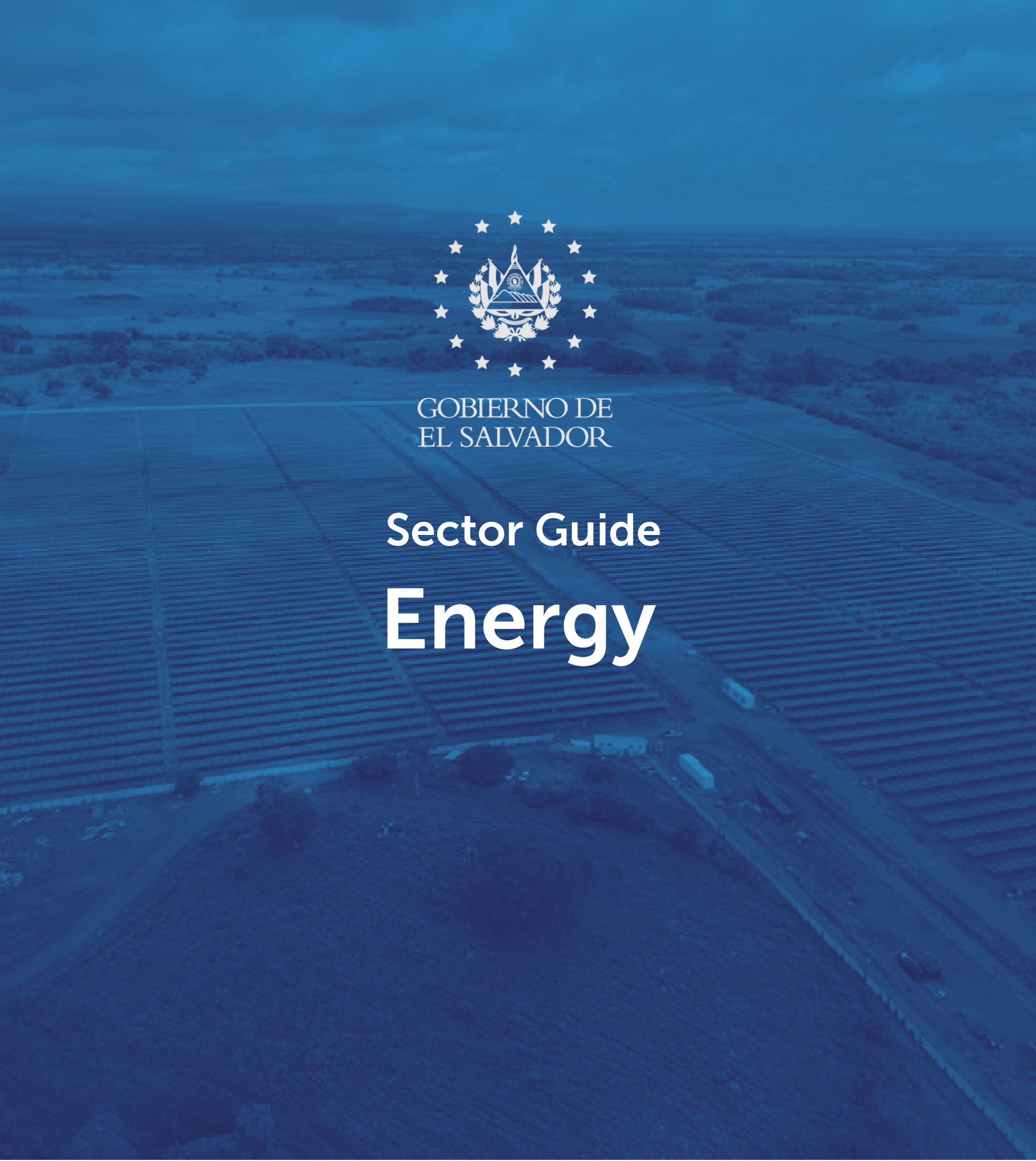

GOBIERNO DE
EL SALVADOR

Sector Guide

Energy

GOBIERNO DE
EL SALVADOR

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Contents

Introduction

The renewable energy sector in El Salvador has experienced significant growth in recent years, positioning the country as a regional leader in the transition towards cleaner and more sustainable energy sources. According to recent data, approximately 70% of the energy generated in El Salvador comes from renewable sources, with notable contributions from hydroelectric, solar, and geothermal energy. One of the most prominent projects is the Metapan Wind Farm, inaugurated in 2022, which consists of 28 wind turbines and has a capacity to generate 60 megawatts of clean energy, providing electricity to thousands of Salvadoran households.

Furthermore, the country has implemented incentive programs for the installation of solar systems for businesses, promoting the adoption of photovoltaic solar energy. These efforts have helped reduce dependence on fossil fuels and decrease the carbon footprint, thereby contributing to mitigating climate change and fostering sustainable development in El Salvador.

Sector delimitation

For the purposes of this document, the CIIU code **3510 Generation, transmission and distribution of electrical energy** is considered within the Energy sector.

Demographic indexes of El Salvador[1]

	Total	Urban area
Population (inhabitants and % of total population)	6,325,827	3,903,035 **(62%)**
Literacy (% of population over 10 years old)	90.0%	93.2%
Labor force (Economically active population)	2,932,673	1,906,237
Unemployment rate	6.3%	6.3%
Underemployment Rate [2]	37.6%	n/d
English-speaking population (% of population)[3]	4.0%	n/d

Principales zonas[4]

El 64.2% de la población se concentra en 5 de los 14 departamentos: San Salvador, La Libertad, Santa Ana, Sonsonate y San Miguel.

Estructura etaria

El 51.9% de la fuerza laboral tiene menos de 40 años, el rango de edad más productiva.

1 Fuente: Dirección General de Estadísticas y Censos (2021).

2 El subempleo lo conforman aquellos ocupados que tienen dificultad para trabajar un número determinado de horas semanales, así como para obtener una retribución que alcance al menos, el salario mínimo. Este es un segmento de la población que podría estar disponible para migrar hacia trabajos con mejores oportunidades.

3 % respecto a población de 5 años o más, con educación formal. Fuente: VI Censo de Población 2007, es la última información disponible, por lo que las cifras actuales habrían incrementado. Para este caso, el dato del área metropolitana corresponde únicamente a San Salvador.

4 El Salvador está dividido en 14 regiones geográficas llamadas departamentos.

National Energy Policy

The National Energy Policy of El Salvador establishes the government guidelines on long-term energy planning, access to energy, efficient consumption, clean and renewable energy, fossil fuels, biofuels, natural gas, among others.

Strategic axes

- Regulatory modernization: The operation of the energy sector is supported by a broad regulatory framework, which needs to be updated, not only due to the dynamism of markets and technologies, but also in order to ensure the effective implementation of short-term strategies, programs, and initiatives. medium and long term.
- Sustainable energy supply: To ensure a supply, production, storage, transport, distribution and commercialization of energy resources, with the least possible environmental and social impact, complying with the quality qualities expected by end users.
- Research, development and innovation: It seeks to promote research, development and innovation activities in energy technologies, especially in clean technologies.
- Energy security and integration: To minimize the country's energy vulnerability, and strengthen the energy supply chain, manage the risks of energy shortages associated with the high dependence on petroleum products, the impact of climate change or national emergency situations.
- Efficient energy consumption: Energy efficiency will allow for more competitive productive sectors, availability and access to better quality goods and services, and preservation of natural resources, which are the main primary source of energy.

El Salvador's Electricity Market Structure

The Salvadoran electricity market is one of the most open in the region, in the sense that its legislation has promoted a competitive market and private participation in the generation, distribution and sale of electricity. Added to this is the fact that El Salvador has an adequate institutional structure for the development, regulation and operation of the electricity market.

Electricity market in El Salvador

Energy Policy

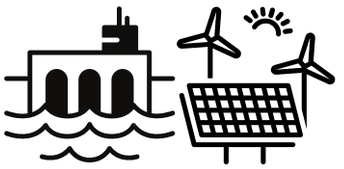
The General Directorate of Energy, Hydrocarbons and Mines is the governing body of the National Energy Policy

Regulation

The regulatory entity of the national electricity market is the General Superintendence of Electricity and Telecommunications (SIGET).

Market operator entity

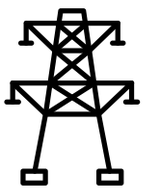
The operation of the transmission system and wholesale electricity market is carried out by the Transactions Unit (UT)



Generation

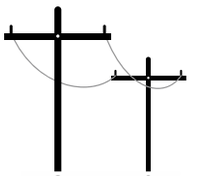
22 generation and cogeneration companies, 15 Non-Conventional Renewable Distributed Generation companies

Likewise, there are 31 energy trading companies



Transmission

The Empresa Transmisora de El Salvador (ETESAL) is in charge of the maintenance and expansion of the electric power transmission system in a timely and effective manner, to guarantee the continuity of the electric supply in El Salvador in a stable and reliable manner.



