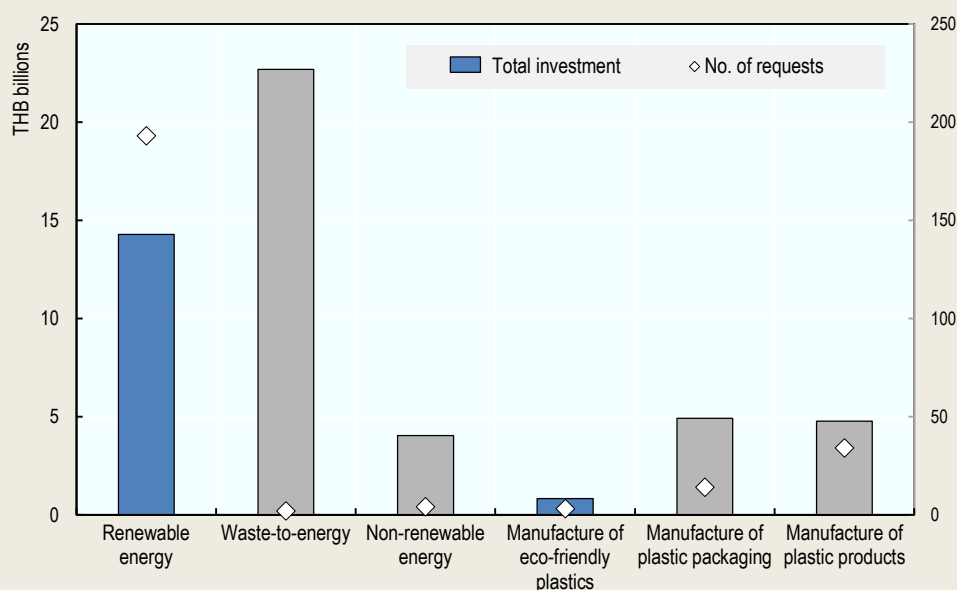
Investment tax incentives are widely used to promote FDI and to influence its characteristics and impacts. Incentive programmes can target low-carbon investments by increasing related after-tax profits, reducing costs associated with certain expenses or exempting recipients from indirect taxes. Different instruments present advantages and disadvantages related to their fiscal and administrative costs, and their effectiveness in promoting the desired investment. Profit-based incentives are often used to promote the development of strategic sectors. For instance, Rwanda offers a 50% corporate income tax (CIT) reduction on investments in renewable energy. The main drawback of these incentives is that they are very costly in terms of forgone public revenues, and that by reducing (or eliminating) the CIT rate on any amount of profit earned by the investor, they benefit investments that would have materialised anyway. Cost-based incentives that target low-carbon investments are instead linked to specific expenses and lower the cost of related inputs. For instance, Mauritius and South Africa offer accelerated depreciation allowances on machinery used to generate renewable energy. By lowering the cost of capital they are expected to facilitate investment that would otherwise not be made and have the potential to mobilise more investment per dollar of forgone tax revenue (Clark and Skrok, 2019). A downside of targeted cost-based incentives is that they require greater tax administration capacities and are associated with higher compliance costs in terms of qualifying and reporting requirements.

Exemptions from indirect taxes paid by businesses, such as value added tax (VAT) on machinery and equipment, land tax, property tax, and customs duties on imported and exported goods, allow investors to avoid contact with tax and customs administration, lowering their cost of paying taxes. In the case of renewables, these fiscal measures often reward installation of capacity rather than production, which does not encourage investors to locate clean electricity generation in the most optimal geographical locations (according to resource availability and grid location). A notable exception is the US renewable electricity production tax credit, which benefits production rather than capacity.

Box 5.5. Green and non-green investment incentives in Thailand

Thailand's Board of Investment (BOI) provides investment incentives for green activities including a three-year corporate income tax holiday if they invest in renewable energy. Another incentive to green business behaviour offers tax deductions on expenses towards biodegradable plastics in a bid to reduce plastic pollution (OECD, 2021^[49]). At the same time, investment incentives are also offered to 'non-green' activities in similar targeted sectors, including non-renewable energy generated from fossil fuels or waste, and standard plastic products and packaging. Providing similar incentives to both green and non-green substitutes reduces the ultimate effectiveness of efforts to promote green investment. In fact, significantly more investment applications were received for non-biodegradable plastics, and the value of investments in non-renewable energy benefitting from these investments is also significant. According to the recent *OECD Investment Policy Review of Thailand*, the country would benefit from classifying green and non-green activities in targeted sectors using emerging taxonomies, and scaling down or phasing out investment incentives for non-green activities.

