Reuniwatt ALBIOMA

FLAGSHIP PROJECTS

Le Portail – Rooftop PV and Storage

#Solar #PV #Storage #EMS #RooftopPV
#ReunionIsland
#SkyImager #SkyInSight #InstaCast

Le Portail: Rooftop PV and Storage in the Indian Ocean

Since 2015, the shopping centre E. Leclerc in Saint-Leu on Reunion Island has been the first Reunionese installation using a combined PV and storage system. The project was constructed and is operated by Albioma SA, a leader in the solar power market in Overseas France, with an EMS by Bertin Technologies guaranteeing optimal power controls.

Reunion Island aims at achieving energy autonomy by 2030 based on greater energy efficiency and renewable energy alternatives.

Top view of Le Portail site

Total Capacity	1 MWp
Location	La Réunion, France
Type	Rooftop
Energy mix	PV + Storage

This project uses Reuniwatt's

Sky InSight™ + InstaCast™/HourCast™/DayCast™

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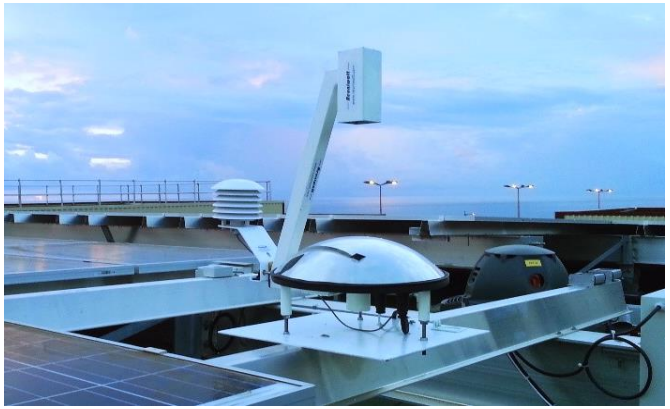
A flagship project for the local renewable energy revolution

Population growth and improved living standards have significantly increased peak consumption on Reunion Island over the last decades. With a focus on achieving energy autonomy by 2030, a 50% share of renewable energy in the energy mix in 2020, and 76% in 2023, managing the demand and the ups and downs of solar electricity production has become a priority.

Due to its location in the middle of the Indian Ocean, the cloud cover onsite can greatly vary during daytime, with a huge impact on GHI levels and thus on PV output power. For a commercial site such as Le Portail, a stable energy supply is an important base for the expected daily load. That is why Albioma uses advanced storage technology. During the day, the system accumulates energy, which can subsequently be reinjected into the network.

Reunion Island



The Sky InSight™ sky imager installed at Le Portail.

Sky InSight™ is a high-class sky imager developed by Reuniwatt for high-resolution sky observation and tracking of the cloud cover using the infrared thermal spectrum. In combination with the InstaCast™ service, it offers highly accurate forecasts of the irradiance levels and upcoming power generation up to 30 minutes in advance. The method is based on image processing techniques for cloud retrieval and motion tracking, as well as machine learning techniques in order to adapt to the site's specific conditions. It enables users to optimise controls for a combination of PV and storage.

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Forecasts optimise power supply operations at the commercial centre

To cope with the daily load profile and peak consumption during the evening hours, Le Portail uses lithium-ion batteries to make the most of the energy generated by the rooftop PV installation, and is injected into the island grid. The plant generated more than 1.3 GWh in 2018 used for the island community.

In order to forecast drops in the production as well as overproduction, Reuniwatt's all-sky imager Sky InSight™ has been installed onsite and uses InstaCast™ for precise forecasts of the produced solar energy for the next minutes.

In combination with intra-day forecasts generated through Reuniwatt's proprietary satellite-to-irradiance model, this individual solution is adapted to the needs of this island-based PV and storage combination. The continuous tracking and forecasting of the cloud cover and a precise forecasting of the incoming irradiance helps with the successful operation of this renewable flagship project on Reunion Island. It allows Albioma to comply with grid operator rules and to announce the incoming PV energy for the coming 24h, thus avoiding penalties.

Le Portail site

Impact of the project

1.3 GWh
produced in the year 2018

7%
Revenue increase thanks to the use of forecasting

+105 %
New PV+Storage Capacity planned on Reunion Island 2018-2023

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Renewable Energy for French Islands

Achieving energy autonomy is a challenge for remote areas. To address the needs of these insular areas the French Energy Regulation Commission (CRE) is awarding contracts for these so-called non-interconnected zones (ZNI) for projects over 100kW through regular competitive public tenders (Appels d'Offres) according to the multi-annual energy plan (PPE) for each zone.

CRE aims for 50% renewables in the energy mix in each zone by 2020, and energy autonomy in all ZNIs by 2030. As for solar power, operators are required to inject electricity matching a specific feed-in profile over the course of a day. In 2015, the profile was updated and a peak was added to the evening hours, to better match the daily load profile.

Exemplary for other projects in the ZNIs, Le Portail on Reunion Island can handle production lows caused by irradiance drops, as well as the evening peak load with ease, thanks to the combination of PV and storage units and forecasting. The producer plans its engagement profile, i.e. makes a day-ahead commitment at 4pm for the next 24 hours, with intraday updates being allowed three times per day at set times.

Overview over the ZNI

Source and more information: https://www.cre.fr/Transition-energetique-et-innovation-technologique/Soutien-a-la-production/Transition-energetique-dans-les-ZNI

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About Reuniwatt

Reuniwatt is a major player of the solar radiation and cloud cover assessment and forecasting. Based on solid Research and Development works, the company offers reliable products and services intended for professionals of various fields, making the best out of two key facets of meteorology: atmospheric physics and data sciences. A particular focus has been placed on solar energy forecasting, while developing cutting edge solutions to improve short-term prediction of the solar resource. The company has won many grants, including H2020's SME Phase 1 programme, which makes Reuniwatt a European Champion with regards to innovation.

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