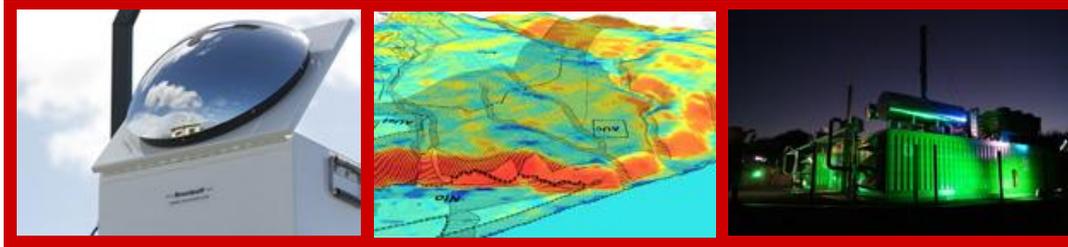


— Reuniwatt —



Reuniwatt – Forecasting Use Cases

Marion Lafuma – Marketing Manager



Repowering Europe

18 & 19 May 2016, Brussels, Belgium





Our company

Reuniwatt's creation

- Founded in **2010** by Nicolas SCHMUTZ
- Reunion Island is a “laboratory” to develop Renewable Energy Sources
 - First territory in the world to achieve **30% of RES** in the electricity mix
- **Core activity is solar forecasting**



Reuniwatt's Key Numbers

Over
15 years of
experience

International
Energy
Agency
Task46
member

Top 20
abstract at
EU PVSEC
2015

4 million
forecasts
everyday

More than
50'000
hours of
R&D





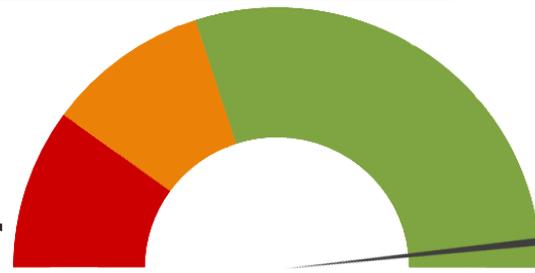
Solar Forecasting

The intermittence of solar power



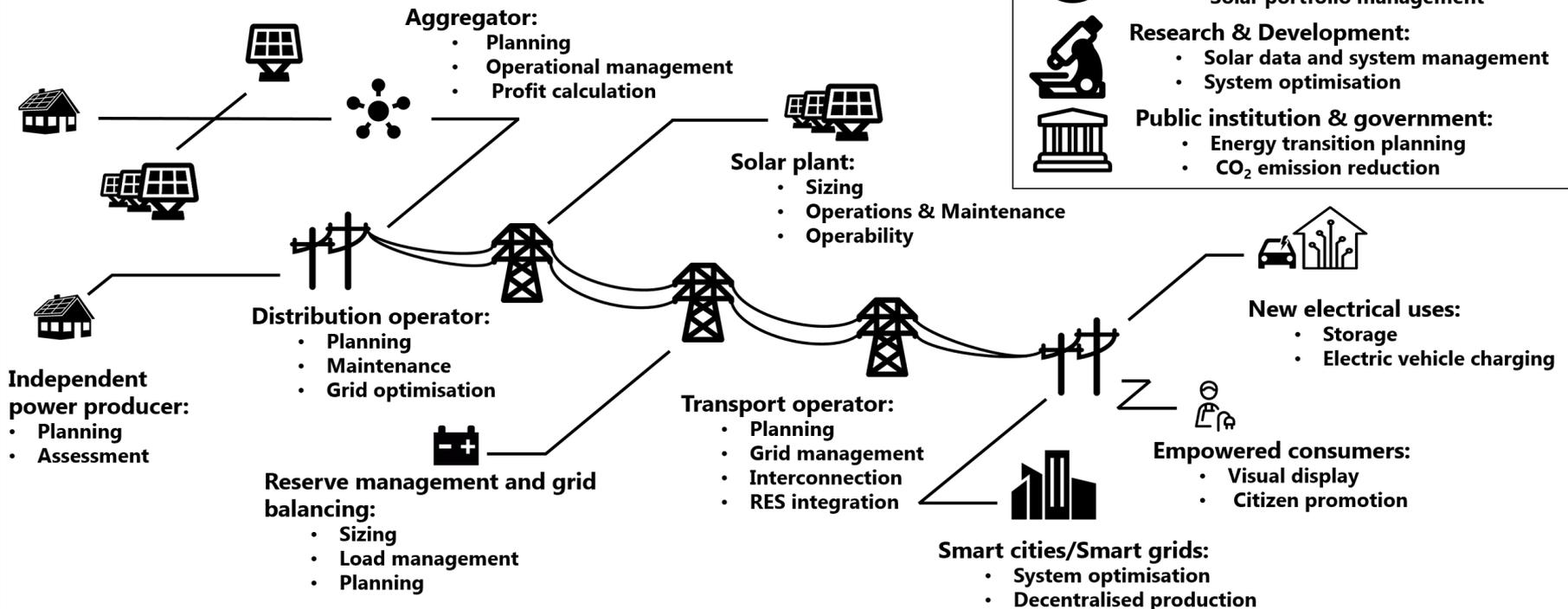
25/04/2016

solar power



The benefits of solar forecasting

Solar power forecasting: a necessity for every stakeholder of the electrical grid



