Fluidit

Helping cities thrive

Fluidit Heat™

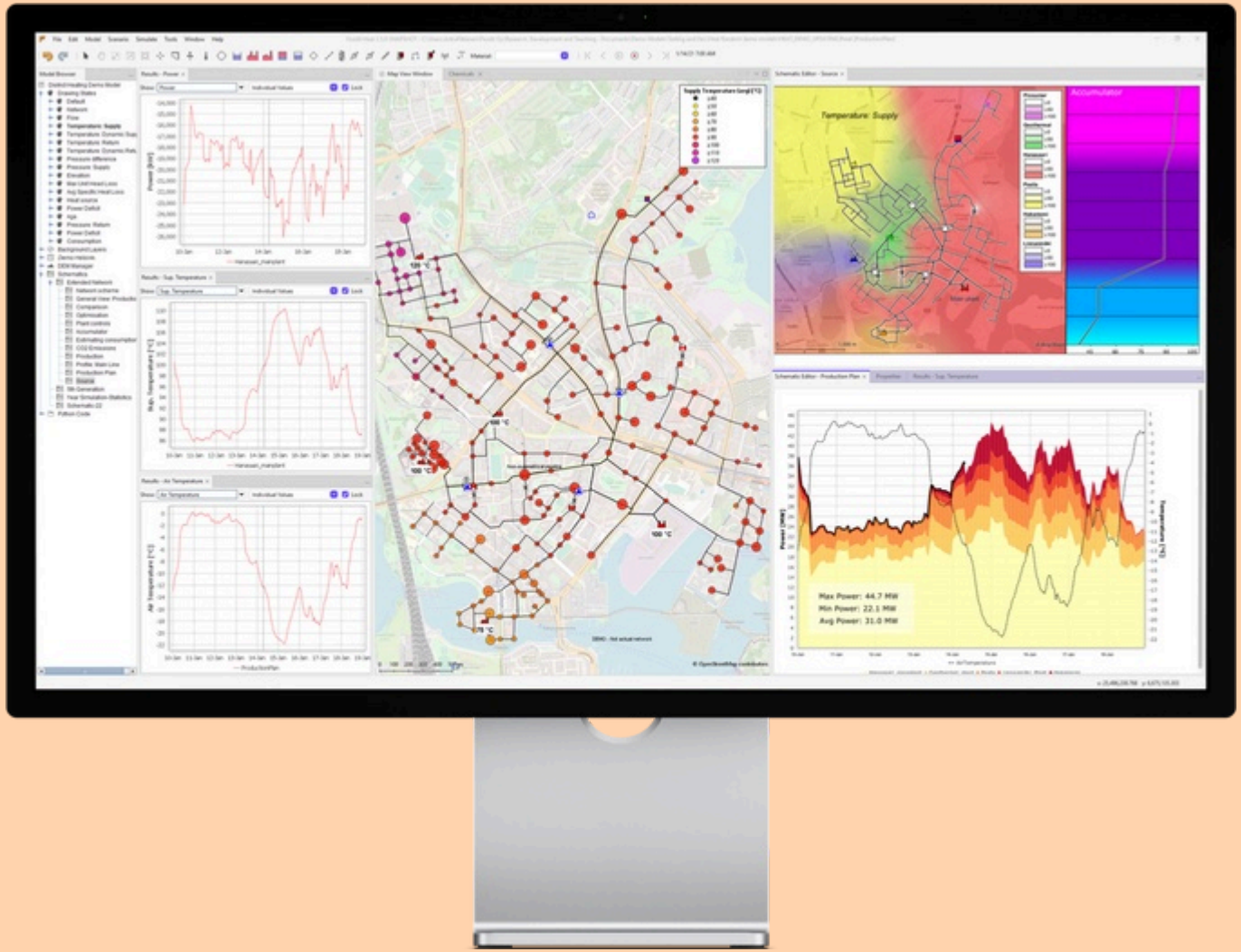
DISTRICT ENERGY SYSTEMS

Fluidit Heat™

See the whole picture of district energy

New-generation energy networks are anything but simple. With prosumers, lower operating temperatures, and cooling demands, simulations must keep up.

Fluidit Heat is purpose-built for turning complexity into actionable insights. It is powered by cutting-edge analytics, seamless integrations, and decades of hydromechanical expertise.



Fluidit Heat™

Let us help you

A unique offering tailored to your needs

Advanced modeling technology

We develop and license cutting-edge, intuitive modeling software to give you a complete view of your water and energy systems.

Deep industry expertise

Our team of technicians, analysts, and problem-solvers helps you get the most out of your data.

Lasting partnerships

We meet you wherever you are on the digital journey and work alongside you to achieve your goals.

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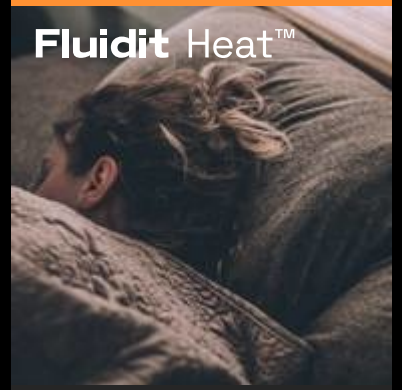
BETTER DATA, BETTER DECISIONS



For district energy systems

Maximize efficiency in district energy networks. Simulate energy flows, optimize supply-demand balance, and reduce costs with intelligent control strategies.

For water distribution systems

Optimize water distribution networks with advanced modeling and analytics. Detect leaks, enhance resilience, and integrate alternative water sources for sustainable supply.

For stormwater and combined sewer systems

Minimize surface flood risks and combined sewer overflows with predictive stormwater modeling. Develop sustainable drainage designs and improve climate resilience in changing urban environments.

For municipal sewer systems

Design, optimize, and manage municipal sewer systems for reliable wastewater collection. Ensure regulatory compliance and reduce operational risks with data-driven insights.

Access your model anywhere

Seamlessly access, share, and collaborate on Fluidit models from anywhere. Enable real-time decision-making with cloud-based visualization and analytics.

Digital twin platform for water and energy

Create operational digital twins of Fluidit network models. Build data integrations, optimize network controls, and communicate through live dashboards.

Fluidit Heat™

Software Finland

Solving infrastructure challenges across the globe

We provide simulation tools and digital twins for leading Utilities and Consultancies across global district energy market.

UK, Canada, Germany, Switzerland, Poland, Denmark, Norway, Finland, Sweden, Iceland, Netherlands, Belgium,...

e.on · fluvius. · BG · BURO HAPPOLD · TURKU ENERGIA · groupe e · Grupa GPEC · kw 50 Innovation. Integrity. Employee-Owned. · VATTENFALL · Rotterdam ENGINEERING · Bring Energy · L&Q · VEKS Grøn fjernvarme til dig

Hafslund Oslo Celsio

Hafslund Oslo Celsio, Norway

Celsio is the largest district heating provider in Norway. They trusted in Fluidit Heat to help them optimize and automate their district heating system.

VEITUR

Veitur, Iceland

Veitur has adopted the Fluidit Heat, Water and Storm software suite as their main tools for planning and optimizing their water and energy systems.

fortum For a cleaner world

Fortum, Finland

Fortum has transitioned into using the modern Fluidit Heat platform for the district heating network development and system analysis in the Helsinki Region.

SEC SZCZECIŃSKA ENERGETYKA CIEPLNA

Szczecin Thermal Energy SEC, Poland

SEC has transitioned into using the Fluidit Heat platform for the district energy network development and system analysis in the city of Szczecin, Poland.

wsp

WSP, United Kingdom

Fluidit Heat has become a key tool for WSP's district energy projects in the UK, Canada and Middle East.

Fluidit Heat™

Working together to achieve your goals

Plan & Analyze

- System behavior forecasting
- Scenarios and subscenarios
- Physics-based digital twin compatible
- Visual information sharing

Optimize Operations

- Dynamic temperature control
- Detect network bottlenecks
- Pumping cost efficiency
- Optimize running order

