

Getting the most out of home electricity

July 5 2013



Large household appliances, such as refrigerators and washing machines, account for a huge amount of daily electricity consumption. An EU-funded project has developed a system to help you and your neighbours optimise energy consumption in the home.

The BEYWATCH ('Building Energy Watcher') project, led by Spain's Telefonica Investigacion y Desarrollo, has developed an innovative, energy-aware, flexible and user-centric system for monitoring home energy use.

The system interconnects legacy consumer devices already in your home with a new generation of energy-aware white-goods in a common network. Features include multilevel metering, greater control and

scheduling based on power demand (i.e. off-peak rates), and the ability to set personal preferences.

By scheduling and controlling the operation of power-hungry [home appliances](#), the BEYWATCH system also aims to minimise power distribution peaks. This will help to balance the energy load across power distribution networks, at home, street and neighbourhood levels. The result is a more predictable large-scale energy-consumption profile.

In addition, BEYWATCH has worked to develop and integrate an innovative combined photovoltaic/solar (CPS) system that can provide electricity and hot water for white goods, such as dishwashers. This brings down the cost of water-heating cycles. And the CPS system can even generate surplus electrical energy, which can be used in the home or fed back into the [electricity network](#) under a reverse power generation/distribution scheme.

BEYWATCH has essentially produced a platform for integrating heterogeneous, low-cost, energy-aware products into a more efficient and accessible system for [electricity distribution](#). This also points the way to a more flexible and elegant approach to demand-side management, now widely considered a key point for future electrical systems and of great interest to energy distributors and retailers.

Increased flexibility will in particular help networks to cope with peak loads on the grid, which are getting higher and higher every year. The new system provides access to real-time information about consumption, as well as understandable reports and comparisons to past consumption. For electricity consumers, it all means clearer insights into how to save money on electricity while doing your part to preserve the environment.

Project partners say their [electricity](#) generation and consumption models, and simulation results have been made available to related projects, to be

used as reference materials for further investigation.

One possible area of work could address commercial and industrial buildings. Usage patterns and [energy](#) requirements of such premises are very different to those seen in homes and the knowledge gained through such work could be used to further improve global [energy consumption](#) and reduce carbon footprints.

More information: www.beywatch.eu/

Provided by CORDIS

Citation: Getting the most out of home electricity (2013, July 5) retrieved 20 April 2024 from <https://phys.org/news/2013-07-home-electricity.html>

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