

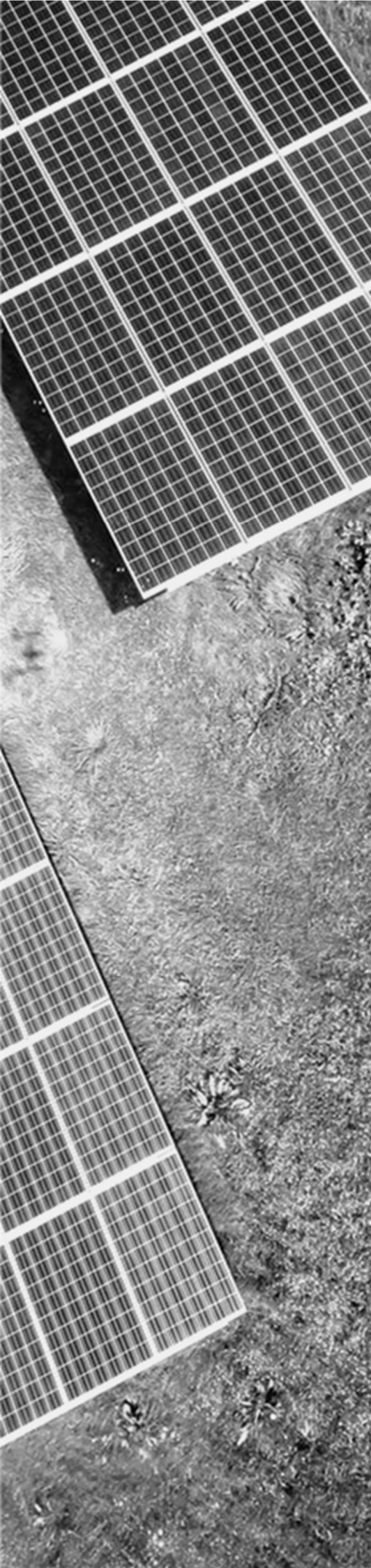
An aerial, black and white photograph of a solar farm. Two rows of solar panels are visible, separated by a dirt path. The panels have a distinct grid pattern.

— Reuniwatt —

REUNIWATT PRESS KIT

Excellence in Forecasting

2023



CONTENT

1 FOREWORD.....	1
2 REUNIWATT, A DARING AND INNOVATIVE PATH	2
3 REUNIWATT IN THE PRESS	7
Cutting-edge solutions for high-resolution cloud cover and solar power forecasting.....	7
Reuniwatt: Renowned Solar Forecasting Expert	9
Reuniwatt: Innovation in the service of solar energy	12
Joint efforts: Adapting solar applications to current challenges	14
Hybrid: Energy transition for a rainforest community	17
Off-grid: Decarbonising industrial production.....	19
PARCS: Helping authorities map their energy transition...	21
4 CONTACT US.....	23

1 FOREWORD



NICOLAS SCHMUTZ, FOUNDER AND CEO OF REUNIWATT

“At Reuniwatt, we are committed to offering cutting-edge cloud observation solutions adapted to current challenges. To do this, you have to dare to leave your comfort zone and think big.

Founded more than a decade ago, it was our goal as a pioneer in solar forecasting to develop the best skills in earth observation to provide solutions for a massive and secure injection of photovoltaics into the grid. Today, we are delivering cutting-edge technology for the solar industry through our monitoring and forecasting systems, from a few minutes, to a few hours, to a few days ahead. Sky InSight™, our patented sky imager, has proven to be the best-in-class solution for local 5-minute ahead solar forecasting. We use satellite imagery to provide intra-day forecasts. To complete our services, we offer day-ahead (and up to one-week ahead) forecasts using meteorological models coupled with artificial intelligence.

Our proficiency is also requested by other sectors, such as Space & Defence and Atmospheric Sciences.”

Nicolas Schmutz

2 REUNIWATT, A DARING AND INNOVATIVE PATH

Founded in 2010 on Reunion Island, Reuniwatt has become one of the world leaders in cloud observation and forecasting. Our headquarters are located in Reunion Island with two offices in Paris and Toulouse. The company has 20 employees.



Thanks to its solid research work, Reuniwatt offers highly reliable and comprehensive services for a wide range of applications. Our core markets are renewable energy, atmospheric sciences, and defence & space.

Our continued investment in R&D, as well as our development of strong scientific partnerships (Mines ParisTech, Deutscher Wetterdienst...), have enabled us to achieve a high level of recognition in the evaluation and forecasting of renewable energies, while mastering the use of technologies such as meteorology, remote sensing, artificial intelligence and satellite data processing.

In our determination to support the construction of a more sustainable world through innovative ideas, Reuniwatt has taken up the challenge of assisting public players in the assessment of their initiatives in the field of renewable energies (and more particularly photovoltaic energy). We have consequently launched a new project: PARCS, a PV atlas for governments and local administrations. This innovative project has enabled Reuniwatt to be awarded the 6th call for projects proposals on “Energy and Climate” launched by IGNfab in 2021.

Innovation is Reuniwatt's main motor of success, which is why we have a firm commitment to invest in research and development.



