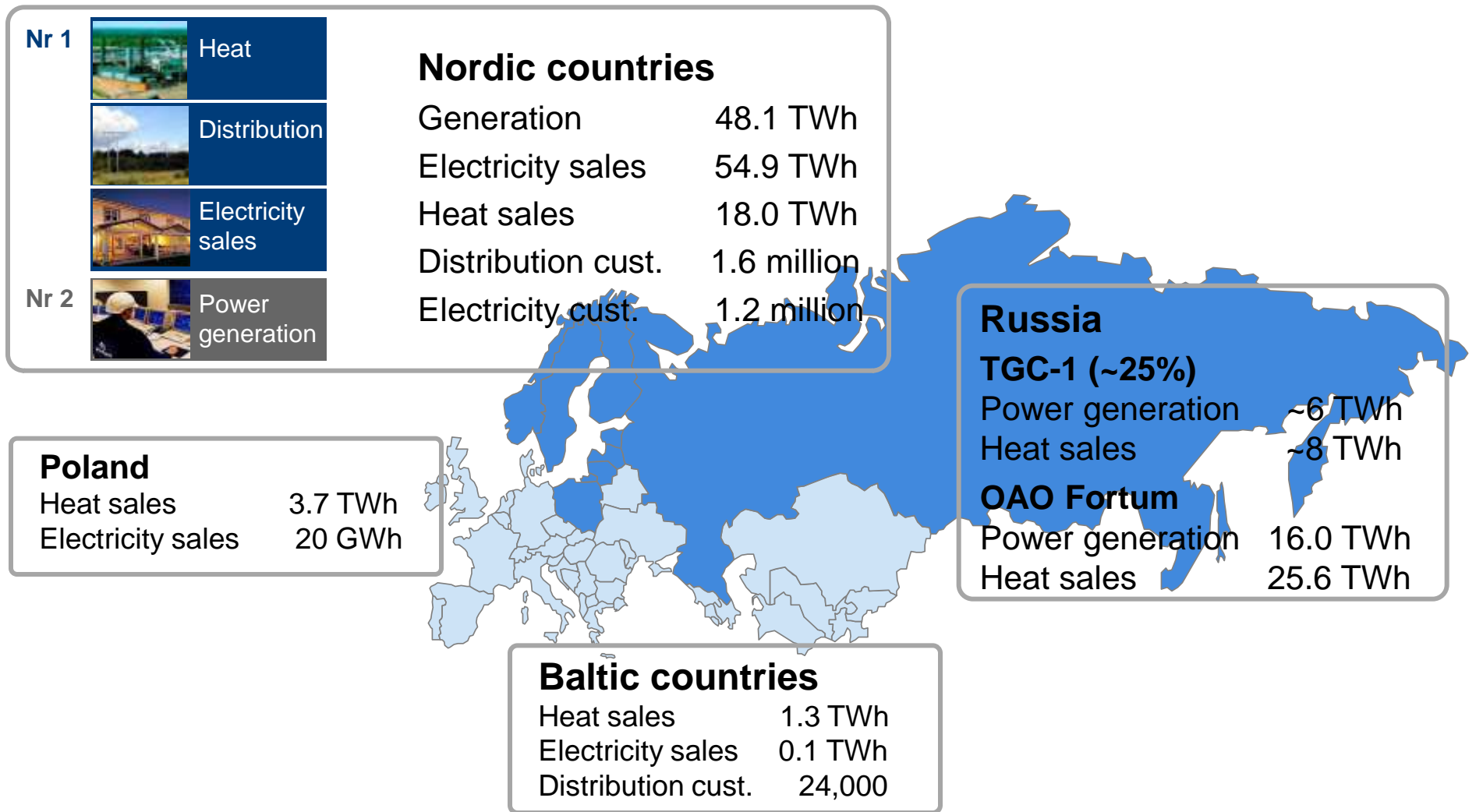


A blurred photograph of a busy indoor space, likely a conference or exhibition hall. Several people are walking away from the camera, carrying bright green bags. The scene is out of focus, with soft bokeh lights from the ceiling fixtures.

