



# **CABO VERDE**

*THE MID - ATLANTIC GATEWAY  
TO THE WORLD'S ECONOMY*

***ENERGY  
SECTOR***



# CABO VERDE

THE MID - ATLANTIC GATEWAY  
TO THE WORLD'S ECONOMY



## CONTENTS

INTRODUCTION .....	5
SECTOR BACKGROUND PAPER .....	9
FEATURED PROJECTS .....	15
ENER01 WIND AND SOLAR IPPS 2019-2030.....	16
ENER02 SANTIAGO PUMPED STORAGE PROJECT.....	19
ENER03 ENERGY STORAGE (BATTERIES & CONVERTERS).....	22
ENER04 PROMOTION OF MICROGENERATION.....	25
ENER05 ENERGY EFFICIENCY .....	28
ENER06 BRAVA: A SUSTAINABLE ISLAND .....	31
ENER07 E-MOBILITY .....	34
ENER08 REINFORCEMENT AND MODERNIZATION OF THE GRID .....	37
ENER09 DE-RISKING INVESTMENT IN RENEWABLE ENERGY .....	40
ENER10 STRENGTHENING THE INSTITUTIONAL ENVIRONMENT.....	43





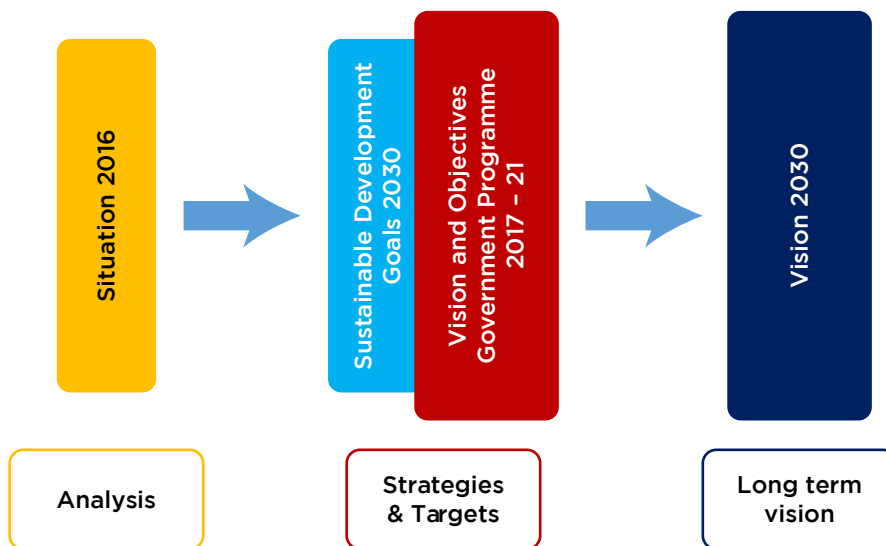
# INTRODUCTION

The Strategic Plan for Sustainable Development (PEDS, using the Portuguese acronym) sets out, in programmatic and operational terms, the vision and objectives of the Government of Cabo Verde and establishes 39 ambitious development targets for the period 2017-2021 for the sustainable development of Cabo Verde. But the PEDS strategy for the short term is underpinned by a longer-term vision for Cabo Verde’s sustainable development for the period 2018-2030 that is aligned with the 2030 sustainable development agenda and the sustainable development goals as means to build a better future for all Cabo Verdeans.

The PEDS was conceived using a participatory and inclusive approach with great efforts being made to ensure the involvement of not only the central administration and local governments and other national entities and institutions, but carefully including a range of civil society organisations, the private sector, and Cabo Verde’s development partners.

The strategy and objectives of the PEDS are conceived on the basis of the reality of the national and the global context in which Cabo Verde is situated and presents a profound analysis of the country’s development in 2016.

Fig. 1: PEDS Methodology



## VISION AND LONG-TERM OBJECTIVES

The Government Programme for the IX Legislature (2016-2021) sets out a clear vision which is adopted by the PEDS:

“A developed Cabo Verde, inclusive, democratic, open to the world, modern, safe, where full employment and full freedom rule”

The PEDS seeks to promote the dynamic

insertion of Cabo Verde into the global economy considering this the only realistic and viable alternative for its long term, sustainable development. The long-term vision is established through four inter-related strategic objectives:

1. **Make Cabo Verde a Circulatory Economy in the Mid-Atlantic**, through strategic capital investments in connectivity, the blue economy, tourism development, and business, industry, and financial services.
2. **Sustainable Economic and Environmental development** through structural reforms such as investment

in sustainable tourism, strengthening its link with the country's productive value chain through agribusiness and domestic industry and export promotion, while safeguarding environmental sustainability;

- 3. Ensure social inclusion and reduce inequalities** through improving education and professional training, health and social safety nets, youth and gender equality;
- 4. Strengthen democracy, justice and international diplomacy**, and engage the diaspora in the country's development.

The PEDS foresees the need to promote investment in key strategic and transformative areas such as the maritime economy, renewable energy and water and sanitation, which will have a catalytic impact on the wider economy and particularly on sectors such as tourism, agriculture, industry and commerce.

Each of these objectives are linked to a set of country specific outcome indicators with a baseline value and annual targets up to 2021.

## PEDS STRATEGIES FOR 2017-21

The overall objective of the PEDS is 'sustainable development with full employment' that will be achieved through exploiting Cabo Verde's geo-strategic position to create a "Mid-Atlantic Hub Economy"

### OBJECTIVE 1: TRANSFORMING CABO VERDE INTO A CIRCULATORY ECONOMY

The PEDS strategy identifies the development of 7 priority hubs, or platforms, on which the country's future economic growth will be based:

**TOURISM PLATFORM** Inclusive tourism that benefits all islands and takes advantage of Cabo Verde's natural environment, history and culture

**AIR TRANSPORT HUB** For passengers and freight in all countries bordering the Atlantic

**MARITIME PLATFORM** Supplying and providing services to freighters, cruise ships, and other vessels

**COMMERCIAL AND INDUSTRIAL HUB** Transforming Cabo Verde into an international business centre

**FINANCIAL HUB** Creating an international finance platform

**ICT PLATFORM** Creating a digital platform for technological innovation

**ETHNIC & CULTURAL PLATFORM** Promoting investment by the diaspora and ethnic tourism

To achieve this, Government recognises that profound reforms and structural adjustments will be required to make Cabo Verde more competitive and to reduce business costs in order to take advantage of its endogenous resources. These will include:

1. Placing Cabo Verde in the top rankings in relation to international indicators for doing business, good governance and economic freedom
2. Fundamental reforms in the development of human capital in four areas:
  - Strengthening scientific and pedagogical capacities
  - Exploiting opportunities for the use of ICT, video-imaging and distance learning
  - Adapting curricula to the needs of the market
  - Institutional development

## **OBJECTIVE 2: GUARANTEEING ECONOMIC AND ENVIRONMENTAL SUSTAINABILITY**

The PEDS strategy for promoting economic and environmental sustainability has three components:

1. Consolidating tourism development, ensure its sustainable and inclusive growth;
2. Promoting domestic production and exports particularly in the following sectors:
  - Fisheries
  - Agriculture
  - Light industry
  - Creative Industries
3. Implementing Structural Reforms (to reduce factor costs) through:
  - Reform and modernisation of the public administration
  - Improving the business and

investment environment

- Introducing new models for financing development and the economy
- Investment in transportation and Infrastructure
- Investing in renewable energy and reducing electricity cost

The PEDS recognizes the significance and developmental value of Cabo Verde's environmental resources, adopting integrated environmental policies to ensure their sustainable management, enhancing the value of the environment as an asset and key factor in economic competitiveness, whilst recognising the need to maintain a balance between meeting current needs and the expectations of future generations.

