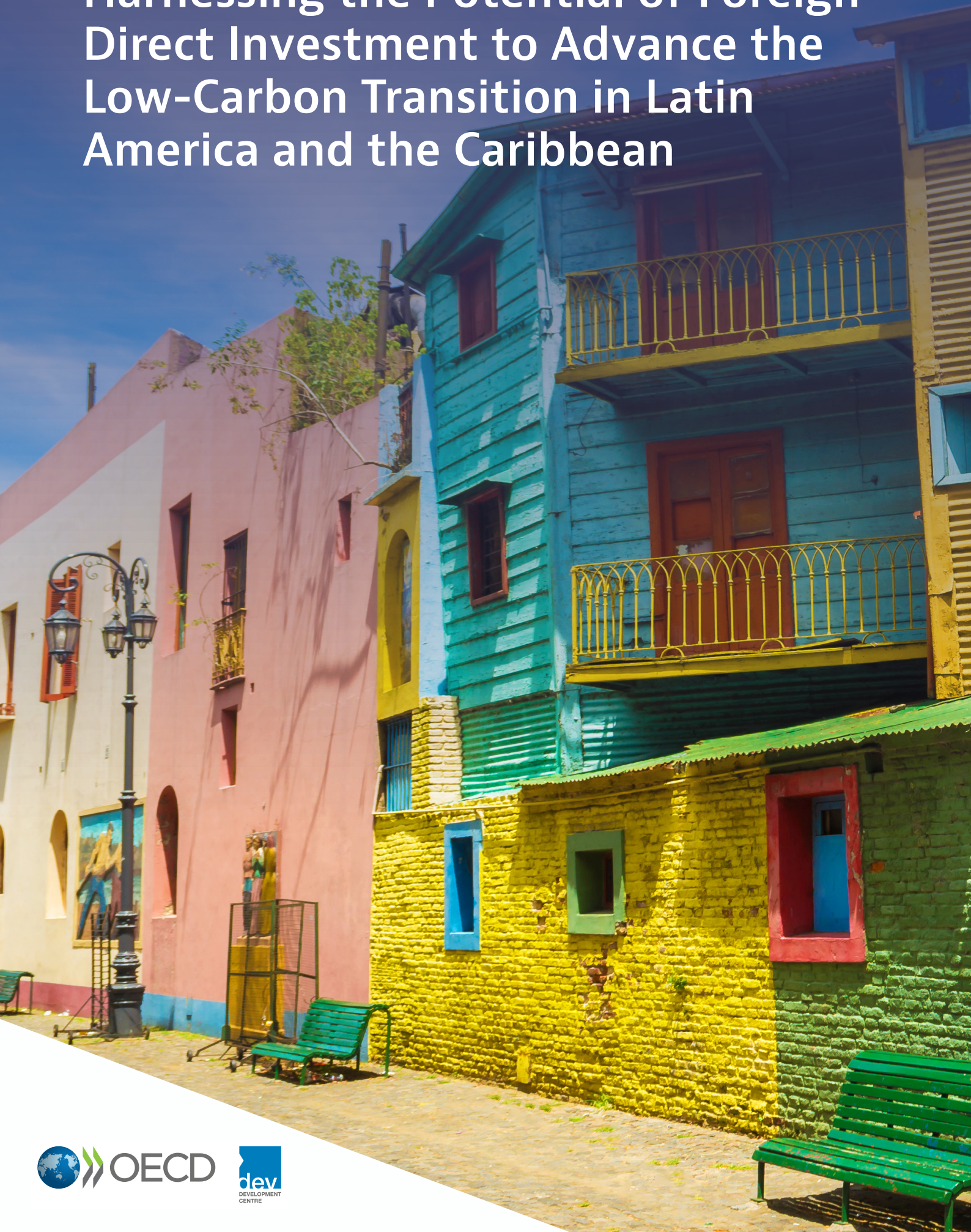


Harnessing the Potential of Foreign Direct Investment to Advance the Low-Carbon Transition in Latin America and the Caribbean



About this note

This note explores key climate challenges in LAC, encompassing energy transition, biodiversity preservation, and adaptation – leveraging findings from OECD Development Centre’s “Latin American Economic Outlook 2022: Towards a Green and Just Transition” (OECD et al., 2022^[1]). It underscores that tackling these challenges presents a significant chance for sustainable and inclusive development in the region.

Considering the constrained fiscal situation of several LAC governments, involving the private sector to advance in the low-carbon transition becomes crucial. The note assesses the potential impact of foreign direct investment (FDI) on LAC’s low-carbon transition using the OECD FDI Qualities Indicators (OECD, 2022^[2]). It provides initial inputs on where policy action may need to be reinforced and suggestions for a future research agenda for LAC in this topic.

The note contributes to the Productivity and Environmental Sustainability Priorities of the OECD LAC Regional Programme (LACRP) under the aegis of the External Relations Committee and the governing board of the OECD Development Centre, and the OECD LAC Investment Initiative and the FDI Qualities Initiative of the Investment Committee. It serves as background to the discussions at the LACRP Ministerial Summit on Environmental Sustainability, taking place on 5-6 October 2023 in San José, Costa Rica.

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Executive Summary

This note examines some of the main climate-related challenges in LAC (including the energy transition, biodiversity preservation, and adaptation efforts). It highlights that efforts to address these challenges represent a tremendous opportunity for sustainable and inclusive development in the LAC region. Given the tight fiscal space that many LAC governments are facing, the participation of the private sector will be fundamental. The note examines what role foreign direct investment (FDI) can have for this transition agenda in LAC.

Following the pledges of the Paris Agreement, LAC governments should deepen their mitigation policies to decarbonise every sector of their economies, including hard-to-abate industries

Moving away from the intensive use of fossil fuels and towards the development of renewable natural resources will be crucial for strategic sectors such as energy. Decoupling national economies from the use of non-renewable resources can not only help mitigate the levels of emissions but also foster alternative sources of revenues and quality jobs. LAC is endowed with the needed sources of energy to do so, such as hydro, solar and wind power.

In view of the investment gap for the decarbonisation of LAC economies, scaling up FDI in renewables is crucial to accelerate the low-carbon transition in the region

Although cross-border investment in renewable energy in LAC increased over the past decades, the region did not yet exploit its full potential and more FDI in renewable energy could be mobilised. The analysis shows that the mix of FDI in the energy sector differs across LAC economies with oil producing countries still receiving most of the energy FDI in fossil fuels. To scale up cross-border investment in renewables, LAC economies – especially small economies that have not yet attracted much FDI in renewable energy – could increase efforts to tap into investments from countries that account for a large share of global FDI in renewables, such as Germany, Spain, or the United States.

The low-carbon transition brings about major changes to LAC job markets, and FDI plays an important role in the creation of high-quality, formal jobs and the development of skills

The job creation potential of greenfield FDI in renewables varies greatly within the region ranging from 400 jobs created per billion USD invested in renewables in Chile to 2000 jobs created per billion USD invested in renewables in Colombia. Importantly, FDI in renewables creates more jobs than it does in fossil fuels in LAC: for example, 1 billion USD invested in fossil fuels creates on average about 500 new jobs, 800 jobs are being created with 1 billion USD worth of investment in renewables. Although greenfield FDI creates jobs that enhance green skills of workers in the region, there are substantial skills bottlenecks that represent barriers to investment in green industries. Promoting the attraction of greenfield FDI in renewables that creates jobs in education, training and R&D cannot only help developing green skills but can also leverage domestic R&D spending in the region.

FDI can play an important role to reduce emissions in key sectors

Foreign firms in the mining and quarrying industry are on average 16% (Colombia) to 65% (Chile) less carbon intensive than domestic competitors. Several LAC economies will be important suppliers of minerals for new green energy technologies. Therefore, sustainable resource extraction is crucial and FDI can support the reduction of emissions in this industry. Regarding the decarbonisation of the energy sector, foreign firms in the electricity sector in Mexico, Costa Rica and Brazil tend to emit less carbon per unit of output than domestic peers – further highlighting the role of FDI in supporting the access to clean energy in the region.

Active preservation of biodiversity is crucial for the decarbonisation of LAC economies

Hosting close to 50% of the world's biodiversity, the region is a source of infinite nature-based activities. Nevertheless, an unsustainable use of these resources can directly hamper development and reduce the availability of assets for future generations. Active adaptation policies for reforestation and afforestation and the promotion of protected areas, in close cooperation with the private sector, have proved crucial to reverse the escalating tendency of biodiversity loss in the region.

Even if the region is disproportionately vulnerable to the consequences of climate change, its resilience and readiness to address it are low

LAC is below the OECD's average of resilience to climate change and the gap has been growing since 2005. The LAC region has been unable to properly leverage investment for adaptation. Reinforcing investment attraction efforts will therefore also prove crucial in view of adaptation.

Enabling climate action investments demands both a favourable overall investment policy environment and specific conditions for low-carbon investments

Achieving a successful shift towards a low-carbon economy in LAC, along with attracting substantial private investments, including foreign, hinges upon a complex mix of policy measures that involves both a favourable overall investment environment and specific conditions for low-carbon investments. An in-depth policy assessment for LAC could help prioritise reforms and actions to promote climate investments. This note summarises a hands-on example of such based on a review done for Chile and describes OECD policy approaches, toolkits and principles that could be leveraged.

1. LAC countries must accelerate the low-carbon transition

Greenhouse gas (GHG) emissions in LAC are significant but broadly in line with the size of the region in the world. In 2019, LAC's share in total GHG emissions (8.1%) was proportional to its share in the total world population (8.4%) and relatively higher than that in global GDP (6.4%). However, per capita emissions in LAC are lower than those in other regions such as the Middle East and North Africa (MENA) and East Asia and the Pacific (OECD et al., 2022^[3]).

LAC's development model has been historically linked to the use of natural resources. The vast amount and variety of natural assets have been used for the economic development of the region at a high environmental cost, as many of them were non-renewable. During the past 20 years, natural resources (i.e., oil, arable land, and minerals) contributed substantially to economic growth in LAC. In 2021, agriculture, forestry and fishing value added accounted for 6.1% of the region's GDP, while natural resources such as oil, coal, natural gas, and minerals represented 6.7% of the GDP (World Bank, 2021^[4]).

