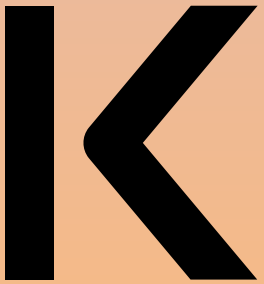

Kiona

Workshop: Demand response and digitalization of demand side in district heating and cooling systems.

Agenda

- > Introduction to Kiona Group
- > How we work and create value
- > Optimizing buildings – optimizing grids
- > What can we do (better) together?



Kiona

Software and services for technical property management, energy optimization with AI, cooling management, energy monitoring and follow up.



→ Facts

Open. Flexible. Independent

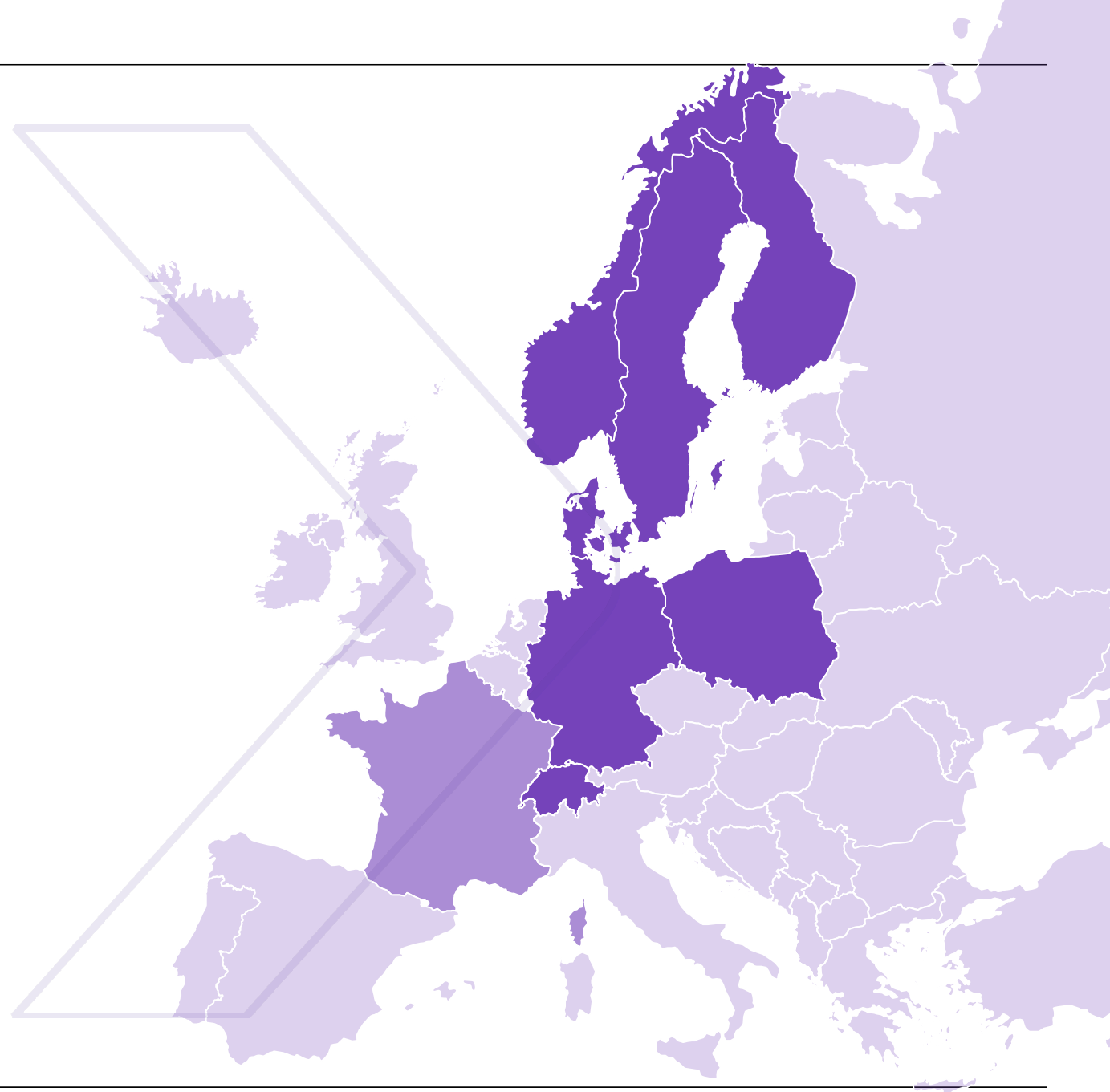
With proven integration and connectivity solutions, Kiona helps customers achieve their financial and sustainability goals by digitizing new and old buildings and their heating, cooling, ventilation and refrigeration systems.