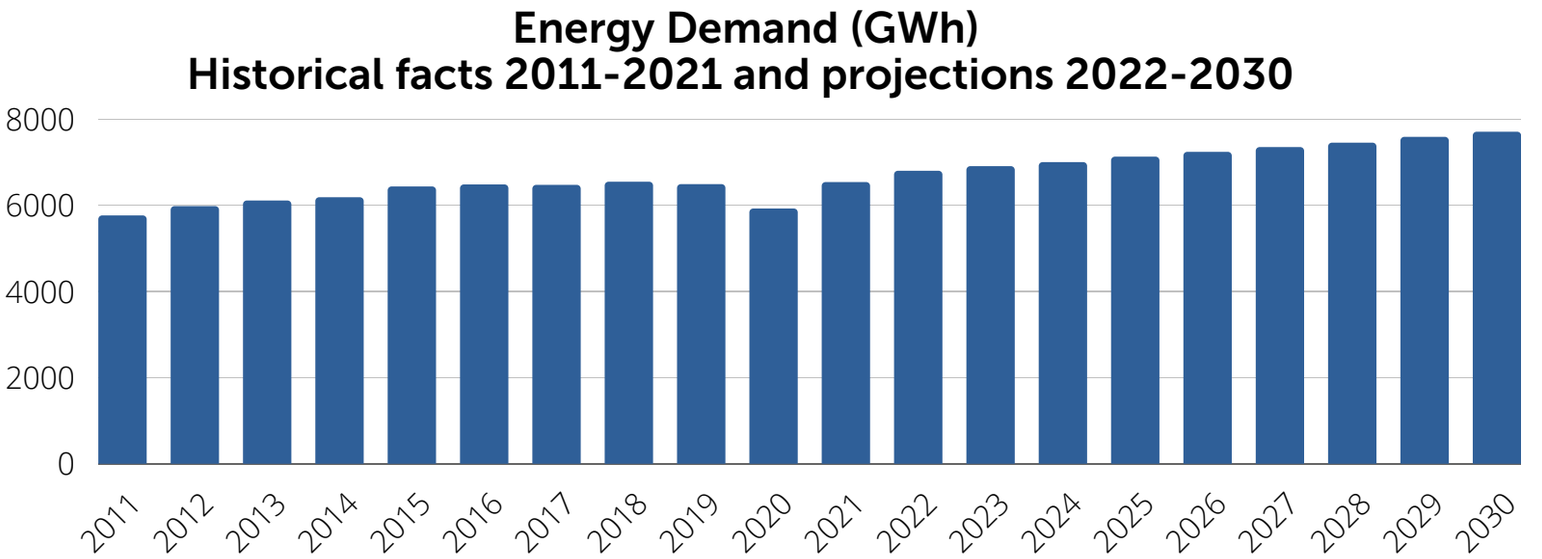
Distribution

Electricity distribution in El Salvador is in the hands of solid private players

The main distribution companies are: **AES El Salvador**, which with four distributors serves the central north zone of the country (CAESS), the western zone (CLESA) and the eastern zone (EEO and DEUSEM) and **Distribuidora de Electricidad del Sur (DELSUR)** which supplies energy in the south central area of the country.

Energy Demand

In the year 2022, the energy demand was 6,629.71 GWh. According to the Indicative Plan for the Expansion of Electricity Generation in El Salvador 2020-2030, the base scenario of demand projection considers an average annual increase of 1.58%, while the low growth scenario considers an average growth of 1.1%. annual, while for a high growth demand a rate of 2.1% has been taken.



Source: UT and General Directorate of Energy, Hydrocarbons and Mines DGEHM
Projections: base case

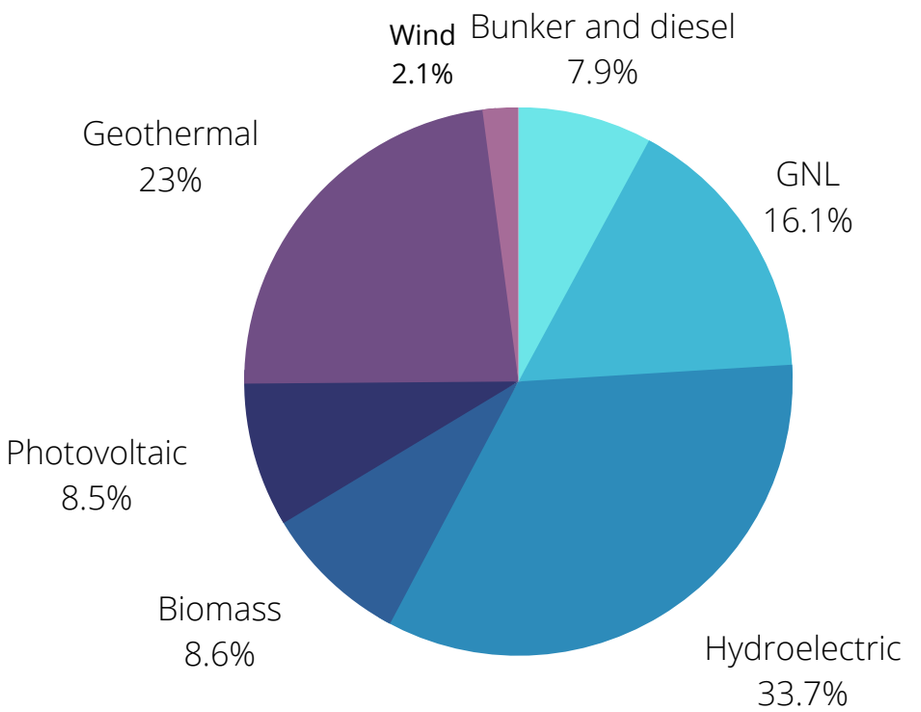
Regarding the maximum demand for power, between 2011 and 2022, the maximum demand for power was 1,093 MW in 2016. It is projected that for the next decade demand will grow by an annual average of 1.58% as a scenario of reference.

Installed capacity

In recent years, the government of El Salvador has worked to diversify the energy matrix and be able to produce increasingly cleaner energy. The installed capacity by type of resource is presented below.

To date, the installed capacity of El Salvador is 2,461 MW. Of which, 34% corresponds to hydroelectric power generation, 23% geothermal, 9% Biomass and 8.5% photovaltaic solar generation.

Generation according to renewable source
(% participation)

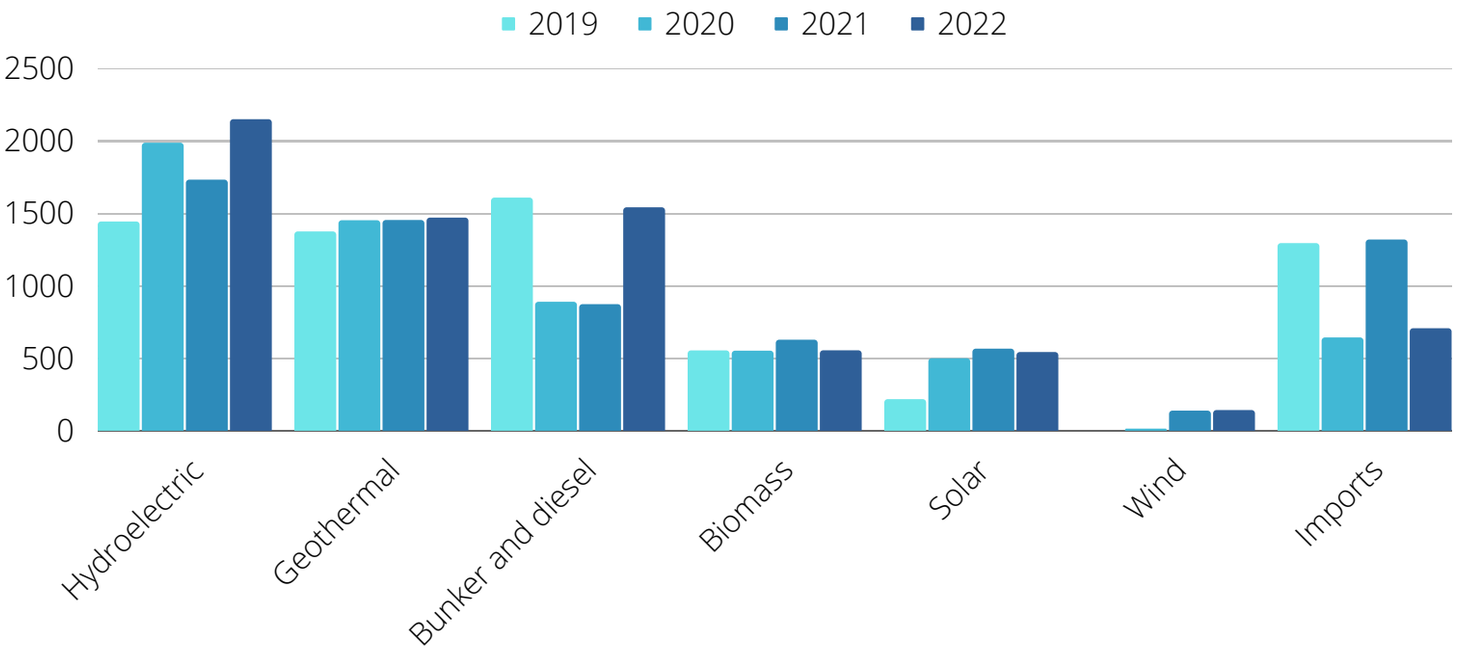


Source: Data from 2022, General Directorate of Energy, Hydrocarbons and Mines DGEHM