Figure 5.6. Applications for investment incentives submitted to BOI in 2018



Source: OECD (2021^[49]), *OECD Investment Policy Reviews: Thailand*, <https://doi.org/10.1787/c4e4ee1c-en>.

Feed-in tariffs (FiTs) are a type of incentive designed specifically to accelerate investment in renewable energy technologies by offering long-term contracts to renewable energy producers. They reduce the risk of renewable energy investments by guaranteeing a predetermined price (or revenue) for the electricity generated for a predefined period of time. Payments can be provided at a fixed 'tariff' level set independently of the wholesale electricity price, or as a 'premium' payment above the wholesale electricity price. They are typically combined with guaranteed access to the grid for renewable generators. Studies have found evidence that feed-in-tariffs are a powerful tool for attracting FDI in renewables, both in advanced and developing countries (Wall et al., 2019^[50]; Kathuria, 2015^[51]; Zhang, 2013^[52]). At the same time, feed-in-tariffs come with some important drawbacks. The tariff needs to be accurately calculated, and clarity needs to be given to investors as to when and on what basis the tariff is susceptible to change (e.g. to adapt to changes in input costs, achievement of targets, etc.). Setting the right tariff is a complex

exercise, with the rapidly decreasing cost of the technologies, and particularly in young markets where government capacity in the design of FiTs may be low and there may be asymmetry of information between regulator and companies. To overcome such informational asymmetries, countries in Europe have moved toward auctioning renewable capacity to determine the price of the FiT.

Tradable renewable energy certificates (also known as renewable energy credits or green tags) can also be used to support clean energy investments. They consist of a market-based mechanism involving the exchange of certificates derived from electricity generation from renewable energy sources. They are usually combined with renewable portfolio standards that require electric utilities to source a fixed share or quantity of electricity from renewable sources, either by installing an equivalent amount of renewable electricity generation capacity, or by purchasing green certificates. Tradability enhances the cost-effectiveness of renewable power generation, although high administrative costs may reduce the cost-effectiveness of implementation. Investors may additionally require capacity building before engaging in such markets.

Public procurement is a useful tool to decarbonise infrastructure investment. Beyond bringing existing low-carbon solutions to market today, it can create 'lead' markets where government demand is significant (e.g. transport, construction), and can spur innovation without engaging new spending (OECD, 2016^[53]). Partly as a result of their experience with fossil-fuel technologies, developing countries tend to have greater experience in using procurement methods than with support mechanisms specific to low-carbon technologies. If used in combination with long-term power purchasing agreements (PPAs), tenders can be an alternative way to attract private investment in clean energy. In Brazil, for example, the use of reverse auctions for wind energy (with 20-year PPAs) resulted in winning bids for which tariff rates were 42% lower than previously established feed-in-tariffs. Especially for procuring entities that lack technical capacity or experience in the renewable energy field, however, tenders can be a long and costly process and sometimes end with no project. Governments should design tenders with a view to guaranteeing competitive neutrality and minimising the risks of fraud and bid rigging (OECD, 2015^[41]).

Box 5.6. Financial support for renewables decreases as technologies mature

The extent and type of financial support provided to expand renewable energy generation capacity varies across countries, often as a function of the extent of penetration of renewable energy technologies. Climate leaders like Sweden and Costa Rica, which rely overwhelmingly on renewable energy, tend to offer little or no government support for renewable energy generation in the form of tax incentives, grants or subsidies (aside from subsidies for micro-production by households and non-energy enterprises). Sweden rather combines strong carbon pricing with market-based support measures, like tradable electricity certificates. Costa Rica focuses on developing domestic supply chains to produce renewable energy equipment locally.

Countries that still depend heavily on fossil fuels but where renewable capacity is rising rapidly, like Thailand, Morocco and Jordan, tend to offer a mix of investment incentives on renewable energy equipment, fixed feed-in-tariffs for renewable electricity fed into the grid, and public tenders for new installations of renewable energy infrastructure. Studies provide some evidence that price-based support schemes such as FiTs and premiums are more positively correlated with investors' ability to raise private finance than quota-based schemes, and therefore may be more appropriate for countries at an earlier stage of the energy transition (Cárdenas-Rodríguez, Haščič and Johnstone, 2014^[54]).

