



# **EXECUTIVE SUMMARY**

# Achieving Our Green Future and Accelerating the Clean Energy Transition

Sustainability has rapidly come to the forefront for governments around the world, including those in the Americas. To build a greener future, countries should develop a comprehensive vision for environmental protection that encompasses a broad range of factors, from reduced GHG emissions and reaching net-zero targets to reversing the loss of forests, encouraging biodiversity, and addressing land degradation.

## Climate Change

ABD believes countries must **take decisive action now to ensure that they can meet their Paris Agreement commitments and transition to net-zero.**

As the world confronts the reality of climate change, countries need to take decisive action and create innovative solutions that will enable them to rapidly electrify and decarbonize their economies while meeting increasing demand for electricity and ensuring economic growth. In response, many are beginning to create policy and regulatory environments that support a shift to low- and zero-emission systems in sectors such as energy, transportation, and heavy industry.

As countries in the Americas step up their decarbonization goals, the deployment of capital and technology by the private sector will play a key role. For the Latin America and the Caribbean region, climate-related investment opportunities are expected to reach US\$5 billion by 2030 in the urban sector alone, according to IDB Invest.<sup>5</sup> Companies are already transforming their business models to enable and take advantage of the energy transition through investments in wind and solar-energy solutions, natural gas, hydrogen, carbon capture and storage (CCS), electric mobility, energy storage, biofuels, and low-sulfur diesel, among other things.

The Americas are highly vulnerable to the consequences of climate change. At the same time, however, it has

unique potential for green initiatives and a great variety of renewable and low-carbon energy resources, many of which are still largely untapped. As they look for opportunities to combat climate change, countries should plan how to make the best use of those resources. They should begin by integrating energy, environmental, and economic policies into regional frameworks. They should also explore ways to integrate renewable energy and new-low carbon technologies into their current electricity and energy systems—not only nationally, but regionally. Greater power sector integration in the region will benefit all countries involved, because it will expand the size of energy markets, create economies of scale that attract private investment, and reduce capital costs.

## Recommendations

23. Support the rapid and exponential scaling of low- and zero-carbon technologies through the integration of energy, environmental, and economic policies.
24. Take measures to achieve high renewable energy integration without significant increases in rate payers' costs or the loss of reliability and resiliency.



**RECOMMENDATIONS  
& POLICY ACTIONS**

# Achieving Our Green Future and Accelerating the Clean Energy Transition

## Climate Change

Vision:

**Countries must take decisive action now to ensure that they can meet their Paris Agreement commitments and transition to net-zero.**

It has been clear that was an impending catastrophe for decades, and it is now intensifying in demonstrable ways, as evidenced by increasingly volatile weather patterns, rising sea levels, numerous wildfires, and extensive flooding. And it has become increasingly clear that countries need to take decisive action on climate change and create innovative solutions that will enable them to rapidly electrify and decarbonize their economies while meeting the increasing demand for electricity and economic growth.

Broadly speaking, the Americas have made fervent commitments to the Paris Agreement's 2050 net-zero goals, and many are beginning to create policy and regulatory environments that support a shift to low- and zero-emission systems in sectors such as energy and heavy industry. To meet those goals, countries will need to encourage the development of innovative technologies and systems that will create low-carbon energy sources, and make them widely affordable and available.

Because of the extensive change and effort involved, the development of comprehensive policy and legal frameworks will be critical in reaching lower-carbon goals. But so too will be private-sector innovation, expertise, and deployment of capital and technology. For the Americas, climate-related investment opportunities are expected to reach US\$5 billion by 2030 in the urban sector alone, according to IDB Invest.<sup>32</sup> And the private sector is clearly engaged in this issue. Companies are already transforming their business models to enable and take advantage of the energy transition through investments in wind and solar-energy solutions, natural gas, hydrogen, carbon capture and storage (CCS), electric mobility, energy storage, biofuels, and low-sulfur

diesel, among other things.

Sustainability and climate policies play an important role in the decisions of investors and thus, in the investment decisions of financial institutions. To attract increasingly emerging sustainability- and net-zero- focused investment activity, countries will need to reconcile energy, environmental, and economic policies.

## Making renewables mainstream

Countries can build on this growing momentum with policies that encourage continued investment in renewable energy, and laws that pave the way for the broader use of renewables. At a high level, a key area of focus should be well-designed, economy-wide carbon-pricing, which offers an efficient and effective way to reduce emissions while incurring a relatively low cost to society and maximizing incentives for innovation. CCS technologies, which can also bring cost-effective reductions in emissions, will be an important part of the equation in the near-term, while the clean energy transition remains underway.