## **OBJECTIVE 3: ENSURE SOCIAL INCLUSION AND REDUCE INEQUALITIES**

PEDS strategies include:

1. Improving the living conditions of families
2. Promoting social inclusion
3. Developing education of excellence
4. Increase access to quality housing
5. Creating decent employment and strengthening the relevance of vocational training
6. Improve the conditions for youth
7. Increase the national health system and access to social security
8. Promote gender equality
9. Promote culture and sport

## **OBJECTIVE 4: STRENGTHEN DEMOCRACY, JUSTICE AND INTERNATIONAL DIPLOMACY**

The PEDS strategy is to:

1. Strengthen Democracy;

2. Enhance a culture of peace, human rights and justice
3. Reinforce security
4. Strengthen territorial defence
5. Strengthening foreign policy and use diplomatic resources to mobilise strategic partnerships and the Cabo Verdean diaspora

Gender equality, ensuring that that women and girls, as well as men and boys, have the same opportunities to participate in and benefit from the development process, is a fundamental principle of sustainable development and is integrated as a cross cutting issue in the PEDS. Through the execution of the PEDS Government will ensure measures are taken to address gender inequalities in different sectors to promote justice and social inclusion in the country's sustainable development.

## IMPLEMENTATION

The operationalisation of the PEDS to achieve its 4 prescribed objectives PEDS, is to be achieved through sectoral and transversal programmes, each comprising a set of projects.



The 35 PEDS programmes are grouped into 3 cross-cutting pillars designed to achieve the objectives set, within the time horizon 2017-2021 and contributing to the realization of the long-term vision for the future of Cabo Verde.

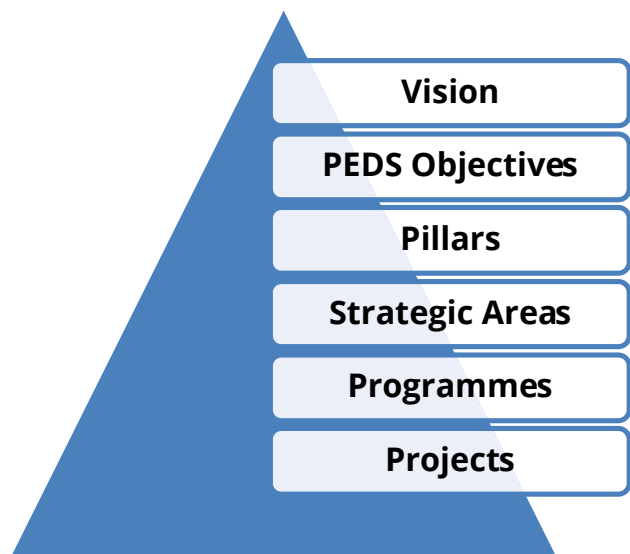
**PILLAR 1, Economic Growth:** programmes that will promote a new model of economic that will introduce reforms and restructure the economic sectors

**PILLAR 2, Social Development:** programmes that will develop the country's human capital, quality of life and combat inequalities and asymmetries.

**PILLAR 3, Sovereignty:** programmes that will develop a new state model for the strengthening of sovereignty, creating value in democracy and orientation of diplomacy to the challenges of the country's development.

Each pillar is linked to a subset of the Sustainable Development Goals (SDGs). For every programme an objective and a budget has been defined, and links to the PEDS indicators and the SDGs are presented.

Fig. 2: The logic of the PEDS Strategy:



## REGIONALISATION AND TERRITORIALISATION OF THE PEDS

Cabo Verde is a country of regional asymmetries and inequalities with its insular nature making universal access to basic services challenging, and compromising the creation of economies of scale. Thus, the regionalization of the PEDS is a firm Government commitment.

The situation analysis that underpins the PEDS incorporated an analysis of the different regions of the country, where the specificities of development dynamics and challenges were addressed, weighted and used in the definition of regional targets aimed at exploiting the potential and value of each island and their endogenous resources to reduce regional asymmetries and to ensure that nobody is left behind.





**SECTOR BACKGROUND PAPER**

# ENERGY

## FACTS AT GLANCE

- 176.5 MW - Total Installed Generation Capacity
- 31,5 MW - Renewable Energy Installed Generation Capacity
- 491 GWh - Total Electricity Generated
- 83 GWh - Electricity Generated from Renewable Sources
- 93% - Population with Electricity Access
- 23% - Total Electricity Distribution Losses
- 74% - Population with access to Primary Clean Cooking Fuels and Technologies;
- 80% - Dependence of Imported Fossil Fuels;
- 1,5 Toe/Million's ECV - Energy Intensity Index.

## CHARACTERISTICS OF THE SECTOR

The energy sector of Cabo Verde is characterized by a strong dependence of the imported petroleum products corresponding to about 80% of total primary energy supply in 2017.

Cabo Verde registered, in 2017, a total demand of 491 GWh and the Master Plan for the Electricity Sector estimates that it will reach 625 GWh, 843 GWh and 990 GWh, in 2020, 2030 and 2040, respectively

The country has made significant progress in the field of energy supplies, but major challenges persist namely: High level of energy dependency on imported fossil fuel, high electricity tariff rates and the high losses in the electricity distribution grids.

Access to modern, sustainable and low-cost energy is one of the key challenges for Cabo Verde 's sustainable socio-economic

development. To ensure improved access to electricity, in addition to physically extending the power grids, Government policies are aimed at facilitating connections and ensuring price affordability

The energy sector in Cabo Verde is in the process of transition to a sustainable and low-carbon network, with reforms under way or planned, as defined by the Government's strategy for the sector.

## TRANSFORMATION STRATEGY

The Government of Cabo Verde elected energy security, price stability and reduction of the energy bills as central concerns, as established in the PEDS (Strategic Plan for Sustainable Development), and in line with SDGs 7. These strategic objectives will be operationalized through the National Programme for Energy Sustainability (PNSE).

The long-term goal of the National Programme is to accomplish the transition to a secure, efficient and sustainable energy sector, reducing dependence on fossil fuels and ensuring universal access and energy security. Five axes of interventions are identified as crucial to the success of the PNSE, namely:

- Strengthening the institutional framework and improving the business and investment environment
- Reform of the organizational structure of energy market
- Investment in strategic infrastructures
- Development of renewable energy (RE)
- Promotion of energy efficiency

Within this framework and to allow the planning of the necessary infrastructures and related investments, a Master Plan for the Electricity Sector (2018 - 2030) was developed, in order to channel all efforts and actions towards these long-term goals.

Exploiting the potential of endogenous

renewable resources, notably wind and solar resources, have an important role for reducing electricity and water costs, increasing energy security and competitiveness, as well as diversifying the national economy.

The development of a local market for renewable energies has a great potential to induce, directly and indirectly, the emergence of new businesses, industries and services engaged in the construction, marketing, installation and maintenance of renewable technologies, with a positive impact on the creation of new jobs, especially for young people, and on sustainable growth.

On the other hand, resilience to climate change, drought and consequent water scarcity, suggest the need for investment in low-cost desalination plants, not only for human supply, but also for other productive activities, namely commercial agriculture, with the exploitation of endogenous renewable resources being the catalyst for this change.

The planned strategy is to reach a penetration rate for renewable energy of 54% by 2030, with a phased implementation schedule, requiring a total installed capacity of 251MW, plus more than 620MWh of storage capacity, by 2030.

This strategy foresees the installation of more than 150MWp of new solar PV projects and more than 60MW of new wind farms across Cabo Verde's territory.

To achieve these goals, significant investment and financial support is required.

