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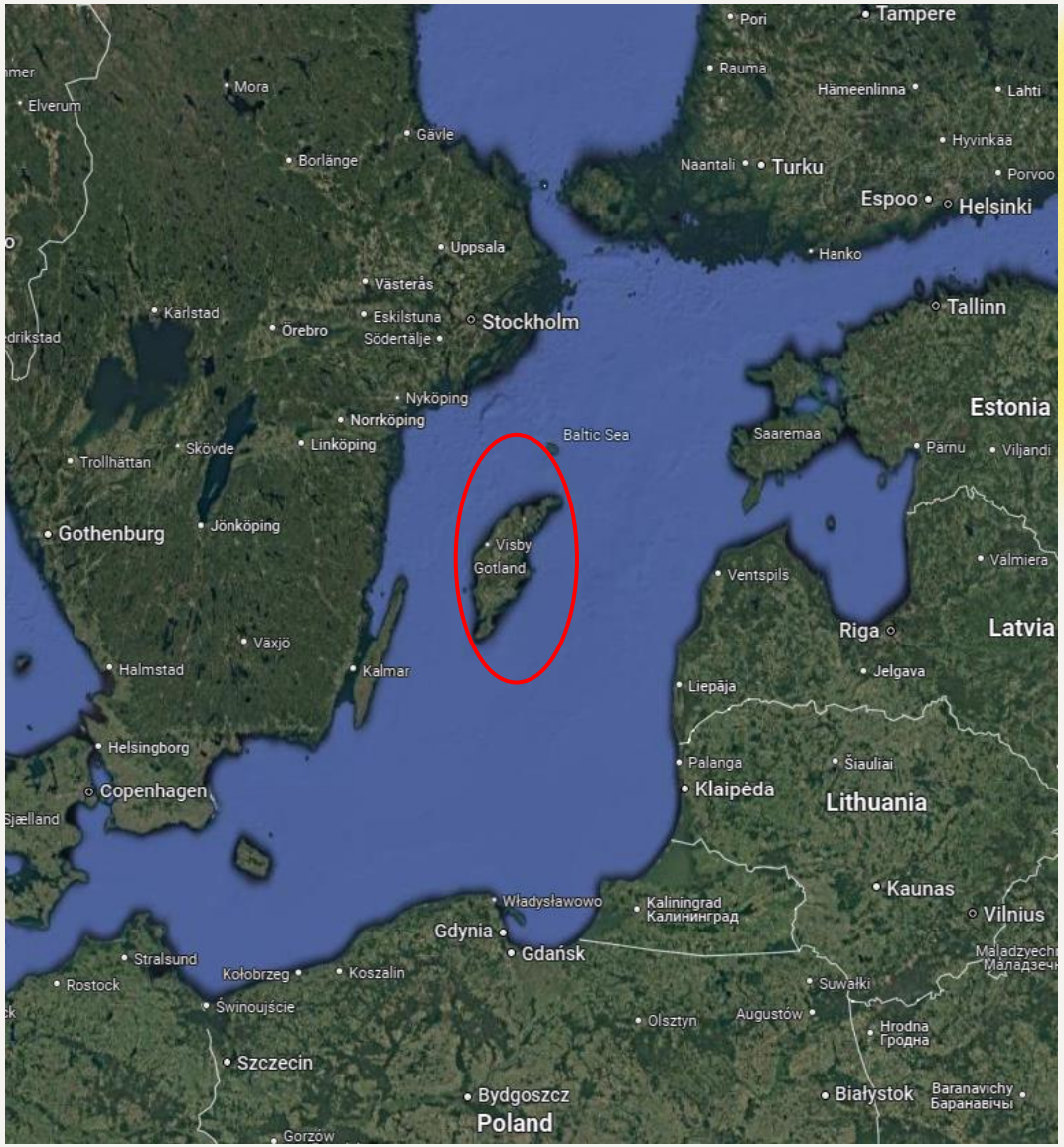

Dynamic pricing, and smart metering

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Gotlands Energi

Funded by the European Union

2025-05-15

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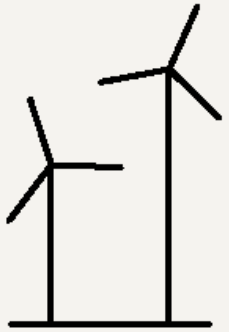
Electricity consumption per year approx. 1 TWh