Your energy partner

Belgrade, 7th of June 2010

# Our geographical presence today



# Fortum is committed to sustainability

- Fortum's commitment to sustainable development is expressed in the company's Core Purpose and vision statement
- We want to make sustainability a success factor for the company
- According to our Sustainability Agenda, we want to
  - provide sustainable energy solutions
  - be an enabler of a low-carbon society
  - be known as the responsible energy company



*Core purpose*

*Our energy improves  
life for present and  
future generations*

# Fortum is committed to reduce emissions

## **Commitment to reduce emissions, investments to:**

- energy efficiency
- renewable energy sources
- nuclear and clean coal technology
- R&D of new production technologies including wind, solar and wave energy

Share of renewable sources 40 % of electricity generation, 34 % of heat production

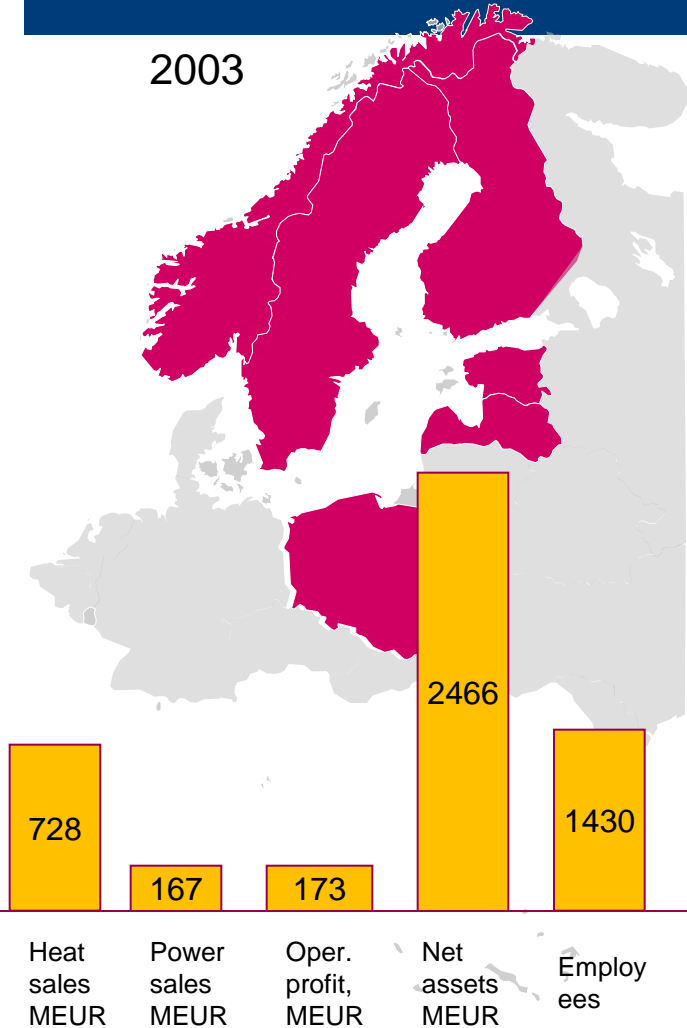
100 % environmental certification

**Long term goal: CO<sub>2</sub>-free energy company**



# Heat Division Development during 2003-2008

2003



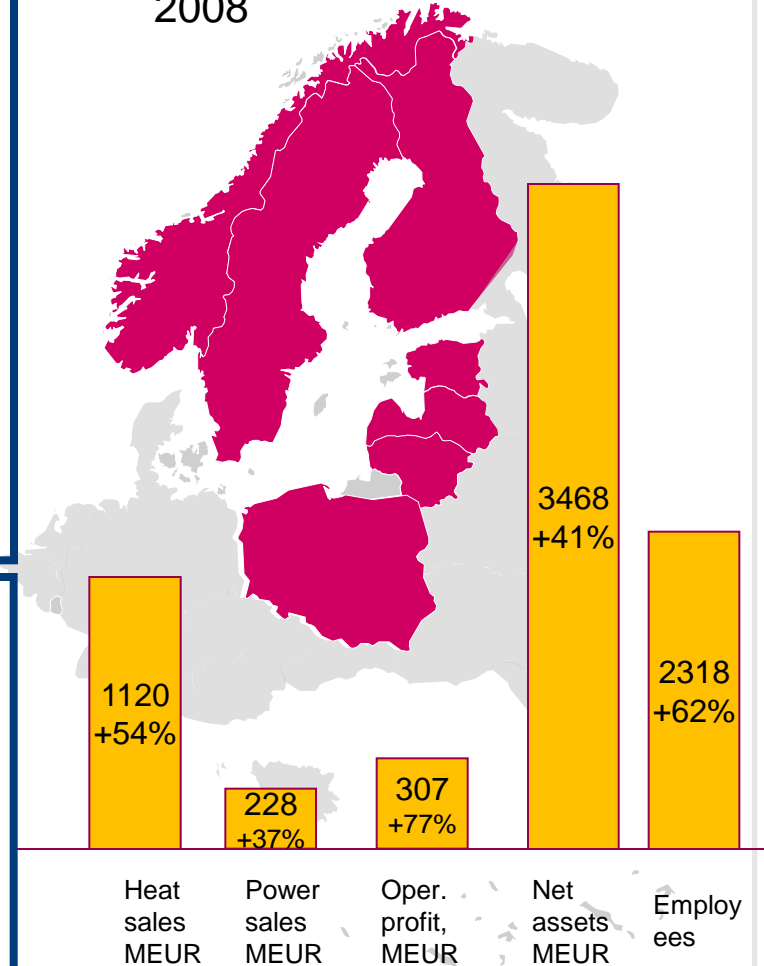
## Key acquisitions:

- Finland
  - Espoo and Joensuu DH
- Poland
  - DZT DH
  - Czestochowa DH
  - Wroclaw DH
  - Plock DH
  - Wojkowice DH
- Estonia
  - Tartu DH
  - Pärnu DH
- Lithuania
  - Suomijos Energija
  - Minority in Klaipėdos Energija DH
- Latvia
  - Jelgava DH

## Key divestments

- Finland
  - Hämeenlinna CHP
  - Jyväskylän Energiantuotanto Oy (CHP)
  - Tornio heat plant
  - Hyvinkää gas turbine
- Sweden
  - Bromölla
  - Sölvesborg
  - Optical fiber canalisation capacity

2008



# Heat Division

## Large Investment Program to New CHP's

### Projects finalized in 2009:

- **Estonia, Tartu:** Biofuel and peat fired CHP plant. 25 MWe/52 MWt
- **Latvia, Jelgava:** Gas engine CHP plant. 4 MWe/5 MWt
- **Suomenoja, Finland:** Gas fired CHP plant. 234MWe/214MWt

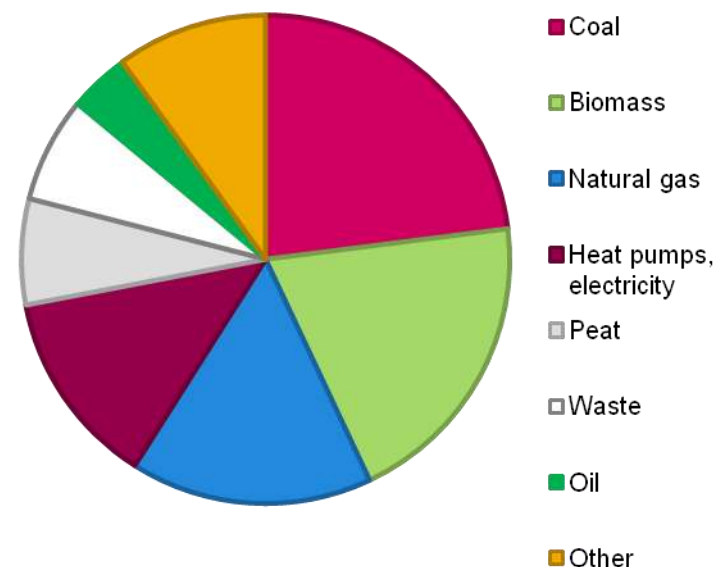
### Projects under construction:

- **Poland, Czestochowa:** Coal and biofuel fired CHP plant. 64 MWe/120 MWt (ready 2010).
- **Estonia, Pärnu:** Biofuel and peat fired CHP plant. 24 MWe/45 MWt (ready 2011).
- **Klaipeda, Lithuania:** Waste fired CHP plant 20 MWe/50MWt (ready 2013)