## REASONS TO INVEST

- Political stability
- Government is committed to the development of Renewables Energies
- Opportunity to participate in exciting challenge for installation of renewable capacity
- Enabling Legal Framework and Independent Regulatory Entity in Place
- Excellent Quality of Renewable Energy Resources (Wind and Solar)
- Return on investment guaranteed, considering the existing regulatory regime
- Tax benefits according to the tax benefits code - Law n°26 VIII / 2013 of January 21
- Master Plan for the Electricity Sector defines the needs for the attribution of new capacities within medium and long term
- Sites for the development of Renewable Energy projects already identified and protected

## CURRENT PARTNERS

PARTNER	SUMMARY OF INVESTMENT	VALUE (EURO)
AECID	Mini grid in Vale da Costa; Strategic Plan for Promotion of Solar Heaters	600K
AFD	Expansion of Thermal power Plant in Sal island; and Desalination Plants in Sal and S. Vicente	26M
JICA and BAD	Concessional Loan for co-financing of the 60 kV Transmission Line in Santiago; Grid Reinforcement and Expansion project in 6 Islands and rural electrification; SCADA/EMS/DSM for Sal, Santiago and S. Vicente islands; Desalination Plan and Water pipeline in Santiago ; Technical cooperation Grants	36.7M
GEF	GEF 4 - Promotion of Market based Renewable Energy projects; GEF 5 - Energy Efficiency in Buildings and Appliances; GEF 6 - Energy Water Nexus	5M
GIZ	Interconnection Grid Code; Procedures for Tendering process of Renewable IPPs	
LUX-DEV	Renewable Energy Support Program, Solar PV Water pumping facilities	4.5M
NAMA Facility	DPP for Nama support project on E-Mobility	
European Union	Master Plan for Electric Sector; Tariff toolbox for RE IPPs and Micro-Grids	2 M
World Bank	Palmarejo and Lazareto Thermal Power plant Expansion; Loss Reduction and Revenue protection program; Distributed Solar PV and Solar Water Heating for Central and Regional Hospitals	50 M

### FOR MORE INFORMATION CONTACT:

**Rito Évora,**

National Director of Industry, Trade and Energy  
Santiago, Cabo Verde, Tel: +238 9938896,  
E-mail: rito.evora@mice.gov.cv

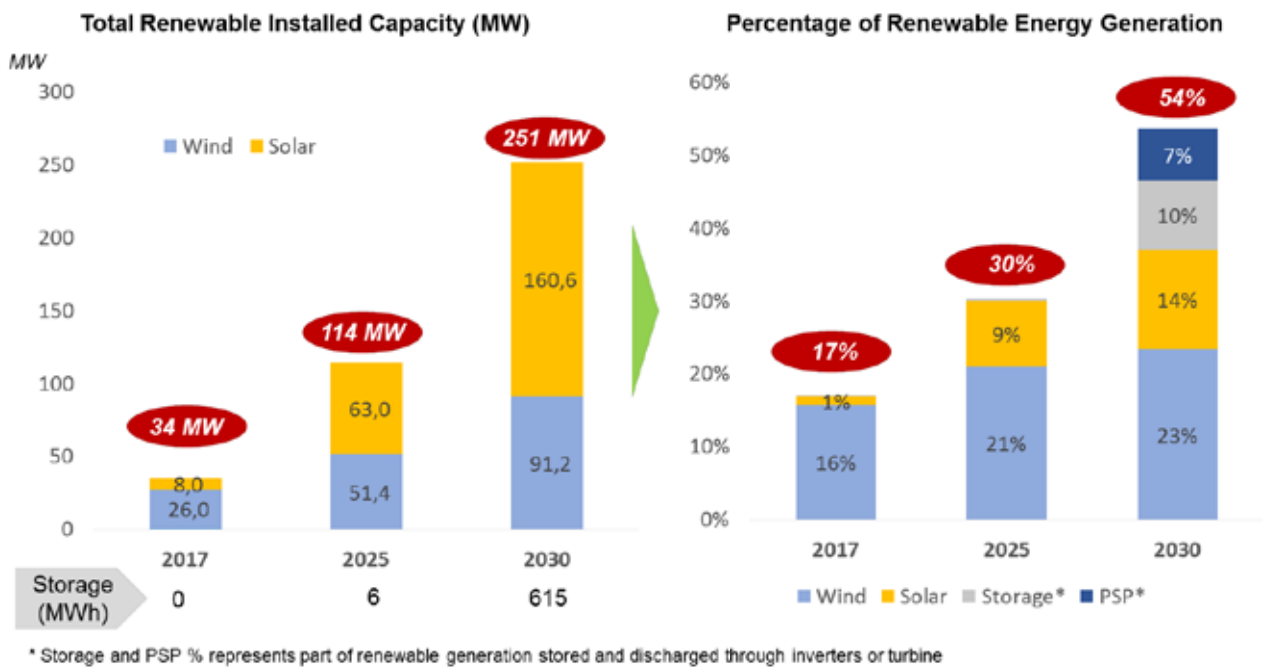


Figure 3 - Strategy towards 54% RE by 2030









**FEATURED PROJECTS**



## ENERO1 WIND AND SOLAR IPPS 2019-2030

### KEY INFORMATION

- Type of Opportunity:** Public Private Partnership
- Resources Required:** **€125.7 M (Wind) + €123.2M (Solar)**
- Promoter:** Ministry of Industry, Trade and Energy (MICE)
- Seeking:** Private Sector Investors
- Location:** All islands
- Status:** Legal Framework and Master Plan approved, Request for Proposals are currently being prepared for international tenders
- Duration:** 2019 - 2030
- Beneficiaries:** Population of Cabo Verde (approximately 550 K)
- For More Information:** **Rito Evora**, National Director of Industry, Trade e Energy, Santiago, Cabo Verde, Tel: (+238) 517 77 85, E-mail: rito.evora@mice.gov.cv

### CONTEXT

The 2018-2040 Master Plan for the Electricity Sector presents a strategy with the objective of reaching 54% of total energy requirements supplied by renewable sources by 2030, with a phased implementation schedule for achieving a total capacity of 251 MW, plus more than 620 MW of storage capacity. This strategy foresees the installation of more than 150 MW of new solar PV projects and more than 60 MW of new Wind Farms across the country.

The projects are to be developed in accordance with the legislation in force for the “Promotion, Incentives and Access to License and Operation of Independent Production of Electricity” from renewable energy sources (DL 01/2011). This Law defines in detail the “Simplified Tender and Award Process” for the tendering of renewable energy capacity to private sector developers, who will be responsible for the design, construction, commissioning, financing, and operation of the generation facilities on a ‘Build, Operate and Own’ (BOO) type scheme. Smaller projects (under 1 MW capacity), if needed, will be promoted by the Government with public funding (concessional loans, grants) for the construction and tendering for the operation of the infrastructures in accordance with the legislation in place.

## REASONS TO INVEST

- High Energy Yield Renewable Energy Development Zones reserved for IPPs
- Reduced emission of greenhouse gases (GHG)
- Operational experience of a system with high level penetration of Intermittent Renewable Energy
- A comprehensive legal and regulatory framework in place
- A favorable environment for doing business for private investors
- Lower risk (perception and reality)
- A long-term agreement (20 years for wind technology and 25 Year for solar)
- A model for other IPPs in the country with good performance and with a good relationship with the grid operator;

## INVESTMENT IMPACTS

**TRANSFORMATIVE POTENTIAL** **HIGH:** Providing sustainable energy solutions for Cabo Verde and the development of the essential expertise required, will put Cabo Verde on course for 50% renewable energy by 2030 and ultimately 100%. Added value for academia (nationally and internationally) attracting more expertise to the country.

**EFFICIENCY AND EFFECTIVENESS** **HIGH:** Advanced monitoring, control and automation functions, and the use of ICT for local and remote operations, will minimize supply disruptions, optimize network performance and reduce operating costs.

**SUSTAINABLE DEVELOPMENT** **HIGH:** Reduction of greenhouse gas emissions and increases in the share of renewables in the energy mix will contribute to Cabo Verde's sustainable development and particularly SDG7.

**COUNTRY OWNERSHIP** **HIGH:** High priority for the government and specifically addressed in the PEDS, PNSE (the National Programme for Energy Sustainability) and the Master Plan for the Electricity Sector and reflected Cabo Verde's Intended National Determined Contribution (INDC) in the context of the Paris Climate Change Agreement.

**RECIPIENT NEEDS** **HIGH:** Investment in renewables will reduce country's dependency on imported fossil fuels and exposure to the international price volatility and improve access to energy access at affordable prices.

**INVESTMENT OPPORTUNITIES** **HIGH:** OBuild, Operate and Own (BOO) modality, to be executed by an IPP, and complemented with some de-risking incentives. A 20-year PPA can be signed with the utility. Some fiscal incentives are in place and incentives for the importation of equipment and accessories.



