

CASE STUDY

Construction Progress Monitoring for Germany's Largest Solar Carport

CEA was tasked by WI Energy to monitor the construction progress for Germany's largest solar carport (16.2 MW). Our mission? To ensure the client met lender requirements and documented code compliance.

"As this was the first of several carport designs, a third-party review of the construction was important to us and our bank. CEA helped us greatly to achieve investment confidence."

Thomas Nolden, head of energy-trading at WI Energy (formerly Sybac)

THE SCOPE

1. **Design Review:** We meticulously reviewed the design against constructional requirements.
2. **Construction Progress Monitoring:** Our team traveled to the PV Carport site in Germany once a month for five months. Our focus was on overhead glazing, specific constructional code compliance issues, and ensuring the PV Carport's compliance with German standards.
3. **Drone Inspection:** Leveraging drone technology (in collaboration with AePVI), we inspected 100% of the PV modules thermographically. We also captured electroluminescence images of a sample of 400-800 PV modules.

Why Drones?

The unique structure of the carport, with its densely populated modules, made traditional inspection methods impractical. Hence, we coined this as a "101% drone inspection" – 100% IR and 1% EL.

RESULTS

- Identified a minor issue with some modules having lost substrings due to junction box concerns.
- Provided actionable remediation steps and confirmed the project's overall quality and compliance.
- Recommended future inspections, especially before the end-of-warranty period, to monitor potential diode failures in other modules' junction boxes.