More than 300 000 hours
of R&D

More than 90 scientific
publications



5 patents published

European Horizon 2020
champion

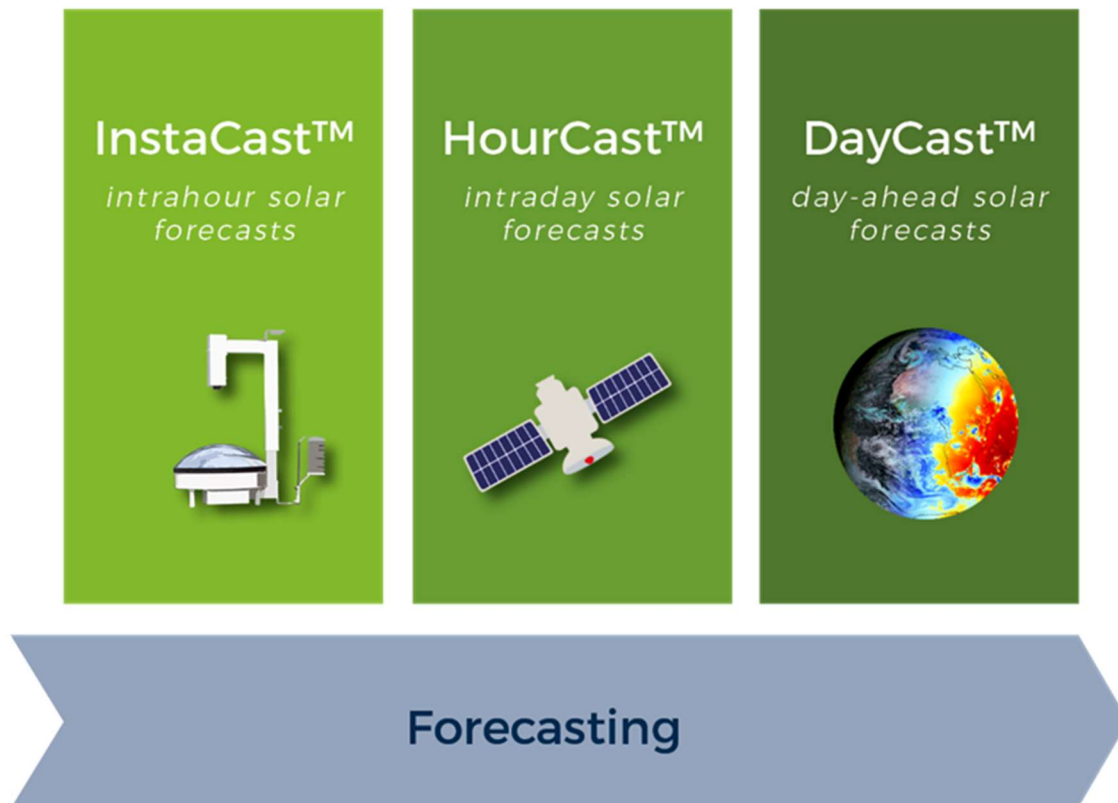


French Tech 120
Label of Excellence
(2020 and 2021)

Winner of the IGNfab
and the French Recovery
Plan "Space Tour" in 2021
with the PARCS project



Our products and services allow to effectively manage a multitude of renewable sites from project development to operations.



SOLAR FORECASTING

Our proposal of irradiance forecasts ranges from 1 minute to 7 days in advance. Firstly, we propose the **InstaCast™** intrahour forecasting service which is a software associated to one of our sky imagers, allowing to obtain irradiance and solar production forecasts for the upcoming minutes for a certain location. For forecasts further in the future, we propose **HourCast™** (up to several hours ahead thanks to the processing of high-quality raw satellite images) and **DayCast™** (up to 7 days in advance thanks to a combination of numerical weather models and artificial intelligence to better take into account local weather phenomena).

