



ASSOCIATION OF OIL, GAS AND
RENEWABLE ENERGY COMPANIES
OF LATIN AMERICA AND THE CARIBBEAN



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Just Energy Transitions

in Latin America and
the Caribbean

Preface

This document describes the consensual position of ARPEL member companies regarding the concept of just energy transitions in Latin America and the Caribbean, developed within the framework of the ARPEL Energy Transitions Committee.

The document is subdivided into the following eight chapters plus conclusions, which - in general - include an analysis of the current scenario, focusing on the conditions of developing countries and the specificities of the region.

1. Introduction:

Transition context; characteristics of the region and perspectives for the energy transition aligned with sustainable development; importance of a competitive and attractive regulatory environment for investments.

2. Expansion of the energy supply:

Role of gas, oil and renewable energies in the energy matrix for developing countries; growth perspective; importance of an innovation system.

3. Challenges for the decarbonization of traditional businesses:

Transition of the way of operating consistent with sustainable development models and with the NDCs and their sectoral goals; challenges for the oil and gas industry; importance of taking advantage of the existing resources and infrastructure in the region.

4. Opportunities in renewable energy:

Opportunities generated from the region's renewable energy potential; potential of the energy sector to boost the value chain; supply and use of renewables in the region.

5. Energy transition and SDGs:

Relationship between the SDGs and company strategy; priority indicators for oil and gas companies, based on the joint roadmap of IPIECA⁴ and WBCSD⁵.

6. Pillars and metrics for just energy transitions:

Main monitoring topics and indicators focused on the supply of low-carbon energy, and generation of employment and local capacities.

7. Financing of energy transitions:

Competitive access to capital for new businesses, necessary for growth and sustainable development; Financial instruments and institutions that can expand financing opportunities to create and develop new markets.

8. Training, technological development and supplier development:

Initiatives that can reduce costs and expand opportunities to make the transition fairer.

9. Conclusions

⁴ <https://www.ipieca.org/>

⁵ World Business Council for Sustainable Development

Key messages



Talking about a just energy transition for Latin America and the Caribbean implies recognizing the urgency of promoting initiatives to mitigate climate change, aligned with the NDC¹, within a trajectory that considers the social and economic impacts on developing communities with a high percentage of unemployment, inequality, and energy poverty.

ARPEL and its member companies are committed to the search for a just energy transition in Latin America and the Caribbean. We recognize the importance of balancing the path of environmental sustainability with social and economic development. We believe that by promoting a competitive environment to attract investment, providing adequate financing, and fostering collaborative dialogue, we can achieve a just energy transition that benefits all stakeholders and contributes to building a sustainable future in the region.

We recognize the urgency of addressing global challenges related to the energy transition and the fight against climate change, and we are committed to playing a proactive and constructive role in this journey.

¹ Nationally Determined Contributions



Our vision is clear: to work towards the success of the Paris Agreement, while promoting social and economic development in the region. We understand the complexity of energy transitions and are aware that they require a real-world transformation that affects all communities and nations.

We recognize the importance of the role of the hydrocarbon industry in the transition, contributing with its financial and human capacity, and its capacity to execute projects, diversifying towards renewable energies and mitigating emissions in its operations. The industry is a fundamental pillar in the balance of energy sources to supply safe, affordable, and sustainable energy during the transition.

The industry is a source of fiscal resources and economic and social development in its areas of operation, and the gradualness of the transition must protect the socioeconomic balance of developing countries.

It is crucial to strengthen the application of the guiding principles of human rights and business, and the implementation of recognized business practices in the context of the just energy transition in developing countries, as well as establish metrics that facilitate transparent monitoring of their impact on the performance of SDGs² in the region.

The hydrocarbon sector plays a key role in financing the energy transition, being a recipient and mobilizing agent of investments. Most companies in the sector are investing in renewable energy generation projects, in R&D³ aimed at transition technologies and in initiatives to achieve the SDGs. Likewise, companies that invest in capital-intensive projects have the ability to work in coordination with governments and multilateral development organizations to help guide investment flows. Additionally, the sector manages to adapt to a challenging context and has the capacity to contribute to sustainable finance principles and initiatives, such as the Stockholm Declaration, the Monterrey Consensus, the Addis Ababa Agenda and the UNFCCC, among others.

Financing just energy transitions is related to the protection of economic resources in an equitable and sustainable manner, to promote changes in the energy system towards cleaner and renewable energy sources. In this context, the term "just" is fundamental, because it refers to ensuring that the costs and benefits of energy transitions are distributed equitably between different social and geographic axes, avoiding disproportionate negative impacts on vulnerable communities.

² Sustainable Development Goals adopted by United Nations in 2015

³ Research and Development

01 | Introduction



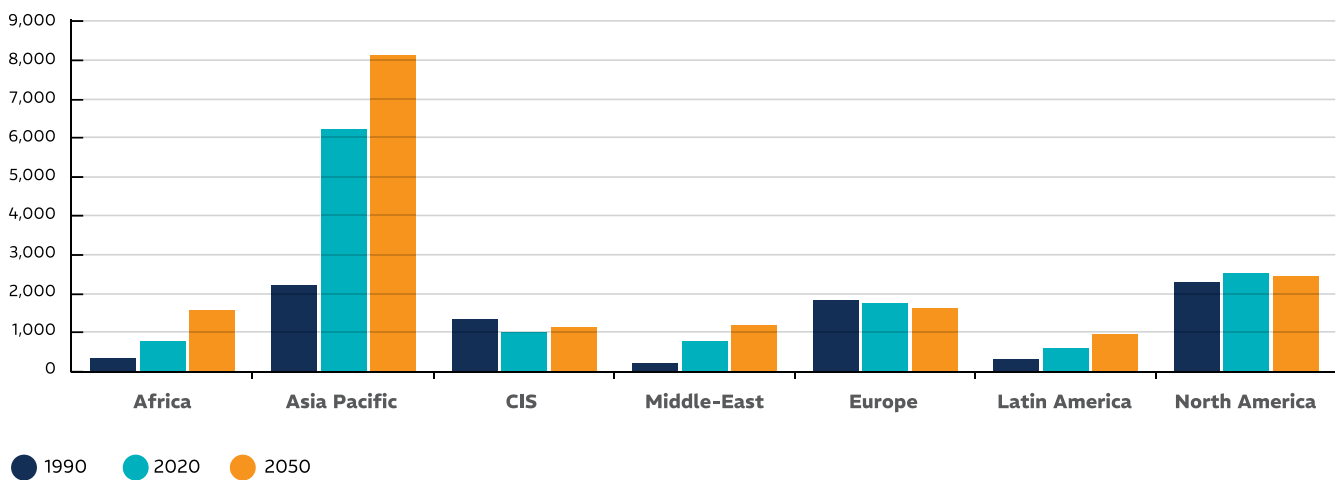
As we look toward the horizon of the global energy landscape, it is clear that change is in the air. The transition from traditional fossil fuel-based energy sources to cleaner, more sustainable alternatives is underway. This change is not just about scientific data and academic theories; it is a real-world transformation that affects us all. If we want to meet the objective of limiting global warming to 1.5 degrees Celsius above pre-industrial levels, in addition to achieving social development objectives, as an oil and gas industry we have to move forward in the implementation of strategies to progressively replace the use of coal, increase energy efficiency, rationalize the use of energy throughout the value chain, and increase the participation of renewables in the energy matrix.

Talking about a just transition for Latin America and the Caribbean implies recognizing the urgency of promoting initiatives to mitigate climate change, aligned with the NDCs, within a trajectory that considers the social and economic impacts in developing communities with a high percentage of unemployment, inequality, and energy poverty. Choosing this path, which combines energy solutions with different costs and application times, can accelerate the guarantee of access to increasingly cleaner energy, quality jobs, quality of life, and basic health conditions.

When looking at the projection of energy demand and population growth to 2050, it is possible to perceive clear differences in regional trends: like other regions of the developing world, Latin America and the Caribbean need an increase in the supply of secure energy, affordable and preferably clean, to allow its growing industrialization and satisfy the basic needs of its growing population.

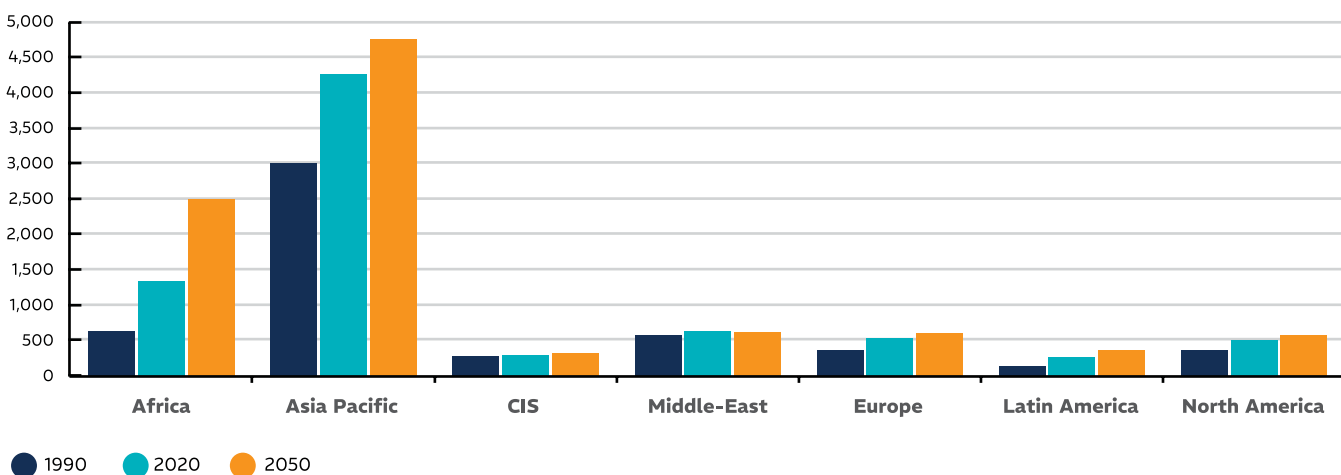
Primary energy regional demand (TOE)

Source: S&P Global Commodity Insights



World population (millions)

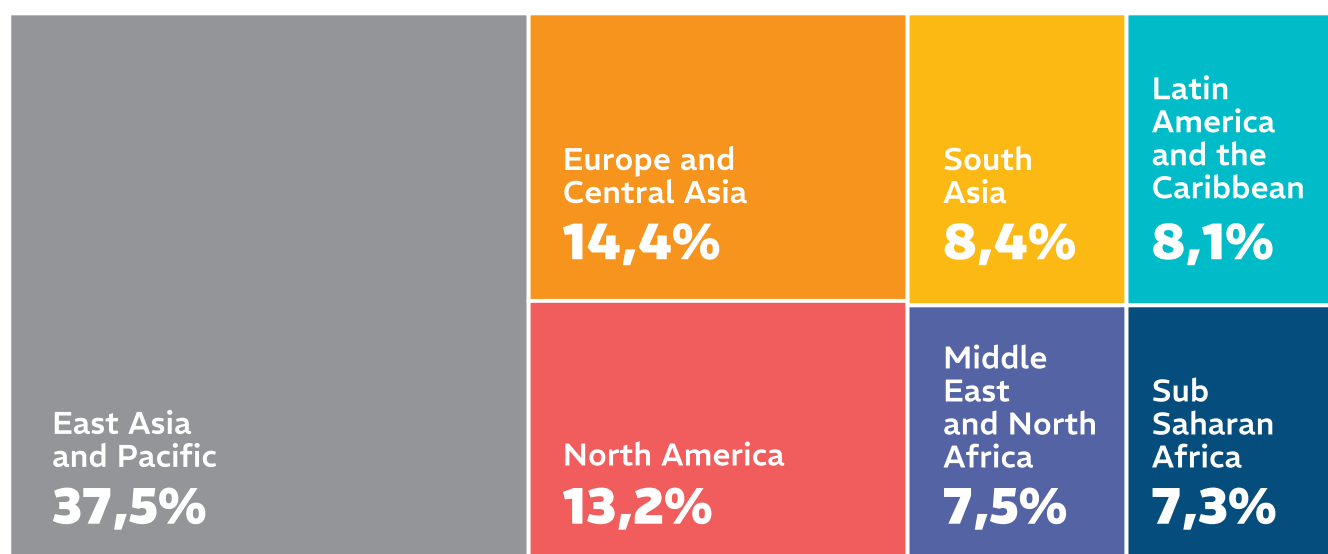
Source: S&P Global Commodity Insights



The weight of the region in global GHG⁶ emissions (8.1%) is proportional to what its population represents in the world total (8.4%) and is slightly higher than its participation in global GDP (6.4%), but is lower than the per capita emissions of other regions with similar levels of development, as shown in the graph below.