Countries with still limited renewable energy capacity like Tunisia and Uzbekistan primarily employ a combination of public tenders, corporate tax holidays and import duties exemptions on machinery and equipment.

Table 5.4. Summary of financial support for renewables

Country	Tax incentives	Feed-in-tariffs	Public procurement	Tradable certificates
Canada	Accelerated depreciation of RE machinery and equipment			
Costa Rica	VAT exemption on imported machinery and equipment			
Jordan	Customs and VAT exemption on machinery and equipment	Wind, solar PV, thermal, biomass and biogas	Direct Proposal Submission, Build Own Operate scheme	
Morocco		Wind power (EnergiPro Programme)	ONE IMs tender process	
Rwanda	CIT reduction (50%) and VAT exemption (machinery)	Small hydro power	Tenders for solar plants	
Senegal	Deductions on installations, VAT and customs exemptions	Solar PV	Tenders for suppliers of solar mini-grids	
Sweden	Energy tax exemption for self-produced RE			Tradable Electricity Certificate
Thailand	CIT holiday, customs exemption (machinery)	Distributed solar systems		
Tunisia	Exemptions on CIT (4 years) customs and VAT (machinery)		Build Own Operate scheme	
Uzbekistan	Exemptions on CIT (5 years), property and land tax (10 years)		Several tenders for RE installations	

Source: OECD (2022^[36]), FDI Qualities mapping: A survey of policies and institutions that can strengthen sustainable investment.

Build domestic low-carbon knowledge and capable low-carbon workforces

Technical support is a useful tool for reducing the emissions intensity of investments, building capabilities related to low-carbon technologies, and promoting low-carbon innovation and spillovers. These initiatives are important for attracting foreign investors that seek skills related to green technologies and local business partners in green supply chains. By developing low-carbon capabilities of domestic firms and workforces these programmes are crucial for the transfer of knowledge and technology from foreign to domestic firms. Countries use a variety of programmes to develop domestic know-how and support low-carbon innovation (Box 5.7). In many cases governments finance these programmes but outsource their delivery to specialists.

Business support initiatives are typically designed to help investors reduce their energy use, waste, or emissions levels. They include seminars, events, and specialised technical assistance (e.g. support for energy audits). In Morocco, the audit results of an energy efficiency training programme for large corporations showed that 5% of the 8 000 companies audited accounted for 70% of industrial energy consumption, suggesting that there may be opportunities to achieve large energy savings by targeting a relatively small number of investors. While these initiatives tend to target local businesses, and often SMEs, rather than foreign investors, they can help create a pool of low-carbon champions that attract MNEs concerned with the carbon footprint of their supply chains. By increasing the opportunities for local linkages, these initiatives can be an important driver of FDI spillovers that advance decarbonisation of domestic industry.

Training programmes that target workers can similarly help encourage FDI spillovers by creating pools of qualified workers with the skills necessary to operate low-carbon technologies, and by increasing the potential for labour mobility between foreign and domestic firms. These programmes include specialised training, learning-by-doing, apprenticeships and secondments, and in-depth professional certification programmes (see Chapter 3). Other programmes offer community-level capacity building (e.g. energy literacy) to influence consumption behaviours, and reduce the demand for energy- or emissions-intensive products and services. These initiatives can help create new markets for foreign investors seeking to expand their low-carbon investments.

Beyond mitigating adverse environmental effects of business, technical support can be used to foster innovation and commercialisation of new climate-friendly technologies (see Chapter 2). Technology parks, incubators and accelerators can be tailored to support businesses in finding innovative solutions to reducing GHG emissions, and create low-carbon innovation hubs that attract talent and investors. Eco-friendly by design, and often located close to universities and research centres to promote the exchange of knowledge, these parks can help facilitate synergies and partnerships between foreign investors, local business and research institutions, and support local industries in acquiring knowledge and know-how. By upgrading the capabilities and innovation potential of domestic industry, green technology parks and incubation facilities can heighten competitive pressures and encourage FDI spillovers that arise from imitation of foreign technologies and operating procedures.