In addition to renewable energy-generation, countries should also consider a range of related factors: Energy storage technology, for example, will be key to making the widespread use of renewables practical and affordable, because it can help electricity systems accommodate and “smooth over” the variability of solar and wind electricity production, helping to keep grids stable and reliable as they bring on more of these more-intermittent sources.

Many “traditional” renewable energy sources are proven and practical today, but the field is still evolving. For example, there are important potential opportunities for producing and using hydrogen energy—both blue (using natural gas as a feedstock) and green (made using renewable energy)—in the region. Here, governments should formulate and highlight a hydrogen vision, spelling out the benefits and risks of potential large-scale hydrogen projects, along with the objectives and measures to be taken to achieve that vision. They can also promote support for research and development of hydrogen energy innovations, help ensure that private-sector hydrogen initiatives have access to financing,

facilitate permitting processes for hydrogen facilities, and develop standards and preferred tariffs that create export opportunities for hydrogen.

## Preparing the grid

The energy transition will also require improvements to electricity grids to allow them to operate more effectively, with increased reliability and flexibility. Digital technology, for example, can enable modernization that provides better management of generation, transmission, and distribution in the grid. Often, power grids operate below maximum capacity; technology investments that move them closer to operating at maximum capacity will “free up” underutilized capacity without the need for new infrastructure. These technologies can also increase the system’s reliability, resilience, and flexibility—which will be key to integrating tomorrow’s growing amounts and variable sources of renewable energy into the power grid.

Increased interconnection of grids, within countries and across borders, will make it possible to reduce network congestion, operate more economically, and ultimately make better use of renewable energy. In general, however, electric power systems in the Americas are not well integrated; where there is interconnection, it is typically not optimized. Given the importance of energy to growth, countries are missing out on a fair amount of economic development potential due to this lack of interconnection. There are many opportunities for broader energy integration in the Americas—what’s needed are the policies that will support interconnection.

Regulatory frameworks that support increased power-system integrations and bring greater stability and predictability to regional and sub-regional energy trade will bring benefits to all countries involved. In addition to supporting the energy transition through greater reliability and flexibility, those frameworks will expand the size of energy markets, reduce capital costs, and help make energy more affordable and reliable for people and companies in the region. That, in turn, has the potential to create employment opportunities, and promote the social and economic development of local communities.

## Bridging the transition

Meanwhile, natural gas can play an important role in both carbon-reduction efforts and the energy transition. While natural gas is a fossil fuel, it provides relatively clean combustion compared to other traditional fuels, generating 30% less carbon dioxide than fuel oil, and 45% less than coal.<sup>33</sup> In addition, natural gas combustion produces lower levels of atmospheric pollutants, such as nitric oxides, sulfur oxides, particulate matter, and ozone, that can damage the health of communities that are near fuel-consumption points. Overall, natural gas is the lowest-carbon fossil fuel available on a large scale. There are also robust natural-gas logistics capabilities and infrastructure in place that will allow it to help meet the world’s energy demand. And new natural gas developments are expected to keep supplies up and prices stable.

As a result, natural gas offers an important “bridge” energy source for the energy transition—a stable source of power that can help meet energy demand in the coming decades and support ongoing power generation, transportation, and industrial development as the world moves toward fully decarbonized energy systems over time.

Perhaps more important, natural gas can enable the deployment of renewable energy sources. In recent years, it has emerged as a reliable complement to renewable energy, because gas turbines are cheap and modular compared, without the high upfront costs of other energy sources, and gas-powered generation offers operational flexibility and low fixed costs/high variable costs. This means that it can provide a practical “back up” to intermittent renewable sources, and remain financially viable even if wind and solar energy can meet energy demand much of the time.

Policies that encourage the use of natural gas can provide climate-relevant benefits beyond the power sector. For example, compressed natural gas has the potential to be used more widely to power light vehicles, public transport, and road freight transport, and to replace traditional fuels in maritime transport with a cleaner, more cost-effective alternative.



## Shifting to regeneration

Reducing emissions and enabling the energy transition will require change across all industries and segments of society. That said, there are two sectors that will experience significant impacts from energy-related policies in the near term: agriculture and logistics.

The subject of climate change is of extreme importance for the food systems and agriculture in the Americas, and the issue has been top-of-mind in the sector. However, efforts thus far have been focused primarily on reacting to current problems, such as protecting at-risk jungles and biomes.<sup>34</sup> There have been few initiatives geared towards soil restoration for agricultural use and not much has been done to incorporate regenerative agriculture practices at a large scale, apart from a few important efforts by public- and private-sector organizations.