Given the high costs of inaction, governments from the region will have to further deepen their decarbonisation efforts. By 2022, and following the mandate of the Paris Agreements, 24 LAC countries have submitted either a second or an updated version of their Nationally Determined Contributions (NDCs).¹ Regarding mitigation policies, LAC countries prioritised the sectors of agriculture, energy (transport and mobility), forestry and land use/land-use change. Regarding adaptation policies, the prioritised sectors were agriculture, health, and water resources (OECD et al., 2022^[3]). However, achieving these ambitious goals of decarbonisation will require additional resources (see Section 2).

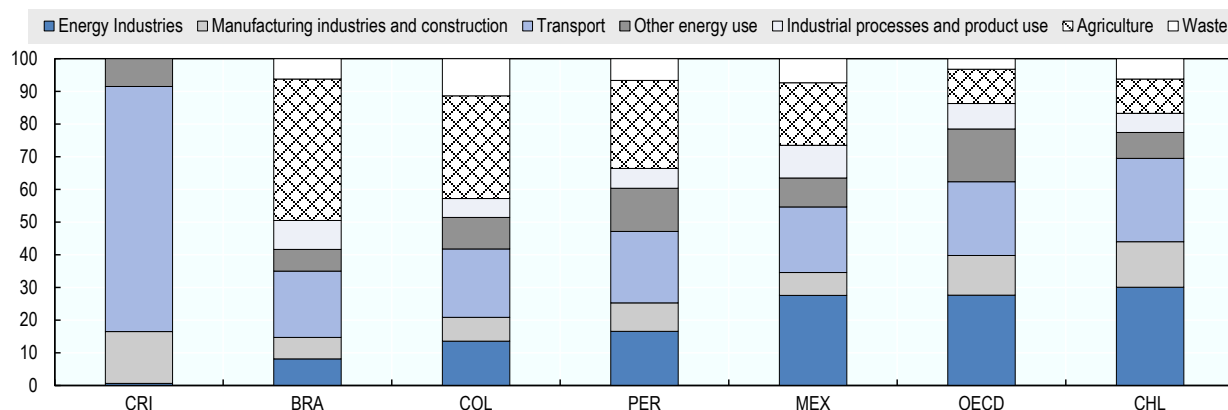
To achieve the low-carbon transition, the LAC region must undergo several challenging transformations. This section examines selected areas where transformations are needed and how they can represent an opportunity for LAC. These areas include: the energy transition, the protection of biodiversity and the adaptation to climate change.

LAC has a comparative advantage in accelerating the transition towards clean and affordable energy

The use of energy is responsible for the highest increase of GHG emissions over recent decades in most LAC countries (OECD et al., 2022^[5]). Oil and gas extraction alone are responsible for 30% of GHG emissions in Mexico and Chile, but energy consumption by other sectors also contributes heavily to emissions of LAC economies. For example, GHG emissions of the transport sector make up between 20% and 25% of emissions in Brazil, Colombia, Mexico, and Chile (Figure 1). A high share of total emissions coming from the transport sector in Costa Rica could be due to its relatively low level of emissions in the energy industry, which is almost exclusively based on renewable energies.

¹ NDCs set targets and the needed policies to achieve, together with the main stakeholders of the transition, the long-term goals of mitigation and adaptation.

Figure 1. In some LAC economies, energy use is an important source of GHG emissions



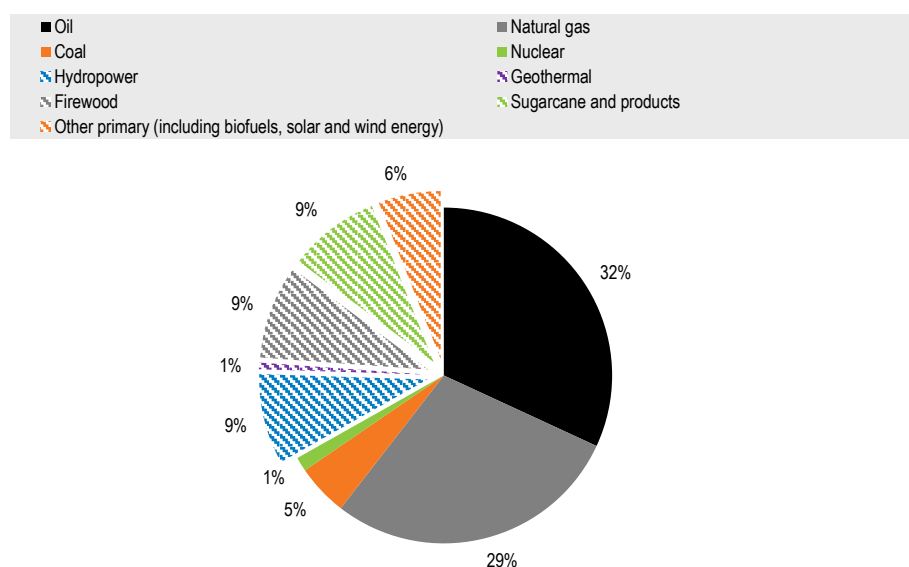
Note: This chart shows the sources of greenhouse gas emissions across countries for the most recent year available, BRA and PER (2016), CHL and COL (2018), MEX (2019), CRI (2020)). Energy industries, manufacturing industries and construction, transport, and other energy use together are responsible for total energy use.

Source: OECD elaboration based on OECD Air and Climate, Environment Statistics database (2023^[6]).

LAC has a comparative advantage in accelerating the low-carbon transformation of the energy matrix and reduce the region's dependency on oil and improving the access to energy of the population. LAC is endowed with renewable sources of energy and has a high potential to continue developing better and cheaper sources of clean energy. Although the bulk of LAC's total energy supply is currently concentrated in oil (32%) and natural gas (29%), energy from renewables accounts for 35% of the regional energy supply, surpassing the world average of 13% (OECD et al., 2022^[1]). In 2021, renewable energy sources such as hydro power, firewood, and sugarcane represented each 9% of the total energy supply, followed by geothermal (1%) and nuclear energy (1%) (Figure 2).

Figure 2. Even if most energy in LAC still comes from fossil fuels, the region has a comparative advantage in accelerating the low-carbon transformation of the energy matrix

Mix of total energy supply in LAC, by source, 2021



Note: Total energy supply consists of production + imports – exports – international marine bunkers – international aviation bunkers +/- stock changes. Hydropower, firewood, geothermal, sugarcane and products, and “other primary” (which includes biofuels, solar and wind energy) are considered as “renewable energy sources”.

Source: OECD elaboration based on SieLAC (2023^[71])

Biodiversity preservation is key to ensure sustainable development in LAC

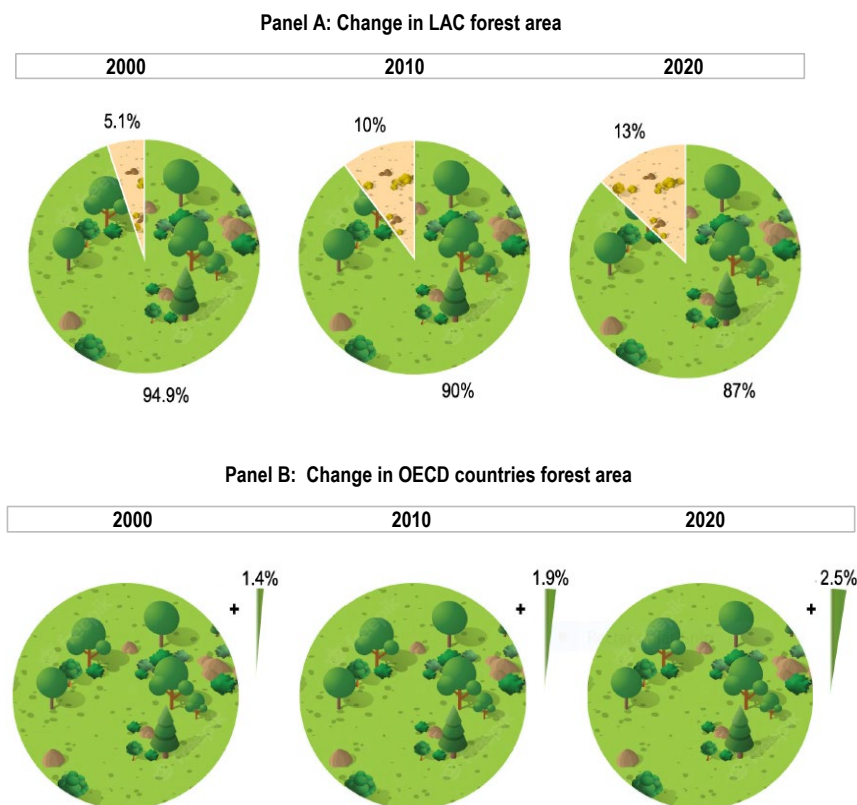
Several economic sectors of the LAC region are deeply connected with local natural resources, such as agriculture, tourism, livestock, and mining, and most of them have proven to be unsustainable. The LAC region hosts close to 50% of the world’s biodiversity, more than half of the world’s tropical forests and six so-called mega-diverse countries, holding the majority of world species (UNEP-WCMC, 2016^[8]). Nevertheless, the degradation of these natural resources is currently driven by a multiplicity of unsustainable practices and the effects of climate change. A sustainable use of these resources is crucial to ensure its preservation and multiplication for future generations.

Land-use change is the biggest current menace to nature (WWF, 2022^[9]). Degraded land is unable to provide its usual ecosystem services to protect citizens from the consequences of climate change. Deforested and overcultivated land lose its capacity to absorb water, directly contributing to floods, landslides, and droughts, among other consequences of climate change. Excessive forest clearance for agriculture, inadequate crop rotation and sprawled territories are some of the non-sustainable land uses causing deforestation in LAC. Agriculture is the main cause of deforestation and land-use change in the region, covering up to 38% of LAC’s territory (FAO, 2018^[10]; OECD/FAO, 2019^[11]). Forest loss in the region does not only imply a lost opportunity for other sustainable activities but it hampers adaptation efforts to combat climate change, as the surface capable of absorbing CO₂ emissions is being drastically reduced.