But also:

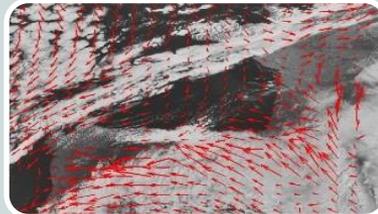
-  **Stock market and energy trading:**
 - Speculation
 - Solar portfolio management
-  **Research & Development:**
 - Solar data and system management
 - System optimisation
-  **Public institution & government:**
 - Energy transition planning
 - CO₂ emission reduction

Soleka – Reuniwatt's Solar Power Forecasting tool

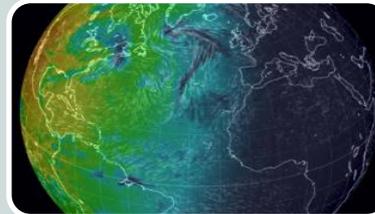
In order to give the **most accurate forecasts** at **diverse time horizons** (from minutes to several days ahead) and **spatial scales** (from a single power plant to a whole country), **Soleka blends and analyses different data sources**:



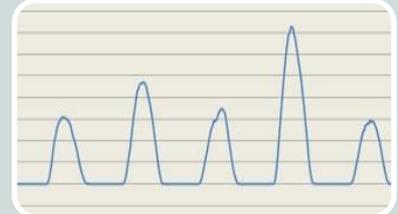
*Cloud cover image acquisition from **ground cameras**, ground projection of the shadows*



***Satellite image processing** to compute the movements of the clouds*



*Solar irradiance forecasts using **Numerical Weather Prediction models***



***Statistical post-processing methods**, valuation of ground measurements*

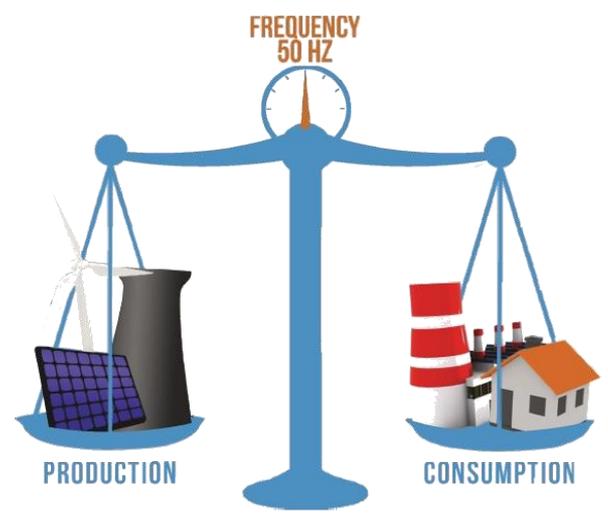


Forecasting Use Cases

Forecasting for TSOs

- A decision tool for a **massive and secure injection** of PV into the grid

- 1 Determine Operation reserve requirements**
- 2 Better day-ahead flexible resources commitment**
- 3 Secure load monitoring**
- 4 Take into account distributed production**



To ensure grid's security and reliability, the system operator must be able to maintain the balance at every moment.

Forecasting for energy trading

- A certain **competitive knowledge advantage** for energy traders who integrate them in their daily transactions

1 Bidding strategies with revenue maximization

2 Portfolio management

3 Risk mitigation

4 Imbalance charges and penalties reduction



Forecasting for storage optimisation

1 Increase the amount of energy injected into the grid

2 Increase the batteries' lifetime by avoiding their cycling

3 Release of previously stored energy when clouds pass over the installation



946kW photovoltaic power plant coupled to a 1,200kWh lithium-ion storage solution located on the rooftop of a commercial centre in Reunion Island

Forecasting for hybrid systems (PV+diesel off-grid projects)

1

Cut the spinning reserve when the weather allows it: Turn off and restart the generators according to the clouds' movements

2

Long-term fuel savings



Photo Credits: Power and Water Corporation

— Reuniwatt —

Find more information on our website
www.reuniwatt.com



They support us

