

Spanish investors can capitalize on the low-carbon transition in Latin America

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Theme

The implementation of the Paris Agreement and Sustainable Development Goals (SDGs) offer significant opportunities for Spanish investors while supporting Latin American countries in the achievement of low-carbon and resilient development. Institutional, knowledge and infrastructure challenges require attention to maximise these opportunities.

Summary

The Sustainable Development Goals (SDGs) and the Paris Agreement present Latin America with an invaluable chance to revise and redirect policies and investment towards building more prosperous, low-carbon and resilient economies. Concerns in the region about the current economic malaise should not distract attention from the implementation of the SDGs or the Paris Agreement. Spanish companies working in the energy, infrastructure, waste management and consulting sectors could benefit from ambitious climate action in Latin America. This paper provides an overview of Latin America's contribution to global greenhouse gas emissions followed by an analysis of the physical, economic and political risks facing Latin America's development model within the context of the new climate and sustainability agenda. It reviews the SDGs and the Paris Agreement as a framework for action and examines some of the opportunities and challenges for Spanish investors in low-carbon and climate resilient development in Latin America.

Analysis

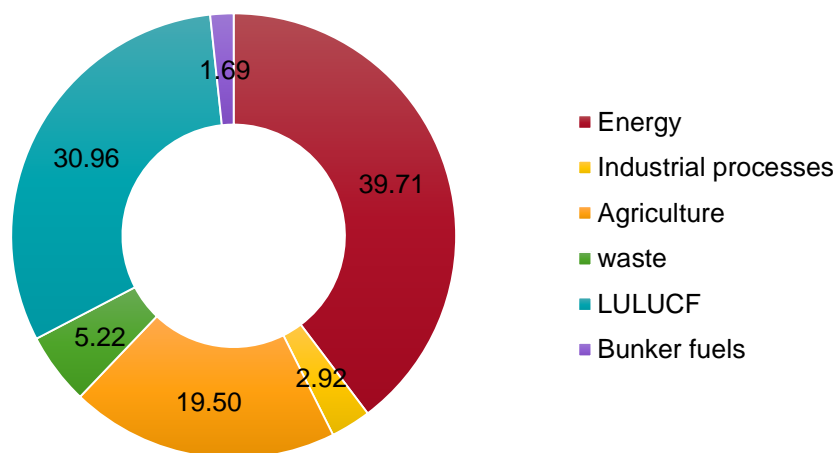
Global action to confront climate change is advancing. Last week, scores of world leaders travelled to the United Nations in New York to sign the **Paris Climate Agreement**. A number of Latin American leaders, including Peru's President Ollanta Humala and Brazil's President Dilma Rousseff, attended the ceremony to sign the agreement and declared their commitment to ratifying the agreement as soon as possible. The Agreement will enter into force once at least 55 Parties to the UNFCCC, which account for at least 55% of total global greenhouse gas emissions, have deposited with the UN their instruments of ratification, acceptance, approval or accession.

The Paris Agreement received a considerable boost when the US and China signed the agreement in New York and reiterated their intention of ratifying the Agreement as early as possible this year. **China** and the **US** account for nearly 40% of global emissions, representing a major step forward towards the Agreement entering into force.

Latin America's emissions account for 9.5% of global greenhouse gas emissions, with Brazil and Mexico being the region's largest emitters. Latin America and the Caribbean emit 7 tons of CO₂-equivalent per person per year, compared with 8 tons in the EU.¹ There is a wide range of emissions across the region, with per capita emission in Argentina and Venezuela considerably higher than in Costa Rica and Honduras.

Although emissions from **deforestation** have fallen drastically in recent years, emissions from the **energy sector**, including power generation and transport, are rising rapidly. The International Energy Agency predicts that Latin America's per capita energy-related emissions will grow by 33% from 2005 to 2030.² Figure 1 provides a sectoral breakdown of greenhouse gases (GHG) in the region in 2012, showing that emissions from the energy sector, land use, land-use change and forestry (LULUCF) and agriculture are the main sources.

Figure 1. GHG emissions by sector in Latin America and the Caribbean in 2012 (%)



Source: World Resources Institute. CAIT Climate Data Explorer.³

While the region's power sector is relatively clean due to the dominance of hydropower, economic growth has increased electricity demand, strained installed capacity and driven demand for a greater share of fossil fuels. Global warming will bring both more

¹ Economic Commission for Latin America and the Caribbean (ECLAC) (2015), 'The European Union and Latin America and the Caribbean in the new economic and social context', Santiago de Chile.