Deforestation in LAC saw a twofold increase from 2000 to 2010 and although the pace has decelerated between 2010 and 2020, it has not yet been completely reversed. On the contrary, OECD has achieved a slow but steady increase of 2.5% in their covered land between 2000 and 2020 (Panel B, Figure 3, Panel B). Uruguay, Chile, and Costa Rica are the only three countries in the LAC region that managed to reverse deforestation since 2000, by 48%, 15% and 6% respectively (World Bank, 2020_[12]). All these countries combined a series of measures to incentive reforestation and afforestation, ranging from regulatory measures to incentive-based policies to engage key stakeholders such as the private sector and local communities in the preservation efforts.

Figure 3. The forested land in the LAC region has experienced a 13% reduction from 1990 to 2020

Change in forest area, 1990-2020



Note: The initial base-year is 1990.

Source: World Bank (2020_[12])

Restoring biodiversity can have a direct impact in people's lives, as it helps rehabilitate vital ecosystems, fight against climate change, and prevent health crises. Nevertheless, the LAC region recorded the highest decline (94%) in monitored wildlife populations between 1970 and 2018, well above Africa (66%) and Asia Pacific (55%). Similarly, the decline in species populations of freshwater environment reached 83% in the same period in LAC, threatening not only its biodiversity but the overall use of freshwater for domestic use, energy production, food security, and industry (WWF, 2022_[9]). The promotion of protected areas and biological corridors proved crucial in the past few years to start reverting the degradation of some ecosystems. Biodiversity protection has proved an effective policy in LAC, reaching the largest extent in the world (8.8 million km²), and covering more than 25% of land and 19% of marine areas, both above the average of OECD (OECD et al., 2022_[11]).

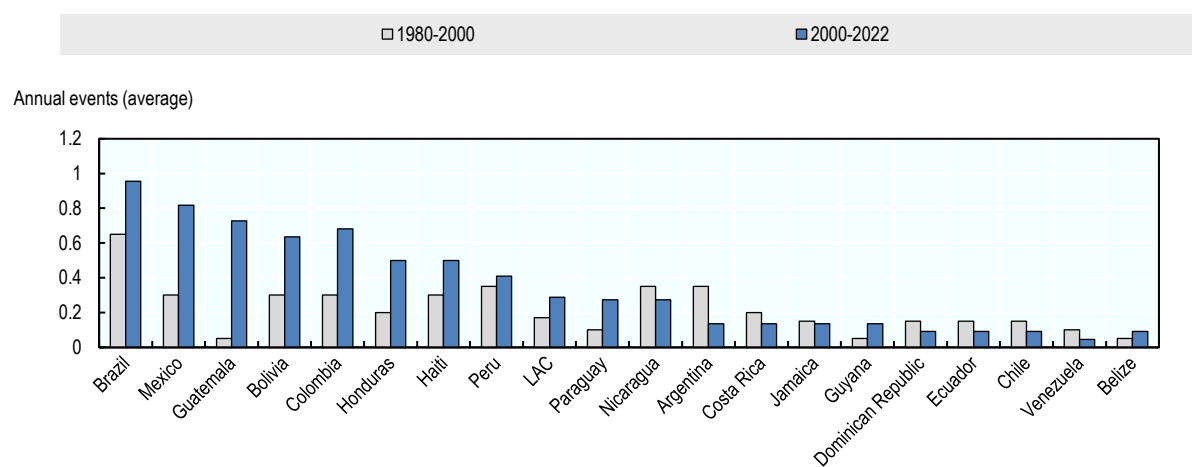
LAC governments need to strengthen their adaptation policies as the region suffers disproportionately from the consequences of climate change

The region, and its citizens, are particularly vulnerable to the increasing rate and amount of extreme weather events. From 1980 to 2022, the total amount of extreme weather events duplicated in LAC, making the region one of the world's most vulnerable (OECD et al., 2022^[11]). On average, the LAC region suffered 3.4 extreme weather events per year from 1980 to 2000 and 6.3 extreme events per year from 2000 to 2022. Brazil, Mexico, and Guatemala had the highest frequency of extreme weather events in the last decades (almost one per year for the Brazilian and Mexican cases) (Figure 4). In addition, 13 LAC countries were among the 50 countries in the world that are most affected by climate change in 2019² (GermanWatch, 2019^[13]). In LAC, more than 152 million people have been affected by natural disasters between 2000 and 2019. Thus, more than 50% of citizens in LAC are considered to be highly or extremely vulnerable to the consequences of climate change (CAF, 2014^[14]).

Floods and droughts, exacerbated by the effects of climate change, have a high social and economic impact in LAC. Floods are the most common natural disaster in LAC, affecting the second largest share of citizens (41 million people). Since 2000, floods are estimated to have cost more than USD 26 billion in total damages. In turn, droughts affect the largest share of citizens (53 million people), particularly in the dry corridor of Central America, where 8 out of 10 households need crisis coping mechanisms. In total, droughts are estimated to have cost USD 13 billion since 2000 (OCHA, 2019^[15]).

Figure 4. The occurrence of climate-related extreme weather events in the LAC region has almost doubled since 1980

Frequency of climate-related extreme weather events in LAC, 1980-2022



Note: Based on Alejos (2018^[16]), extreme weather events were defined as a natural disaster resulting in 100 000 or more people affected, or 1 000 or more deaths, or at least 2% of GDP in estimated economic damages. The following natural disasters were considered: landslides, storms, droughts, and floods.

Source: OECD elaboration based on data from EM-DAT (2023^[17])

LAC governments will have to strengthen their resilience to the consequences of climate change, given the disproportionate vulnerability of the region and the high cost of inaction. In a scenario in which the

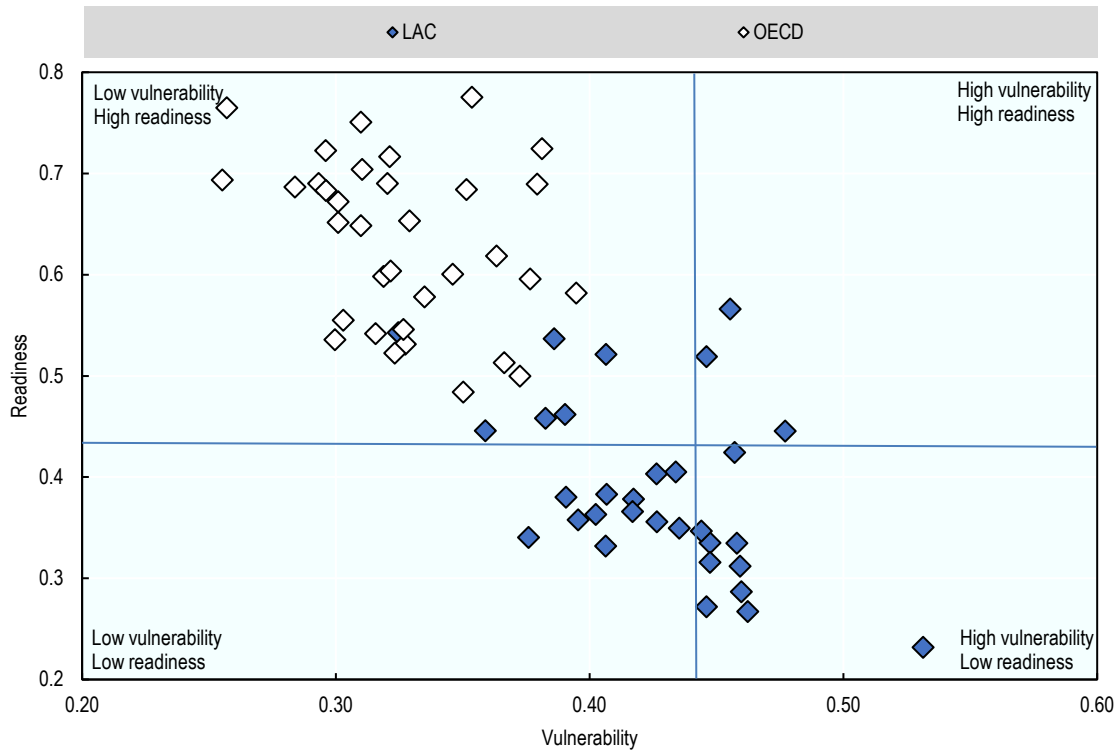
² The LAC countries ranked within the top 50 most vulnerable between 2000-19 were: Bolivia (25), Colombia (38), Dominica (11), Dominican Republic (50), El Salvador (28), Grenada (24), Guatemala (16), Haiti (3), Honduras (44), Nicaragua (35), Puerto Rico (1), The Bahamas (6), and St. Vincent and the Grenadines (48).

average temperature increases 2.5 degrees compared to pre-industrialisation levels, the region could lose between 1.5% and 5% of its GDP by 2050 (ECLAC, 2015_[18]).

LAC’s resilience to the impacts of climate change is low, as countries in the region tend to be more vulnerable and less resilient to climate-related hazards than OECD countries. About 40% of LAC countries are more vulnerable to climate change than the global average, which implies being negatively affected by climate-related hazards across life supporting sectors, like water, food, health and infrastructure. Moreover, 70% of LAC countries show a below-average readiness, as they have lower economic, social and governance abilities to make effective use of investments for adaptation actions (Figure 5). Most LAC economies like Chile, Costa Rica or Uruguay that demonstrate higher readiness scores compared to the global average are at the same time less vulnerable whereas some Caribbean countries like Saint Kitts and Nevis, Dominica and Antigua and Barbuda have high scores of vulnerability but better than average readiness scores.

Figure 5. Most LAC economies are highly vulnerable but little prepared for climate-related hazards

Vulnerability and readiness to climate-related hazards in LAC and OECD countries, 2020



Note: The Notre Dame Global Adaptation Initiative (ND-GAIN) measures the predisposition of countries to be negatively impacted by climate-related hazards across life-supporting sectors, like water, food, health, and infrastructure (i.e., vulnerability), against their economic, social and governance ability to make effective use of investments for adaptation actions thanks to a safe and efficient business environment (i.e., readiness). The blue lines highlight the global averages of readiness and vulnerability scores. Chile, Colombia, Costa Rica, and Mexico are grouped under LAC.

Source: OECD elaboration based on ND-GAIN (2021_[19]).

