



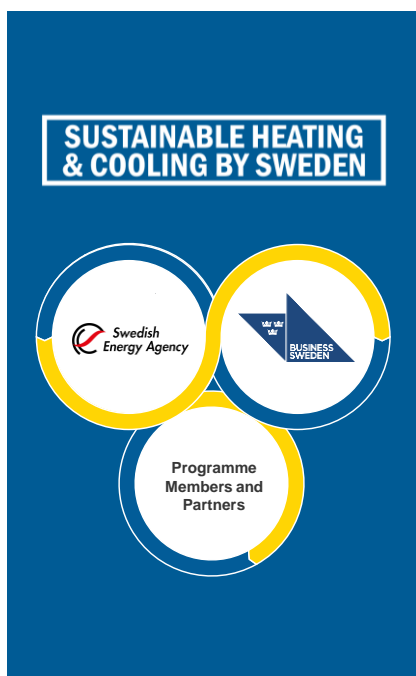
## Sustainable Heating & Cooling by Sweden

A Swedish government and industry-led initiative sharing experiences from Sweden

London, United Kingdom | Paris, France  
2020-09-16



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### Sustainable Heating & Cooling by Sweden

#### Short background

- The programme was initiated in 2016 to support the decarbonisation of the UK heat market, and has since grown to include a larger international arena
- Owned and financed by the Swedish Energy Agency and implemented by Business Sweden in collaboration with partners
- The programme has approximately 40 Swedish member companies, spanning from heat generation to intelligent digital solutions

#### Purpose

- The purpose of the programme is to share Swedish know-how and support the uptake of sustainable heating and cooling solutions around Europe and across the world

#### Key collaboration activities

- City partnership
- Seminars
- Supplier collaborations
- Policy forums
- Delegations
- Trade fairs

## About the Swedish Energy Agency

### National authority for energy policy issues

R&D funding, policy analysis, statistical authority, information, testing, commercialisation, internationalisation, security of supply, electricity certificates, sustainability criteria, EU-ETS, international climate investments.

Ministry of Infrastructure, Anders Ygeman (S)  
Minister for Energy and Digital Development.

Director General Robert Andrén

Around 200-300 m€ per year in transfer of funding, R&D, grants, etc.

Around 400 employees, Eskilstuna



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## Sweden has ambitious targets and aims to remain as a frontrunner for sustainability

- Sweden is a forerunner in the EU on many recommendations regarding improvements for the climate policy and Sweden commits to even more ambitious targets, such as carbon neutrality earlier than anticipated
- Sweden has already achieved a share of renewables at 65% for heating & cooling and electricity, 30% for transportation.
- More than 50% of heating in Sweden comes from district heating and an additional 25% from heat pumps. The remaining 25% are from domestic fuel wood and direct electric heating. Almost 0% fossil fuel for domestic heating.
- Biomass, energy from waste and the use of ambient and excess heat are the main sources for the heat supply in Sweden.
- The Swedish district heating market has been very driven by municipalities and their own energy companies in different forms. State-owned and private companies such as Vattenfall, E.ON and Fortum have also played a vital role.

### A few of the key targets within Swedish energy policy:

Reach greenhouse gas emission neutrality by 2045 and achieve negative emissions thereafter.

50% more efficient energy consumption by 2030 than in 2005.

100% renewable power by 2040.

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### Specific circumstances in Sweden for municipalities

- First instance of income taxation. Most citizens only pay municipal and regional tax, not state tax on income.
- Planning monopoly, including possibility to plan new areas exclusively for DH (Court decision 2016)
- Not allowed to perform business in other municipalities (unless close-by, or through joint ventures)
- Often owning municipal housing companies, under the same holding company as the municipal energy company
- Some municipalities were stressed for finance and have sold their DH (often not a popular choice among citizens, following price increases in the wake of such deals).

## Ownership models for district heating companies in Sweden



Municipally owned company, e.g. Luleå, Eskilstuna etc. Most common category.



Public (listed) company, incl. multinationals, E.On, in at least 11 municipalities



Private company (non-listed), e.g. Solör Bioenergi. in >12 municipalities, investor owned



Joint venture, municipal and public company, Stockholm Exergi, 50% owned by Stockholm city, active in 5 municipalities.

