



Gridstream™ Solution for Turku Energia

Landis+Gyr's long-time partner, Turku Energia, has covered its 70,000 customers with smart metering technology and the Landis+Gyr Gridstream solution. Smart metering gives the network company a chance to develop their customer service and enhance network management.

Turku Energia Sähköverkot was among the first Finnish network companies to adopt smart metering technology. A third of its customers were transferred to smart metering during 2003–2008. In 2010, Turku Energia Sähköverkot started to expand smart metering to its whole clientele. At the end of 2012, all 70,000 Turku Energia customers had a Landis+Gyr smart meter installed, and the system was finalized for full operation. The project met also some challenges when start of the mass roll was delayed and installation schedule had to be tightened. The final goal still remained the same: the project would be carried through by the end of 2012.

The versatile solution of a long-time partner

Landis+Gyr was Turku Energia Sähköverkot's partner in both phases of the project. In their selection criteria for its technology partner, Turku Energia Sähköverkot included significant experience from large smart metering projects and reliable and versatile metering technology with ability to produce up-to-date consumption data, and data on the status of the electricity network and power quality. Landis+Gyr was able to provide a cost efficient and comprehensive solution, from modern meters to an operational and maintenance service. In addition, the

Landis+Gyr portfolio offered practical tools for all phases of a rollout project: from solution planning to project management and rollouts, and system initialization.

In the project, Landis+Gyr was responsible for delivering the metering infrastructure and integrating the system to the utility's information systems. In addition, Landis+Gyr was responsible for the project management and meter installations in collaboration with a Landis+Gyr partner.

The solution includes also a 10-year smart metering service covering the whole clientele. In the service the metering data and reports on the network status is delivered to the utility. Landis+Gyr is also responsible for the operation and maintenance of the system.

Innovations for customer service

Smart metering has enhanced Turku Energia Sähköverkot customer service. With the smart metering technology in place, customer hourly consumption data is made available, which provides the utility the ability to use that information to customize services to customer needs.

Customers will receive bills based on actual consumption, and new services

can be developed for them: Turku Energia customers are interested in following their energy consumption via the internet, and the utility is developing their EnergyOnline service where customers can monitor their hourly consumption data online. In this way, customers can increase their energy efficiency and affect the amount of their bills and the environmental impact.

Thanks to smart metering, customers' contract changes become easier: removal readings and tariff changes can be done by customer service with a remote connection. With smart metering, utilities can develop and expand their product range, for example, to electricity products based on the wholesale price of electricity.

Turku Energia Sähköverkot Oy

Turku Energia Sähköverkot Oy is part of Turku Energia Group. Its turnover in 2011 was €226.8 million. Turku Energia Sähköverkot Oy is responsible for electricity transmission, the management of the Group's electricity grid property and its electricity grid services. In 2011, Turku Energia Sähköverkot transmitted electricity 1473 GWh.



The Site Manager installation tool transfers work orders to installation personnel without manual work. It enables multiple functionality to include the wireless storage of meter data and meter time setting.

Smart metering enhances grid management

Smart metering increases the visibility of the low voltage (LV) network and enables better network management. When the electricity consumption and quality data and alarm and fault information is received even customer-specific, the problems in the network will be located and fixed quickly; transmission errors

“Smart metering increases customer satisfaction. Our customers’ interest on their own energy consumption has increased. Better network management affects also to our customers: it ensures good power quality and reliable distribution.”

*Vesa Vaskikari, Managing Director,
Turku Energia Sähköverkot.*

and high and low voltages can be located accurately. Smart metering enables the flexible remote control of meters. Loads can be switched on and off from any transformer area, region, or individual control points. Better network management also brings benefits to the customer — it ensures good power

quality and reliable distribution. Turku Energia Sähköverkot has also studied the possibility to expand smart metering all the way to transformer stations. A smart meter located to the transformer would give information about both the transformer and the network. Transformer station monitoring allows occurrences on the LV network to be discovered at the transformer level. The AIM profile calculation, in which residential metering values are compared to transformer metering values, is a tool for loss calculation, and it reveals losses such as electricity thefts. Increased data of the transformer capacity and peaks helps also to plan the network use. In addition, data on transformers and network loads are of considerable help in investment planning.

Site Manager and Dashboard as part of the solution

Turku Energia selected the Landis+Gyr Dashboard and Site Manager applications for its smart metering solution. The Dashboard is developed mainly for the use of utility’s customer service personnel. The consumption data can be acquired via a web-based user interface. The application retrieves the consumption and metering point data, power quality and outage data and then displays them in clear graphic

form that can also be provided to the customer. Data from different times can be compared for individual as well as multiple metering points. The application offers an ability to both switch electricity on or off and manage loads remotely. Turku Energia’s customer service uses Dashboard in removal situations for performing meter reading requests and controls. Readings and remote connecting, and disconnecting electricity can be done during the customer call or at a specified time.

The Landis+Gyr Site Manager application is an installation tool designed for planning and data management of rollout projects. In the Turku Energia project, over 2,000 smart meters per day were installed with the help of Site Manager. With the application, data is loaded onto the PDA device directly from the customer information system. After installing the smart meter the installation data is loaded and stored automatically into databases.

With Site Manager the meter information is recorded without manual work by using bar code reading. Additionally, the time setting of meters can be done wirelessly via an optical detector. The application also enables to document the installation event with photographs.

Site Manager enables the utility to migrate to smart metering as installations progress; updating the Gridstream AIM system is possible already at the installation site.

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Comprehensive Gridstream solution

Our technology:

- + 70,000 smart electricity meters (E450, E120)
- + PLC communication supplemented with 2G/3G communication
- + Gridstream™ AIM system
- + AIMIA integration application
- + Site Manager installation tool
- + Dashboard application for customer service
- + Training
- + 10-year smart metering service

The Turku Energia project was finalized at the end of 2012. Landis+Gyr delivered the comprehensive solution: metering infrastructure, communication, system integrations, project management, installations and the smart metering service.

Smart metering and real time data on LV network status gives Turku Energia Sähköverkot a chance to enhance grid management and this way to improve customers’ power quality and to increase the reliability of energy supply.

The Site Manager application was exploited in the installation project. The Dashboard application enables easy access to the information in the AIM system for customer service.