Under a tight fiscal space and an uncertain economic context, private investment, including FDI, will be essential to achieve the low-carbon transition

For the LAC region, economic and social challenges are piling up, while time is running out for the low-carbon transition and public resources are scarce. The region is facing development traps linked to low potential and productivity growth, high income, gender and sub-national inequalities, high labour informality, weak institutions, and an environmentally unsustainable development model. A multiplicity of global shocks, including the COVID-19 or Russia's war of aggression against Ukraine, have slowed progress and deteriorated social conditions. Over the past decade, poverty and extreme poverty have been increasing and reached 32% and 13% of the population in 2022, respectively (OECD et al., 2022^[5]; ECLAC, 2022^[20]). To add to these challenges, the region is running out of time to achieve the Sustainable Development Goals (SDGs) and the Paris Agreement objectives. Taking decisive action will require the mobilisation of vast resources. For instance, if emerging and developing economies are to become net-zero by 2050, investment needs to increase from an average per year of USD 150 billion in 2020 to over USD 1 trillion by 2030 (IEA, 2021^[21]).

Under this complicated context, the low-carbon transition is an opportunity and a necessary requirement to overcome some of the structural challenges and improve well-being in LAC (OECD et al., 2022^[1]).

For LAC, mobilising the necessary resources becomes particularly challenging due to the constrained fiscal space. LAC has structurally low tax revenues, limiting the available resources to finance the region's development agenda, including the green transition. The average tax-to-GDP ratio in the LAC region was 22% in 2021, with strong heterogeneity across countries from 13% in Panama to 34% in Brazil. The LAC ratio is considerably lower compared to the OECD average (34%). (OECD et al., 2023^[22]). Similarly, debt levels are relatively high. Although debt levels have decreased in the last two years, they remain above pre-pandemic levels. In 2022, they stood at 52% of GDP in Latin America and 77% of GDP in the Caribbean (ECLAC, 2023^[23]).

As the energy transition advances, demand for non-renewable resources will decline, entailing a drop in public revenues in a group of LAC countries. In hydrocarbon producing countries of the region³, the exploration and production of oil and gas revenues account, on average, for around 4% of GDP and can reach above 9% of GDP in Ecuador, Guyana and Trinidad and Tobago (OECD et al., 2022^[1]; OECD et al., 2023^[22]).

Given limited fiscal capacity and growing developmental challenges, improvements in the fiscal frameworks coupled with private investment, particularly foreign direct investment (FDI), will play a pivotal role in securing essential resources for the low carbon transition. The level of investment, known as Gross Capital Formation, in this region is comparatively modest. In 2022, it averaged merely 20% of GDP, a stark contrast to emerging and developing Asian economies where the average stood at 40% of GDP. Within this investment landscape in LAC, the private sector emerges as the principal driver, constituting 78% of the total investment in 2019. However, the share of private investments in the overall investment portfolio still lags behind the OECD average, which hovers around 84% of total investment (OECD et al., 2022^[3]). The attraction of FDI in LAC thus offers the possibility to close financing gaps of the low-carbon transition while at the same time promoting the sustainable development of the region.

³ Oil producing countries include: Argentina, Bolivia, Brazil, Colombia, Ecuador, Guatemala, Guyana, Mexico, Peru, and Trinidad and Tobago.

2. The contribution of FDI to the low-carbon transition of LAC

As more investment is needed in LAC, FDI is an important source of finance for sustainable development, not least due to its potential to support multiple policy objectives. Beyond the capital invested by the affiliates of foreign multinationals, FDI can make important contributions to a multiplicity of areas related to sustainable development. For example, FDI is rapidly shifting out of fossil fuels and into renewables, accounting for 30% of global new investments in renewable energy in 2020 (OECD, 2022^[24]). Furthermore, FDI brings valuable technological and financial resources that can help the region tackling its structural challenges as it can enhance growth and innovation, create quality jobs, reduce gender disparities, develop human capital, and improve living standards and environmental sustainability.

In view of the private investment gap in the LAC region, this section shows to what extent FDI can spur the low-carbon transition in selected key areas. As highlighted in Section 1, the transformation of the energy matrix is key to support decarbonisation strategies of LAC, to reduce the region's dependency on hydrocarbons and to improve the access to energy of the population. Scaling up FDI in renewables is thus crucial to accelerate the low-carbon transition in LAC. This section analyses recent trends in FDI flows to the renewable energy sector of the region, shows where more investment is needed and highlights the contribution of FDI to the creation of green quality jobs and skills. The analysis also points to the role of foreign multinational enterprises (MNEs) in the decarbonisation of countries across different industries and shows where FDI already contributes to the reduction of carbon emissions, and to what extent improvement is needed.

FDI can improve access to clean and affordable energy in the region

To further advance the low-carbon transition of LAC economies, the shift away from carbon-intensive energy generation to clean energy generation must accelerate significantly, alongside the electrification of key sectors like public and private transport, buildings, and industry. Substantial investment will be needed to upgrade and adapt grids to accommodate greater demand for clean electricity and more generation from renewable energy sources. LAC's geography offers enormous potential to attract investment in various kinds of renewable energy. The entire region has great capacity to generate hydropower as well as energy from biomass and some areas offer particularly favourable conditions for wind (e.g., Patagonia, the Atlantic Coast of South America, the Isthmus of Tehuantepec, and the Guajira Peninsula), solar (e.g., Atacama and Sonora-Chihuahua) and geothermal energy (e.g., the Andes and the Central American Cordillera) (OECD et al., 2022^[5]; United Nations Environment Programme, 2019^[25]).

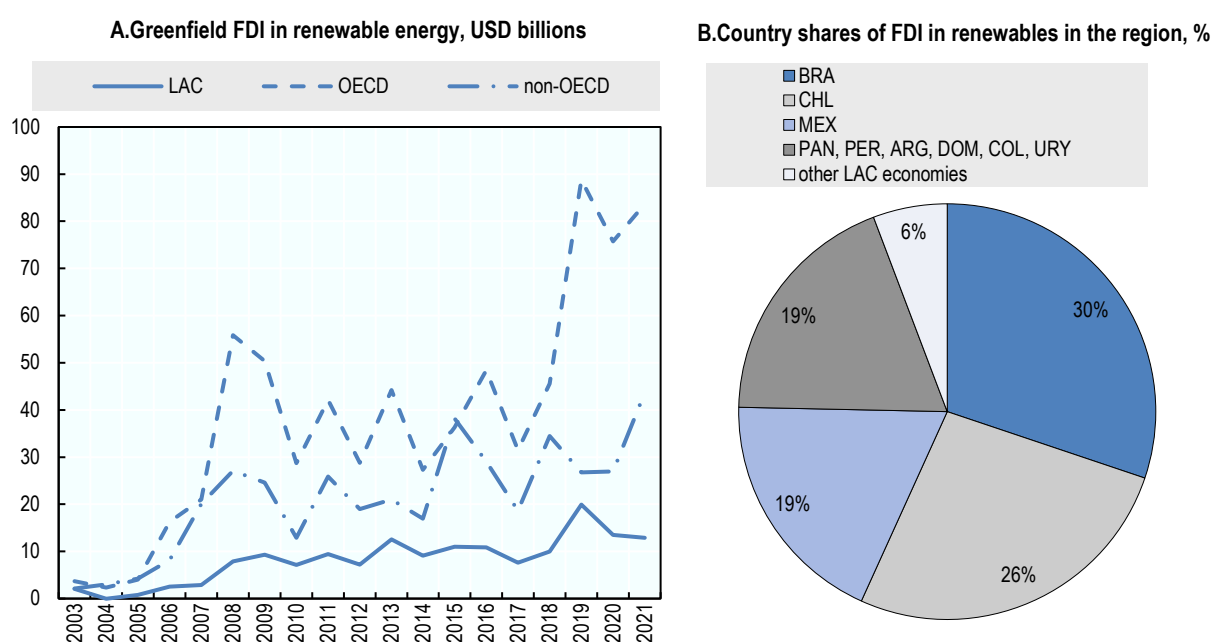
Cross-border investment in renewable energy in LAC increased over the past decades, but international comparison shows that the region did not yet exploit its full potential. Greenfield FDI projects, i.e., new FDI projects, in renewable energy in LAC increased more than sixfold over the past two decades highlighting the growing contribution of FDI to the energy transition (Figure 6, Panel A). However, the comparison with OECD countries shows that the curve of FDI in renewable energy in LAC has been comparatively flat until 2019 and the region did not benefit from a first surge in renewable FDI before the global financial crisis in 2008. Although the capital value of all opened and announced renewable energy FDI projects almost quadrupled in LAC from 2003 to 2008, it increased by a factor of 15 and almost 13, respectively, in OECD and non-OECD economies over the same period.

FDI in renewable energy is currently concentrated in a few predominantly large countries in the region and a broader attraction of FDI also in smaller countries would give further impetus to the decarbonisation of LAC. Brazil, Chile, and Mexico together host 75% of all opened and announced renewable energy FDI in

the region since 2003 (Figure 6, Panel B). Almost one-fifth is accounted for by Panama (5%), Peru (3%), Argentina (3%), the Dominican Republic (3%), Colombia (3%) and Uruguay (2%), while the remaining countries jointly account for around 6%. Although FDI in renewable energy is closely correlated with the economic size of countries, there are some countries that have received a disproportionately large amount of FDI in renewable energy relative to their economic size. For example, Chile accounts for about 5%⁴ of GDP among LAC economies but attracted 26% of renewable energy FDI.

FDI in renewable energy can also leverage other decarbonisation strategies such as the extended use of green, i.e., low-carbon, hydrogen in the region. In the debate on global decarbonisation, the use of low-carbon hydrogen gained in importance in recent years. As a versatile energy carrier, hydrogen can, for instance, substitute fossil fuels where direct electrification may present implementation challenges or it can further support the integration of renewables by providing long-term energy storage (IEA, 2021^[26]). The future deployment of hydrogen depends on a plethora of policies and also technologies that are still under development and the discussion of different implementation scenarios goes beyond the scope of this note. An essential determinant, however, is the capacity of countries to use renewable energy in the production of large volumes of competitive low-carbon hydrogen. Attracting more FDI in renewable energy can thus not only accelerate the low-carbon transformation of the energy matrix but can also support other decarbonisation strategies.

