

# Solar services for the entire value chain



**We  
Create  
Trust**





# How we service the solar industry

Solar is the fastest growing source of new energy capacity around the world. As the market for solar technology grows and evolves, downstream buyers need to have trust in the performance, safety, and reliability of solar modules, inverters and other components for photovoltaic (PV) systems.

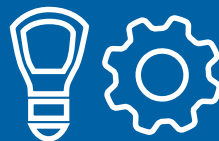
The Kiwa Group offers a comprehensive portfolio of quality assurance, testing, inspection, and certification services for the solar industry. We support investors, developers, EPC contractors and asset managers, while also helping manufacturers demonstrate compliance to the requirements of numerous markets.



**5,000+**  
PV module  
model types  
tested



**1,000+**  
Factory  
audits  
conducted



**300+ GW**  
of PV production  
capacity  
evaluated



**20+ GW**  
of PV projects  
consulted or  
visited

# Empowering the Energy Transition

PV technology has undergone significant changes in recent years impacting efficiency, demand and price. In this rapidly moving environment product uncertainty and quality issues can easily arise. We create trust to empower the energy transition via the following key service categories:

## Quality Assurance

Companies investing in a solar project must take into consideration the quality of solar components as it directly impacts performance and safety over the project's lifetime. Existing design and safety standards are not intended to assure manufacturing quality or long-term reliability of PV module, inverter and battery components. An enhanced quality assurance program is needed to safeguard solar project return on investment.

As the industry's experts in procurement and manufacturing quality, the Kiwa Group offers:

- Procurement contract assistance
- Factory audits for PV modules, inverters and batteries

## Bankability

PV modules are a long-term investment; developers and financiers need to know whether the products they invest in will be reliable. One cannot assume that module reliability is consistent based on manufacturer size, location, or past performance. Qualification of the specific bill of materials combinations being procured is a necessary step in demonstrating reliability.

As the industry's experts in testing for PV modules, the Kiwa Group offers:

- Extended reliability and performance testing via PVEL's Product Qualification Program
- In-lab and in-field testing for solar components
- Customized data and reports from our global labs

## Technical Advisory

Third-party expertise is required during the development, construction and operational stages of a PV project's lifetime. We advise project developers, lenders, investors and asset managers to assess and manage the risks associated with their assets. Our consulting leverages our experience gained in the field around the world and backed by our knowledge from the factory and the lab.

As the industry's experts in advisory services, the Kiwa Group offers:

- Due diligence for the financing and acquisition of solar assets
- Review of PV plant designs, evaluation of procurement process and construction monitoring

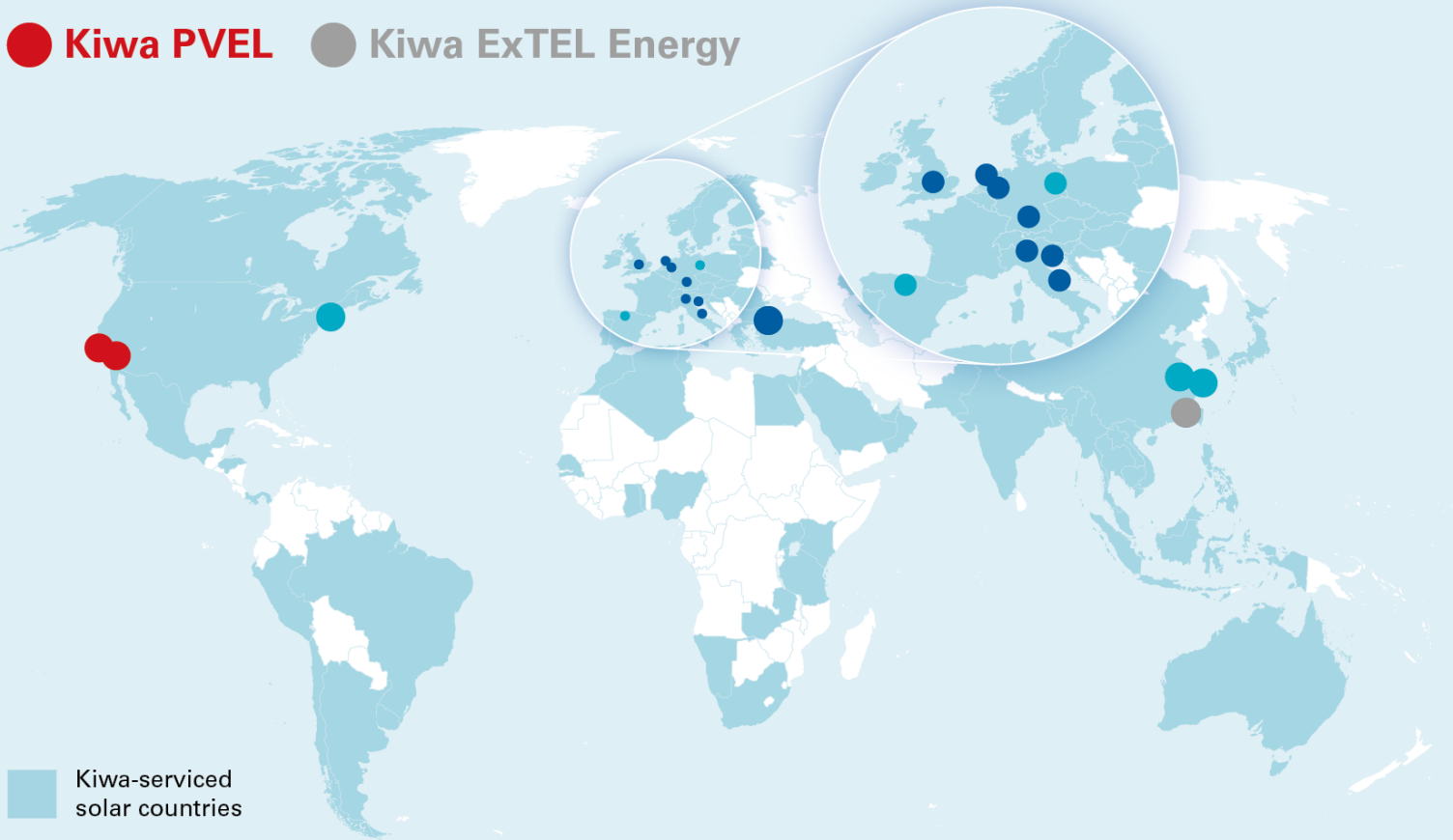
## Certification

Compliance to relevant testing standards is an important step for manufacturers who want to bring their products to the global market, but understanding the requirements of various jurisdictions can be difficult. Procurement managers, grid operators and local authorities demand proof of conformity for component certification and compliance.

As the industry's experts in certification testing, the Kiwa Group offers:

- PV module certification to IEC 61730, 61215 and other standards
- PV inverter and grid connection device testing and certification
- Battery testing according to IEC 62133

- **Kiwa**    ● **Kiwa PI Berlin**
- **Kiwa PVEL**    ● **Kiwa ExTEL Energy**



## Kiwa Group

Our Kiwa offices bring you world class expertise in laboratory testing, quality assurance and manufacturing oversight to create trust in the performance, reliability, and safety of your investment.

### Contact us

Do you want more information about our solar services for the complete supply chain? Contact us via [solar@kiwa.com](mailto:solar@kiwa.com) or visit our website.



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