Virtual Energy Advisor - open city home energy management system

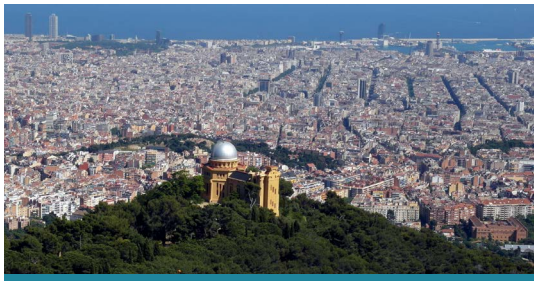
Smart solution 3
Smart, energy saving tenants

Measured impacts

15%
electricity savings per household on average

>400
users signed up for the platform

300
dwellings with installed metering equipment



Barcelona

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What is it?

The Virtual Energy Advisor combines a user-friendly front-end visualisation with an intelligent back-end algorithm that uses data from electrical digital sub-metering equipment and other sources to share information about a household's electricity use. The front end can be viewed on multiple devices and it encourages behavioural change (and empowerment) among tenants.

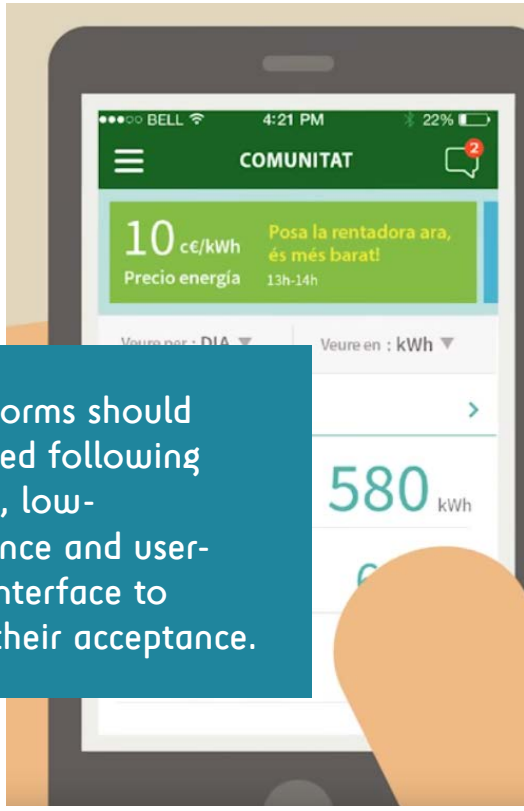
What did GrowSmarter do?

Barcelona Municipality launched a campaign to encourage citizens to decrease their electricity consumption at home by providing the free electricity consumption visualization platform 'Virtual Energy Advisor'. The tool, provided to 450 citizens, is managed by a web platform and a mobile app.

The tool demonstrated several smart ways to inform and advice tenants on how to optimize their behaviour to achieve maximum energy efficiency and reduce their energy bill. On top of

visualising the energy consumption, tips and advice on how to reduce electricity consumption, a virtual community to exchange experiences and comparison with earlier years, was all included in the app.

The measure was not intended to be self-financing as the aim of the municipality is to both focus energy policies on citizen awareness and collect electricity consumption profiles to foster suitable energy policies for the city as a whole. The Virtual Energy Advisor was developed within the municipality project 'Take charge of your energy' and was funded by Barcelona Municipality



City platforms should be designed following simplicity, low-maintenance and user-friendly interface to increase their acceptance.

Lessons learnt

The main barrier encountered during implementation of this measure was data confidentiality constraints related to evaluating the individual dwellings electricity consumption data. An agreement was signed with the users but massive data treatment by third-parties was still restricted. The discussion around data privacy should have been included in the process from the very beginning.

The impact of the platform on household electrical consumption has shown an average 15% reduction, which is 5 percentage points more than expected. However, it should be considered that the first campaign normally captures "early adopters" (citizens with an interest in energy efficiency), thus the impact of a massive upscaling could be lower.

Upscaling & replication potential

With this tool, the municipality is also able to gather detailed information on the residential electricity consumption profiles of the city based on district, building typology, etc. This feature can be the reason for Municipalities to upscale and replicate the measure, as they can use the information to foster suitable energy policies.

How did the measure work?

Technical feasibility ●○○

For its technical feasibility, it is important to clearly specify the operations and maintenance services required in the public tendering process and avoid connectivity issues to the maximum extent.

Economic feasibility ●●○

Based on a municipal policy, this measure has been completely financed with public funding, while the residents capture the economic benefits. The tool (targeting energy behavior) has proven as more beneficial in a Cost-Benefit Analysis compared to some passive retrofitting actions implemented by the Administration.

Replication potential ●●●

In order to avoid the costs of electricity sub-metering equipment, future implementations of this type could obtain the consumption data directly from the digital meters operated by the distribution system operator

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