



RENEWABLES READINESS ASSESSMENT: EL SALVADOR

EXECUTIVE SUMMARY

The report highlights **key action areas** to accelerate the country's uptake of renewables:

1. **Enhance long-term planning and policy for the renewable energy sector**
2. **Create enabling conditions for geothermal energy development**
3. **Establish clear institutional frameworks and co-ordination**
4. **Assess the implementation of distributed power generation**
5. **Foster project development and financing for renewables**

Investing in domestic renewable energy infrastructure offers the potential to boost health capacity and build climate resilience. It can also greatly strengthen El Salvador's post-COVID recovery.

December 2020

EXECUTIVE SUMMARY

El Salvador depends heavily on fossil fuels to meet its energy needs for industry, transport and, to a certain extent, power generation. Increasingly, the country also imports electricity from neighbouring countries to meet domestic demand. Renewable energy use – already seen in hydropower and geothermal projects – could therefore be scaled up further and faster in the Central American country.

Encouragingly, the past decade has seen national energy policy recognise the benefits of developing solar, wind and bioenergy, as a wide range of renewable energy technologies can help to diversify the energy mix, expand electricity access and strengthen regional energy integration.

El Salvador's economy, based mainly on services, industry and agriculture, grew by an estimated 2.4% in 2019, within a moderate average annual growth rate of its gross domestic product (GDP) per capita of 3.9% over the last 20 years. Regardless of persistent challenges, El Salvador has made substantial social and economic progress over the last two decades, with national policies increasingly mirroring with the United Nations 2030 Agenda for Sustainable Development.

With no domestic oil, gas or coal supply, the country depends entirely on imported fossil fuels, which accounted for 69% of its total energy supply in 2019. Yet the energy sector continues to be recognised as a strong contributor to economic and social development. The country has prioritised the development of renewables to mitigate import dependency and thus improve energy security. Renewables are also expected to stimulate local commerce and industry, help reduce electricity tariffs and improve people's welfare.

The General Electricity Law of 1996, which liberalised the power sector, also allowed for more private sector participation in renewable energy development, alongside the government's more active promotion of renewable energy sources.

The National Energy Policy 2010-2024 then became a key tool for the implementation of renewable energy, especially in the power sector. Indeed, no new fossil-fuel based power generators have been added since 2013. By 2019, renewables, including hydropower, biomass, solar photovoltaic (PV) and geothermal power, had reached 64.3% of the country's total installed capacity of 2.2 gigawatts (GW). Since 2015, solar PV capacity alone has grown nearly tenfold, reaching 273 megawatts (MW) in 2019.

Additionally, El Salvador is connected to the Central American Electrical Interconnection System (SIEPAC – *Sistema de Interconexión Eléctrica de los Países de América Central*), making the country an active participant in the Regional Electricity Market (MER – *Mercado Eléctrico Regional*). Electricity imports, mainly from Guatemala, accounted for around 21% of the country's electricity supply in 2019.

The National Energy Council (CNE – *Consejo Nacional de Energía*) is currently developing its long term National Energy Policy 2020-2050. This aims to reduce the electricity tariff through added renewable power generation, facilitating the removal of electricity subsidies towards the end of the policy period. This new strategy goes beyond the power sector, too, stipulating targets for clean energy technologies in end-use sectors and energy efficiency, as well as promoting pilot projects for direct use of renewables in the industrial and agri-food sectors.

The country's Renewables Readiness Assessment (RRA) process has highlighted key actions for the short and medium-term that could create more conducive conditions for renewable energy deployment. The country-led assessment, facilitated by the International Renewable Energy Agency (IRENA), aims to help unlock El Salvador's renewable energy potential. The identified actions are grouped in five areas, where the main challenges have been identified.

Challenges and key recommendations

1. Enhance long-term planning and policy for the renewable energy sector

Competitive tendering processes and various fiscal incentives for renewable electricity have helped to create good business conditions for renewables in El Salvador, resulting in significant uptake of renewable energy technologies.

Yet rapid renewable energy development has highlighted insufficient co-ordination in terms of long-term energy plans. El Salvador could devise a more comprehensive national energy plan, encompassing all energy technologies, suppliers and consumers through an integrated analysis of current market conditions. The plan should also consider the integration of renewable energy technologies for end uses in buildings, heat and transport, while establishing clear targets that contribute to the ongoing scale-up of renewables.