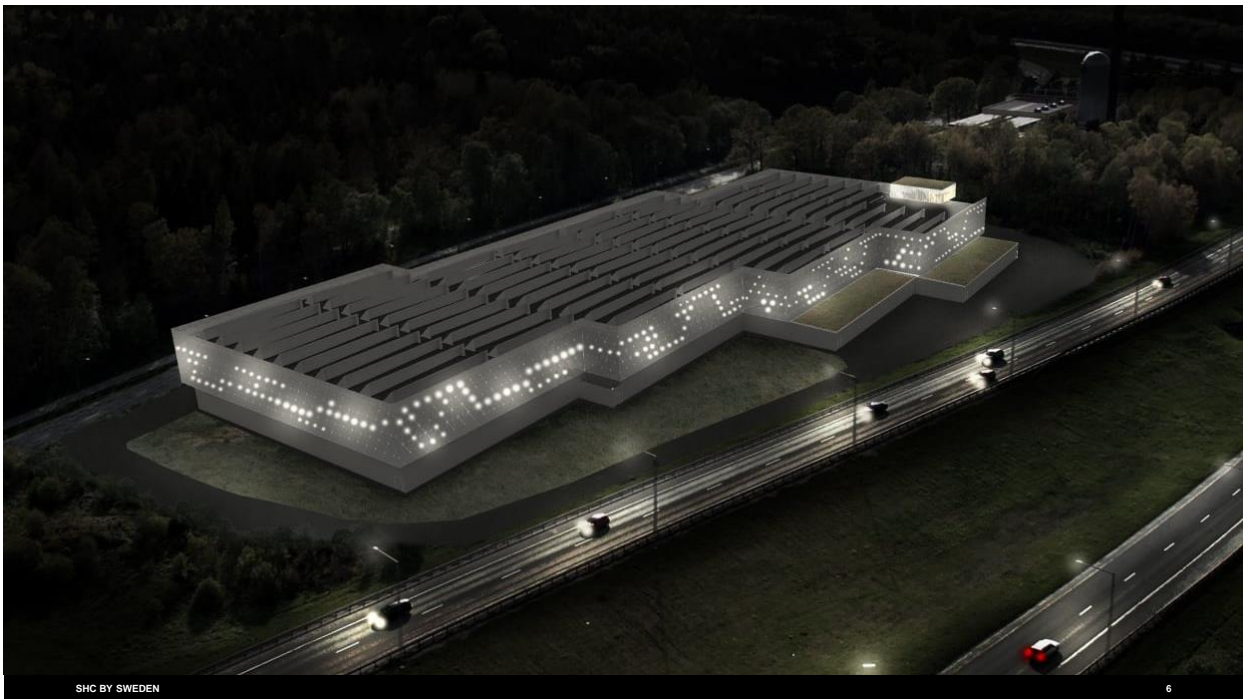


Joint venture, several municipalities, Norrenergi (owned by 2 municipalities, customers in 3)



State owned company, Vattenfall, in at least 9 municipalities

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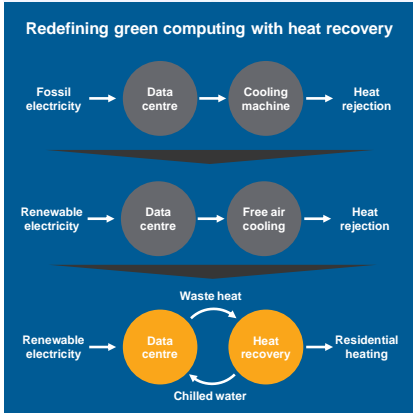


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## The data centre industry represents new circular opportunities for heat recovery

- Stockholm Data Parks (SDP) is an initiative by the City of Stockholm, district heating and cooling provider Stockholm Exergi, power grid operator Ellevio and dark fiber provider Stokab
- The initiative originates from a scheme started by Open District Heating in 2014, where companies were approached and asked if they wanted to sell excess or wasted heat
- To achieve heat recovery, SDP provides infrastructure elements at greenfield sites suited for data centre development
  - The data centre’s servers generate heat, which is captured by heat recovery technology
  - The heat is distributed by the existing 2,800km network of district heating pipes underneath Stockholm
- Beneficial to all stakeholders
  - The district heating provider is able to buy heat for a price lower than the cost of producing it
  - The data centre gets paid for something that is generally regarded as waste, while offering an increasingly sustainable service
  - The city can better achieve its objectives of transitioning to a sustainable energy system
  - Heat consumers get a more competitive and sustainable offer
- This business model can contribute to the heating of tens of thousands of homes while simultaneously making Stockholm an attractive hub for data centre development



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## Thank you for tuning in!



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Swedish Energy Agency



Julius Lundh, Programme Manager  
SHC by Sweden

Tune in to Energy Ireland 2020 Conference on the **8<sup>th</sup> of October** for when Paul Westin will dive deeper into the topic of *“The Swedish model for fossil free district heating”*. Find the programme and register here: <https://www.energyireland.ie/programme-2020/>

### Social media



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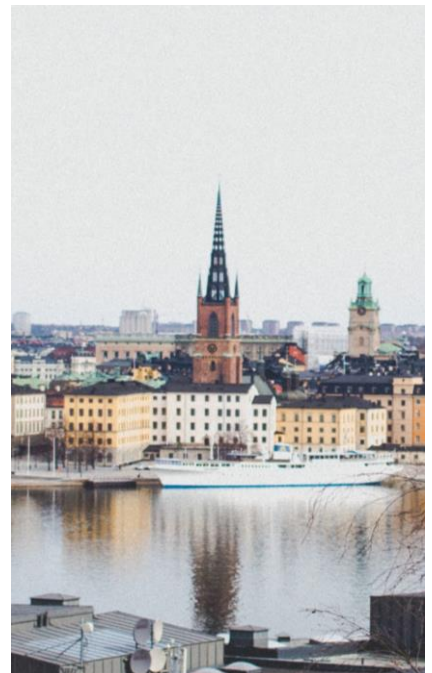
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