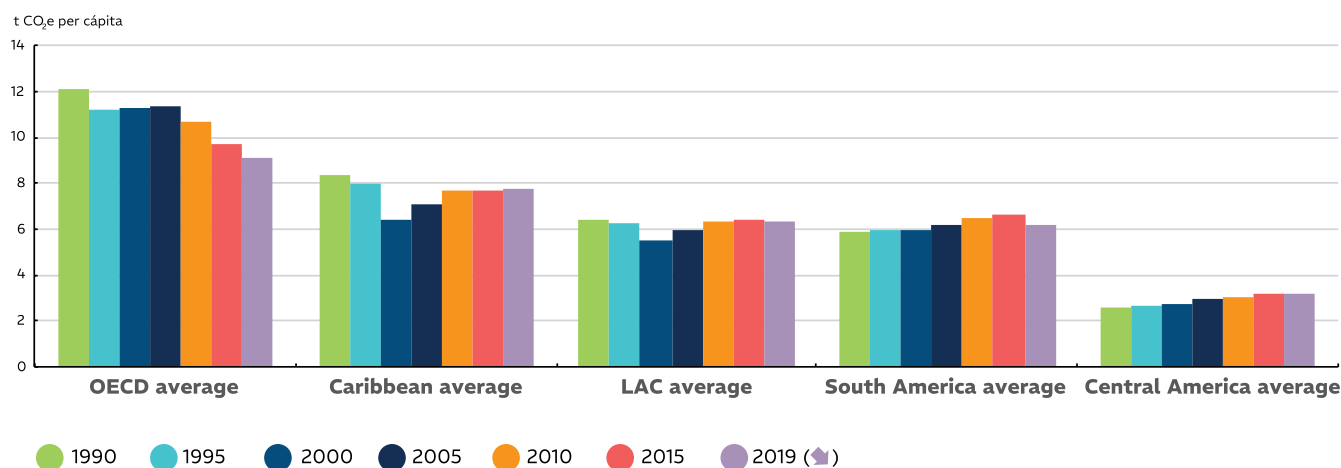
Regional percentage of total GHG emissions 2019

Source: OECD et al. (2022)



Average per capita emissions by subregions 1990 - 2019

Source: OECD et al. (2022)



Note: GHG emissions excluding LUCF, OECD average is a simple average of all the countries until May 2022, for which there is data available.

⁶ Greenhouse Gases

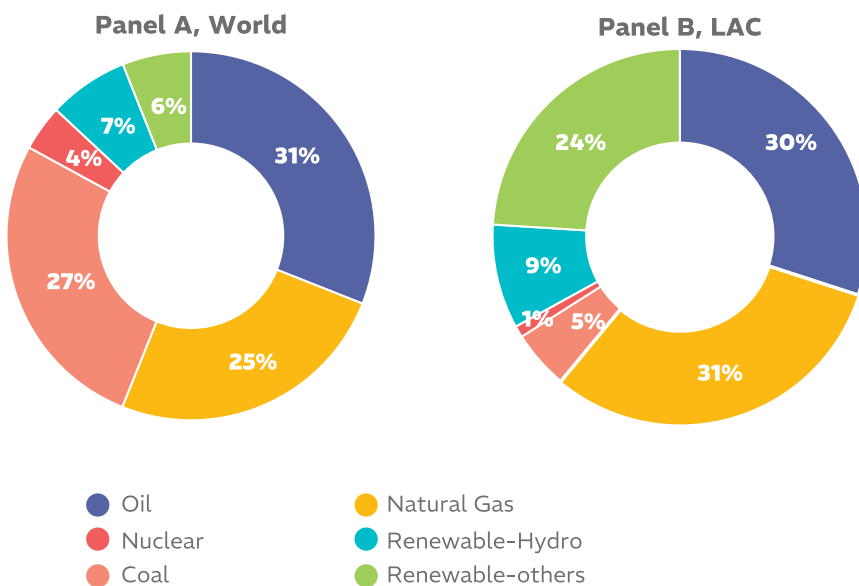
GHG emissions per capita in LAC (6.3 tCO₂e per capita) are lower than those of OECD countries (9.1 tCO₂e per capita).

An important source of emissions is energy generation, mainly electrical, in this regard and although energy production through the use of coal has decreased throughout the region, some of its countries still need this primary source. A diversified energy matrix with increasing participation of low-carbon and renewable

sources will help reduce the region's GHG emissions, harness the potential of its vast renewable energy resources, and boost universal access to energy. The region is endowed with great potential for renewable energy resources; Currently, these represent 33% of the region's total energy supply, compared to 13% globally.

Total energy supply matrix worldwide and in LAC 2020

Source: Developed by authors based in SieLAC (Energy Information System of Latin America and the Caribbean), 2020



Notes: Total energy supply consists of production+imports-exports-fuels for international maritime transport - fuels for international air transport +/- variations in stocks. "Renewable energy - others" includes biofuels, solar, wind and geothermal energy.

As can be seen in the two previous graphs, LAC already occupies a different position with respect to the world total in the context of the energy mix and GHG emissions.

As we work to further reduce these emissions, and as shown in this document, the presence of a clear strategy and regulatory framework and better access to capital will be essential to stimulate investments.

The growth environment of the energy industry can offer quality formal jobs and generate income to promote human and technological development, reducing poverty and social inequality⁷ rates that are very characteristic of the region, as shown in the following figure. However, for the benefit of the transition to be equitable and realistic, public policies are required to promote a competitive environment to attract private sector investments, with special attention to the cost of energy, human rights due diligence and protection of indigenous and vulnerable peoples.

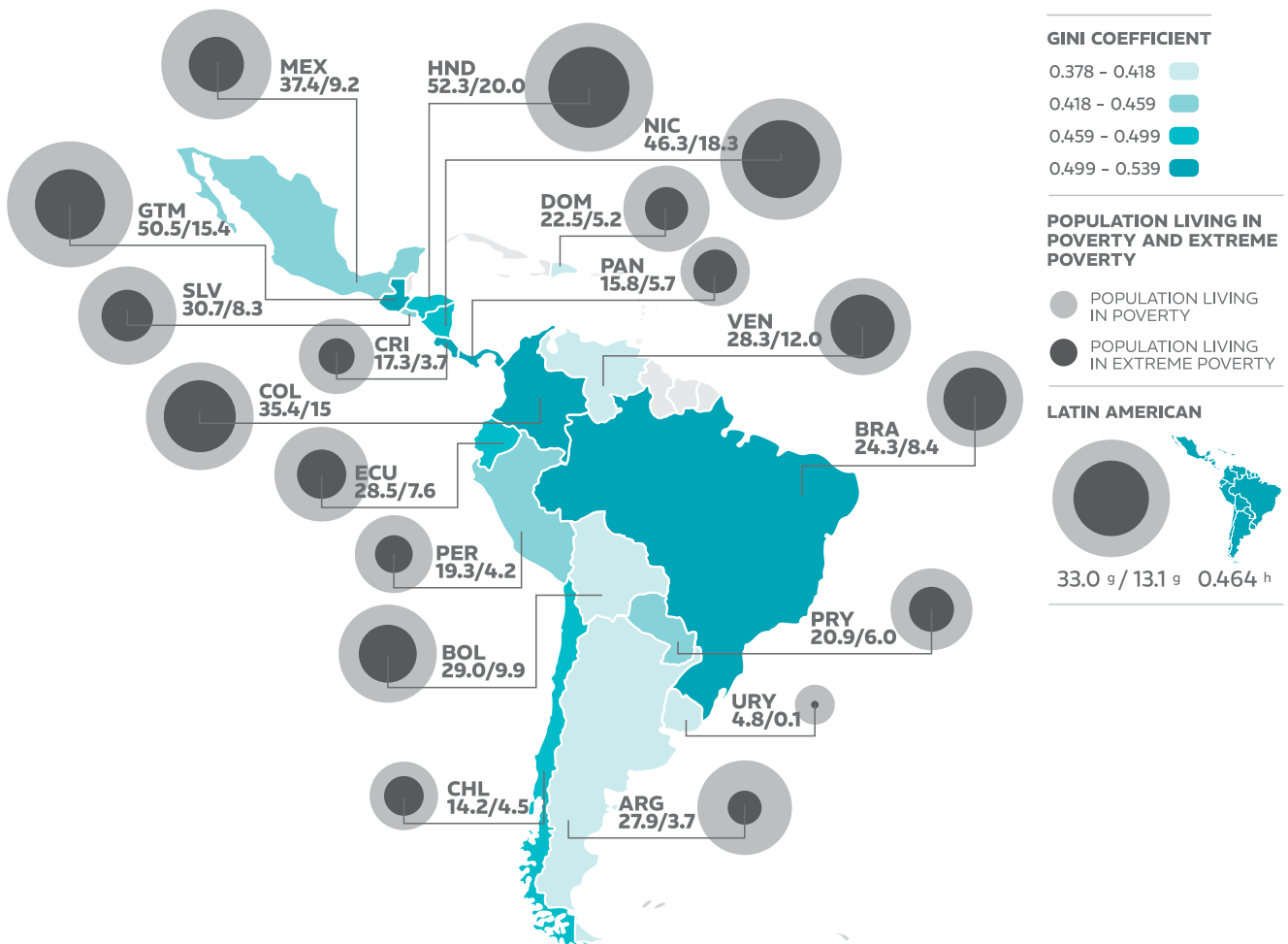
⁷ The Gini index is a statistical measure to evaluate the income distribution of a population, which varies between 0 (perfect equality) and 1 (extreme inequality).

In this context, just energy transitions facilitate equitable access to environmental, social and economic resources, in a complementary and mutually strengthening manner. Without this balance, there is a risk of neglecting the most vulnerable and marginalized populations, which could jeopardize social development and the very progress of the transition, and the competitive advantage of the industry in the region. It is important to remember that the planet, its climate and its air are shared resources on a global scale, whose quality and availability affect all of humanity.