### Projects under planning:

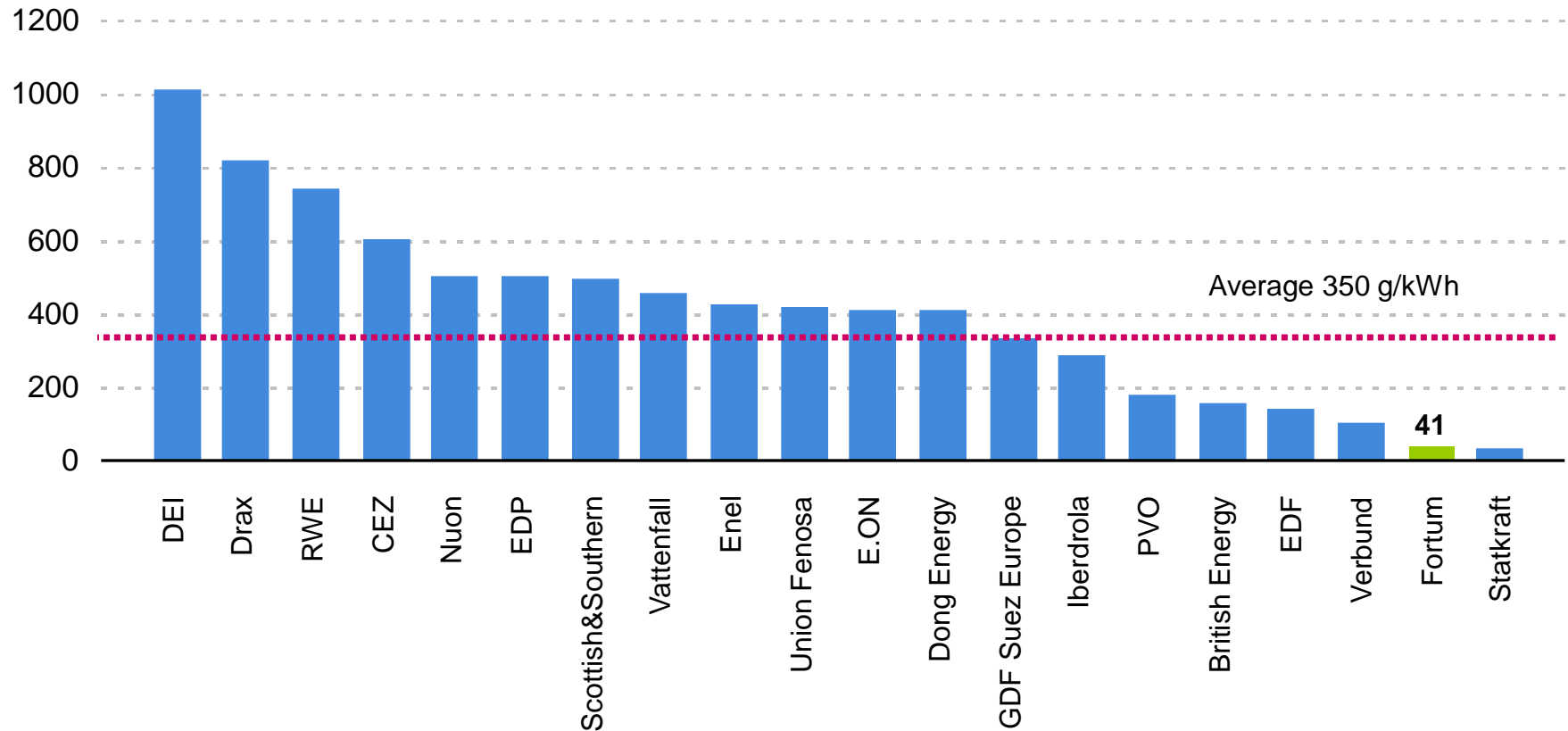
Värtan bio CHP, Sweden  
Järvenpää bio CHP, Finland  
Brista waste CHP, Sweden  
Wroclaw coal/waste CHP, Poland  
Jelgava bio/waste CHP, Latvia

### Fuels used in heat production 2008



# Fortum's carbon exposure among the lowest in Europe

g CO<sub>2</sub>/kWh electricity, 2008



Source:  
PWC & Enerpresse, 2009  
Changement climatique et Électricité

# Fortum in Stockholm

## Public Private Partnership

**Fortum Värme** produces and sells environmentally oriented district heating, district cooling and electricity.

**Owned by Fortum and the City of Stockholm (PPP) in a 50/50 partnership.**

**The business is one of the main reasons that Stockholm today is one of the cleanest capitals in the world and recently was awarded the title “European Green Capital 2010” by the EC.**



An unusual site. The central parts of a major city without any smoking chimneys. 75% of the city's central parts use district heating.



# CITY OF STOCKHOLM

## Overall strategy

- Tighter city
- Located close to public transit
- Biking improvement
- Low energy
- Renewable energy
- Waste use – recycling
- Urban and green bands
- Vision 2030 – 150 000 more citizens