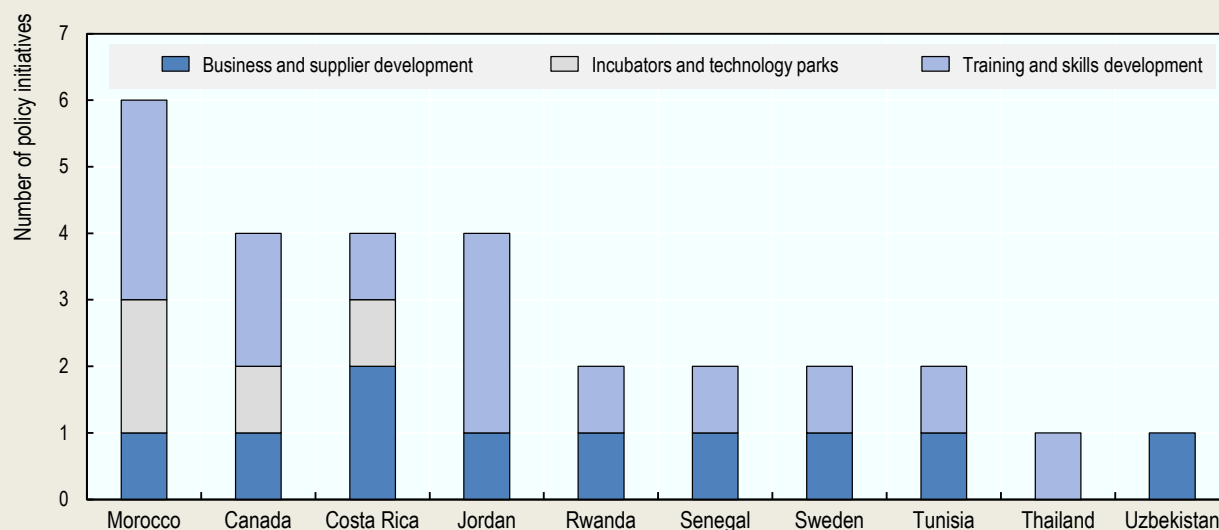
Box 5.7. Examples of technical support for developing low-carbon capabilities

Countries tend to offer a mix of technical support initiatives directed at businesses and workers. Many countries support businesses in reducing GHG emissions, by providing technical assistance for improving energy efficiency (Sweden, Morocco, Jordan, and Uzbekistan), reducing waste (Tunisia), and developing electrifying industry (Costa Rica). More advanced programmes can support entrepreneurs in developing breakthrough technologies and solutions to reduce GHG emissions (Canada).

Training and skills development initiatives are also increasingly tailored to green technologies. In Costa Rica, in order to boost green jobs, the National Apprentice Institute has incorporated environmental courses into its training catalogue, including subjects like GHG emissions control. Jordan offers vocational training on renewable energy and energy efficiency, and an in-depth professional certification programme for energy managers tailored to the Arab region. Training programmes in Canada target rural communities, encouraging regional collaboration and knowledge-exchange, and seek to reduce their reliance on diesel products. Since 2016, the Swedish Energy Agency in co-operation with other actors has been responsible for a set of capacity building programmes in the area of building for low energy consumption. The programmes target different construction stakeholders, such as architects, engineers, clients, technicians, installers, and site managers.

Countries at more advanced stages of the low-carbon transition sometimes seek investors with high innovation potential, and support them in developing innovative solutions to address climate change across sectors. Incubators and technology parks in Canada (Net Zero Accelerator), Costa Rica (Green Tech Incubator) and Morocco (Green Energy Park) serve as platforms for researching, developing, testing, and rolling out low-carbon technologies and processes.

Figure 5.7. Summary of types of technical support offered



Source: OECD (2022^[36]), FDI Qualities mapping: A survey of policies and institutions that can strengthen sustainable investment.

5.3.5. Address information failures and administrative barriers that deter low-carbon investments

Raise public awareness on carbon performance

Insufficient, inaccurate or costly information on the carbon performance of different technologies, products or services leads to sub-optimal decisions by consumers and investors, and generally results in under-investment in low-carbon technologies. For instance, lack of awareness on the energy performance of household appliances leads to an inability of consumers to interpret the impact of energy prices on the operational costs of one product relative to another, meaning that price signals do not influence purchasing behaviour as expected and carbon pricing instruments may be ineffective.

Concerns about access to information on the carbon footprint of consumption and investment choices have led many governments to introduce measures to raise public awareness and understanding of carbon performance, including platforms for dialogue and information sharing, information campaigns, and product labelling schemes. For instance, many governments have long ago introduced mandatory energy labelling schemes for appliances, which have been key in helping consumers choose more energy-efficient products. According to the Eurobarometer on energy, in 2019, the EU energy label was recognised by 93% of consumers and considered by 79% when buying energy-efficient products. The energy label has also encouraged manufacturers to seek more energy-efficient technologies and stimulated innovation, in an effort to see their energy-labelled products in the highest available category when compared to competitors. For example, roughly two-thirds of refrigerators and washing machines sold in 2006 were labelled as class A, compared to over 90% in 2017 (Ang, Röttgers and Burli, 2017^[11]).