Poverty and income distribution Population in situations of poverty^a and extreme poverty and Gini index^{[A]b}

Source:
ECLAC (2023)⁸

In percentages and values between 0 and 1
2021



[A] ECLAC, Household Survey Data Bank (BADEHOG)

^a Includes people who are in extreme poverty.

^b Data corresponds to 2021 except in the cases of: Guatemala, Nicaragua and Venezuela (Bolivarian Republic of), in which they correspond to 2014. Honduras corresponds to 2019, and Chile, El Salvador and Mexico correspond to 2020.

Note: The boundaries and names shown on this map do not imply their official endorsement or acceptance by the United Nations.

^c Urban area.

^d Weighted average based on estimated or projected figures for the corresponding year in 18 countries.

^e Simple average calculated based on the last available year. Includes 18 countries.

⁸ Additionally, in Suriname, it is estimated that 26% of the population lives in poverty, and in Guyana it rises to 43% (UNICEF).

02 | Expansion of energy supply



The transition towards sustainable development requires changes in the socioeconomic structure, with the capacity to meet the needs of the present, with more resilient economies, low in emissions and with a strategic approach that allows improving current living conditions, while conserving natural resources for future.

The region needs to eradicate poverty (both in general and energy poverty), develop, reduce inequalities and produce sustainable macroeconomic changes.

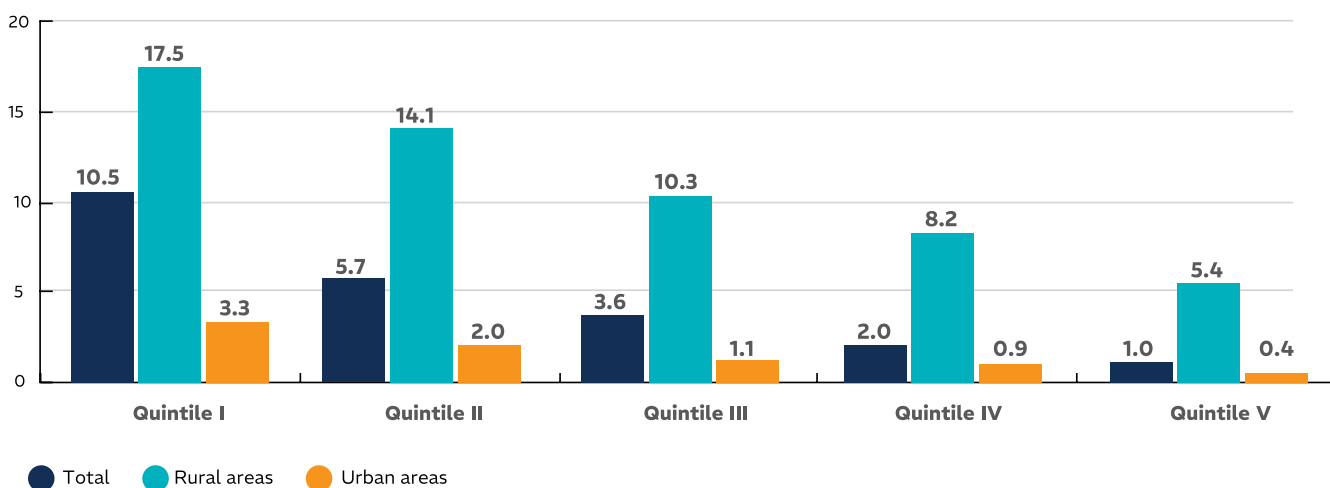
To achieve this growth with inclusion, the region faces the challenge of creating business environments that enable new investments aimed at expanding the energy supply with clean, accessible technologies, a diversified energy matrix and promoting efficient energy demand.

Energy poverty does not only consist of the lack of access to energy, it also implies deficiency in the use of energy at the residential level. It is the combination of three factors: low family income, high energy prices and low energy efficiency of housing. So, to achieve a virtuous circle it is essential to advance in the improvement of the indicators related to these three factors.

According to the IEA⁹, 17 million people in the region lack access to electricity and 74 million do not have access to clean energy for cooking. Most people who are not connected to electricity in the region live in rural or isolated areas, as shown in the following figure.

Latin America (16 countries): proportion of the population without access to electricity, in rural and urban areas and total, by income quintile, last year with available information
In percentages

Source: ECLAC (Economic Commission for Latin America and the Caribbean), based in CEPALSTAT (online database): <https://statistics.cepal.org/> and Household survey database (BADEHOG)



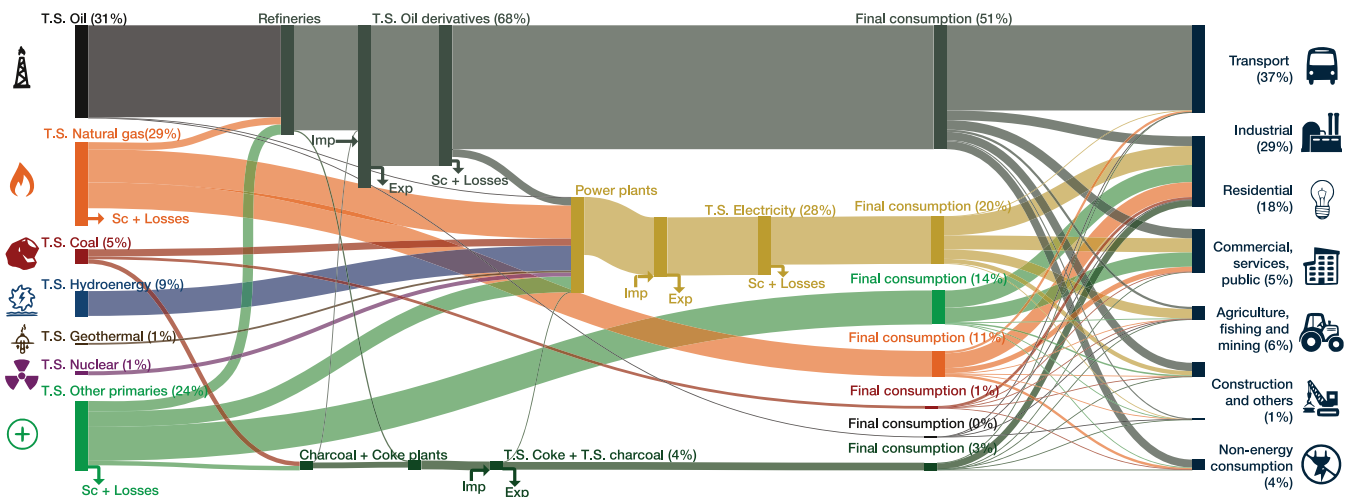
Note: Countries included are: Bolivia (Plurinational State of), Colombia, Costa Rica, Ecuador, El Salvador, Paraguay, Peru and Uruguay with information of 2017. Honduras, Mexico and Dominican Republic with information of 2016, and Guatemala, Nicaragua and Venezuela (Bolivarian Republic of) with information of 2014.

The average household energy consumption in the region is 18% of the total energy consumed, as shown in the following graph, with prospects of increase to satisfy the demand of the population that today does not have access to energy. This perspective has its correlation in the rest of the sectors, given that its increase also means forecasting the increase in aggregate demand in the rest of the sectors.

⁹ Latin America Energy Outlook 2023

Energy flows in Latin America and the Caribbean 2021

Source: Energy Panorama of Latin America and the Caribbean 2022 - OLADE



More than 60% of the current regional energy matrix is based on hydrocarbons. In the region's energy balance, fossil fuels represent an essential source of energy for various segments, especially petroleum derivatives for the transportation sector, and gas for the industrial sector (including electricity generation).

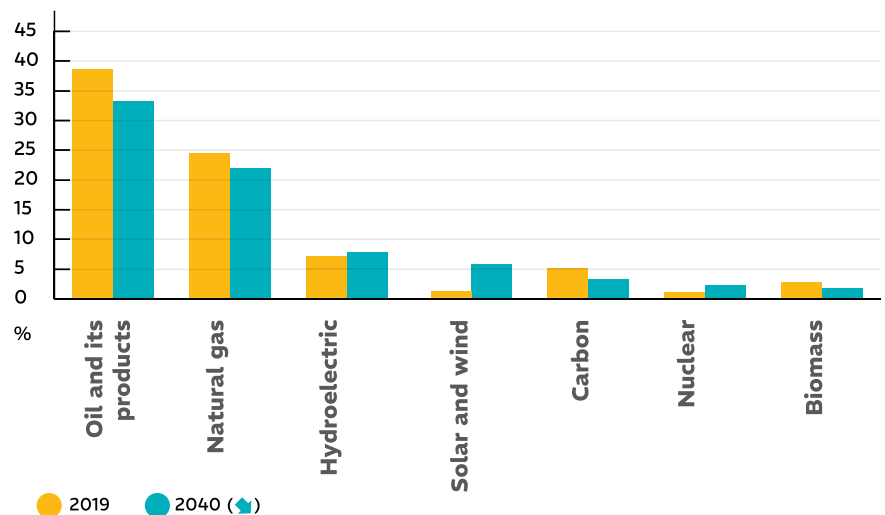
The future energy matrix required to satisfy the growth and development of the region, in accordance with the emissions quota established in the Paris Agreement, includes both renewable energy sources and fossil fuels. Regional initiatives aimed at the generation of renewable energy can allow this diversification of the energy matrix with a reduced social impact, compared to other regions of the world. In this transition, the addition -rather than the replacement- of sources is emphasized, which turns out to be an efficient strategy under the particular conditions of the region, as shown in the following figure.

It is likely that the supply diversification process will require the use of hydrocarbons at least until 2050, and this must be accompanied by the necessary investments, which would match the region's access to capital. It should also be considered that natural gas can complement the introduction of new energies on the path to reducing GHG emissions.

LAC: Total energy supply and demand based in current policies

Real and projected

Source: OECD et al. (2022) based in IEA (2021)



Overcoming the barriers to the development of new alternative energy sources to fossil fuels requires a framework of innovation, cooperation, and integration throughout the region.

To achieve this, the progressive construction of innovation ecosystems is essential, made up of a new culture of renewability, energy efficiency, security, and resilience, in which educational policies, and investment and regulation instruments converge.

03 | Challenges for decarbonizing traditional businesses



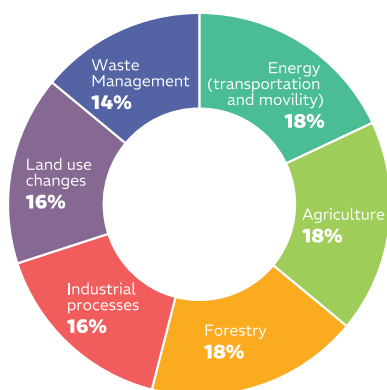
Sustainable development calls for a shared commitment by the international community in pursuit of a mutual and genuine effort. Decarbonization is an extremely relevant aspect to mitigate climate change. The sectoral initiatives configured in the private sector result in climate change mitigation and adaptation programs. Some countries, to make their contributions (NDC) a reality, develop regulatory frameworks that include guidelines for the preparation of sectoral plans, as shown in the following figure, which are part of their National Plans for Climate Change Adaptation and Mitigation.

Through the analysis of national circumstances, countries identify the key variables that explain the level of GHG emissions in the different sectors of the country. Energy generation and consumption, transportation, mining, agriculture, livestock, forests, and waste generation largely explain the behavior of emissions. Likewise, some of these sectors, such as energy, mining, or agriculture-livestock, have strategic value for the development of the region, and together, they play a fundamental role in meeting human development needs.