## INVESTMENT NEEDS BY PHASES

		PHASE 1	PHASE 2	PHASE 3	
		2019 -2022	2023 - 2026	2027 - 2030	Total
Total Wind Power	MW	20	29	21	70
	M€	37,39	52,67	35,51	125,6
Large (>10MW) To be pro-cured as IPPs (Equity+ debt or blended finance)	MW	14	25	20	59
	M€	24,65	43,26	32,43	100,3
Small (<10MW) To be pro-cured By GovCV (Conces-sional Loans)	MW	5,8	4,3	1,4	11,5
	M€	12,74	9,41	3,08	25,23

Table: Investments (IPP) in Wind Power Plants until 2030

Source: Master Plan Electric Sector 2018 - 2040

(\*) - Year of commissioning of projects.

		PHASE 1	PHASE 2	PHASE 3	
		2019 -2022	2023 - 2026	2027 - 2030	Total
Total Solar PV	MW	52	50	54	156
	M€	42,54	40,59	40,11	123,24
Large (>1MW) To be pro-cured as IPPs (Equity+ debt or blended finance)	MW	48	47	50	145
	M€	38,52	37,91	37,25	113,68
Small (<1MW) To be pro-cured By GovCV (Concessional Loans)	MW	4	3	3,5	10,5
	M€	4,02	2,68	2,86	9,56

Table: Investments (IPP) in Wind Power Plants until 2030

Source: Master Plan Electric Sector 2018 - 2040

(\*) - Year of commissioning of projects.





# ENER02 SANTIAGO PUMPED STORAGE PROJECT

## KEY INFORMATION

- Type of Opportunity:** Public Private Partnership
- Resources Required:** € 50.1M
- Promoter:** Ministry of Industry, Trade and Energy (MICE)
- Seeking:** Technical Cooperation, Grants, Concessional Loans and Private Equity Investors
- Location:** All islands
- Status:** Pre-feasibility Study performed and complete Hydrologic, Geotechnical Geological and Feasibility Study to be performed in 2019.
- Duration:** 2019 - 2025
- Beneficiaries:** Population of Santiago, Cabo Verde in general
- For More Information:** **Rito Evora**, National Director of Industry, Trade e Energy, Santiago, Cabo Verde, Tel: (+238) 517 77 85, E-mail: rito.evora@mice.gov.cv

## CONTEXT

Investment will provide a least cost solution for energy storage in Santiago Island in the context of the 2018-2040 Master Plan for the Electricity Sector contributing to the achievement of 54% penetration of renewable energy in the grid by 2030. The aim is to build a 20 MW turbine/reversible pump storage in one of two possible locations on the Island of Santiago identified during a pre-feasibility study: Chã Gonçalves or Mato Sancho. It is anticipated that the infrastructure will enter into service at the beginning in 2025.

The 20 MW Pump Storage Plant (PSP) would allow for the minimization of renewable energy curtailment, mostly due to its capacity to provide spinning reserve services in replacement of thermal generation, but also due to its capacity to store surplus energy. Additionally, the 20 MW Pump Storage Plant could provide 10 MW of guaranteed capacity to the system.

Investment will help reducing emissions, saving fuel by transferring the spinning reserve to the energy storage system, and can serve as backup and support for thermal systems, improving the storage capacity of surplus energy.

The development of the PSP on a Public-Private Partnership model would require at least a 30% grant and adequate risk mitigation measures, mainly related to credit and demand risk. Access to Development Finance Institutions and some form of blended finance, that can enable the project to access low cost debt over the long term, are also key success factors.

## REASONS TO INVEST

- High Yield Renewable Energy Development Zones reserved for IPPs
- Legal and regulatory framework in place and additional regulations under development
- Opportunity to be part of an innovative project with great potential for replication in other SIDS
- Existence of ambitious targets for Intermittent Renewable Energy penetration in the island
- Opportunity to gain experience of operation of such facilities in the context of high penetration of Intermittent Renewable Energy in the electricity system
- Favorable investment environment for private investors
- Lower risk (perception and reality)
- PPA signed under long term agreement (20 years for wind technology and 25 Year for Solar);
- Others IPPs in the country with good performance and with good relationship with the grid operator

## INVESTMENT IMPACTS

**TRANSFORMATIVE POTENTIAL** **HIGH:** substantial increase in the penetration of renewable energy in the Cabo Verde contributing to the target of 50% renewable generation by 2030. The project also foresees value added to academia (nationally and internationally).

**EFFICIENCY AND EFFECTIVENESS** **HIGH:** Greater stability in the island's electrical grids, ensuring efficiency and safety in transmission and distribution, minimizing supply disruptions and reducing operating costs.

**SUSTAINABLE DEVELOPMENT** **HIGH:** The project will contribute to SDG 7 and improve access to electric energy, reduce the cost of electricity and contribute to reduce the emissions of greenhouse gases (GHG) contributing to Cabo Verde's sustainable development

**COUNTRY OWNERSHIP** **HIGH:** The project is a high priority for the government and specifically addressed in the Master Plan for the Electricity Sector.

**RECIPIENT NEEDS** **HIGH:** Cabo Verde is a SIDS and African State with high levels of vulnerability and fragility particularly with regard to climate change. The project will reduce the country dependency on imported fossil fuels and exposure to the international price volatility, improving energy access and price affordability.

**INVESTMENT OPPORTUNITIES** **HIGH:** A PSP to be developed on a Public-Private Partnership model and will require at least a 30% grant and adequate risk mitigation, measures mainly relating to credit and demand risk. Exploitation for 35 to 50 years.

## INVESTMENT NEEDS

	PHASE 1 Chã Gonçalves PSP	PHASE 2 Mato Sancho PSP
Capacity	20 MW	20 MW
Stored Energy	320 MWh	280 MWh
Investment	50.1 M€	53,5 M€

Source: Master Plan Electric Sector 2018 – 2040



## ENERO3 ENERGY STORAGE (BATTERIES & CONVERTERS)

### KEY INFORMATION

**Type of Opportunity:** Public Private Partnership

**Resources Required:** € 60M

**Promoter:** Ministry of Industry, Trade and Energy (MICE)

**Seeking:** Private Investment and/or Grants

**Location:** All islands

**Status:** The legal and regulatory framework is currently being adapted to include energy storage.

**Duration:** 2019 - 2030

**Beneficiaries:** Population of Cabo Verde

**For More Information:** **Rito Evora**, National Director of Industry, Trade and Energy, Santiago, Cabo Verde,  
Tel: (+238) 517 77 85,  
E-mail: rito.evora@mice.gov.cv

### CONTEXT

Investment will support the design and implementation of Energy Storage Systems (ESS) on all islands, to serve as a means for reducing the need to curtail renewable energy (RE) production and improve dynamic frequency control. On the island of Sal in particular, 50% of the renewable energy produced is lost due lack of absorption capacity. Thus, the investment foresees a utility-scale ESS, which will potentially be used to provide spinning reserves by storing excess output of RE and for grid support.

Under the 2018-2040 Master Plan for the Electricity Sector, an electric energy promotion scheme identified a load management system (ESS & Converters) which can manage the excess of renewable energy and release it during periods of high energy consumption/demand. This will help reduce emissions, saving fuel by transferring the spinning reserve to the energy storage system and can serve as a backup, and support for, traditional thermal systems. In this context, the investment seeks to improve the capacity to store surplus energy.

The implementation of energy storage facilities is identified as a key measure in the Intended National Determined Contribution (INDC), to accelerate the upgrade of renewable energy in Cabo Verde towards the 50% target set for 2030, with support from international partners. Thus, this project will leverage significant ESS technological advances, which will result in price reduction, further reduce the use of fossil fuels, and provide grid back-up and increase the use of the abundant renewable energy resources that exist in Cabo Verde.

Where appropriate, implementation will consider a Build, Operate and Own (BOO) modality, to be executed by the private sector. In this context, and to mitigate temporary market barriers, the project will consider a co-financing grant scheme of up to 30% to make the project bankable. The grant-debt mix of any blended finance will be defined after the completion of the technical evaluation.