While there are still no regulatory requirements on carbon labelling, some investor-driven initiatives are emerging to cater to customers that are responsive to climate credentials. The meat substitute, Quorn, started including carbon labels on its most popular products in 2020; Popular oat milk brand, Oatly, began using the labels in 2019; Unilever, one of the world's largest consumer goods companies, recently stated its intention to include carbon labels on all of its products; and Nestlé is considering carbon labelling (Financial Times, 2020^[55]). Emissions consultancies have supported investors in measuring the emissions embodied in their products, and labelled hundreds of thousands of products, from cement to bank accounts (Carbon Trust, 2021^[56]). Canadian directory business Ecolabel Index has identified more than 455 green labels across 199 countries, including 34 relating to carbon footprint (Ang, Röttgers and Burli, 2017^[11]).

Encourage climate-related risk disclosure

The complex nature of climate change makes it uniquely challenging for investors to adequately view and take into account longer-term implications of climate risks on their returns. Valuations of assets may not factor in climate-related risks because of insufficient information. To address this challenge, the Task Force on Climate-related Financial Disclosure (TCFD) provides recommendations to companies on effective, clear, and consistent climate-related disclosure. This helps to reveal how companies are preparing for a lower-carbon economy and thus supports investors to better assess financial exposure to climate-related risks. The recommendations include expectations from companies for disclosure of information on the governance, strategy, management and targets around climate-related risks, which are increasingly adopted by the largest carbon emitters and supported by the public sector (TCFD, 2021^[57]).

Better corporate disclosure of climate-related risks will also help aligning the environmental pillar of ESG investment ratings with a low-carbon transition. Inconsistencies in the construction of ESG ratings across providers, the multitude of different metrics, and insufficient quality of forward looking metrics prevent agencies from supplying consistent and comparable information on transition risks and opportunities across firms and jurisdictions. Notably, rating providers appear to place less weight on negative environmental impacts while placing greater weight on the disclosure of climate-related corporate policies and targets, with limited assessment as to the quality or impact of such strategies. Such limitations could

mislead investors with an aim to align portfolios with the low-carbon transition. Greater transparency and precision of climate-related corporate risks along the TCFD recommendations, for example, would facilitate investments into lower carbon assets (OECD, 2021^[58]).

Beyond non-binding recommendations, environmental regulations on reporting requirements are increasingly being used to address the cross-border environmental footprint of multinationals. The EU Taxonomy Regulation, which entered into law in 2020, for instance, places a reporting obligation on certain companies to disclose how much of their global investment is aligned with environmentally sustainable activities (Box 5.8). Starting from 2022, large investors (with over 500 employees) with operations in the EU must disclose which proportion of their turnover, capital expenditure and operating expenditure is associated with environmentally sustainable economic activities. Non-financial investors can use the EU Taxonomy to plan their climate and environmental transition and raise finance for this transition, while financial companies can use the EU Taxonomy to design credible green financial products. Going forward, implementation of the Regulation is likely to have significant influence on the carbon implications of inward and outward FDI of companies operating in the EU. The emergence of new taxonomies in other countries and regions can result in inconsistent definitions of what is environmentally sustainable and create additional uncertainty and costs for multinational investors.

Box 5.8. The EU Taxonomy Regulation

The EU Taxonomy is a regulatory classification system that helps investors and companies define which economic activities are environmentally sustainable. To qualify as environmentally sustainable, the activity must substantially contribute to at least one of six environmental objectives (i.e. Climate Change Mitigation, Climate Change Adaptation, Sustainable Use and Protection of Water and Marine Resources, Transition to a Circular Economy, Pollution Prevention and Control, and the Protection and Restoration of Biodiversity and Ecosystems), while at the same time not significantly harming any of these objectives and meeting minimum social safeguards.

The Regulation is a transparency tool that will introduce mandatory disclosure obligations on some companies and investors, requiring them to disclose their share of Taxonomy-aligned activities. Reporting under the Taxonomy will be a mandatory requirement for three key users: (1) financial market participants and issuers offering financial products within the EU; (2) large companies (with over 500 employees) who are already required to provide a non-financial statement under the EU Non-Financial Reporting Directive (NFRD); and (3) EU and Member States when setting public measures, standards or labels for green financial products or green bonds.