50% - own production - mainly wind power

(180 MW Wind, 40 MW solar)



50 % - mainland connection

1/3 largest city, Visby

1/3 Heidelberg Cement

1/3 rest of the island

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Challenges due to the mainland connection:

Own frequency control - completely dependent on power from the mainland for frequency control

Results in too high investment costs for battery storage

Only 65 MW additional installation of wind and solar production

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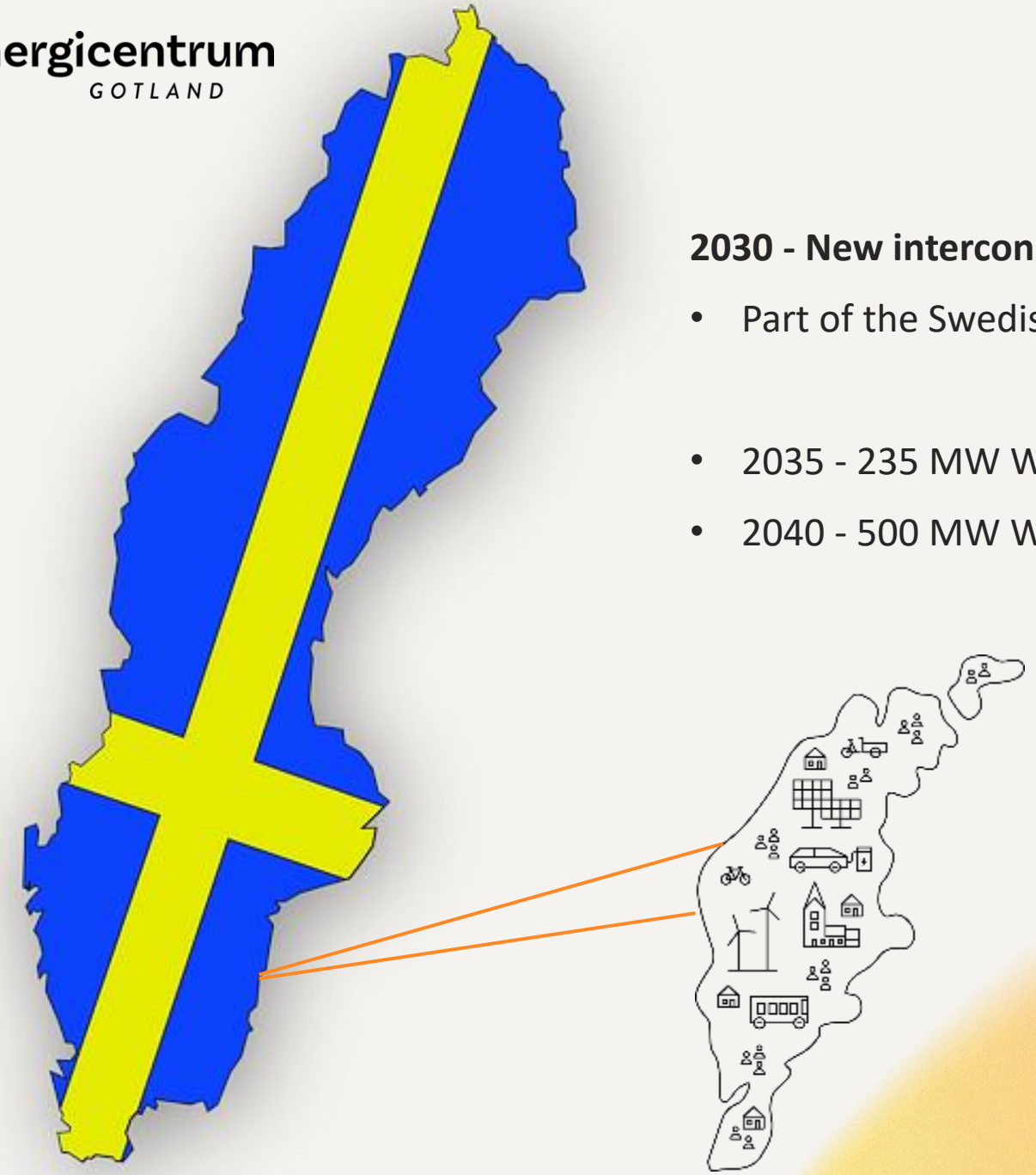

