KONGSBERG

Kognitwin® Grid

Manage a more efficient and reliable grid

Energy system stakeholders face a wide range of challenges. As the number of energy customers and powered devices grows, demand for electric power continues to increase.

New and evolving technologies like solar panels (PVs) and electric vehicles (EVs) are viewed as positive changes but can complicate grid management. Meanwhile, many grid operators don't have access to the centralised data or insights that would help them manage their grids more effectively.

Kognitwin Grid delivers a digital twin of the power grid, providing operators with a complete and actionable overview of assets and operations.

Gain better visibility across a range of systems and grids

Kognitwin Grid facilitates a digital twin of the power grid, giving operators a holistic overview of its assets and operations. With key power system assets mapped into Kognitwin Grid, operators are better positioned to automate processes, execute timely decisions, and make more efficient grid investments.

Access critical data quickly

With a digital twin model of your electric grid, utility managers can replace siloed and fragmented data located in multiple systems with immediately accessible contextualised data. So, rather than spend time hunting for specific technical information when a situation arises, grid operators always have actionable data at their fingertips.

Improve reliability

Be aware of upcoming operational situations and create scenarios, including topology changes and/or using flexible assets to alleviate and reduce the risk of overload-based outages.

Create test grid scenarios

Kognitwin Grid has an always-on simulator engine that performs a complete power flow analysis across all voltage levels, including forecasts of future near-time or long-term load flow in the power grid to increase insights and support decision-making from planning to operations.

Optimise investments

Plan and develop a future-proof grid by running long-term grid scenarios to assess the impact of electrification and new intermittent energy. This also enables utilities to test and refine various grid scenarios before investments are made or work begins.

The solution in action

A Norwegian power grid company explores condition-based maintenance with Kognitwin Grid

Traditionally, substation maintenance has been carried out using a calendar-based approach, where inspections and service tasks are scheduled at fixed intervals, regardless of the actual condition of the equipment.

Glitre Nett is utilising Kognitwin Grid to continuously monitor the health of switches and other critical infrastructure components, aiming to gain valuable insights for optimising condition-based maintenance.

The pilot with Kognitwin Grid provides valuable lessons on the potential of digital tools in grid operations. Still, its findings will shape future considerations rather than representing a solution ready for full-scale implementation today.

> "This pilot is an important step in learning how we can improve maintenance practices. While we are still in the early stages, it gives us valuable knowledge about how we might work smarter in the future by incorporating new digital tools."
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> Otto Andreas Rustand,
> Head of Digitalisation, Innovation and IT Security, Glitre Nett

Reimagine the way you operate

Rapid changes related to increased electrification mean we must improve how energy systems are planned and operated. Kognitwin Grid is the digital twin solution that enables better decisions, automated processes, and more efficient grid investments.