# Business Area Heat

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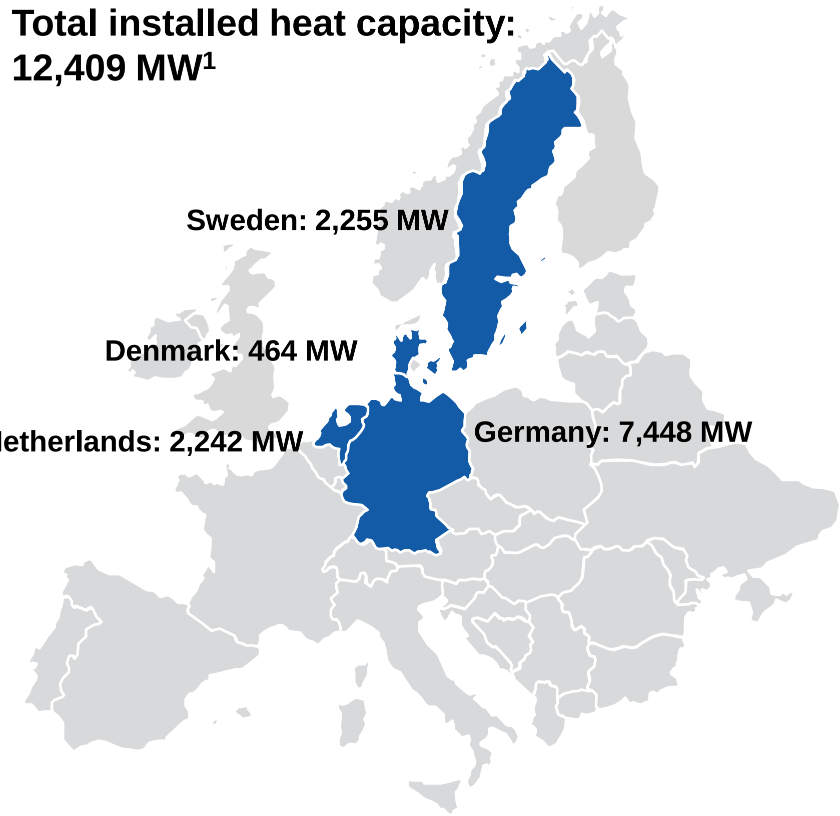
# Facts and figures – Business Area Heat

**Total installed heat capacity: 12,409 MW[1]**




|  | 2014 |
|---|---|
| District heating networks (km) | 5,500 |
| Sales of heat (TWh) | 24.1 |
| Number of employees (FTE) | ~3,900 |

Vattenfall is one of Europe's largest distributors of heat and is a leading player in district heating in Germany and one of the foremost in Sweden and in the Netherlands.

1) Utrecht , NL, (~480 MW) and Fynsværket, DK (~925 MW) divested. Divestments completed beginning of 2015.



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# BA Heat's largest plants

| CHP and heat plants | Country | Type | Installed capacity (MWth) | Installed capacity (MWel) | Fuel |
|---|---|---|---|---|---|
| Reuter West (Berlin) | GER | CHP | 790 | 564 | Hard coal |
| Diemen 33+34 | NL | CHP | 440 | 689 | Gas |
| Nordjyllandværket | DK | CHP | 464 | 684 | Hard coal |
| Mitte (Berlin) | GER | CHP | 670 | 444 | Gas |
| Lichterfelde[1] (Berlin) | GER | CHP | 650 | 432 | Gas |
| Uppsala | SWE | CHP | 856 | 130 | Biomass, waste, peat |

1) A new gas-fired CHP plant is under construction, which will replace the older facility. See below ongoing investment project.