Minimize Costs and Losses

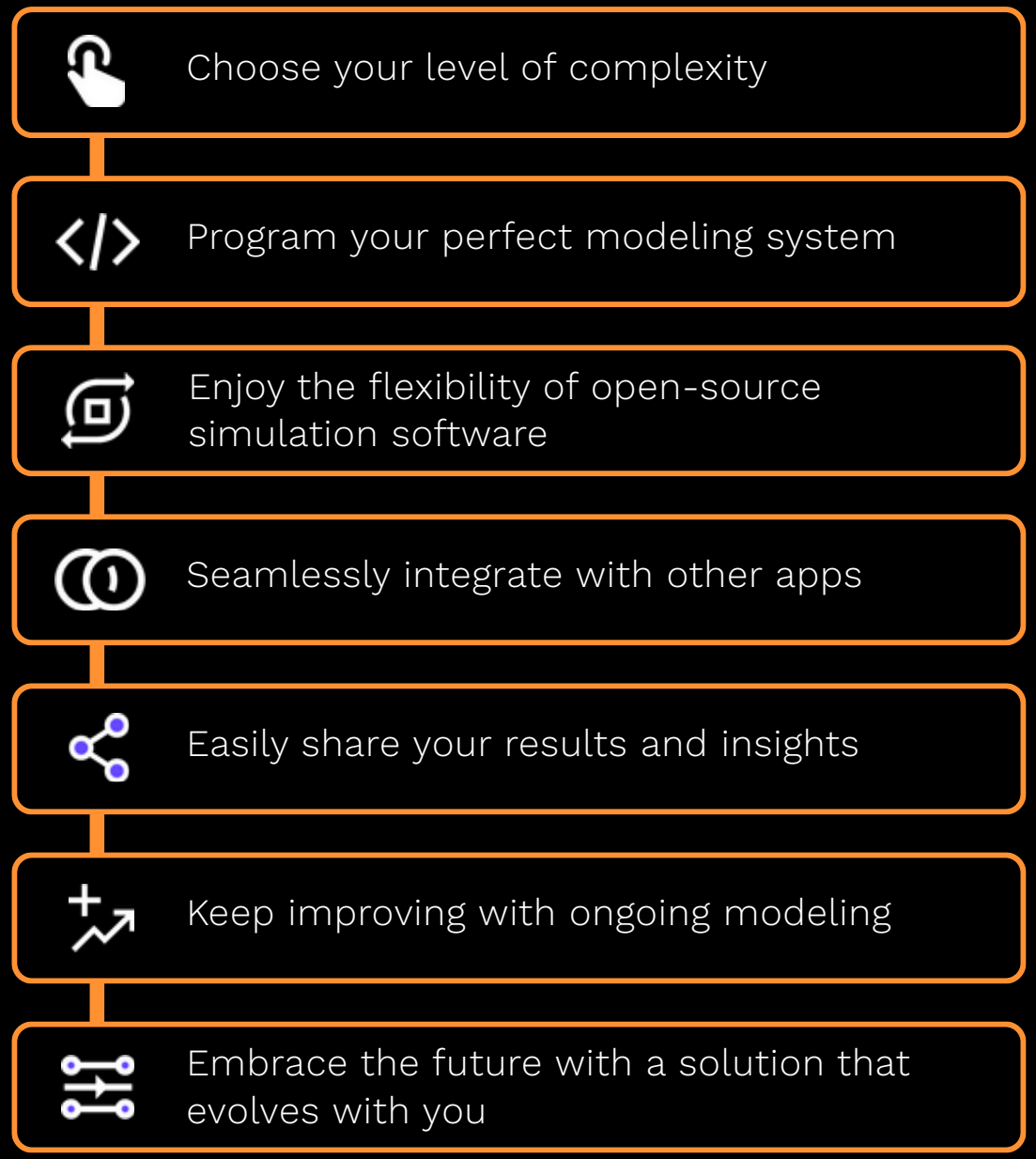
- Operating costs
- Emissions disruption and downtime
- Pressure and heat losses
- Power consumption

Fluidit Heat™

OUR PRODUCT PHILOSOPHY

You’re always in control

The way we work with you is scalable and adaptable, ensuring that your needs and preferences shape your experience.

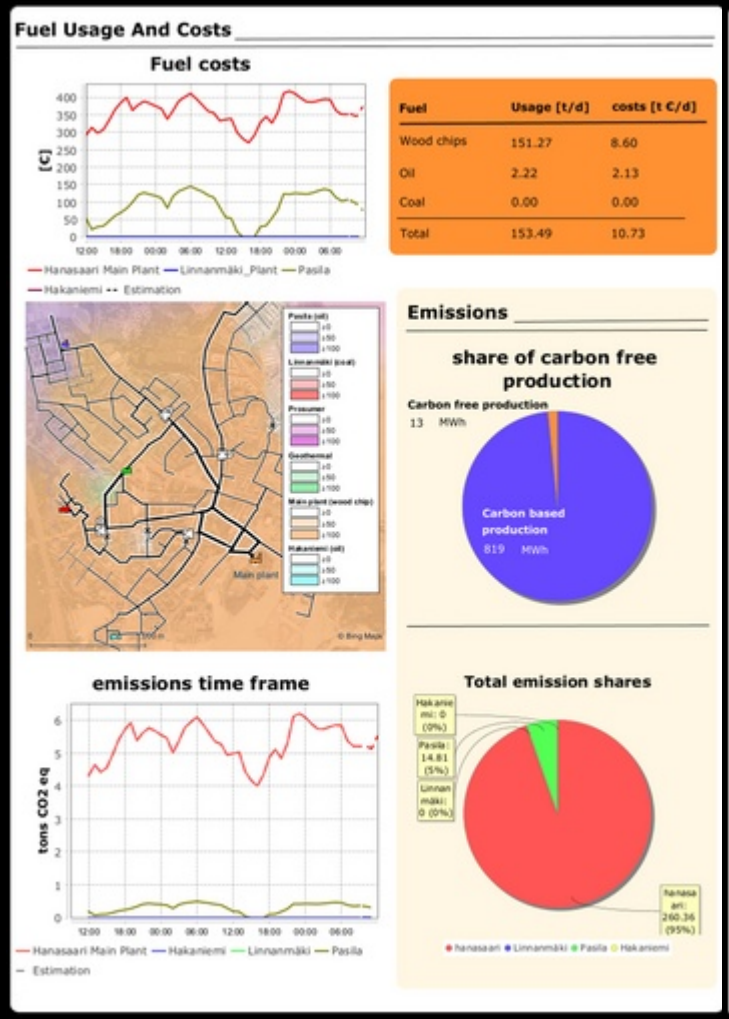


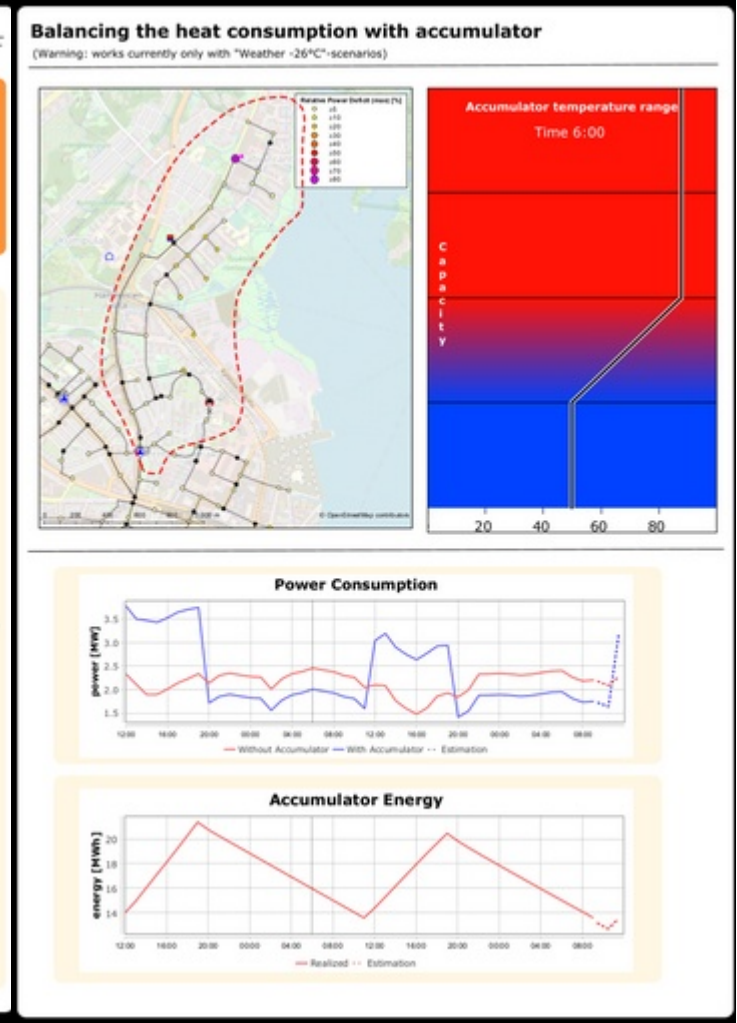
Fluidit Heat™

KEY FEATURES

Thermo-hydraulic modeling software

- Fast time series simulations
- Advanced scenario management
- Flexible background layers
- Customization and automation with scripts
- Flexible imports and exports
- User-defined custom dashboards and visualizations
- Flexible window layout
- Utilize measurement data as input
- GIS-based
- Digital elevation model integration via API’s