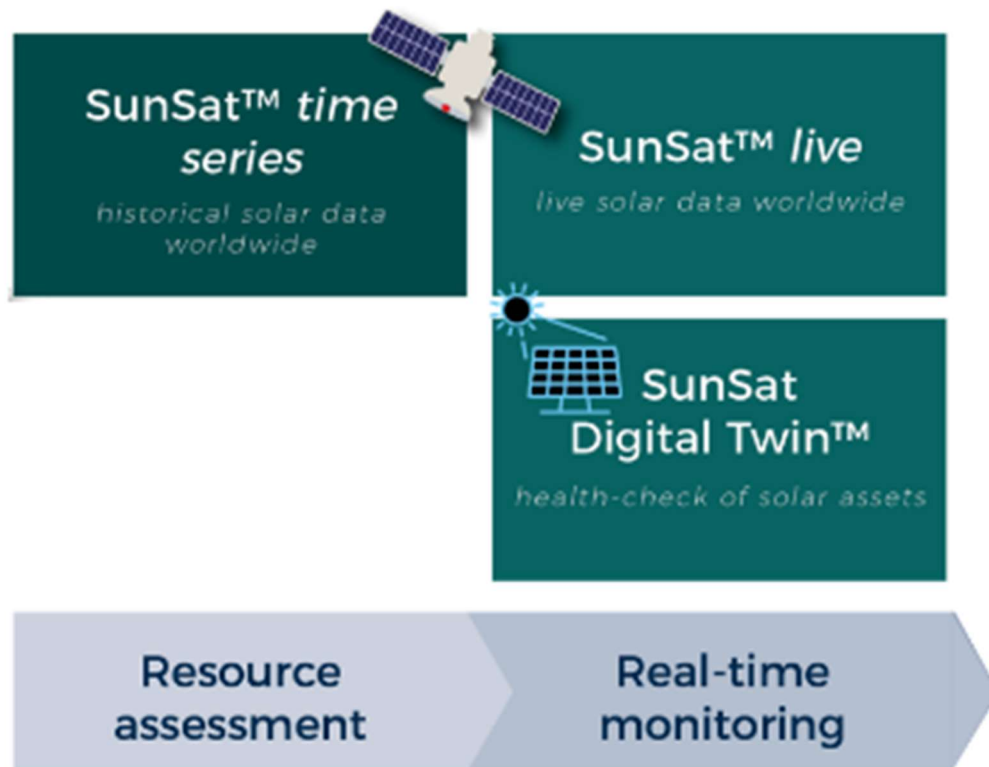
When integrated within a smart energy management system, solar forecasts enable to better anticipate energy flows. Thus, **the curtailment of solar power can be minimized to achieve an optimal exploitation of the solar potential** and reduce fuel

consumption in diesel-PV hybrid installations. The use of solar energy, which relies on weather conditions, sets additional challenges for grid operators, which must adapt the existing energy structure to integrate an increasing share of renewable



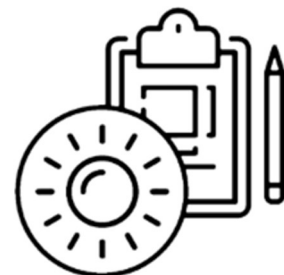
energy sources. **Forecasts are essential to achieve a smooth grid integration of solar power** while maintaining the same level of quality (voltage and frequency) and of reliability (avoiding blackouts) in supplying electricity. The forecasts also help improve energy trading activity's profitability.

Solar portfolio management can require real-time estimations of the solar irradiance over an ensemble of plants or plant-specific forecasts of the solar power generation, or health-checks of the solar assets to detect malfunction.

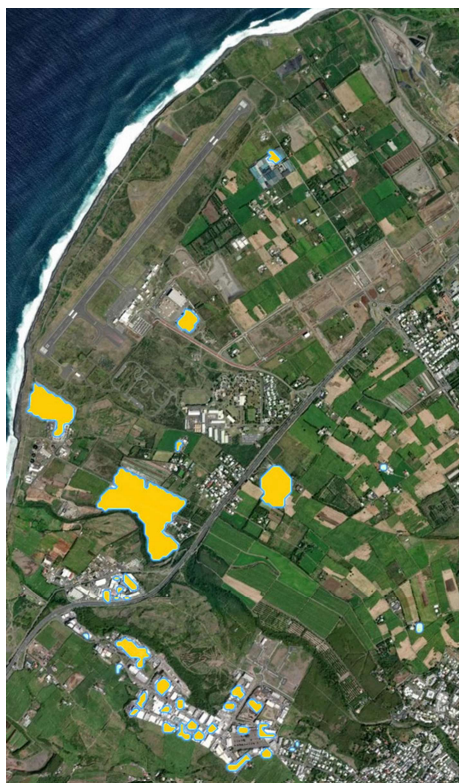


SOLAR DATA

We also provide satellite-based solar resource assessment solutions: **SunSat™ Time Series** to get access to historical solar data worldwide, **SunSat™ live** to obtain “live” irradiance/power production estimations and **SunSat™ Digital Twin** to check the performance monitoring of plants. Irradiance data represent a very useful KPI, because they are used to verify production, yield, availability and performance, and allow to optimally plan O&M activities.



In addition to solar forecast and estimation services, Reuniwatt has developed an **innovative method to identify the solar installations in an area from the sky: PARCS, or *Photovoltaic Atlas Remotely Captured from the Sky***. The automatic detection system for photovoltaic installations was based on an artificial intelligence algorithm. A patent has been filed in early 2021.



PARCS mapping is carried out using airborne or satellite images. PARCS makes it possible to compare the coverage rate of photovoltaic installations between different zones within a defined area. **This diagnostic and decision making tool assists public actors in implementing the correct measures to lead the energy transition at their scale.**

After the proof of concept had been carried out with the support of the Reunion Region and ADEME Reunion, Paris Est Marne&Bois became the pilot territory for PARCS in mainland France in 2021.

Reuniwatt is proud to have won the first prize of the Space Tour 2021 launched by the French Ministry of Economy, Finance and industrial and Numerical Sovereignty. PARCS will contribute to the consolidation of the solar production of a territory and consequently to the monitoring of the electrical networks through the combination of the PARCS cartography with the already available SunSat™ Live solar irradiance assessment service.

