

# VIRTUAL POWER PLANT

## Control room software for distributed energy resources

emsys VPP is a pioneer in the development and provision of Virtual Power Plants and is one of the world's leading suppliers today. Our sophisticated software monitors and remote-controls in real-time numerous distributed energy resources, pulling maximum value from their consumption and generation on power markets and for a smart grid management. The Virtual Power Plant digitally connects renewable and conventional energy sources as well as various types of storage systems and demand-side resources. Distributed energy resources are thus turned into a single power pool whose generation you can flexibly adjust to grid requirements or trade profitably on international spot, intraday and balancing power markets.

Power traders, aggregators, energy providers and grid operators already control numerous distributed energy resources with our trend-setting technology. Our Virtual Power Plant is used in many international markets and can be easily adapted to the requirements of electricity markets, users and existing IT infrastructure.

### All crucial data at a glance

We make sure that all the necessary plant data are integrated into your Virtual Power Plant: real-time data and availability of the plants, wind and solar power forecasts, consumption data and electricity market data. As an experienced provider of power forecasts, our partner company energy & meteo systems predicts the power schedules for wind and solar parks which we integrate into the Virtual Power Plant. You capture all fundamental events – production and consumption processes as well as power forecasts – at a glance and can concentrate fully on managing your power plants.

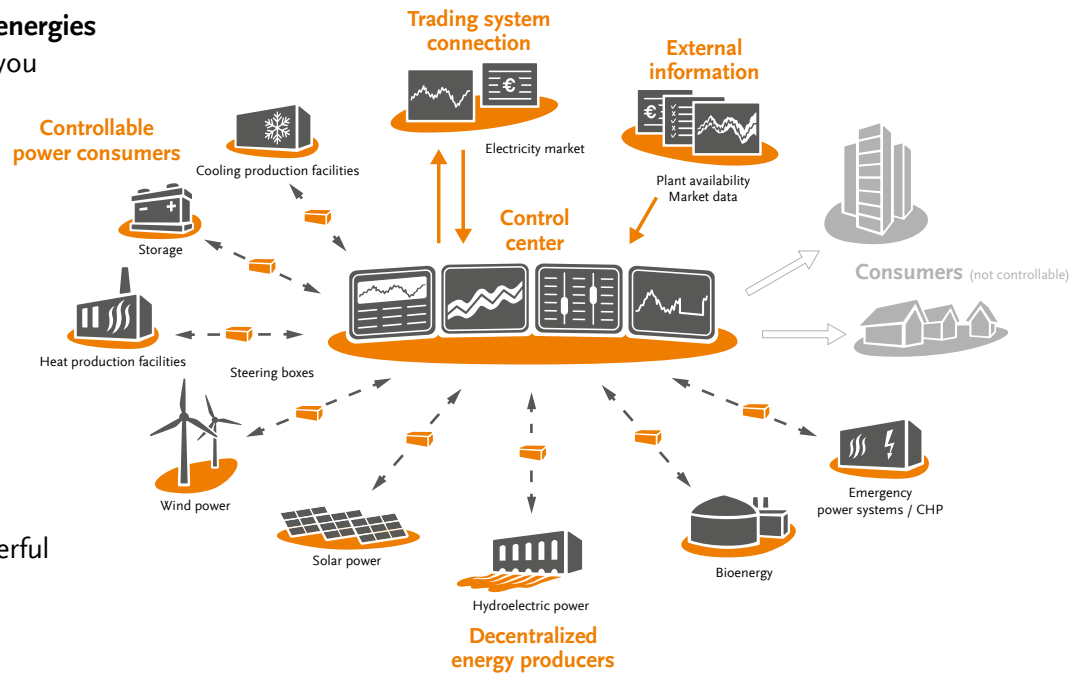
### Complete setup as SaaS solution

Since our technology works as a Software-as-a-Service solution, there is no need for additional IT-infrastructure on your side. emsys VPP configures your Virtual Power Plant according to your requirements. We take care of hosting the system and our 24/7 team ensures high availability. With our vast market and IT experience we support you personally in all questions regarding integration, control and trading of renewable energies.

## Our Virtual Power Plant: market-leading IT platform for a wide range of applications

### Trading power from renewable energies

Our Virtual Power Plant allows you to aggregate large numbers of renewable energy plants and other distributed energy resources to efficiently monitor, forecast and remote-control their production in real-time. Thus, you can concentrate entirely on extracting maximum value from your portfolio on intra-day, spot and balancing energy markets. Leading aggregators have relied for years on our powerful and sophisticated technology.



### Supply of balancing energy

Many renewable energy plants can today contribute to power system stability by providing primary (FCR), secondary (aFRR) and minute reserve (mFRR) capacity. You can seize this potential with our Virtual Power Plant which intelligently orchestrates connected assets to dynamically react to power system needs by automatically throttling, storing or increasing production. Our Virtual Power Plant: a proven all-in-one solution to successfully participate in balancing energy markets.

### Coverage of grid management processes

Due to new challenges posed by grid management processes, the Virtual Power Plant has been extended to include additional functionalities that ensure the integration of renewable energies into current market processes. Thus, all necessary processes, such as the transfer of master and planning data, non-availabilities and market-related adjustments, as well as the processing of grid management activations are mapped. Moreover, the data exchange with the grid operators can be handled smoothly.

### Comprehensive know-how for the energy transition

The partner companies energy & meteo systems, emsys VPP and emsys grid services offer pioneering services and IT products worldwide for efficiently integrating renewable energies and other distributed energy resources. Their joint portfolio ranges from precise power forecasts and comprehensive consulting services to the provision of Virtual Power Plants as control centers for decentralized energy plants and customized software platform for grid management.

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**Three companies, one goal: 100 % renewable energies!**