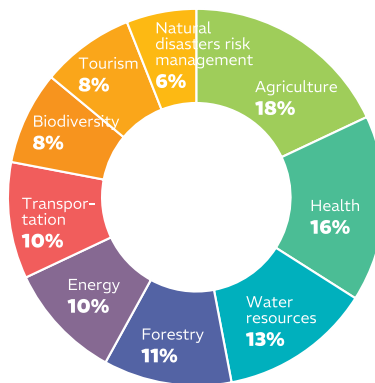
Sectoral distribution of NDC goals in 14 selected countries in LAC

Source: OECD et al. (2022)
based in UNFCCC (2021)

Panel A: Sectoral distribution of NDC mitigation goals



Panel B: Sectoral distribution of NDC adaptation goals



Note: Brazil is not included because its NDC does not include information disaggregated by sector

The policies and regulations implemented to achieve the NDCs impact the SDGs considered in the 2030 Agenda, so it is important that the industry makes adaptations to its plans so that they are effective and at the same time contribute to the fulfillment of the strategic objectives of each country. The plans and initiatives of the industrial sector must take into consideration the pillars established by national energy policies and strategies and ensure that they implement metrics that demonstrate the contribution that the industry makes to the reduction of GHG emissions, including the incorporation of renewable energy in its energy offer. Therefore, sectoral objectives aligned with the NDCs are a relevant basis for defining business strategies for investment in decarbonization and innovation towards new businesses in renewable energy.

The oil and gas industry plays a relevant role in the region's economy because it contributes to job creation and to governments through the payment of taxes, foreign direct investment and other types of income. Likewise, it contributes to society in general through the research and development of technologies and new products, investing in long-term social and economic development of the communities in which it operates, and managing the impacts of its operations, prioritizing environmental protection, health, safety, and human

rights. With such representation, the oil industry began its sustainability trajectory focused on increasing efficiency and reducing operational emissions and, in parallel, investing in the research of decarbonization alternatives, especially those that have synergy with its assets and technical knowledge.

The sustainable development of Latin America and the Caribbean requires a strategy that allows the use of regional resources and existing infrastructure to leverage the transformation process necessary in the transition.

Gas plays a very relevant role in the energy transition process that the world requires. Natural gas is a light hydrocarbon, which is less carbon intensive than oil and coal. Our region has this source of energy in abundance, representing a great opportunity in its use with appropriate technologies and high operating standards, as a source of energy for industry, transportation, and a very reliable complement to an energy matrix with a high percentage of renewables. The intermittency of the supply of renewables can be supported with an optimal stock of natural gas accumulated in the gas pipeline network, much of it already available, which can act as an energy lung when renewable sources are not available: wind, solar, water, etc.

Gas and oil are energy sources required for a transition that claims to be fair, which is why it is necessary to ensure a level of investment that allows, on the one hand, to maintain their production and availability, but also to incorporate changes and requirements associated with the transition towards a sustainable and low-carbon energy matrix. This involves investments and actions focused on areas such as: expansion of energy supply, energy and operational integration and efficiency, carbon capture and technological development.

The gas and oil industry in the region is called to plan its new strategies aiming to develop its production more efficiently, always considering that its activities reduce environmental impacts, and to participate in new businesses related to the renewable energies abundant in the region, contributing to solving the energy trilemma: energy security, energy affordability, and environmental sustainability.

The hydrocarbon sector plays a key role in financing the energy transition, being a recipient and mobilizing agent of investments. Most companies in the sector are investing in renewable energy generation projects, in R&D focused in transition technologies and in initiatives to achieve the SDGs. Likewise, companies that invest in capital-intensive projects can work in coordination with governments and multilateral development organizations to help guide investment flows. Additionally, the sector manages to adapt to a challenging context and has the capacity to contribute to

sustainable finance principles and initiatives, such as the Stockholm Declaration, the Monterrey Consensus, the Addis Ababa Agenda and the UNFCCC, among others.

Effective participation in the process of energy transitions demands a great commitment on the part of the industry since its strategies, investments, and the influence of its activities on society, need to be closely framed under the NDCs and the associated policies and regulatory frameworks of the countries where it operates.

In this context, sector investments must be consistent with the commitments acquired by the countries and define appropriate goals and objectives, in addition to quantifying their contribution to the aforementioned NDCs.

Without a doubt, the industry, within the framework of the decarbonization of traditional businesses, can make investments to guarantee universal access to energy, seeking the incorporation of renewable sources and ensuring its growth, both in technology and use.

04 | Opportunities in renewable energies



The energy transition process can be framed by effective participation of society to reduce its negative impacts, especially on vulnerable groups, and provide adequate technological growth accompanied by the corresponding training, as well as participation in the benefits of this transition, reflected in an improvement in their quality of life, their access to energy, and the coverage of their basic life needs. The development of new technologies, particularly those with low emissions, opens business opportunities for the industry. The energy transition process and the involvement of renewable energies on a larger scale will bring benefits to the industry, which must be shared with society, especially with the most vulnerable groups in the region where it operates.

The gas and oil sector in the region has extensive technical experience and the infrastructure that can be shared to contribute to the development of renewable energies, considering in its energy supply plan the participation of geothermal, wind, hydro, and biomass

energy sources, among others, always considering the potential of each region.

In summary, the oil and gas industry has extensive management capacity in the transitions to renewable energies, being also just, with several approaches, depending on the activity that predominates its process and its degree of influence on the energy production, so some specific opportunities are presented below.

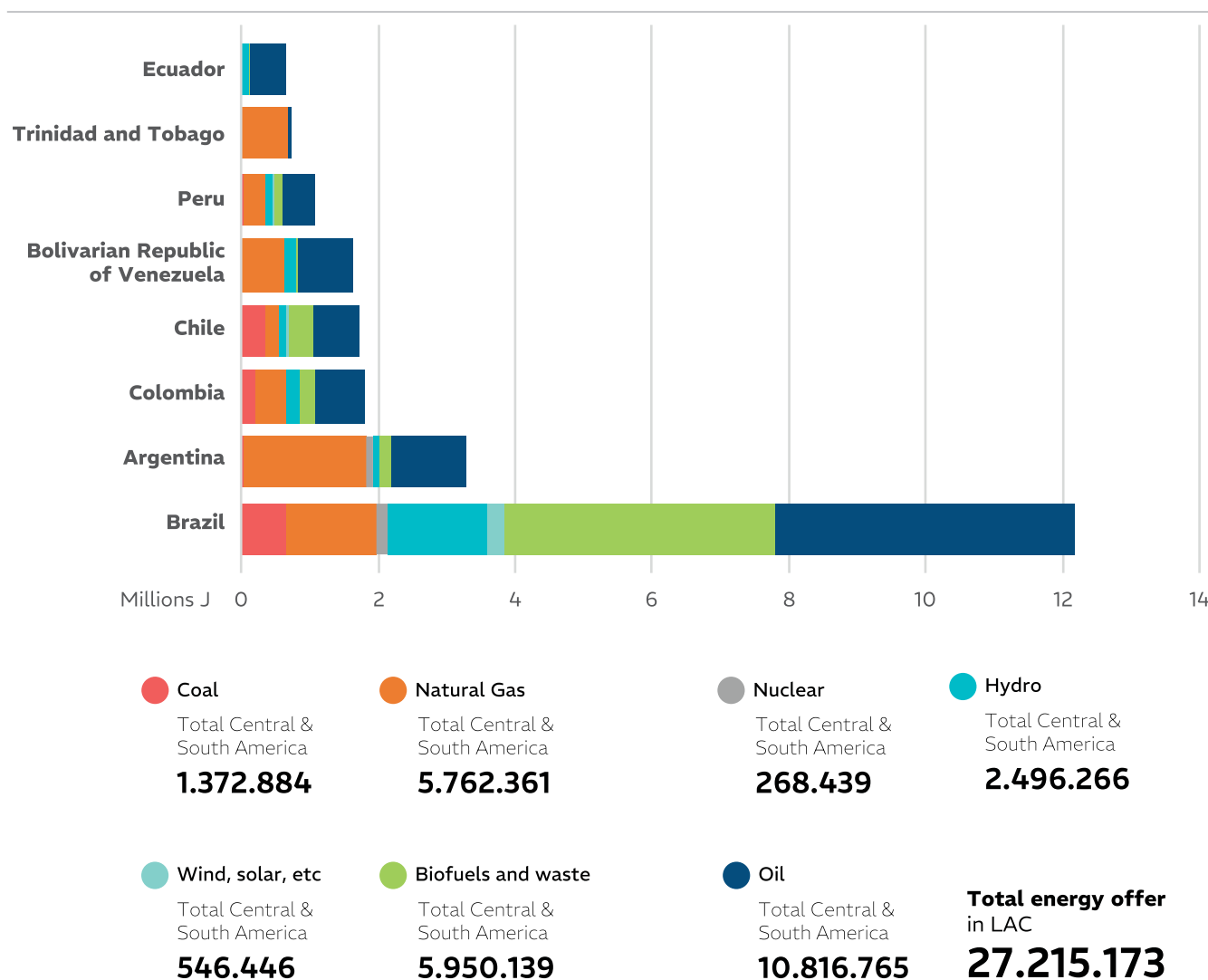
Hydroelectric energy and biomass are present throughout the region. Likewise, there are other specific renewable energy sources for which there is great investment potential in technological development and infrastructure, or in the development of new businesses, as they would allow generating energy at a lower cost, with fewer emissions and diversifying the energy matrix in the countries that are currently dependent on imported fossil fuels, as is the case of Central America and its geothermal potential.

Latin America has the potential to increase its commercial-scale solar and wind energy capacity by more than 460% by 2030 if all 319 gigawatts (GW) of potential new projects in the region come online, according to a report by Global Energy Monitor. -GEM 2023. Together with existing distributed and smaller-scale solar capacity, Latin America will be on track to meet, and potentially exceed, the International Energy Agency's (IEA) 2030 regional net zero renewable energy targets if it implements all your possible larger scale projects. Competitive renewable resources can also boost low-cost, low-emission hydrogen production, which can help decarbonize heavy industry and freight transportation domestically and internationally.

In its recently published report, the IEA outlines the region's detailed potential for various renewable energy sources. It indicates that bioenergy, particularly biofuels, can help countries in the region meet both energy security and emissions objectives. Brazil, for example, is a leading producer and consumer of biofuels, with bioethanol fueling a significant portion of the energy used in road transportation. Advanced biofuels have considerable potential in LAC, which could become a major global exporter of kerosene for bioreactors, leveraging its current production capacity. Biogas and biomethane have untapped potential, but supportive policies are needed to stimulate their deployment in power generation and transportation.

Total energy offer in LAC. % of renewables.

