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FAROE ISLANDS SEPTEMBER 27-28 2016



From Isolation to Integration: Island Solutions to Europe's Energy Challenges:

EL HIERRO WIND-PUMPED HYDRO POWER STATION



Island self-sufficient in water and energy

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1. Who we are?

2. What have we done?

3. What can we contribute?

4. How can we work together?

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El Hierro, the smallest of the Canary Islands



Outermost region and double insularity.

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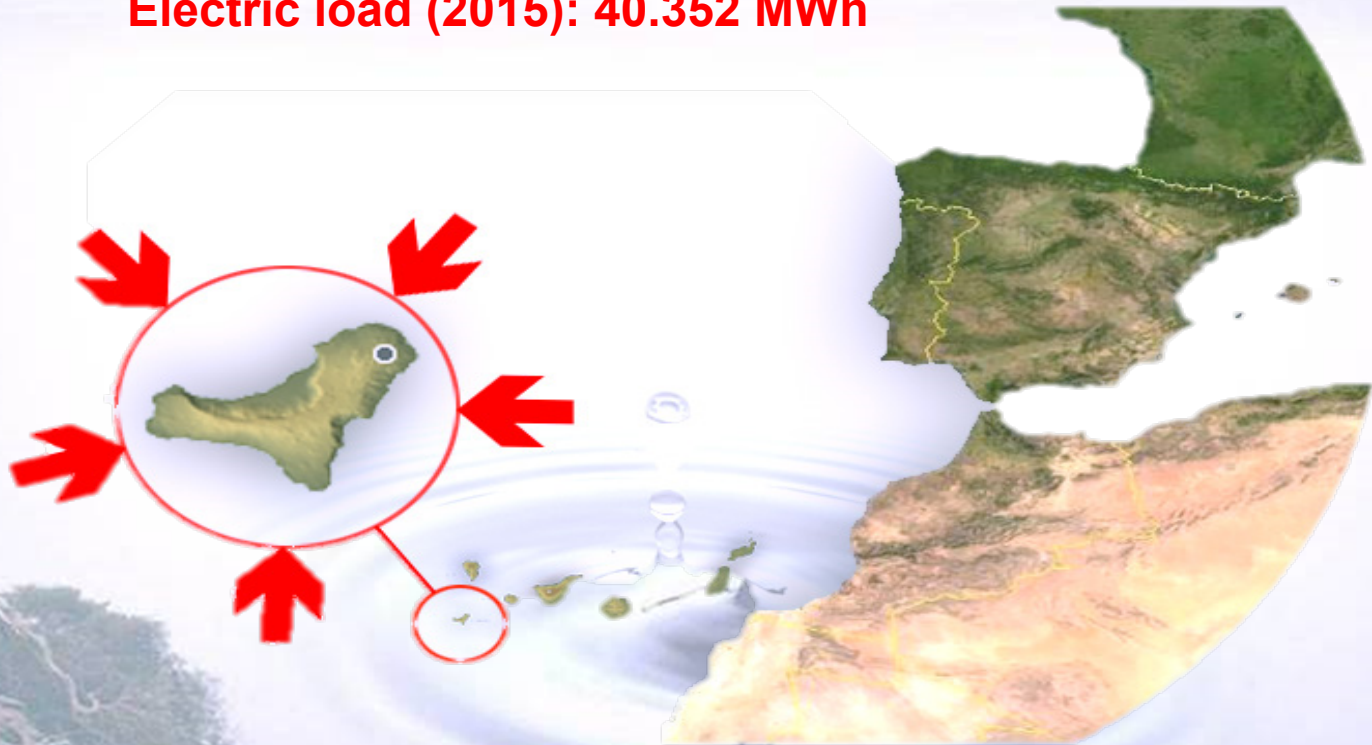
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Total external energy Dependence

278 Km² . 10.700 inhabitants.

Electric load (2015): 40.352 MWh



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World Biosphere Reserve (since 2000)



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Sustainable Development Program (1997)



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2. What have we done?



Sustainability Plan

- Sustainable tourism.
- Agriculture, Livestock and Fisheries.
- Job creation.
- Waste management.
- Trade and Industry.
- Sustainability Laboratory.
- El Hierro 100% RES.