2030 - New interconnection: 2 x 220 kV AC - 1 billion euros

- Part of the Swedish national grid

- 2035 - 235 MW Wind, 200 MW Solar
- 2040 - 500 MW Wind, 500 solar

2030 Heidelberg Cement 1,5 TWh consumption – CCS

Possible to transmit 2.5 TWh in 2030

Investment of 200 million euros -2040

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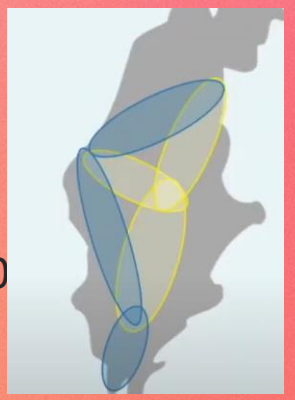

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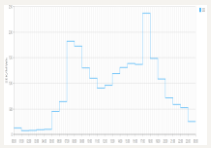
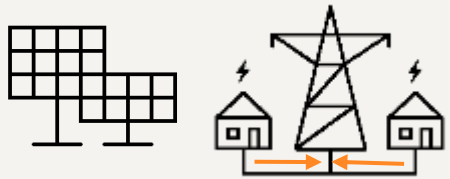
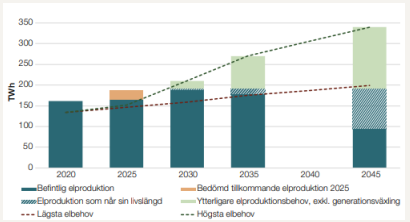
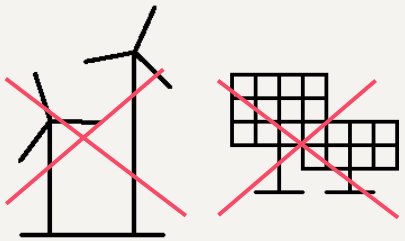
Challenges





NORD POOL
A EURONEXT COMPANY

(- öre)

Solutions

1. Grid tariffs
2. Flex markets
3. Conditional agreements

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The electricity grid of the future – Enabling the energy transition!

Traditional reinforcement

- Install more hardware to increase grid capacity
- Size for peak load plus risk margin
- 100 billion euros in grid expansion 2045

Grid Optimization

- Use existing resources more efficiently
- Enable flexibility to handle congestions
- Reduce costs for customers and grid owners

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Smart meters

- All subscribers - by 1 jan 2025
- 15 min interval
- Connection port for external equipment - real time - 10 seconds
- Enables external energy services such as power and energy control
- Prepared for self-production
- For each phase - voltage, current, active/reactive energy and power for consumption and production of electricity

Goltand also has smart meters in:
- Secondary substations
- Within a few years, the regional substations