 135 employees in 8 countries

 55 000 connected buildings

 180+ partners i Europa

 ~200 NOKm revenue in 2021



Edge



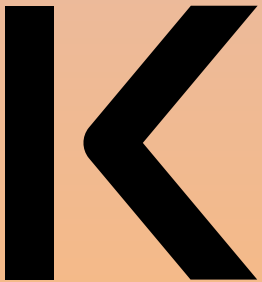
Works on all buildings!
Extends the lifespan of existing hardware.
No need for expensive replacements.



Easy access from every where.
High security

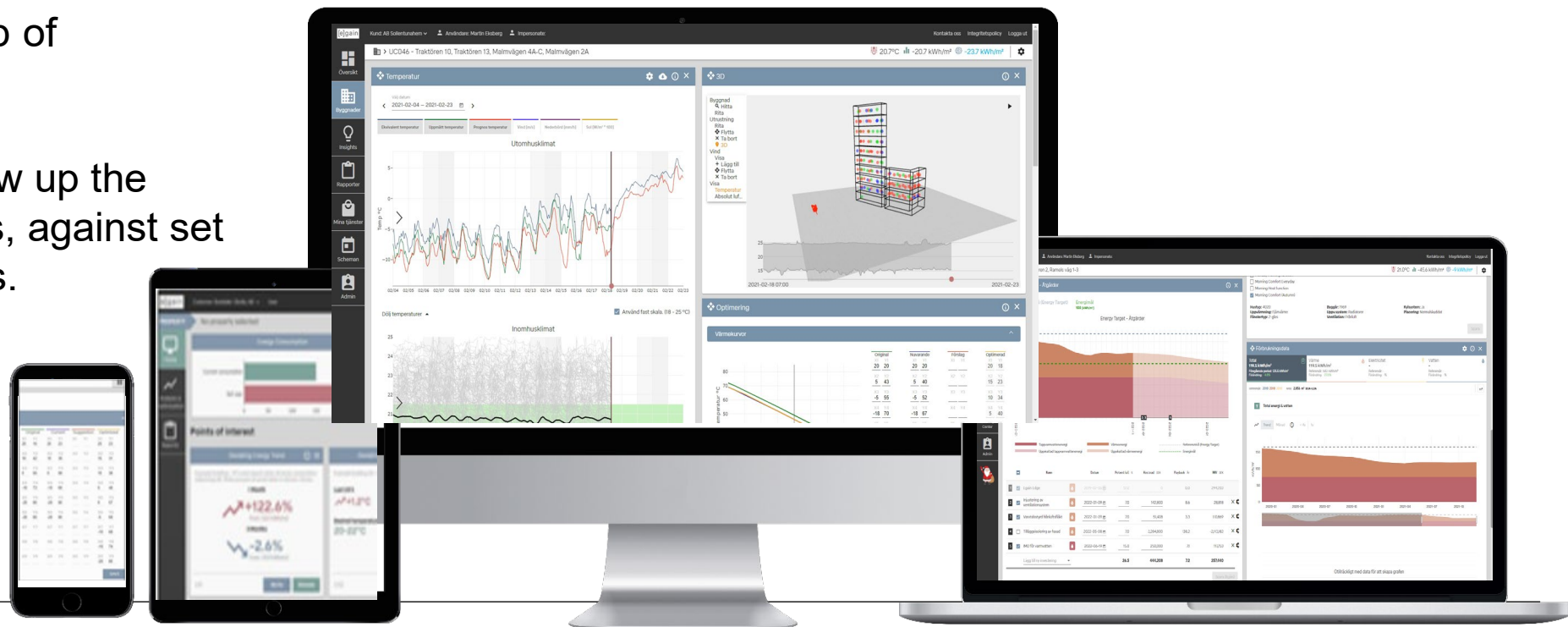


Low cost and easy implementation.
Savings



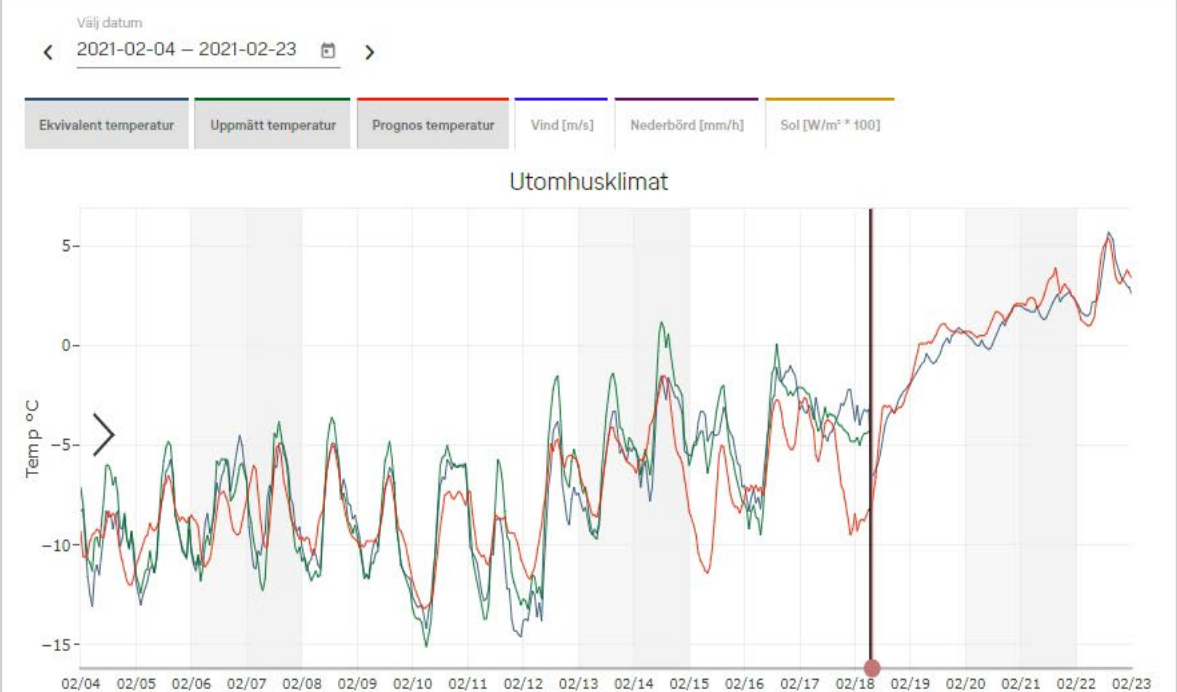
Flexible platform with efficient analysis tools

- Effective operation & analysis tools in a flexible platform for high availability at all levels throughout the organization
- Identify opportunities for improvement and make data-driven decisions as well as quality-assured follow-up of measures
- Simulate, analyze and follow up the results of various measures, against set energy and financial targets.