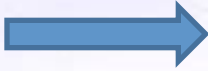
WATER

CONNECTION

ENERGY

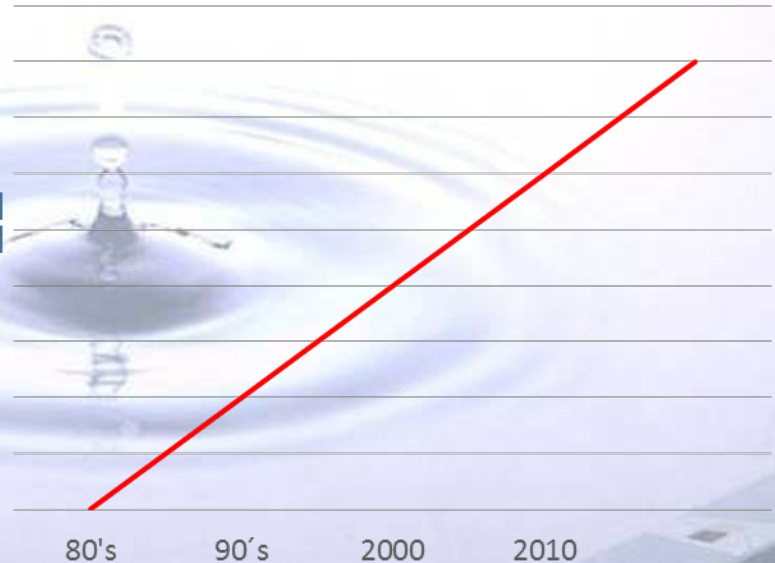
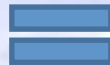
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ENERGY DEMAND

700 million people lack access
to safe drinking water



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WATER

ENERGY

INDUSTRY

**SUSTAINABLE
MOBILITY**

EL HIERRO 100% RES

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3. What can we contribute?

Island Strategy for Energy Self-Sufficiency.



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The Wind-Hydro Pumped Power Station

