



Empowering your business

Maximize photovoltaic energy use with innovative forecast services



CalibSun, benefits of 15 years of innovation in solar energy through **Solaïs & academic partners**

A SOLAÏS SPIN-OFF



Expert in photovoltaics for 15 years

1000+ Projects & Studies

18 Country

200MW PV assets

Monitoring & performance management

Engineering & consulting

Unique expertise in storage for PV

Sizing / Technology assessment / Energy management

15 years of R&D



**Collaborating since 2009
with
Mines Paris - PSL & Armines**

10 years R&D on solar resource forecasting & satellite data valorisation

Over 15 scientific publications

[See our scientific publications →](#)



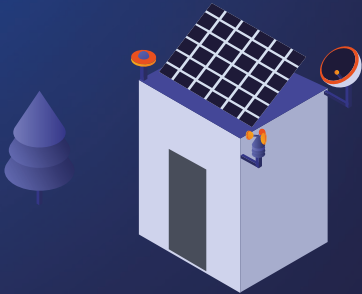
**Member of SCIDOSOL
Research chair**

Academic and industrial partners for disruptive innovation on solar resource forecasting





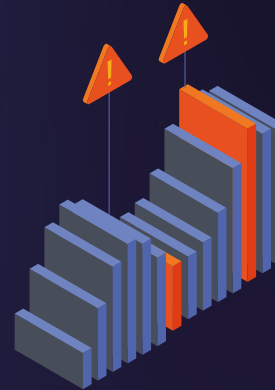
CUBE



1

1 year measurement

The autonomous weather station collects all relevant data on-site during the impact study.



2

Calibration

Quality check and calibration of historical irradiance satellite data basis to remove potential bias.



3

P90, P50, TMY

Lower uncertainty on P50 and TMY to reduce risks.
Increase P90 to maximize debt leverage.

CUBE is the world's first service to integrate an autonomous meteorological measurement cabin to refine and validate a site's energy production potential.



CUBE helps secure and improve the profitability of your projects

CUBE revolutionizes best practice in estimating the irradiation potential of photovoltaic projects.

CUBE combines an exclusive measurement cabin and an innovative bias correction algorithm, to conduct representative campaigns and secure the Yield report.

The one-year on-site measurement campaign collects all relevant data (irradiation, temperature, soiling...)

A bias correction algorithm, based on quantile mapping, corrects the historical satellite database used by technical advisors to obtain a yield report based on real local meteorological phenomena.

- ✓ Secure your project with investors, banks and technical advisors
- ✓ Consolidate financial profitability
- ✓ Reduce project risk profile
- ✓ Improve storage sizing - hybrid / on-grid systems



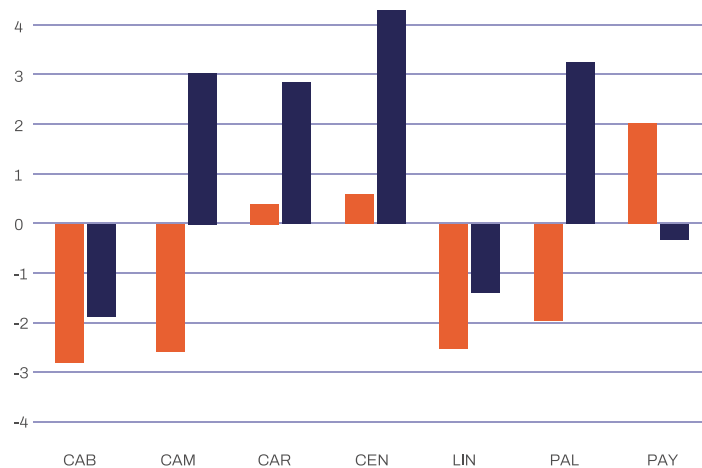


CUBE reduces uncertainty of satellite database

The satellite databases used to estimate TMY are subject to uncertainty.

- Significant biases on 7 BSRN reference stations (-3% to 5% in this case)
- Annual GHI uncertainty of around 3%.
- No apparent correlation between database biases

Bias between Solargis and SODA irradiance databases at 7 reference sites - BSRN



SOLARGIS

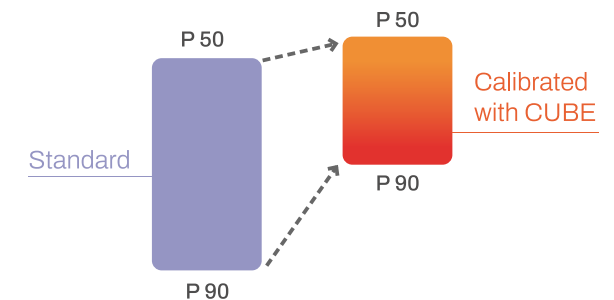
Helioclim-3



The market has an aggressive feed-in tariffs, leaving no room for uncertainty. With CUBE, CalibSun provides a local calibration — already a best-practice the wind industry — reducing the gap between estimation and reality of your sites' yields.