Source: [https://www.iea.org/regions/central-south-america & Mexico](https://www.iea.org/regions/central-south-america&Mexico)

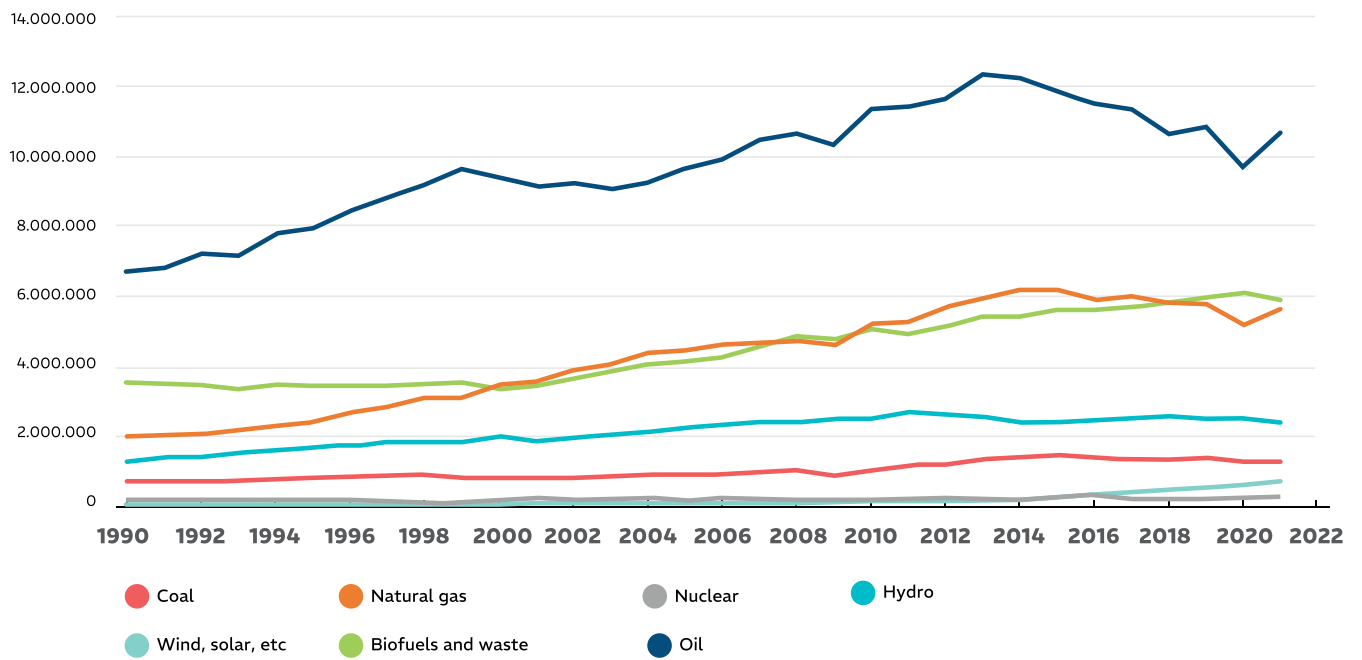


¹⁰ Latin America Energy Outlook 2023

In 2020, electricity from renewable sources reached 60% (see graph below). Here, the gas and oil industry still has room to continue expanding the use of electrical energy from renewable sources to decarbonize its processes since - being large energy consumers - this represents a significant contribution to the energy transition.

Electricity generation in LAC by source % of renewables.

Source: [https://www.iea.org/regions/central-south-america & Mexico](https://www.iea.org/regions/central-south-america%20&%20Mexico)



05 | Energy transition and SDGs



An energy company can impact the 17 SDGs, increasing its positive contributions and mitigating negative impacts, especially because it is part of the global energy system, as well as because of its economic importance and the social and environmental impact of its activities. Additionally, some of these goals present specific challenges for the industry, especially SDG 13 on climate action.

On the other hand, the objectives of the Paris Agreement imply a transformation of the energy system, to guarantee access to affordable, reliable, and sustainable energy, while moving towards a global energy system with net zero GHG emissions in the second half of this century. Meeting this global challenge is essential for the growth of strong economies, sustained improvements in quality of life and for eradicating poverty.

In 2021, ARPEL published the roadmap to boost the contribution to the SDGs of the Association and its partners, establishing a framework for action and a shared work agenda. This defines priority objectives, key impact opportunities, and several lines of action. Furthermore, the annex includes a selection of indicators related to the SDGs most relevant to the energy sector, following the joint IPIECA and WBCSD roadmap to accelerate action for sustainable development. These indicators have the potential to promote inclusion, protection, and regional development in the context of the energy transition, transcending the responsibility of companies to develop strategies and plans for conversion, dismantling and/or sale of assets, so that no one is left behind, among workers, suppliers, and communities. The incorporation of the SDGs into the business strategy makes it possible to address the needs of society, promote innovation, adapt operations, and exert influence throughout the value chain.

The relationship between the SDGs and company strategy is influenced by various factors, such as the type of current and future business, issues inherent to the sector, the predominant risks for the company and the most pressing problems in the context of each country. In regions where companies operate or plan to operate, it is essential to carry out a detailed socioeconomic and environmental analysis to obtain a deep understanding of the potential risks and value creation potential associated with these operations.

This implies proactive and collaborative action so that the results of the energy transition initiatives favor compliance with the SDG indicators.



The application of the SDGs in business strategy requires adaptations without losing its sense of urgency, considering the contribution to the 2030 Agenda. The following chapter suggests some metrics to monitor the performance of companies in the sector in the just energy transitions of traditional businesses and new energy businesses, and is inspired by some indicators of the SDGs, especially SDGs 7, 9 and 12¹¹.



¹¹ See definition in annex

06 | Pillars and metrics for just energy transitions



This chapter aims to translate the main aspects of just energy transitions into metrics that allow, in the routine of business activities, the development, evaluation and comparison of different initiatives and projects. Systematically disseminating the results of these metrics will help provide transparency into their progress.

ARPEL member companies play an important role in the sustainable development of Latin America and

the Caribbean, contributing to achieving a just energy transition with respect for human rights, expanding efforts to reduce social inequalities and energy poverty, and acting to expand regional development opportunities. To track metrics in this context, the two main topics considered by the industry are: expanding the supply and access to low-carbon energy and profitable decarbonization and expanding job and training opportunities in low-carbon businesses.

6.1 / Expanding supply and access to low-carbon energy and profitable decarbonization

6.1.1 / Pillars:

- Monitoring of decarbonization goals and commitments linked to the NDCs and monitoring of the SDG indicators.
- Ensuring that regional potentials and vocations are considered in business evaluations, promoting positive impacts, and contributing to the common goal of expanding universal access to energy.
- Investment in new energies and decarbonization of traditional businesses, which maximize efficiency.
- Maintenance of a common agenda with governments and communities with the objective of reducing energy poverty (role of the company in the transformation of demand/social justice).
- Promoting public policies and investments that support just transitions, including competitive access to capital.
- Contribution to satisfying the demand of customers and surrounding communities with low carbon alternatives.

6.1.2 / Metrics:

- 1. Energy supply (ODS 7.b.1 & ODS 12.a.1¹²):** renewable or low-carbon energy generation capacity by region, by company, and by year (in MW, % of basket, % of regional potential, number of favored people considering average regional consumption).
- 2. Investment in clean energies:** % of low-carbon CAPEX/total CAPEX.
- 3. Low-carbon products offer:** carbon intensity of the product basket (gCO_{2e}/MJ).
- 4. Emission reduction:** % annual operative and value-chain emissions reduction.
- 5. Emissions mitigation hierarchy:** marginal cost of abatement of decarbonization projects and new energy projects implemented (US\$/tCO_{2e} & % with regards to a reference carbon tax).
- 6. CAPEX responsibility in new projects:** CAPEX/avoided emissions (US\$/tCO_{2e}).
- 7. Cost of renewable energy produced:** LCOE (US\$/MW).
- 8. Regional development:** Progression of the Human Development Index (HDI) of the regions of operation and influence.
- 9. Population with access to electricity (ODS 7.1.1):** % by region and areas of operation.
- 10. Population with primary access to clean fuels and technologies (ODS 7.1.2):** % by region and areas of operation.
- 11. Reduction of inequalities:** Progression of the Inequality-Adjusted Human Development Index (IHDI) or the Gini index of the regions of operation and influence.
- 12. Access to competitive capital:** index rate for investments in energy transition projects.

¹² See definition in annex

6.2 / Expanding employment and training opportunities in low-carbon businesses

6.2.1 / Pillars:

- Taking advantage of the generation of quality jobs through low-carbon businesses, maintaining recognized labor and safety standards, and equal access to opportunities.
- Commitment to retaining, training, and reassigning its own workers in low carbon companies.
- Cooperation with educational institutions and knowledge ecosystems to develop the skills of workers in new value chains.
- Taking advantage of new association models for the development of local entrepreneurship.
- Capacity building of business leaders to promote the inclusion and expansion of ESG initiatives¹³.

6.2.2 / Metrics:

- 1. Jobs generated in new low-carbon businesses (ODS 9.2.2¹⁴):** opportunities, per year, per gender and per region of operation, direct and indirect (quantity in days-person & %).
- 2. Employees relocated in low-carbon businesses:** opportunities, per year, per gender and per region of operation (number & %).
- 3. Low-carbon knowledge development initiatives (ODS 9.5.114):** research projects, joint laboratories, partnerships, and patents (annual quantity, cumulative value & % with regards to other topics; number of training hours per region and per income group).
- 4. Investment in technological development for low carbon energies:** amount invested in R+D and Corporate Venture Capital (annual, cumulative amount & % with relation to other topics).
- 5. Training the workforce in just energy transition:** trainings per year, per gender and per job (quantity & %).

Additionally, considering that just energy transitions have a marked characteristic of collaboration and commitment, it is also important to monitor the initiatives of companies with their stakeholders (employees, suppliers, government, and communities where they operate) to take advantage of and accelerate generation of socio-environmental value from the energy transition. Some of these may be:

- Actions to involve workers and other stakeholders in decision making.
- Promotion of energy communities.
- Alliances to enable new ventures that generate sustainable jobs.
- Forums and actions to share knowledge and practices with peers and organizations.
- Commitment actions and support to suppliers on their path towards a just energy transition.
- Actions to support the development of competitive local supply chains.
- Initiatives to improve the traceability of the origin of purchased products and raw materials.
- Actions to preserve biodiversity in the region around new investments, units in operation and dismantling of facilities.
- Actions to support (social) projects to protect communities vulnerable to climate change.
- Initiatives for the development and diversification of communities dependent on operational businesses.

¹³ Environmental, Social & Governance

¹⁴ See definition in annex.

07 | Financing of energy transitions



Companies in the oil and gas sector, public and private, play an essential role in social and economic development, supplying energy that mobilizes society, providing foreign exchange, employing labor, promoting fiscal surplus and in some cases collaborating with the equilibrium of the trade balance. On the other hand, the financial trend in the energy sector is reversing and it is expected that, in 2023, for the first time in history, investment in solar energy will exceed that in oil, according to IEA projections. It is projected that for every dollar invested in the hydrocarbon sector, 1.7 dollars will be invested in clean energy, when this relationship was 1 to 1, five years ago.

Capital spending on physical assets for energy and land use systems for the transition to net zero emissions between 2021 and 2050 would total approximately \$275 trillion, or \$9.2 trillion per year on average, of

which, 3.5 trillion would correspond to expenses on low-emission assets, which are added to the almost 6 trillion that are currently spent in these sectors. The total amount over the course of the period considered would represent 7.5% of global GDP. For Latin America, the investment would be equivalent to 9.4% of GDP, with an average annual amount of 0.7 trillion¹⁶.

Financing in just energy transitions is related to the protection of economic resources in an equitable and sustainable manner to drive changes in the energy system towards cleaner and renewable energy sources.