² International Energy Agency (IEA) (2007), *World Energy Outlook 2007*.

³ World Resources Institute, CAIT Climate Data Explorer, <http://cait.wri.org/profile/Latin%20America%20&%20the%20Caribbean>.

intense rainfall events and longer dry periods to Latin America, which could adversely affect hydropower capacity, which accounts for around 60% of installed capacity and 70% of power generation.⁴ Hydropower in countries such as Brazil, Colombia and Honduras is expected to be particularly affected. Bloomberg's New Energy Finance predicts that Latin America will invest roughly US\$500 billion in wind and solar over the next 25 years as it attempts to diversify away from an over-reliance on drought-prone hydropower.⁵

Latin America and the Caribbean's total energy use is projected to expand by more than 80% through 2040 at an average annual rate of 2.2%.⁶ The energy sector is vulnerable to infrastructure and technological lock-ins so a low-carbon transition needs to start immediately to allow emissions to peak as soon as possible and then drop drastically.⁷ To meet growing demand, a considerable challenge will be avoiding becoming locked into high-carbon development pathways.

Risks

There are a number of physical, economic and political risks facing Latin America's development model within the context of the new climate agreement and the sustainability agenda.

Physical risks

For Latin American leaders and citizens, **climate change is no longer a distant problem** but presents an existential threat today.⁸ The region is highly vulnerable to climate-change impacts. Glacial melt in the Andes is likely to affect water supplies with serious consequences for millions of people including the availability of water for human consumption, agriculture and for electricity from hydropower. Other impacts include rising sea levels, intensification of weather patterns and storms, and increased exposure to tropical diseases.⁹

Economics risks

Latin America's acute vulnerability in part relates to its **dependence on natural resources**. Its reliance on extractive sectors, such as mining and fossil fuels, creates more vulnerability to climate-related risks in both the short term (such as water scarcity and local

“There is growing consensus that the impacts of climate change in Latin America will carry a hefty price tag.”

⁴ Walter Vergara, Ana R. Rios, Luis M. Galindo, Pablo Gutman, Paul Isbell, Paul H. Suding & José Luis Samaniego (2013), *The Climate and Development Challenge for Latin America and the Caribbean: Options for Climate Resilient Low Carbon Development*, Inter-American Development Bank, Washington DC.

⁵ Bloomberg New Energy Finance (2015), 'The New Energy Outlook: Executive Summary', June.

⁶ Lenin H. Balza, Ramón Espinasa & Tomas Serebrisky (2015), 'Lights On? Energy Needs in Latin America and the Caribbean to 2040', Inter-American Development Bank.

⁷ Vergara *et al.* (2013), *op. cit.*

⁸ 'The IPCC's Fifth Assessment Report: What's in it for Latin America?', Executive Summary, Overseas Development Institute and Climate and Development Knowledge Network, 2014.

⁹ Vergara *et al.* (2013), *op. cit.*

contamination) and the long term (such as those coming from a lack of diversification of the economy).

Environmental policy is often undermined by other sector's policies such as industry or urban development.¹⁰ The perils of 'extractivism' illustrate the concern of an overreliance on the exploitation of natural resources to the detriment of the environment, social development and the likelihood of action on climate change.¹¹ Investments in extractive sectors have yielded significant benefits for the region's economy.¹² Yet, despite important social gains, commodity-led economic growth continues to lead to serious environmental and social problems, including deforestation and social conflict.¹³

A study by Christopher McGlade and Paul Ekins shows that achieving the 'well below 2°C' temperature goal outlined in the Paris Agreement will entail leaving in the ground between a third and over 80% of fossil fuels worldwide. Around 40% of Latin America's oil, 55% of its gas and 75% of its coal reserves, when combined with other fossil fuel reserves in other regions, would have to stay in the ground to make the two-degree goal achievable.¹⁴ Latin American countries with large fossil fuel such as Argentina, Brazil, Colombia, Ecuador, Mexico and Venezuela, or those dependent on their imports such as Chile and Costa Rica, are potentially exposed to this systemic risk.