What CUBE offers:

- ✓ Refined P50 for a more secure investment
- ✓ Reduced the P90/P50 ratio to optimize equity contribution
- ✓ Safer investment decision for banks and investors
- ✓ Better project valuation in the case of a sale



As a gap between estimation and reality can be economically detrimental in the medium and long term, local calibration is strongly recommended.

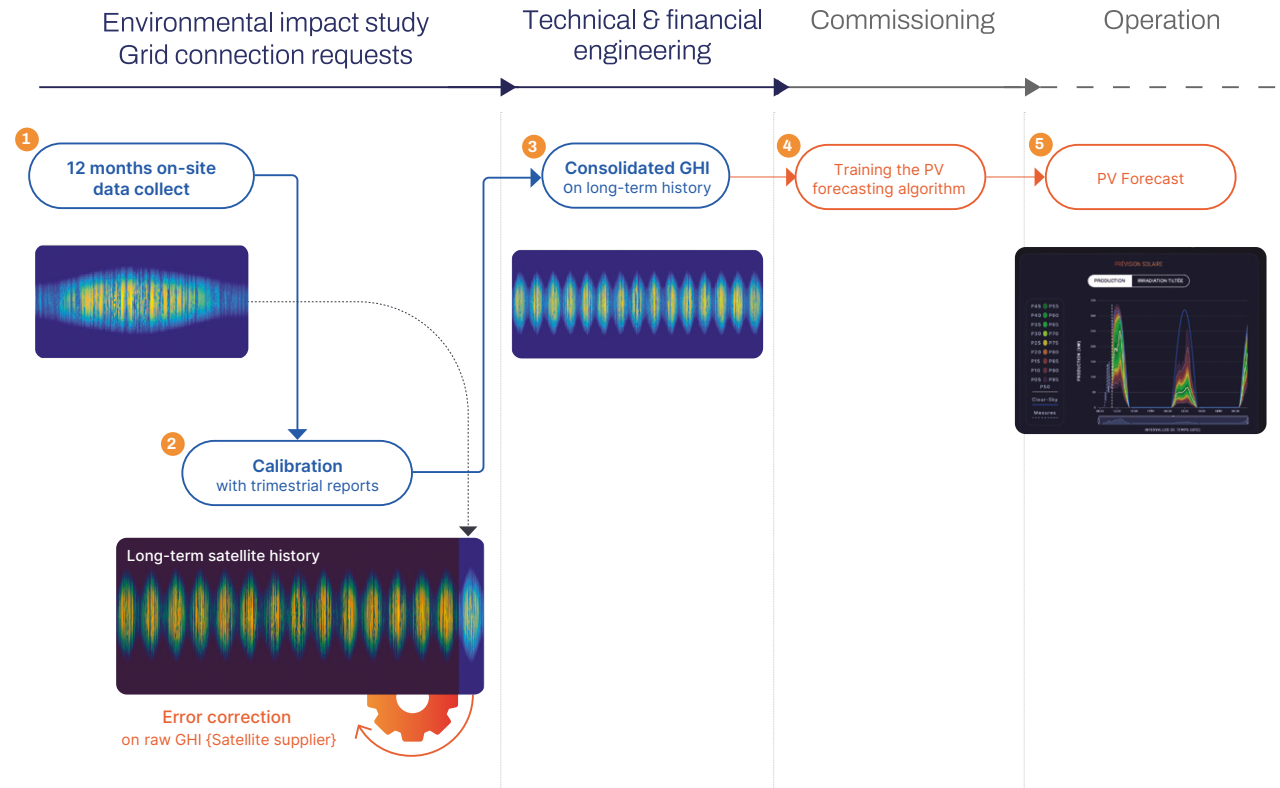


Turnkey service with complementary partnerships

A turnkey and customizable meteorological measurement cabin

CalibSun includes in its CUBE offering operational monitoring of data collected on-site to trigger intervention if necessary. Multiple quality tests are applied, covering all measurement anomalies not visible to the naked eye. These tests include, for example, tests of extreme value limits, point shading by nearby horizon, outlier detection, etc.

- ✓ Regular on-site maintenance to ensure high data availability.
- ✓ Validation of data quality prior to calibration : *CalibSun ensures to discard any measurement point suspected of being faulty.*



12 months of quality measurement

Time step 5 min / 99.5% availability

- Irradiance GHI
- Temperature (ambient and modulus)
- Wind (direction, speed, gusts)
- Fouling (dust IQ)
- Rainfall
- Humidity (relative and absolute)

Calibrated data

- Time series: Irradiance GHI (15 years)
- TMY



Technical partner



Scientific partner



A fully-equipped, autonomous, self-contained, turnkey weather station

Meteorological station



Pyranometer

Dust IQ

Photovoltaic panels

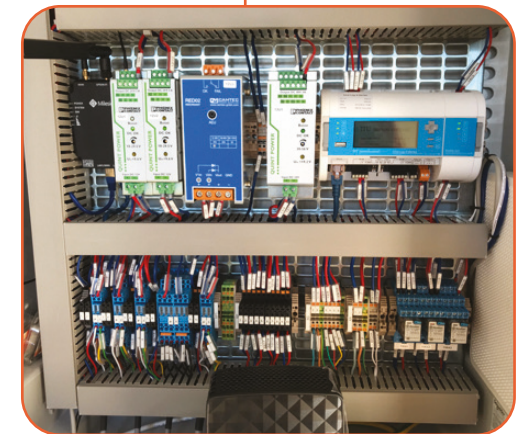
Satellite antenna (Starlink - 4G/5G)



Batteries

360° security camera (autonomous)

Complete electrical panel



The cabin can be customized depending on your requirements (albedo, DNI...).



