

Therefore, several islands have recently developed institutional and physical solutions to redesign their electricity system and become "renewable energy islands" [41] such as Reunion Island [4], Samsø; in Denmark [27, 47], Canary Island El Hierro [48], Madeira [49], Pantelleria [29] and islands in the Philippines [30].

As in the case of Kilauea, the La Réunion Island volcanoes have rift zones on their flanks and deep deformation inside the edifices (e.g. Froger et al., 2015; Michon et al., 2016; Chaput et al., 2017). Such structures may favor fluid circulation at depth. However, the La Réunion Island rift zones are more diffuse than those of Kilauea.

Reunion's goal is to have an all-renewable energy mix by 2030. Can you describe the current energy mix ? Philippe Boyer: The island's energy mix currently comprises 30% renewable energy (from local bagasse, hydroelectric, ...

Four articles describe the energy transition of Reunion Island [23], [24], ... because of the limited availability of this resource on the island. Comparing the 2030 scenarios, both the 80-90% renewable and 100% renewable pre-designed scenarios require almost six square kilometers, one more than for the remaining scenarios. ... The renewable ...

To cope with dependency of imported fossil fuels, high shares of renewable energy sources are expected to expand in electricity production in Small Islands. The case of Reunion Island that aims at having an electricity generation based to 100% on renewable energies by 2030 is analyzed using a bottom-up cost-optimization TIMES model. Future ...

Several projects and works were developed for integrating renewable energy systems in island and to create Renewable Island. Bao [69] showed that implementing renewable energy technologies in Peng Chau Island, Hong Kong, is a good solution and introduced the name of "Zero Energy Island". Through a plan to promote renewable energy use ...

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Reunion Island, our case study, is a French overseas territory located in the Indian Ocean. It covers a land area of 2512 km<sup>2</sup>, its coastline is 207 km long and its highest peak is 3071 m above sea level. Reunion is a

volcanic island that has a very steep terrain consisting of two volcanic massifs (Fig. 1 2).The 870,000 inhabitants on January 1, 2018 (INSEE 1 1 data) ...

Studies on 100% RE for Africa can be characterized by low resolution in sector coverage, time, space, and applied technology diversity. The geographical scope of 100% RE research in Africa is limited; Morocco, Nigeria, and La Réunion Island are the most researched countries; however, La Réunion is politically part of Europe.

a path to prosperity: Renewable energy for islands A Path to Prosperity: Renewable Energy for Islands, presents a compilation of case studies from Small Island Developing States (SIDS) and stakeholder organisations. These examples demonstrate real-life project viability, highlight innovative solutions, and showcase successful

This research discusses the role of energy storage in the Réunion island power sector by 2030 for sustainable power supply and the result shows that with sufficient investment in energy storage facilities, the island could meet its electricity demand with 100% RE with a high share of variable renewable energy (VRE) plants of about 50% without ...

Being the first renewable energy used in Reunion Island, it provided 100% of the production required in 1982, ... The bagasse allows the importation of coal from South Africa to be limited for 4 months. This local resource, which, until a few years ago, was underdeveloped and even problematic, has become one of the major sources of energy ...

The rest of the paper is organized as follows: In Section 2, we describe a comprehensive approach that uses three complementary tools to design and validate reliable long-term energy policies with a 100% renewable energy target. In Section 3, we present the case study of La Réunion, a French island in the Indian Ocean used to validate our ...

Reunion island, France A goal of meeting 50% of the island's electricity needs with renewable energy by 2020, and a further goal of 100% of all energy use by 2030. Projects include ocean thermal and wave power to solar PV and small-to-medium scale hydro. Strong focus on electric vehicles, throughout the island. Samsøe, Denmark

Non-renewable - 1 0.0 Renewable + 11 + 1.0 Hydro/marine + 1 0.0 Solar + 25 + 2.0 Wind - 8 0.0 Bioenergy - 1 0.0 Geothermal 0 0.0 Total + 5 + 0.5 Geothermal Capacity utilisation in 2022 (%) Renewable TFEC trend Renewable energy consumption in 2021 0 Net capacity change (GW) Net capacity change in 2023 (MW) RENEWABLE ENERGY CONSUMPTION (TFEC)

Reunion Island consumes 1460.7 ktep of primary energy, for a final consumption of 1040.9 ktep. Primary energy comprises 87% fossil fuels and only 13% renewable energy (Fig. 1).Forty-four per cent is devoted to

secondary energy production (electricity and heat) and 56% to final consumption, of which 89% is for transport.

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