The growing consensus surrounding the spectre of stranded assets could alter the strategic investments of fossil fuels companies,¹⁵ especially post 2020,¹⁶ provided adequate price and regulatory signals are in place. An additional factor that could speed up divestment in fossil fuels in Latin America and elsewhere would be a shift in the future behaviour of investors, fund and pension managers. Lawyers agree that those who manage third-party funds should take into account material risks that could reduce the value of their investments by 5% or more. Climate change poses such a risk and hence clients could sue investors in the future if GHG emissions erode the value of their investments.¹⁷ The threat of stranded assets, current low oil prices, the increasing competitiveness of renewable energy and the need to overcome the dependence on fossil fuels make a strong case for why Latin American countries should strongly back renewable energy and revise scheduled fossil fuel investments.

¹⁰ Economic Commission for Latin America and the Caribbean (ECLAC) (2015b), 'Latin America and the Caribbean: Looking Ahead after the Millennium Development Goals. Regional Monitoring Report on the Millennium Development Goals in Latin America and the Caribbean', Santiago de Chile.

¹¹ Eduardo Gudynas (2009), 'Diez tesis urgentes sobre el nuevo extractivismo', Centro Latino Americano de Ecología Social.

¹² Martin Walter (2016), 'Extractives in Latin America and the Caribbean: The Basics', Inter-American Development Bank, Technical Note IDB-TN-907, January.

¹³ Economic Commission for Latin America and the Caribbean (ECLAC) (2014), 'Compacts for Equality: Towards a Sustainable Future', Santiago de Chile.

¹⁴ Christophe McGlade & Paul Ekins (2015), 'The Geographical Distribution of Fossil Fuels Unused When Limiting Global Warming to 2°C', *Nature*, nr 517, p. 187-190.

¹⁵ P. Clark (2015), 'Climate deal: Carbon dated?', *Financial Times*, 15/XII/2015, <http://www.ft.com/intl/cms/s/0/58ecb88c-a30e-11e5-8d70-42b68cfae6e4.html#axzz42yfGTI96>.

¹⁶ V. Walt (2015), 'Energy Companies Face Big Risks From Paris Climate Deal', *Forbes*, 17/XII/2015, <http://fortune.com/2015/12/17/energy-companies-feel-the-burn-from-paris-climate-deal/>.

¹⁷ H. Covington, J. Thornton & C. Hepburn (2016), 'Shareholders Must Vote for Climate-change Mitigation', *Nature*, nr 530, p. 156.

There is growing consensus that the impacts of climate change in Latin America will carry a hefty price tag. The UN Economic Commission for Latin America and the Caribbean (ECLAC) suggests that the estimated costs of climate change in the region range from 1.5% to 5% of GDP, although there is a high level of uncertainty and variation across countries.¹⁸

These data come at a particularly difficult time as the Latin American and Caribbean economies struggle to shake off weak economic growth. In 2016 the region will grow a modest 0.2%. Central America will grow by roughly 4% in 2016, yet the regional average is dragged down by South America, which will contract 0.8% mainly due to the recessions in Brazil and Venezuela.¹⁹ A reduction in investment flows, lower commodities prices, slower growth in China, projected at 6.2% in 2017,²⁰ and the rise in US interest rates combine to create a difficult situation for the region this year.

In terms of **green and climate finance**, Latin America is not a priority for global climate finance compared with **Small Island States** or the **Least Developed Countries**. Moreover, existing levels of green development finance are overshadowed by traditional forms of finance. Climate finance in Latin America is highly concentrated in Brazil and Mexico. Mitigation also receives considerably more funding than adaptation.²¹

Development banks operating in Latin America are yet to play the necessary role to drive sustainable development. Thirty-three per cent of all development bank finance in Latin America is not green, with most of it going to carbon-intensive projects. Green finance in the region makes up 20% of total development bank financing. These financial flows need to be scaled up significantly alongside credible governance structures to ensure that green finance translates into sustainable results.²²

Political risks

The difficult economic situation across a number of Latin America countries, alongside troubling levels of insecurity and corruption, are having political consequences. A number of leaders' approval ratings are very low, illustrating how citizens are rejecting corruption and demanding better services and security.

“Latin American citizens are also very much concerned about climate change.”

¹⁸ Economic Commission for Latin America and the Caribbean (ECLAC) (2014) ‘The economics of climate change in Latin America and the Caribbean: Paradoxes and challenges’.

¹⁹ Economic Commission for Latin America and the Caribbean (ECLAC) (2015), ‘Latin American and Caribbean Economies Will Grow Just 0.2% in 2016 in a Complex Global Scenario’, 17/XII/2015.