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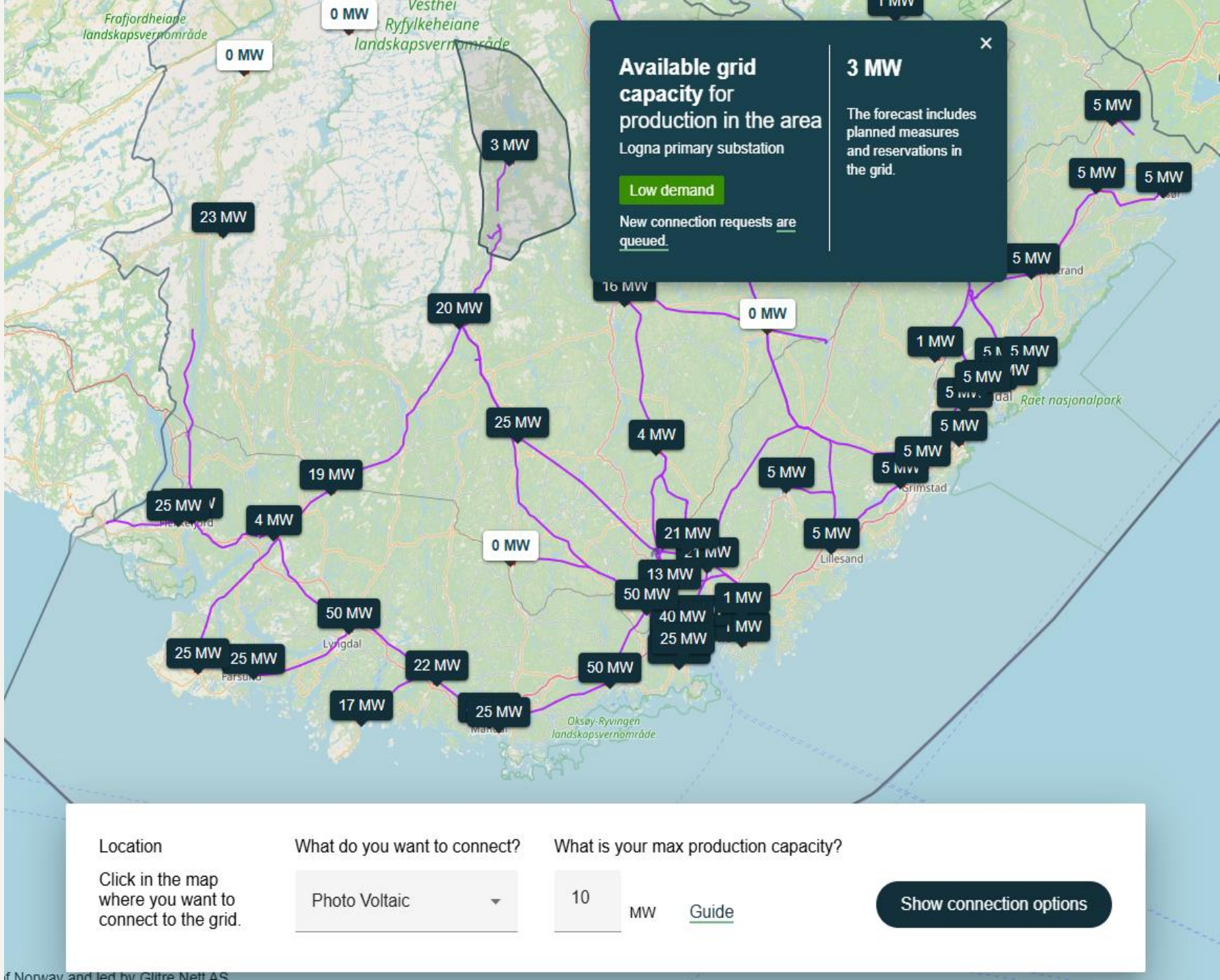
capacity maps

