DERMS(Distributed Energy Resource Management System)

Panasonic

DERMS(Distributed Energy Resource Management System)

Panasonic

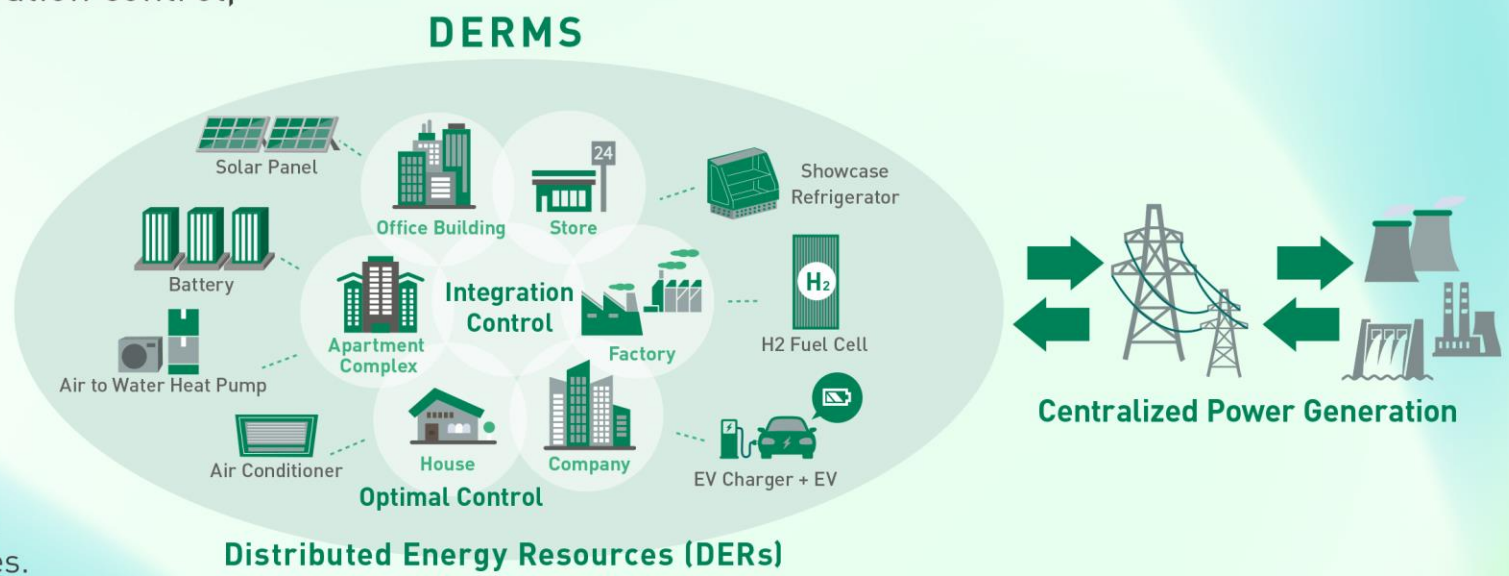
Benefits

❶De-carbonization

- Renewable energies utilized as the distributed energy resources(DERs) on the demand side are expected to decarbonize the overall energy systems.
- In addition, the grid instability caused by many renewable energy resources can be stabilized by the integration control, which will contribute further decarbonization.

❷Resilience

- While large-scale centralized energy systems are exposed to a risk of massive blackout, DERMS can wisely manage the DERs to avoid such a risk due to the dependent operation.



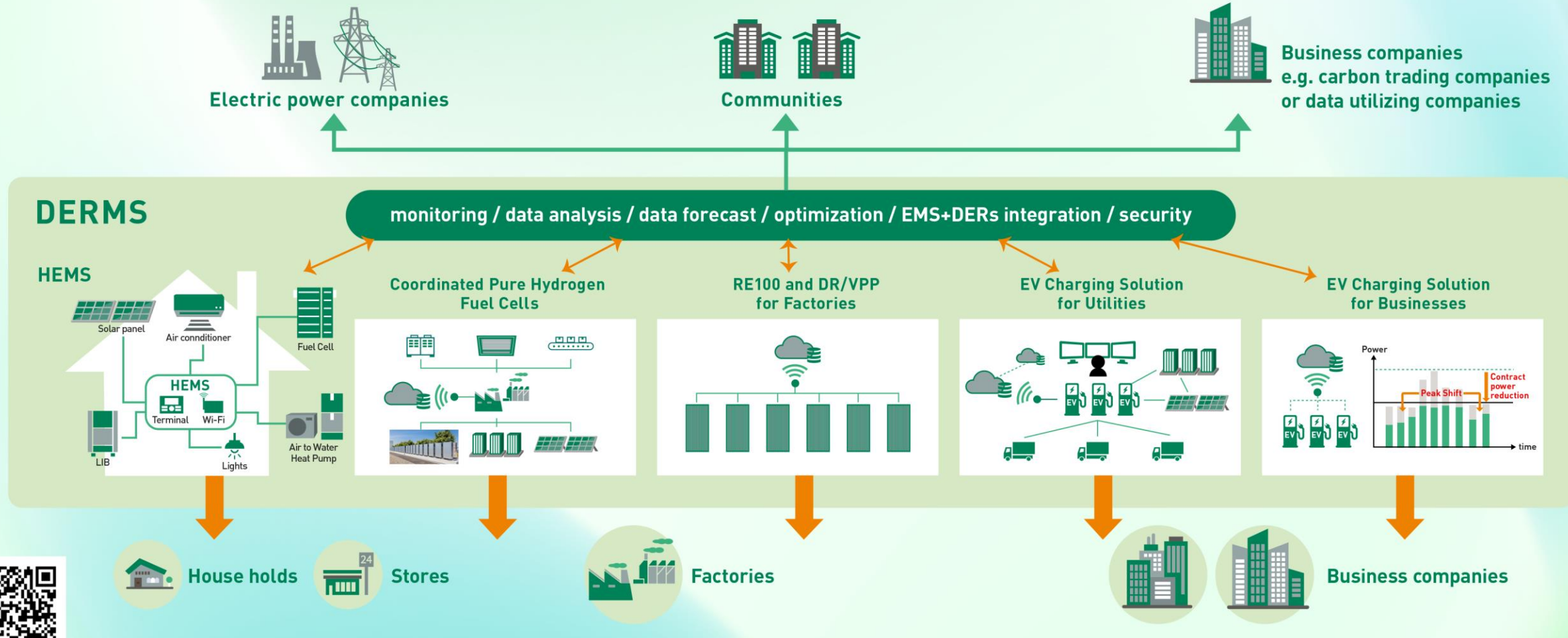
DERMS requires the high-level management and control of each DERs with different characteristics as well as the precise information of the energy consumption patterns at the facilities.