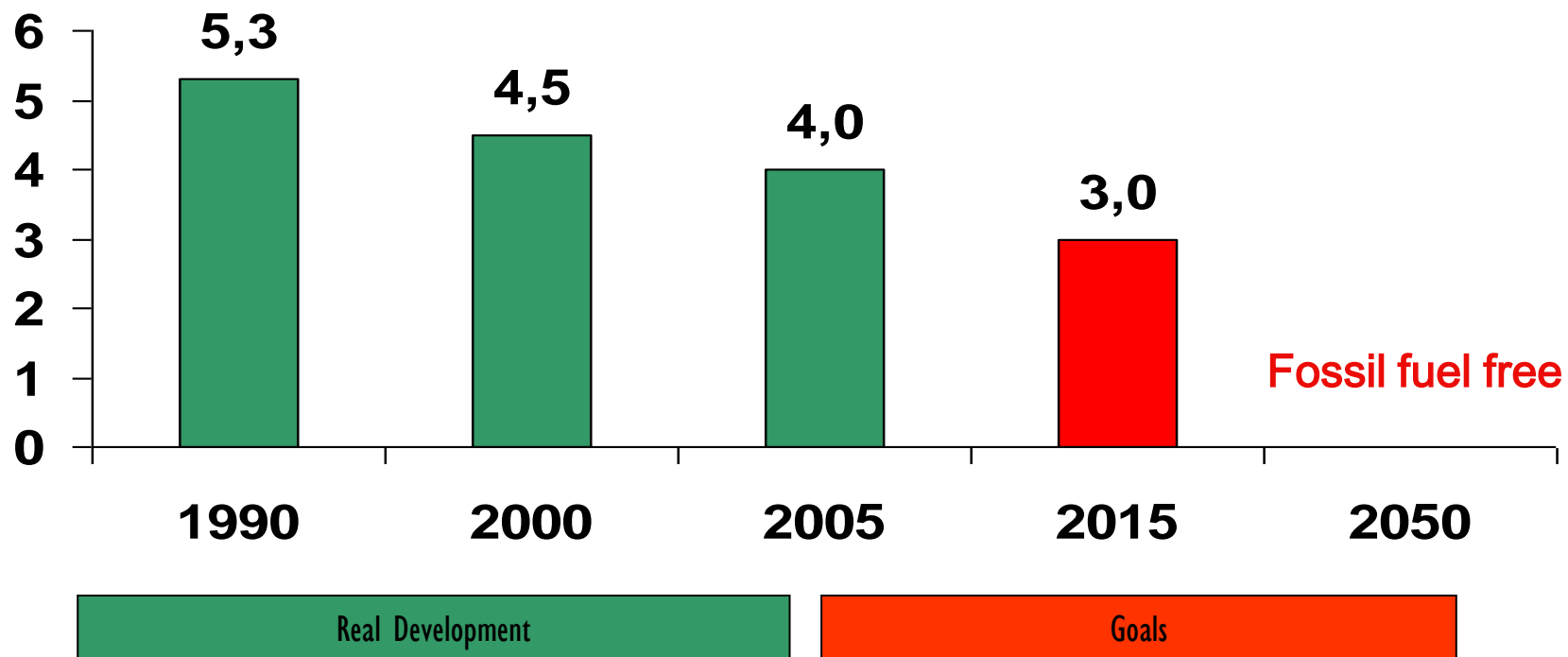




# CITY OF STOCKHOLM

## Goals and achievements

Tonnes CO<sub>2</sub>-ekv per capita



# District Heat in Stockholm

Heat production 9 TWh

District cooling 0.4 TWh

Electricity 1,6 TWh



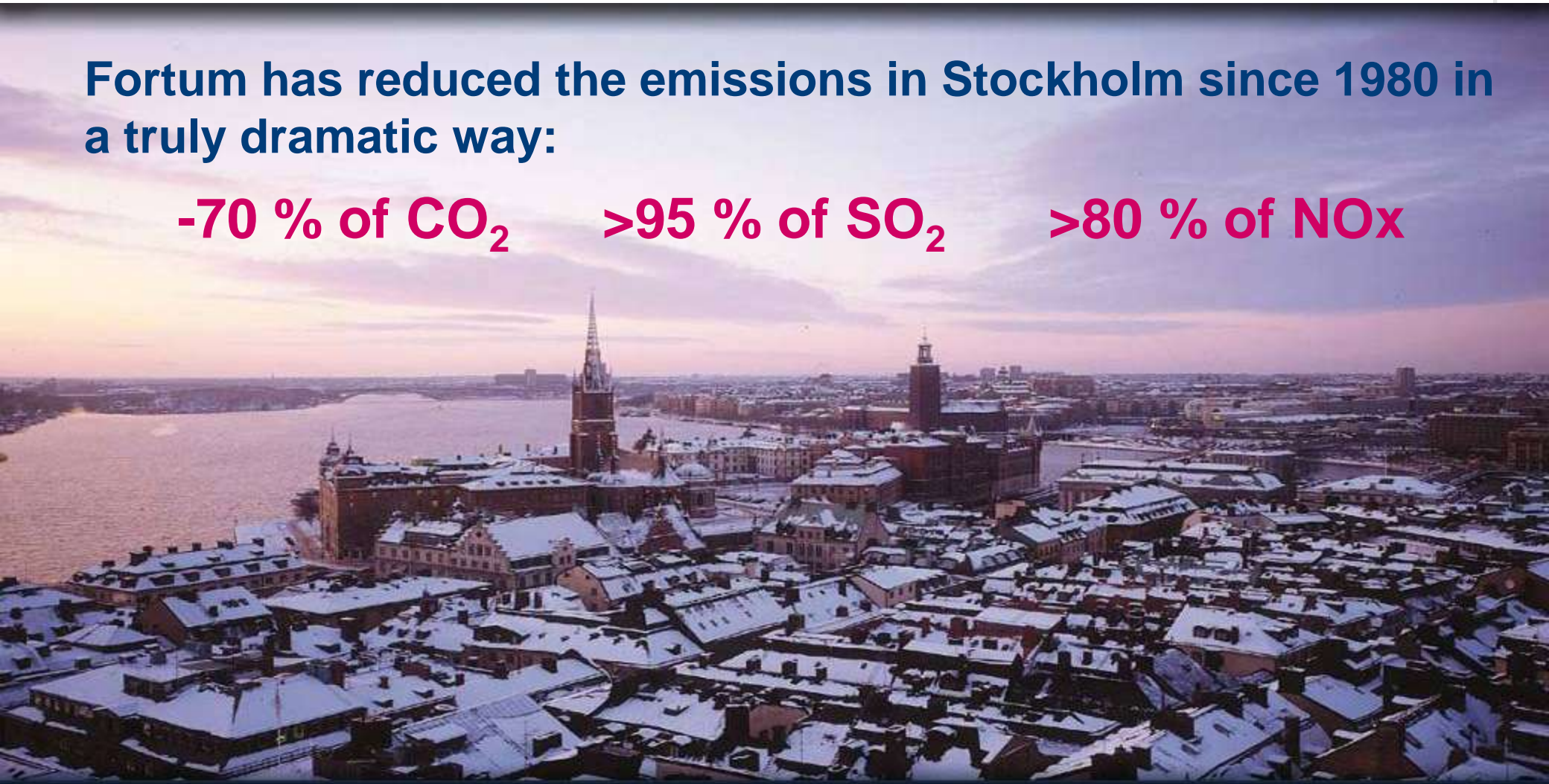
# District Heating - An Environmental Success Story