Work in progress

Completed within a few years

Better overview - Fundamental for future development



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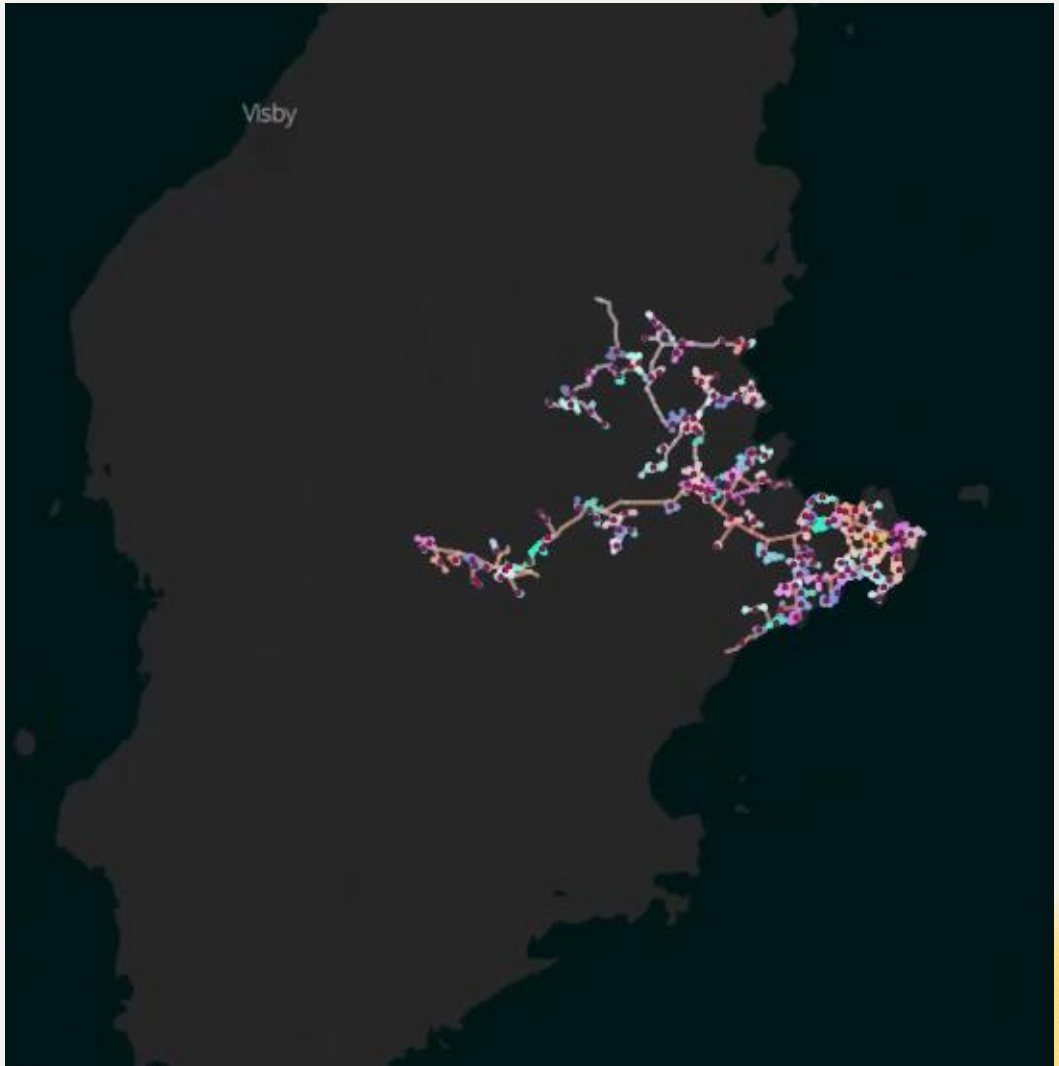
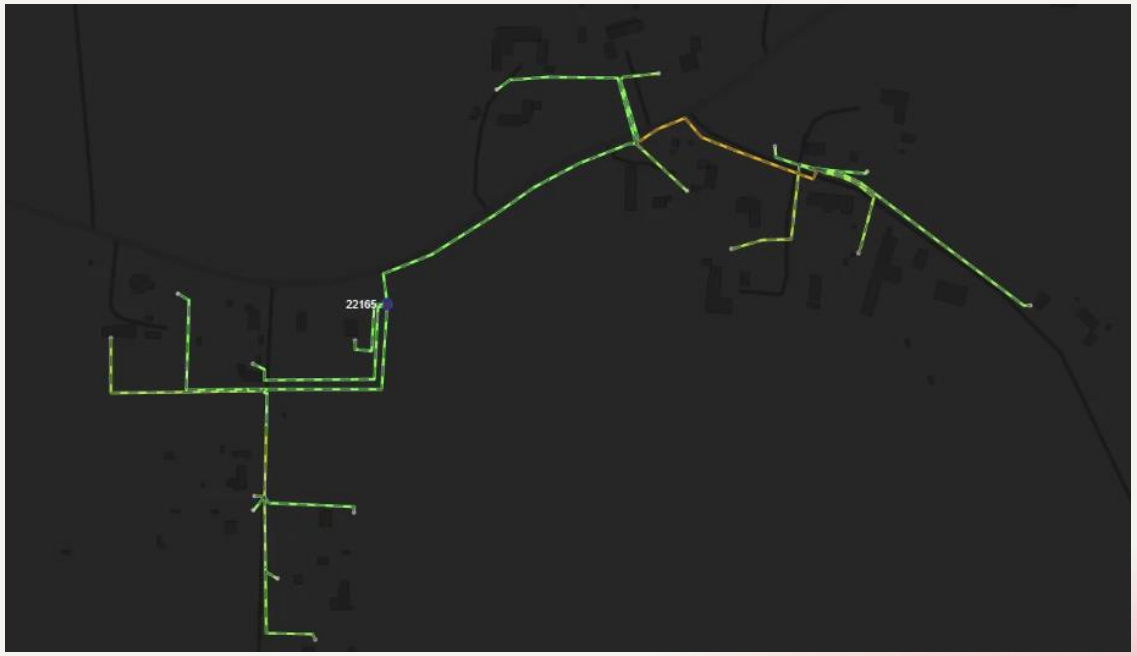
Tariff Project Gotland