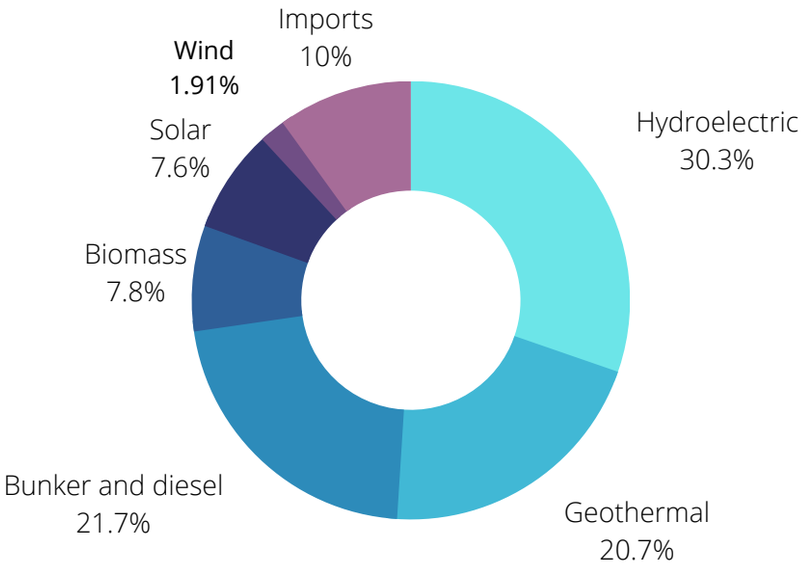
Generation by resource type

The main sources of energy generation have been hydroelectric power (30.3% of the total injected in 2022) and bunker fuel and diesel (21.7%). However, significant increases have been observed in the generation from other renewable sources such as solar, which has been steadily growing in recent years (7.6% in 2022), as well as wind energy (1.91%), with the operation commencement of the first wind farm in the country, one of the tallest in Central America.

Generation by resource (GWh) 2019-2022



Injection per resource (GWH)



Injection per resource (GWh and % variation)

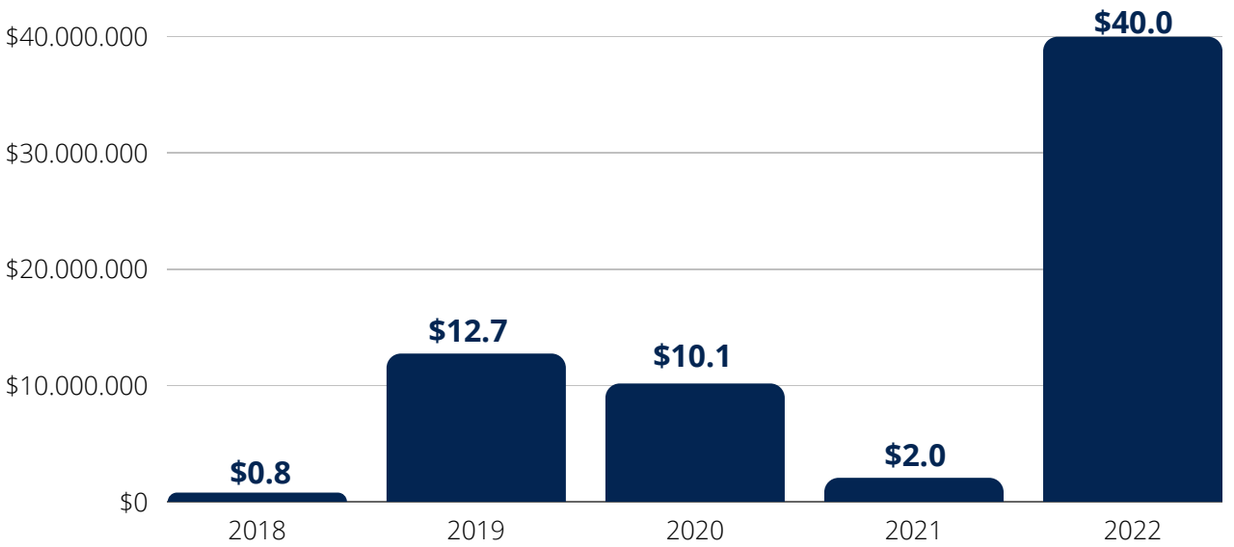
Type	2019	2020	2021	2022	%Var 2022-2021
Hydroelectric	1,442.47	1,985.36	1,730.8	2,147.4	24%
Geothermal	1,372.72	1,449.99	1,451.6	1,468.0	1%
Bunker and Diesel	1,606.09	888.69	872.2	1,539.3	76%
Biomass	551.59	549.73	625.0	552.3	-12%
Solar	216.81	497.66	563.2	540.1	-4%
Wind	0.00	14.12	131.8	135.5	3%
Imports	1,292.05	642.61	1,316.7	706.0	-46%

Source: Transactions Unit and SIGET

Relative importance in foreign currency generation

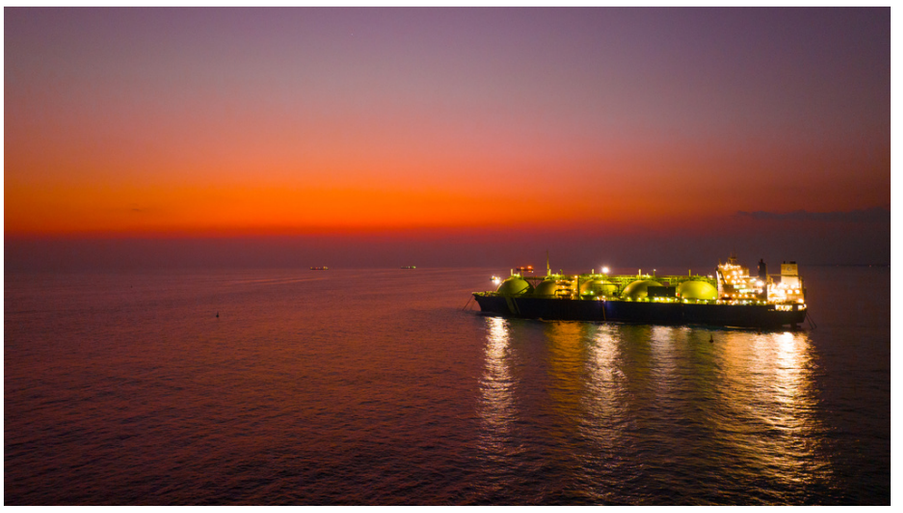
Exports of the Energy sector

2018-2022 (USD millions)



Source: Own elaboration with data from the Central Reserve Bank of El Salvador - BCR. Exports of services in the Energy category.

El Salvador's energy sector has demonstrated a positive performance in 2022 by achieving exports totaling USD 40 million. This achievement highlights the growth and competitiveness of the Salvadoran energy sector, which has been able to capitalize on its potential



Advantages of investing in El Salvador

1. There is a constant growth in energy demand.

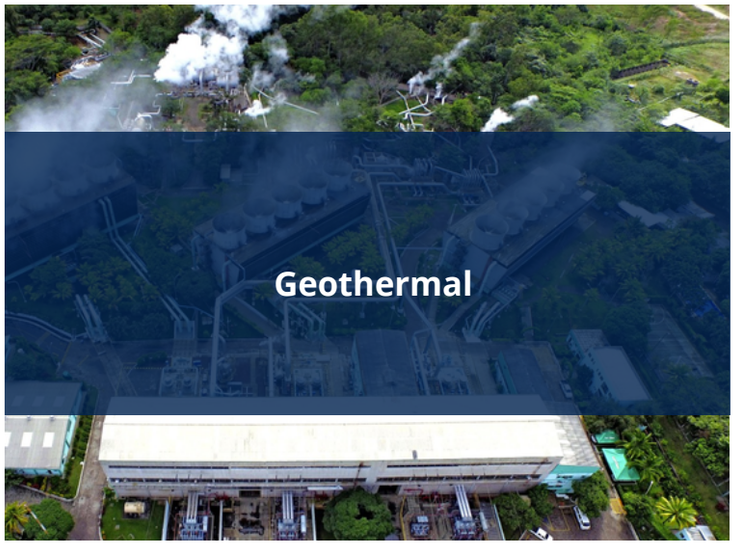
2. The country is strongly committed to diversifying its energy matrix.

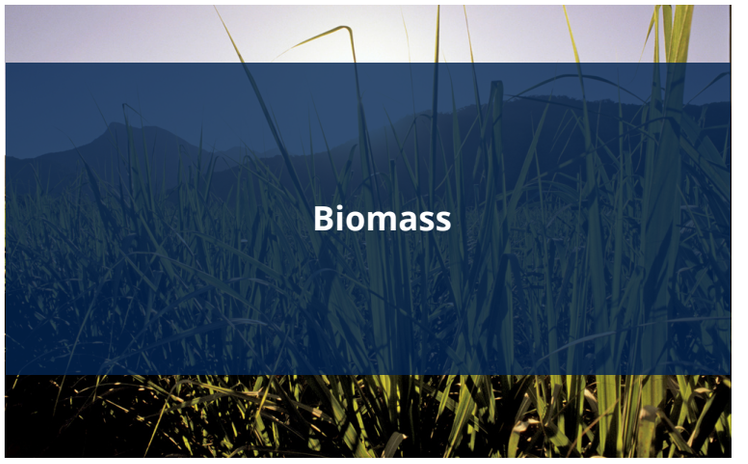
3. The country has made a strong commitment to diversify its energy matrix, harnessing the potential for various sources of energy generation, including wind, geothermal, small hydroelectric power plants, biomass and biogas, solar, coal, and natural gas.

