



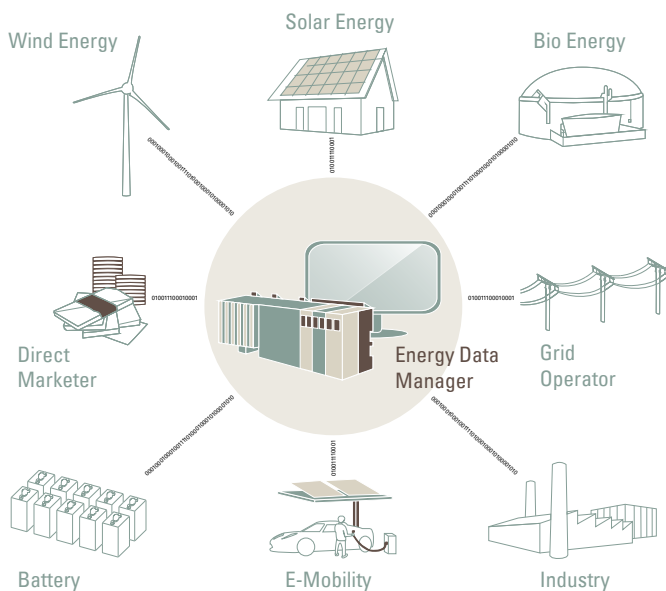
PRODUCTION DATA IN REAL TIME: JUWI ENERGY DATA MANAGER

How much energy does the wind turbine produce, what about the PV or the biogas plant? As owner you want to access this information at all times and in one overview. Make use of our new offer to raise the quality of your energy data. The juwi Energy Data Manager is able to acquire each kilowatt hour in real time.

More Transparency for Plant Owners

The wind is blowing, the sun is shining, the biogas plant is under full production. As owner, you want to observe your energy production independently of the renewable energy source. The

correct selection and setup of the monitoring system influences the sampling rate, the quality and the transparency of your plant data.



The new juwi Energy Data Manager will make you independent; moreover, it offers you a real benefit: The system provides production data in real time, not considering if values are captured at different technologies like wind energy, PV or biogas plants. Hardware and software – based on international industrial standards – are modular.

Thus, we can setup and adjust the system adequately to your expectation and to the requirements of the plant. You will always have access to your data. Our know-how will optimize your monitoring system – a benefit during the lifetime of the plant. The increased transparency of your data reduces reaction times during failures, raises technical availability and, in total, stabilizes the renewable energy production.

→ Combination and Configuration Level

Product Line	Data Aggregator	Data Provider (external systems)	Grid Code Requirements*	Plant Control Room*
Basic	✓	–	Digital/Analog In- & Outputs	Status Display
Medium	✓	✓	Digital/Analog In- & Outputs + IEC-Protocols	Status Display + Trend + Alarm Viewer
Pro	✓	✓	Digital/Analog In- & Outputs + IEC-Protocols + Virtual Power-Plant	Status Display + Trend + Alarm Viewer + Database + Historian + Redundant Server

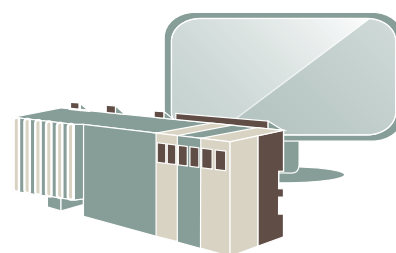
*optional

The setup of the juwi Energy Data Manager is modular. Hardware and software elements can be set up for each system in several combinations and expansion stages. We have put together the packages Basic, Medium and Pro for plant operators. Basic starts

with data aggregation. Apart from that, Medium and Pro include the provision of data for third-party systems. Depending on the requirements, they can be extended by other features at the outset or at a later stage.

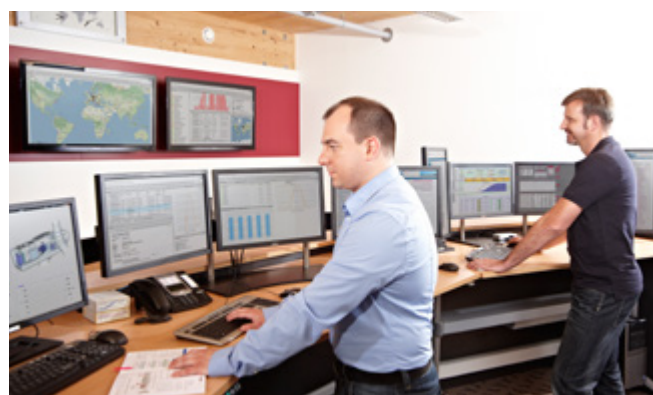
YOUR BENEFITS AT A GLANCE

- Suitable for project developers and owners of renewable energy plants
- Access to real time data and therefore transparency of your plant data
- Bi-directional data acquisition, processing and provision from different sources and systems
- State-of-the-art industrial standards
- Long-term availability of hardware devices
- Short integration time due to high standardization of the system



→ The juwi Group

juwi is one of the world's leading companies in the area of renewable energy. We are experts in the project development of wind-, solar- and bioenergy plants. So far, juwi has realized approximately 2,300 plants with a total capacity of 3,000 megawatt. After the plants have been connected to the grid, juwi Operations & Maintenance GmbH offers you a comprehensive package including technical and commercial management as well as maintenance. In 1996, Matthias Willenbacher and Fred Jung created the juwi group in the German federal state Rhineland-Palatinate. Today, the company has offices in almost all federal states as well as in 15 countries abroad.



juwi Operations & Maintenance GmbH

Contact: Alrik Schiede · Energie-Allee 1 · 55286 Wörrstadt · Tel. +49. (0)6732. 96 57-3599 · Fax. +49. (0)6732. 96 57-5099
edm@juwi.de · www.juwi-om.de