3 REUNIWATT IN THE PRESS

Cutting-edge solutions for high-resolution cloud cover and solar power forecasting



Media Source: Copernicus Atmosphere Monitoring Service

Date: Nov 24, 2022

Title: Copernicus: supporting Europe's solar industry

Link: <https://atmosphere.copernicus.eu/copernicus-supporting-europes-solar-industry>



Solar power is set to occupy an increasingly important role in Europe, as the European Union (EU) strives to implement its Green Deal, reduce fossil fuel imports and increase the share of renewables in its final energy consumption. Energy producers can use Reuniwatt's solar power forecasts to estimate how much energy they will be able to generate from the solar resource on a given day. To mitigate the intermittency of solar power, forecasting services are important for both independent producers as well as Transmission System Operators (TSOs). Read an excerpt from the article :

[...] CAMS data in action: spotlight on Reuniwatt

One such company combining CAMS data with data from other sources to offer high-quality services for a range of applications is Reuniwatt. Reuniwatt is an SME that specialises in atmospheric sciences and solar irradiation forecasting and the renewable energy sector is a key market for the company. Reuniwatt integrates CAMS data into its cutting-edge solutions for high-resolution cloud cover and solar irradiation observations and forecasts.

"CAMS provides access to high quality data worldwide. It makes environmental data easy to handle, enabling a fast proof of concept as well as best-in-class industrial solutions. CAMS helped to unleash the innovation potential of our SME, enabling Reuniwatt to become a market leader with our value-added spatial data services for the solar industry," said Reuniwatt founder and CEO Nicolas Schmutz.

For its InstaCastTM, HourCastTM and DayCastTM services, Reuniwatt combines data from the CAMS Radiation Service, such as aerosol forecasts and water column data, with satellite imagery to deliver robust predictions - from intra-hour forecasts to forecasts for up to 10 days in advance.

These forecasts are of significant benefit to the renewable energy sector, where accurate forecasting helps to manage supply and demand in the energy system while optimising costs. For example, energy producers can use forecasts to estimate how much energy they will be able to generate from the solar resource on a given day. This is important both for independent producers, who need to commit daily to supplying a certain amount of energy into the grid, and for Transmission System Operators, who need to balance supply and demand. [...]

You can read the complete article at the website of the Copernicus Atmosphere Monitoring Service : <https://atmosphere.copernicus.eu/copernicus-supporting-europes-solar-industry>.

Reuniwatt: Renowned Solar Forecasting Expert



pv magazine

Media Source: pv magazine Global

Date: Nov 2, 2021

Author: Tim Sylvia

Title: Forecast for foresight, and prosper

Link: <https://www.pv-magazine.com/magazine-archive/forecast-for-foresight-and-prosper/>



applications & installations

Forecast for foresight, and prosper

At the risk of stating the obvious, PV performance will always be inextricably linked to the weather. Cloud cover significantly influences power output and severe weather events - including high winds, heavy snowfall, fire, and hail - can lead to module or structural damage. And with climate change making extreme weather events more common, the value of forecasting and understanding the worst Mother Nature can throw at a solar array is increasing.

The Sandia researchers analyzed maintenance tickets from **800** solar farms in 24 states

40

At the risk of stating the obvious, PV performance will always be inextricably linked to the weather. Cloud cover significantly influences power output and severe weather events - including high winds, heavy snowfall, fire, and hail - can lead to module or structural damage. And with climate change making extreme weather events more common, the value of forecasting and understanding the worst Mother Nature can throw at a solar array is increasing.

The list of damages that severe weather can cause at solar projects is long, and there is still much to learn about the extent of such damage. Hail can shatter glass or send shockwaves through a module, causing cell cracking, losses and degradation. High winds can contort ground-mount installations and trackers in particular, straining and warping mounting

hardware. And heavy rainfall, flood or even consistently high humidity can lead to water ingress and degradation.

Knowing that such weather event poses an extreme level of concern, predicting and preparing for these events has emerged as a lucrative business opportunity of its own, with software and monitoring services helping solar operators avoid some of these output losses, and generate revenues as a result.

With offices in the French territory of Réunion, Paris and Toulouse, Reunite is a weather forecast service provider working with a range of solar PV owner operators around the world. The company offers four main products for solar PV installations: Sky Insight, SolarCast, SolarCast and SolarCast.

Their first product is Reunite's SolarCast, which is a weather forecast service. It provides a range of weather forecasts for solar PV installations, from short-term forecasts (up to 15 days) to long-term forecasts (up to 15 years).

SolarCast uses a combination of numerical weather prediction models and local weather data to provide accurate forecasts. It also includes additional weather data, such as cloud cover, wind speed, and precipitation, to provide a more comprehensive forecast.

SolarCast also includes a feature called 'SolarCast Pro', which provides a more detailed forecast, including hourly and daily forecasts, as well as a forecast of the total energy output of the solar array.

SolarCast Pro also includes a feature called 'SolarCast Pro', which provides a more detailed forecast, including hourly and daily forecasts, as well as a forecast of the total energy output of the solar array.

SolarCast Pro also includes a feature called 'SolarCast Pro', which provides a more detailed forecast, including hourly and daily forecasts, as well as a forecast of the total energy output of the solar array.

SolarCast Pro also includes a feature called 'SolarCast Pro', which provides a more detailed forecast, including hourly and daily forecasts, as well as a forecast of the total energy output of the solar array.