4. The country has the Law of Fiscal Incentives for the Promotion of Renewable Energies in Electricity Generation, which provides attractive incentives for the development of projects based on renewable energy sources.

Investment Opportunities

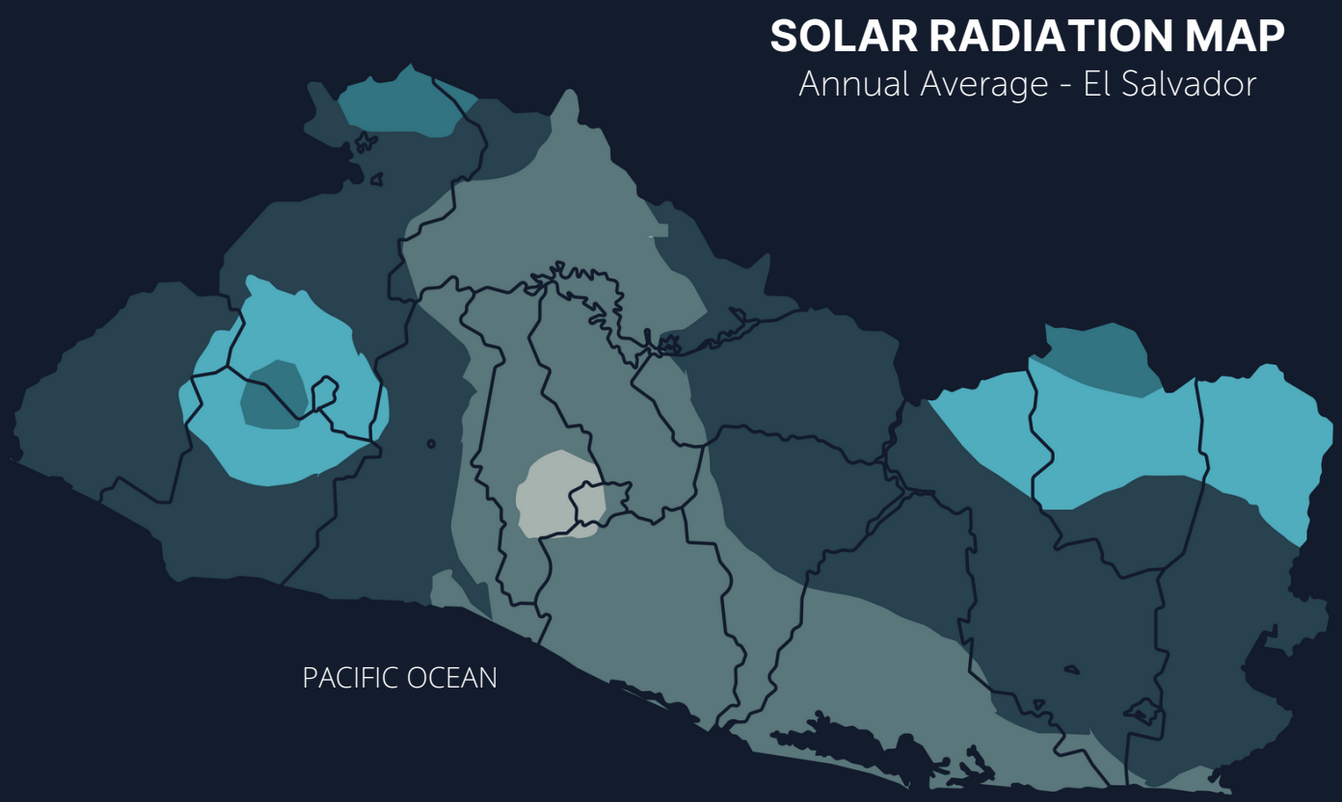
El Salvador has the potential for energy generation from renewable sources.





Solar Energy

As of now, El Salvador has an installed capacity of 214 MW in photovoltaic plants. This source of generation has been one of the most dynamic in the past five years, with various projects being developed in the country during this period. The following is the map of solar radiation in El Salvador.

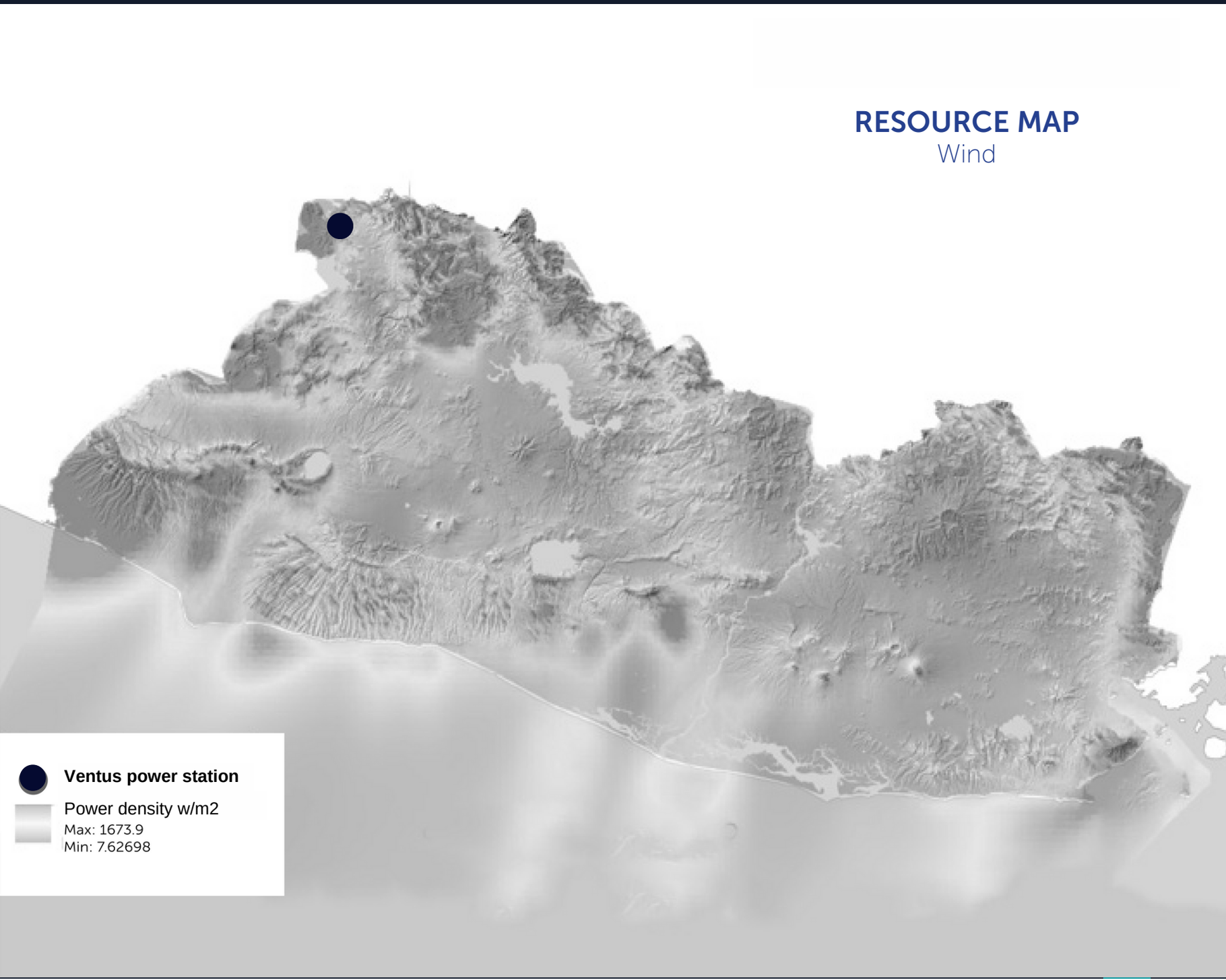


Companies and projects

Company	Source of investment	Project	Supply start date	Installed capacity (nominal power MW)
PROVIDENCIA SOLAR	France	ANTARES	1/4/2017	60
ACAJUTLA ENERGÍA SOLAR I	Spain	LOS REMEDIOS	1/2/2019	20
PROYECTO LA TRINIDAD, LTDA. de C.V.	Spain	LA TRINIDAD	1/2/2019	8
PROYECTO LA TRINIDAD, LTDA. de C.V.	Spain	MÁRQUEZ	1/2/2019	6
CAPELLA SOLAR, S.A. de C.V.	France	ALBIREO I	1/4/2020	50
CAPELLA SOLAR, S.A. de C.V.	France	ALBIREO II	1/4/2020	50
SONSONATE SOLAR, S.A. de C.V.	Spain	SONSONATE SOLAR	1/4/2020	10
ECOSOLAR, S.A. de C.V.	Spain	PARQUE FOTOVOLTAICO ECOSOLAR I	1/2/2021	9.9
ENERGÍAS DE ORIENTE, S.A. de C.V.	El Salvador	Proyecto Fotovoltaico La Unión	1/6/2021	72.24
INVERSIONES ENERGETICAS, S.A. DE C.V.	El Salvador	TALNIQUE SOLAR	1/9/2023	14.6

Wind power

In 2021, the first wind farm in El Salvador began to operate, which constitutes an important milestone in the efforts to diversify the energy matrix. The wind farm operated by Ventus has the highest wind turbines in the region with a height of 120 meters. The country's wind resource map is shown below.