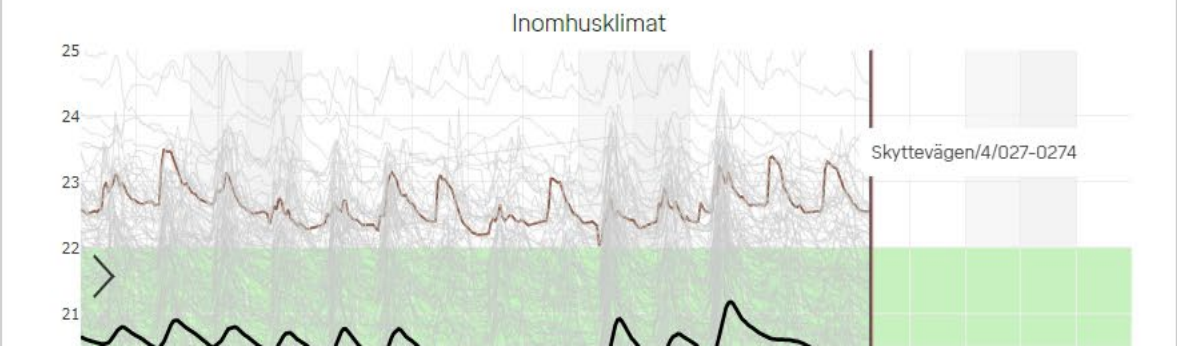


- Översikt
- Byggnader
- Insights
- Rapporter
- Mina tjänster
- Scheman
- Admin

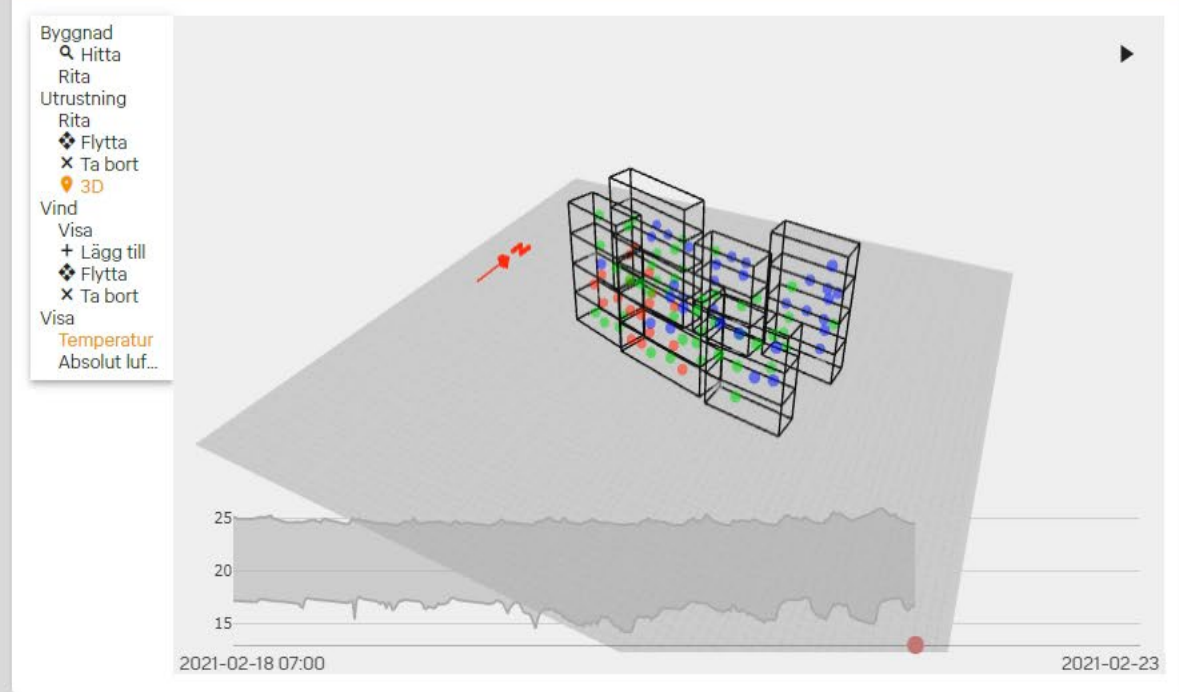
Temperatur



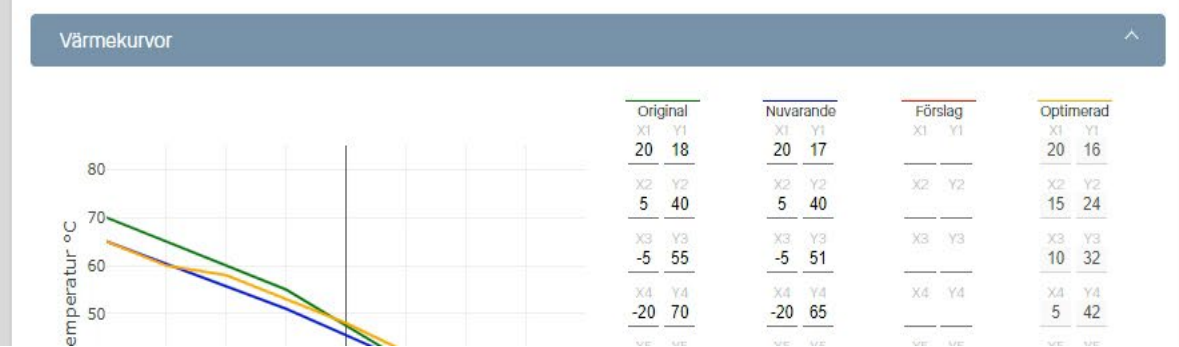