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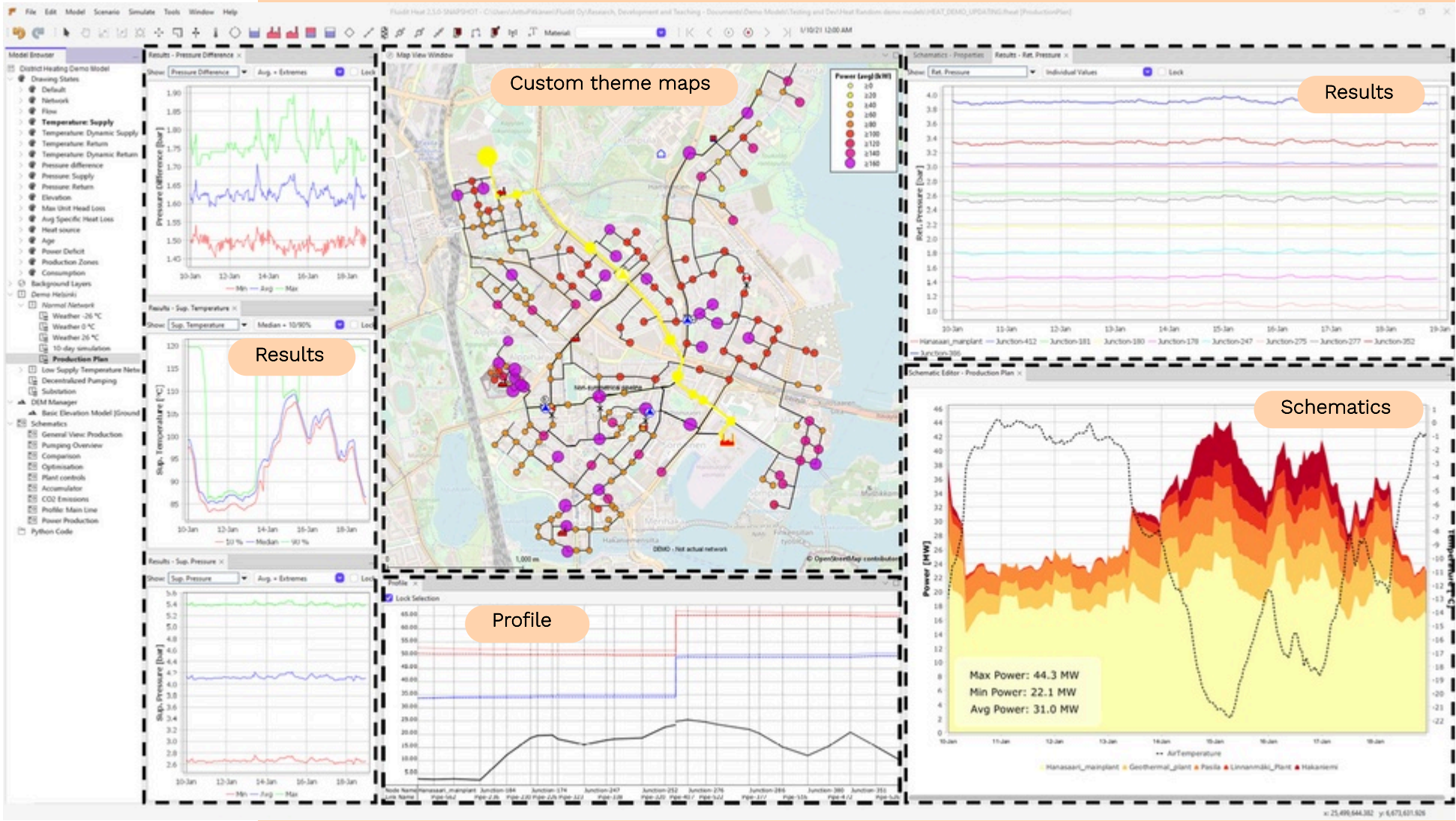
Flexible User Interface

- Customize window layout freely to best fit your workflow and projects.
- Different scenario or component results automatically update for viewing.



Create your own user-specific window layout - even for multi-screen use.

Unlimited Scenarios

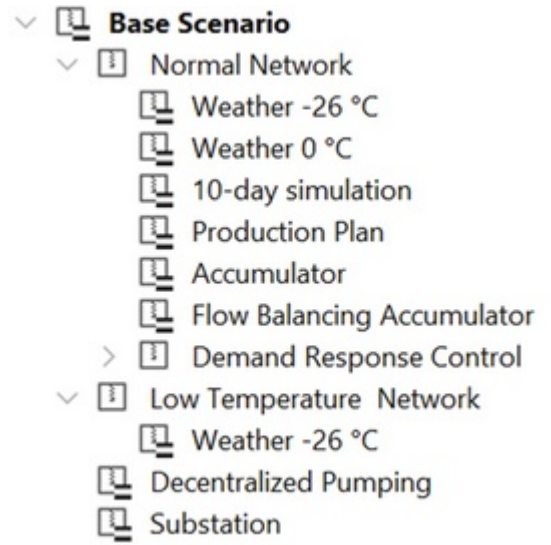
A hierarchical scenario management system provides access to all scenarios and their results within a **single model file.**

No need for multiple model files or duplicating data.

- Create and organize scenarios freely as a scenario tree.
- Child scenarios inherit properties from their parent.
- Changes in the parent scenario are automatically applied to child scenarios.
- You can efficiently work with multiple scenarios and easily compare them.

Work safely in a child scenario before adopting changes for wider use.

Example scenario tree:



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Comparing Scenarios

How can I see **where** and **how** has the model been changed?

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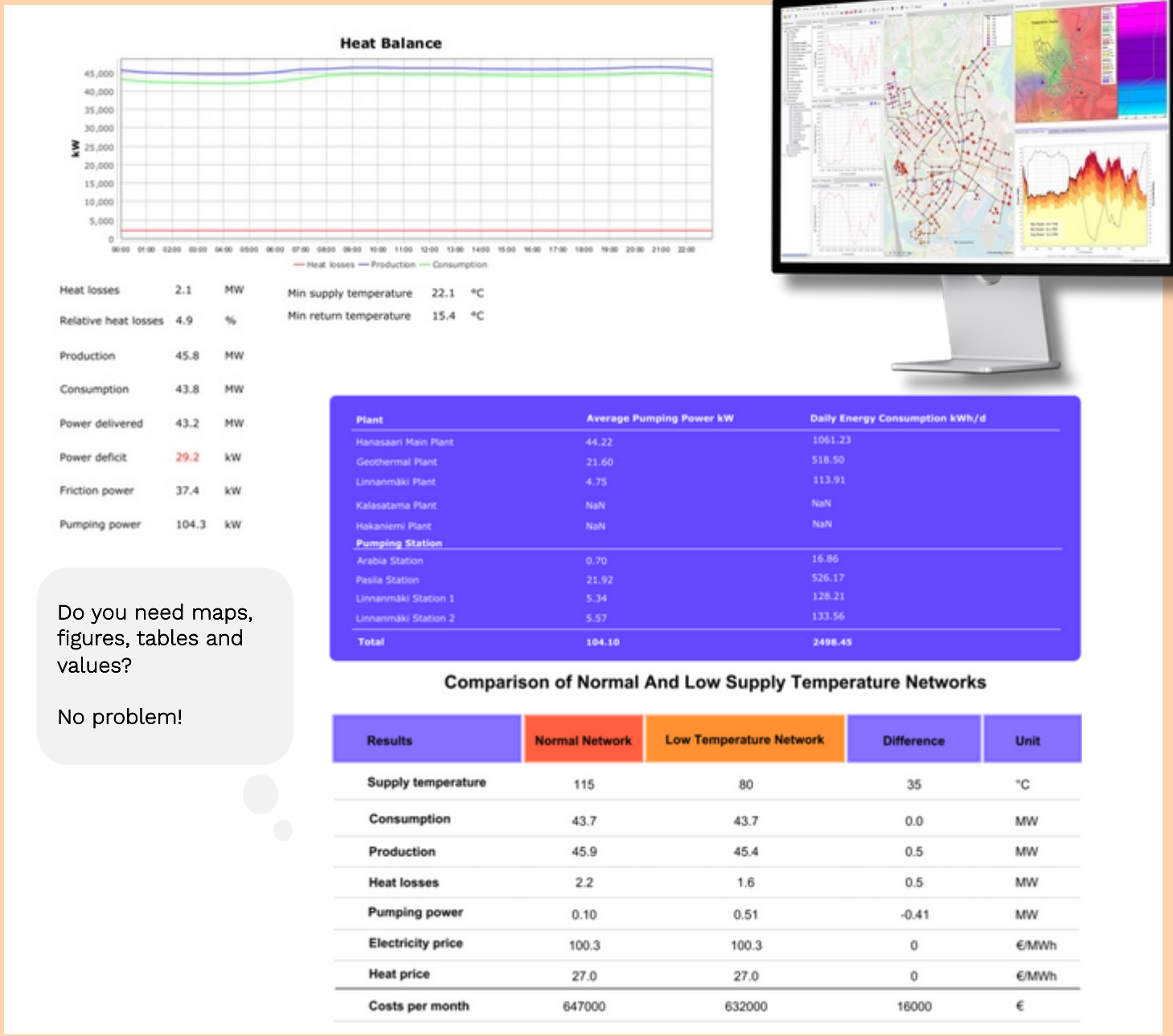
Schematics

- **Visualize and share** your analysis.
- **Report** the performance of the network and pumping stations.
- **Compare** scenarios to make informed decisions.
- **Understand** the vulnerabilities of the network.
- **Automatically update** results from scenarios.