## REASONS TO INVEST

- Increase in access to clean, green and modern electricity
- Reduction in the cost of electricity
- Increase the quality of service and product
- Greater stability in the island's electrical grids, ensuring a greater efficiency and safety in the transmission and distribution grid
- Reductions in the emissions of greenhouse gases (GHG)
- Higher level of penetration of renewable energies

## INVESTMENT IMPACTS

<b>TRANSFORMATIVE POTENTIAL</b>	<b>MEDIUM:</b> Investment will bring the essential expertise needed to set Cabo Verde will put Cabo Verde on course for 50% renewable energy by 2030 and ultimately 100%. The project foresees value added to academia (nationally and internally), attracting more expertise to the country.
<b>EFFICIENCY AND EFFECTIVENESS</b>	<b>HIGH:</b> Advanced monitoring, control and automation functions and communication technologies will minimize supply disruptions, optimize network performance and reduce operating costs leading to greater network efficiency.
<b>SUSTAINABLE DEVELOPMENT</b>	<b>HIGH:</b> Investment will lead to a greater share of renewable energy in the energy mix but also results in (i) energy efficiency, (ii) an energy-water nexus (demand side), (iii) a smart grid, (iv) electricity mobility, and (vi) R&D. The project will contribute to SDG 7 and improve access to electrical energy, reduce the cost of electricity, and contribute to reduce emissions of greenhouse gases (GHG) contributing to Cabo Verde's sustainable development.
<b>COUNTRY OWNERSHIP</b>	<b>HIGH:</b> The transition to renewable energy is a high priority for the government and specifically addressed in the PEDS, the National Program for Energy Sustainability (PNSE) and the 2018-40 Master Plan for the Electricity Sector.
<b>RECIPIENT NEEDS</b>	<b>HIGH:</b> Cabo Verde is a SIDS and African State with high levels of vulnerability and fragility particularly with regard to climate change, and high energy costs and high quantities of imported fossil fuels.
<b>INVESTMENT OPPORTUNITIES</b>	<b>HIGH:</b> Build Operate and Own (BOO) modality, where appropriate, to be executed under a public-private partnership (PPP), and complemented with tailored incentives to support key pillars.

## INVESTMENT NEEDS

	<b>2019 -2022</b>	<b>2023 - 2026</b>	<b>2027 - 2030</b>	<b>TOTAL</b>
	<b>2019 -2022</b>	<b>2023 - 2026</b>	<b>2027 - 2030</b>	
Storage (+Converters)	1,57	15,12	39,36	56,05
Modability of financing	50 % Grants + 50 % Equity	35% Grants + 50% Equity + 15% Concessional Loans	50% Equity + 50% Gov. Concessional Loans	

Table: Investments ESS until 2030 in M€  
 Source: Master Plan Electric Sector 2018 - 2040





## ENERO4 PROMOTION OF MICROGENERATION

### KEY INFORMATION

- Type of Opportunity:** Public Private Partnership
- Resources Required:** € 7M
- Promoter:** Ministry of Industry, Trade and Energy (MICE)
- Seeking:** Grants, Concessional Loans and Private Investors
- Location:** All islands
- Status:** Legal Framework approved, complementary regulation under development and implementation stage
- Duration:** 2019 - 2030
- Beneficiaries:** Residential Consumers, and Agriculture, Industry and Service sectors
- For More Information:** **Rito Évora**, National Director of Industry, Trade and Energy, Santiago, Cabo Verde, Tel: (+238) 517 77 85. E-mail [rito.evora@mice.gov.cv](mailto:rito.evora@mice.gov.cv)

### CONTEXT

Access to modern, sustainable and low-cost electric energy is one of the key challenges for Cabo Verde's sustainable socio-economic development. The proposed investment is aligned with the country's strategic development plan (PEDS) and the National Programme for Energy Sustainability (PNSE) and will contribute to the achievement of SDG 7. It aims to increase access to energy for Cabo Verdean families, small industries and public buildings at reduced costs, and increase capacity for the mobilization of groundwater through pumping systems driven by renewable energies for families and agriculture.

The project will be publicly funded for the promotion of microgeneration (for self-consumption), including the co-financing of renewable energy systems for eligible families and small businesses, and the pumping of groundwater. There will be an added incentive of a 50% reduction in interest rates for systems purchased with loans from commercial banks. Furthermore, finance for renewable energy systems for public buildings, including schools and health centres, will release valuable funds for other priorities.

In the present context, Cabo Verde has a total of 3.5 MWp of microgeneration capacity (distributed generation) installed (on and off-grid), distributed to almost all sectors, such as water pumping systems for agriculture, self-consumption for public buildings, private systems for self-consumption in industries, businesses and for households.

## REASONS TO INVEST

- Increase the access to clean, green and modern electricity
- Reduced energy costs for households, industries, public buildings and the cost of water for agriculture
- Reduced emissions of greenhouse gases (GHG)
- Reduced imports of fossil fuels
- Increased penetration of renewable energy
- Reduction in losses to the electrical grid

## INVESTMENT IMPACTS

### TRANSFORMATIVE POTENTIAL

**MEDIUM:** Investment will bring the essential expertise needed to set Cabo Verde on course for 50% renewable energy by 2030 and ultimately 100%. Microgeneration systems will focus on self-consumption of energy, leading to a reduction in the cost of electricity, and helping industries, services and other companies to be more competitive

### EFFICIENCY AND EFFECTIVENESS

**HIGH:** Advanced monitoring, control and automation functions and communication technologies will minimize supply disruptions, optimize network performance and reduce operating costs leading to greater network efficiency

### SUSTAINABLE DEVELOPMENT

**HIGH:** Investment will lead to a greater share of renewable energy in the energy mix but also results in (i) energy efficiency, (ii) an energy-water nexus (demand side), (iii) a smart grid, (iv) electricity mobility, and (v) R&D. The project will contribute to SDG 7 and improve access of electric energy, reduce the cost of electricity and contribute to reduce the emissions of greenhouse gases (GHG), and create jobs for young people, contributing to Cabo Verde's sustainable development

### COUNTRY OWNERSHIP

**HIGH:** The project is a high priority for the government and specifically addressed in the PEDS, the National Program for Energy Sustainability (PNSE) and the 2018-40 Master Plan for the Electricity Sector

### RECIPIENT NEEDS

**HIGH:** Cabo Verde is a SIDS and African State with high levels of vulnerability and fragility particularly with regard to climate change and high energy costs and dependency on imported fossil fuels

### INVESTMENT OPPORTUNITIES

**HIGH:** Supply installation and maintenance of equipment and certification of installations

## INVESTMENT PHASES

	2019	2020	2021	2022	TOTAL
Microgeneration 50% -> Private Sector Equity and 50% -> Public Sector (Concessional Loans or Grants)	1,75	1,75	1,75	1,75	7

Table: Investments in DG systems in M€  
SourceSolar Market Assessment for Rooftop (Distributed Generation)

**2019:** Focus on Public buildings (Health Centres, Small Hospitals, Public Primary and Middle Schools and co-financing systems for families with low income);

**2020 - 2022:** Continuation of the Bonus of 50% (interest rate) for systems purchased with funds from commercial banks. Continuation of co-financing systems for Public Buildings. Co-financing systems for small industries and introducing the co-financing of systems for Desalination Plants to reduce the cost of potable water production.

With the target of achieve a 5% share of distributed generation potential (12,2 MW installed) in the energy mix in 2022.



## ENERO5 ENERGY EFFICIENCY

### KEY INFORMATION

**Type of Opportunity:** Public Private Partnership

**Resources Required:** € 23M

**Promoter:** Ministry of Industry, Trade and Energy (MICE)

**Seeking:** Grants, Concessional Loans and Private Investments

**Location:** All islands

**Status:** Validation stage

**Duration:** 4 years

**Beneficiaries:** Population of Cabo Verde, commerce and industry

**For More Information:** **Rito Evora**, National Director of Industry, Trade e Energy, Santiago, Cabo Verde, Tel: (+238) 517 77 85, E-mail: rito.evora@mice.gov.cv

### CONTEXT

The Strategic Plan for Sustainable Development (PEDS) and the National Programme for Energy Sustainability (PNSE), establish the long-term goal of making a transition to a secure, efficient and sustainable energy sector, reducing dependence on fossil fuels, and ensuring universal access and energy security. Promotion of Energy Efficiency is one of the main axes of the PNSE.