²⁰ OECD (2015), ‘China Economic Forecast Summary’, November, <http://www.oecd.org/economy/china-economic-forecast-summary.htm>.

²¹ Nella Canales Trujillo, Smita Nakhooda, Alice Caravani & Liane Schalatek (2015), ‘Climate Finance Fundamentals 6: Latin America’, Overseas Development Institute & Heinrich Böll Stiftung North America Briefing papers, November.

²² Fei Yuan & Kevin P. Gallagher (2015), ‘Greening Development Finance in the Americas’, Boston University.

Although most of the political dissatisfaction and unrest is linked to corruption and job losses, Latin American citizens are also very much concerned about climate change.²³ In 2014, Peru witnessed the largest climate march in Latin American history, with 15,000 demonstrating in Lima during the UN climate change talks hosted by the city. Those marching were not exclusively environmental activists but also women's groups, indigenous peoples and trade unionists calling for environmental responsibility, better water management and protection of activists' rights.²⁴

The level of insecurity in many Latin American countries also relates to environmental issues such as disputes over hydropower and mining, often with tragic consequences. Indigenous peoples have been especially hard-hit. Various countries in the region including Honduras, Brazil, Colombia, Peru and Mexico are some of the most dangerous countries in the world to be an environmental activist.²⁵ There is little chance of successfully implementing the Paris Agreement or the SDGs unless human rights, the rule of law and the free, prior and informed consent of communities is granted for project development, ensuring governments and private sector actors respect their rights.

The Paris Agreement and the SDGs: providing an impetus for low-carbon and resilient investments

Latin American countries played a significant role in developing the post-2015 Development Agenda. Colombia and Guatemala were pivotal in developing the concept of sustainable development goals.²⁶ Latin American countries including Brazil, Mexico, Chile and Peru also proved instrumental in helping to secure the Paris Agreement.²⁷

In September 2015 the UN adopted the 2030 Agenda for Sustainable Development, which includes 17 Sustainable Development Goals (SDGs) and 169 targets. Among the goals, the SDGs propose to eradicate extreme poverty and promote the protection of critical ecosystems and biodiversity, as well as a transition to lower-carbon, less fossil fuel-intensive economies.²⁸ Considerable financial and technical support to developing countries will be required for the success of SDGs.²⁹

In December 2015 the UN adopted the Paris Agreement which seeks to limit the mean global temperature increase to well below 2° and to pursue efforts to limit global mean temperatures to 1.5° above pre-industrial levels. A long-term mitigation goal aims to

²³ Pew Research Center (2015), 'Global Concern about Climate Change, Broad Support for Limiting Emissions', 5/XI/2015.

²⁴ Mónica Araya & Guy Edwards (2015), 'Can Latin America Blaze a Trail to Paris?', *Nivela*, 4/VI/2015.

²⁵ Global Witness (2015), 'How Many More?', 20/IV/2015, <https://www.globalwitness.org/en/campaigns/environmental-activists/how-many-more/>.

²⁶ David Steven & Alejandra Kubitschek Bujones (2013), 'A Laboratory for Sustainable Development? Latin America, the Caribbean, and the Post-2015 Development Agenda', New York University, Center on International Cooperation, November.

²⁷ Guy Edwards (2016), 'Can Latin American Diplomacy at COP21 Spur Interest in the Paris Deal Back Home?', *Nivela*, 4/II/2016.

²⁸ Economic Commission for Latin America and the Caribbean (ECLAC) (2015), 'Latin America and the Caribbean: Looking Ahead after the Millennium Development Goals. Regional Monitoring Report on the Millennium Development Goals in Latin America and the Caribbean', Santiago de Chile.

²⁹ David Steven (2015), 'From Declaration to Delivery: Actioning the Post-2015 Agenda', Save the Children, June.

reach global peaking of greenhouse gas emissions as soon as possible and reach greenhouse gas emission neutrality in the second half of the century. On climate finance, whilst a concrete number was not included in the legally binding part of the Agreement, reference is made to the joint goal to mobilise US\$100 billion annually by 2020.

The Paris Agreement includes an “ambition mechanism” that requires countries to review and increase their emission reduction commitments every five years, with the first global stocktake scheduled for 2018. The dialogue will analyse the collective efforts of countries on their progress towards meeting the long-term goal. A central tenet of the Agreement is the national climate change plans called the **Intended Nationally Determined Contributions (INDCs)**, which 189 countries submitted as part of the Paris conference.