Figure 6. Global FDI in renewables has increased over the past two decades



Note: Panel A shows all opened and announced greenfield FDI projects in renewable energy aggregated in LAC, OECD and non-OECD countries. LAC comprises Argentina, Belize, Brazil, Barbados, Chile, Colombia, Costa Rica, Cuba, Cayman Islands, Dominican Republic, Ecuador, Guatemala, Guyana, Honduras, Jamaica, Saint Lucia, Mexico, Nicaragua, Panama, Paraguay, El Salvador, Suriname, and Uruguay. Panel B shows the split of all opened and announced greenfield FDI projects between 2003 and 2022 across different LAC economies. Other LAC economies include: Honduras, Nicaragua, Guatemala, Cuba, Paraguay, Costa Rica, El Salvador, Jamaica, Cayman Islands, Barbados, Suriname, Trinidad and Tobago, Guyana, Belize, and Saint Lucia.

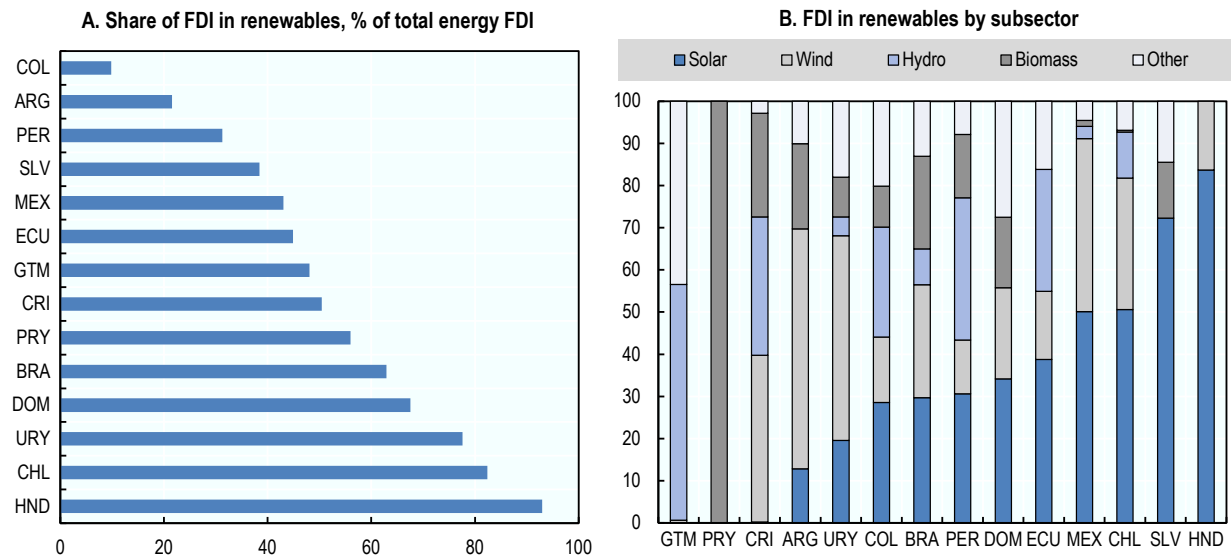
Source: OECD elaboration based on FT fDi Markets (2023^[27]).

⁴ OECD elaboration based on GDP in current prices for 2022 from the World Economic Outlook Database (2022^[45]).

The mix of FDI in the energy sector differs across LAC countries. In Colombia, Argentina, Peru, El Salvador, Mexico, Ecuador and Guatemala, fossil fuels account for about 50-90% of total greenfield FDI in the energy sector accumulated since 2003 (Figure 7, Panel A). Conversely, in Costa Rica, Paraguay, Brazil, Dominican Republic, Uruguay, Chile and Honduras, renewable energy FDI dominates the energy sector and has attracted a sizable share of total energy FDI, ranging from 50% in Paraguay to 82% and 93% in Chile and Honduras, respectively. Especially in Honduras, almost all open and announced FDI projects in the energy sector are directed to renewable energy (93%). Having the lowest level of rural electrification among considered LAC economies, Honduras can thus particularly benefit from renewable energy FDI not only to reduce emissions but also to reduce the gap of energy access and to promote sustainable development.

FDI can help diversifying energy production using a variety of renewable sources to address potential vulnerabilities related to climate change. For example, if a drought affects hydropower generation, energy shortages can be compensated by other forms of renewable energy. Between 2003 and 2022, most renewable energy FDI in the region went in solar (39%) and wind power (31%) followed by biomass (10%) and hydro energy (9%), but the renewable energy mix varies across countries along with the geographic potential of different forms of energy. While greenfield FDI in wind and solar power accounts for the largest share of FDI in renewables in most LAC economies, Guatemala, Paraguay, and Costa Rica received most renewable energy FDI in hydropower and biomass (Figure 7, Panel B). These countries, for example, could target additional investment in other renewable energy sub-sectors such as solar and wind power (IRENA, 2022^[28]; 2022^[29]; 2022^[30]) to fully exploit the potential of renewable energy in the region while also fostering the resilience of energy supply.

Figure 7. Renewable energy FDI in LAC concentrates in few sub-sectors



Note: Panel A shows the share of all opened and announced greenfield FDI projects in renewables as a share of total energy greenfield FDI in LAC by country. Energy greenfield FDI comprises FDI in renewables and fossil fuels. Panel B shows the split of greenfield FDI across renewable energy subsectors within countries. Both charts are based on aggregated greenfield FDI flows between 2003 and 2022.

Source: OECD elaboration based on FT fDi Markets (2023^[27]).

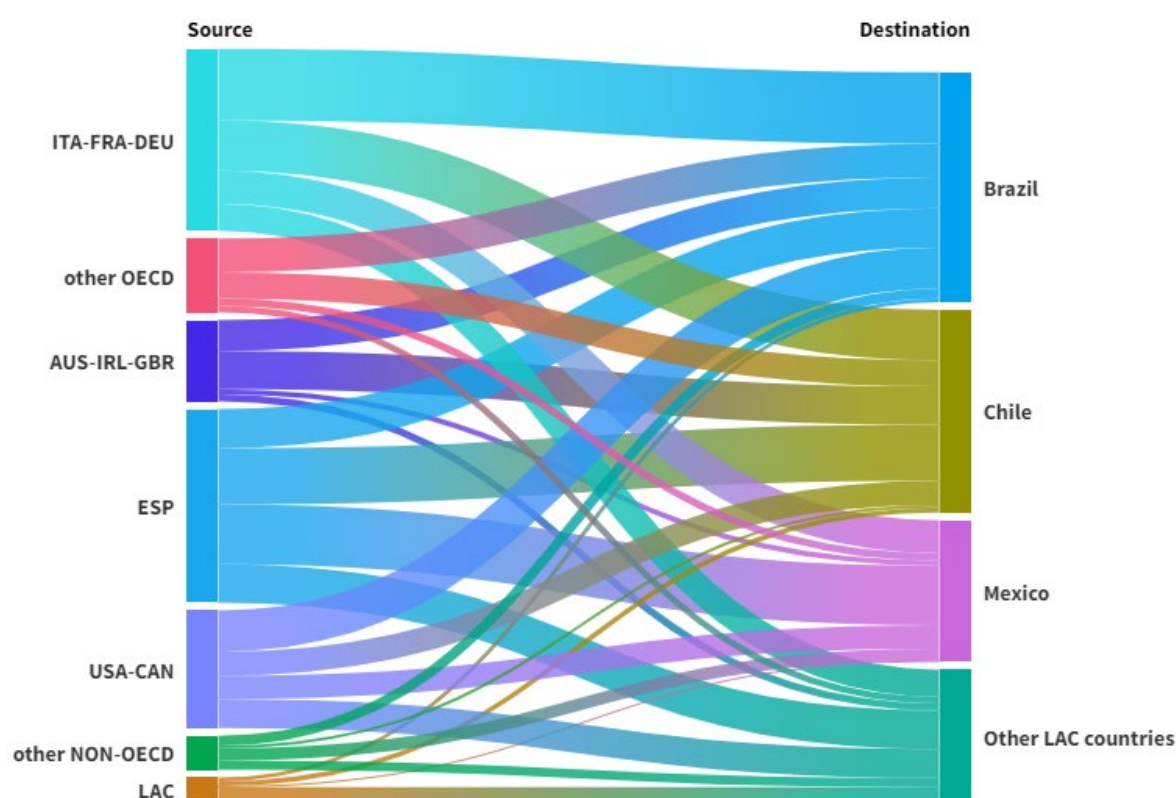
To scale up cross-border investment in renewables, LAC can deepen and expand investment relations with big source countries for renewable energy FDI. The bulk of cross-border investment in renewable energy in LAC comes from only a few countries. The largest source of greenfield FDI in renewables over the past two decades has been Spain, with 27% of cross-border investments in renewable energy in LAC,

followed by the US (13%), which together with Canada accounted for 17% (Figure 8). About a quarter of greenfield FDI in renewables in the region came from Italy (11%), France (10%) and Germany (5%), while other OECD members jointly make up for 22%, mostly driven by Australia (4%), Ireland (4%) and the UK (3%). The remaining 8% of greenfield FDI in renewables in the region are accounted for by LAC economies (4%) and other non-OECD countries (5%) including the People's Republic of China with 2%.

LAC economies that have received relatively little investment in renewable energy could try tapping into large existing sources such as Germany, Spain, the US, France and Italy. Together, they account for almost half of global greenfield FDI projects in renewable energy since 2003. Some of these large global source economies, currently underinvest in LAC. For example, Germany accounts for 10% of global FDI projects in renewable energy (2003-2022) but only represents 5% in LAC.

Figure 8. European economies are the largest renewable energy investors in LAC

Greenfield FDI in renewables, total 2003-2022



Note: This chart shows the value of all opened and announced greenfield FDI projects in renewables in LAC economies. Other LAC countries include: Argentina, Colombia, Costa Rica, the Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Paraguay, Peru, and Uruguay. Source: OECD elaboration based on FT fDi Markets (2023^[27]).

