

# **Gamification motivates consumers to reduce power consumption peaks - pilot sites in Helsinki, Nice and Vienna**

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In collaboration with the international CITYOPT project, VTT Technical Research Centre of Finland has developed an energy planning tool for experts and an application for consumers. The tools have been piloted in Helsinki, Nice and Vienna, with promising results. Local energy costs were reduced by 15% and carbon dioxide emissions by 30% using the optimal planning feature of the tool for experts. Using the game-like tablet application, almost 80% of the households involved managed to reduce their electricity consumption during peak times.

The CITYOPT Planning Tool, which was developed to meet the needs of [energy](#) experts and investors, enables optimisation of the energy planning of large-scale urban and regional systems. The tool provides alternative plans with cost and functional evaluations, enabling the minimisation of energy costs and CO<sub>2</sub> emissions, for example. It also provides holistic solutions instead of partial optimisation. Over the long-term, the benefits of urban planning are also passed on to the tax payer. The tool has been piloted in Helsinki and Vienna. Optimal planning at the case locations achieved reductions of around 15% in [energy costs](#) and 30% in CO<sub>2</sub> emissions. The [planning tool](#) also markedly reduces the time required for planning.

## **Households willing to participate**

The aim of the CITYOPT Operational Tool for consumers is to reduce

the household load during peak-time power consumption and prevent problems with electricity production in advance.

The tablet application was piloted in 140 households in Nice during the project. Consumer trials showed that cuts in power consumption can be achieved when end users are sufficiently motivated.

Almost 80% of households reduced their electricity consumption when the need to do so arose.

The application provides information on household electricity consumption and how it can be reduced. It increases consumers' awareness of energy efficiency and their opportunities to influence their own consumption. The consumer can choose whether to participate in cutting his or her own electricity consumption and how, i.e., which load to shift temporally. For example, during peak loads consumers can lower the lighting power or change their laundry time. Participation is rewarded by allocating points for reducing and moving loads. The consumer can give his or her points to a local charity, with the power company paying the charity accordingly. This creates a direct, small energy saving for the consumer and financial benefits for charitable activities in the community, while electricity producers benefit from a more economical production method when avoiding peak production capacity. Consumers can save around EUR 5 per year, which is fairly small. However, this was anticipated since the aim was to shift power loads during peak-time consumption rather than actually lowering electricity bills. The need to shift consumption was brief, occurring between 6 pm and 8 pm on days during which peak [electricity consumption](#) was being reached.

**More information:** For more information, see [www.cityopt.eu/](http://www.cityopt.eu/)

Provided by VTT Technical Research Centre of Finland

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