One of the main criticisms of the Agreement is that although countries have a legally binding obligation to put together domestic targets, these will only be held in a ‘public registry’ separate from the Agreement.³⁰ **The INDCs do not currently correlate with the global temperature goal**, with preliminary estimates suggesting they could result in roughly 2.7° of warming by the end of this century if all governments fully implement their commitments.³¹ A majority of Latin American countries’ INDCs are among those considered insufficiently ambitious.³²

Despite some of the limitations of the Paris Agreement, and the pending work to operationalise the SDGs, both present Latin America with an excellent opportunity to revise and redirect policies and investments towards building more prosperous, low-carbon and resilient economies. Taking into account the growing evidence that tackling climate change and building prosperity are mutually reinforcing goals,³³ both the agreement and the SDGs should be considered a priority for government and investors to confront the difficult economic situation.

³⁰ Gerard Wynn (2015), ‘Decoding the Paris Climate Deal: What Does it Mean?’, *Climate Home*, 12/XII/2015.

³¹ Thomas Day et al. (2014), ‘What the Paris Agreement Means for Global Climate Change Mitigation’, New Climate Institute, 14/XII/2014.

³² Climate Action Tracker (2015), ‘Large South American Governments Could Take More Climate Action: Analysis’, 29/X/2015, <http://climateactiontracker.org/indcs.html>.

³³ The Global Commission on the Economy and Climate (2015), ‘Seizing the Global Opportunity: Partnerships for Better Growth and Better Climate. The 2015 New Climate Economy Report’.

The opportunities and challenges for accelerating a low-carbon transition

Latin American countries' INDCs require strong support from the private sector to ensure existing targets are met and to explore further opportunities. The INDC process has acted as a catalyst for developing new policies, legislation and plans for implementation, and has also indirectly enhanced pre-2020 ambition.³⁴ Taking advantage of the situation, the period prior to the 2018 global stocktake provides an opportunity to ratchet-up ambition.

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The role of the private sector, development banks and national banks will be crucial, with changes needed to shift finance from high-carbon projects to low-carbon and resilient infrastructure. The Inter-American Development Bank (IDB) and the Development Bank of Latin America (CAF) are working with governments to translate the INDCs into bankable and investible plans. In 2015 the IDB committed US\$3.8 billion for projects that target climate change adaptation and mitigation, renewable energy and environmental sustainability.³⁵ In April 2016 the IDB announced its intention of increasing the volume of climate-related finance to 30% by the end of 2020.³⁶ Spanish investors should follow these processes carefully to capitalise on the opportunities derived from increased low-carbon finance.

Latin American countries' INDCs focus on renewable energy and energy efficiency, forest protection, sound agricultural practices, clean transport, waste management and the improvement of industrial processes. The implementation of the INDCs can provide investment opportunities for Spanish companies, although the economic slowdown could take a toll on future low-carbon investments in the region. Here, we focus primarily on the renewable energy sector.

Renewable energy

Renewable energy is advancing rapidly in Latin America and there is significant potential for growth. Latin America can meet its future energy needs through renewable energy sources, including solar, wind, marine, geothermal and biomass energy, which are sufficient to cover its projected 2050 electricity needs 22-times over.³⁷

“Latin America can meet its future energy needs through renewable energy sources.”

³⁴ New Climate Institute (2015), 'Preparation of Intended Nationally Determined Contributions (INDCs) as a Catalyst for National Climate Action', 1/XII/2015.

³⁵ Inter-American Development Bank (2016), 'IDB Provides \$3.8 Billion in Environmental Sustainability and Climate Change Products in 2015', 4/IV/2016.

³⁶ Inter-American Development Bank (2016), 'IDB Group Sets Goal to Increase Financing for Climate Change to 30 Percent of Approvals by 2020', 10/IV/2016.

³⁷ Walter Vergara, Claudio Alatorre & Leandro Alves (2013), 'Rethinking Our Energy Future: A White Paper on Renewable Energy for the 3GFLAC Regional Forum', Discussion Paper, nr 292, Inter-American Development Bank, June.

