

Smart grids

Smart grids: Electrical networks that evolve in response to usage ?



The use of electricity has changed greatly since its early days: from simple wireless receivers on to household appliances, heating systems, flat screens, and today's **electric cars**, electrical devices have proliferated and our energy needs have increased.

At the same time, it is necessary to integrate more and more new means of generating energy such as solar farms and wind parks, whose renewable energies can also be produced by consumers (factories, buildings,

individual homes...).

The electrical network has to become intelligent to adapt to these changes. Equipped with advanced analysis, monitoring, diagnosis, communication, and real-time monitoring devices, electrical networks have to exchange data, enabling them to account for the actions of all stakeholders, and thus ensure a balance between supply and demand as well as anticipating intermittent drops in the generation of renewable energies.... In brief, they are able to remotely manage and more efficiently direct the flows of the electricity generated and consumed.

Consuming electricity intelligently

Smart grids, through their connection with smart metres, allow fine control over electricity consumption by detecting events such as a surge due to excessive generation and by delaying or interrupting the operation of certain devices. Consumers are informed in real time about their consumption level and encouraged to manage it better. They may be invited to turn off certain devices during peak consumption periods or be informed by management tools of the most favourable times (technically and economically) to recharge electric car batteries.

And smart metering? Smart metres are components in smart grids. They measure electricity, water, and gas consumption, as well as light emissions and data from presence detectors.... This information is then used to assess the energy performance of a building and to implement precise adjustments to respond to immediate conditions or to use as long-term settings.

VINCI Energies is active in the development of smart grids

Smart grids are positioned at the intersection of several fields in which VINCI Energies is expert: as a manager of entire electricity transmission networks, equipment integrator, solutions developer for information and communications technology, and installation manager. The Group is helping to create the



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