Energy efficiency has been also identified by the Government of Cabo Verde as one of the key areas in which important cost savings can be made, Greenhouse Gas emissions can be reduced, and by which the high cost of energy can be reduced. As a contribution to these objectives, Cabo Verde presented Intended National Determined Contribution (INDC) based on Energy Efficiency, that makes an unconditional and long-term commitment to reducing overall energy demands by 10% in relation to the baseline scenario by 2030.

A Mandatory Building Code for Energy Efficiency (EEBC), procedures that favour the purchase of high-efficiency appliances, and a certification and testing mechanism for energy efficiency, are all in the final stages of development. The next steps will involve the introduction of some demonstration projects, namely: Energy Efficiency in Public Lighting (Street Light Replacement with LED bulbs); Promotion of Energy Efficiency in Appliances and Buildings (Replacement of Incandescent and Fluorescent Bulbs); Replacement of Refrigerators; Replacement of Air Conditioning Units; an Energy Efficiency Social Project;



Energy Efficiency in the Public Administration; Sustainable Schools Project; Energy Efficiency in Industry and Tourism; Mass Introduction of Solar Thermal Systems; and Incremental Growth in Access to Clean Cooking technologies (Changing from the use of firewood for Liquefied Petroleum Gas (LPG)).

## REASONS TO INVEST

- Increase access to clean, green and modern energy
- Reduce the cost of electricity
- Promote greater energy efficiency
- Improve the quality of life of families through migrating from the use of firewood for cooking to butane gas
- Improve household health (especially Women and Girls)
- Promote greater gender equality
- Engagement in Women's empowerment
- Contribute to reduce emissions of Greenhouse Gases

## INVESTMENT IMPACTS

**TRANSFORMATIVE POTENTIAL** **HIGH:** Investment will facilitate a market-led transformation resulting in substantial energy savings and Greenhouse Gas reductions.

**EFFICIENCY AND EFFECTIVENESS** **HIGH:** The Mandatory Building Code for Energy Efficiency (EEBC), will result in delivering more energy efficient buildings and the purchase or import of high-efficiency appliances, and certification and testing mechanisms will ensure low energy consumption.

**SUSTAINABLE DEVELOPMENT** **HIGH:** Investment will contribute to achieving Cabo Verde's long-term commitment to reduce overall energy demand by 10% in relation to the baseline by 2030 and SDG 7

**COUNTRY OWNERSHIP** **HIGH:** Greater energy efficiency and reduced emission are high priorities for the government and specifically addressed in the PEDS, PNSE, and the country's INDC

**RECIPIENT NEEDS** **HIGH:** Cabo Verde is a SIDS and African State with high levels of vulnerability and fragility particularly with regard to climate change, with high energy costs and high dependency on imported fossil fuels

**INVESTMENT OPPORTUNITIES** **HIGH:** Supply of equipment and services and improved competitiveness for businesses investing in Cabo Verde

## INVESTMENT NEEDS

	2019 - 2022			
	Total	Private Financing	Public Financing	Grants
Total	23.000.000	15.112.500	2.350.000	5.537.500
Energy Efficiency Project in Public Lighting	8.000.000	6.400.000	1.600.000	-----
Promotion of Energy Efficiency in Appliances and Buildings	3.750.000	1.212.500	375.000	2.162.500
Solar Thermal Promotion Program	10.000.000	7.500.000	-----	2.500.000
"Clean Cooking" Program - Biomass for LPG (Stove + gas cylinders )	1.250.000	-----	375.000	875.000



## ENERO6 BRAVA: A SUSTAINABLE ISLAND

### KEY INFORMATION

- Type of Opportunity:** Public Private Partnership
- Resources Required:** € 8.5M
- Promoter:** Ministry of Industry, Trade and Energy (MICE)
- Seeking:** International Development Partners, Climate Grants and Private Sector Investors
- Location:** Island of Brava
- Status:** Project to be designed, budgeted and implemented as a demonstration project
- Duration:** 3 years starting in 2019 (Phase 1)
- Beneficiaries:** direct 6,000 (indirect: all the population of Cabo Verde (and other SIDS))
- For More Information:** **Rito Evora**, National Director of Industry, Trade e Energy, Santiago, Cabo Verde, Tel: (+238) 517 77 85, E-mail: rito.evora@mice.gov.cv

### CONTEXT

Investment will support the development and implementation of innovative renewable energy solutions for the island of Brava, while leveraging technological advances in energy efficiency, energy storage, sustainable mobility, and a smart grid. The investment will serve as a catalyst for capacity building, and lessons learned required to replicate initiatives in other islands, in line with the targets set forward in the INDC.

Phase 1 will involve the installation of both wind and solar power plants with capacity of 1.7MW (3M€ capex) and 1.8MW (€1.5M capex) respectively, to be implemented by the private sector through a competitive bidding process, but with 50%+ co-financing grant support. Storage facilities of 6MWh (1.55M€ capex) are also contemplated, with the inclusion of a SCADA system along with investments in reinforcing and upgrading the electricity grid, with co-financing grant support.

In Phase 2, the project will invest in the introduction of “electric mobility” through a network of infrastructure for recharging and servicing electric vehicles and the purchase of some electric vehicles by the public sector.

The implementation of the Brava Sustainable Island project will consider a Build Operate and Own (BOO) modality divided into key phases and, where appropriate, executed under public-private partnerships (PPP), and complemented by targeted incentives to support key pillars envisaged in the INDC.

The primary stakeholders to be involved are

the National Directorate of Energy, the National Directorate of Environment, the grid operator (Electra), local water utility company, and the Municipality of Brava. Given the widespread impact expected for this project, a working group will be created and the active participation of the Universities and the Centre for Renewable Energies and Industrial Maintenance (CERMI) is being considered as well as potential partnership with Universities overseas.

## REASONS TO INVEST

- The experience gained from a pilot approach on 1 island in seeking to achieve a 100% renewable energy supply, will be essential to bridge the knowledge gap for energy transition
- Support to the medium and long-term environmental and economic sustainability of the Island of Brava and Cabo Verde
- Equip Cabo Verde's stakeholders with the required expertise to meet the challenges of a sustainable energy transition and enable technical capacity to be strengthened in the sector and in academia
- Opportunity to work with other key transversal sectors and have a broad impact on green growth in the local economy, and the creation of new jobs for young people in the areas of water mobilization for agriculture, agro-processing, tourism, and education
- Reduction of energy tariffs and increasing energy access for vulnerable families will promote greater efficiency and productivity in the sector, stimulate investment, create jobs and increase incomes, particularly for women and poor people
- Reducing fuel imports will have a positive impact on the balance of payments and CO2 emissions level

## INVESTMENT IMPACTS

<b>TRANSFORMATIVE POTENTIAL</b>	<b>HIGH:</b> Sustainable energy solutions for the population of Brava contributing to the development of essential expertise and putting Cabo Verde on course to achieve 100% renewable energy generation. The project foresees value added to academia (nationally and internationally), attracting more expertise to the country
<b>EFFICIENCY AND EFFECTIVENESS</b>	<b>HIGH:</b> The Brava Sustainable Island Project will bring advanced monitoring, control and automation functions and communication technologies minimizing supply disruptions, optimizing network performance and reducing operating costs leading to greater network efficiency
<b>SUSTAINABLE DEVELOPMENT</b>	<b>HIGH:</b> Investment will lead to a greater share of renewable energy in the energy mix but also results in (i) energy efficiency, (ii) an energy-water nexus (demand side), (iii) a smart grid, (iv) electricity mobility, and (v) R&D. The project will contribute to SDG 7 and improve access of electric energy, reduce the cost of electricity and contribute to reduce the emissions of greenhouse gases (GHG) contributing to Cabo Verde's sustainable development
<b>COUNTRY OWNERSHIP</b>	<b>HIGH:</b> The project is a high priority for the government and specifically addressed in the PEDS, the National Programme for Energy Sustainability (PNSE), and the 2018-40 Master Plan for the Electricity Sector.
<b>RECIPIENT NEEDS</b>	<b>HIGH:</b> Cabo Verde is a SIDS and African State with high levels of vulnerability and fragility, particularly with regard to climate change and high energy costs and dependence on imported fossil fuel.
<b>INVESTMENT OPPORTUNITIES</b>	<b>HIGH:</b> a Build Operate and Own (BOO) modality, where appropriate, to be executed under public-private partnership (PPP), and complement with tailored incentives to support key pillars;