Now, it is imperative to transform agricultural practices so that soil and food security are protected in the Americas. Such a transformation could help eliminate millions of tons of GHG emissions by the end of the decade. To achieve this, governments should focus on providing education, developing standards and methods for measuring progress, financing projects for regenerative agriculture and climate-smart practices, and helping agriculture groups in the region adopt new practices that can build resilience and restore ecosystems.

## Moving with greener modes

In the logistics arena, countries have an opportunity to reduce carbon emissions in several ways. Freight transportation is responsible for approximately 7% of total GHG emissions in the world.<sup>35</sup> Trucking represents a significant portion of that, but in the Americas, the focus has been largely on urban and passenger transportation, rather than freight. Recent COP26 discussions have highlighted the link between the freight logistics carbon footprint and its potential impact on trade competitiveness and financial attractiveness.

There is a clear opportunity to reduce carbon in logistics services through private and public efforts. Governments can help develop more modern, dedicated infrastructure and encourage the private sector to adopt a mix that includes more multimodal models of transportation—there is much room to increase the use of more efficient

and cleaner transport modes, such as railways and inland navigation. Innovation in vehicle design and operation, such as higher capacity trucks, heavier trains or integrated intermodal combinations, could help reduce carbon footprints, as well as logistics costs. Because of the multifaceted nature of these challenges, policies will need to be coordinated across various government agencies.

In the end, combatting climate change will require work on many different things on many fronts, but these efforts will need to be approached coherently and in a coordinated fashion. In addition, energy-transition initiatives should keep the big picture in mind, and approach change with a circular-economy perspective that emphasize the creation of an attractive environment for investment, in which the ecosystem supports sustainable business that includes renewable energy, circular material flows, and closed-loop value chains, and positive relationships with local communities. Thus, countries should pursue climate-change initiatives through integrated energy, environmental, and economic policies.

The current national and regional policies and frameworks in the Americas do not foster the rapid pace of improvements and change that will be required to meet climate-change goals. Industry, the financial community, and civil society all have important roles to play. But it will be up to governments to devise the necessary policies and laws that will create an enabling environment for reduced emissions and the energy transition—and ultimately guide the collaborative efforts needed to build a greener future.

### Example Key Performance Indicators for Climate Change:

- Paris Accord commitments from each country in the region
- Logistics performance as measured by the LPI or WEF indicators
- Number of economic policies (#) incorporating green certificates and carbon pricing mechanisms
- Representation (%) of renewable energy and new energy technologies planned and in-use
- Representation (%) of natural gas and its respective infrastructure for power generation



## Recommendation 23

Support the rapid and exponential scaling of low- and zero-carbon technologies through the integration of energy, environmental, and economic policies that provide an enabling environment to collectively drive investments, economic growth, and progress towards a net-zero future. To that end, encourage technological development of innovative systems that make zero- and low-carbon energy widely affordable and available through integrated policy approaches, such as a well-designed and economy-wide price on carbon, carbon capture and storage (CCS), energy storage, and hydrogen.

### Policy Actions

#### *Transition:*

- Develop a roadmap for strategic, reliable, transparent, and integrated energy and climate governance for the region, to ease the design of updated, comprehensive, and long-term policy frameworks to secure capital flows for investments and sustainable financing for the deployment of renewable energies and new technologies to reduce emissions at the unprecedented level now needed to meet climate targets.
- Build comprehensive legal and policy frameworks to drive investment in mature renewable and new energy technologies for power generation and GHG emissions reduction in the Americas.
- Ensure that regulatory frameworks encourage the investment necessary to produce the metals and minerals that are critical for the decarbonization of the global economy, such as copper, lithium, nickel, among many others.
- Provide open access to energy markets for renewable electricity suppliers, consumers, and corporate buyers and link those markets across borders.
- Increase consumer options for sourcing renewable energy.
- Promote common accounting tools to track renewable energy, such as renewable energy certificates (REC) or other similar instruments.
- Support reforestation and other nature-based solutions across the Americas with a strong focus in the Amazon basin.

- Adopt a well-designed, economy-wide carbon-pricing mechanism and incentives to promote more-efficient energy usage and foster promising pre-commercial technologies such as hydrogen, biofuels and CCS.

- Develop a roadmap for managing the fiscal risks associated with the net-zero transition.

- Implement sustainable, low-carbon transportation models and technologies in the region, including the use of zero-emission vehicles, and leverage investments for infrastructure deployment.

#### *Technology and Innovation:*

- Develop national hydrogen strategies, with input from industry. These strategies should realistically assess the potential for blue and green hydrogen production, distribution, and storage; define targets; and address concrete yet flexible policies that can adapt to fast-evolving market realities.