Dölj temperaturer ▲ Använd fast skala. (18 - 25 °C)



3D



Optimering



Temperatur

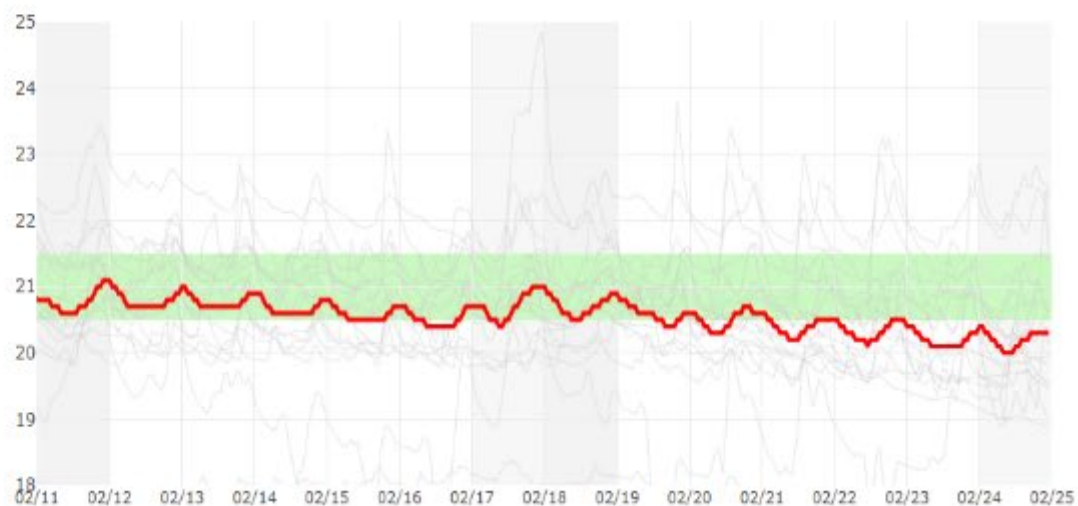


Startdatum 2018-02-11 och Intervall 2 Veckor framåt

Döj temperaturer

 Använd fast skala. (18 - 25 °C)