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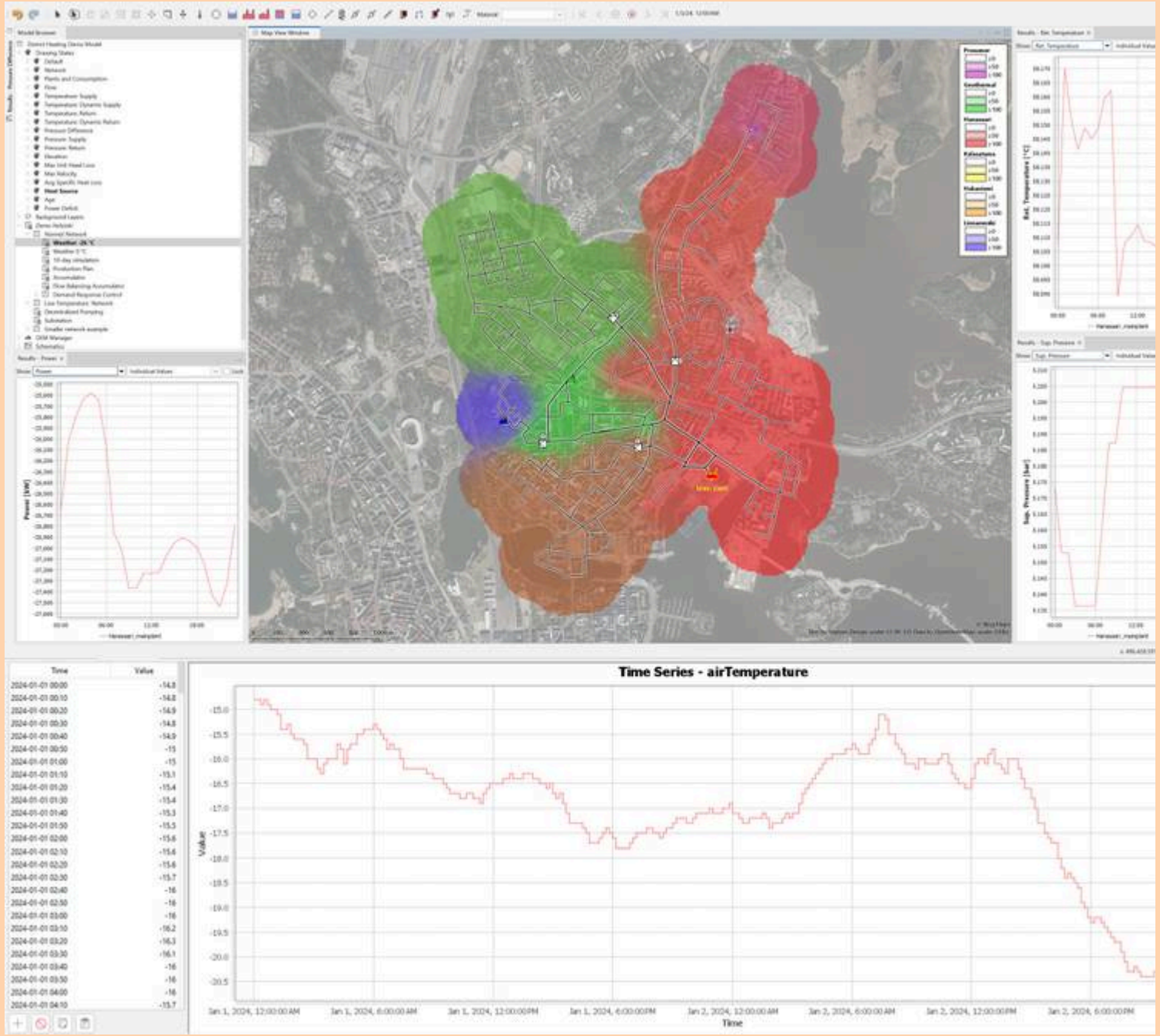
Production Testing

- Ensure your production plans and control strategies are robust and effective through rigorous testing and validation.
- Evaluate the viability of your projects using a comprehensive meteorological data to ensure reliable performance year-round.



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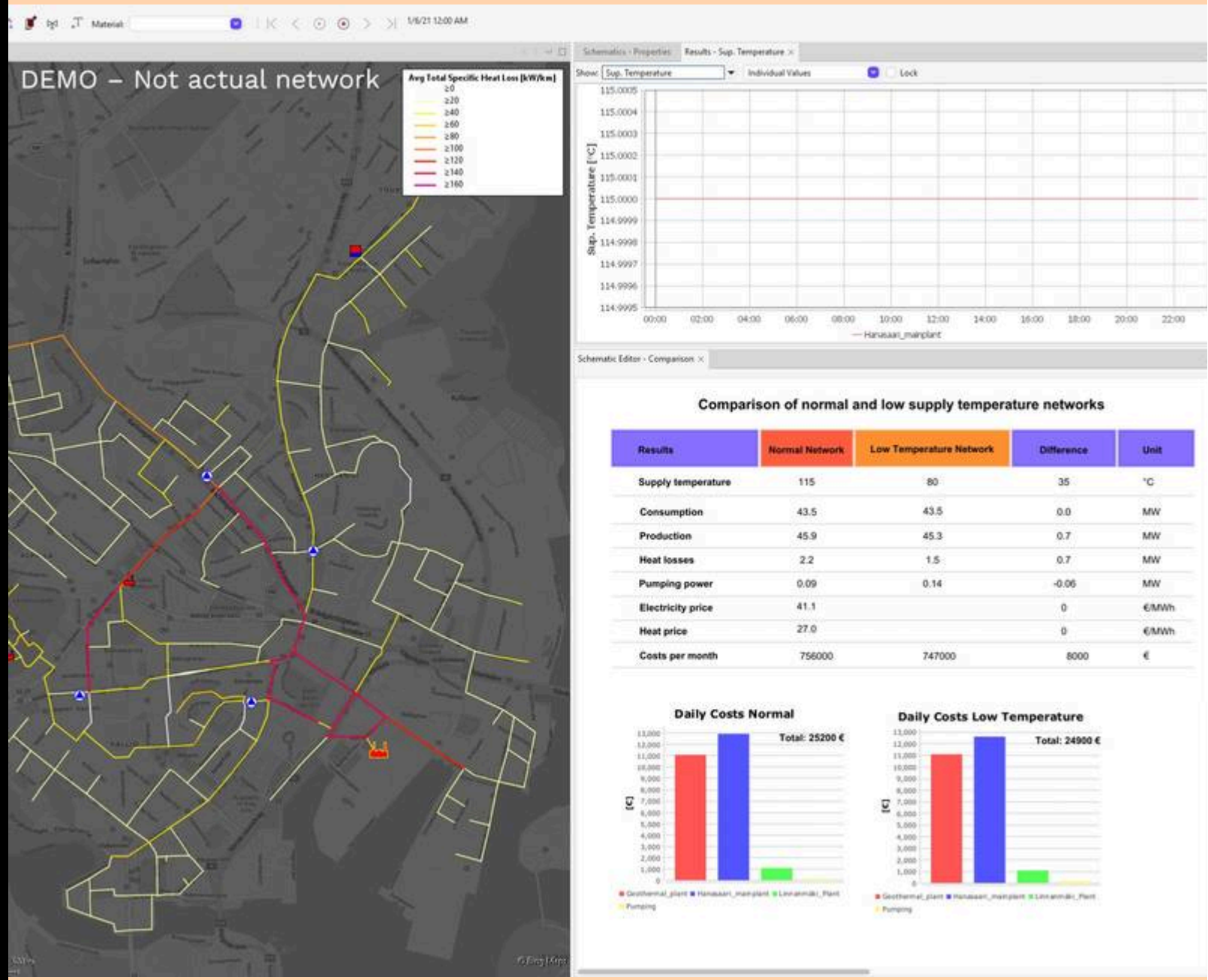
Heat Loss Optimization

One of the most common use cases for Fluidit Heat

- Test your system performance with lower supply temperatures.
- Reduce heat losses and improve cost-efficiency.
- Find the optimal supply temperature to achieve the most efficient pump operation.
- Detect network bottlenecks.