¹⁶ McKinsey & Company, 2022

In this context, the term “just” is fundamental, because it refers to ensuring that the costs and benefits of energy transitions are distributed equitably between different social and geographic axes, avoiding disproportionate negative impacts on vulnerable communities. For the financing of just energy transitions, the following aspects should be considered:

1/Equity in the distribution of costs and benefits:

The energy transition involves significant investments in renewable infrastructure and technologies that support an economy with lower GHG emissions. Furthermore, the economic and environmental benefits of the transition must also be shared equitably.

2/Support for affected communities:

Communities that are economically dependent on extractive industries may face economic and social challenges during the energy transition. Financing must include measures to support labor retraining and the development of new businesses necessary for the growth and sustainable development of these areas.

3/Social approach:

Decisions on planning and financing the energy transition must be inclusive, considering the voices of diverse communities, ethnic groups, and civil society organizations. The meaningful participation of these stakeholders is essential to ensure that their needs and concerns are addressed. In this context, it is also necessary to intensify the development of human capital to involve transdisciplinary knowledge of local and global environmental problems in their daily activities.

4/Sustainable technology approach:

Financing could focus on the implementation of sustainable technologies for mitigation and adaptation to climate change, such as renewable energies and nature-based solutions for CO₂ capture, and on R&D of those technologies that require it. Low-emission technologies may require higher initial investments, so developing countries may need financial and technological support to adopt these technologies effectively and reap their long-term benefits.

5/Public policy

It is important to generate a competitive and attractive environment to encourage private investment in renewable energy projects.

This includes establishing clear and predictable policies and regulatory frameworks. Equitable environmental debt mechanisms can also be instituted, and debt swap mechanisms created to develop instruments so that the public sector is able to strengthen adequate policies, regulations and infrastructure.

6/International funds:

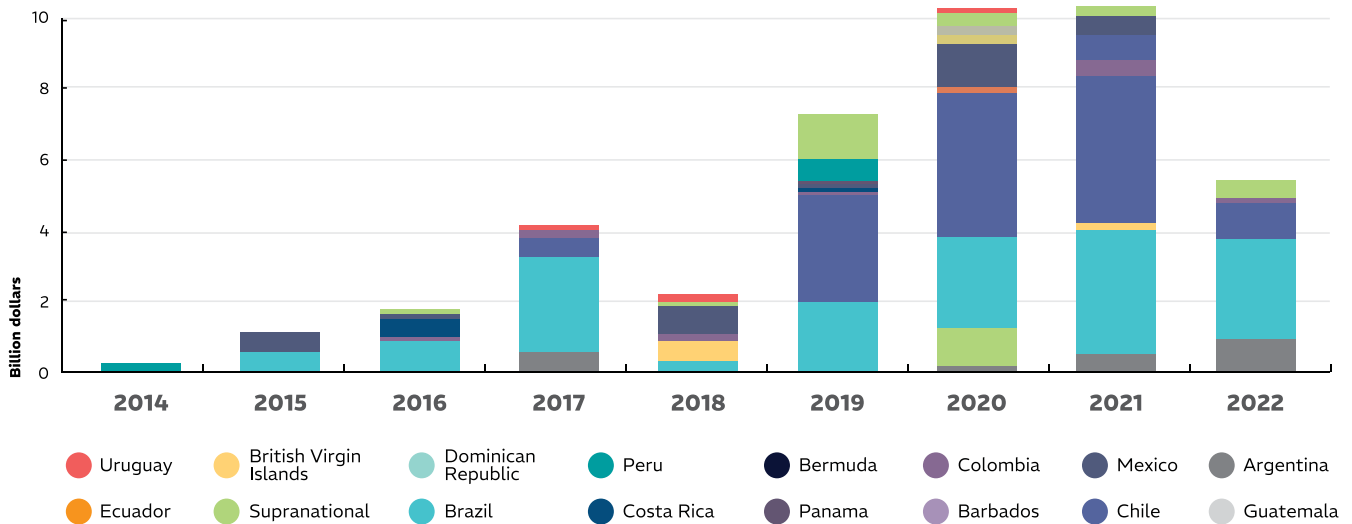
Just energy transitions have often been enabled through international agreements and financial cooperation. In the case of developing countries, the support of developed countries and multilateral organizations that promote the energy transition is essential. Likewise, governments can promote the development of capital markets that contribute to energizing private initiative and mobilizing public-private projects. International funds, including those dedicated to climate change, can contribute to the financing of clean energy projects in developing countries. Another alternative is the creation of political and technical forums to explore solutions for climate financing, ensuring equitable representation of developed and developing countries to establish a roadmap aimed at mobilizing the necessary funds.

7/Thematic bonds:

The issuance of thematic bonds, both green and sustainability, can also contribute to the financing of just energy transitions. In the case of Latin America and the Caribbean, market growth has been evident since 2019 through the participation of countries such as Brazil, Chile and Mexico.

2021: record year for Green Bonds in Latin America and the Caribbean

Source: Climate Bonds Initiative



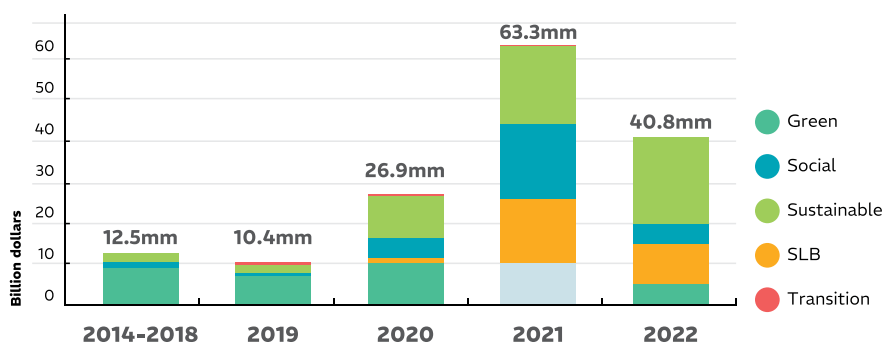
It is important to note that the energy sector is the one that obtained the most financing in 2020 since it represented 44% of the total accumulated amount financed. 95% of the bonds issued by Argentina, Barbados, Bermuda, Costa Rica, Peru and Uruguay were destined for this sector¹⁷.

Most public sector emitters tend to allocate funds to the energy sector; while, in the private sector, allocations are more varied between the energy, transportation, land use and water sectors.

Below are the amounts of thematic bonds issued in Latin America and the Caribbean in the period 2014 to 2022, which shows the significant increase in sustainable bonds starting in 2019.

2021: record year for Thematic Bonds in Latin America and the Caribbean

Source: Climate Bonds Initiative



Green bonus: exclusive financing of projects with a clear environmental benefit (renewable energy, biodiversity conservation, sustainable transport and green construction projects)

Social bond: exclusive financing of projects with a positive social impact, especially on vulnerable groups (food security, education and access to basic infrastructure)

Sustainable bond: financing a combination of green and social projects.

SLB Bond: linked to sustainability, unlike the previous ones, the benefits of the issue are not linked to specific social or green projects or assets, but to company commitments linked to sustainability.

Transition bonds: finance projects and initiatives associated with the energy transition of companies that generate high levels of greenhouse gas emissions.

¹⁷ Market status in Latin America and the Caribbean 2021, Climate Bonds Initiative

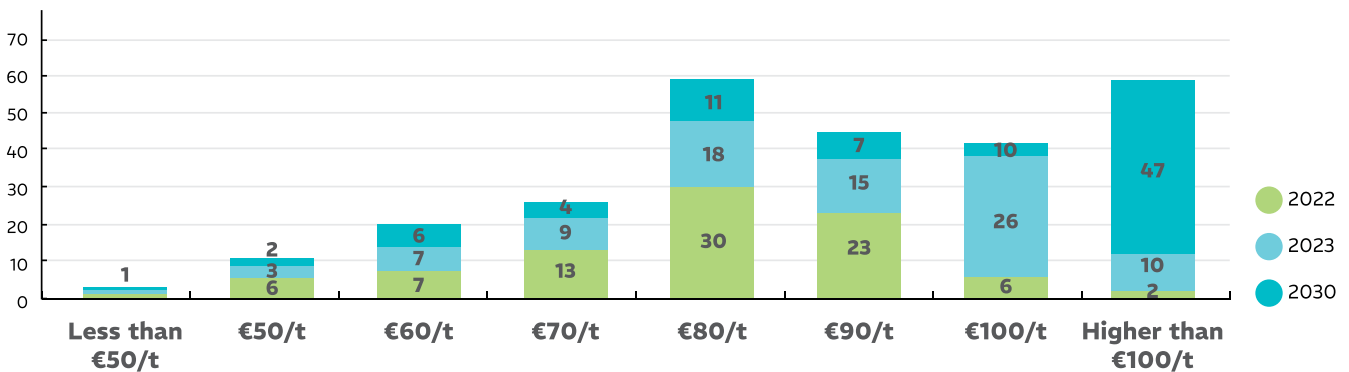
It is necessary to highlight that in 2022 a Common Taxonomy Framework for LAC was developed, published in July 2023, led by the United Nations Environment Program (UNEP-FI), with the participation of the World Bank, UNDP, ECLAC, IMF, IDB, CAD, FAO, ISC and Euroclima+, which focuses on mitigation and adaptation. This provides a common framework to guide the development of the LAC taxonomy to improve comparability and ensure interoperability of sustainable finance taxonomies in the region considering local specificities.

8/Voluntary markets:

Through these markets, companies and organizations can buy and sell carbon credits with the aim of reducing their carbon footprint and contributing to the mitigation of climate change. The potential for such markets in the region is high due to the capture that can be achieved, determined by the characteristics of the forest area and the costs incurred in accordance with local regulations and characteristics. The expectation of an increase in international carbon prices improves the outlook for the financial viability of the projects. The following graph shows the outlook for the average carbon price in Europe because of the development of carbon markets, unlike LAC, which does not have a regulated regional market.

Carbon price perspectives in Europe Average

Source: Point of view, Voluntary carbon markets, Deloitte



The prospects for the medium term show a significant increase in the carbon price, which could even exceed €100 per ton of CO₂eq mitigated.

The previous graph has been included for reference and shows the current scenario and perspectives of the price (in Euros) of the ton of carbon, indicating on the (y) axis the number of tons mitigated in the projects, and on the axis (x) the price per mitigated ton.

9/Promotion of energy efficiency:

Energy efficiency is a key component of energy transitions. Investing in measures to reduce energy consumption is often highly efficient and can generate long-term savings and free up resources for additional investments in renewable sources.

The evolution of climate financing in LAC between 2013 and 2020 is included below, which is collected from a study (ECLAC) from which it is concluded that there is climate financing that has been allocated to Latin America and the Caribbean.

Evolution of climate financing in Latin America and the Caribbean, between 2013 and 2020

In millions of current dollars

Source: Own elaboration based on data published by Samaniego and Schneider (2019), IDFC (2021), AfDB (2021), CBD (2021). CBI (2018, 2019 and 2020) and virtual databases of the EIB, the WB, the Climate Funds Update and the Green Climate Fund

Year	Climate funds ^a	MDB	NDB	Other local resources ^b	Green bonds	Total
2013	347,80	5 923,5	11 884,0	2 463,20	0,0	20 619
2014	420,70	7 857,3	11 783,0	1 967,30	246,0	22 724
2015	403,70	8 293,1	9 622,5	1 662,20	1 063,8	20 682
2016	364,80	7 308,6	4 561,2	849,40	1 698,4	14 773
2017	371,50	11 827,20	5 567,5	717,20	4 201,9	22 685
2018	601,40	9 881,2	4 402,3	722,00	1 621,9	17 229
2019	624,10	10 886,6	2 542,0	868,50	5 035,7	19 957
2020	669,17	10 672,6	1 537,0	631,85	9 400 ^c	22 910
2013-2020	3 803,10	72 286,3	51 899,6	9 881,75	23 258,6	161 129

a Without 5% of the Amazon Fund that correspond to national resources in Brazil.

b Brazil, Colombia and Mexico: national climate funds and agricultural insurances; Chile: environmental protection fund.

c Data compiled from the CBI publication, 2021.

