

## Success story

**"We are able to focus efforts on projects with a higher chance of success and financial viability."**

JOLYON DENT, VP OF ANALYTICS, CONVERGENT

### A 'gold standard' solar-plus-storage measurement campaign

Convergent Energy and Power (Convergent) is a leading provider of energy storage solutions in North America. Convergent has over 800 MW / 1 GWh of energy storage and solar-plus-storage systems operating or under development. The company works to increase grid reliability and create financial certainty for investors, developers, and operators.

Convergent turned to Solargis and GroundWork for highly accurate and site-specific resource assessments for its solar-plus-storage systems to better understand expected performance and maximize confidence for project stakeholders.

### Opportunity

There were two areas of opportunity for Convergent to refine the analysis of its proposed solar-plus-storage system in Puerto Rico:

- 1 High quality solar resource data to inform robust project design
- 2 Better understanding of regional resource variability to improve modeling of project performance

Jolyon Dent, VP of Analytics, Convergent, said **"we need a clear understanding of the solar resource to make informed decisions and successfully model the financial viability of complex projects"**.

At one planned solar-plus-storage system in Puerto Rico, the Convergent team had limited solar data availability and high geographic variability. The tropical climate introduces transient weather patterns that cause significant resource fluctuations. These changes occur at frequencies that aren't adequately captured by low-frequency historical satellite data and lack supportive data from ground-based measurements.

Convergent needed a way to undertake a highly site-specific resource assessment campaign, coupling high resolution satellite data and reliable on-site measurements.

## CONVERGENT

### KEY FACTS

**Location**  
US

**Customer**  
Convergent Energy and Power

**Service**  
Site adaptation of high resolution satellite data using ground-based measurements from GroundWork Renewables, Inc.

**Service function**  
Comprehensive resource analysis to support deployment of solar plus storage in Puerto Rico and across the USA

**Outcome**  
+ Bankable report with low uncertainty and reliable resource estimates  
+ Reduces operational uncertainty leading to better revenue generation for Convergent  
+ Enables improved financial modelling and risk mitigation for solar-plus-storage projects

## Solution

Solargis worked with GroundWork, a company that specializes in ground irradiance and meteorological (MET) data, to conduct a site adaptation of its satellite data using ground-based measurements from the Puerto Rico project site. This involved:

- Generating high-resolution satellite based synthetic data at one-minute intervals by correlating satellite data with high-frequency weather and solar irradiance ground measurements
- GroundWork running an on-site ground monitoring campaign to calibrate the high quality instruments and comprehensive quality control checks.

Jolyon commented: **“Solargis stands out in the market due to its exceptional accuracy and the provision of one-minute granularity data. This level of precision is a feature that sets them apart from other players in the industry”.**

The results of this measurement campaign were used to optimize the PV plant design for grid stability by determining the optimal DC/AC ratio and energy storage characteristics to ensure cost-effectiveness and accurate energy production modeling. Accurate solar resource data is critical due to the need to control the plant's ramp rate using the battery to mitigate rapid rate changes and ensure efficient power output.

Jolyon added: **“The services that both Solargis and GroundWork provide are constantly evolving and becoming more important as the demand for reliable solar resource information grows”.**

## Outcome

This ‘gold standard’ measurement campaign brought Convergent three main benefits:

- 1 A bankable report featuring minimal uncertainty and reliable resource estimates, which is a key tool for both securing and improving project financing and terms
- 2 Key data to inform system design and operating procedures, maximizing revenue and enhancing the ability to meet project requirements and contractual obligations
- 3 Mitigating uncertainty to allow all stakeholders to progress through the contracting process with confidence

The successful collaboration in Puerto Rico has now paved the way for an ongoing relationship with Solargis and GroundWork for Convergent’s project pipeline.

## Conclusion

By taking a ‘gold standard’ approach to its measurement campaigns, utilizing the very best satellite data and the very best on site measurements, Convergent has set an industry benchmark for hybrid project development and increased confidence of its multiple stakeholders, including its leadership.

Jolyon added: **“Through Solargis and GroundWork’s robust statistical processes and quality control measures, we are able to focus efforts on projects slated for success and financial viability.”**



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