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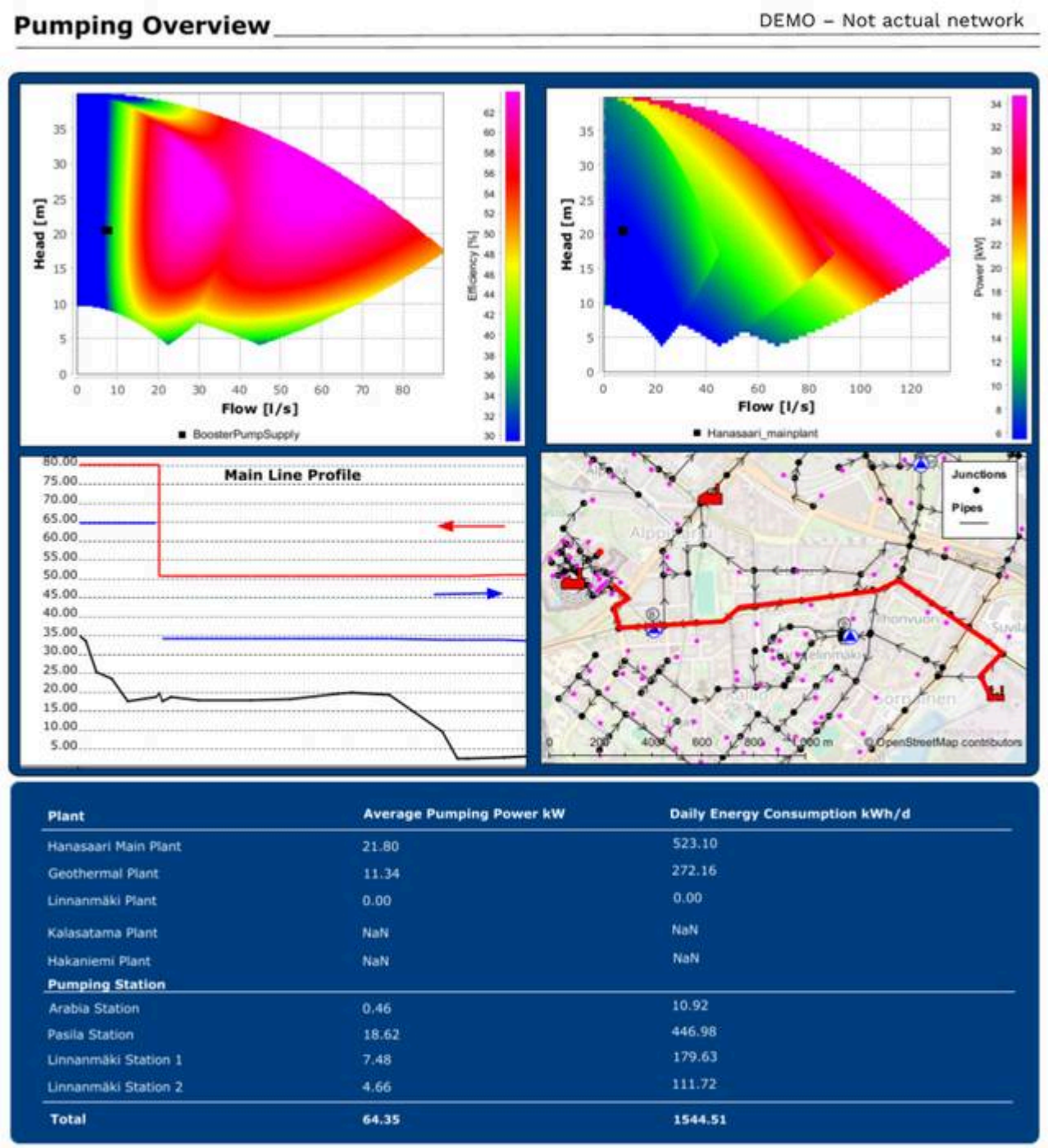
Pumping Performance

- Evaluate your network's pump performance utilizing comprehensive analysis tools.
- Visualize pump operating ranges and operating points.
- Track pressure profiles throughout the network.
- Quantify pump power demands and energy consumption.



Plant	Average Pumping Power kW	Daily Energy Consumption kWh/d
Hanasaari Main Plant	21.80	523.10
Geothermal Plant	11.34	272.16
Linnanmäki Plant	0.00	0.00
Kalasatama Plant	NaN	NaN
Hakaniemi Plant	NaN	NaN
Pumping Station		
Arabia Station	0.46	10.92
Pasila Station	18.62	446.98
Linnanmäki Station 1	7.48	179.63
Linnanmäki Station 2	4.66	111.72
Total	**64.35**	**1544.51**

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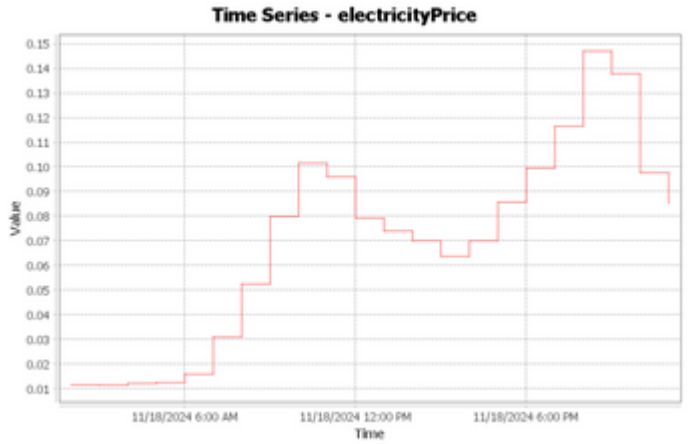
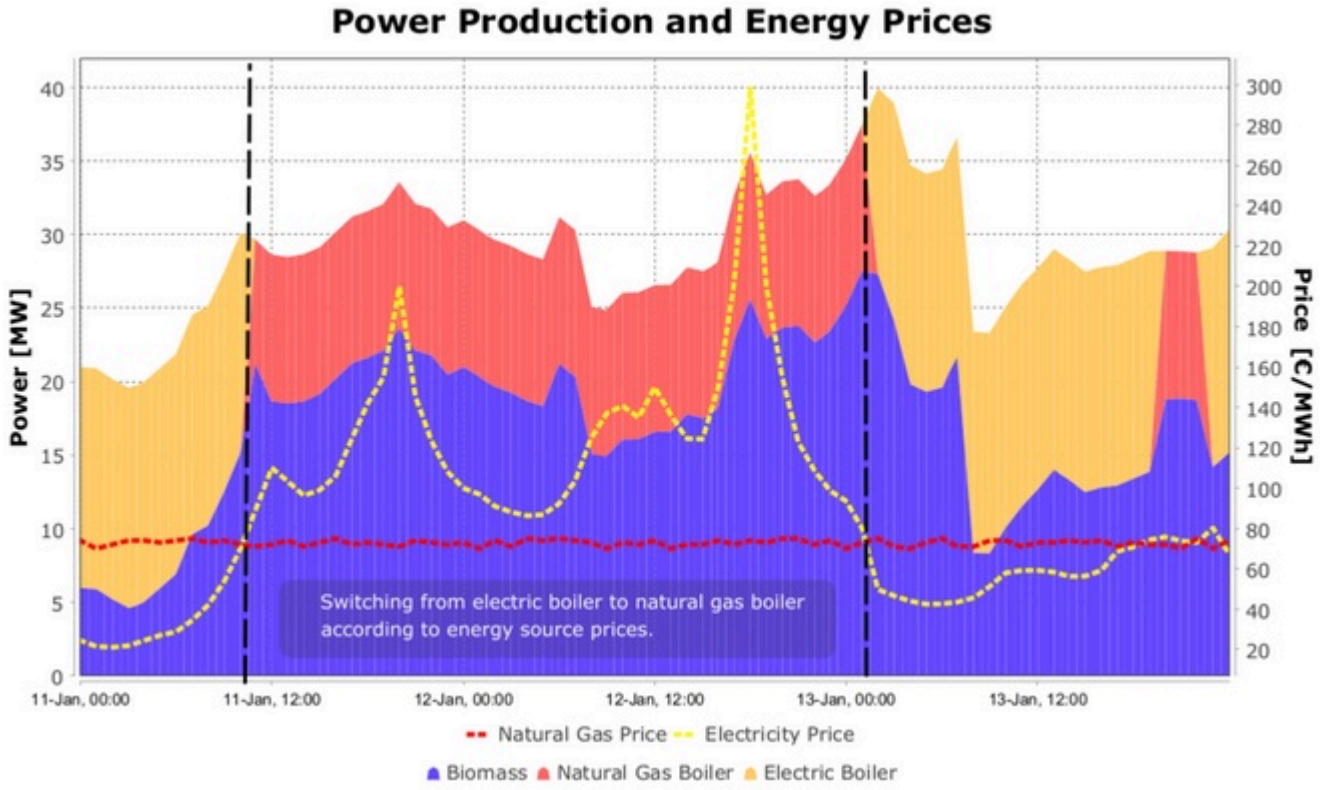
Energy Optimization

- Maximize efficiency and cost-effectiveness by optimizing your operations in response to fluctuating hourly energy prices.
- Control your plant operations based on energy prices – for example, switch from an electric boiler to a gas boiler as the electricity price peaks.

Directly connect to the ENTSO-E database for country-specific electricity prices.