Companies and projects

Company	Source of investment	Project	Supply start date	Installed capacity (nominal power MW)
VENTUS, S.A. de C.V.	Guatemala	Parque Eólico Ventus	1/4/2021	54

Geothermal energy

El Salvador is a leader in geothermal energy generation, it is positioned as the second country in the world with the highest participation of geothermal energy in its energy matrix. Currently the installed capacity of this resource is 204.4 MW. Below is the geothermal resource map.

RESOURCE MAP
Wind

Nº	Nombre Sitio	Temperatura Prom. Reservorio (ºC)	Potencial Geotérmico (Mwe)
1	San Lorenzo	2016	16
2	Caluco	207	15
3	Coatepeque	2016	70
4	Chambala	233	26
5	Chilanguera	153	11
6	Olomega	163	11
7	Conchagua	180	13

Nº	Nombre Sitio	Capacidad Instalada (MW)
A	C.G. Ahuachapán	95
B	C.G. Berlin	109.4

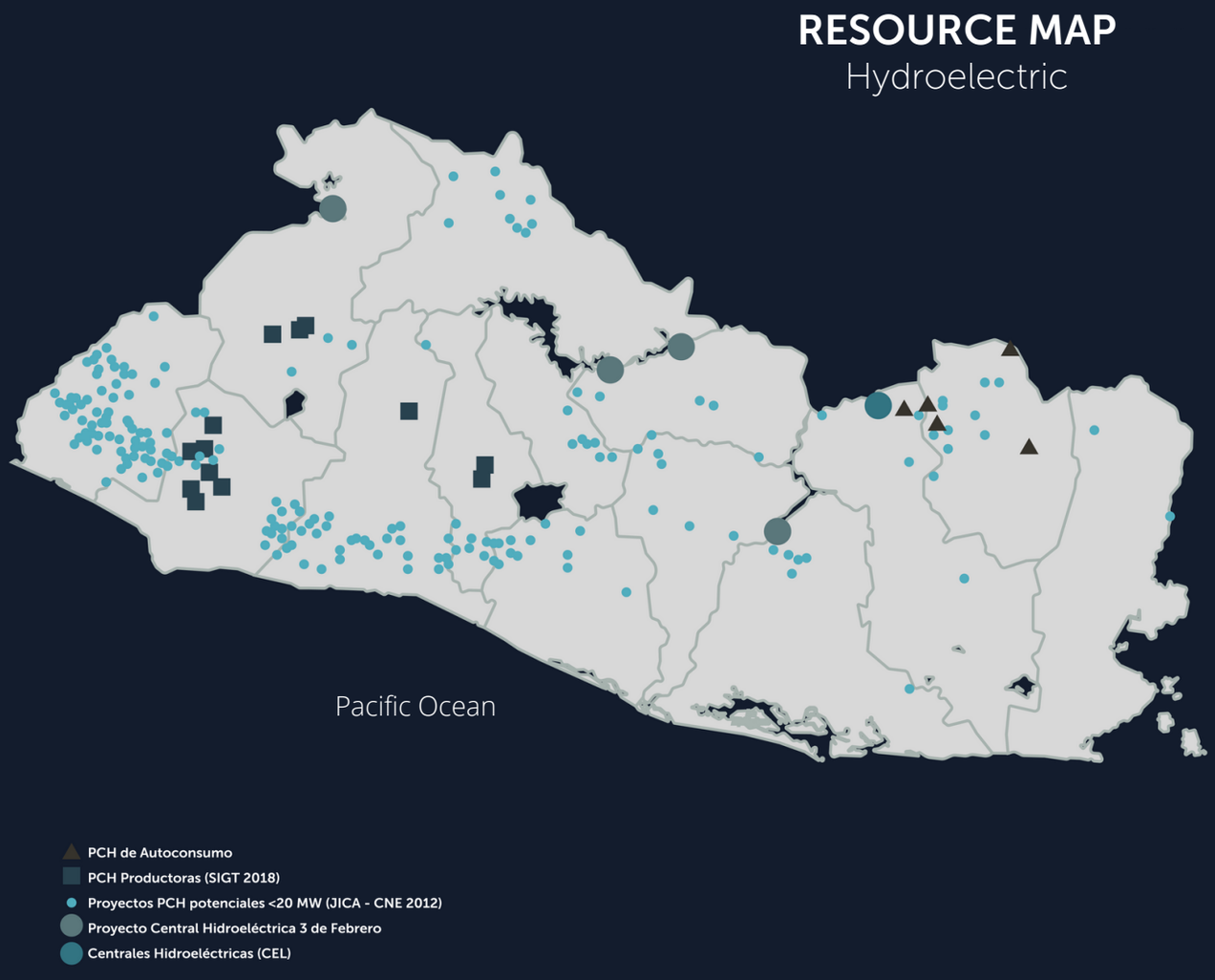
Nº	Nombre Sitio	Temperatura Prom. Reservorio (ºC)	Potencial Geotérmico (Mwe)
C	San Vicente	228	117
D	Chinameca	210	76

Companies and projects

Company	Source of Investment	Project	Supply start date	Installed capacity (nominal power MW)
LAGEO	El Salvador	AHUACHAPÁN	1/1/1975	95
LAGEO	El Salvador	BERLÍN U1 Y U2	1/1/2005	56.24
LAGEO	El Salvador	BERLÍN U3	1/1/2007	44
LAGEO	El Salvador	BERLÍN CICLO BINARIO	1/1/2008	9.2
SAN VICENTE 7, INC., SUCURSAL EL SALVADOR	El Salvador	UNIDAD A BOCAPOZO EN POZOS SV-5	1/12/2022	5
LAGEO, S.A. DE C.V.	El Salvador	CICLO BINARIO BERLIN 2	1/6/2022	7.4
SAN VICENTE 7, INC., SUCURSAL EL SALVADOR	El Salvador	CENTRAL GEOTÉRMICA DE CHINAMECA	1/1/2023	25

Hydroelectric generation

El Salvador has an installed capacity of hydroelectric resource of more than 550 MW. Below is the map of this resource:



Companies and projects

Company	Source of investment	Project	Supply start date	Installed capacity (nominal power MW)
COMISIÓN EJECUTIVA HIDROELÉCTRICA DEL RÍO LEMPA	El Salvador	CENTRAL HIDROELÉCTRICA GUAJOYO	1/1/2005	19.8
COMISIÓN EJECUTIVA HIDROELÉCTRICA DEL RÍO LEMPA	El Salvador	CENTRAL HIDROELÉCTRICA CERRÓN GRANDE	1/1/2005	172.8
COMISIÓN EJECUTIVA HIDROELÉCTRICA DEL RÍO LEMPA	El Salvador	CENTRAL HIDROELÉCTRICA 5 DE NOVIEMBRE	1/1/2005	99.95
COMISIÓN EJECUTIVA HIDROELÉCTRICA DEL RÍO LEMPA	El Salvador	CENTRAL HIDROELÉCTRICA 15 DE SEPTIEMBRE	1/1/2005	168.3
COMISIÓN EJECUTIVA HIDROELÉCTRICA DEL RÍO LEMPA	El Salvador	CENTRAL HIDROELÉCTRICA 15 DE SEPTIEMBRE	1/1/2007	11.7
COMISIÓN EJECUTIVA HIDROELÉCTRICA DEL RÍO LEMPA	El Salvador	CENTRAL HIDROELÉCTRICA 5 DE NOVIEMBRE EXPANSIÓN	1/1/2016	80
COMISIÓN EJECUTIVA HIDROELÉCTRICA DEL RÍO LEMPA	El Salvador	EL CHAPARRAL	1/1/2022	66

Generation from biogas

Below is a map of the country with the location of sanitary landfills and biodigesters.