An innovative Project for island's energy self-efficiency

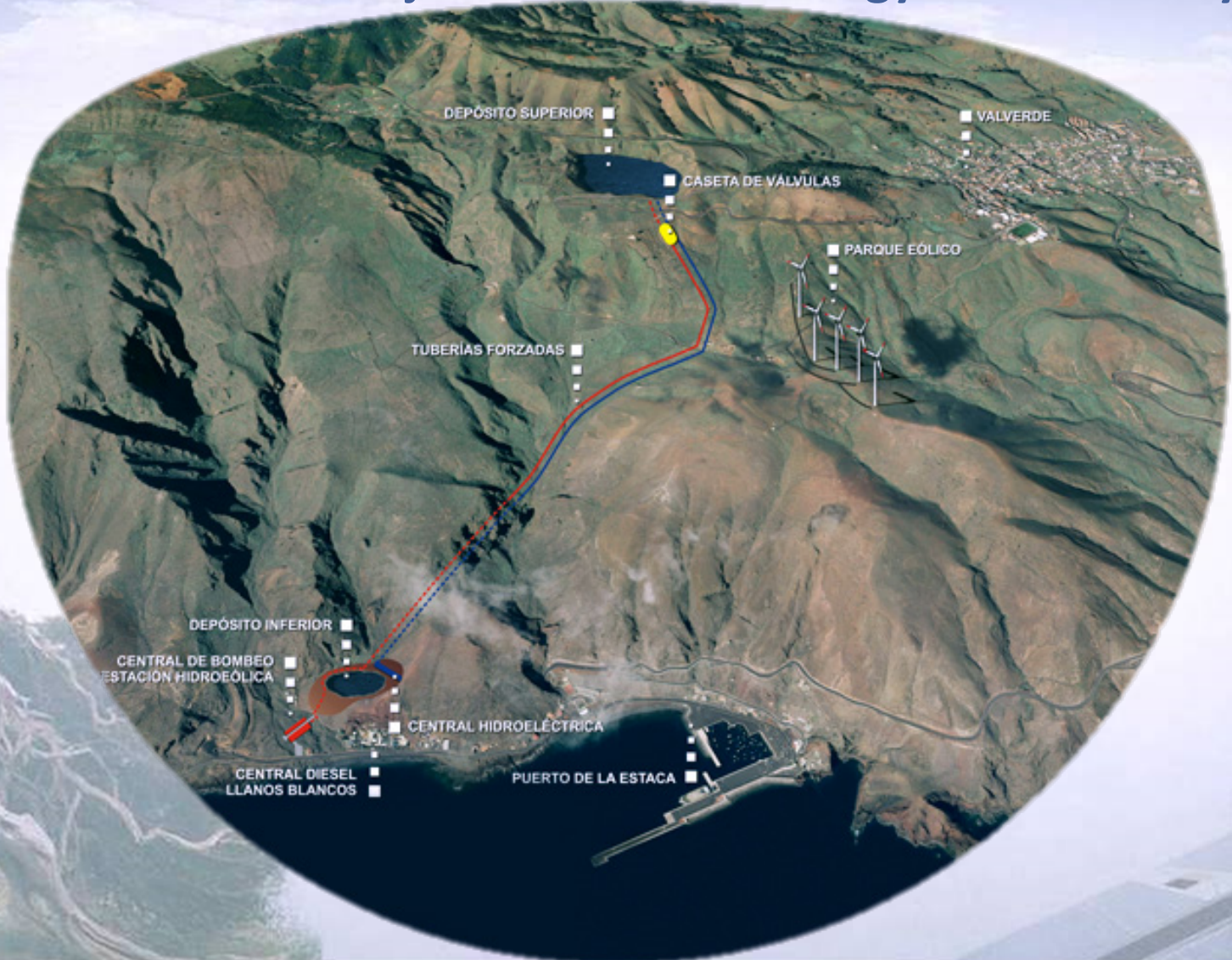