The year 2015 saw new records for the development of renewable energy. The amount of money committed to renewables, excluding large hydro-electric projects, rose 5% to US\$285.9 billion.³⁸ Latin American countries including Brazil, Chile, Mexico and Uruguay are among some of the top developing countries for their ability to attract capital for clean energy.³⁹

The International Renewable Energy Agency states that globally renewable generation capacity increased by 152 gigawatts (GW) or 8.3% during 2015, the highest annual growth rate on record. The fastest growth came in developing countries, including in Central America and the Caribbean, which expanded at a rate of 14.5%. Wind energy is expanding rapidly in South America, where capacity increased by 3.1 GW (40%) in 2015. The deployment of renewable energy continues to grow due to the falling costs of technologies and favourable conditions. This progress sends a strong signal to investors and policymakers that renewable energy is now the leading option for new power generation capacity.⁴⁰

Most Latin American countries have established renewable energy targets and have enacted renewable energy laws. In the electricity sector, auctions and fiscal incentives are favoured for promoting renewables. In the transport sector, renewable energy policies focus on biofuels, while the use of renewable energy for heating is currently limited.⁴¹ The global energy sector will be further transformed as the costs of renewable energy continue to fall⁴² and more technological advances materialise.⁴³

Last December, **Mexico's** Congress approved the Energy Transition Law, which calls for the share of 'clean energy' (which includes large-scale hydropower, nuclear power and co-generation with natural gas) to rise to 35% by 2024.⁴⁴ In March 2016 Mexico held its first-ever private auction where renewable energy developers won contracts to produce 1,720 MW of power. Several wind and solar companies won 15-year contracts expected to generate more than US\$2.1 billion in investment.⁴⁵

In 2015, **Brazil** pledged to reduce GHG emissions by 43% until 2030, compared with 2005 levels. Among the specific targets for 2030, Brazil plans to achieve a ratio of 45% of renewables in the energy mix by 2030, including expanding the use of renewable energy sources other than hydropower in the total energy mix to between 28% and 33%

³⁸ Frankfurt School-UNEP Centre/BNEF (2016), 'Global Trends in Renewable Energy Investment 2016'.

³⁹ ClimateScope (2015), 'ClimateScope 2015 Goes Live!', 23/XI2015, <http://global-climatescope.org/en/blog/2015/11/23/climatescope-2015-launches/>.

⁴⁰ International Renewable Energy Agency (2016), '2015 Sets Record for Renewable Energy, New IRENA Data Shows', 7/IV/2016.

⁴¹ IRENA (2015), 'Renewable Energy in Latin America 2015: An Overview of Policies'.

⁴² University of Cambridge and PwC (2015), 'Financing the Future of Energy. The Opportunity for the Gulf's Financial Services Sector. A Report for the National Bank of Abu Dhabi', https://www.nbad.com/content/dam/NBAD/documents/Business/FOE_Full_Report.pdf.

⁴³ Michael Mathres (2016), 'Paris Agreement Unleashes \$16 Trillion of Investment in Renewables and Cleantech', *EcoWatch*, 26/I/2016, <http://ecowatch.com/2016/01/26/investment-renewables-cleantech/>.

⁴⁴ Victoria Burnett (2015), 'Mexican Energy Law Seen as Key Climate Step', *EcoAméricas*, December.

⁴⁵ Vanessa Dezem & Adam Williams (2016), 'Mexico First Power Auction Awards 1,720 Megawatts of Wind, Solar', *Bloomberg*, 29/III/2016.

by 2030.⁴⁶ In December 2015 Brazil approved its latest 10-Year Energy Expansion Plan, which includes new solar energy targets for 2024 that are roughly double those of earlier plans. The new targets call for 7 gigawatts (GW) of utility-scale solar and 1.32 GW of distributed solar photovoltaic (PV) capacity.⁴⁷

Although progress is being made to promote renewable energy, some countries are being held back by vested interests in the status quo, fossil fuel subsidies, difficult investment climates and a lack of capital.⁴⁸ The International Monetary Fund shows that energy subsidies in Latin America and the Caribbean accounted for about 1.8% of GDP on average in 2011-13.⁴⁹

The integration of Latin America's isolated national transmission systems could also provide a significant boost for renewables.⁵⁰ Although grid integration in the region is still incipient, progress is being made. For example, a project is under discussion between Colombia and Chile to modernise and set up an interconnected grid, with improvements of existing links in Ecuador and Peru. Mexico is also planning to strengthen its links with the Central America region. The completion of these projects could increase the likelihood of the large-scale deployment of renewable energy.⁵¹

“The integration of Latin America's isolated national transmission systems could also provide a significant boost for renewables.”