The EU Taxonomy is not a mandatory list of economic activities for investors to invest in. Nor does it set mandatory requirements on environmental performance for companies or for financial products. Companies are free to choose what to invest in. Companies with products and services that are not sustainable will have to state that their investments do not consider the regulation. However, the mandatory disclosure of the proportion of Taxonomy-aligned activities will allow for the comparison of companies and investment portfolios, and can guide market participants in their investment decisions.

Source: https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance/eu-taxonomy-sustainable-activities_en

Promote and facilitate low-carbon investments and their spillovers

Investment promotion agencies (IPAs) are key players in bridging information gaps that may otherwise hinder the realisation of foreign investments, and their potential sustainable development impacts. Their primary role is to create awareness of existing investment opportunities, attract investors, and facilitate their establishment and expansion in the economy, including by linking them to potential local partners.

Most IPAs prioritise certain types of investments over others, by selecting priority sectors, countries or investment projects, and allocating resources accordingly (Box 5.9). The prioritisation approaches and tools adopted by IPAs are intended to influence the kind of investment that is attracted into the local economy and, increasingly, their sustainable development impacts, and should reflect the national investment promotion strategy and any climate considerations embedded in the strategy. Since few economies can offer an attractive environment for all low-carbon technologies and all segments of their value chains, IPAs should review and identify specific economic activities where they see a potential to develop low-carbon activities or growth poles. On this basis they can design investment promotion packages combining a variety of tools that range from intelligence gathering (e.g. market studies) and sector-specific events (inward and outward missions) to pro-active investor engagement (one-to-one meetings, email/ phone campaigns, enquiry handling).

IPAs are also responsible for investment facilitation and retention. Facilitation services can help reduce administrative barriers to low-carbon investments. While imperative for curbing environmental impacts of FDI, the multitude of permits and licenses for air emissions, water abstraction, wastewater discharges, waste generation, storage and disposal, and other environmental impacts, can create significant hurdles for foreign investors and discourage investment rather than help improve their environmental performance. As the first point of contact of foreign investors, IPAs can support them in acquiring the necessary permits and clearances, including from environmental authorities, by guiding them through the required procedures facilitating access to relevant government bodies. Having a single window portal for all administrative procedures can help reduce transaction costs for investors, as long as it does not create additional duplication and complexity in the company establishment process. As a general rule, one-stop shops should not be mandatory entry points for investors, as allowing businesses to opt for alternative routes to open a business if they so wish is an incentive for one-stop shops to remain efficient. Additionally, they should be equipped with a Customer Relationship Management (CRM) system, including indicators for monitoring performance, and customers should be invited to fill in satisfaction surveys and forms. It is also important that the decisions to grant or refuse a business licence are transparent and made publicly available, with a right of appeal for those investors who have seen their licence rejected.

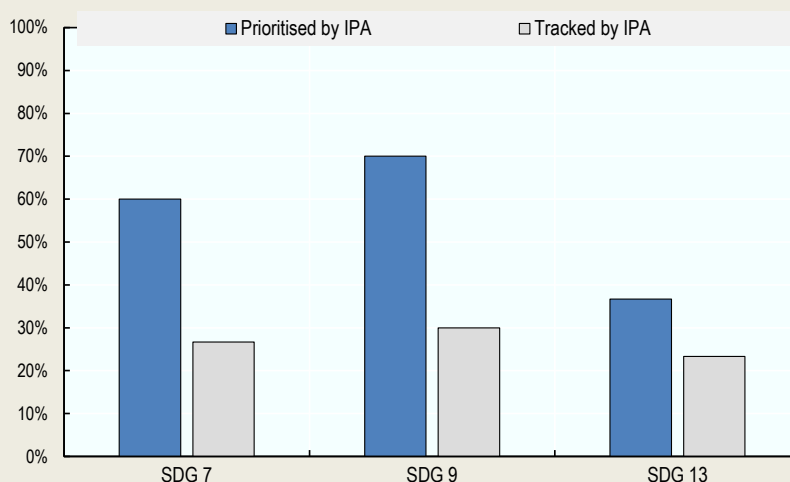
Investment aftercare services are an important channel for the propagation of FDI spillovers through the interactions of foreign MNEs with domestic firms and workers. In the context of improving FDI impacts on carbon emissions, aftercare services can help foreign investors overcome information barriers associated with identifying low-carbon business partners, suppliers and distributors, and help them reduce emissions along their supply chains. When IPAs engage in matchmaking, they should look for complementarities with local firms. Even if these firms do not have a low-carbon profile, they may possess skills and technologies that could be used for low-carbon projects. Examples include skills and technologies in the field of electronic components, computer software, and various biological processes that could be used in the production of biofuels.