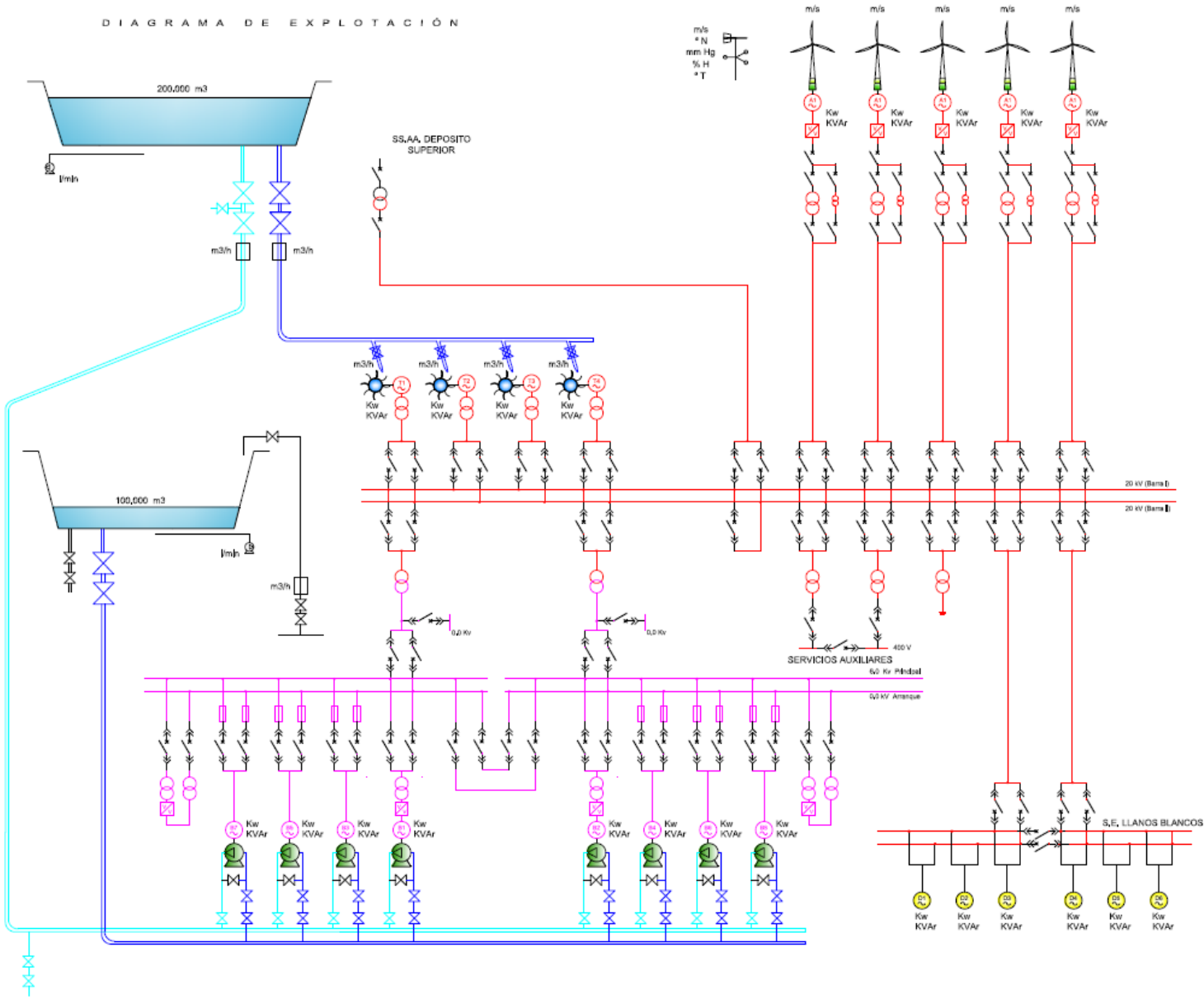
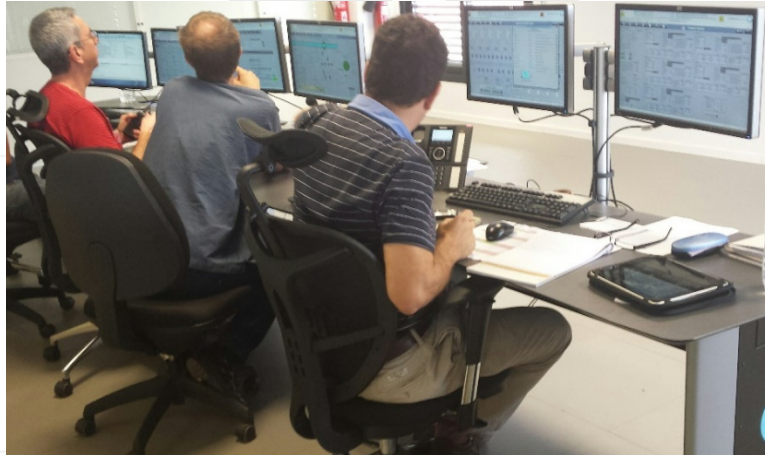