Spain's interests in Latin America

From the 1990's onwards, Spanish companies embarked on an internationalisation process. Spanish investment in the region has focused on strategic sectors including financial and insurance services, telecommunications, energy (power, gas and oil), mineral extraction and the building sector, among others.⁵²

After a recent bonanza, Spanish foreign direct investment (FDI) in Latin America has wavered. In 2015 Spain's gross FDI flows were largely directed towards Europe (45,07%) and North America (40,83%). However, Spain's gross FDI flows to Latin America were significant in 2015 (12,38%). In descending order, Chile, Brazil, México, Uruguay and Peru account for almost 78% of Spain's gross FDI flows to the region last

⁴⁶ Brazil's INDC,

<http://www4.unfccc.int/submissions/INDC/Published%20Documents/Brazil/1/BRAZIL%20iNDC%20english%20FINAL.pdf>.

⁴⁷ Henry Lindon (2016), 'Brazil Doubles 2024 Solar Power Target', *Clean Technica*, 14/1/2016.

⁴⁸ Christopher Flavin, Milena Gonzalez, Ana Maria Majano, Alexander Ochs, Maria da Rocha & Philipp Tagwerker (2014), 'Study on the Development of the Renewable Energy Market in Latin America and the Caribbean', Inter-American Development Bank, Washington DC.

⁴⁹ G. Di Bella, L. Norton, J. Ntamatungiro, S. Ogawa, I. Samake & M. Santoro (2015), 'Energy Subsidies in Latin America and the Caribbean: Stocktaking and Policy Challenges', IMF Working Paper, nr 15/30.

⁵⁰ Vergara *et al.* (2015), 'Zero Carbon Latin America: A Pathway for Net Decarbonisation of the Regional Economy by Mid-century Vision Paper', UNEP DTU Partnership.

⁵¹ CAF (2012), 'Nuevas oportunidades de interconexión eléctrica en América Latina', Colombia.

⁵² Adán Doval (2014), 'Historia reciente de las inversiones en América', *Regional and Sectoral Economic Studies*, vol. 14, nr 2, p. 157-176.

year.⁵³ Periods of slow economic growth, political and legal uncertainty, expropriations and nationalisations of energy or mineral resources in Argentina and Bolivia have reduced Spain's FDI in the region.

Another important variable in terms of developing low-carbon business opportunities for Spanish companies are exports. Spain's exports to Latin America amounted to 6.2% of total exports in 2015.⁵⁴ Capital equipment, food, the automobile sector, chemical products, non-chemical semi manufactures, consumer goods and energy products are the key Spanish exporting sectors, accounting for over 90% of exports in 2013.⁵⁵

In terms of multinational companies (MNCs), Figure 2 below shows that in 2013 Ibx 35 companies obtained 22% of their revenues from the region. The banking sector MNC's shown in the Figure, with around 50% of their revenues coming from Latin America, energy companies with between 10% and 45% of their revenues originating in Latin America, or infrastructure companies with 29% or less of their revenue coming from Latin America, stand to benefit from emerging business opportunities in the region.

⁵³ http://datainvox.comercio.es/principal_invex.aspx.

⁵⁴ Ministerio de Economía y Competitividad (2015), 'Informe trimestral de comercio exterior. Tercer trimestre de 2015', http://boletin-secex.comercio.mineco.es/es-ES/enero-2016/Pdf/OK_Informe-ComexTrimestral-III-2015-con-Portada.pdf.

⁵⁵ CEOE (2014), 'El sector exterior 2000-2013', http://www.ceoe.es/resources/image/sector_exterior_2000_2014_1.pdf.

Figure 2. Spanish MNCs' revenues from Latin America as % of global revenues, 2013

Firm	%over total	Firm	%over total
BBVA	50.6	Mapfre	24.6
Santander	51	NH Hoteles	10
Ferrovial	0.6	Telefónica	47.1
Iberia IAG	26.3	Red Eléctrica Española	4.9
Endesa	31.1	Cintra	9
FCC	14.4	Repsol YPF	18.5
Inditex	11.9	Acciona	30
Abertis	10.8	Gas Natural Fenosa	20
Iberdrola	12.8	Abengoa	46
Sacyr	8.9	Prisa	21.6
Inra	28.1	DIA	18
Duro y Felguera	45.6	Ebro Foos	37.8
Prosegur	74	OHL	36.9
Arcelor Mittal	20.8	Ibex 35 Companies	22

The above data regarding FDI, exports and revenues originating in Latin America provide reasons for a continued interest in further exploring business opportunities in the region.