MDB=Multilateral Development Bank

NDB=National Development Bank

Given that projects related to decarbonization do not always have an attractive profitability due to factors such as the cost of new low-emission technologies and renewable energy, the support of developed countries, multilateral banks, private investors, and philanthropic organizations is imperative. Through reimbursable and non-reimbursable funds that allow financing their execution, for example, through energy transition mechanisms, that is, initiatives developed in association between countries with the participation of entities that can provide financing.

On the path of just energy transitions, it is important to highlight the specific challenge that public companies face because their actions are based on public policy and regulations issued by governments; Hence the importance of incorporating criteria and guidelines in regulatory instruments that support the energy transitions of public companies. Likewise, public policy must generate a favorable and attractive scenario for investment in transition projects towards cleaner energy by private companies.

Although there are several financing options for just energy transitions in Latin America and the Caribbean, through multilateral organizations, international cooperation, issuance of green and/or sustainable bonds, private banks, among others; companies in the oil and gas sector have generally been relegated in access to them because they are part of the sector that they hope to leave behind to promote cleaner or low-carbon energy, without considering that precisely these companies are pillars of access to energy. and energy sovereignty in several countries. In addition, thanks to their technical and human capabilities for the execution of large projects, these companies can be a fundamental part of the transition.

08 | Training, technological development, and supplier development



The trajectory of energy transitions requires the development of new technologies and a workforce with new knowledge. This is why it is a priority to establish mechanisms for the participation of future professionals in specific training in technologies related to renewable energy sources and other low emissions technologies. This requirement suggests that plans or agreements be made with the academic sector to encourage R&D of technologies, as well as

the implementation of training campaigns. Many of the countries in the region already have a scientific community, from public and private sectors, and a population educated in environmental issues, with the capacity for local innovation and regional cooperation. Another requirement that arises because of the above is the need to develop suppliers to diversify the supply chain. These requirements are developed in more detail below.

(i) Training

As mentioned in previous chapters, a people-centered approach ensures that the benefits and costs involved in transforming the energy system are distributed fairly and in a way that protects the most vulnerable sectors of society. For this to become a reality, strategies must focus on skills, decent jobs, and worker protection; social and economic development; and equity, social inclusion, and justice; in addition to involving people as active participants in said transition.

Energy transitions can create more than 1 million new jobs in energy supply by 2030, especially in the electricity sector and in the mining and processing of critical minerals, as well as in the oil and gas sectors as the region increases its production¹⁷. The Global Commission on People-Centered Clean Energy Transitions recognizes that local circumstances and clean energy pathways differ from region to region and therefore the new jobs required will not always be the same, they will not adapt to the same workers or types of skills, nor will they be of the same quality or remuneration. Additionally, energy transitions also pose challenges for workers and communities that depend on fossil fuels. The current decline in jobs in the hydrocarbon industry and its impact on communities highlight the need for proactive policies. The effects of these transitions for workers and communities dependent on fossil fuels and fossil fuel-dependent industries also require supportive policies and programs as economic opportunities change.

To mitigate the negative impacts on local jobs, the use and development of capabilities must be prioritized, with the required investment, and the necessary commitment to educational institutions associated with strategies and public policies of new training requirements. Furthermore, the renewable energy industry will need to develop new skills, including modeling, digital management, electronics, and telecommunications. New challenges will arise for this sector related to the large amount of data generated from thousands of wind platforms and millions of sensors to be installed.

Specific information is needed on the skills that will be required to train workers for jobs in the new economies. It is also necessary to align the education of the youngest in clean energy, to adequately train the workforce of the future.

Strategic design of the transition to cleaner energy by governments can minimize negative disruptions to employment and maximize opportunities for new quality jobs, across regions, by aligning with existing strengths, infrastructure, and skills, promote innovation, and identify opportunities in emerging areas. Establishing clear and transparent long-term energy transition strategies will help stimulate and de-risk private investment in clean energy sectors, and drive job creation.

In conclusion, while the energy transition presents important opportunities for job creation in cleaner energy sectors, it also requires a shift in workforce capabilities and proactive policies to support workers and communities affected by the decline in fossil fuel sectors.

This movement to train qualified labor must evolve in an integrated manner with two other work fronts: technological development and supplier development.

¹⁸ Key areas for policy action – Latin America Energy Outlook 2023 – Analysis - IEA

¹⁹ The Global Commission for People-Centered Clean Energy Transitions

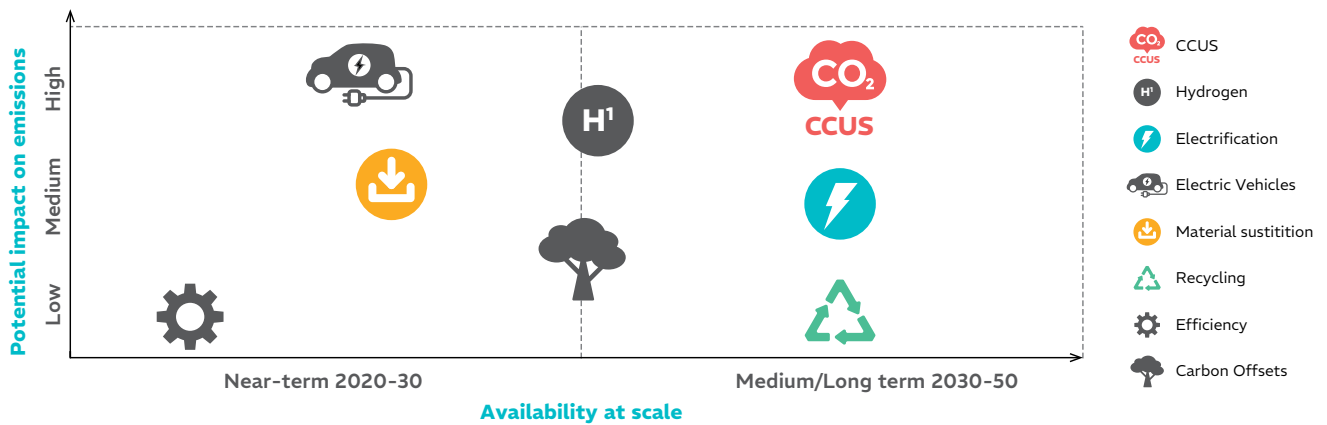
(ii) Technological development

We have the technological levers to reach an energy system with net-zero GHG emissions

By 2030, the pillars of the transition will be energy efficiency, the electrification of end uses, solar photovoltaic energy and wind energy. In the 2030s, emerging technologies will increase in scale if the right investments and effort are made. These include grid-scale batteries; new types of nuclear reactors; low-carbon hydrogen utilization and carbon capture and storage. Meanwhile, it is essential that, in this decade, a significant investment is made in the development of technology for direct capture of CO₂ from the air to reduce its cost in the following decades. In the longer term, other big bets, like those shown in the chart below, could be game changers. The following graph compares some of the main technologies in development with respect to their availability at scale and their potential impact on reducing GHG emissions.

Relative potential impact of emerging technologies

Source: S&P Global Commodity Insights



In the medium and long term, hydrogen, electrification and carbon capture and storage stand out as the main large-scale solutions.

However, the reality is that the massification of all technologies will be needed to effectively decarbonize the energy sector, including short-term emissions reductions and low-carbon options.

(iii) Development of suppliers

The transition depends on currently highly concentrated value chains

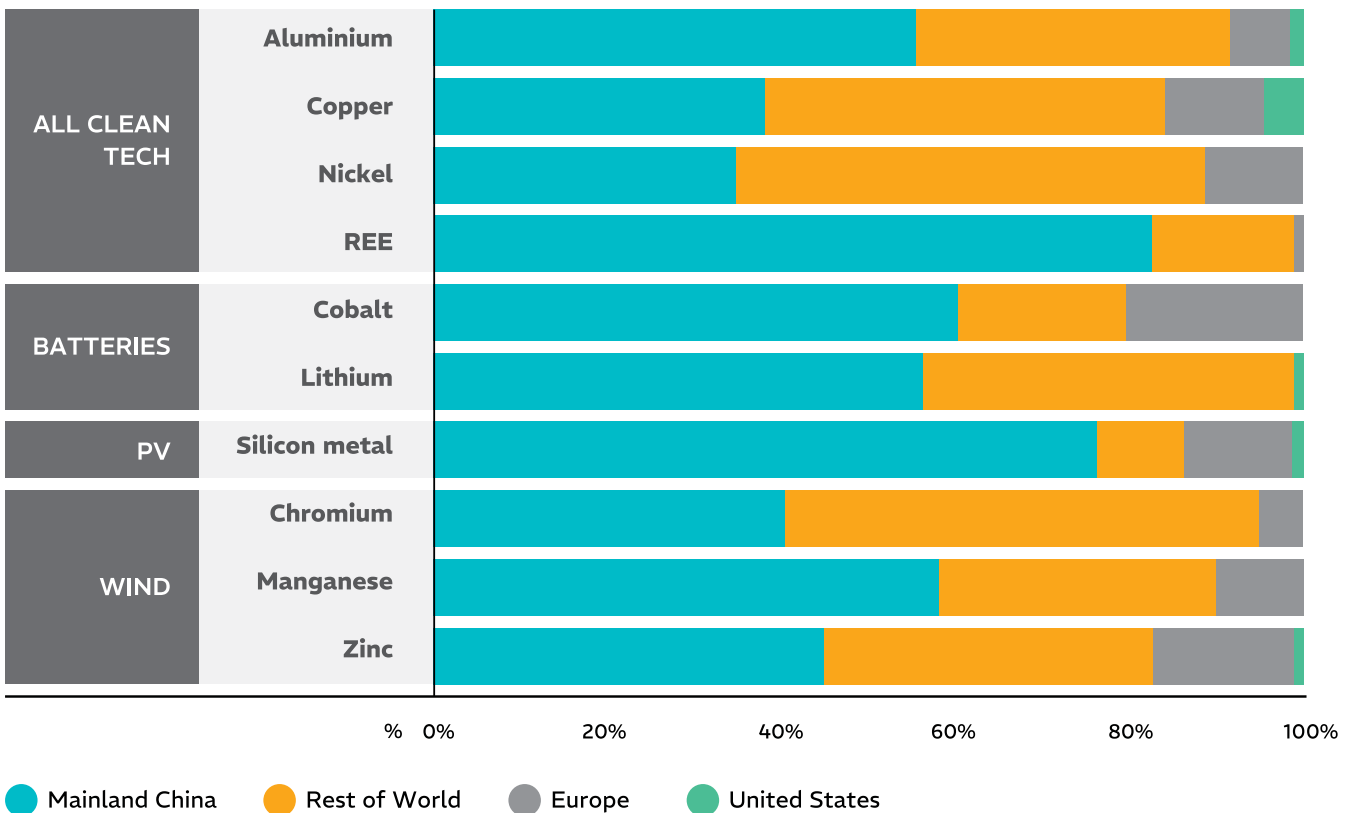
Greater diversification of supply chains could reduce their security risks. Supply chain risks crystallize around regional bottlenecks due to local content, reshoring requirements and availability of certain refined minerals.