## INVESTMENT PHASES

	2019 - 2022
Brava Sustainable Island 50% -> Private Sector Equity and 50% -> Public Sector Gov (Grants)	8,5





## ENERO7 E-MOBILITY

### KEY INFORMATION

**Type of Opportunity:** Public Private Partnership

**Resources Required:** € 19.8M

**Promoter:** Ministry of Industry, Trade and Energy (MICE)

**Seeking:** Action Plan prepared, Nama Facility Support Project Preparation fund granted for detailed preparation studies

**Location:** All islands

**Status:** Validation stage

**Duration:** 2019 - 2030

**Beneficiaries:** Population of Cabo Verde, commerce and industry

**For More Information:** **Rito Evora**, National Director of Industry, Trade e Energy, Santiago, Cabo Verde, Tel: (+238) 517 77 85, E-mail: rito.evora@mice.gov.cv

### CONTEXT

The Government of Cabo Verde has identified the promotion of electric vehicles (EV) as one of the key investments required to reduce GHG emissions related to land transport, as well as reducing air and noise pollution, and contributing to improvements in the health of the population. Furthermore, the initiative will contribute to increasing the proportion of renewable energy in the energy mix, raising it from the current 17%, to 100% by 2040.

The elaboration of a national action plan for electric mobility, is supported by the renewable energy support programme, financed by the Government of Luxembourg (LuxDev). Technical studies and the detailed preparation for a NAMA Support Project, for a demonstration of the introduction of electric vehicles for the public administration and public transport have been prepared. The investment sought will finance the construction of infrastructure to supply re-charging facilities for electric vehicles and support the first acquisitions of vehicles and electric boats and promotional measures to support the use of electric vehicles.

## REASONS TO INVEST

- Greater energy security
- Contribute to the reduction of local air pollution and noise contributing to health improvements
- Contribute to the reduction of fossil fuel imports
- Contribute to reduction in GHG emissions

## INVESTMENT IMPACTS

**TRANSFORMATIVE POTENTIAL** **HIGH:** Contribute to the country's energy transition with health benefits associated with a reduction in local air and noise pollution.

**EFFICIENCY AND EFFECTIVENESS** **HIGH:** Regulations for electric vehicles and fast charging points and the introducing the latest technology will increase the viability and efficiency of the use of electric vehicles

**SUSTAINABLE DEVELOPMENT** **HIGH:** Investment will lead to a greater share of renewable energy in the energy mix contributing to the sustainable development and the achievement of SDGs 7 and 3.

**COUNTRY OWNERSHIP** **HIGH:** Greater use of electric vehicles is specifically addressed in the PEDS, PNSE (the National Programme for Energy Sustainability) and the Master Plan for the Electricity Sector, 2018-40.

**RECIPIENT NEEDS** **HIGH:** Cabo Verde is a SIDS and African State with high levels of vulnerability and fragility, particularly with regard to climate change, and high energy costs and dependency on imported fossil fuels

**INVESTMENT OPPORTUNITIES** **HIGH:** Construction and management of infrastructure through a concessionary arrangement and the supply and maintenance of electric vehicles.

## INVESTMENT NEEDS

	PHASE 1	Phase 2	
	2019 -2024	2024 - 2030	Total
Electric Mobility	10	9,8	€ 19,8M

Table: Investments Electric Mobility until 2030 in M€



## ENERO8 REINFORCEMENT AND MODERNIZATION OF THE GRID

### KEY INFORMATION

- Type of Opportunity:** Public Private Partnership
- Resources Required:** € 39M
- Promoter:** Ministry of Industry, Trade and Energy (MICE)
- Seeking:** Technical Cooperation, Grants, Concessional Loans and Private Equity Investors
- Location:** All islands
- Status:** Inception phase. Preparation of specific projects
- Duration:** 4 years
- Beneficiaries:** Population of Cabo Verde, residents, commerce, industry and tourism
- For More Information:** **Rito Evora**, National Director of Industry, Trade e Energy, Santiago, Cabo Verde, Tel: (+238) 517 77 85, E-mail: rito.evora@mice.gov.cv

### CONTEXT

The 2018-2040 Master Plan for the Electricity Sector presents a strategy with the objective of reaching 54% of total energy requirements supplied by renewable sources by 2030, with a phased implementation schedule for achieving a total capacity of 251 MW, plus more than 620 MW of storage capacity. This strategy foresees the installation of more than 150 MW of new solar PV projects and more than 60 MW of new Wind Farms across the country.

Managing a high rate of penetration of renewable energy in the grid is a challenge and demands a robust distribution network and a technologically advanced, flexible and efficient distribution centre, to avoid or minimize the risk of instability. An assessment of the Cabo Verde power grid has determined the maximum allowable renewable energy (RE) penetration on all islands, from a stability point of view, which is a key-factor for the secure operation of each power grid, as well as for selecting which type of RE power plants will be constructed in the years to come.

The proposed investment aims to modernize the grid and develop a distribution control centre to manage all the Power Production Plants.

Other important measures to reduce losses in the grid require the mass substitution of the all analogue meters and the installation of advanced smart meters. This will allow the utility to control the energy distributed to all clients and reduce non-technical losses.

The Government of Cabo Verde seeks to achieve

a target of 100% of citizens having access to electricity by 2020. This mean extension of the grid to remote locations and provide connection to the grid in a safe condition.

## REASONS TO INVEST

- Increased access to modern and reliable electricity supply
- Reduced cost of electricity by reducing technical and non-technical losses;
- Increased quality of services and products (electricity)
- Greater control and management of the grid, ensuring stability and greater efficiency and safety in the transmission and distribution of energy
- Contribute to reducing the emission of greenhouse gases (GHG)
- Raising the penetration of Renewable Energies

## INVESTMENT IMPACTS

**TRANSFORMATIVE POTENTIAL** **HIGH:** Greater use of renewable energy with a smarter grid, reduced losses and greater efficiency at reduced costs will support the economic transformation and sustainable development that the Government seeks to achieve in its strategic vision.

**EFFICIENCY AND EFFECTIVENESS** **HIGH:** Reducing grid losses and greater efficiency in supply is the most efficient and effective way to achieve Cabo Verde long-term sustainable development

**SUSTAINABLE DEVELOPMENT** **HIGH:** through the creation of a modernized grid, the investment will lead to a reduction of greenhouse gas emissions and facilitate the transition to a secure, efficient and sustainable energy sector, reducing dependence on fossil fuels and ensuring universal access to energy, contributing to Cabo Verde's sustainable development and leading to the achievement of SDG 7

**COUNTRY OWNERSHIP** **HIGH:** Investment is a high priority for the government and specifically addressed in the PEDS, PNSE (the National Programme for Energy Sustainability) and the Master Plan for the Electricity Sector.

**RECIPIENT NEEDS** **HIGH:** Cabo Verde is a SIDS and African State with high levels of vulnerability and fragility particularly with regard to climate change and with high energy costs and dependency on imported fossil fuels.

**INVESTMENT OPPORTUNITIES** **HIGH:** Supply, installation and maintenance of equipment and certification of installations

## INVESTMENT NEEDS

	Phase 1	
	2019 -2024	2019 -2023
Total	M€	39
2 <sup>a</sup> Phase - Development of the National Dispatch Centre	M€	5
Mass Substitution of Analog Meters to Advanced Smart Meters	M€	6
Grid (T&D) Reinforcement and Modernization	M€	20
SCADA/EMS	M€	5
100% Access to Electricity	M€	3

Table: Investments in the Grid in M€  
(\* ) - Year of commissioning of projects.





