

# Improve your efficiency, reduce your losses and maximize your revenues

- Detect and correct under-performance
- Prioritize interventions based on the evaluation of losses
- Reduce O&M costs through remote maintenance
- Quantify time and production-based availability
- Manage manufacturer warranties

### The value we deliver



The world has woken up to the importance of renewable energy. Global warming and climate change, along with increasing consumption and the dwindling of fossil fuel sources, are driving the development of clean energy towards sustainability. The industry is maturing and local governments have established incentives for renewable investments. Unlike fossil fuels, energy generated from the sun, wind, water and other natural sources is clean and will never run out.

In order to respond to arising challenges, assets must be managed and controlled efficiently and transmission networks and energy markets need to move up a gear. Ultimately, renewable producers must pursue how to increase availability, decrease downtime and ensure assets are performing at their best.

This mission is complicated by several factors: usually the portfolio is diverse, and contains various different technologies; on a wind farm, for example, there are often wind turbine models from several different manufacturers placed in remote locations; and in each country, region or state, electrical grid operators apply specific connection requirements, which need to be fulfilled.

Finally, the inherent intermittency of renewable energy leads electrical grid operators and energy markets to demand predictability in order to manage risk. Production-forecasting tools are therefore required to support producers in estimating energy output.

Renewables Management System (RMS) is a solution for the centralised operation of wind, hydro, photovoltaic and other renewable energy power stations. It is an operational platform used to streamline management and control of your growing renewable energy portfolio, while fully supporting your business.

RMS connects, manages and integrates – in real time – the energy production of more than 40 wind turbine models from 12 different vendors, as well as equipment for hydroelectric and photovoltaic facilities.



WPP Wind Power Plants 6,000

WTG
Wind Turbine Generators



GW Giga Watts

RMS monitors and controls energy production for EDP Renewables, one of the largest players in wind energy worldwide.

With three dispatch centres in Portugal, Spain and the USA, EDPR uses RMS to control nearly 10 GW of installed capacity from 300 wind farms. This accounts for a total of 6,000 wind turbines across 8 countries that are able to supply electricity to 5 million homes and prevent the emission of more than 10 million tons of CO2.





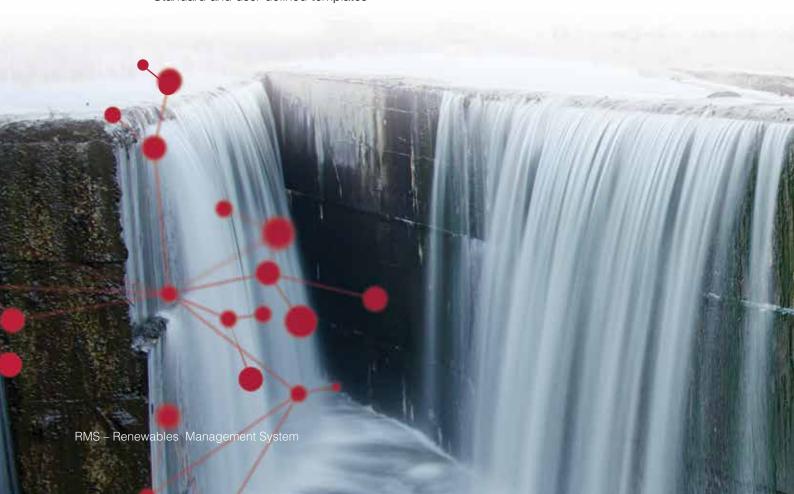
## A system that fulfills your needs

- Manufacturer independent
- Integrated real-time SCADA system
- Worldwide operation, supporting multiple time zones
- Scalable from a few power plants up to hundreds
- Your entire renewable portfolio on the same platform



## Timely and informed decisions

- SCADA HMI
- Scheduled and ad-hoc reporting
- Built-in operational KPIs
- Real-time dashboards, alerts and notifications
- Standard and user-defined templates







#### More than supervision, it's performance management

- Integrated alarm management
- · Ability to monitor and control your plants in real time
- Ability to calculate, categorize and diagnose your energy losses
- Historical data and performance analysis
- Real-time performance monitoring



#### Bring your knowledge into the equation

- Edit, correct and complete missing historical data
- Build your own operational KPIs
- Configure your performance assessment algorithms
- Define your availability formulas
- Implement your own downtime categorization
- Standard and user-defined templates







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