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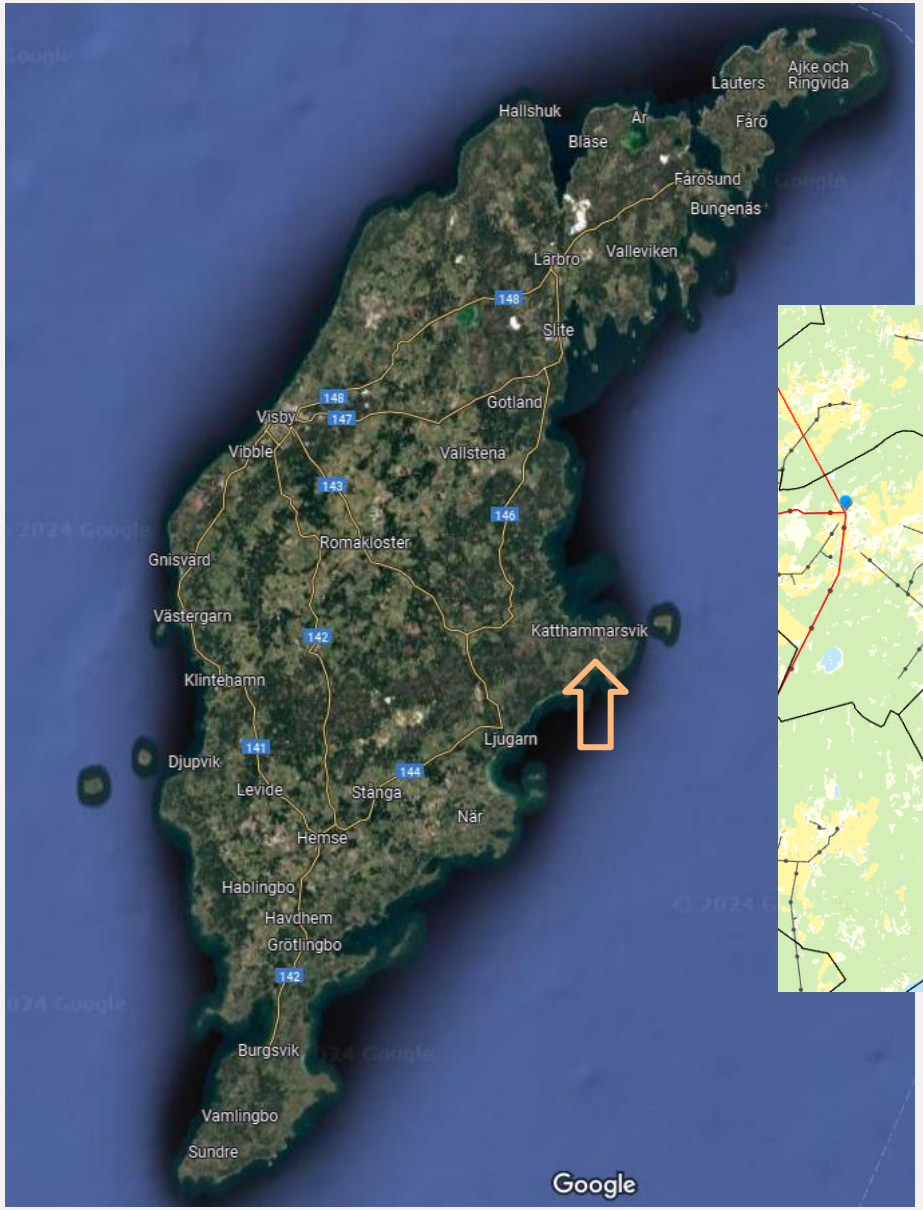