Inomhusklimat



Visa luftfuktighet

Välj trappuppgång

Aktivera klimatlogger

Inomhusgivare (20)

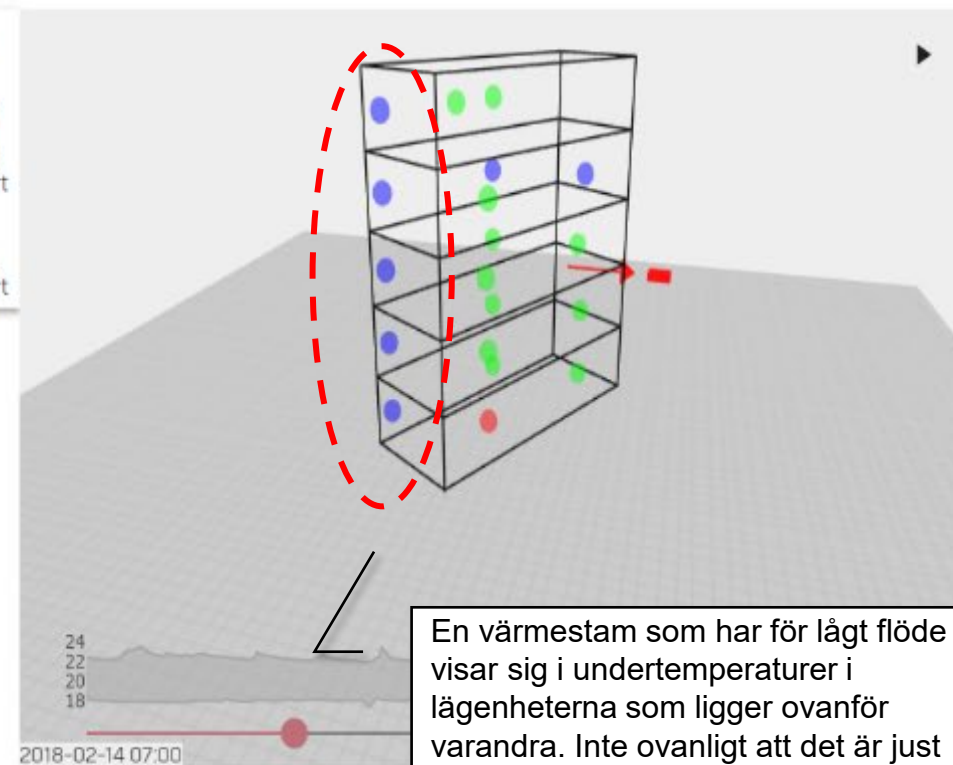
Markera alla linjer med Teq3

Beskrivning	Nummer	Visa	Teq3
Tulegatan 63/1301	94005132	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Tulegatan 63/1401	94004787	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Tulegatan 63/1101	94003842	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		<input checked="" type="checkbox"/>	<input type="checkbox"/>

3d



- Byggnad
 - Hitte
 - Rita
- Utrustning
 - Rita
 - Flytta
 - Ta bort
- Vind
 - Flytta
 - Ta bort



En värmestam som har för lågt flöde visar sig i undertemperaturer i lägenheterna som ligger ovanför varandra. Inte ovanligt att det är just gavellägenheterna som är svagaste länken.

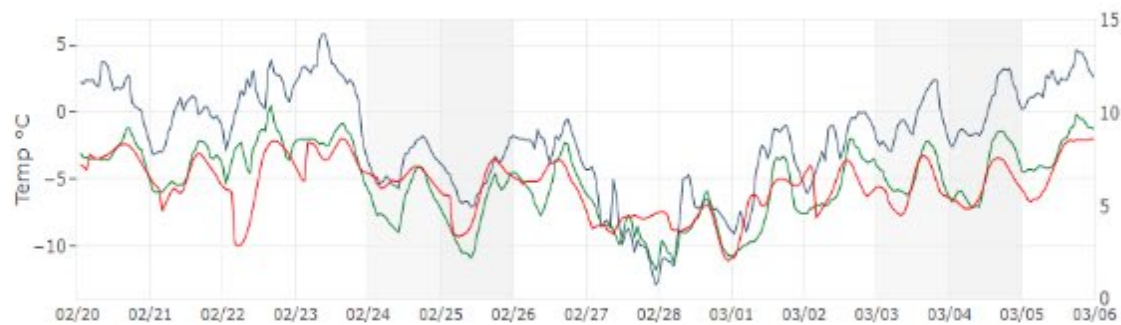
Temperatur



Period < 2018-02-20 > och 2 Veckor framåt

Ekvivalent temperatur Uppmätt temperatur Prognos temperatur Vind [m/s] Nederbörd [mm/h] Sol [W/m² * 100]