**Fortum has reduced the emissions in Stockholm since 1980 in a truly dramatic way:**

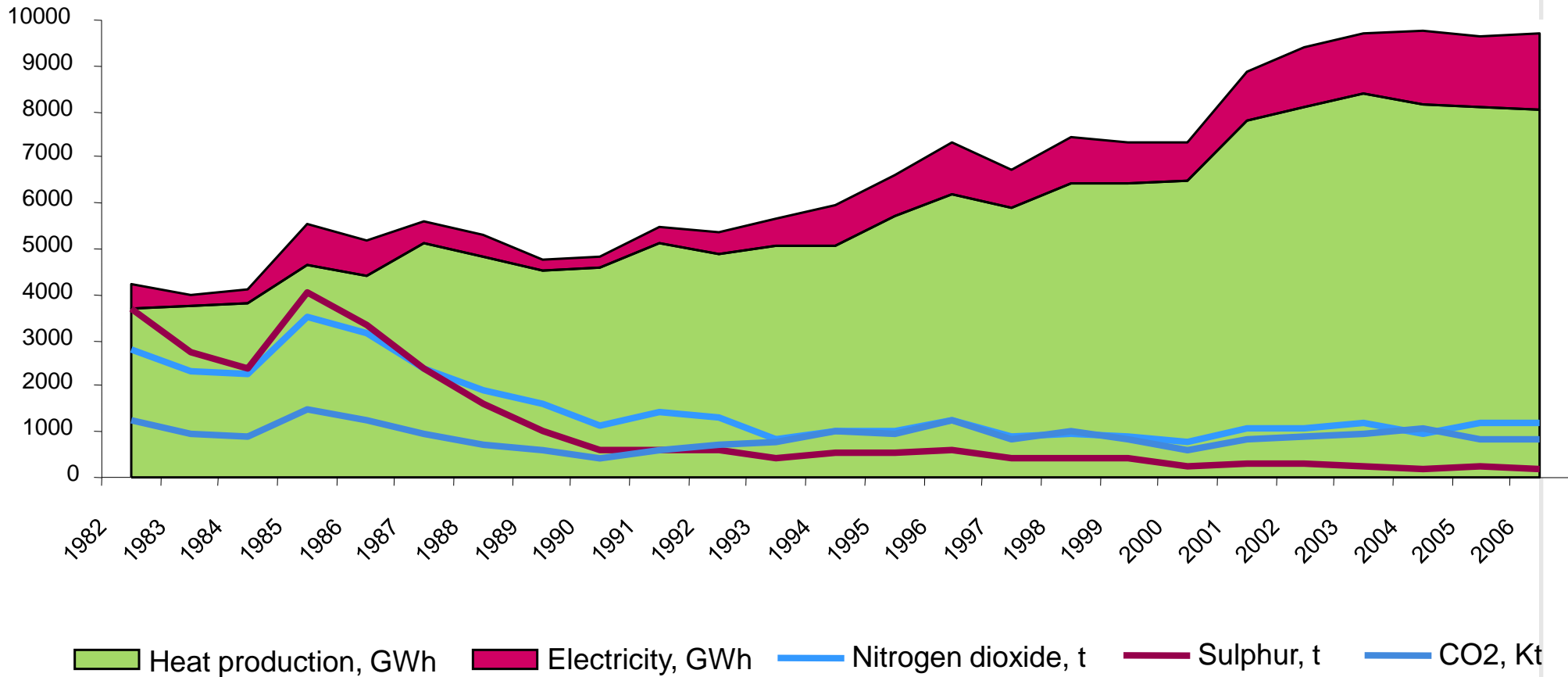
**-70 % of CO<sub>2</sub>**

**>95 % of SO<sub>2</sub>**

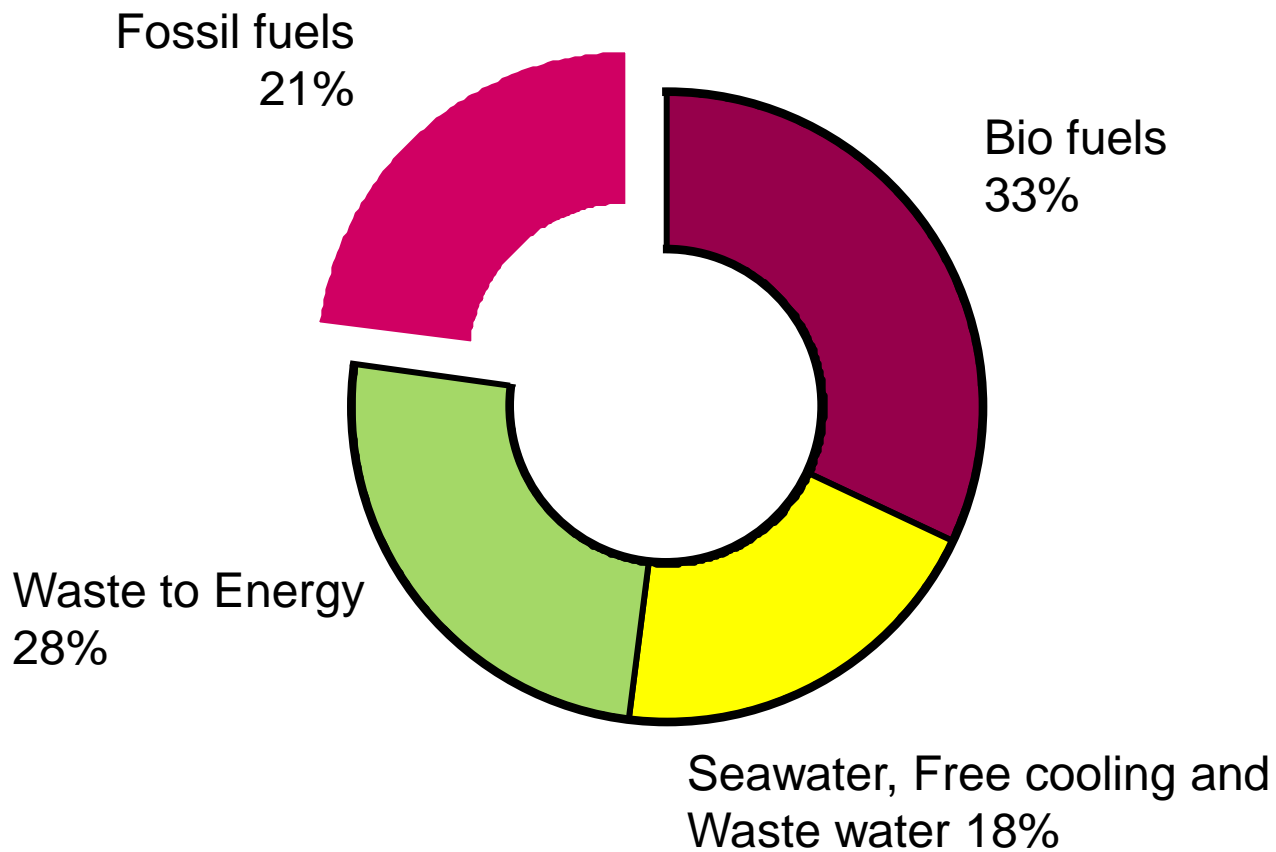
**>80 % of NO<sub>x</sub>**



# The Reduction of Emissions Has Been Made in a Growing Market



# Fortum Fuel Mix



# Stockholm

## Waste Management and Fortum Waste\* to Energy



**\* Municipal Solid Waste & Treated Waste Water**

# Fortum and Waste to Energy

## Waste as a Resource

**Every year Stockholm inhabitants produce 235 000 ton of waste which is used as fuel for production of district heat and electricity in the Högdalen plant.**

