

Central Energy Management System for Smart Grids



Experience the commitment®

The energy landscape is changing. Energy is increasingly being generated by means of wind and solar power. This is a positive development, resulting in greater flexibility in power generation and demand. When the sun is shining, for example, consumers and business can generate their own energy by means of solar panels. When there is no sun, they can turn to centrally transmitted energy.

THE CHALLENGE

The biggest challenge in the use of renewable and non-renewable energy sources lies in preventing power grid imbalances. When there is an abundance of sustainable energy, this should be tapped into to meet energy demand instead of centrally transmitted energy. However, there is no incentive for consumers to maximize their use of renewable energy sources without insight into energy supply and demand and related price fluctuations.

OUR SOLUTION

To limit power grid imbalances, CGI developed a Central Energy Management System (CEMS) for smart grids. CEMS is connected to home energy computers and provides residents with up-to-date energy information, such as current energy prices, supply and demand, weather forecasts, etc. It's also linked to various smart devices in the home, such as solar panels, smart energy meters, electric car charging points and smart devices for appliances such as washing machines.

Residents can use the information provided by CEMS to make better choices with regard to their energy consumption. They can know when supply is high and prices are low and vice versa, helping them to use the right energy resources at the right time. For example, they can set their smart washing machines to start automatically when electricity prices are low or tap into solar generated energy when electricity prices are high.

FEATURES

CEMS offers the following features:

- Weather interface (forecasts how much solar energy will be generated per household)
- Insight into variable energy prices
- Insight into variable power transmission prices
- Automatic measurement of energy consumption and automatic billing for energy suppliers



CENTRAL ENERGY MANAGEMENT SYSTEM: YOUR POWER GRID IN BALANCE

KEY BENEFITS

- Up-to-date energy information to avoid power grid imbalances and improve consumer energy consumption
- Forecasts of sustainable energy supplies
- Insight into variable energy prices
- Automatic measurement of energy consumption
- Billing based on variable prices
- Research databases to analyze results
- Mobile phone and tablet apps and a website for convenient access to energy information and energy consumption tools

- Databases with information for energy research
- Mobile phone and tablet apps and a website for convenient access to energy information and energy consumption tools

CEMS is compatible with the smart grid technology that is on the rise in many countries. Smart grids enable grid operators to increase flexibility in demand and better anticipate fast-changing energy flows.

WHY WORK WITH CGI

CGI is a forerunner in the field of smart grids, delivering insight, foresight and innovative solutions for the generation and consumption of sustainable energy. CGI's approach to smart energy is a combination of having a vision and putting that vision into practice. We take into account both the environment and costs in developing smart grid strategies, solutions and services, ensuring the right balance among each. We also offer open protocols to facilitate the integration of smart grid technologies and cloud services that allow clients to pay only for what they use.

Examples of our smart grid work include the following:

- Hundreds of households in the city of Zwolle in the Netherlands are participating in a CEMS pilot project to gain insight into their energy consumption. A second pilot project has also been initiated in the city of Breda in the Netherlands.
- CGI's developed electric vehicle charge point management systems for the e-Laad and Green Charge networks in the Netherlands and Sweden. Our EV solutions are also in use in Germany, Belgium, Luxembourg and Norway.
- We are a partner in large, well-known smart grid projects such as InovGrid (Portugal) and Low Carbon London (UK).
- CGI delivered innovative smart data services for smart meters deployed by a majority of electricity suppliers in the UK and was appointed as Data Services Provider for the rollout of 53 million smart gas and electricity meters in the UK.

We have a strong, long-term track record of success based on our industry knowledge, technical excellence and global delivery expertise. Our broader utilities experience includes the following:

- Major presence across North America, Europe and Australia, with 6,000+ dedicated utilities professionals
- Partner to 8 of the 10 largest utilities in Europe and North America, working with more than 200 clients globally
- Designed and built 11 of the 17 central energy market infrastructures in the world today

CGI's continued aim is to remain at the forefront of innovation in the utilities industry.

ABOUT CGI

With more than 68,000 professionals in 40 countries, CGI fosters local accountability for client success while bringing global delivery capabilities to clients' front doors.

Founded in 1976, CGI applies a disciplined delivery approach that has achieved an industry-leading track record of on-time, on-budget projects.

Our high-quality business consulting, systems integration and outsourcing services help clients leverage current investments while adopting new technology and business strategies that achieve top and bottom line results.

As a demonstration of our commitment, our average client satisfaction score for the past 10 years has measured consistently higher than 9 out of 10.

For more information, please contact us at info@cgi.com or visit www.cgi.com.