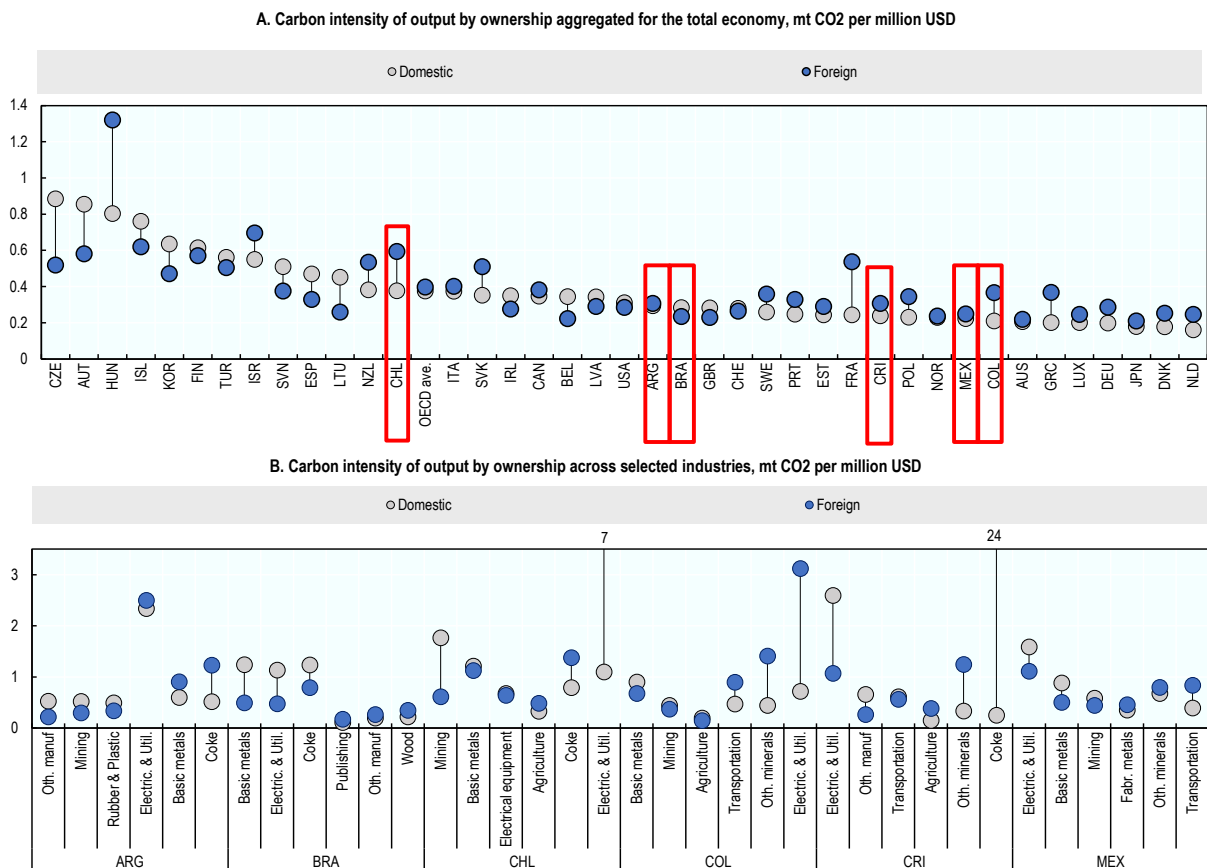
FDI can play a role in reducing carbon emissions of key sectors

The relationship between FDI and carbon-intensity in LAC economies is not clear-cut. FDI appears more carbon-intensive than domestic investment in most LAC economies. When considering the overall economy, foreign firms in LAC economies generate between 4% and 75% more emissions per unit of output than domestic peers (Figure 9, Panel A). These differences in carbon intensity between foreign and domestic firms are driven by a few industries, including for example electricity and other utilities in

Colombia. Foreign companies in the Mexican transport and storage sector and in the Brazilian wood industry also have a higher carbon intensity than domestic competitors suggesting that there remains scope for improving the carbon performance of FDI in these sectors.

A closer look at the carbon intensity of domestic and foreign firms at the sector level sheds light on industries in which FDI can play a role in reducing carbon emissions of key sectors. Several LAC economies will be important suppliers of minerals for green energy technologies. The region includes the world's biggest copper producer (Chile), the world's biggest silver producer (Mexico), the third-biggest steel producer (Brazil) and the world's second and third largest Lithium producers (Chile and Argentina) (OECD et al., 2022^[5]; Alejandra Bernal, Joerg Husar and Johan Bracht, 2023^[31]). Foreign firms in the mining and quarrying industry are on average 16% (Colombia) to 65% (Chile) less carbon intensive than domestic competitors, showing that FDI can support more sustainable resource extraction (Figure 9, Panel B). Regarding the decarbonisation of the energy sector, foreign firms in the electricity sector in Mexico, Costa Rica and Brazil tend to emit less carbon per unit of output than domestic peers highlighting the role of FDI in supporting the access to clean energy in the region.

Figure 9. FDI is on average more carbon-intensive than domestic investment but in some sectors FDI can help reduce emissions



Note: Panels A and B show carbon intensities, i.e., carbon emissions per unit of output, of foreign and domestic firms at the aggregated country level (Panel A) and at the sector level (Panel B). To obtain country-level values (Panel A), values for individual sectors were aggregated using each sector's share in the country's total output as weights. Panel B shows the top and bottom three sectors where foreign firms are more (less) polluting than domestic firms. Both panels rely on data from 2016.
 Source: OECD elaboration based on IMF Climate Change Dashboard (2023^[32]) and OECD TiVA (2023^[33]).

FDI in green industries creates quality jobs and helps developing skills needed for the low-carbon transition

The low-carbon transition will bring about major changes to job markets of LAC and FDI plays an important role in the creation of high quality, formal jobs and the development of skills. Changes to job markets entail both economic costs as fossil fuel extractive sectors will face considerable job losses in affected regions, but also opportunities to promote green quality jobs. Especially in LAC, where almost half (45%) of people live in a household that depends solely on informal employment, the creation of green quality jobs offers the chance to integrate more workers in formally protected employment relations (OECD et al., 2022^[5]). Under the premise of well-designed active labour market policies and considerable investments in both human and physical capital in green sectors, estimates suggest that employment in green jobs of LAC, i.e., jobs with new, less polluting tasks and greener production processes than existing ones, have the potential to increase between 7% and 15% by 2030 relative to 2020 (OECD et al., 2022^[5]).

Workers in green jobs are likely to be male, highly educated and formal in LAC. Therefore, public and private investments, including FDI, coupled with active labour market policies, should promote a better gender balance and include most vulnerable population in the green transition agenda (OECD et al., forthcoming^[34]).

FDI in green sectors have already created important employment opportunities in the region and helped shaping skills needed in the green transition. Although investments in renewable energies are relatively capital intensive, announced and opened greenfield FDI projects in renewables directly created on average 800 jobs per billion USD invested in the region – over 500 jobs more than in the OECD on average and almost 300 jobs more than FDI in fossil fuels (Figure 10, Panel A). Considering that these numbers only represent the number of direct jobs created by greenfield FDI projects, the total number of jobs associated with greenfield FDI projects in renewable energy is even higher once indirect job creation along the value chain of renewables in the region is taken into account.

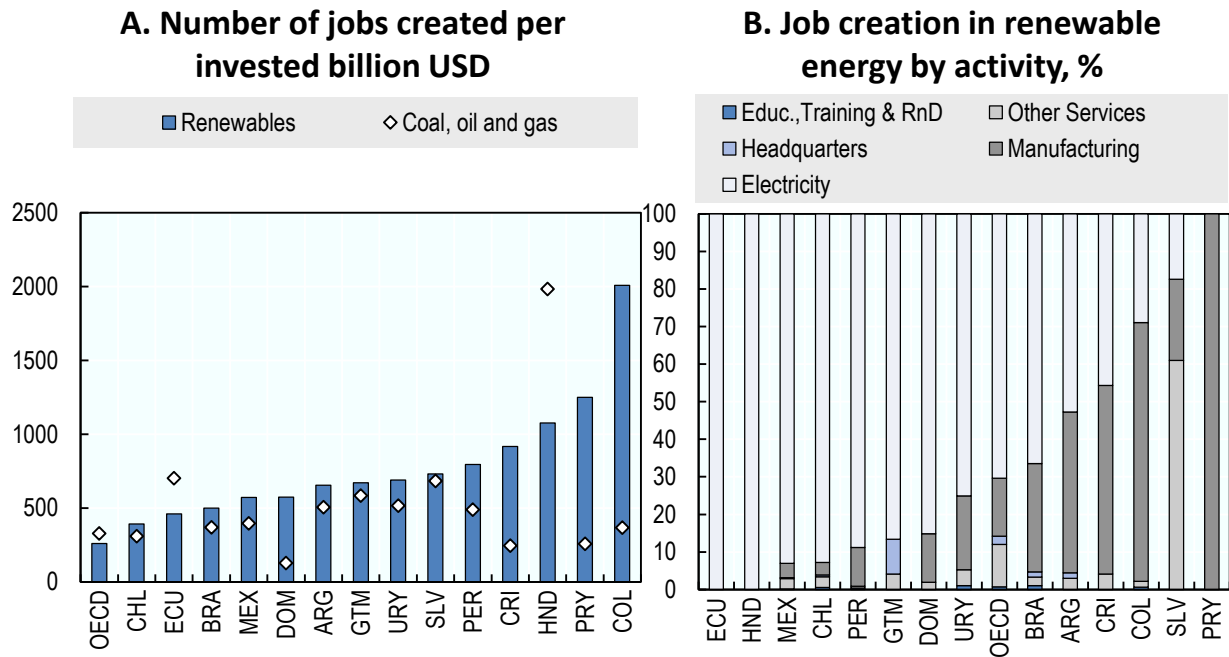
The job creation potential of greenfield FDI in renewables varies greatly within the region ranging from 400 direct jobs created per billion USD invested in renewables in Chile to 2000 direct jobs created per billion USD invested in renewables in Colombia (Figure 10, Panel A). These differences suggest that the split across value chain activities within a sector plays an important role in determining the job creation of FDI. Value chain activities in the renewable energy sector range from research and development (R&D) at the beginning of a product lifecycle to manufacturing, electricity generation, marketing, logistics or maintenance and servicing. As these activities differ in their labour intensity, investments within a sector have a different job creation potential depending on the activities targeted. For example, Colombia received a higher share of its renewable energy FDI in manufacturing activities than Chile, where investment in renewable energy is more concentrated in less labour-intensive electricity production activities (Figure 10, Panel B).