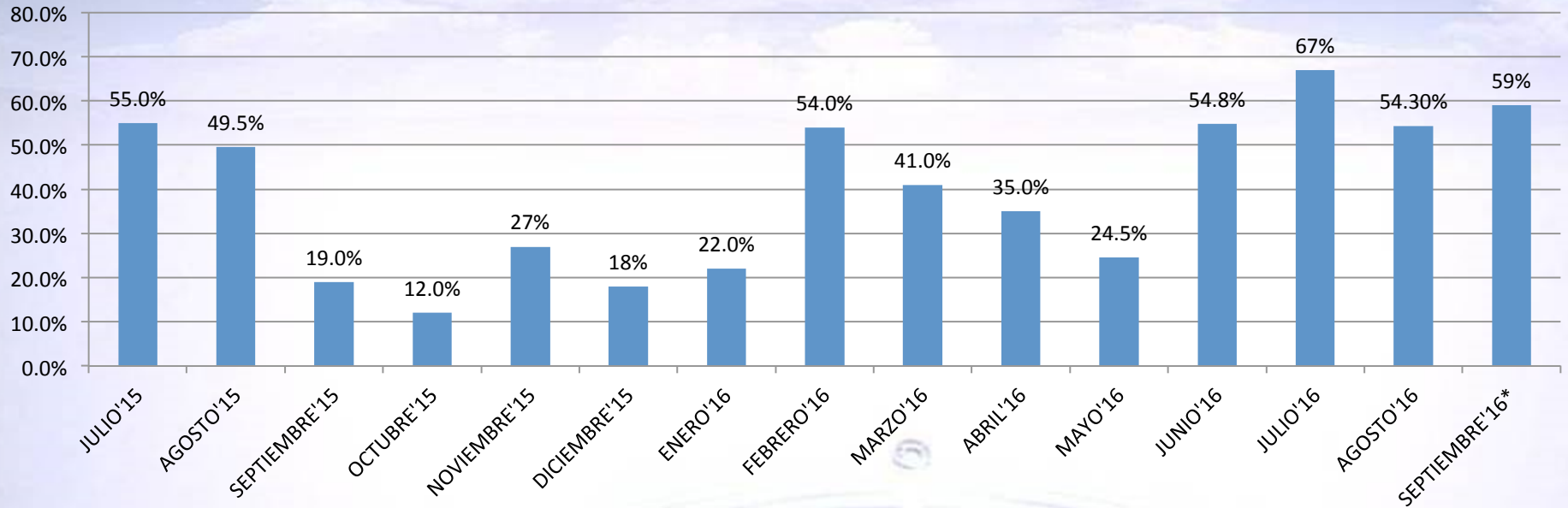
DIAGRAMA DE EXPLOTACIÓN







Production of GORONA DEL VIENTO



Main landmarks in 2016:

- Nearly 500 hours being 100% renewable
- 76 hours continuously
- We have avoided the consumption of +6.000 Tn of diésel
- 5 months producing more than 50% of demand
- More than 2/3 of the energy production of July
- Avoid the emission into atmosphere of 18.000 Tn CO₂ /year

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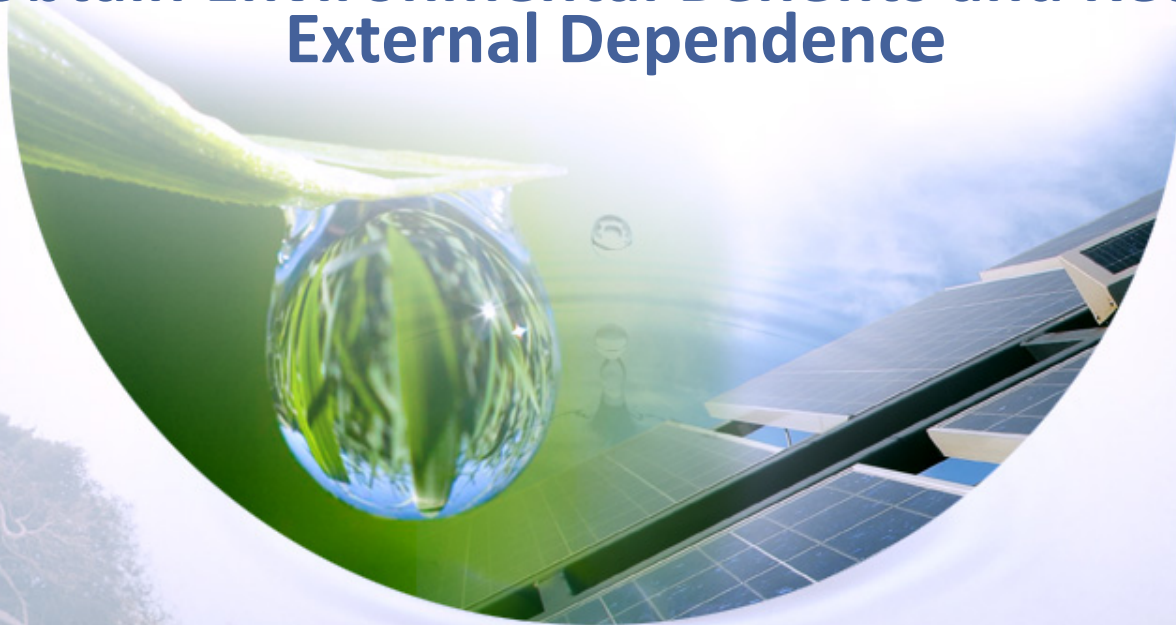
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Operating Outline