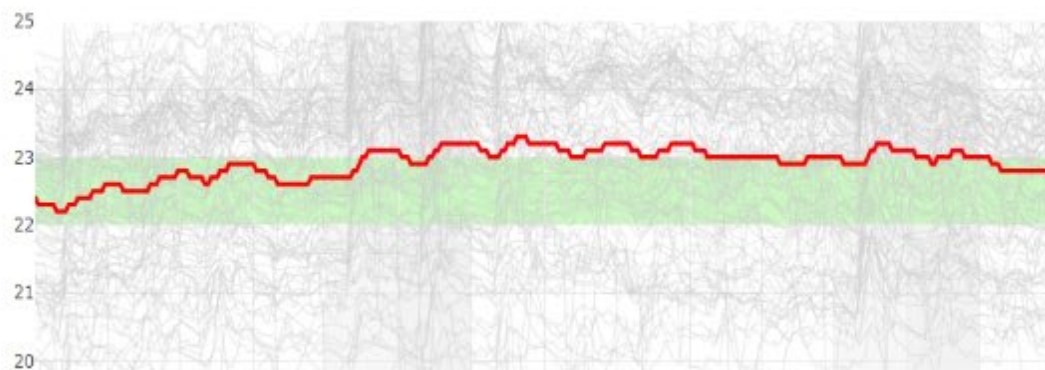
Utomhusklimat



Dölj temperaturer ▲

 Använd fast skala. (18 - 25 °C)

Inomhusklimat

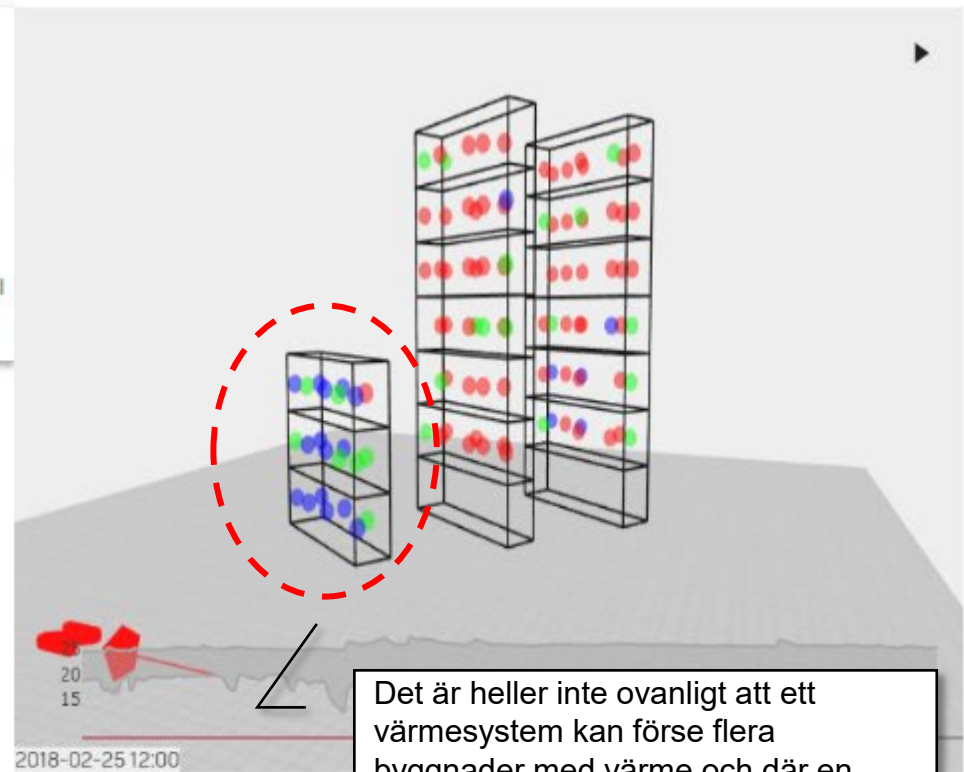


3d



Byggnad

- Hitta
- Rita
- Utrustning
- Rita
- Flytta
- Ta bort
- 3D
- Vind
- Visa
- Lägg till
- Flytta
- Ta bort