Source: Doval (2014), p. 170.

Considerations for the Spanish private sector

Strong population growth, a substantial infrastructure gap, commitments to decarbonise Latin America's economies and Spain's expertise and experience in the region show how business opportunities abound in the region, especially in countries that offer greater legal security and political stability.⁵⁶

According to Spain's business association (CEOE), Spain's firms have experience and technological know-how in the deployment of mitigation and adaptation projects in Latin America. Spanish companies operating in renewables, energy efficiency and sustainable transport sectors, can benefit from the opportunities presented by the Paris Agreement and the SDGs. Spain's small-

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⁵⁶ Doval (2014), *op. cit.*, p. 157-176.

and medium-sized enterprises (SMEs) are experienced in waste management as well as in the development of adaptation projects offered by the consulting sector, which could benefit from the development of national mitigation and adaptation plans.

The International Energy Agency calculates that Latin America and the Caribbean will need US\$4 trillion in investment through 2035 to be able to satisfy the region's energy requirements, especially in terms of renewable energy.⁵⁷ The abundance of renewable energy coupled with growing energy demand, regulatory institutions that respect international investments and the launch of national climate plans, provide the right environment for large-scale low-carbon investments, although current low oil prices are slowing down the transition.⁵⁸

There are numerous challenges for advancing low-carbon projects in Latin America. Large investment needs, predictable regulatory frameworks, licencing and bureaucracy requirements in receiving countries and the existence of clear guidelines and mediation institutions (that fully respect existing laws and international norms when operating in indigenous territories) will shape, in addition to the economic outlook, the extent of Spain's low carbon investment in the region.

Some Spanish companies are lacking information on potential low carbon opportunities for their businesses in the region. Within the Spanish construction sector, there are companies that are currently unaware of existing business opportunities for them in Latin America in the areas of energy saving and energy efficiency. These companies could benefit from the analyses of national climate plans to tap into projects including those that encourage improvements in the thermal performance of buildings.

Lastly, as regards government action to foster low-carbon development, Latin American policy-makers can improve the regulatory frameworks to encourage private investment in renewable energy. Success stories such as Honduras, which now has the second-greatest installed solar capacity in Latin America after Chile, can provide lessons for other countries.⁵⁹ The Spanish government through its foreign policy strategy, which supports Spanish energy companies abroad, could work in closer proximity to Latin America countries to locate renewable energy investment opportunities.⁶⁰

⁵⁷ EFE (2016), 'IDB to Discuss Latin America's Energy Needs', 31/III/2016.

⁵⁸ C. Octaviano *et al.* (2015), 'Climate Change Policy in Brazil and Mexico: Results from the MIT EPPA Model', *Energy Economics*, <http://dx.doi.org/10.1016/j.eneco.2015.04.007>.

⁵⁹ Institute of the Americas (2016), 'Beyond Paris: Energy Transition in Latin America and the Caribbean'.

⁶⁰ Ministerio de Asuntos Exteriores y Cooperación (2014), 'Estrategia de Acción Exterior. Gobierno de España', <http://www.lamoncloa.gob.es/espana/eh14/exterior/Documents/Estrategia%20de%20acción%20exterior.pdf>.

Conclusion

The Paris Agreement and the SDGs provide a framework to advance the transition to a low-carbon and resilient future. The required action on climate change can be a catalyst for a better type of development rather than a burden, especially during an economic downturn. Despite recent progress made by renewable energy, these technologies are still facing a significant challenge *vis-à-vis* conventional fossil fuel generation capacity.⁶¹ In Latin America, the implementation of national climate plans, increasing government and citizen support for action on climate change and renewable energy, create the positive conditions for welcoming low-carbon investments that favour Spain's FDI and exports in the region. The Spanish private sector can capitalise on these opportunities and contribute to Latin American countries' efforts to implement the Paris Agreement and the SDGs. There is no time to lose.

⁶¹ Frankfurt School-UNEP Centre/BNEF (2016), 'Global Trends in Renewable Energy Investment 2016'.