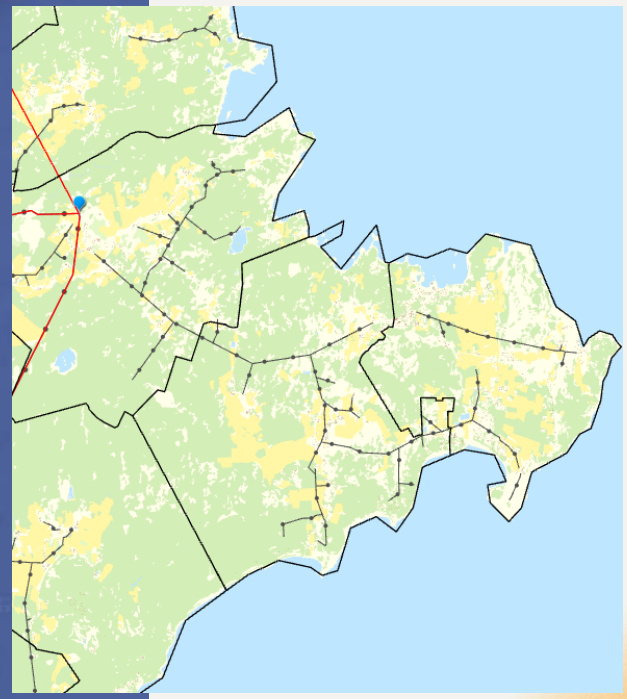

Our solution

A high resolution capacity-based approach

Where

Sweden – East of Gotland - Kräklingbo

Resolution

- 1700 costumers/150 Secondary substation
- Due to the station load, unique prices per every station,
- Time: 30-minutes
- Location and time specific!

According to this you will actual pay for the strain you cause where you actually are and when it happens.

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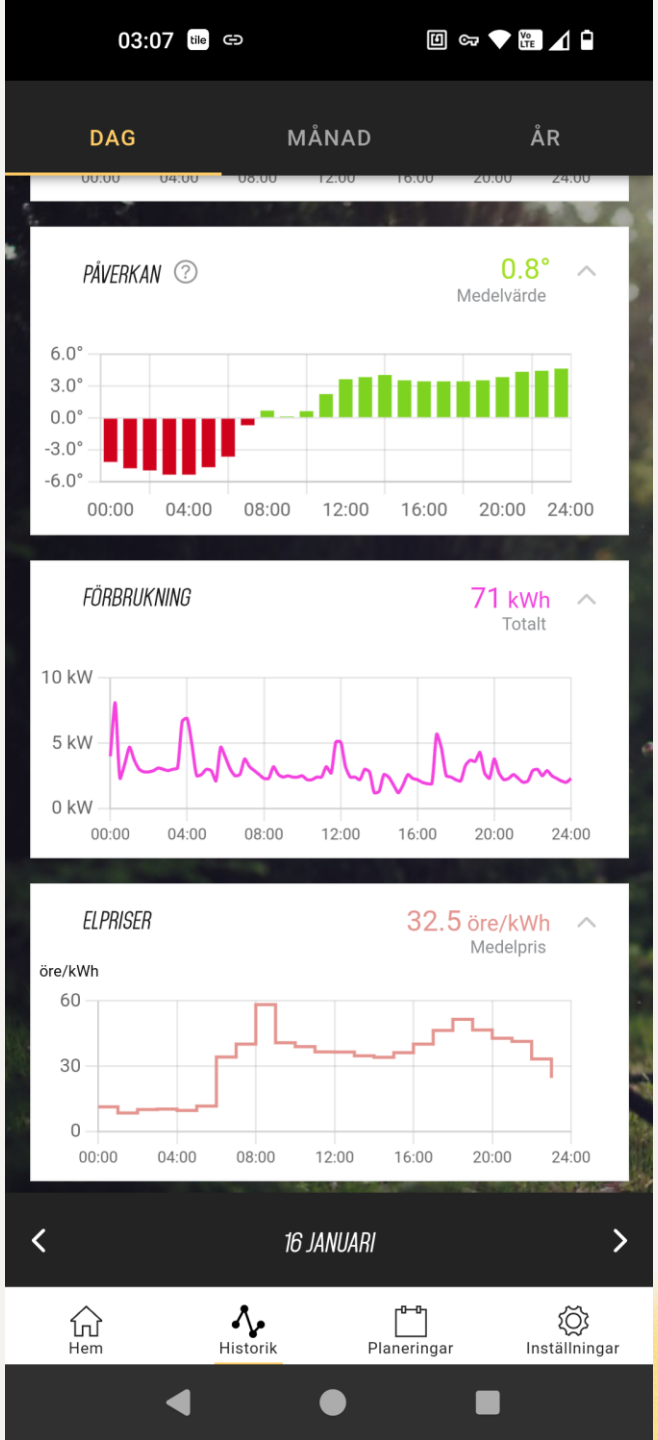