- Adjust electricity regulatory frameworks to consider the new configurations of renewable energy production for green hydrogen production, avoiding grid overcharges.

- Support the introduction of new technologies in the region, including new forms of solar panels and energy efficiency programs.

- Invest in network and implement state-of-the-art digitalized transmission and distribution management to address the challenges of a net-zero transition, as well as grid flexibility and the digitalization of energy systems management.

- Develop rural electrification programs, with integrated solar storage projects, for example, to help meet demand and provide access to electricity in rural and remote areas.

#### *Energy Storage:*

- Lift regulatory restrictions that currently prevent or delay the participation of energy storage, and develop national storage strategies with input from industry.

- Include energy storage in long-term planning analysis with specific targets and guidelines set across a range



of applications to enable the participation of storage in all the industry's segments (including standalone capacity and ancillary services to add flexibility).

- Allow for storage-supported solutions to alleviate congestion of the transmission networks, particularly during peak renewable hours.
- Promote policies for customer demand management through storage to help replace diesel generation.
- Facilitate investment frameworks for the lithium sector. Create the requisite social, environmental, and financial conditions required to ensure that the Americas can benefit from its plentiful lithium resource base, which remains under-explored and under-produced.

#### **Circular Economy:**

- Accelerate circular-economy criteria adoption within renewable energy development, through the engagement of financing institutions, with particular focus on critical raw materials, impacts on the territory, local value chains, and material recovery.
- Modernize regulations to facilitate the reuse and recycling of mineral waste that can contain valuable resources.

## **Recommendation 24**

Take measures to achieve high renewable energy integration without significant increases in rate payers' costs or loss of reliability and resiliency.

### **Policy Actions**

- Update regulatory frameworks governing existing interconnection to make provision for operating them based on market conditions; develop flexible regulatory frameworks that can take advantage of intra-day power system changes and standardize regulations to maximize the use of infrastructure.
- Undertake a comprehensive analysis and modification of current Firm Transmission Rights regulation.

- Adopt new guiding principles for existing and future interconnections to increase regional integration through the creation of flat, free, and fair market regulations governing interconnections.

- Support the improvement of existing regional electricity interconnection systems (SIEPAC) and support the creation and strengthening of less-mature regional electricity interconnection initiatives in the region (SINEA, SIESUR, Arco Norte, Colombia-Panamá Interconnection, etc.).

#### **• Advance the integration of energy infrastructure.**

- Promote sub-regional conversations at the ministerial level to discuss energy integration opportunities, with active involvement from the private sector, to determine specific actionable measures. Set up priorities and timelines. Meet twice a year to review goals and progress.

- Support energy literacy programs across the region to seek a better understanding from consumers of the value of energy in their daily lives and the challenges to mitigating the environmental impacts. The objective is behavioral change and more efficient energy usage.

- Optimize energy systems within the sub-regions, seeking more interconnectivity within them and across the Americas—boosting regional productivity and economic growth.

- Maximize energy efficiencies across the region and across energy value chains.

#### **• Implement adequate planning measures to ensure flexibility and reliability of the power grid as more variable renewable sources of energy come online.**

- Utilize detailed planning tools to maximize carbon-reduction opportunities by ensuring flexible capacity is available to firm variable renewable output instead of curtailing renewable output due to an inflexible generation fleet.

- Realize strategic investments in grid and resource flexibility to ensure climate goals are achieved while minimizing costs and maximizing the reliability of the system. Grid flexibility and resilience do not necessarily depend on new, expensive infrastructure investments. Planners can effectively make use of cost-effective technologies (energy storage, smart grid, demand management, etc.) and focused grid enhancements (including transmission) to prevent contingencies, which otherwise may lead to blackouts.

#### **• Develop natural gas infrastructure to support the**

deployment of renewable energy sources and support a responsible energy transition by providing a stable source of back-up power to support economic and industrial gas.

-Incorporate technology-neutral, performance-based, cost-effective, and gradual but consistent emission control standards that define allowable levels of pollutants and GHG emissions on a life-cycle basis for any kind of industry independent of fuel.

-Support energy efficiency and innovation by the adoption of technologies such as Combined Heat and Power, hydrogen, and CCS focused on industry and transformation.

-Promote a regional regulatory framework to allow investments in liquefied natural gas (LNG) and natural gas infrastructure that will support pathways toward storing and transporting increasingly low-carbon liquid and gaseous fuels and promote regional integration.

-Support the development and adoption of standardized technical supply and usage standards for natural gas.

-Support the implementation of market-based rules and systems (i.e., technical cooperation, financing, exchange of best practices) to incentivize private-sector investments and competition to foster lower costs for end consumers.