

MARTEN'S CHALLENGE: Can an SME supply flexible power? Absolutely!

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The generation of sustainable energy is subject to sharp peaks and troughs which do not match those of consumption, which is why future energy consumption must be scheduled to coincide with energy-generation peak hours, thereby reducing energy storage. We also refer to this deferred energy consumption as flexible power supply. This power can be used to respond to market prices, reduce peaks in the distribution grid, or to provide balancing power to TenneT.

Aggregate energy demand

For instance, if the energy consumption of an individual small or medium-sized business is too low to be able to supply flexible power, they could turn the tables by joining forces with other businesses to aggregate their energy demand. This is relatively easy for households due to the limited number of energy-consuming appliances, which mainly comprises boilers, heat pumps and, at most, an electric car. The number of 'energy guzzlers' in the business market is much higher and more diverse. And connecting all these devices to a platform that monitors and manages energy consumption is a highly complex process most businesses will likely want to outsource.

To respond to this need, ICT Group joined forces with Engie, Jules Energy, Enexis, New Energy Coalition, TU/e, the City of Groningen and the Zuidoost Business Park. This consortium is tasked with examining methods for promoting the energy transition in the small and medium-sized business segment. As part of this collaboration, ICT Group has provided access to its energyNXT platform, which monitors the energy consumption of all devices connected to it. At moments when the supply of sustainably generated energy is low, energyNXT makes sure energy consumption is deferred as much as possible.

Deferred energy consumption

Not all processes are suitable for deferred energy consumption. A cold store that is normally kept at a temperature of -18 degrees Celsius can easily be cooled to -22 degrees Celsius without affecting the quality of the goods stored in it. It takes several hours for the temperature to subsequently increase to -18 degrees Celsius again. However, this is not an option for foods cold stores because they need to be kept between 2 and 4 degrees Celsius. As soon as the cold store's door is opened, the temperature rises a few tenths of a degree. Postponing the additional cooling because energy prices are too high, is simply not an option. Some processes are more suitable for deferred energy consumption than others. Which processes this applies to is not always immediately obvious and will need to be further investigated on a case-by-case basis. One of our learning objectives is therefore to develop a method to assess this more accurately.

During the first phase of the project, we will be assessing six different organisations operating in various sectors – ranging from a cold store company and a wholesaler in electric transport, to an office building and an educational facility. I'm very curious to find out how much they could potentially save, and we'll know soon enough, because the project is about to be launched.



Interchanging sustainably generated energy

Another part of this project involves [Wasaweg Energieneutraal](#) (Energy-Neutral Wasaweg). As part of this process, thirty businesses located at Wasaweg in Groningen interchange self-generated energy. We use the energyNXT platform to assess which companies have an energy surplus at any given moment, and to which company it should subsequently be distributed. ICT Group can set up a virtual dashboard to provide businesses that have not yet switched to self-generated sustainable energy, or that are considering the purchase of additional solar panels or a battery, with real-time information on the potential impact on their energy consumption. For instance, if the sun is shining, they will see their virtual battery charge with energy from the virtual solar panels. This allows companies to see for themselves how they could benefit from the energy transition.

I am very much looking forward to the outcome of both processes, and to learn to what extent a business park can become completely self-sufficient. We expect to have a much better understanding of this subject in a year from now. Please feel free to contact me if you have any questions in the meantime.

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