Although greenfield FDI creates jobs that enhance green skills of workers in the region, there are substantial skills bottlenecks that represent barriers to investment in green industries (OECD et al., 2022^[5]).⁵ In LAC, as in other economies around the world, new skills will have to be developed to attract green investment and to fill skill shortages in green industries. In addition to training programmes, and formal education, jobs created through FDI in green sectors can fill skills gaps – especially when jobs are created in research and development (R&D) or education and training.

⁵ OECD (2022^[5]) identifies the following sectors as strategic for the LAC region to advance the green transition: renewable energy, sustainable transportation systems, digital transformation, bioeconomy, the circular economy, sustainable tourism, and sustainable agriculture and livestock, water and waste management, plastics and sustainable mining. Renewable energy includes: solar, wind, hydro, biomass, as well as geothermal and marine electric power. Figure 7, Panel B indicates the relative importance of these renewable energy sectors in LAC.

Promoting the attraction of greenfield FDI in renewables that create jobs in education, training and R&D cannot only help filling gaps in green skills but can also leverage domestic R&D spending in the region. LAC’s gross domestic expenditure in R&D is much smaller (0.3%) than the OECD average (2%) and remains highly government-driven (57% of the total) (OECD et al., 2022^[5]). Cross-border investment in knowledge-intensive activities in the renewable energy industry are thus important to supplement domestic R&D spending and to allow for green innovation spillovers to other industries in the local economy. To date, most jobs created by FDI in renewables in LAC are in activities directly linked to the generation of electricity or manufacturing – especially in Ecuador, Honduras and Paraguay where all jobs created by renewable energy FDI were concentrated in these activities (Figure 10, Panel B). While greenfield FDI in renewables created jobs in education, training, and R&D in some LAC economies (Mexico, Peru, Chile, Columbia, Brazil and Uruguay), most LAC economies do not see jobs created in these activities. Expanding and deepening greenfield FDI in renewable energy, especially in knowledge-intensive activities, therefore has the potential to advance the low-carbon transition in LAC.

Figure 10. Greenfield FDI in renewables creates jobs and supports the development of green skills



Note: Panel A shows the number of direct jobs created per invested billion USD by all opened and announced greenfield projects in LAC economies and OECD members. Panel B shows the proportion of jobs created across different activities in the renewable energy sector. Other services include business services, customer contact centre, shared services centre, logistics, distribution & transportation, maintenance & servicing, technical support centre and recycling. Both panels rely on data from 2003 until 2022.
 Source: OECD elaboration based on FT fDi Markets (2023^[27]).

3. Towards a reform agenda to better leverage FDI for the low carbon transition

This note outlines various pathways through which FDI could play a role in expediting the transition to a low-carbon economy, thereby fostering inclusive and sustainable development in LAC. However, achieving a successful shift towards a low-carbon economy, along with attracting substantial private (and possibly foreign) investments, hinges upon a complex mix of policy measures, as well as supplementary investments in physical infrastructure and human capital, that should also consider specific country/regional context in LAC. For instance, the feasibility of a new offshore wind farm might rely on discontinuing subsidies for fossil fuels, establishing a feed-in tariff system, and publicly-financed construction of transmission grids and port facilities. Consequently, individual projects must be firmly rooted in more expansive, long-term strategies for climate action at the economy-wide and sector-specific levels. These strategies should provide potential investors with a clear understanding of how individual projects are reinforced by broader supporting measures (OECD, 2023, forthcoming[35]). In conjunction with the imperative for clear and stable policies, private sector entities consistently emphasise the necessity for a pipeline of viable projects as a central requirement for boosting commercial investments in climate action within emerging economies (GISD, 2022[36]).

Enabling climate action investments demands both a favourable overall investment environment and specific conditions for low-carbon investments

A diverse set of policy tools needs to be utilised to establish the necessary conditions for attracting low-carbon investment. Adjustments might be necessary in investment policy to ensure transparency, safeguard property rights, and guarantee non-discrimination (OECD, 2022[37]; OECD, 2015[38]; OECD, 2015[39]). These adjustments could be paired with proactive efforts to promote and facilitate low-carbon investments, such as providing incentives to address shortcomings in the market. Box 1 provides an overview of financial incentives for renewables in selected OECD, including Costa Rica from LAC, and non-OECD countries.

Reforms in competition, financial market, public governance, and fiscal policies might also be essential to facilitate investments in addressing climate issues. Apart from reforms regarding subsidies for fossil fuels, taxes, such as corporate income and property taxes, may be used to incentivise carbon-intensive practices (OECD et al., 2015[40]). This could lead to market distortions and discourage investments in climate action.

To enhance adaptation efforts, providing access to data about climate impacts, offering economic incentives, and establishing coherent policies and institutions can effectively tackle the issue of incorrectly assessing climate-related risks. This approach can also offer businesses clear guidance on the kinds of investments that are suitable for addressing these risks (IFC, 2013[41]). While an increasing number of countries are either developing or in the process of creating national adaptation plans (NAPs), a significant portion of these plans lacks information about required finances (UNEP, 2022[42]).

Enhancing the necessary conditions requires technical assistance and capacity development. In addition to cross-cutting, economy-wide issues and efforts, climate action often comes with distinct limitations. For instance, the rapid transformations needed in various sectors, coupled with the resulting social and distributional consequences, may demand focused support to assist governments in handling and mitigating adverse effects while making the most of transitional opportunities. Given the diverse array of supplementary measures required to enhance these conditions, it is essential to engage all stakeholders impacted.

Box 1. Financial incentives for renewables in selected countries

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.

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 1. Summary of financial incentives for renewables in selected countries

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^[43]), FDI Qualities mapping: A survey of policies and institutions that can strengthen sustainable investment.

An in-depth policy assessment for LAC could help prioritise reforms and actions to promote climate investments

Beyond the preliminary diagnostic assessment of climate-related challenges and FDI prepared in this note, an in-depth review of institutional arrangements and the policy mix at the intersection of investment and climate would be needed for LAC. Box 2 provides a succinct summary of Chile's policy framework and strategic prioritisation for low-carbon investments, derived from the recent OECD FDI Qualities Review of Chile (OECD, 2023^[44]).

A climate-specific FDI Qualities Review for LAC could be conducted at the regional and/or national level. It would allow to identify targeted and actionable recommendations based on regional and national contexts and priorities and could involve an action plan to prioritise and implement possible reforms. In this regard, relevant OECD policy frameworks, analyses and principles provide a whole-of-government approach and specific recommendations to identify and implement the structural, and financial changes needed to invest in and finance the climate transition, and more broadly align financial flows with climate policy goals. Concrete instruments include the OECD FDI Qualities Recommendation and Policy Toolkit (OECD, 2022^[2]), the OECD Policy Framework for Investment (OECD, 2015^[38]), and the OECD Policy Guidance for Investment in Clean Energy Infrastructure (OECD, 2015^[39]). The national and regional socio-economic contexts of the LAC region would be considered thanks to several analyses and reports, including the annual OECD flagship Latin American Economic Outlook – LEO (OECD et al., 2022^[3]). Key multi-laterally agreed policy principles to foster low-carbon FDI, against which such a policy review would need to be conducted, include (OECD, 2022^[37]):

1. Ensure policy coherence and co-ordination on investment and climate action

- Ensure a coherent, long-term strategic framework to mainstream decarbonisation across sectors, linked to the national goals for sustainable development, with clear climate goals that are translated to science-based targets for the private sector and other key stakeholders.
- Develop a dedicated strategy that articulates the government's vision on low-carbon investment. The strategy should set the goals, identify priority policy actions and clarify operative and budgetary 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 expanding the mandate of existing ones.
- Encourage public consultations and stakeholder engagement to receive feedback and build consensus around policy reforms and programmes to decarbonise investments.
- Develop monitoring and evaluation frameworks to assess the impact of FDI and related policies on decarbonisation, and to identify bottlenecks in implementation, including strategic environmental assessment (SEA) and environmental impact assessment (EIA) systems.

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 investment standards (e.g., on emissions) 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 regulations that level the playing field for climate-friendly investment, involving a non-discriminatory investment environment in low carbon technologies, strengthening competition in electricity markets, and ensuring intellectual property protection for low-carbon innovations.

3. Stimulate investment and build capabilities for 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 to strengthen the 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 reviewed regularly.
- 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.⁶

4. Address information failures and 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, while avoiding green washing.
- Tailor investment promotion activities and tools to 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 Investment Promotion Agencies as intermediaries to make policy makers aware of the regulatory needs of low-carbon investors.

⁶ The OECD FDI Qualities Policy Toolkit shows that countries offer a mix of technical support initiatives directed at businesses and workers for developing low-carbon capabilities (OECD, 2022^[37]). 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. 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

Box 2. Chile's policy framework for low-carbon investment and possible avenues for reform

Creating an enabling environment for low-carbon investment is a longstanding policy priority for Chile. Under an inter-ministerial committee and a national council on sustainability, the Ministry of Energy and the Ministry of the Environment lead this effort together with other public bodies (such as the Ministry of Economy and InvestChile). Recent initiatives have focused on setting low-carbon transition targets and long-term policy strategies. Chile is the first Latin American country that made emission targets legally binding through its 2022 Framework Law on Climate Change. In agreement with the coal-fired plant owners and operators, the government has also put forward a decarbonisation plan for the electricity system, which aims to phase out or reconvert all coal-fired power plants by 2040. It aims to achieve 100% zero-emission electricity generation and 80% renewable energy by 2050.

An important feature of the Chile's policy framework is the absence of investment support mechanisms or direct public subsidies, tax benefits or feed-in tariffs

Instead, Chile has relied on mandatory quotas; auctions that allow renewable energy generators to have power purchase agreements with distribution companies; and recently a system of net metering allowing consumers to produce their electricity from renewable energy sources. Clean energy projects are exempted from paying tolls for using the main electrical transmission system. Measures were also taken to facilitate the connection of the electrical system to renewable energy plants of smaller capacity and guarantee their access to distribution facilities. Challenges regarding access to land for renewables investment are also being addressed. Over the past decade the contribution of fossil fuels to electricity generation has declined in Chile; however, coal is still used to generate one-third of total electricity, significantly above the OECD average. Chile still heavily relies on carbon energies due to the weight of the transport sector and the growth in needs of certain industries (e.g., mining).