Use Case : AMARENCO Group has decided to use CUBE for its future large-scale PV development projects.

The meteorological cabin was installed in Nouvelle-Aquitaine (France), in a remote and off-grid location:

- 12 months of operation in partnership with SPIE of on-site maintenance
- Data collection and communication : over 98% of all data, validated by a quality control used for calibration.

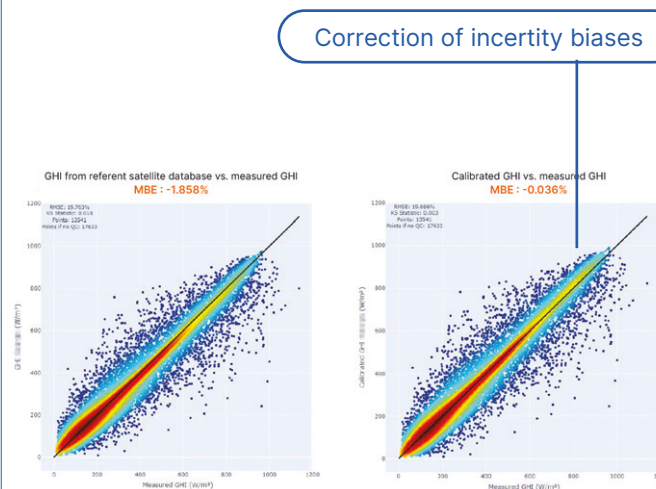
The calibration of the satellite database enabled an upward re-evaluation of the estimated producibility.

- +1.5% overall irradiance estimated compared with the reference satellite database used used by technical advisors

Hardware set-up



Calibration output



Amarenco
14 239 abonnés
23 h •

Last year, in a groundbreaking partnership with CalibSun, we've harnessed the power of their innovative CUBE service for our photovoltaic plant projects!

The CUBE, a game-changer in solar potential estimation, combines an autonomous measurement cabin with advanced calibration algorithms. This technology has been pivotal in our recent project in Nouvelle-Aquitaine, optimizing both financing and the long-term economic viability of the solar plant.

Our journey with CALIBSUN shows our commitment to innovation and sustainability. The CUBE's precise energy yield estimates have significantly enhanced our financial planning and project efficiency.

Gonzague Vuillier, Construction Manager, Amarenco: « Efficient and quick! We are very satisfied with this first experience with the CALIBSUN team and are now considering deploying this tool across all our large projects. »

Stay tuned as we continue to pioneer in sustainable energy solutions, bringing a brighter, greener future!

#InvestInRegeneration
Voir la traduction

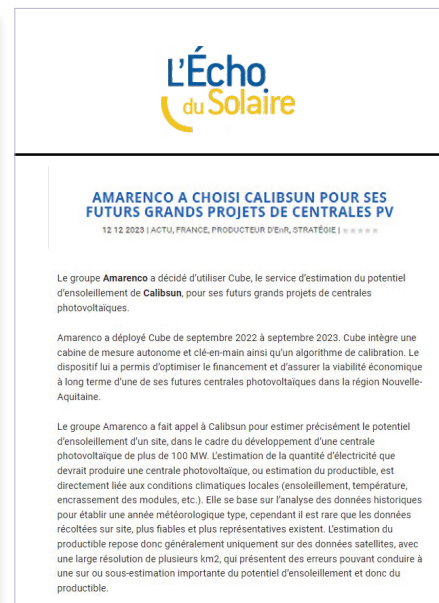


« I'm delighted to have completed the first irradiance measurement campaign for our future photovoltaic power plant. This new data will enable us to accurately improve our yield estimates, and thus facilitate all our future technical and contractual exchanges with our partners.

I'd also like to emphasize the ease with which CUBE's cabin was installed on our site. Quick and efficient! Therefore, we are very satisfied with this first experience with the CALIBSUN teams, and are now thinking of deploying this tool on all our major projects. »

- Gonzague VUILLIER
Construction Manager, AMARENCO Group

Overview of CalibSun in the specialized press



« CalibSun: a trio of innovative products to predict irradiance. »

- Tecsol

« CalibSun aims to make irradiance data more reliable. »

- GreenNews Techno

« CalibSun uses AI to forecast irradiance and photovoltaic production. »

- Echo du Solaire

« Three digital tools developed in France to support solar energy. »

- Batimag

« Amarenc has tested CalibSun's CUBE and is going to adopt it! »

- Plein Soleil



See more on calibsun.com



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