As discussed throughout the chapter, a range of targeted policies are necessary in order transition to low-carbon economies and to attract low-carbon foreign investment, including those that create a market for low-carbon products and services by addressing market failures, administrative barriers and information asymmetries, and those that build low-carbon capabilities across workers and firms through financial and technical support. In order to ensure that such issues are given due consideration by governments and that they are in a position to proactively market the country as a low-carbon investment destination, IPAs need to pay particular attention to their advocacy function. IPAs can be more up to date on the latest trends in foreign investment flows and serve as the primary interface between TNCs and government. Their role in making policy makers aware of regulatory needs to promote low-carbon investment are thus be crucial.

Box 5.9. IPA prioritisation and tracking of contribution to climate-related SDG

According to the OECD Survey on Prioritisation and Monitoring and Evaluation of IPAs, close to 40% of OECD IPAs prioritise investments that help mitigate climate change (SDG 13); 60% prioritise investments that support the energy transition (SDG 7); and 70% prioritise investments that contribute to resilient infrastructure, sustainable industry and low-carbon innovation (SDG 9). In contrast, between 23% and 30% of IPAs track their investment attraction efforts along transition-related indicators (e.g. number of new renewable energy projects). Virtually no IPAs monitor the impact of the investments attracted against climate-related indicators (e.g. GHG emissions). This suggests that IPAs in the OECD tend to allocate considerable resources to investment attraction activities that can support decarbonisation objectives and tailor their activities accordingly, but continue to struggle to measure and monitor their contribution to these climate objectives. Potential approaches to overcome these challenges may include translating climate goals (e.g. based on the SDGs) to specific key performance indicators (KPIs) and complementing these measures with official sources of data to evaluate targets (Sztajerowska and Volpe Martincus, 2022^[59]).

Figure 5.8. IPA prioritisation and tracking of contribution to climate-related SDG



Source: OECD survey on IPA monitoring and evaluation and prioritisation, 2021

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Annex 5.A. Assessing the impacts of FDI on carbon emissions

Annex Table 5.A.1. Core questions to assess the impact of FDI on carbon emissions

Dimension	Questions	Potential data sources
Carbon performance	How does the country perform in terms of carbon and other GHG emissions? What sectors are driving these emissions?	Carbon emissions by sector (IEA)
	How does the country perform in terms of energy efficiency (e.g. power generation, end-use fuel, end-use electricity, transmission losses)?	Energy intensity by sector (IEA)
	How does the country perform in terms of fuel switch technologies (e.g. renewables, electric vehicles, hydrogen fuel)?	Renewable energy, energy storage, EVs, hydrogen tech (IEA, OECD)
	How does the country perform in terms of end-of-pipe solutions (e.g. carbon capture and storage for power generation and industry)?	Capture, storage, sequestration or disposal of GHGs (OECD)
	How much does the country invest in R&D related to low-carbon technologies?	Public R&D budget for low-carbon technology (IEA)
Economic structure and comparative advantage	Is economic activity concentrated in carbon- or energy-intensive sectors?	Value added by sector (OECD, UN)
	Is the country endowed with fossil fuels? Is it endowed with renewable natural resources?	Oil and coal rents as a share of GDP (WB), Global RE Atlas (IRENA)
	Does the country export fossil fuels? Does it export electricity? Does it export high-tech goods?	Export data by sector (WITS)
	To what extent does the country participate in green global value chains? (see EU taxonomy) Where is its position along these value chains?	Foreign value added share of gross exports (OECD TIVA)
FDI transmission channels	How polluting are the sectors that account for most of the country's FDI? How much FDI do renewables/ fossil fuels attract?	FDI inflows by sector (OECD, UNCTAD, Financial Times)
	How green are foreign firms relative to domestic peers (e.g. strategy and management, energy use and monitoring, environmental impacts)?	Green economy indicators by firm ownership (WBES)
	To what extent do firms monitor emissions along their supply chains? How does this vary by firm ownership?	Green economy indicators by firm ownership (WBES)
	How does the extent of supply chain linkages between foreign and domestic firms vary across sectors with differing carbon emissions?	Share of local sourcing of foreign firms (WBES)

