

INTERNATIONAL RENEWABLE ENERGY AGENCY

Eleventh meeting of the Council

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**Note of the Director-General
Region in Focus – Latin America****I. Background**

1. With a population of over 600 million growing at 1% per year, and a GDP which has more than doubled between 1990 and 2015, the demand for electricity in Latin America is expected to double by 2030. At present, 15 million people in the region lack access to electricity. Latin America is a region with over 200 GW of renewable power generation, which represents 56% of its power generation capacity. Historically, the region's greenhouse gas emissions from energy use have been low, largely due to the relatively clean electricity mix which includes a large share of hydropower. While the majority of the region's renewable electricity comes from hydropower and biomass, the region has recently made considerable progress in developing solar, geothermal and wind energy (over 10 GW of installed capacity).

2. In recent years, Latin America has seen significant investment in renewable energy. Total investment in power generation has been estimated at around USD 120 billion between 2010 and 2015, including USD 38 billion in large hydropower. IRENA's analysis highlights recent cost reduction trends for renewable power generation technologies, and the level of competitiveness that has been reached with solar and onshore wind in an increasing number of countries. For instance, the recent auctions in Chile, Mexico and Peru resulted in highly competitive prices, with solar PV awarded in Peru at a record-low USD 0.48 per kWh. Rapid cost reductions, maturing technologies, the consolidation of renewable energy policies and the vast untapped resource potentials offer an unprecedented opportunity to further develop the renewable energy market in the region.

II. IRENA's engagement in Latin America

3. IRENA's membership base in the region has expanded over the years, now including ten Members and six countries in the process of accession. Since its establishment, IRENA has been actively engaged with Latin America. Against this backdrop, the Communiqué endorsed by Heads of Delegation from Latin American countries during the fifth session of the IRENA Assembly in January 2015 identified a number of key areas for potential collaboration between countries in the region and IRENA towards an enhanced deployment of renewable energy. In addition to work on the various sources of renewable energy, the areas of work identified include renewable energy resource assessment, energy planning, integration of large shares of renewables, off-grid energy access, assessment of effectiveness of policy frameworks, capacity building, and finally, renewable energy in end-use sectors. On the basis of this guidance, IRENA started to plan its engagement in the region, through both region-specific analytical work as well as country-specific and regional technical advisory support.

4. The focus of the Agency's work in the region has also been shaped, and will continue to be informed by, concrete findings and insights gained during the Renewables Readiness Assessments (RRAs) initiated and conducted in countries in the region, as well as the preparation of renewable energy roadmaps and REmap 2030 reports.

a. Country Support

5. As requested by countries in the region, and reflecting major elements of the Latin America Communiqué, the Agency has started implementing specific country-level activities. Through RRAs, key conditions for renewable energy development and deployment in a given country are assessed and short- to medium-term measures towards the development of policy, technology and regulatory measures to further improve these conditions are identified. So far, the Agency has facilitated RRA processes in Peru and Nicaragua. Panama has recently requested to initiate an RRA process. REmap provides a technology focused analysis with a longer-term vision for renewables deployment. REmap Mexico was released in May 2015 and REmap Dominican Republic is due to be published later in 2016. IRENA has started discussions with Argentina, Brazil, Colombia, Ecuador, and Uruguay to develop REmap reports.

6. The Agency plans to continue supporting countries during the post-RRA phase by facilitating the implementation of the RRA recommendations through the engagement of other development partners, as well as by providing specific advisory services. Furthermore, building on a REmap country report, additional analysis can be conducted upon request, including comprehensive country roadmaps or technology and sector specific analysis at the country or regional level.

b. Regional Engagement

7. In response to the Communiqué's call to support regional market integration, energy planning, and the integration of large shares of renewable energy, the **Clean Energy Corridor of Central America (CECCA)** was initiated to promote the accelerated development and cross-border trade of renewable power in Central America. The initiative is in line with the region's strategic plan for the regional electricity market, with national and regional energy policies, as well as climate change strategies. It has been developed based on a regional stakeholder consultative process leading to a better understanding of specific country needs and priorities. The resulting CECCA Strategy document was endorsed by Energy Ministers of the region in December 2015. During the biennium, the CECCA work will focus on improving enabling conditions, both at technical and regulatory level, towards a reliable integration of renewables. The regulatory component focuses on strengthening the policy and regulatory framework. The technical component addresses key issues related to grid stability as well as standards and best practices. As a first step, a technical capacity building workshop was conducted at the end of 2015. It brought together national and regional system operators and presented best practices and effective tools for power system operation with high shares of variable renewable energy.

c. IRENA analysis, tools and services

8. The Agency's regional level engagement provides a broad framework for the utilization of various IRENA analysis, tools and services, including resource assessment, capacity building, facilitation of access to finance, and project development. In this regard, IRENA has conducted tailored work for the

region using the Global Atlas and Sustainable Energy Marketplace platforms, which will also contribute directly to the implementation of its plan for regional engagement, including the CECCA initiative.