**Each Stockholmer produce abt. 300 kg of waste for incineration.**



# Fuel

## Högdalen Waste to Energy CHP Plant

### Waste volume:

- Residential waste 500 000 ton/a
- Industrial waste 200 000 ton/a



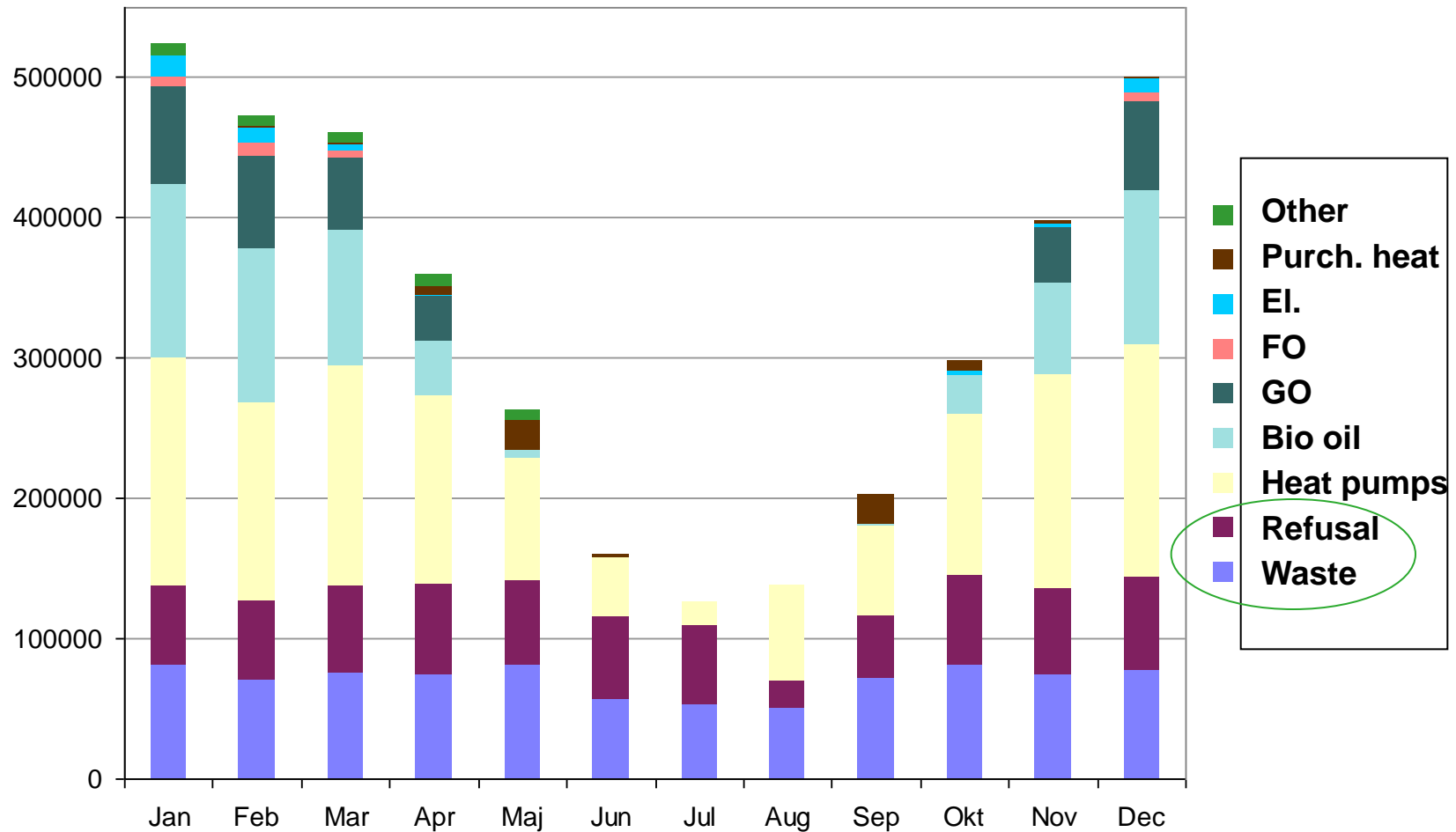
# Production

## Högdalen Waste to Energy CHP Plant

Annual Energy Production: 2.2 TWh



# Stockholm Southern District Production mix



# Högdalen Plant and the Environment

- Advanced Flue Gas Treatment System
- When producing power and heat, 90% of the energy content in the waste is utilized which consist mostly of bio fuel





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