DERMS(Distributed Energy Resource Management System)

Panasonic

Applications

With deep understandings of the customers' situations due to the long-term relationships with them, we believe we can provide the most suitable energy solutions to your requirements.



DERMS(Distributed Energy Resource Management System)

Panasonic

Technical Advantages

❶Integration of DERs and their optimal operation

- Energy Management System (EMS) to integrate and operate DERs efficiently in the houses and industries.
- Virtual Power Plant (VPP) to consolidate DERs virtually and make them function as a single large-scale power plant.

❷Highly advanced prediction algorithm

- Precise prediction of the power consumption patterns on the demand side for the optimal energy supply planning.
- Power generation prediction of reusable power sources using the weather and history data.

❸Real-time monitoring of the control system

- IoT device integration for the real time data collection from the sensing devices in the demand side.
- Automatic DER control according to the aggregated data such as battery charging/ discharging, on/off switching of the equipment and load shifting.

❹Highly advanced data analyses and machine learning technology

- Machine learning algorithm to learn from data and to improve the performance of the system continuously.
- Data analysis platform to process a large amount of data and to detect the data patterns and anomalies.

❺Security and privacy protection

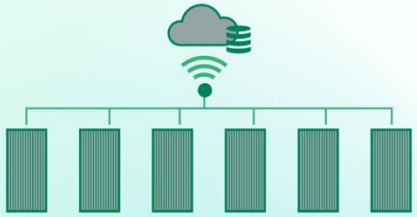
- Cyber security (i.e. encryption, authentication and access control) for protecting the EMS from cyber attacks.
- Data privacy protection (i.e. anonymization and data minimalism)

DERMS(Distributed Energy Resource Management System)

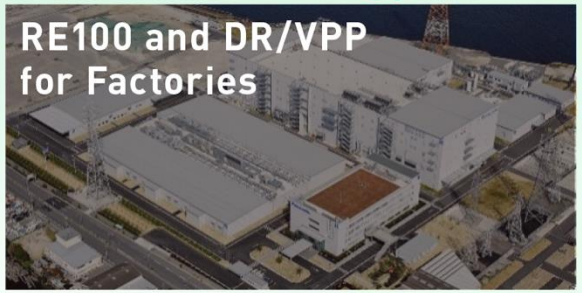
Panasonic

Applications

Generation & Utilization of Clean Energy

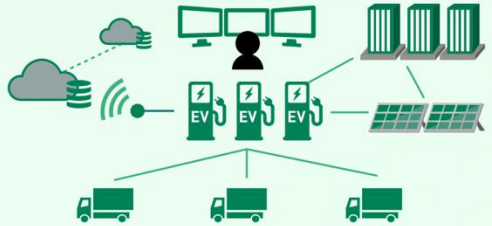


>>Coordinated hundreds pure hydrogen Fuel Cells realize high and scalable output, high efficiency, longevity, and non-stop maintenance.

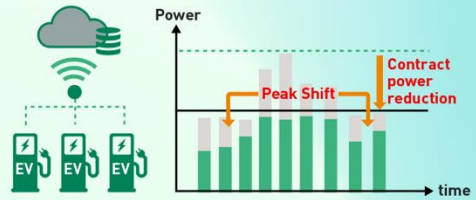


>>Optimally coordinated control for the system of 3 energy devices (FCs, solar panels and batteries) realizes RE100.
>>Integral control of the factory equipment for demand response (DR).

Penetration of EVs



>>Optimal control for the EV fast chargers in the companies' premises adjusts the charging rates automatically according to the situation of the power distribution network.



>>Coordinated EV chargers shift the load peak to level the electricity rates, which encourages business owners to adopt EVs.

Although not described here, we have other many applications e.g. HEMS (Home Energy Management System) for house , BEMS for building and more.