SolarCast Pro also includes a feature called 'SolarCast Pro', which provides a more detailed forecast, including hourly and daily forecasts, as well as a forecast of the total energy output of the solar array.

The article focused on weather forecasts and appeared first in pv magazine

At the risk of stating the obvious, PV performance will always be inextricably linked to the weather. Cloud cover significantly influences power output and severe weather events - including high winds, heavy snowfall, fire, and hail - can lead to module or structural damage. And with climate change making extreme weather events more common, the value of forecasting and understanding the worst Mother Nature can throw at a solar array is increasing.

The list of damages that severe weather can cause at solar projects is long, and there is still much to learn about the extent of such damage. Hail can shatter glass or send shockwaves through a module, causing cell cracking, losses and degradation. High winds can contort ground-mount installations and trackers in particular, straining and warping mounting

systems and hardware. And heavy rainfall, flooding or even consistently high humidity can lead to water ingress and degradation.

Knowing that each weather event presents some level of concern, predicting and preparing for these events has emerged as a lucrative business opportunity of its own, with software and monitoring providers helping solar operators avoid some of these output losses, and generate revenues as a result. With offices in the French territory of Réunion, Paris and Toulouse, Reuniwatt is a weather forecast service provider, working with a range of solar PV owner-operators around the world. The company offers four main products for solar PV installations: Sky InSight™, InstaCast™, HourCast™ and DayCast™. They are demonstrating their merit at a project owned by 8minute Solar Energy's Springbok Solar Cluster. The Springbok Cluster has a capacity of 443 MW in the Mojave Desert, in Kern County, California. Given its size, passing clouds cover can result in significant generation either ramping up or down. The Springbok Solar Cluster produces on average about 10% of the power needed for the city of Los Angeles, so ensuring maximum production, timely power delivery, minimal curtailment, and advance warnings of potential interruptions is critical. Through its sensors and digital toolkit, Reuniwatt is providing forecasts of the solar radiation and plant generation for periods ranging from a few minutes in advance, up to several days ahead. The Springbok Solar Cluster utilizes single-axis trackers and is paired with a 1.5 MWh lithium-ion battery.

Forecasting Toolkit

Marion Lafuma, a business development manager with Reuniwatt, provides some insight into how the company's forecast toolset delivers at the Springbok project. HourCast™ uses data provided by geostationary satellites to track cloud movements and weather patterns in order to provide intraday forecasts from 10 to 15 minutes, depending on the location and generation of the satellite, up to six hours in advance. DayCast™ uses numerical weather prediction models developed by international weather agencies and hybridized with local weather information to improve the forecasts. It also adds additional weight onto the models which perform best on the type of location we're looking at -there is variance in the performance of each model, dependant on differences in geography and climate. This blend enables weather forecasting anywhere from six hours ahead to up to 10 days. InstaCast™ utilizes the Sky InSight™ weather measurement system. Sky InSight™ is an infrared all-sky imager giving a temperature reading for a certain area of the sky above the solar PV plant, with the sun being the obvious constant as the hottest point. The camera can then determine any cloud's height in the sky and its temperature. According to Lafuma, high and cold clouds

usually present no issue beyond marginal production drops, whereas low and hot clouds can reduce output more significantly, along with bringing storms with them. With these offerings, Reuniwatt is able to create a global horizontal irradiance forecast, which gives site irradiance readings down to the square meter, and power production forecasts. Solar forecasts are critical to the operation of the cluster, allowing it to serve as one of the world's first fully dispatchable utility-scale solar PV and energy storage projects, its proponents claim. Dispatchable solar power needs to be available at the request of grid operators or the plant owner to match the demands of the market. To meet these requirements, energy storage serves a huge role, providing flexibility to overcome the imbalance between periods of peak solar generation and times of peak demand. Reuniwatt claims that the high level of forecasting detail allows the operation of the battery to be optimized. It also assists in partially overcoming energy and power issues traditionally linked to solar power variability - such as generation curtailment and frequency variation, while allowing for ramp rate control and energy smoothing. Another benefit, Lafuma suggests, one she says is often overlooked, is that accurately forecasting battery discharges enables asset managers to prolong battery lifespan, because the number of annual cycles required can be reduced, facilitating the development of more large-scale battery projects. [...]