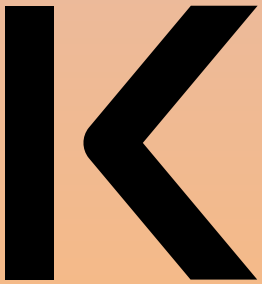


Det är heller inte ovanligt att ett värmesystem kan förse flera byggnader med värme och där en huskropp ligger betydligt lägre i inomhustemperatur än övriga

Edge

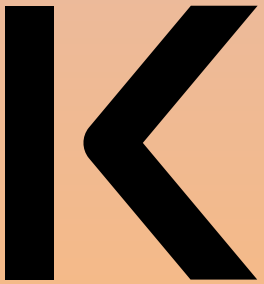
Typical benefits for customers

- > Average 10% reduction in consumption.
- > Problems with return temperature solved.
- > More stable indoor temperature.
- > Better dialog between tenants and service/management personnel.
- > Lower maintenance cost due to efficient fault seeking - and targeted efforts.
- > Insights to make better decision for long term investments



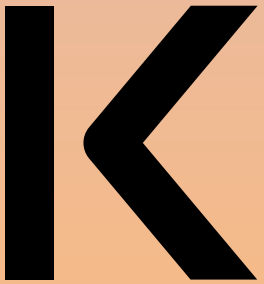
Edge Benefits for District Heating Companies

- > 10% “free” capacity
- > Lower forward temperature due to optimized buildings
- > Lower return temperature



Combined gains

- > 10% “free” capacity
- > Flexibility
- > Load shift
- > Optimized heat and power production
- > Potential business area (service/maintenance)
either in-house or by partner models



We collaborate with Utilifeed





Flexi-Sync

Flexible energy system integration
using concept development,
demonstration and replication



Smart
Energy
Systems
ERA-Net

Webinar #6: Demo of district energy flexibility optimization tool

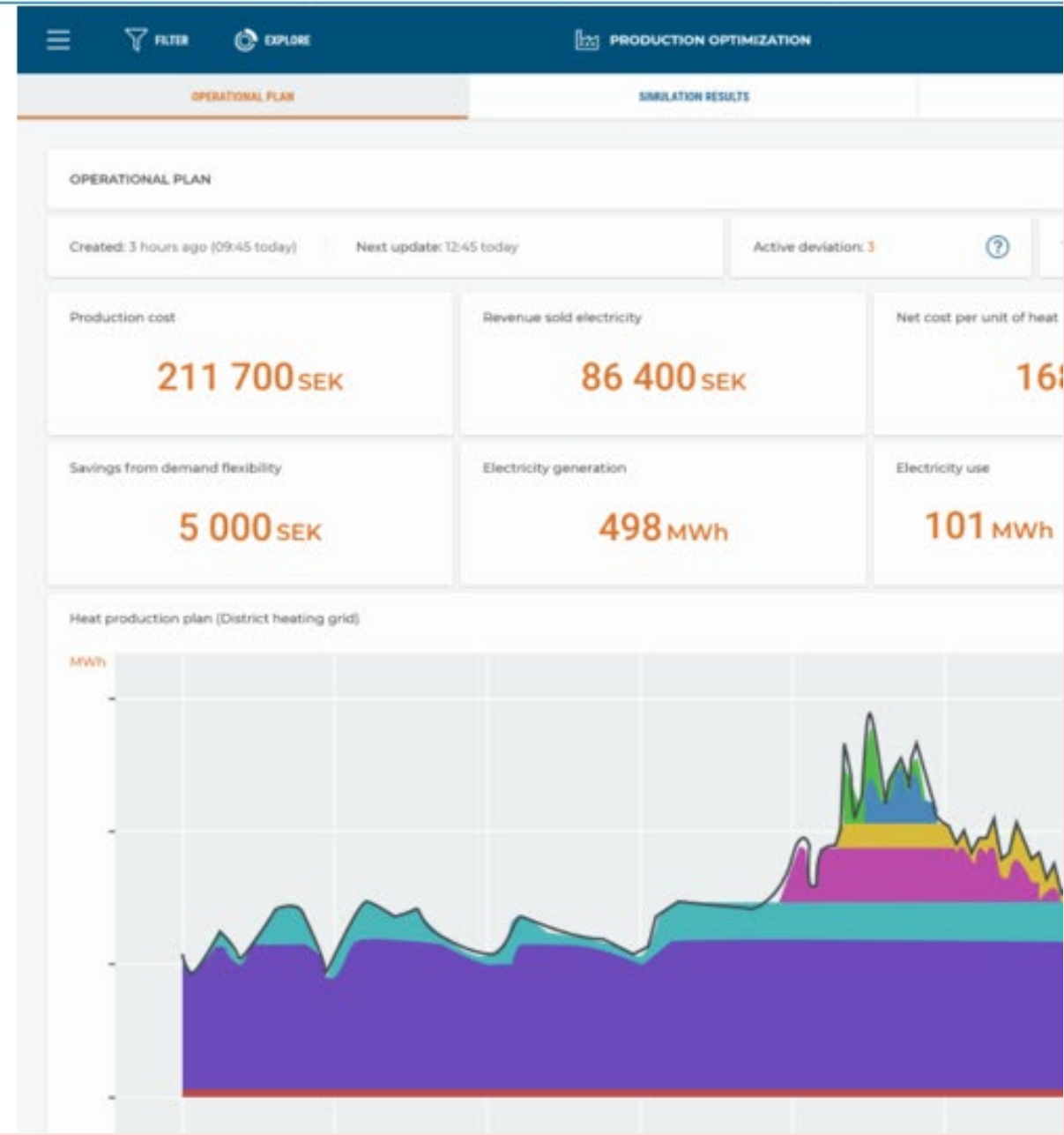
Filippa Sandgren & Johan Kensby - Utilifeed 2022-02-08