Objectives

To Obtain Environmental Benefits and Reduced External Dependence



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Operating Outline

Objectives

To supply the island with
power and water

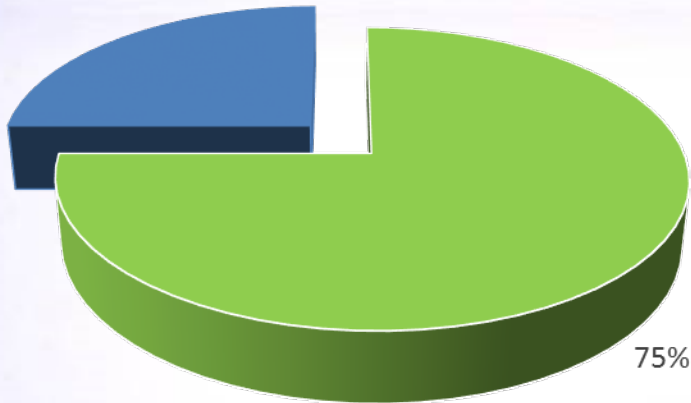


PROJECT STRENGTHS

- **Electricity and water self-sufficiency on the island. Reduction of power vulnerability.**
- **Power generation with greater dependency on renewable energy sources. Greater implementation of wind power.**
- **Reduction of CO2 and contaminant emissions.**
- **Use of facilities to dispose of elevated water resources (supply, irrigation, fire extinguishment).**
- **Reduction of costs with respect to diesel generation on El Hierro.**

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■ Hidroeléctrica ■ Diesel



3.048 h. equivalentes
13Gwh Excedente eólico



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El Hierro, the perfect setting.
A project that can be
extrapolated to other territories



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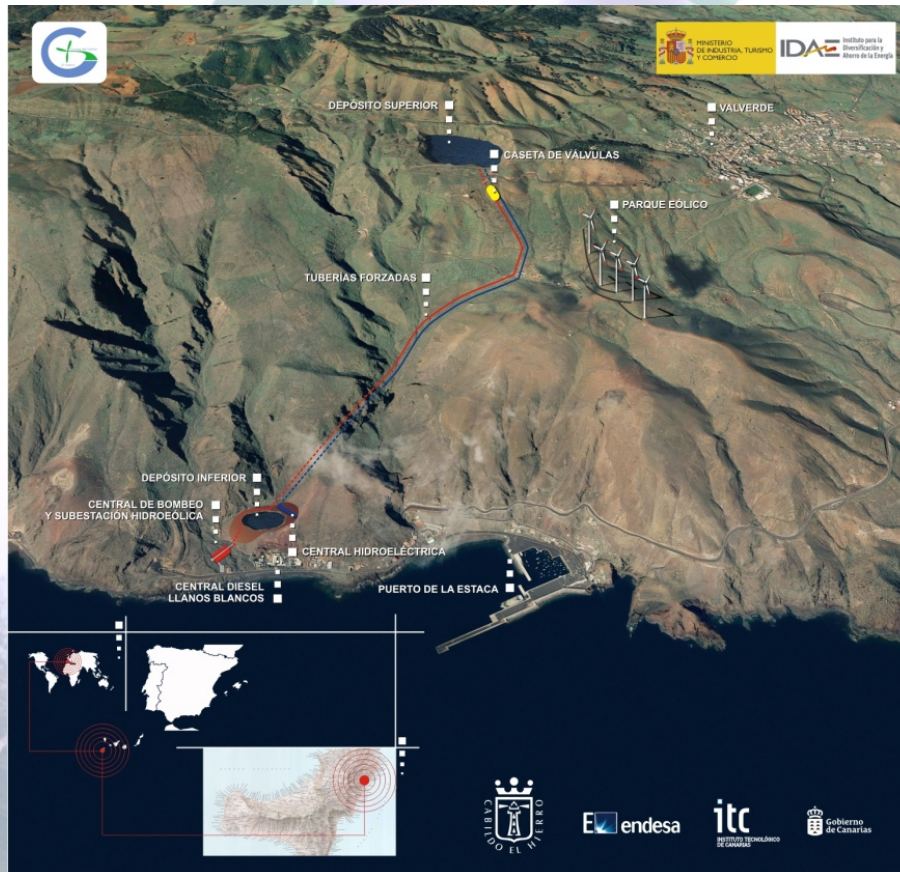
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VISITS



COLUM OF THE SUSTAINABLE DEVELOPMENT PLAN OF EL HIERRO



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4. How can we work together?

THANK YOU
VERY MUCH