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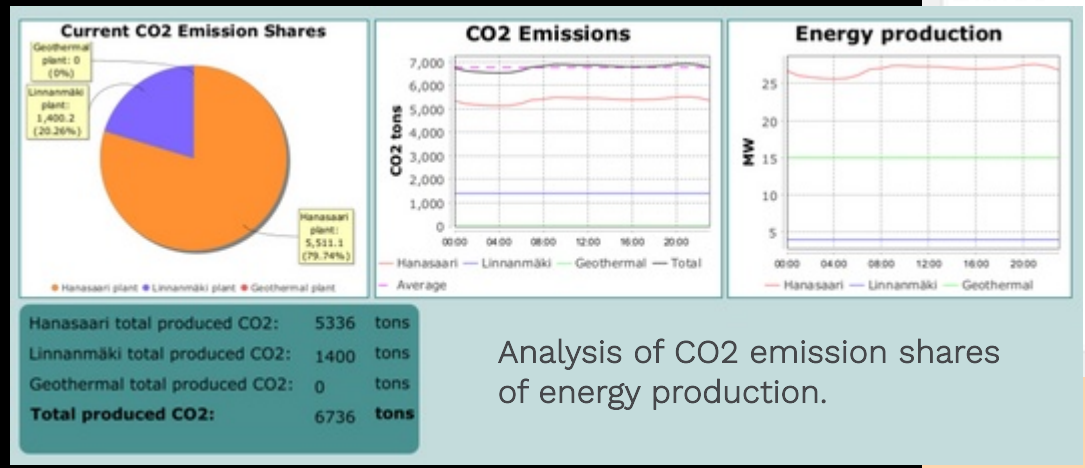
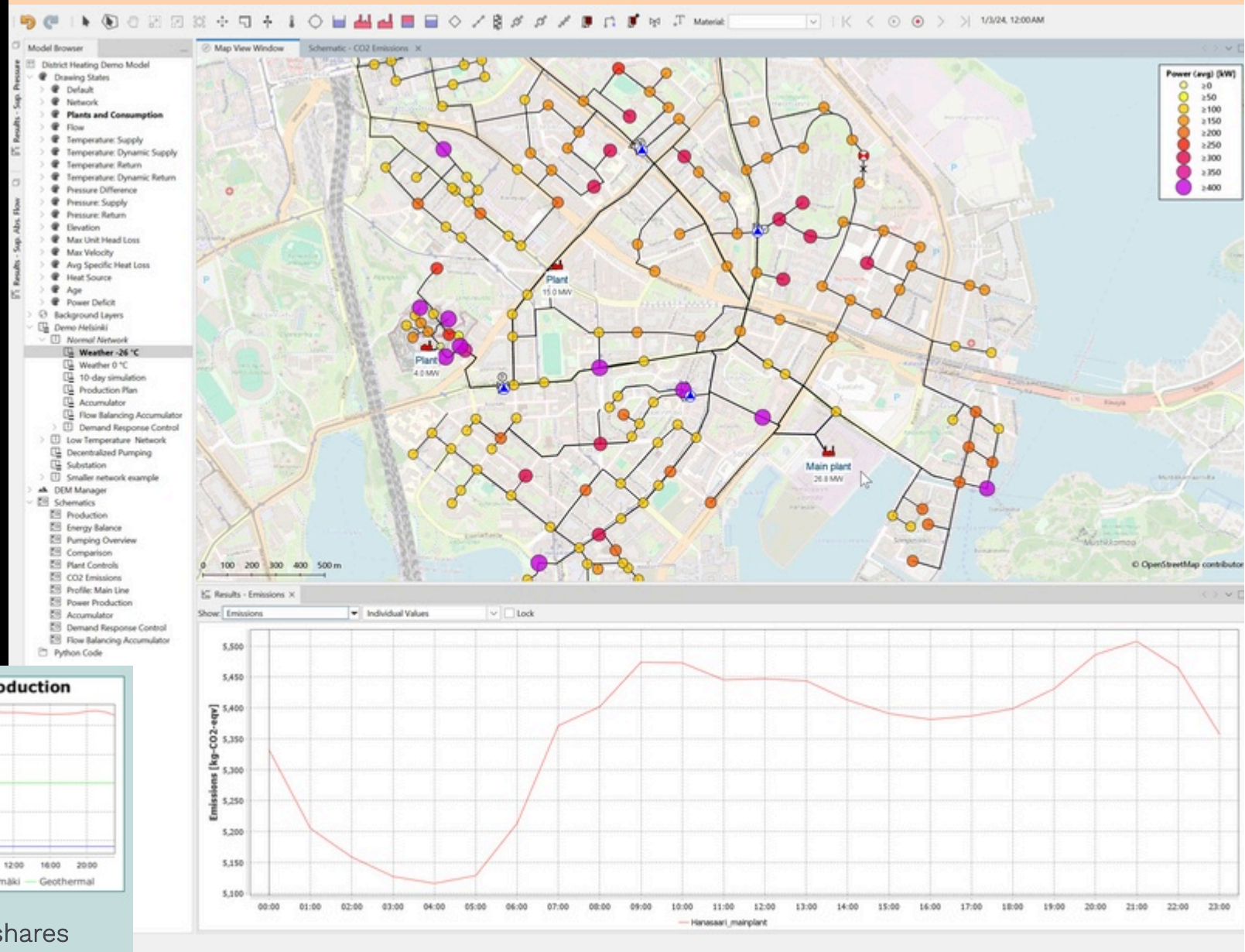
CO2 Emissions

- Simulate the carbon dioxide emissions of your production plants.
- Develop alternative plans for emission reduction.



Hanasaari total produced CO2:	5336	tons
Linnanmäki total produced CO2:	1400	tons
Geothermal total produced CO2:	0	tons
Total produced CO2:	6736	**tons**

Analysis of CO2 emission shares of energy production.



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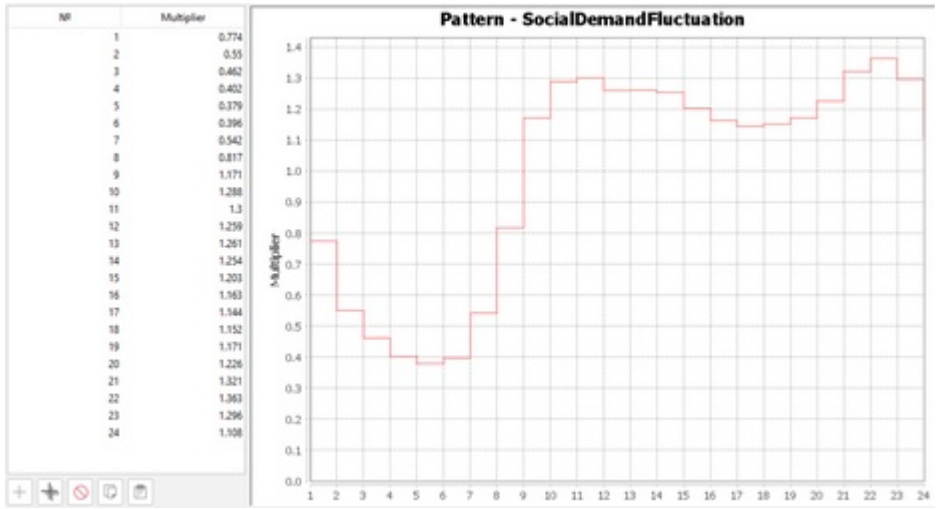
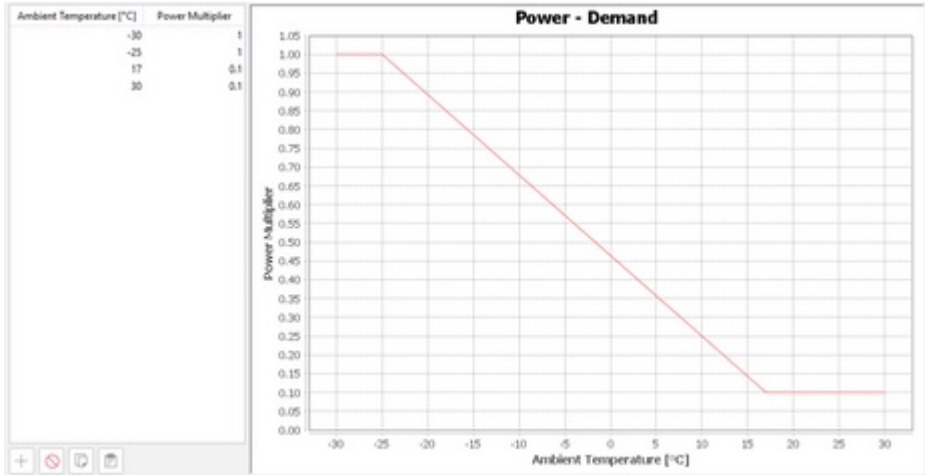
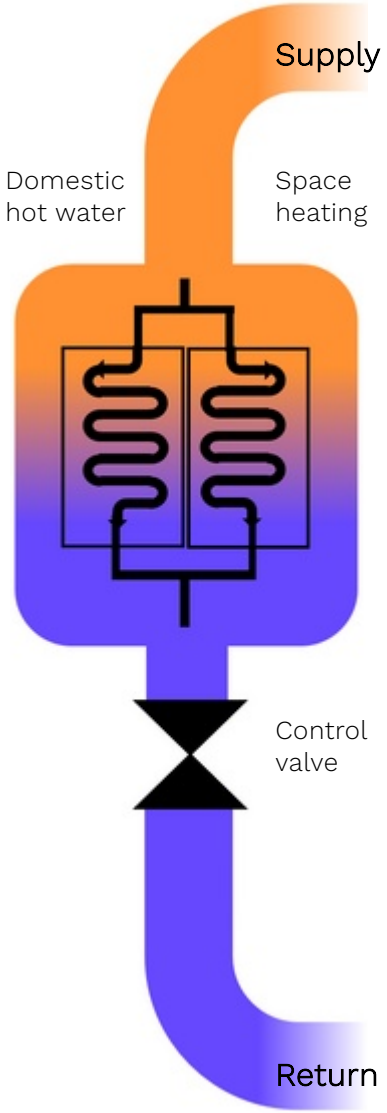
Modeling Substations

- Flow in pipes is modeled as plug flow.
- Each substation is modeled separately.
- Domestic hot water and space heating power demands can be defined independently.
- Consumer power demand and return temperature can be defined as a function of outdoor or supply temperature.

Hourly, daily, and monthly custom demand patterns can be applied to the model.