This initiative has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement no. 775970 (RegSys).



Key features Optimization

- Load forecast with EnergyPredict
- Electricity price forecast
- Flexibility as a part of the optimization
- Demand side flexibility, Kiona



Current situation in electricity grid

Large variation in electricity prices

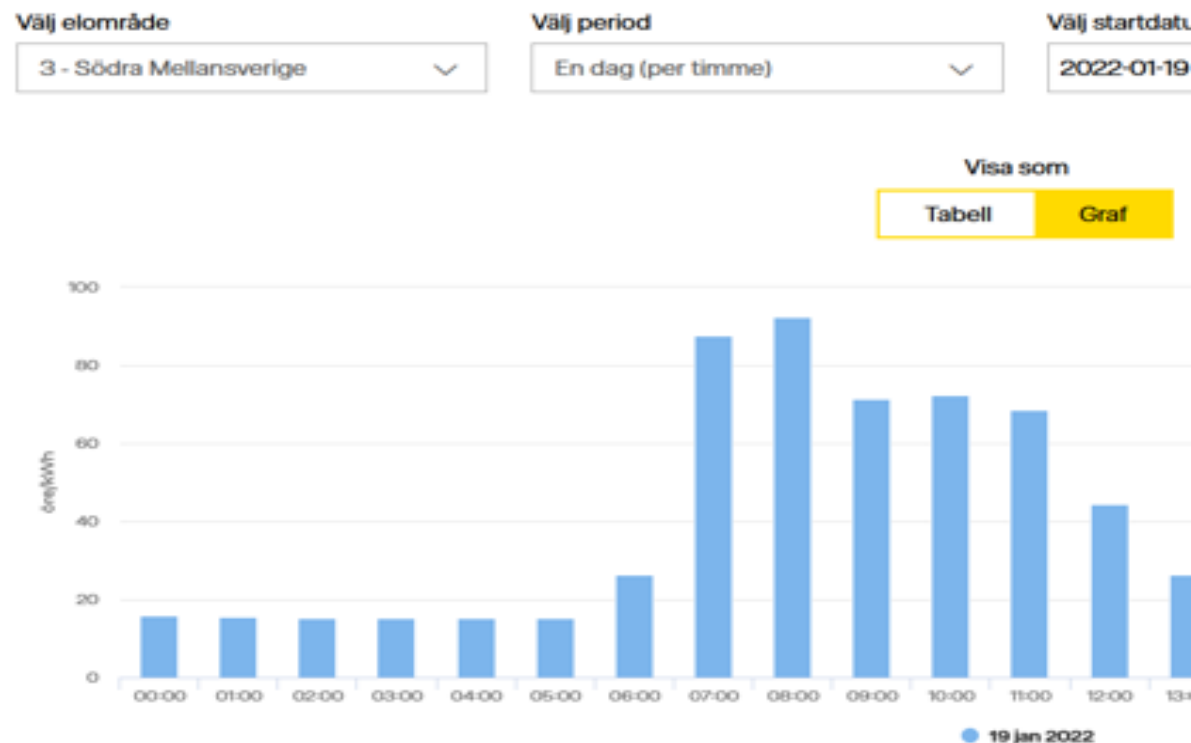
November - December (SE3):

- On average - Factor 10 between daily max & daily min price
- All days - Factor >1.8 between daily max & daily min price

The one with flexibility is the winner

- Large value in shifting electricity use (and generation) in time
- Large value in shifting between heating using and not using electricity (e.g. heat pump and district heat from CHP)

Hourly electricity price January 19th - 1



Thanks for listening

Looking forward to solve the
challenges together with you!

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Kiona

