

# Clean energy for EU islands FORUM 2025



European 14-15 May 2025 Commission São Miguel Island, Azores

### **THE AZORES CASE**



### **Organization of the Sector**



The Azores Archipelago is a Portuguese Autonomous Region, and the definition of the strategy for the electricity sector is a responsibility of the **Regional Government**.

**EDA** - **Electricidade dos Açores, S.A.** is a company created by the Regional Government in 1981, merging different companies on all nine islands, which were at the time part of the local municipalities.







### **Organization of the Sector**

**EDA** is responsible for the concession of the transmission and distribution of electricity, and for the management of the electricity systems on all nine islands, awarded until 2050.

**EDA** also operates thermal power plants, one on each island, to ensure security of supply, and is also responsible for the commercialization of electricity (CUR).





EDA's activities have also been regulated by **ERSE**, the National Regulatory Authority for Energy Services, since 2003. A specific regulatory framework ensures that customers on the islands of the Azores and Madeira have access to electricity at the same price as on the Portuguese mainland.

EDA is the parent company of a group of companies, one of which is **EDA RENOVÁVEIS**, which aims to produce electricity from renewable resources such as geothermal, hydro, wind and solar.





#### **Brief History of Electricity Production in the Azores**





#### **Azores Electrical System**





### Integration of Renewables São Miguel Island

#### **Production Sources**

#### 44,5 % Renewables

- Geothermal: 35,6%
- Wind: 3,1%
- Hydro: 5,2%
- Biogas/Solar: 0,6%





### Integration of Renewables São Miguel Island







### Integration of Renewables São Miguel Island

#### **Renewable Generation Forethought**



Considering the ongoing renewable projects, including: the expansion of the Pico Vermelho Geothermal Power Plant (+12MW) and the saturation of the Ribeira Grande Geothermal Power Plant (+5MW)







#### **Production Sources**

#### 60 % Renewables

- Wind: 52,9%
- Solar: 7,1%

Periods of <u>several hours/days in continuous operation</u> with 100% RES generation (up to 7 days straight) due to an innovative energy management system and the presence of a battery energy storage system.





4,7MW

Peak load: 2,68MW

control and management platform

1MWp

7,4MW 2.6MWh

4,5MW



Р

X



**Integration of Renewables** 

**Graciosa Island** 



### Integration of Renewables Graciosa Island

#### Load Diagram





### **Integration of Renewables Graciosa Island**

#### **Power Quality**











#### **Integration of Renewables**



Maximum share of renewables

in an instant

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

### Maximum share of renewables in one day



0% 10% 20% 30% 40% 50% 60% 70% 80% 90%100%

Renewable Fossil



#### **Investment Plan**

#### Investment planned for 2025 to 2029

304.8 M€ - EDA 150.6 M€ - EDA Renováveis

- A large part of EDA's investment is focused on projects to ensure Security of Supply (43% in diesel power plants) and Quality of Service on the 9 islands (37% in the transmission and distribution networks);
- Installation of more **BESS Systems** to assist in the integration of intermittent renewable generation and to stabilize the frequency and voltage (15%);
- o Ongoing construction and refurbishment of Geothermal Power Plants, Wind Farms and PV Plants;
- o Ongoing transition to Smart Meters, with full coverage by 2028;
- Several R&D Projects, such as transformers with LV voltage regulation, VPP solution for distributed production management and thermal and electrochemical storage, new strategies for managing electric vehicle charging points and application of V2G technology for demand side management and frequency and/or voltage control.



### **Main Difficulties**

#### **Factors that differentiate the Azores**

from the Portuguese Mainland and most European Territories

- Small market size, which leads to lower competitive efficiency in the acquisition of services;
- High costs of logistics operation, transportation and handling of equipment and materials;
- High risks associated with **public procurement** (penalties, risk management, logistics, local partners, insularity, etc.) that lead to less attractiveness for competitors, even more at a time of high demand worldwide;
- Adverse weather conditions in the archipelago compared to other realities, with the need to strengthen infrastructures, which leads to higher investment costs and volatility in maintenance costs due to the need for maintenance interventions with shorter cycles;
- Need to maintain the European Union's **exceptions/derogations** for small isolated electricity systems;
- Difficulty in recruiting young and **skilled labour**.



### Conclusions



EDA is focused on the goal of maximizing the integration of renewable sources.



EDA is carrying out several projects to achieve this goal, always keeping has a priority the stability of the systems and the quality of service.



The support of the European Community funding programs is essential to enable the implementation of innovative projects, which will strengthen the energy autonomy of the islands.



EDA is also following developments in synthetic/green fuels, as diesel generator will continue to be essential in the near future for the operation of small-scale isolated power systems (remote islands).



The know-how that EDA is obtaining will enable sustainable energy solutions for the future.



## Thank You for your attention