## ENERO9 DE-RISKING INVESTMENT IN RENEWABLE ENERGY

### KEY INFORMATION

**Type of Opportunity:** Blended Finance/Grants

**Resources Required:** € 15M

**Promoter:** Ministry of Industry, Trade and Energy (MICE)

**Seeking:** Grants to support the implementation of de-risking instruments, to improve the bankability of renewable energy projects

**Location:** All islands

**Status:** An assessment of potential de-risking is being undertaken

**Duration:** 1 year

**Beneficiaries:** Energy Sector and indirectly the population of Cabo Verde

**For More Information:** **Rito Evora**, National Director of Industry, Trade e Energy, Santiago, Cabo Verde, Tel: (+238) 517 77 85, E-mail: rito.evora@mice.gov.cv

### CONTEXT

The long-term goal of the Strategic Plan for Sustainable Development (PEDS) and the National Programme for Energy Sustainability (PNSE), is to accomplish the transition to a secure, efficient and sustainable energy, reducing dependence on fossil fuels and ensuring universal access and energy security. Strengthening the institutional framework and improving the business environment are considered crucial to the success of the PNSE.

Within this framework, and to allow a planning of the necessary infrastructures and related investments, a Master Plan for the Electricity Sector (2018-2030) was elaborated, in order to channel all interventions and actions towards the long-term strategic goals.

The objective of this project is to introduce de-risking instruments to improve the financing environment and boost private sector investment in renewable energy. Technical Assistance to support the development of a steady flow of economically viable and sound renewable energy projects, engage local financing institutions, mitigate lending risk and ensure access to finance through the development a portfolio of financing instruments, will be critical for Cabo Verde's transition to renewable energy.

## REASONS TO INVEST

- Increased access to modern and reliable electricity supply
- Reduced cost of electricity by reducing technical and non-technical losses;
- Increased quality of services and products (electricity)
- Greater control and management of the grid, ensuring stability and greater efficiency and safety in the transmission and

distribution of energy

- Contribute to reducing the emission of greenhouse gases (GHG)
- Raising the penetration of Renewable Energies

## INVESTMENT IMPACTS

**TRANSFORMATIVE POTENTIAL** **HIGH:** De-risking instruments that facilitate access to comprehensive financing conditions will be critical for Cabo Verde's transition to renewable energy

**EFFICIENCY AND EFFECTIVENESS** **HIGH:** De-Risking investment in Renewable Energy Projects will be critical for incentivizing private sector investment and will reduce costs for Independent Power Producers (IPP)

**SUSTAINABLE DEVELOPMENT** **HIGH:** Energy security, price stability and energy cost reductions are perfectly aligned with the SDGs and will contribute to Cabo Verde's sustainable development.

**COUNTRY OWNERSHIP** **HIGH:** Cabo Verde has made an unconditional commitment to achieve a 30% Renewable Energy penetration rate into the electric grid by 2025 and seeks to increase the renewable energy uptake to 100% by 2030.

**RECIPIENT NEEDS** **HIGH:** Cabo Verde is a SIDS and African State with high levels of vulnerability and fragility particularly with regard to climate change, with high energy costs and dependency on imported fossil fuels

**INVESTMENT OPPORTUNITIES** **HIGH:** Supply of expertise, grants and concessional loans.

## INVESTMENT NEEDS

	2019 - 2022			
	Total (Eu.)	Private Financing	Public Financing (Eu.)	Grants (Eu)
Total	15M	-----	7.5M	7.5M
Financing of Risk Mitigation Instruments	15M	-----	7.5M	7.5M



## ENER10 STRENGTHENING THE INSTITUTIONAL ENVIRONMENT

### KEY INFORMATION

**Type of Opportunity:** Blended Finance/Grants

**Resources Required:** € 5.5M

**Promoter:** Ministry of Industry, Trade and Energy (MICE)

**Seeking:** International and Bilateral Development Support and Cooperation, Climate Grants

**Location:** All islands

**Status:** Concept and Design

**Duration:** 2019 - 2022

**Beneficiaries:** The energy sector and indirectly the population of Cabo Verde

**For More Information:** **Rito Evora**, National Director of Industry, Trade e Energy, Santiago, Cabo Verde, Tel: (+238) 517 77 85, E-mail: rito.evora@mice.gov.cv

### CONTEXT

The Strategic Plan for Sustainable Development (PEDS) and the National Programme for Energy Sustainability (PNSE), establish the long-term goal of making a transition to a secure, efficient and sustainable energy sector, reducing dependence on fossil fuels, and ensuring universal access and energy security.

To accomplish the energy transition, several reforms are under way or planned. At the top of the sector's concerns is strengthening the institutional framework and improvement of the business environment, a key priority in the National Programme for Energy Sustainability.

This aim is to introduce reforms to the sector through the design and implementation of the New Structure of Organization of the Energy Market and reinforce the institutional and regulatory environment through training, capacity building and development of human resources, reinforcement of technical cooperation, and promotion of research and technological development.

Furthermore, it is considered important to foster scientific and technological research in the field of wind, solar, geothermal energy and ocean thermal energy conversion (OTEC), and the creation of institutional solutions to centralize energy research efforts, capable of integrating important centers and global knowledge networks and R&D in the field of energy.

## REASONS TO INVEST

- Create arrangements to ensure that economic actors have sufficient clarity on the policy objectives of the sector to invest in it
- Implement clear accounting frameworks and mechanisms to monitor the implementation of policies and plans and to review the performance of the market's key actors
- Increase of capacities and competencies across market enablers (entrepreneurs, project developers, and financial institutions)
- Equip Cabo Verde with the expertise required to meet the challenges of a sustainable energy transition allowing capacity building of the main stakeholders, including in academia
- Expand technical capacities to design, install, operate, manage and maintain renewable energy equipment.

## INVESTMENT IMPACTS

<b>TRANSFORMATIVE POTENTIAL</b>	<b>HIGH:</b> De-risking instruments that facilitate access to comprehensive financing conditions will be critical for Cabo Verde's transition to renewable energy
<b>EFFICIENCY AND EFFECTIVENESS</b>	<b>HIGH:</b> De-Risking investment in Renewable Energy Projects will be critical for incentivizing private sector investment and will reduce costs for Independent Power Producers (IPP)
<b>SUSTAINABLE DEVELOPMENT</b>	<b>HIGH:</b> Energy security, price stability and energy cost reductions are perfectly aligned with the SDGs and will contribute to Cabo Verde's sustainable development.
<b>COUNTRY OWNERSHIP</b>	<b>HIGH:</b> Cabo Verde has made an unconditional commitment to achieve a 30% Renewable Energy penetration rate into the electric grid by 2025 and seeks to increase the renewable energy uptake to 100% by 2030.
<b>RECIPIENT NEEDS</b>	<b>HIGH:</b> Cabo Verde is a SIDS and African State with high levels of vulnerability and fragility particularly with regard to climate change, with high energy costs and dependency on imported fossil fuels
<b>INVESTMENT OPPORTUNITIES</b>	<b>HIGH:</b> Supply of expertise, grants and concessional loans.

## INVESTMENT NEEDS

	2019 - 2022			
	Total (Eu.)	Private Financing	Public Financing	Grants (Eu)
Total	5.500.000	-----	900.000	4.600.000
Restructuring and Privatization of ELECTRA and AEB	400.000	-----	100.000	300.000
Design and Implementation of the New Structure of Industrial Organization of the Energy Market	600.000	-----	150.000	450.000
Reinforcement of Regulation and Regulation	500.000	-----	-----	500.000
Training, Capacity Building and Development of Human Resources	1.000.000	-----	200.000	800.000
Technical Cooperation and Promotion of Research and Technological Development	3.000.000	-----	450.000	2.550.000



GOVERNMENT OF  
**CABO  
VERDE**  
WORKING FOR ALL.

