

Capgemini's Smart Energy Services Supports Texel's Energy Neutrality 2020 Goals

Capgemini delivers Cloud Power and Smart Public Lighting Projects to save energy and costs for the island

The Situation

Texel is a Dutch island in the North Sea with a population of about 14,000 and total area of over 460 square kilometers. The Municipality of Texel, Gemeente Texel, has decided to achieve 'energy neutrality' by 2020. Simply put, the island is aiming to cut the energy cable connected to the mainland.

To reach this ambitious goal, it has joined forces with Capgemini and TexelEnergie, the local energy company, in a Smart Energy Program. The program's objectives are to reduce energy consumption, match demand and supply more effectively, and increase the use of renewable energy. The smart energy program aims to create projects that help individuals save energy within their own homes and also reduce public energy consumption.

The Solution

Capgemini delivered two key solutions as part of the smart energy program:

Cloud Power: self-sufficiency for electricity based on energy from renewable sources

The concept of Cloud Power is based on a community of consumers who share common preferences for their energy supply. These preferences can be based on multiple drivers including economic, environmental and social drivers. A Cloud Power community resembles the concept of a cooperative in which members own and operate the energy provider to their mutual benefits.

“Working with Capgemini on these Smart Energy Projects is enabling us to reach our goal of becoming energy neutral by 2020.”

Eric Hercules,
Alderman of the Municipality of Texel



The implementation of Cloud Power is based on a few main components: Smart meters continuously measure how much energy local households use and produce. This enables the Home Energy Management System to optimize the use of household appliances. A Central Energy Management System balances community renewable generation with household demand and supply; if there is a shortfall of energy, the central system imports energy from the grid – if there is an oversupply, it exports energy.

Smart Public Lighting: Reducing energy usage

Capgemini has also collaborated with Microsoft to create a web portal that enables public street lights to be controlled remotely. The solution allows city employees to manage public lighting from any location with an Internet connection.



This web application is run off the Microsoft cloud platform Windows Azure, which has low carbon footprint and saves the Municipality of Texel from investing in and developing its own deployment environment. Weather and traffic data is collected from sensors and cameras mounted on lamp-posts, and presented to users via the portal, which incorporates an interactive dynamic map of Texel provided by Microsoft Bing Maps. Windows Azure synchronizes data stored in the smart lamps with data residing in Capgemini’s software portal. The solution can easily be scaled up by adding more sensors and cameras. It can also be easily adopted by other municipalities wanting to implement smart lighting grids.

The Result

Cloud Power is a small-scale solution that presents tangible results to consumers at a reasonable price. Consumers can ‘opt-in’ when they think fit and ‘opt-out’ if not. Each Cloud Power community has a broad choice of objectives regarding price, reliability, fuel type, sustainability, self-sufficiency etc. The profile of each community is defined by these common objectives. Individual consumers in the community may have additional needs particular to their circumstances.

Cloud Power enables the deployment of both common and individual assets for generation, storage and load control.

The smart Public Lighting Project will reduce 37% of energy used by intelligent switching and dimming by 2015. In addition, it will save another 43% by replacing old light bulbs. The island has also saved money by building the webportal in the Windows Azure cloud platform, which is more cost effective and can easily be scaled up or down according to demand.

How the Municipality of Texel, TexelEnergie and Capgemini worked together

Eric Hercules, Alderman of the Municipality of Texel, comments: “Our collaboration with Capgemini and TexelEnergie is very important to us. TexelEnergie is our local energy provider and Capgemini has in-depth expertise in smart grids. Texel is a small island with a small community and we are used to the human scale. Cloud Power is the way to organize energy supply in this small scale

so that people feel responsible, but also proud and engaged.”

“The portal will enable us to add sustainable energy, generated on a small scale, to our regular electricity network. This ability will be of significant value to our local economy.”

Brendan de Graaf, Texel Energie, comments: “Cloud Power brings considerable advantages for TexelEnergie with respect to the local generation and usage of sustainable energy.”

The project is instructive for Capgemini as well. The Municipality’s clear vision of what it wants to do, and the fact that it can make swift decisions, makes Texel an ideal partner for Capgemini to develop pilot projects.

If you would like to find out more about this project, please contact: success.story@capgemini.com



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For more information, please visit: <http://www.texel.nl/>