Nombre	Capacidad (kw)	Ubicación	Estado	m3	Ton/día
Agrocampreste	700	13.34561, -88.22725	En construcción	11,450	-
Instiruto Nacional Dr. Francisco Martínez Suarez	-	14.04488, -88.93157	En operación	55	-
Agricola Onza, Hacienda San Ramón	360	13.74005, -89.65197	En operación	4,500	-
Agrosania, San Julian	150	13.75083, -89.58613	En operación	1,200	-
Granja Renig	850	13.71876, 89.42483	En operación	5,500	-
Granja San José (Los hermanos Jovel)	-	13.80888, -88.7562	En operación	2,500	-
Granja El Progreso	-	13.81142, -88.75775	En operación	3,500	-
AES Nejapa	6300	13.85905, -89.22547	En operación	-	1260
Granja Miralvalle	-	14.00308, -89.63984	En operación	220	-

ID	Nombre relleno sanitario	Promedio Diario (ton)*	Potencial (kw/ton)
1	R.S. San Francisco Menéndez	11.576	57.88
2	R.S. Atiquizaya	22.412	112.06
3	R.S. Sonsonate	402.845	2014.225
4	R.S. Santa Isabel Ishuatán	0.175	0.875
5	ASEMUSA	220.846	1104.23
6	MIDES, SEM	1920.06	9600.3
7	R.S. Puerto de La Libertad	156.227	781.135
8	AMUSNOR	38.9	194.5

ID	Nombre relleno sanitario	Promedio Diario (ton)*	Potencial (kw/ton)
9	R.S. Suchitoto	3.106	15.53
10	R.S. Cinquera	1.636	8.18
11	AMUCHADES	3.59	17.95
12	R.S. Usulután	186.835	934.175
13	R.S. Perquín	0.661	3.305
14	R.S. Meanguera	0.856	4.28
15	R.S. San Miguel	129.039	645.195
16	R.S. Corinto	6.682	33.41
17	ASINORLU	53.606	268.03

*Basados en estadística 2015 de derechos depositados en rellenos sanitarios (MARN, 2017)

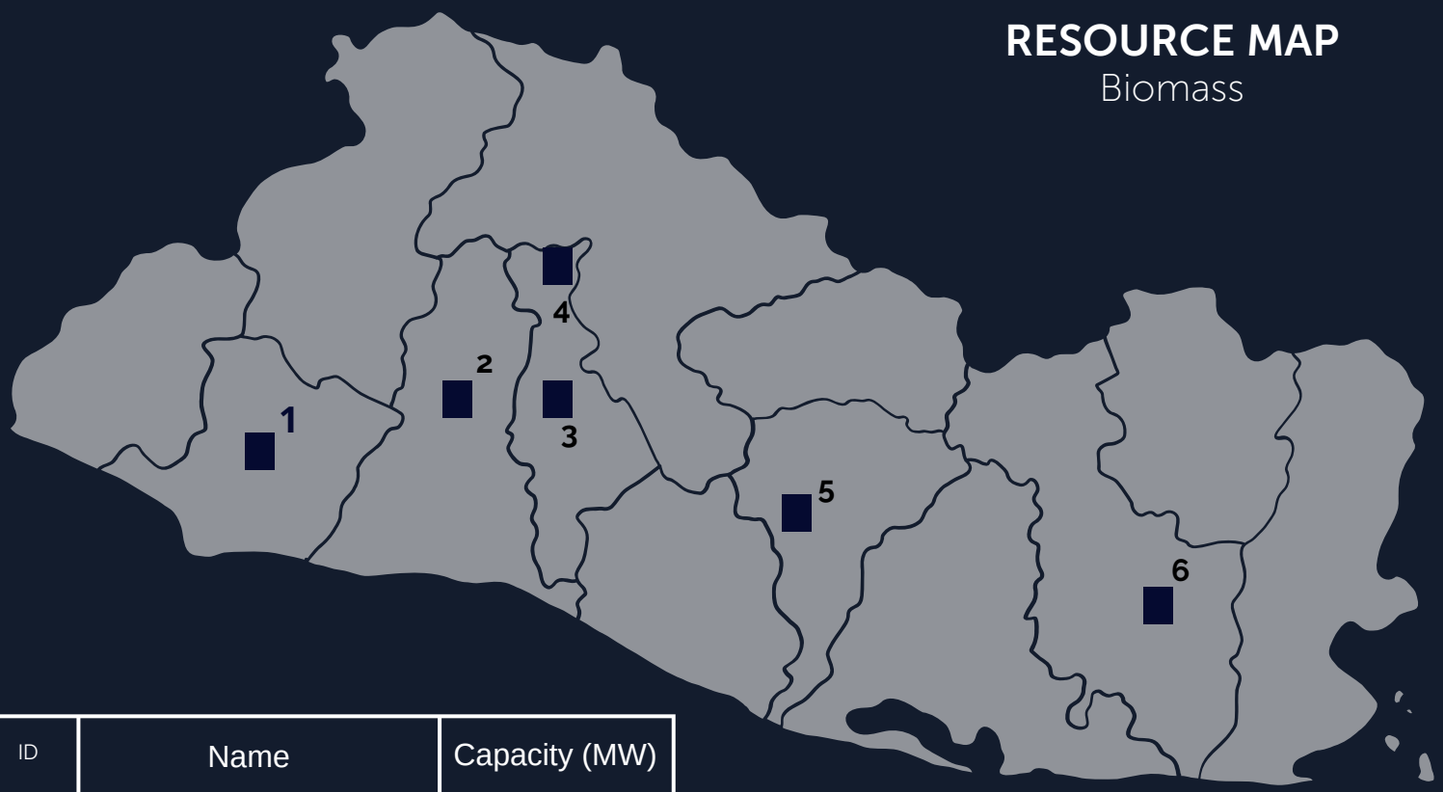
Companies and projects

Company	Project	Supply start date	Installed capacity (nominal power MW)
Agricola Gandera Onza, S.A. de C.V.	San Ramon	01/07/2015	0,3000
Agrosania S.A. DE C.V.	Biodigestor San Julian	06/01/2017	0,1500
Renig, S.A. de C.V.	RENIG	01/02/2021	0,8500
AGROCAMPESTRE, S.A. DE C.V.	PLANTA DE GENERACIÓN DE ENERGÍA ELÉCTRICA CON BIOGÁS AGROCAMPESTRE	01/04/2022	0,8520
AES NEJAPA GAS	Biogás	01/03/2011	5,0000

Note: companies participating in the retail electricity market.

Generation from biomass

Below is a map of the country with the location of the companies that generate energy from biomass in the country:



ID	Name	Capacity (MW)
1	Ingenio Central de Izalco	45
2	Hanesbrands El Salvador	5.5
3	Ingenio El Ángel	72.8
4	Ingenio La Cabaña	20
5	Ingenio Central Azucarero Jiboa	34.9
6	Ingenio Chaparrastique	62.4

Companies and projects

Company	Source of investment	Project	Supply start date	Installed capacity (nominal power MW)
INGENIO CENTRAL IZALCO	El Salvador	INGENIO CENTRAL IZALCO	1/1/2005	45
INGENIO LA CABAÑA	El Salvador	INGENIO LA CABAÑA	1/1/2008	21
INGENIO EL ÁNGEL	El Salvador	INGENIO EL ÁNGEL	1/1/2008	72.8
INGENIO CHAPARRASTIQUE, S.A. DE C.V.	El Salvador	INGENIO CHAPARRASTIQUE	1/1/2011	16
HANESBRANDS EL SALVADOR	Estados Unidos	COGENERACIÓN INDUSTRIAL DE HANESBRANDS	1/1/2015	5.5
INGENIO LA CABAÑA	El Salvador	INGENIO LA CABAÑA (REPOTENCIACION)	1/1/2016	20
INGENIO CHAPARRASTIQUE, S.A. DE C.V.	El Salvador	INGENIO CHAPARRASTIQUE (REPOTENCIACION)	1/11/2017	62.4
INGENIO CENTRAL AZUCARERO JIBOA, S.A.	El Salvador	INGENIO CENTRAL AZUCARERO JIBOA (REPOTENCIADO)	1/1/2018	34.9

Legal framework

Incentives

El Salvador promotes the utilization of hydro, geothermal, wind, solar, marine, biogas, and biomass resources, as well as any other source that may be identified as renewable in the future. To achieve this, it offers attractive benefits through the Law of Fiscal Incentives for the Promotion of Renewable Energies in Electricity Generation.

Benefits

- Tariff Duty Exemption.
  - Exemption period: the first ten years.
  - Subject of exemption: Payment of Import Tariff Duties on Machinery, Equipment, Materials, and Supplies.
  - Destination that the goods must have: exclusively for pre-investment and investment activities in the construction of power plants, sub-transmission lines for energy transport from the generation plant to the transmission and/or distribution networks.

- Exemption from Income Tax (ISR) payment.
  - The exemption from Income Tax payment will be granted:
  - For a period of five (5) years in the case of projects greater than 10 megawatts (MW).
  - For a period of ten (10) years in the case of projects with less than 10 megawatts (MW).
  - In both cases, the exemption will apply from the start of commercial operation of the project.

- Total exemption from the payment of taxes on income derived directly from the sale of Certified Emission Reductions (CERs) within the framework of the Clean Development Mechanism (CDM) of the Kyoto Protocol or similar carbon markets.

In the case of geothermal power plants, the costs and expenses related to the activities of the total reinjection process of the geothermal resource can be deducted from the income tax for a maximum period of 10 years. However, this deduction cannot exceed 20% of the gross income generated in the previous year. It will be carried out through annual installments that do not exceed 25% of the income obtained in each fiscal year until its total amortization.

Modes of participation in electricity generation

Wholesale electricity market

- **Contract market**
  - Bilateral Contracts: Agreed directly between the generator and the distributor
  - Contracts awarded through Open Competitive Bidding Processes: International bidding processes for long-term contracts of up to 20 years, which enjoy a guarantee of energy purchase by the distributor for the duration of the contract.