Reuniwatt: Innovation in the service of solar energy



Media Source: CNBC

Date: May 10, 2019

Author: Anmar Frangoul

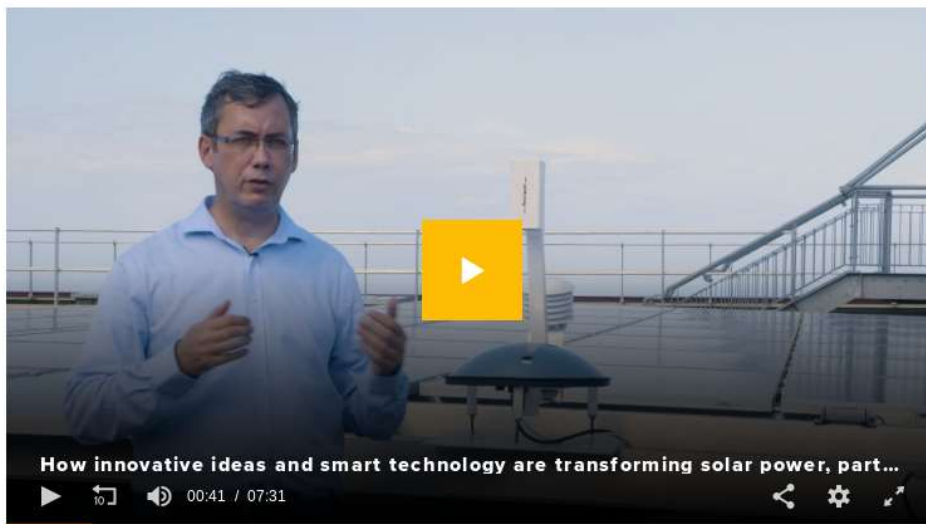
Title: A firm on an island in the Indian Ocean is developing cutting-edge solar tech

Link: <https://www.cnbc.com/2019/05/10/a-business-in-the-indian-ocean-is-developing-solar-forecasting-tech.html>

The Sun has been around for roughly 4.5 billion years and is crucial to life on Earth, providing our planet with an abundance of light and warmth. As technology has developed, humans have come up with increasingly sophisticated methods of harnessing the Sun's vast energy.



Innovative ideas and smart technology are transforming solar power, part three



Nicolas Schmutz in the interview with @CNBC Sustainable Energy

One such way is through solar photovoltaic systems, which directly convert light from the sun into electricity. While the potential of solar power is clear, there are undoubted challenges too. According to the U.S. Energy Information Administration, these “limitations” include the fact that “the amount of sunlight that arrives at the Earth’s surface is not constant.” The EIA adds that several factors — from location and the time of day to weather


— influence the amount of sunlight on the Earth’s surface. There are ways to overcome such issues, though. On Reunion Island, a French island located in the Indian Ocean, one firm specializes in solar energy forecasting and develops technology to “improve the short-term predictability of solar generation.”

Called Reuniwatt, the business offers a range of services including day-ahead, intra-day and intra-hour solar forecasts. The firm has worked on experiments in the U.S. alongside the National Oceanic and Atmospheric Administration and its technology is also being used by solar projects around the world. In February 2019, for example, the Moroccan Agency for Sustainable Energy chose to use the firm’s forecasting services for photovoltaic and concentrated solar power plants.

Caroline Lallemand is a geographic information system engineer at Reuniwatt. “In order to measure, then forecast, solar energy, Reuniwatt uses a multitude of data sources: satellite observations, weather models, ground sensor measurements and sky images,” she told CNBC’s “Sustainable Energy.” “I design the pipelines to collect, clean, aggregate and share the data with the rest of the team,” she added. “The goal is to make sure that the forecasts that we send to our clients are always the most accurate.”

Joint efforts: Adapting solar applications to current challenges

Reuniwatt is part of the consortium of TRUST-PV, a 4-year EU-funded research project aiming to achieve better reliability of solar PV components and systems. The following article highlights the diverse expertise brought together in this 12 million Euro project.




Media Source: Reuters Events Renewables

Date: January 20, 2021

Author: Neil Ford, Robin Sayles

Title: Solar specialists join forces to hike returns

Link: <https://www.reutersevents.com/renewables/solar-pv/solar-specialists-join-forces-hike-returns>



Companies from the entire PV value chain will combine and digitalise their learnings in a holistic plan to raise power plant yields and reduce downtimes.



The European Commission is funding TRUST-PV with over 12 million Euro grant value

A new collaboration between PV companies in Europe looks set to raise standards for plant build and operations. The TRUST-PV initiative will bring together companies from the entire PV value chain to combine technology advances with industry learnings. Around 20 suppliers,

developers, operators and data experts will work together to improve PV performance and reduce the levelised cost of energy (LCOE). The four-year project will last until 2023 and has received 12 million euros (\$14.5 million) from the European Union. The partners will use digitalisation to connect learnings in design, modelling, monitoring and inspections, David Moser, project coordinator at Eurac Research, told Reuters Events. This will allow the tracing of performance issues at a "single component level" and the creation of digital twins for better modelling, Moser said. 3D design and BIM (building information modelling) will be used to create more accurate yield assessments and improve inspection efficiency and fault prevention. The partners aim to increase the yield of solar plants by over 10% and reduce downtimes by 80%, he said. The project has been set up to foster collaboration between specialist domains. Experts in operations and maintenance (O&M) and asset management will be involved from the start of the supply chain process, Emanuel Vallarella, research engineer at technology group Huawei, another TRUST-PV participant, said. Reduced component degradation should also lengthen plant lifespans, compounding the benefits for plant owners. The gains made through the project should increase the internal rate of return (IRR) for large-scale plants by 50%, Moser said.

