



energyNXT controls batteries in housing complexes

Most apartment buildings nowadays have an elevator, which generally causes peak loads in power consumption, so that these complexes require a large – and therefore expensive – connection to the power grid. Many housing and homeowners' associations could potentially switch to a smaller, more cost-efficient grid connection by using a battery capable of storing energy during off-peak times and reusing that energy at peak times. This is attractive in terms of costs and allows administrators to be extra sustainable if they were to have solar panels installed on the roof to power the battery. ICT Group often collaborates with battery supplier iwel on this type of project.

Start-up company iwell supplies batteries to housing associations and homeowners' associations. The young entrepreneurs immediately saw the added value of ICT Group's energyNXT software platform, which provides real-time information on battery use and controls the batteries. If required, this can be combined with other equipment, such as solar panels, lights and so on. As is often the case with ambitious startups that enter the market with a lot of energy, iwell immediately included energyNXT in its proposition, without first conducting lengthy contract negotiations or extensive technical testing. A form of collaboration based on learning by doing.

Pilot projects

Various housing associations in Eindhoven, Amsterdam, Hilversum and Ede, to name a few, were interested in taking part in a pilot, most of which were able to replace their 3x80 ampere connection by a 3x25 connection. At all locations, an elevator as well as some other equipment, was connected to energyNXT. This platform controls when electric devices are powered by which source. energyNXT detects peaks in energy consumption, in response to which it immediately activates the battery. This process can be timed down to the millisecond.

These sources always comprise the grid and the battery, and in some cases also solar panels. In case of the latter, the energyNXT platform controls when this energy is used and when it is stored in the battery for later use. This means the battery is powered by two sources: the grid and the sun. The platform is cloud-based. In the event that there is no internet connection, the battery can still be controlled on-premise using the energyNXT Gateway.

Real-time data provided in portal

All parties involved can view the energy consumption and carbon emission savings in the energyNXT portal. There are currently three portals: one for residents, one for the housing association and one for iwell.

The residents' portal is displayed on a screen in the main hall of the building, and displays data on how far the battery is charged, the percentage of energy consumption generated by the solar panels, and the carbon emission savings. This way, residents are involved in the sustainability improvements made to the building they live in.

The housing association's portal provides insight into the aggregate data, as well as the profit realised by using energy price fluctuations. The battery is charged while the energy

prices are low. If a housing corporation uses several batteries and the aggregate power is high enough, it might be interesting to explore the possibilities of alternative energy markets, such as the imbalance market. In that case, the energyNXT platform calculates the power available at any given time for supply to the imbalance market. However, the primary process always takes priority; it should never be possible for a lift to stop and get stuck because a battery returned too much capacity.

In order to become an even better player in the future, ICT Group is exploring the possibilities of adding predictive algorithms to the platform. By adding a multitude of data to the platform, such as weather forecasts and past behaviour of equipment, an even more accurate prediction can be made of the supply and demand of energy at a specific time, as well as the performance of the individual batteries. The third and last ICT Group portal is for iwell. This is an asset management platform that allows iwell to see exactly where the batteries have been installed, their configuration, their performance, and when they require servicing.

Looking to the future

With the first installations in place, iwell and ICT Group look to the future with optimism, and are discussing the possibilities for expanding the service. One idea that should be fairly easy to roll out is to use the screens in the main hall of the apartment buildings to communicate other information to residents as well, giving housing associations a new means of communication. The portal can also be made available as an app that can be downloaded to mobile devices.

We've also started exploring other markets, such as the industry and water authorities, since the solution will also appeal to organisations with fluctuating energy consumption and associated contracts. Total energy consumption, peak loads and predictability are key factors in reducing energy costs, which can be favourably influenced by combining the energyNXT platform with the iwell battery. According to Eric van der Laan, the initiator of this partnership, this growth track is what makes this collaboration so great: "We start out with a fairly simple, low-tech solution with a clear business case. This solution can be expanded over the years by installing the devices in more buildings, using it to provide new services, and adding new revenue models – a true Agile development process."