| Other plants | Country | Type | Installed capacity (MWth) | Installed capacity (MWel) | Fuel |
|---|---|---|---|---|---|
| Moorburg (Hamburg) | GER | Electricity | - | 1,548 | Hard coal |
| Magnum | NL | Electricity | - | 1,311 | Gas (2/3 mothballed) |
| Hemweg 8+9 | NL | Electricity | - | 1,090 | Hard coal + gas |
| Velsen | NL | Electricity | - | 978 | Gas |

| Ongoing investment projects | Country | Type | Installed capacity (MWth) | Installed capacity (MWel) | Fuel |
|---|---|---|---|---|---|
| Lichterfelde (Berlin), under constr. | GER | CHP | 230 | 300 | Gas |



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# Growth of district heating is supported in all Vattenfall's markets – cities view district heating as a measure to reach climate ambitions

**Vattenfall's city stakeholders expect growth in district heating to realize their climate ambitions:**

**Berlin**
from 30% to 60% heating market in 2050

**Hamburg**
up to 500,000 connected DE[1] in 2020

**Uppsala**
25 GWh p.a. until 2019

**Amsterdam**
from 60,000 to 240,000 DE in 2040

**Arnhem/Nijmegen**
up to 90,000 connected DE in 2030

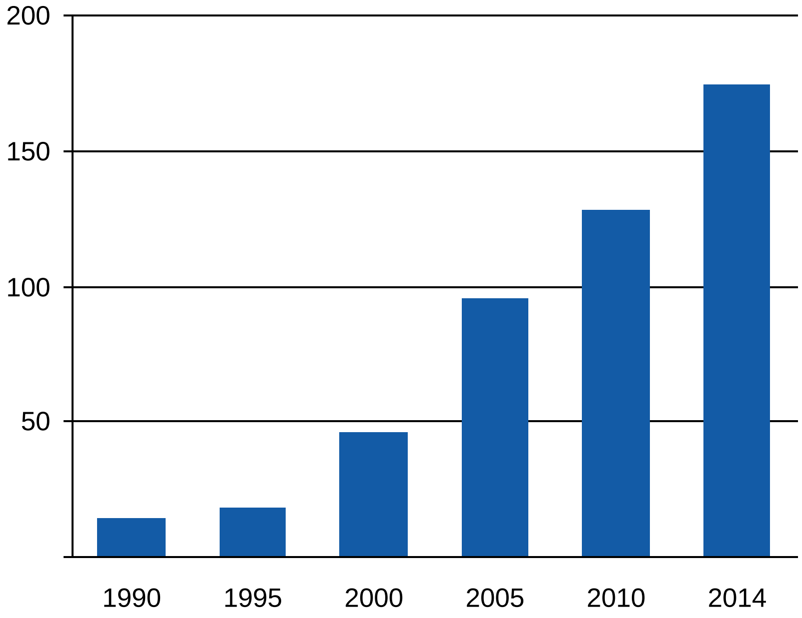
**Rotterdam**
up to 25,000 connected DE in 2025

1) DE =dwelling equivalents


Vattenfall is the market leader in district heating in Berlin, Hamburg, Amsterdam/Almere, Arnhem/Nijmegen and Uppsala

# Vattenfall has been early positioned in the growth area of distributed generation in Germany

## Connected customers in distributed generation business Germany (MWth)




## Business highlights

- Vattenfall is active in decentral energy supply via small-scale CHPs, boilers and remote reader mainly via energy delivering contracting
- Business in Berlin and Hamburg has been gradually built up leveraging past market growth phases (e.g. KWKG 2011) to current capacity of 180 $MW_{th}$
- Vattenfall has become a leading player in Germany's largest heat markets Berlin and Hamburg



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# Focus areas

**… 24/7 comfort and climate- partner of choice for customers & communities**

| Challenges/Opportunities | Focus areas |
|---|---|
| • Declining heat demand due to energy efficiency measures<br>• Growth of district heating market share in the Netherlands and Germany<br>• Slower demand decrease of district heating in Sweden compared to overall heat market<br>• Revision of CHP Act in Germany ongoing | • Connect with customers and stakeholders<br>• Create profitable growth with customers<br>• Shape future portfolio<br>• Improve operational and financial performance |



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