Conversion costs

The TRUST-PV participants will be responsible for different elements of the project and will feed results into a decision platform supported by AI. Costs will be assigned to actions and the AI will be "reinforced" by operator feedback, Moser said. Improvements in monitoring and diagnostics will reduce PV inverter costs, Carmelo Conelli, project manager at Enel Green Power, a plant operator and TRUST-PV partner, said. Inverters convert direct current (DC) from solar energy into alternating current (AC) for the power grid and represent 5 to 10% of utility-scale solar costs. Inverters are typically replaced at least once over the lifetime of the plant and make up around a quarter of O&M costs, according to data gathered by the US National Renewable Energy Laboratory (NREL) in 2018. Inverter suppliers are constantly improving their technology, offering higher voltage, improved access and better control functionality. The TRUST-PV partners will look to integrate automatic or semi-automatic diagnostics and field inspection processes in inverter hardware and software. Aerial imaging and other techniques will also be used to avoid disconnecting systems. Many large solar operators are now using drones to speed up inspections at large sites and reduce labour costs. The project partners will also aim to identify the optimal DC to AC ratio in terms of output and inverter reliability, Roland Huempfer, head of Huawei's European energy competence centre, told Reuters Events. A high DC to AC ratio increases inverter utilisation and can offer a more stable electricity injection but it can also impact inverter reliability,

Huempfnr said. "There needs to be further study on the stress that the inverter has with a high DC/AC ratio in different climate conditions - temperature, altitude, humidity,..." he said.

Predictable power

The research will also help operators manage intermittency as subsidies expire and wholesale market risks grow. Large fleet operators and utilities are increasingly turning to advanced forecasting and analytics solutions to mitigate swings in solar and wind resources. TRUST-PV partner Reuniwatt will use cloud forecasting to optimise short-term operations. The company uses images from infrared all-sky imaging cameras and analytics to improve intra-day solar forecasts. Historic data and algorithms are used to predict near-term production. "When you have clouds passing above a PV plant, production can drop by 80% in seconds, so it's crucial to know this in advance," Marion Lafuma, business development manager at Reuniwatt, said. Better forecasting of this power drop will improve plant management and the sizing of batteries on storage projects, she noted. Separately, Reuniwatt is using satellite data to forecast solar production up to six hours ahead and will feed these results into the project. The collaborative approach to TRUST-PV should also reduce the cost of capital and boost investments in new projects, Vallarella said. The new performance standards established by the project could "set the path to an ever-decreasing LCOE," he said.

Hybrid: Energy transition for a rainforest community

The power plant for rural electrification in Oiapoque, Brazil, has been a flagship for hybrid power plants worldwide, consisting of a 3.3MWp capacity PV power plant and a 12.5MW capacity thermal plant. Reuniwatt's sky-imager SkyCam Vision was installed at the site and provides forecasts every 30 seconds.



pv magazine

Media Source: PV Magazine Latin America (Original language: Spanish)

Date: March 2, 2018

Author: Pilar Sánchez Molina

Title: A solar park in Amapá will be mapping the sky with a camera to predict solar energy

Link: <https://www.pv-magazine-latam.com/brasil-noticias/um-parque-solar-no-amapa-mapeara-o-ceu-com-uma-camera-para-prever-a->

French companies Voltalia and Reuniwatt have partnered to make the maximum use of a solar plant owned by Voltalia in Oiapoque, Amapá, thanks to the imagery that will be collected using an all-sky imager by Reuniwatt.



Solar power plant for rural electrification in Oiapoque, Brazil

Reuniwatt has created a series of algorithms that enable advanced image analysis and consequently make solar forecasts based on the movement of clouds that interfere with the performance of a photovoltaic plant.

One example for this technology is the sky imager developed by the company, which is able to collect images and forecast solar irradiance and power production in the following minutes. With this equipment, Valtalia will begin using short-term solar forecasts that will help achieve greater photovoltaic penetration in its solar hybrid plant. In this particular case, Valtalia will use Reuniwatt's Sky Cam Vision™ camera, which takes pictures of the sky every 30 seconds.

Valtalia's solar plant in the municipality of Oiapoque has an installed capacity of 4 MW and is part of a hybrid project, which also includes a 12 MW thermal unit and will add a 7.5 MW hydroelectric plant in 2021. The Oiapoque solar plant provides electricity to the urban and rural areas of the municipality, optimizing the existing infrastructure and reducing the project's operating costs with a reduction in the use of diesel fuel.

The Oiapoque project will be the first hybrid system in the world to include three power sources and a sky camera for immediate weather forecasting (anticipated for the next several minutes). The Sky Cam Vision will provide information about current and upcoming local meteorological conditions. Therefore, during the day, the thermal generators will run at a partial load, reducing the consumption of fossil fuels needed to power the microgrid. The sudden shortfalls in solar output caused by cloud movement can be detected in time to optimize plant operations.

Off-grid: Decarbonising industrial production

Solar energy can substitute up to 30 to 40% of annual fuel consumption in off-grid installations. To achieve such penetration rates, the PV power plant at Fekola Mine in Mali is combined with storage and a forecasting system, which play a key role in the energy management of the hybrid power plant.



MINING
REVIEW AFRICA

Media Source: Mining Elites in Africa 2021, p.92-93

Date: March 10, 2021

Author: nn

Title: Mining Elites in Africa 2021: B2Gold - Fekola in Mali

Link:
<http://clarioneventsmedia.com/Media/MiningReviewAfrica/2020/2021MRAElites/index.html?r=31>

B2Gold's Fekola mine in Mali ranks as one of the biggest gold mines in Africa, producing around 600 000 oz of gold in 2020.