9. An assessment of the renewable energy resource potential for Latin America through the **Global Atlas**, as one important area highlighted in the Communiqué, provided a region-wide pre-feasibility assessment of solar and wind opportunities for both grid connected and off-grid systems, based on a high resolution map (1km x 1km). In addition to the resource intensity (i.e. solar irradiation or wind speeds), specific attention is paid to key dimensioning parameters, such as distance to the transmission network, population density, terrain, exclusion from protected areas and areas with land-use constraints. The result of the analysis are high-resolution maps that demonstrate the suitability for locations across the sub-region to deploy solar or wind. The maps will help energy planners across Latin America in optimizing the energy mix, and specifically support CECCA countries in the identification of high potential zones.

10. The **Sustainable Energy Marketplace**, a tool that supports project initiation, project development, and access to finance for renewable energy projects, has been operationalized for Latin America in late 2015, in cooperation with the Inter-American Development Bank (IDB). It aims at creating a project pipeline and to provide support in the development of renewable energy projects in the region. The marketplace has been publicized across the region through webinars and targeted communication with countries. After a call for project proposals last November, the Marketplace now includes a total of 86 projects from Latin America and the Caribbean, of which 48% are solar, 15% are bioenergy, 14% are wind and 9% are hydropower projects for a total investment cost of USD 4.9 billion.

11. In response to high interest from geothermal-rich countries of Latin America, IRENA has been supporting the development of the geothermal energy sector of the region since 2013. During the preliminary phase, the focus has been on the Andean region. To this end, a regional capacity building programme “**Geothermal in the Andes**” has been implemented in partnership with the Latin American Energy Organization (OLADE) and the International Geothermal Association (IGA). It consisted of a series of workshops focusing on legal (Iceland and Peru in 2013), technical – environmental licensing and reservoir modelling – (Chile, 2013) and financing (Colombia, 2015) aspects of geothermal energy development. As result, more than 100 professionals were trained and a ‘Geothermal Capacity Needs Assessment Methodology’ has been developed to assist countries in planning for geothermal capacity building. This regional approach is being scaled up during the biennium to support other geothermal-rich countries of Latin America under the umbrella of the Global Geothermal Alliance (GGA).

12. Moving forward, IRENA has recently released two analytical reports specific to the region which provide added insights into circumstances, dynamics and trends specific to the region. The report on **Research, Development and Demonstration (RD&D) for Renewable Energy Technologies for Latin America and the Caribbean** presents practical actions towards strengthening cooperative RD&D for renewable energy technologies. The report revealed the important opportunities that exist to coordinate innovation activities and efforts at regional level, where cooperative research can help bridge gaps in renewable energy technology innovation and diminish the region’s energy challenges.

13. The Renewable **Energy Market Analysis: Latin America** draws on a number of relevant work streams of the Agency which include work on statistics, resource assessment, renewable energy costing, investment dynamics, financial instruments, as well as policy. It provides an in-depth look at renewable energy in the context of the region’s energy sector dynamics and underlying social and economic trends. The report presents the most up-to-date status and trends in renewable energy development, highlighting

their rapid growth, both for power generation and in the transport, industrial, and residential sectors. It examines the framework enabling such trends as well as factors and energy drivers that have played a decisive role in the rapid uptake of renewables in the region. The report includes an in-depth analysis of the mechanisms through which hydropower and other renewables can complement each other and can improve the economic and reliability performance of power systems.

d. Partnerships

14. IRENA aims to continue partnering with key stakeholders in the region in order to ensure long-term impact of its regional and country specific work, to pool efforts and resources, and to achieve a higher impact. To this end, the Agency has developed partnerships with a wide range of stakeholders, including the Inter-American Development Bank (IaDB), the Economic Commission for Latin America and the Caribbean (ECLAC), the Caribbean Community (CARICOM), the Central American Integration System (SICA), the German Corporation for International Cooperation (GIZ), the Organization of American States (OAS) and the Latin America Energy Organization (OLADE), together with other development partners and national institutions.

Questions for discussion

- What are the barriers to renewable energy deployment in Latin America?
- The Latin American region is progressing rapidly in terms of renewable energy technology deployment. Geothermal, hydro, solar and wind energy projects are widely spread in the region. What should be the role and strategy of the Agency to support this crucial transition period?
- What are the main drivers for the deployment of renewable energy in Latin America?
- What lessons from Latin America can be of relevance to other regions and vice-versa?

Suggested reading

[Abu Dhabi communiqué on accelerating renewable energy uptake in Latin America](#)

[Renewable Energy in Latin America 2015: An Overview of Policies](#)

[RD&D for Renewable Energy Technologies: Cooperation in Latin America and the Caribbean](#)

[Latin America Atlas](#)

[Renewable Energy Market Analysis: Latin America \(forthcoming\)](#)

[Renewables Readiness Assessment: Peru](#)

[Renewables Readiness Assessment: Nicaragua, executive summary](#)

[Remap Mexico 2030](#)