Integrations

Connect to other platforms

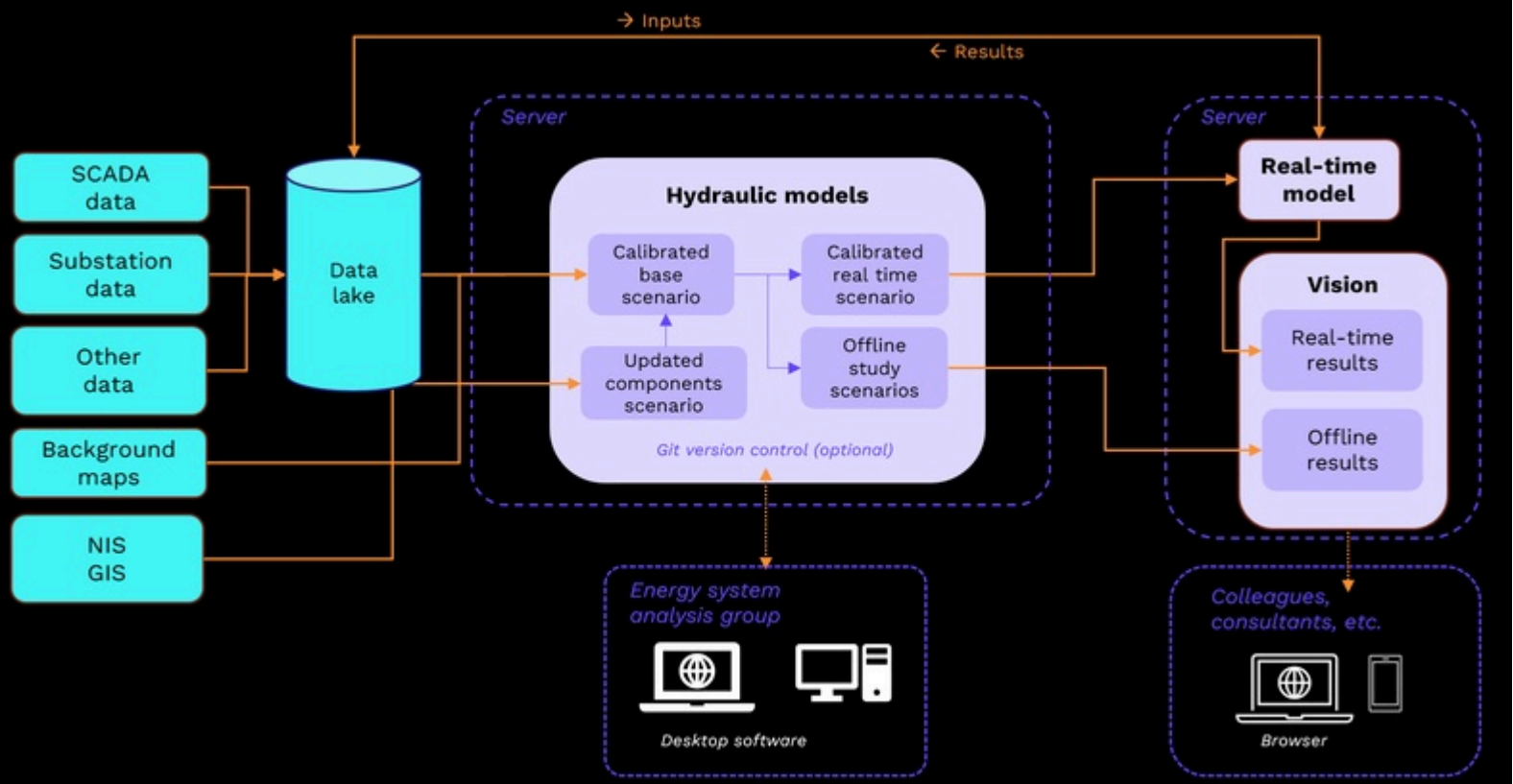
Data Integrations

Leverage various external data sources to enhance the accuracy and relevance of your simulation and analyses.

Automatic Data Cleaning

Streamline daily operations with built-in tools: from time series gap-filling to instant network topology repair.

Example of the modeling and simulation environment setup



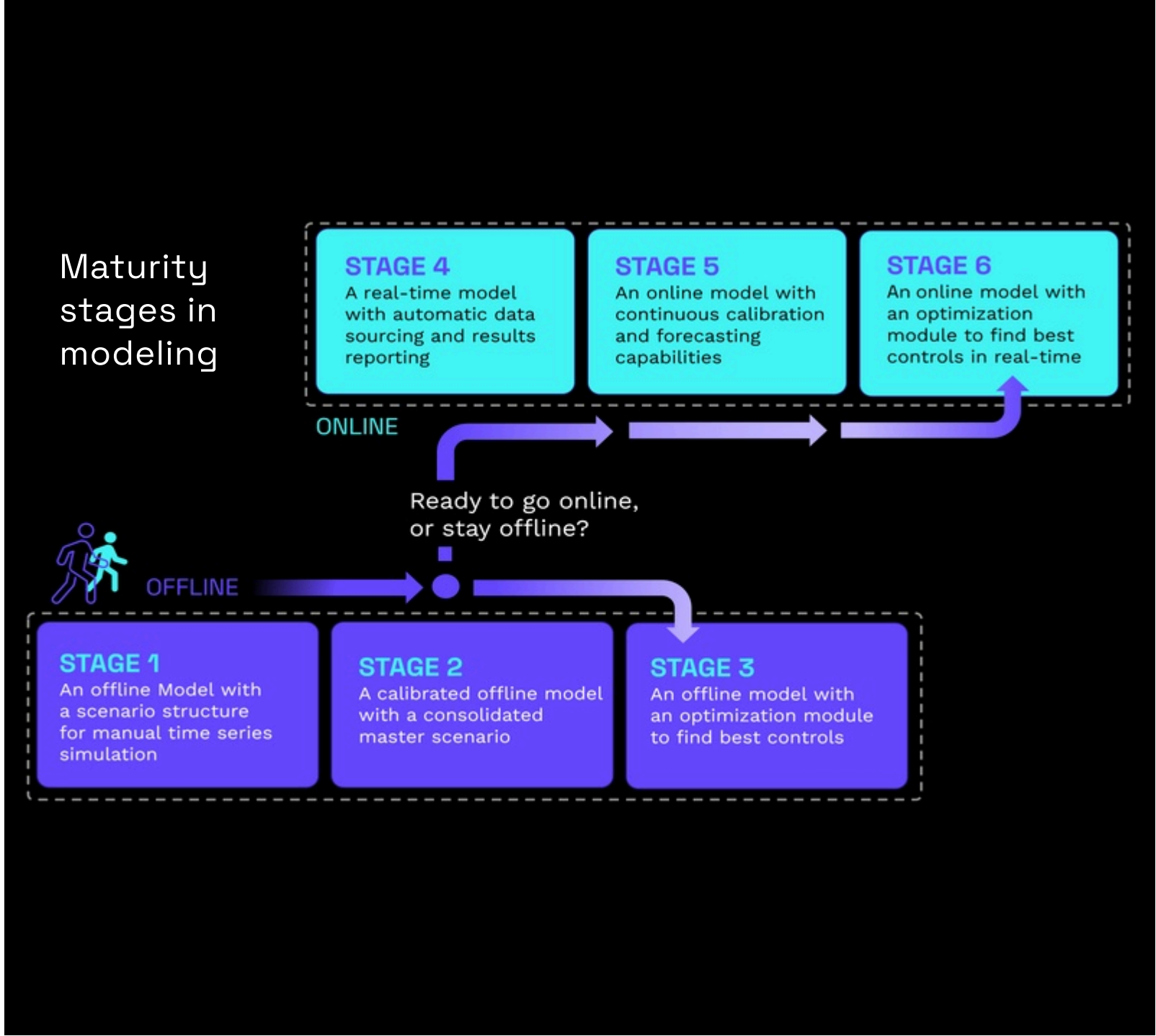
Fluidit Heat™

Digital Twin

With Fluidit's digital twin approach, you can move at your own pace.

Begin with an offline model in any of Fluidit's desktop products to gain a holistic view of your precious infrastructure, study optimal designs, and visualize unlimited what-if scenarios.

As your data evolves, the Fluidit digital twin platform allows you to progress to real-time models. It enables you to build data integrations, optimize network controls, and communicate through a live dashboard.



Fluidit Heat™

Real-Time

Are you ready to go beyond?