This article first appeared in Mining Elites in Africa 2021

It is powered primarily by three Heavy Fuel Oil generators but these will soon be supplemented by 36 MW of solar power. The solar project, which will include a significant battery storage component of 17 MW, is costing approximately US\$38 million and will result in one of the largest off-grid hybrid solar/HFO plants in the world.

When B2Gold announced last year (2019) that the project had been approved, it said the new installation - which will have over 92 000 solar panels and more than 1 100 trackers - would allow the HFO generators to be shut down during daylight hours, resulting in a saving of just over 13 million litres of HFO per year and a reduction in processing costs of approximately 7%.

Among the companies contributing to the project are Suntrace and its partner BayWa r.e, which have been contracted to assist B2Gold during the implementation phase with detailed engineering, procurement support and support during construction and commissioning. The Finnish technology group Wärtsilä has been selected to design and engineer the cutting-edge storage system which will be based on the company's GEMS energy management solution, now in its sixth generation. The GEMS technology will not only control the energy storage system but the 36 MW solar plant. In addition, it will continuously optimise energy production for the entire mine to ensure the lowest Levelised Cost of Electricity (LCOE) while at the same time securing grid stability and maximising uptime.

Solar forecasting is an important aspect of the project and this service will be provided by French company Reuniwatt. The forecasting system will continuously provide forecasts of the solar plant's power output using data from a locally installed high-class sky camera and advanced satellite-to-irradiance technology. The sky camera will be able to forecast sudden drops in solar radiation, allowing actions to be taken to ensure a stable power supply.

B2Gold was planning to have the solar project commissioned in Q3, 2020 but the project was delayed by a few months as a result of COVID-19. Remobilisation of the solar plant construction group began in mid-September 2020 (following a temporary suspension of construction activities in April 2020 due to COVID-19) and will continue to ramp up as camp space becomes available. The target date for completion of the solar plant is the end of the first quarter of 2021.

The new hybrid plant at Fekola will be B2Gold's second in Africa. In 2018 the company commissioned a 7 MW solar plant in Namibia, which it described at the time as "one of the first fully autonomous hybrid plants in the world."

PARCS: Helping authorities map their energy transition

In 2021, Reuniwatt has been a proud winner of if the IGN's project accelerator IGNfab with their innovative solar power atlas PARCS. The Paris Est Marne&Bois territory has been the first territory in France to set up a pilot project with Reuniwatt and bring PARCS to life.



pv magazine

Media Source: PV Magazine France (Original language: French)

Date: February 4, 2021

Author: Joël Spaes

Title: Reuniwatt's "PARCS" project selected for the 2021 edition of the IGNfab

Link: <https://www.pv-magazine.fr/2021/02/04/le-projet-parcs-de-reuniwatt-selectionne-pour-ledition-2021-de-lignfab/>

For its 2021 edition, *IGNfab* - the geoservices project accelerator of the French National Institute of Geographic and Forestry Information (IGN) - has selected PARCS (Photovoltaic Atlas Remotely Captured from the Sky) by Reuniwatt, a mapping project to facilitate the monitoring of solar installations.



Reuniwatt's solar cartography PARCS

The French company Reuniwatt has developed "PARCS" in order to establish an accurate and up-to-date mapping of solar installations based on the processing of satellite and aerial images. The project's objective? To facilitate the monitoring of solar installations and, in the long term, to help local authorities better anticipate variations in photovoltaic production. Selected for the 2021 edition of the *IGNfab*, "PARCS" will thus benefit from the IGN's expertise, network support and #GeodataForTheClimate data. While this partnership will allow Reuniwatt to use IGN's data and techniques, Reuniwatt's expertise will help strengthen the institute's position as a recognized scientific hub and a key player in France's digital transformation.

PARCS, a cartography adapted to French territories

The PARCS project will provide the most complete, accurate and up-to-date map of solar installations in a selected area, with a methodology well adapted to French territories. Within the framework of deployment and performance monitoring, this atlas of solar installations will be exploitable in a standard GIS (Geographic Information System) format. It will allow: An overview of PV installations on the territory, an annual follow-up of the evolution of the solar park, as well as a decision support tool to identify priority areas for the penetration of renewable territories.

4 CONTACT US

Headquarters

14, rue de la Guadeloupe
97490 Sainte-Clotilde - La
Réunion

Paris Office

73, Avenue de Paris
94165 Saint-Mandé

Toulouse Office

B612 - 3, rue Tarfaya
31045 Toulouse Cedex 5

Telephone: +33 977 216 150

www.reuniwatt.com



— Reuniwatt —

Webinars and further information are available on the Reuniwatt website.

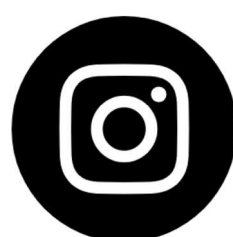


Marion Lafuma

Business Development
and Marketing Manager

teammarketing@reuniwatt.com

+33 7 54 39 14 20





— Reuniwatt —