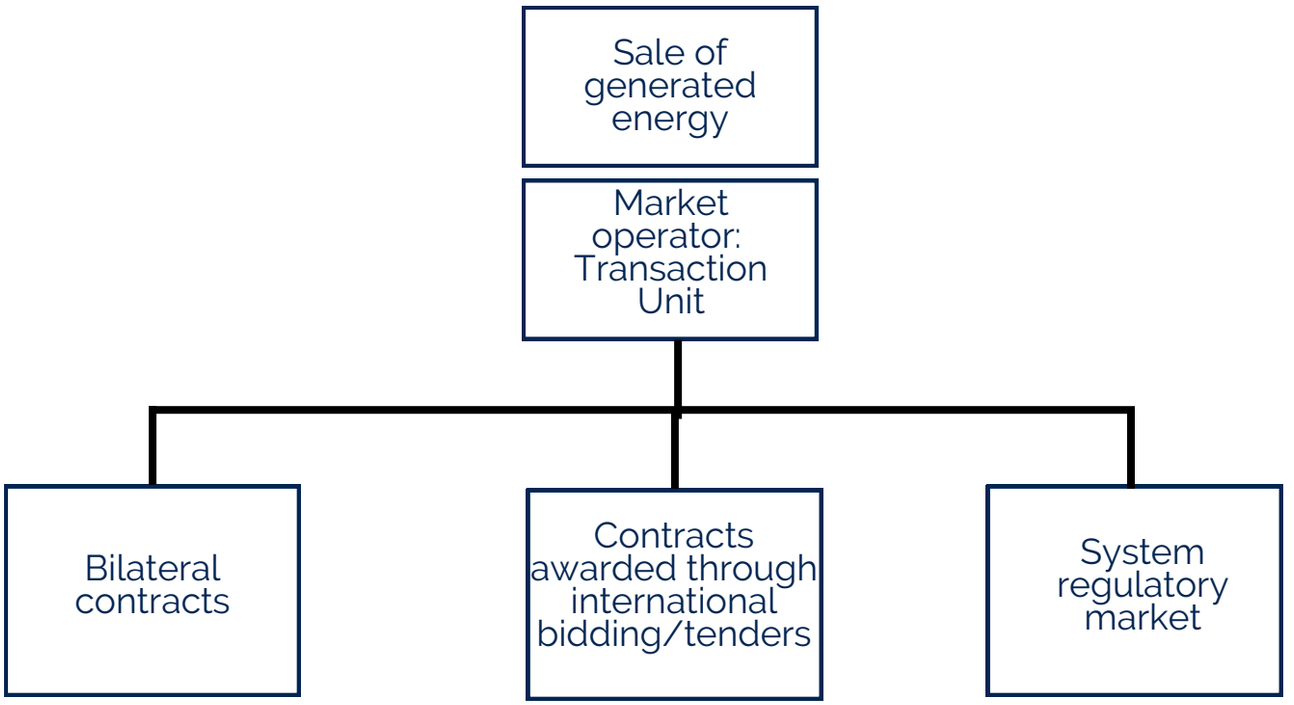
- **Regulatory System Market**
  - Generation for energy supply in the spot market, where non-conventional renewable generators (solar and wind) have priority in supply.

Distributed Generation (Retail Market)

- **Energy Sale**
  - Bilateral Contracts
  - Long-Term Contracts awarded through Open Competitive Bidding Processes
  - Renewable Self-Generating Users (APR)
  - Bilateral Contracts for the Sale of Excess Energy

- **Self-consumption**
  - Renewable Producing Users (UPR)

Wholesale Market Commercialization Mechanism



- Power purchase agreement (agreed price between the parties)
- Registration as a generator in SIGET
- Registration as a market participant (MP) in the Transaction Unit

- Price determined in the bidding process: price according to the economic offer (awarded price not exceeding the price ceiling)
- Registration as a generator in SIGET
- Registration as a market participant (PM) in the Transaction Unit

- Opportunity market: price valued for each hour according to the determined market offer.
- Registration as a generator in SIGET
- Registration as a market participant (PM) in the Transaction Unit

Procedures for project development

El ciclo de un proyecto para la producción de electricidad a partir de la transformación de un recurso renovable se puede representar de diferentes formas. La más tradicional es en términos de la inversión y de la operación de la central de producción, describiendo el primer nivel del ciclo generalmente en 4 etapas y en forma secuencial se listan a continuación:

It should be clear that these stages encompass activities that will later define execution timelines. A first level of execution is defined in terms of the studies or analyses that need to be carried out. The quantity and type of studies and the depth of analysis will depend on many factors, but in general investment terms, they can be grouped as follows

Pre-investment stage:

- Project profile
- Pre-feasibility study
- Feasibility study
  - Environmental impact assessment
  - Studies for grid interconnection
- Final design

All these activities and tasks, whose outcome and effectiveness in their fulfillment and foundation depend on the capacity of the project developer, are dynamic, interdependent, and at times need to be executed simultaneously in a constant process of continuous improvement. Given that these activities are prior to the construction stage, it is considered necessary to evaluate the options presented by the current regulatory framework at the beginning of these studies and analyses. Depending on the resource to be used for electricity generation and the planned scale of the project, certain decisions should be made in favor of its execution, thus defining the project profile.

Understanding the regulatory framework will result in gaining clarity on the most convenient path to direct efforts in project management, entering the market to commercialize or self-consume the energy production, facilitating bureaucratic processes, or enjoying specific fiscal incentives.

The second level of activity execution in the project cycle occurs once the project has been analyzed and defined in general terms. At this point, an initial schedule and budget for the pre-investment stage must be developed, intertwining it with the other stages of the project cycle. This involves establishing activities linked to authorizing institutions or those in permanent collaboration with the developer, which can be grouped in terms of:

- Electrical interconnection and operation in the electricity market.
- Construction of civil works and payment of municipal fees.
- Environmental impact assessment and environmental management plan.
- Concession (Water and geothermal resources).
- Fiscal incentives and project financing.

Project permitting process for energy projects.

Company formation and capital registration.

- **The procedure for company formation.**

http://energiasrenovables.cne.gob.sv/index.php/2021/02/11/procedimiento-de-conformacion-de-sociedad/

- **Registration of Foreign Capital (Foreign Company, Branch).**

http://energiasrenovables.cne.gob.sv/index.php/2021/02/17/registro-de-capital-extranjero-sociedad-extranjera-sucursal/

Electrical interconnection and operation in the electricity market.

Electrical interconnection can be physical and can be done at high voltage to the existing network of the Empresa Transmisora de El Salvador (ETESAL) or at low voltage to the network of a distributor. The procedures are detailed below:

- **Procedure for requesting feasibility of access to transmission networks.**

The applicant must submit a request for feasibility of access to the transmitter's facilities.
Link: http://energiasrenovables.cne.gob.sv/index.php/2021/02/10/procedimiento-para-la-solicitud-de-factibilidad-de-acceso-a-las-redes-de-transmision/

- **Procedure for requesting interconnection to the transmission network**

The Applicant must submit a feasibility request for interconnection to the transmitter's network
Enlace: http://energiasrenovables.cne.gob.sv/index.php/2021/02/10/procedimiento-para-la-solicitud-de-interconexion-a-la-red-de-transmision/

- **Procedure for the request for feasibility of access to the distributor's facilities.**

The regulation from which this procedure derives aims to establish the requirements and responsibilities applicable to electrical interconnections between operators in order to ensure the principle of free access to distribution facilities, as well as the quality and safety of the system.
Link: http://energiasrenovables.cne.gob.sv/index.php/2021/02/10/procedimiento-para-la-solicitud-de-factibilidad-de-acceso-a-las-instalaciones-del-distribuidor/

- **Procedure for requesting interconnection to the distributor's facilities.**

At this point, the corresponding studies for the interconnection of generators must be presented in order to evaluate the impact on the grid, equipment protection requirements, harmonic filters, and define adjustments to existing or to-be-installed voltage regulation and protection equipment. As part of the Project Cycle, the Distributor and the Applicant will analyze and agree on the studies to be conducted based on the impact that the new installation could generate. For this purpose, technical elements that emerge from the analysis of scenarios and hypotheses should be added to the economic feasibility study, defining the investment required due to the generator interconnection.
Link: http://energiasrenovables.cne.gob.sv/index.php/2021/02/10/procedimiento-para-la-solicitud-de-interconexion-a-las-instalaciones-del-distribuidor/

- **Application for registration of Transaction Unit [UT].**

Link: http://energiasrenovables.cne.gob.sv/index.php/2021/02/10/solicitud-de-inscripcion-unidad-de-transacciones-ut/

Construction of civil works and payment of municipal fees.

- **Procedure for project feasibility in construction.**

This procedure is carried out at the Ministry of Housing facilities in El Salvador or, depending on the project's location, it may be requested at the Planning Offices or Municipalities. The initiation of a specific procedure will depend on the project's characteristics (location, scale, and resource).
Link: http://energiasrenovables.cne.gob.sv/index.php/2021/02/11/procedimiento-para-la-factibilidad-del-proyecto-de-construccion/

- **Procedure for obtaining construction permits for the project.**

As a prerequisite, the approval resolution resulting from the construction project feasibility application process must be obtained, and it should be included as part of the documentation required in this subsequent step, along with certificates or resolutions from other ministries.
Link: http://energiasrenovables.cne.gob.sv/index.php/2021/02/11/procedimiento-para-el-permiso-de-construccion-del-proyecto/

Environmental impact assessment and environmental management plan.