Achieving Chile's low-carbon targets may require additional policy instruments

For instance, **feed-in tariffs** are designed specifically to accelerate investment in renewable energy technologies by offering long-term contracts to renewable energy producers. They reduce the risk of investments by guaranteeing a predetermined price/revenue for a predefined time. For energy-intensive activities in the mining and industrial sectors, in which many foreign MNEs are concentrated, incentives (e.g., guaranteed access to networks, priority dispatch, tax credits and soft loans) could be another option.

Carbon pricing is also a core climate policy instrument that provides a technology-neutral case for low-carbon investment and consumption. 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. In 2017, Chile introduced a set of taxes on emissions of pollutants and a tax for new vehicles. However, the level of carbon taxes is significantly low compared to international standards and their coverage is limited.

Market access restrictions in the transport sector, a major CO₂ pollutant, could also be lifted to help Chile meet its net-zero emission targets. Current restrictions on FDI are likely to result in sub-optimal flows of investment, limit the transfer of know-how and may hamper the deployment of low-carbon technologies. Chile has introduced a requirement that only zero-emission vehicles can be sold after 2035, including light vehicles, public transport, and machinery, including mining trucks. Opening the sector to technology-intensive foreign MNEs will be necessary for the electrification of the vehicle fleet.

Source: OECD (2023^[44]), FDI Qualities Review of Chile: Boosting Sustainable Development and Diversification, OECD Publishing, Paris, <https://doi.org/10.1787/98bf1829-en>.

References

- Alejandra Bernal, Joerg Husar and Johan Bracht (2023), *Latin America's opportunity in critical minerals for the clean energy transition*, International Energy Agency Commentary, <https://www.iea.org/commentaries/latin-america-s-opportunity-in-critical-minerals-for-the-clean-energy-transition> (accessed on 17 August 2023). [31]
- Alejos, L. (2018), *Three Essays in Public Finance in Developing Countries*, https://deepblue.lib.umich.edu/bitstream/handle/2027.42/147524/lalejos_1.pdf?sequence=1&isAllowed=y. [16]
- CAF (2014), *Vulnerability Index to climate change in the Latin American and Caribbean Region*, <https://scioteca.caf.com/handle/123456789/509>. [14]
- ECLAC (2023), *Fiscal Panorama of Latin America and the Caribbean 2023: fiscal policy for growth, redistribution and productive transformation*, <https://www.cepal.org/en/publications/48900-fiscal-panorama-latin-america-and-caribbean-2023-fiscal-policy-growth>. [23]
- ECLAC (2022), *Social Panorama of Latin America and the Caribbean 2022: Transforming education as a basis for sustainable development*, <https://www.cepal.org/en/publications/48519-social-panorama-latin-america-and-caribbean-2022-transforming-education-basis>. [20]
- ECLAC (2015), *The economics of climate change in Latin America and the Caribbean: Paradoxes and challenges of sustainable development*, https://repositorio.cepal.org/bitstream/handle/11362/37311/4/S1420655_en.pdf. [18]
- EM-DAT (2023), *EM-DAT - Centre for Research on the Epidemiology of Disasters (CRED)*, <https://www.emdat.be/>. [17]
- FAO (2018), *The State of the World's Forests 2018: Forest Pathways to Sustainable Development*. [10]
- FT fDi Markets (2023), *Database of crossborder greenfield investments*, <https://www.fdimarkets.com/> (accessed on 30 January 2023). [27]
- GermanWatch (2019), *Global Climate Risk Index 2021. Who suffers most from extreme weather events? Weather-related loss events in 2019 and 2000-2019.*, https://www.germanwatch.org/sites/default/files/Global%20Climate%20Risk%20Index%202021_2.pdf. [13]
- GISD (2022), *Joint Statement by Global Investors for Sustainable Development Alliance (GISD)*, <https://www.gisdalliance.org/sites/default/files/2022-> [36]

- [10/GISD%20Alliance%20Joint%20Statement%202022.pdf](#).
- IEA (2021), *Financing Clean Energy Transitions in Emerging and Developing Economies*, [21
] <https://www.iea.org/reports/financing-clean-energy-transitions-in-emerging-and-developing-economies>.
- IEA (2021), *Hydrogen in Latin America*, IEA, Paris, <https://www.iea.org/reports/hydrogen-in-latin-america> (accessed on 29 August 2023). [26
]
- IFC (2013), “Enabling Environment for Private Sector Adaptation: An Index Assessment Framework”. [41
]
- IMF (2023), *Climate Change Dashboard - CO2 emissions per unit of output by firm ownership*, [32
] <https://climatedata.imf.org/pages/bp-indicators#cb2> (accessed on 23 June 2023).
- International Monetary Fund (2022), *World Economic Outlook Database*, [45
] <https://www.imf.org/en/Publications/WEO/weo-database/2022/October/download-entire-database> (accessed on 10 March 2023).
- IRENA (2022), *Energy profile - Costa Rica*, International Renewable Energy Agency, [30
] https://www.irena.org/-/media/Files/IRENA/Agency/Statistics/Statistical_Profiles/Central-America-and-the-Caribbean/Costa-Rica_Central-America-and-the-Caribbean_RE_SP.pdf?rev=698048c2200e49c8886a079462af0654 (accessed on 17 August 2023).
- IRENA (2022), *Energy profile - Guatemala*, International Renewable Energy Agency, [28
] https://www.irena.org/-/media/Files/IRENA/Agency/Statistics/Statistical_Profiles/Central%20America%20and%20the%20Caribbean/Guatemala_Central%20America%20and%20the%20Caribbean_RE_SP.pdf (accessed on 17 August 2023).
- IRENA (2022), *Energy profile - Paraguay*, International Renewable Energy Agency, [29
] https://www.irena.org/-/media/Files/IRENA/Agency/Statistics/Statistical_Profiles/South%20America/Paraguay_South%20America_RE_SP.pdf (accessed on 17 August 2023).
- ND-GAIN (2021), *University of Notre Dame Global Adaptation Initiative*, <https://gain.nd.edu/our-work/country-index/download-data/>. [19
]
- OCHA (2019), *Natural disasters in Latin America and the Caribbean*, [15
] https://www.humanitarianresponse.info/sites/www.humanitarianresponse.info/files/documents/files/20191203-ocha-desastres_naturales.pdf.
- OECD (2023), *Environment Statistics: Air and Climate*, <http://dotstat.oecd.org/> (accessed on [6
] 23 June 2023).
- OECD (2023), *FDI Qualities Review of Chile: Boosting Sustainable Development and Diversification*, OECD Publishing, <https://doi.org/10.1787/98bf1829-en>. [44
]
- OECD (2023), *Trade in Value Added (TiVA) ed. 2021*, [33
] https://stats.oecd.org/Index.aspx?DataSetCode=TIVA_2021_C1 (accessed on 30 January 2023).
- OECD (2022), *FDI Qualities Indicators: 2022*, <https://www.oecd.org/investment/fdi-qualities-> [2]

[indicators.htm](#).

- OECD (2022), *FDI Qualities mapping: A survey of policies and institutions that can strengthen sustainable investment*. [43]
- OECD (2022), *FDI Qualities Policy Toolkit*, OECD Publishing, Paris, <https://doi.org/10.1787/7ba74100-en>. [37]
- OECD (2022), *FDI Qualities Policy Toolkit*, <https://doi.org/10.1787/7ba74100-en>. [24]
- OECD (2015), *Policy Framework for Investment*, OECD Publishing, <https://doi.org/10.1787/9789264208667-en>. [38]
- OECD (2015), *Policy Guidance for Investment in Clean Energy Infrastructure: Expanding Access to Clean Energy for Green Growth and Development*, OECD Publishing. [39]
- OECD (2023, forthcoming), *Climate finance provided and mobilised for climate action in developing countries: Challenges and opportunities in scaling up the mobilisation of private finance*. [35]
- OECD et al. (2023), *Revenue Statistics in Latin America and the Caribbean 2023*, <https://doi.org/10.1787/a7640683-en>. [22]
- OECD et al. (2022), *Latin American Economic Outlook 2022: Towards a green and just transition*, <https://doi.org/10.1787/3d5554fc-en>. [3]
- OECD et al. (2022), *Latin American Economic Outlook 2022: Towards a Green and Just Transition*, OECD Publishing, Paris, <https://doi.org/10.1787/3d5554fc-en>. [1]
- OECD et al. (forthcoming), *Latin American Economic Outlook*. [34]
- OECD et al. (2022), *Latin American Economic Outlook 2022: Towards a Green and Just Transition*, OECD Publishing, Paris, <https://doi.org/10.1787/3d5554fc-en>. [5]
- OECD/FAO (2019), *The State of the World's Forests 2018: Forest Pathways to Sustainable Development*, https://doi.org/10.1787/agr_outlook-2019-en. [11]
- OECD et al. (2015), *Aligning Policies for a Low-carbon Economy*, OECD Publishing. [40]
- SielLAC (2023), *Sistema de Información Energética de Latinoamérica y el Caribe*, <https://sielac.olade.org/default.aspx>. [7]
- UNEP (2022), *Adaptation Gap Report 2022: Too Little, Too Slow – Climate adaptation failure puts world at risk*, <https://www.unep.org/adaptation-gap-report-2022>. [42]
- UNEP-WCMC (2016), *The State of Biodiversity in Latin America and the Caribbean: A mid-term Review of Progress towards the Aichi Biodiversity Targets*, <https://www.cbd.int/gbo/gbo4/outlook-grulac-en.pdf>. [8]
- United Nations Environment Programme (2019), *Zero Carbon Latin America and the Caribbean: The opportunity, cost and benefits of the coupled decarbonization of the power and transport sectors in Latin America and the Caribbean*, <https://wedocs.unep.org/20.500.11822/34532> (accessed on 5 July 2023). [25]
- World Bank (2021), *World Bank indicators*, <https://data.worldbank.org/indicator>. [4]

World Bank (2020), *World Bank Indicators*, <https://data.worldbank.org/indicator/AG.LND.FRST.K2>. [12]

WWF (2022), *Living Planet Report 2022 – Building a nature positive society*, WWF, Gland, Switzerland., https://wwflac.awsassets.panda.org/downloads/lpr_2022_full_report_1.pdf. [9]

