INTELLIGENT POWER DISTRIBUTION SYSTEM

TECNOLOGÍA PATENTADA

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RESUMEN

The research group of computer engineering and networks of computers of the University of Alicante has developed an innovative system that enables the distribution and management of the electricity in a more efficient and rational way.

The system uses artificial intelligence techniques to predict energy demand and taking optimal decisions about sources of supply to be used and prioritizing those preferential consumption centers. These decisions are based on rational criteria, such as the characteristics of the consumption centers, the expectations of supply, demand characteristics and previous experiences.

This technology allows to reduce consumption and optimize the operation of the electric system. It means greater energy efficiency and a considerable reduction in costs. It is also suitable for environments where power fluctuates or is scarce.

VENTAJAS Y ASPECTOS INNOVADORES

MAIN ADVANTAGES OF THE TECHNOLOGY

- Optimizes the distribution of electrical energy in an environment using intelligent management of each of the elements of the system.
- Lets customize the system and adapt to the energy needs of the users or complex patterns.
- Can learn and receive information from external resources to make preventive decisions and optimize its performance.
- It guarantees the energy supply to consumption centres that are vital or have priority and allows to reduce energy consumption through selective shutdown of equipment and systems.
- Reduces costs to prioritize domestic energy sources and reducing the demands to the public distribution network. You can also set other savings mechanisms as the demand for energy when the electric rate is reduced.

INNOVATIVE ASPECTS

- Use distributed artificial intelligence techniques to streamline the supply.
- Allows to set profiles of distribution according to the characteristics and temporal needs of users.
- Can use external information to anticipate demand and establish preventive actions. It could use for example, information about the upcoming weather forecasts and establish the possible energy contributions from sources of generation based on renewable energies.
- The behavior is dynamic and progressive, since it is capable of learning from the corrective actions that the user can set.
- The system takes into account the storing of energy or batteries available, taking advantage of the surplus to minimize the events of power shortages.
- Controls the behavior of devices that require power, optimizing its consumption and prioritizing those most needed according to the

requirements of the users.

• The system is scalable and distributed, which can be later expanded and in case of any failure, the rest of the system would still be operating.

APLICACIONES DE LA OFERTA

The described technology can be used in all types of electrical facilities, any size:

- Networks of very high power, as well as those of high and medium power for transport and supply large areas, industrial areas, municipalities and urban areas.
- Installations of medium size, such as malls, industries, hospitals, University campuses, housing developments, sports and recreation, transport stations.
- Corporate and institutional buildings, industrial buildings and homes.
- Machinery, vehicles, robots.

The target entities of this system can be both firms belonging to the industry of the generation and distribution electric, as any company or group that have several sources of energy l consumer devices, and want to optimize its performance.

COLABORACIÓN BUSCADA

Companies interested in acquiring the technology are wanted. Several ways to transfer technology are possible (agreement of the patent license, assignment of rights of use, manufacture or marketing to third parties, etc.).