By way of contextualization, it is important to consider that, although there are countries in the region with large reserves of the metals that will make the energy transition possible, such as Chile and Peru, which have approximately 40% of all copper reserves, or Brazil

and Argentina that have large reserves of graphite and lithium; It is China that dominates the global processing and refining industry of materials for renewable energy technologies, as can be seen in the graph below. 60% of electric car batteries and wind turbines, and 80% of the world's solar panels, are currently manufactured there. Chinese companies can also make many of these products at a lower price and on a larger scale than in other countries.

Raw materials processing²⁰

Source: S&P Global Commodity Insights



²⁰ There are other technologies not included in this graph, for example the use of solar energy as electrolysis to produce green hydrogen.

For the low-carbon energy system to scale successfully, manufacturers and technology players must secure and diversify their supply chains and drive standardization. To advance the transition, the following measures should be adopted:

Diversify supply chains:

Low-carbon technology companies must ensure their supply chains are robust and not dependent on suppliers from a single country. This means diversification, not decoupling.

Monetize the power of scale:

The benefits of large-scale production can accelerate the transition. Original Equipment Manufacturers (OEMs) should drive the scale-up of low-carbon technologies to reduce their costs and, consequently, their prices.

Balance innovation with standardization:

Technological advances can help OEMs and low-carbon technology companies reduce costs and improve efficiency. However, as technologies mature, players should set standards to drive industrialization. Conversely, lack of standardization could require endless and costly modifications.

It is worth highlighting again that energy transitions are a global and interconnected phenomenon, and do not represent a challenge only for the oil and gas or transportation industry, but for all industries that generate GHG emissions directly or indirectly, and for individual end consumers.

Conclusions:



ARPEL and its associated companies are committed to the search for a fair energy transition in Latin America and the Caribbean. We recognize the importance of balancing the path of environmental sustainability with social and economic development. We believe that by promoting a competitive environment to attract investment, providing adequate financing, and fostering collaborative dialogue, we can achieve a fair energy transition that benefits all stakeholders, and that contributes to building a sustainable future in the region.



We recognize the urgency of addressing global challenges related to the energy transition and the fight against climate change, and we are committed to playing a proactive and constructive role in this journey.



Our vision is clear: to work towards the success of the Paris Agreement, while promoting social and economic development in the region. We understand the complexity of energy transitions and are aware that they require a real-world transformation that affects all communities and nations. We also understand that it is essential to consider regional differences in our strategies. Latin America and the Caribbean is a diverse region in terms of energy demand and available resources.



At the same time, we must respect the legitimate right of developing nations to use their hydrocarbon resources responsibly, while working on their social and economic development priorities. It is important to highlight that the situation of each country in the region varies depending on its economic context and capabilities. The Paris Agreement reflects the principle of "common but differentiated responsibilities", recognizing that developing countries may need more financial and technical support to meet their climate commitments. Effective implementation of the Paris Agreement requires international cooperation and coordinated action at the global level.



We advocate the need for proactive leadership by developed nations and supranational organizations to support and finance energy transitions in developing economies.



Despite this, in recent years, companies in the oil and gas sector are facing barriers to accessing financing for decarbonization projects, without considering that these companies are precisely pillars of access to energy and energy sovereignty in several countries and which, thanks to their technical and human capabilities for the execution of large projects, can be a fundamental part of the energy transition.



Our region has a unique energy mix, with significant opportunities in natural gas and renewable energy. We believe natural gas plays a critical role in this transition, providing a less carbon-intensive energy source and supporting renewable energy. Likewise, we promote collaboration between industry, government, and academia to promote research and development of technologies related to clean energy.



We recognize that environmental protection must advance by ensuring that social needs are met, and that new forms of energy production, despite generating jobs and income, can also generate a negative social impact, since they are not implemented in demographic gaps. Therefore, to mitigate this impact, it is essential to focus on respect for human rights in all our relationships, both direct and indirect, throughout the entire value chain, with a special focus on the rights of indigenous peoples and vulnerable communities. We consider that full dialogue and effective participation of affected communities is essential for the successful implementation of a just energy transition.



It is crucial to promote the advancement of recognized business practices in the context of the just energy transition, applied in developing countries. Likewise, establish metrics that facilitate transparent monitoring of its impact on the performance of the SDGs in the region. We are committed to working collaboratively with governments, civil society and local communities to achieve these collective goals.

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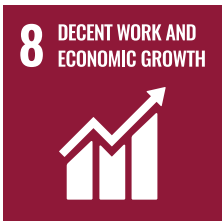
Annex

The following table presents the 7 objectives, 21 indicators and 26 sustainable development metrics considered most relevant for the evaluation and monitoring by our companies, related to the energy sector, to support decisions and demonstrate the positive regional impact of projects and initiatives on just energy transitions:



Ensure access to affordable, reliable, sustainable, and modern energy for all

GOALS	METRICS
<p>7.1: By 2030, ensure universal, reliable, modern, and affordable access to energy services.</p>	<p>7.1.1: Percentage of population with access to electricity</p> <p>7.1.2: Percentage of population with primary access to clean fuels and technologies</p>
<p>7.2: By 2030, substantially increase the share of renewable energy in the global energy mix.</p>	<p>7.2.1: Participation of renewable energies in the Internal Energy Supply</p>
<p>7.3: By 2030, double the global rate of energy efficiency improvement.</p>	<p>7.3.1: Energy intensity measured in terms of primary energy and GDP</p>
<p>7.a: By 2030, strengthen international cooperation to facilitate access to clean energy research and technologies, including renewable energy, energy efficiency and advanced, cleaner fossil fuel technologies, and promote investment in energy infrastructure and energy technologies clean.</p>	<p>7.a.1: International financial flows to developing countries to support clean energy research and development and renewable energy production, including hybrid systems</p>
<p>7.b: By 2030, expand infrastructure and modernize technology to provide modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing states and landlocked developing countries, according to their respective support programs.</p>	<p>7.b.1: Installed renewable energy generation capacity in developing countries (in watts per capita)</p>



Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.

GOALS

8.2: Achieve higher levels of productivity of economies through diversification, technological modernization, and innovation, including focusing on high value-added and labor-intensive sectors.

8.5: By 2030, achieve full and productive employment and decent work for all women and men, including young people and people with disabilities, and equal pay for work of equal value.

METRICS

8.2.1: Annual variation rate of real GDP per employed person

8.5.1: Average hourly income of employees by sex, occupation, age, and people with disabilities

8.5.2: Unemployment rate, by sex, age, and people with disabilities



Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.

GOALS

9.2: Promote inclusive and sustainable industrialization and, by 2030, significantly increase the industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries.

9.4: By 2030, modernize infrastructure and rehabilitate industries to make them sustainable, with greater efficiency in the use of resources and greater adoption of clean and environmentally sound technologies and industrial processes; with all countries acting according to their respective capabilities

9.5: Strengthen scientific research, improve the technological capabilities of industrial sectors in all countries, particularly in developing countries, including, by 2030, fostering innovation and substantially increasing the number of research and development workers per million people and public and private spending on research and development.

9.b: Support domestic technological development, research, and innovation in developing countries, including by ensuring an enabling policy environment for, inter alia, industrial diversification and value addition to commodities.

METRICS

9.2.1: Value added of the industry as a proportion of GDP and per capita.

9.2.2: Employment in industry as a proportion of total employment

9.4.1: CO₂ emissions per GDP

9.5.1: R&D spending as a proportion of GDP

9.5.2: Researchers (full-time equivalent) per million inhabitants

9.b.1: Proportion of value added in industries of medium and high technological intensity over total value added



Reduce inequality within and among countries

GOALS

10.1: By 2030, progressively achieve and sustain income growth for the poorest 40% of the population at a rate above the national average.

10.2: By 2030, empower and promote the social, economic, and political inclusion of all, regardless of age, gender, disability, race, ethnicity, origin, religion, economic or other status.

METRICS

10.1.1: Growth rate of household spending or per capita income between the lowest 40% of the population and the total population

10.2.1: Proportion of people living below 50% of the median income, by sex, age and people with disabilities



Ensure sustainable consumption and production patterns

GOALS

12.2: By 2030, achieve sustainable management and efficient use of natural resources.

12.6: Encourage companies, especially large and transnational companies, to adopt sustainable practices and integrate sustainability information into their reporting cycle.

12.7: Promote sustainable public procurement practices, in line with national policies and priorities.

12.a: Support developing countries to strengthen their scientific and technological capacities to shift to more sustainable production and consumption patterns.

METRICS

12.2.1: Material footprint, material footprint per capita and material footprint as a percentage of GDP

12.2.2: Domestic consumption of materials, (total, per capita and per unit of GDP)

12.6.1: Number of companies that publish sustainability reports

12.7.1: Degree of implementation of policies and action plans for sustainable public procurement

12.a.1: Installed renewable energy generation capacity in developing countries (in watts per capita)



Take urgent action to combat climate change and its impacts

GOALS

13.1: Strengthen resilience and adaptive capacity to climate-related risks and natural disasters in all countries

13.2: Incorporate climate change measures into national policies, strategies, and plans

13.3: Improve education, awareness and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning

METRICS

13.1.3: Proportion of local governments adopting and implementing local disaster risk reduction strategies in line with national disaster risk reduction strategies

13.2.1: Number of countries with Nationally Determined Contributions, long-term strategies, national adaptation plans, strategies reported in national and adaptation communications.

13.2.2: Total greenhouse gas emissions per year

13.3.1: Degree to which (i) education for global citizenship and (ii) education for sustainable development are integrated into (a) national educational policies; b) school curricula; c) teacher training; and (d) student evaluation



Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

GOALS

15.a: Mobilize and significantly increase, from all sources, financial resources for the conservation and sustainable use of biodiversity and ecosystems.

15.b: Mobilize significant resources from all sources and at all levels to finance sustainable forest management and provide appropriate incentives for developing countries to promote sustainable forest management, including for conservation and reforestation.

METRICS

15.a.1: Official development assistance in conservation and sustainable use of biodiversity

15.b.1: Income generated and financing mobilized from economic instruments relevant to biodiversity.



Strengthen the means of implementation and revitalize the global partnership for sustainable development.

GOALS

17.5: Adopt and implement investment promotion plans for less developed countries.

17.7: Promote the development, transfer, dissemination, and dissemination of environmentally sound technologies to developing countries on favorable terms, including concessional and preferential terms, as mutually agreed.

METRICS

17.5.1: Number of countries adopting and implementing investment promotion plans for developing countries, including least developed countries

17.7.1: Total amount of funding allocated to developing countries to promote the development, transfer, dissemination, and dissemination of environmentally sound and sound technologies.

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ARPEL is a non-profit association gathering oil, gas and renewable energy sector companies and institutions in Latin America and the Caribbean. Founded in 1965 as a vehicle of cooperation and reciprocal assistance among sector companies, its main purpose is to actively contribute to industry integration and competitive growth, and to sustainable energy development in the region.

Its members currently operate in more than 30 countries in Latin America and the Caribbean, including national and international operating companies; technology, goods and services providers for the value chain, and national and international institutions in the sector.

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