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Proactively plan and
manage the load

EnergyIP Analytics – Load Forecasting

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The energy system is changing dramatically – and this is posing new challenges but also new opportunities to distribution grids. Transparency about generation and consumption, costs, and power quality are becoming increasingly important as a result. It is this knowledge that will pave the way for making the adjustments needed to optimize grid efficiency and supply security. Rolling out an advanced metering infrastructure (AMI) is costly, but now the time has come to create value from meters. The key to this lies in analytics.

The installed sensors generate huge volumes of data that contain valuable information for grid optimization. Siemens has developed the right solutions for realizing this. EnergyIP is an extremely powerful, flexible, and scalable platform that easily handles millions of sensors – be it smart meter or others – and the huge volumes of data generated. The Siemens Sinalytics framework provides tools and intelligence for advanced excellent connectivity, data integration principles, and data analytics tools in a secure environment.

With **EnergyIP Analytics – Load Forecasting**, Siemens offers a solution that leverages existing AMI meter data to improve the forecasting accuracy dramatically. Existing meters are an ideal starting point for more granular data sets. Using the individual load profiles for each meter, the intelligent algorithms then create clusters based on profiles. Clusters with similar behavioral patterns then allow highly accurate predictions with instant benefits.



EnergyIP Analytics – Load Forecasting

Main benefits

Increase grid reliability

If the actual demand surpasses the predicted demand, the components in the grid are used with higher intensity. This leads to higher equipment abrasion or, in a worst-case scenario, to outages due to equipment failure. More accurate predictions of the load enable preventative upgrades where needed and increase grid reliability.

Reduce costs

Inaccurate predictions are costly. When the demand surpasses the prediction, costly on-the-spot purchases of energy are necessary. If the demand is less than the prediction, excess energy is wasted and, in most cases, equipment has been unnecessarily upgraded or built. More accurate predictions can limit the energy waste and point towards necessary upgrades.

Forecasts available for all levels of the low-voltage grid

One decisive advantage of Load Forecasting is the option to create forecasts on meter, transformer, or substation level. Based on grid topology, different groups can be created to align forecasting with business and grid needs.

Enable the agile grid topology by detecting local overload scenarios

When introducing more and more distributed energy resources (DER) into the grid it needs to be agile in its topology, and to archive that, detailed load insights are invaluable. Load Forecasting can detect local overload scenarios that are caused by DER and point out where adaptations are necessary to make the grid future-proof.

Incorporate external data sources

The ability to add external data sources such as weather forecasts, holiday schedules, local events, and even anticipated construction to the data model increases the accuracy of the predicted load.

Plug-and-play custom algorithms

Big data analytics is usually a journey and not an event. Every open door enables new possibilities and Load Forecasting allows the plug-in of custom algorithms so that you can further explore and unlock the value of your own data.

In the cloud or on-site

Load Forecasting can either be deployed on-site, on an existing system, or as a Software as a Service (SaaS) cloud model that integrates with available data sources.

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