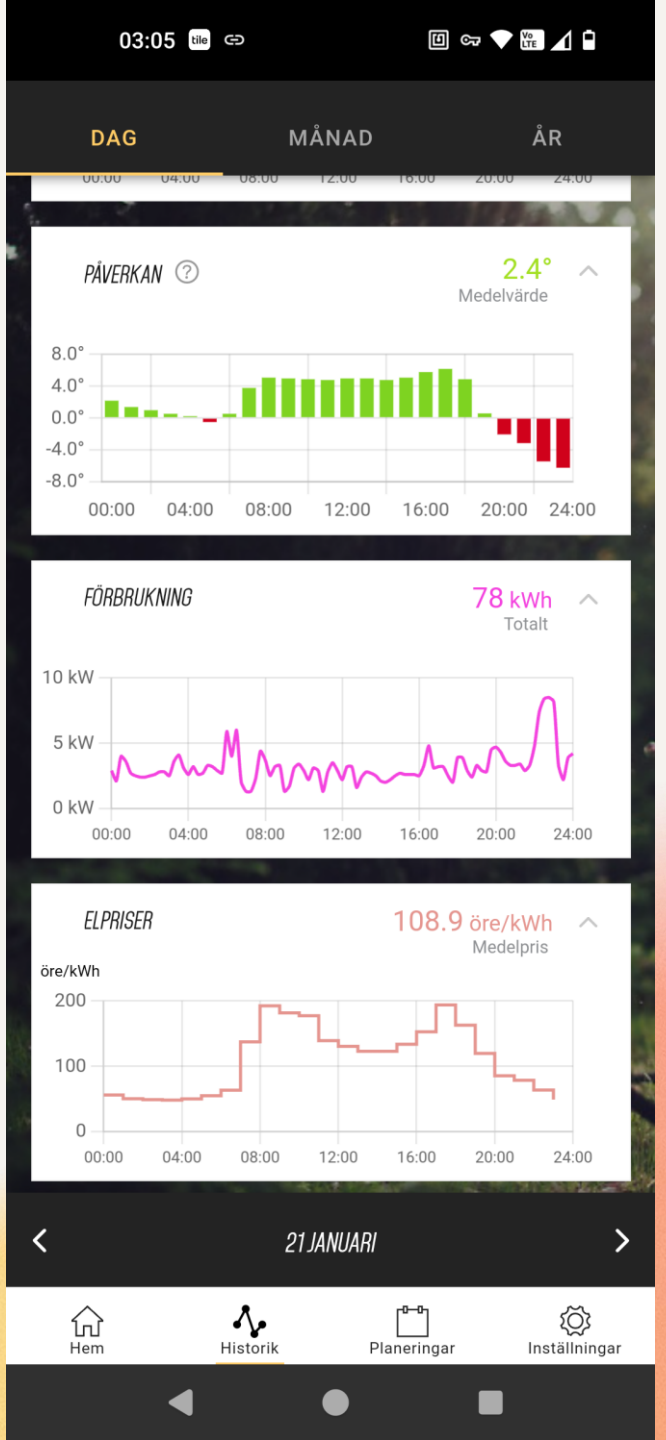

NGENIC

2025-05-15

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Flexible resources

Automated flexible resources

Increased cost

Reduced cost

Depending on the control signal

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Download the project report

- Tariff 2.0 – pilottest för kapacitetsbaserade elnätstariffer – Energicentrum Gotland

In English!


Questions?