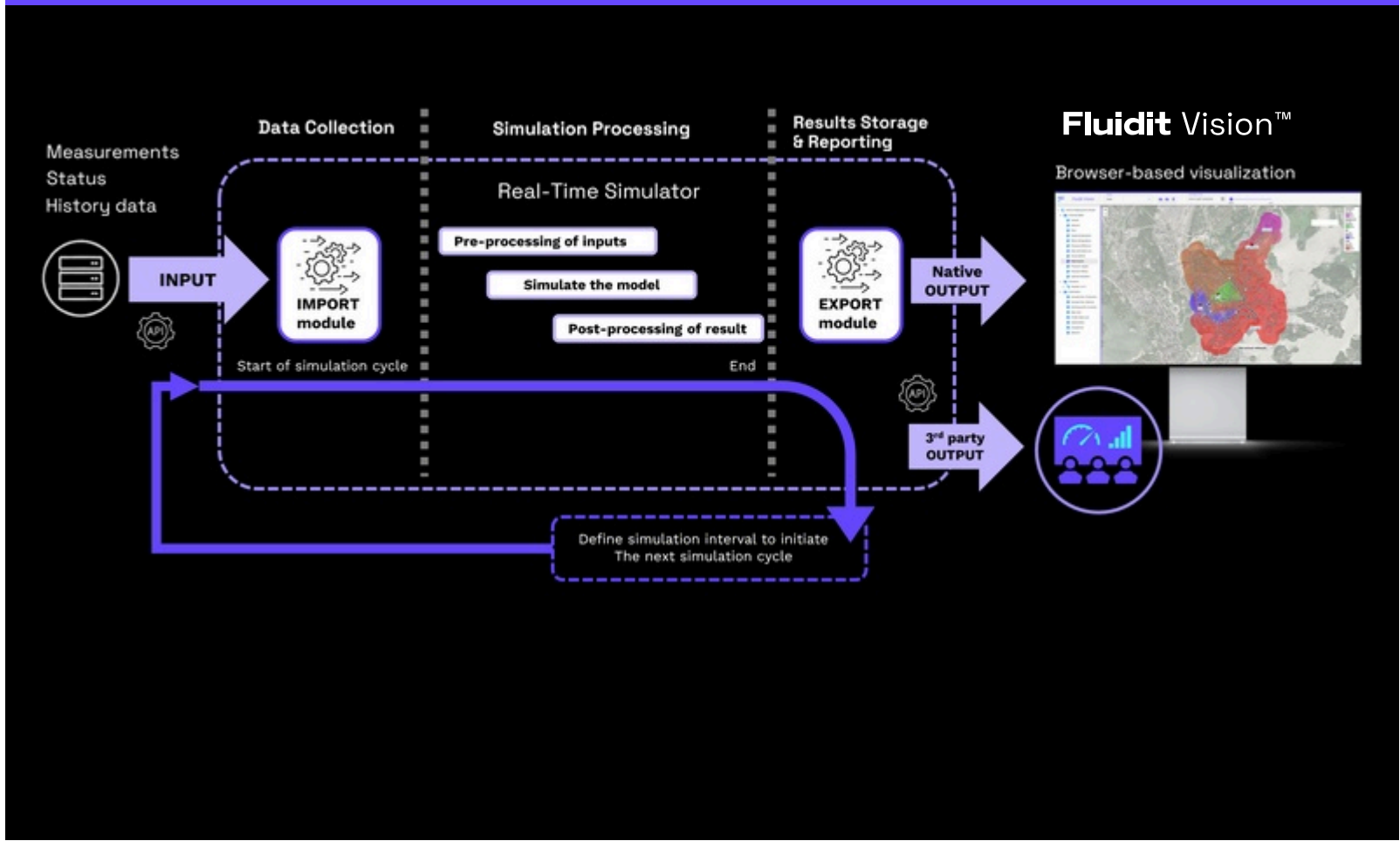
Fluidit Heat is a powerful decision-making engine, not just a modeling software. Use it to analyze the past, simulate the present, and prepare for multiple future scenarios. Make significant cost and emission savings by optimizing peak power production.

Our real-time platform integrates effortlessly with our desktop simulation software suite and the Fluidit Vision web applications, ensuring a smooth workflow across different platforms.

Our browser-based platform, Fluidit Vision, enhances collaboration by providing instant access to real-time data, simulations, and insights — anytime, anywhere.

Fluidit Real-time™

The Fluidit Real-time license includes key components of the digital twin, such as a high-performance simulator, a dedicated data port for external integrations, custom dashboards, and a flexible simulation scheduler.



Fluidit Heat™

Real-Time

Network operators' best companion

Digital twin supports daily operations

- Use a digital twin in the control room to analyze and optimize the use of peak power plants and pumping schemes.
- Create data-driven plans to control district heating accumulators and power production.
- Leverage the calibrated model and measurements to pinpoint operational system anomalies.

Adapt to the dynamic electricity market

- Adapt operations to rapidly changing electricity markets, influencing district energy system controls, as electric boilers and heat pumps are significant electricity consumers.
- Utilize an operational digital twin of the system to continuously display the network's status.
- Gain a deeper understanding of complex interactions within the system and the consequences of various control plans.

Transparent forecast for future operations

- Detailed simulations provide realistic forecasts for heat production and network behavior.
- A digital twin provides critical insights into potential bottlenecks that traditional production plans may overlook.
- Observe how pressure and temperature differences behave at each consumer in the network and identify potential issues upfront.

Fluidit Heat™

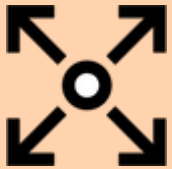
Why Fluidit license?

We offer adaptable licensing to ensure utilities, consultants, and educational institutes have the best tools available.

We guarantee a professional software on-boarding and support - from modeler to modeler.

Floating licenses

Our floating network licenses allow unlimited software installations on the client domain. Only the number of simultaneous software users matters.



Unlimited

No artificial license limitations — all-inclusive pricing. Fluidit software supports projects of any complexity.

Flexible

Choose a subscription or perpetual plan and bundle any Fluidit software to best suit your needs.

Fluidit Heat™

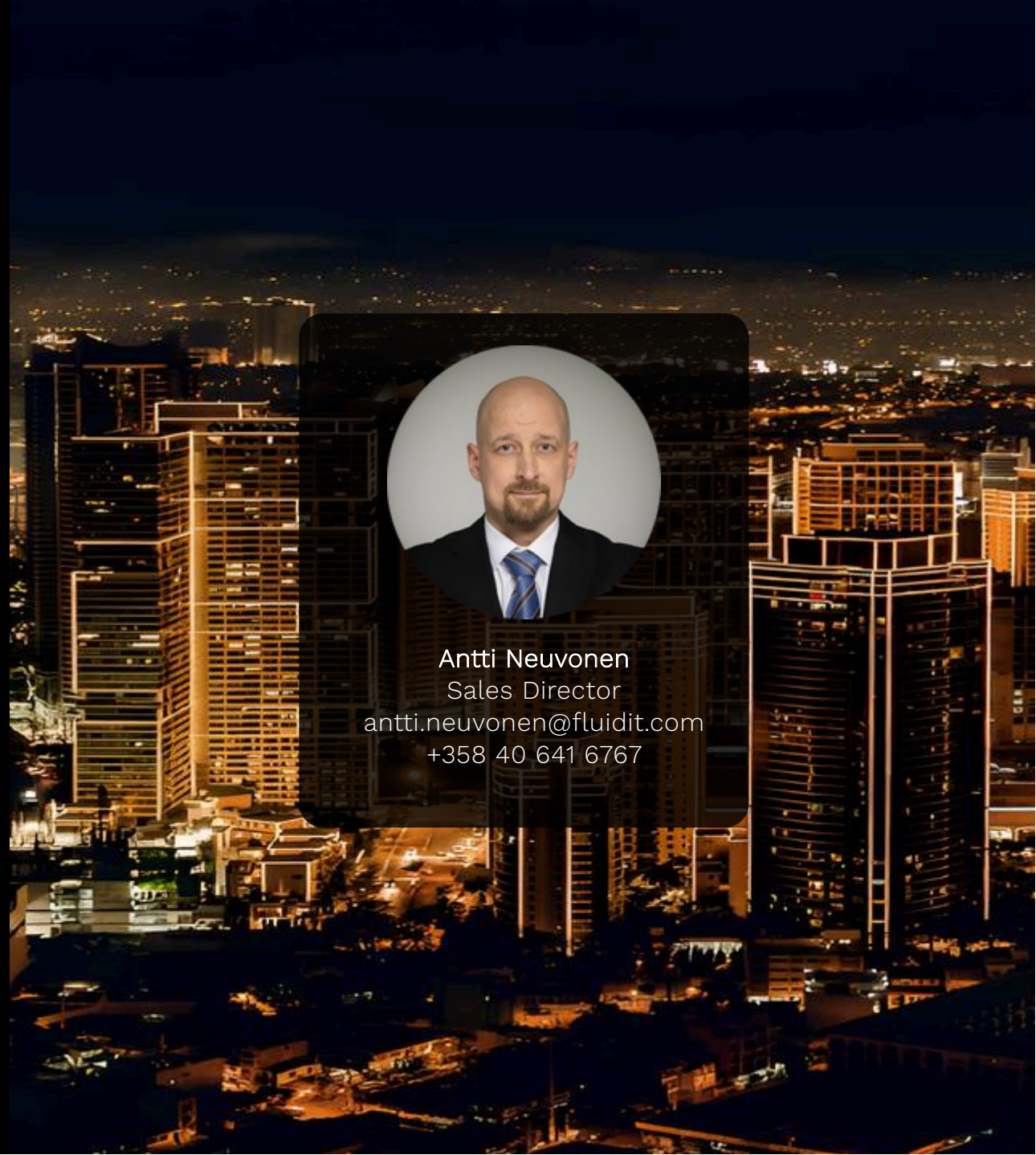
Your Fluidit experience begins

1. **Digitalization strategy workshop**
   We explore your needs & readiness for the digitalization journey.
2. **Follow-up session**
   We help you co-create the pilot option that best fits your needs.
3. **Getting started**
   We give access to our software and professional on-boarding and support.
4. **Testing & evaluation**
   We carry out the pilot, facilitate technical Q&A, and review the results.
5. **The way forward**
   Take your next step towards sustained systems improvement.

Fluidit Heat™

Let’s help cities thrive — today, tomorrow, and beyond.

Interested? Call us for a chat
or book a free demo today.



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