Annex Table 5.A.2. Assessing policies that influence the impact of FDI on carbon emissions

Dimension	Instrument	Questions
Governance	National strategies and plans	Has the government adopted a cross-sectoral national climate strategy? Does it outline targets for GHG reductions, renewable energy and energy efficiency? Does it clarify expectations on private sector contribution to these targets/
	Oversight and co-ordination bodies	Are there high-level cross-ministerial co-ordination mechanisms in the policy areas of investment promotion, environmental regulation and energy policy?
	Public consultation	Have relevant institutions set up mechanisms to consult with the foreign investors to receive feedback on the relevance of their policy programmes?
	Data, monitoring & evaluation	Do relevant institutions monitor and evaluate the impact of FDI on carbon emissions, including knowledge spillovers to domestic firms? What environmental impact assessment and strategic environmental assessment requirements are in place and are they adequately enforced?
International agreements & standards	International agreements on climate change	What are the country's international commitments in terms of GHG emission reduction targets under the UNFCCC?
	International agreements on RBC	Has the country adhered to the OECD Guidelines for Multinational Enterprises? What measures are in place to promote the OECD Due Diligence Guidance for Responsible Business Conduct
	Environmental provisions of BITs and RTAs	Do international investment agreements to which the country is a party, take into account environmental issues? If so, which ones and how?
	Legal framework for	Are there any exceptions to national treatment in sectors with large emissions reduction potential

Dimension	Instrument	Questions
Domestic regulation	investment	(e.g. energy, transport)? Are technologies critical for the transition subject to review mechanisms? Do all investors (SOEs, domestic, foreign) compete on a level playing field in energy markets? Are any anticompetitive practices addressed? What steps is the government taking to protect intellectual property rights and facilitate patenting for low-carbon technologies? What steps is the government taking to ensure that contracts between clean energy providers and their partners are enforced?
	Environmental standards & requirements	Are existing performance and technology standards aligned with the country's emission reduction objectives? Are investors with potentially significant emissions impacts subject to EIAs and environmental permits? How effective is the implementation of EIA systems?
	Regulatory incentives	Are any regulatory concessions available to foreign investors for specific low-carbon technologies, or for the transfer or low-carbon knowledge to domestic firms?
Financial & technical support	Carbon pricing instruments	Has the government taken measures to remove inefficient fossil-fuel subsidies? Has the government put in place pricing mechanisms, such as carbon taxes or emissions trading systems?
	Subsidies and tax relief	Are incentives (e.g. subsidies, tax exemptions, feed-in tariffs) in place to stimulate investment in low-carbon technologies? Are incentives time-limited and subject to regular review?
	Public procurement	Do public procurement policies include environmental and green growth considerations such as resource efficiency, pollution abatement and climate resilience?
	Business & supplier development services	What initiatives are in place to support companies in reducing energy use, waste, or emissions? What initiatives to develop supplier capabilities related to low-carbon technologies?
	Green technology parks	Are initiatives and facilities in place to support low-carbon innovation (e.g. green tech parks, incubators)? Have efforts been made to reduce the carbon footprint of other economic zones?
	Training and skills development services	What measures are in place to promote skills development and prepare the labour force in areas relevant to low-carbon investment
Information & facilitation services	Green investment promotion, facilitation and aftercare?	Do investment promotion agencies tailor their activities to promote low-carbon investments? Are procedures for obtaining investment and environmental permits consistent and streamlined? Does the government maintain a local supplier database with information related to carbon performance? Is it easily accessible and regularly updated? Are business matchmaking services available?
	Public awareness campaigns	How is the government consulting with civil society groups and encouraging public awareness of and engagement with low-carbon objectives?
	Corporate environmental disclosure	What corporate disclosure mechanisms exist (e.g. carbon labelling, fuel economy)? Are the mandatory or voluntary? What measures are taken to ensure that end-users are aware of and understand these reporting mechanisms?

Notes

¹ Climate change adaptation will also become increasingly relevant in the discussion on understanding and improving the contribution of FDI to achieving the SDGs in face of the climate crisis, but is not addressed in this Policy Toolkit. Other environmental challenges (e.g. biodiversity loss) that may be affected by FDI are also beyond the scope of this Policy Toolkit.

² Electricity excise taxes are also taxes on energy use but may run counter to carbon pricing if they do not take into account how electricity is generated.



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