SIEMENS

gPROMS Utilities: Reduce site-wide emissions now

Decarbonization is part of every company's long-term strategy. However a key challenge is to reduce emissions now, without major capital expenditure.

Siemens' gPROMS Utilities digital application helps large-scale process sites minimize day-to-day hydrocarbon fuel requirements – and hence atmospheric emissions such as greenhouse gases – through the use of advanced model-based optimization technology.

This technology handles the complexity of hundreds of operational decisions and constraints to navigate the ever-changing energy landscape and provide operators with the most efficient operational settings for any moment in time.

The result: your whole assets and infrastructure operating with the lowest possible emissions.

Contact us to find out how we can help you reduce emissions now.

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How it works

Siemens provides gPROMS Utilities as a turnkey optimizer customized for the equipment and layout of your specific site.

A typical project involves the following steps:

1. We create a simulation model (digital process twin) of the entire site-wide energy system in gPROMS Process – including boilers, gas and steam turbines, steam headers, fuel systems and so on.

2. The model is deployed on the plant's automation systems using Siemens' gPROMS Digital Applications Platform (gDAP), connected to plant data servers such as historians or DCS and running in real time.

3. We work with your operations team to build easy-to-use visualization screens within the plant automation system or custom dashboards to clearly present the optimization results and provide meaningful actions to your operators.

The Optimizer

Once commissioned, the Optimizer regularly executes to determine the optimal operational settings – i.e. those that minimize energy consumption and emissions – and provides up-to-the-minute information to your operators, along with instructions on how to implement any required changes.

Closed loop, or operator advisory?

Recommendations can be implemented automatically, in closed loop mode in the DCS, or at the discretion of operators, who can make rapid decisions based on the dashboards' advice.

Better or best?

Because the optimizer solves so rapidly, it is able to provide 2 optimizations: "minor changes" where just a few easy-to-change setpoints are highlighted for lower savings; and "major changes" where more significant changes are highlighted for higher savings.

Key benefits

Provide your operators with the optimal settings via easy-to-see dashboards in real time to ensure you are using minimum energy, minimizing emissions and reducing your operating costs.
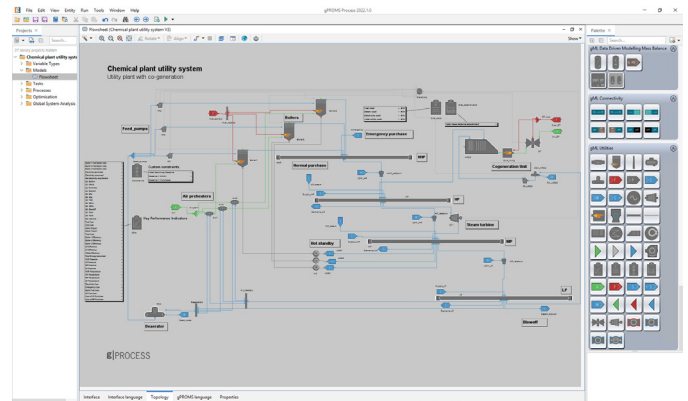
gPROMS Process dynamic model of the site utilities system
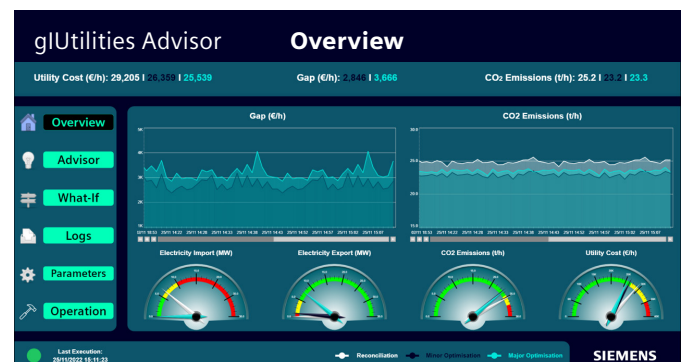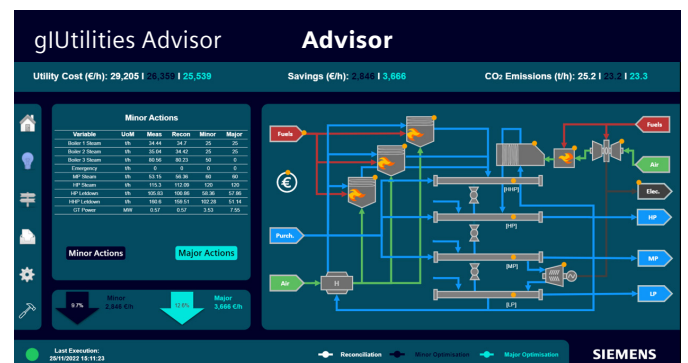
The Optimizer provides up-to-the-minute information on site energy usage at the operators' fingertips, along with instructions on how to implement recommended changes.

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> Siemens gPROMS Utilities site optimizer monitors our refinery energy use hour-by-hour and gives our operators clear instructions on how to change operation to reduce operating costs.
>
> **Hugo Carabineiro, Manager, GALP Energia**

Find out how Siemens can help you accelerate decarbonization at siemens.com