- **Procedure for Environmental Permit for Electricity Generation Projects.**

This procedure is carried out at the facilities of the Ministry of Environment and Natural Resources (MARN) of El Salvador. The Environmental Construction Permit is a process that requires obtaining certificates, technical opinions, or resolutions from other institutions depending on the characteristics of the project.
Link: http://energiasrenovables.cne.gob.sv/index.php/2021/02/11/procedimiento-de-permiso-ambiental-para-proyectos/

- **Procedure for requesting technical inspection/cultural assessment.**

This procedure is carried out at the facilities of the Ministry of Culture, where a cultural impact assessment is conducted for the project's proposed location, particularly if it is situated within an archaeological zone.
Link:http://energiasrenovables.cne.gob.sv/index.php/2021/02/11/procedimiento-de-solicitud-de-inspeccion-tecnica-valoracion-cultural/

- **Procedure for environmental permit for small hydropower projects.**

This procedure is carried out at the facilities of the Ministry of Environment and Natural Resources (MARN) of El Salvador.
Link: http://energiasrenovables.cne.gob.sv/index.php/2021/02/11/procedimiento-de-permiso-ambiental-para-proyectos-de-pequenas-centrales-hidroelectricas/

Concession (Applies to water and geothermal resources).

These procedures are carried out at the facilities of SIGET

- **Procedure to request a permit for studies on water and/or geothermal resources.**

Link: http://energiasrenovables.cne.gob.sv/index.php/2021/02/11/procedimiento-para-solicitar-permiso-de-estudios-para-recurso-hidrico-y-o-geotermico/

- **Procedure for requesting a concession, expedited process for projects up to 5MW.**

Link:http://energiasrenovables.cne.gob.sv/index.php/2021/02/11/procedimiento-de-solicitud-de-concesion-proceso-abreviado-para-proyectos-de-hasta-5mw/

- **Procedure for requesting a concession, regular process for projects exceeding 5MW.**

Link:http://energiasrenovables.cne.gob.sv/index.php/2021/02/11/procedimiento-de-solicitud-de-concesion-proceso-normal-para-proyectos-mas-de5mw/

Tax incentives.

- **Procedure for registration at SIGET**

Link:http://energiasrenovables.cne.gob.sv/index.php/2021/02/11/procedimiento-de-inscripcion-en-el-registro-de-la-siget/

- **Procedure for certification of projects with the tax incentives law.**

Project certification is carried out at SIGET
Link:http://energiasrenovables.cne.gob.sv/index.php/2021/02/11/procedimiento-de-certificacion-de-proyectos-con-ley-de-incentivos-fiscales/

- **Procedure for project qualification to enjoy tax benefits and incentives.**

This procedure is carried out at the facilities of the Ministry of Finance in El Salvador.
Link:http://energiasrenovables.cne.gob.sv/index.php/2021/02/11/procedimiento-de-calificacion-del-proyecto-para-el-goce-de-los-beneficios-e-incentivos-fiscales/

- **Procedure for the Legal Stability Agreement contract.**

It provides tax, customs, and migratory stability for up to 20 years to both national and foreign investors.
Link:http://energiasrenovables.cne.gob.sv/index.php/2021/02/11/procedimiento-de-contrato-de-estabilidad-juridica/

Projects

10 MW geothermal power plant in San Vicente, El Salvador.

Project description

The project involves the design, supply, construction, assembly, testing, commissioning, operation, and sale of energy through a 10 MW geothermal power plant in the San Vicente geothermal field under the BOT (Build-Operate-Transfer) model.

Location:
San Vicente

Investment modality:
BOT y PPA

Contract duration:
20 years

Source of energy generation.
Geothermal.

Project works and activities.
1.1 Vapor delivery transportation system from the delivery point to the power plant and transportation system from the power plant to the reinjection point. 1.2 Geothermal power plant for electrical energy generation using either condensation or binary cycle technology. Capacity of 10MW. 1.3 Step-up substation to 115 KV voltage.

Demand
The winning investor will be awarded a 20-year Power Purchase Agreement (PPA) for the energy produced by the geothermal power plant, allowing them to recover their investment.

Assessments and studies conducted to date.
Feasibility study that will need to be complemented with design, financial requirements, financing structure, financial ratios, sensitivity analysis, risk matrix, bankability analysis, among others.

Attractions
Reduction of renewable energy bill, which does not produce greenhouse gases, job creation, productivity improvements, and technology transfer.

Relevant information.
The participating investors (or consortia) must meet minimum criteria for financial and technical strength:

- Two hundred million United States dollars (US$200,000,000.00) of share capital and net worth.
- Directly accredited experience or through their contractors in the financial structuring, design, construction, commissioning, operation, and maintenance of condensation or binary cycle geothermal power plants of at least 20 MW.

Reference images

Annexes

Applicable laws and regulations.

The laws and regulations that govern the electrical sector in El Salvador are as follows:

- **General Electricity Law.** 996, published in the Official Gazette Number 201, Volume No. 333, on October 25, 1996; and its amendments (more information: https://cutt.ly/1C21qaB)
  - **Regulations of the General Electricity Law (RLGE)**, Executive Decree Number 70, dated July 25, 1997, published in the Official Gazette Number 138, Volume Number 336, on July 25, 1997; and its amendments. https://cutt.ly/6C21sma
  - **Regulation of Operation of the Transmission System and Wholesale Market Based on Production Costs.** Official Gazette Number 138, Volume No. 392, Friday, July 22, 2011. https://cutt.ly/TC21WH
  - **Regulation Applicable to Electricity Trading Activities.** Executive Decree No. 90, dated October 24, 2000, published in the Official Gazette No. 205, Volume No. 349, on November 1, 2012; and its amendments. https://cutt.ly/LC21Pn5
- **Law on the Creation of the General Superintendence of Electricity and Telecommunications.** Decree No. 808 of September 12, 1996, published in Official Gazette No. 189, Volume No. 333, on October 9, 1996; and its amendments (more information here).
  - **Regulation of the Law Creating the General Superintendence of Electricity and Telecommunications.** Executive Decree No. 56 of May 13, 1998, published in Official Gazette No. 88, Volume No. 339, on May 15, 1998; and its amendments. https://cutt.ly/ZC20y1P
- **Law of the Executive Hydroelectric Commission of the Lempa River** Decree Number 137, dated September 18, 1948, published in the Official Gazette No. 210, Volume No. 145, on September 27, 1948; and its amendments.
  https://cutt.ly/hC20kBl
  - **Regulation for the Implementation of the Law of the Hidroelectric Executive Commission of the Lempa River**, Executive Decree Number 13, dated January 30, 1975, published in the Official Gazette No. 24, Volume No. 246, on February 5, 1975; and its amendments.
- **Hydrocarbons Law.** Decree Law Number 626, dated March 17, 1981, published in the Official Gazette Number 52, Volume No. 270, on March 17, 1981; and its amendments. https://cutt.ly/aC20Hc5
- **Natural Gas Law.** Legislative Decree No. 630, dated May 22, 2008, published in the Official Gazette No. 115, Volume No. 379, on June 20, 2008; and its amendments.
- **Regulatory Law for the Storage, Transportation, and Distribution of Petroleum Products** Legislative Decree No. 169, dated November 19, 1970, published in the Official Gazette No. 235, Volume No. 229, on December 23, 1970.. https://cutt.ly/sC208ry
- **Framework Treaty for the Central American Electricity Market** signed in the city of Guatemala on December 30, 1996

- **Law of Tax Incentives for the Promotion of Renewable Energies in Electricity Generation** Legislative Decree No. 462, dated November 8, 2007, published in Official Gazette No. 238, Volume No. 377, on December 20, 2007; and its amendments. https://cutt.ly/nC22faY
  - **Regulation of the Law on Tax Incentives for the Promotion of Renewable Energy in Electricity Generation.** Executive Decree No. 4, dated January 14, 2009, published in the Official Gazette No. 45, Volume No. 382, on March 6, 2009; and its amendments. https://cutt.ly/7C22xXo
    - **Technical regulations for characterizing projects that harness renewable sources in electricity generation.** Agreement No. 162-E-2012, February 2012, and its amendments.
- **Law on Legal Stability for Investments.** Legislative Decree No. 905, dated December 18, 2014, published in the Official Gazette No. 10, Volume No. 406, on January 16, 2015; and its amendments**.** https://cutt.ly/LC22YXc
  - **Regulation of the Law on Legal Stability for Investments.** Executive Decree No. 92, dated November 30, 2015, published in the Official Gazette No. 220, Volume No. 409, on November 30, 2015; and its amendments**.**https://cutt.ly/5C22DGj
- **Law of the Environment.** Decree No. 233, dated March 2, 1998, published in the Official Gazette No. 79, Volume 339, dated May 4, 1998; and its amendments. https://cutt.ly/BC22XKf
  - **Regulation of the Environmental Law.** Executive Decree No. 17, dated March 21, 2000, published in the Official Gazette No. 73, Volume 347, on April 12, 2000.

Sucess Stories

Energía del Pacífico

This 355 MW project will be the first power generation plant based on natural gas in Central America, with an investment of up to USD 1 billion. It has a contract to supply energy for 20 years and is currently under development.

NEOEN

The French renewable energy generation company Neoen has invested approximately $285 million in photovoltaic generation projects in El Salvador. Their most recent project is Capella Solar, which will consist of two plants with a combined capacity of 140 MW.

AES
la energía de ser globales

Bosforo, a project executed by AES El Salvador, has ten power plants each having a capacity of 10 MW, generating a total solar power of 100 MW for El Salvador. The total investment is US$ 160 million.

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