El Salvador benefited greatly from regional energy integration and plays an active role in the MER. The country should therefore incorporate the Regional Energy Strategy 2030 in its national long-term planning efforts. This is in line with the country's overall development strategy and assures the participation of both public and private sectors.

2. Create enabling conditions for geothermal energy development

Despite having a long tradition of geothermal energy use, El Salvador's geothermal development has stagnated in recent years, with a limited number of new projects for geothermal power generation, or heating applications.

El Salvador's geothermal potential could be also utilised for direct-use applications, but the existing regulatory framework only covers power applications. Classifications need to be established for geothermal resources by temperature, including varying potential for direct uses. A more in-depth review of the regulatory framework could also help to overcome challenges with the existing remuneration scheme, as well as the licensing procedure currently in place for geothermal projects.

Likewise, geothermal project developers struggle to access financing options, underlining the need to further enhance the capabilities of local financial institutions and project owners to help create a better understanding of funding geothermal projects and its associated risks.

No new fossil fuel based power generators have been added since 2013

3. Establish clear institutional frameworks and co-ordination

Currently, responsibilities among institutions in the country's energy sector remain decentralised, which is affecting the performance of the sector and is clearly reflected in the absence of longer term co-ordination of different participants' action plans. El Salvador may consider several options to improve this condition, including the creation of an entity that centralises sector development and directives.

Additionally, the development of the national transmission system and of new generation facilities are undertaken separately. Potential new renewable-based power generation, therefore, is not consistently included in transmission expansion plans. Such plans, moreover, tend to overlook the short construction times needed for solar and wind (variable renewable energy) facilities.

Measures are needed to ensure closer collaboration between the entities responsible for developing such plans. For instance, the identification of renewable energy zones in the most suitable areas for project development could serve to inform both transmission and generation planners, facilitating a co-ordinated planning effort.

4. Assess the implementation of distributed power generation

The implementation of the net metering scheme in 2017 has resulted in a successful promotion of rooftop solar PV generation. Yet, there is still no clear understanding of the effects that the growing self-generation practice has on the reliability of the power system and the overall energy market.

To improve this, all existing use of self-generation must first be registered. This should consider both self-use and the potential injection of energy into the grid from existing projects. This exercise could provide a better assessment of the existing regulatory framework, while considering the stability of the grid and the existing distribution market, as well as empowering end users for relatively flexible energy management.

5. Foster project development and financing for renewables

There have been significant achievements and progress in regulation for the development of renewable energy in El Salvador. Renewable project developers still face challenges, however, with administrative procedures and permits. These are not centralised and cause delays in project development. Regulation in this area must ensure transparent processes and well-defined timetables for obtaining permits. A unified national office (or “single-window agency”) should be established to handle all applicable licenses and permits for renewable energy projects, reducing project delays and development costs.

El Salvador’s long-term uptake of renewable energy technologies will also hinge on assessing the availability, along with the potential for improvement and expansion, of existing financing instruments. Existing mechanisms and conditions for financing and risk mitigation by private institutions, similarly, must be clear to ensure that project developers can make use of these instruments. Additionally, local private institutions will need to be familiarised with the renewable energy market to attract more interest from them in project finance.

The implementation of these steps, in close collaboration with all national and regional stakeholders from the private and public sector, should help El Salvador attract investments that contribute towards a climate resilient, low-emission development pathway.



Sonsonate Solar Plant, Acajutla, El Salvador

Image credit: Shutterstock

© IRENA 2020

The findings outlined here are taken from: IRENA (2020), *Renewables Readiness Assessment: El Salvador* (ISBN: 978-92-9260-293-2) (*Evaluación del Estado de Preparación de las Energías Renovables en El Salvador* - ISBN: 978-92-9260-294-9), International Renewable Energy Agency, Abu Dhabi

DISCLAIMER This publication and the material herein are provided “as is”. All reasonable precautions have been taken by IRENA to verify the reliability of the material in this publication. However, neither IRENA nor any of its officials, agents, data or other third-party content providers provides a warranty of any kind, either expressed or implied, and they accept no responsibility or liability for any consequence of use of the publication or material herein. The information contained herein does not necessarily represent the views of all Members of IRENA. The mention of specific companies or certain projects or products does not imply that they are endorsed or recommended by IRENA in preference to others of a similar nature that are not mentioned. The designations employed, and the presentation of material herein, do not imply the expression of any opinion on the part of IRENA concerning the legal status of any region, country, territory, city or area or of its authorities, or concerning the delimitation of frontiers or boundaries.