Heating market Sweden

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- **1970:** ~ 90% fossil fuels
- **Today:** more than 80% renewables and recovered heat, district heating dominating (>50%)

### Heat demand, 2012, [100 TWh]

- Singel family houses: 37
- Multi family houses: 27
- Premises: 23
- Industry, conv heating: 7
- Weekend cottages: 5
Yearly economic turnover

Even if district heating is the dominating supply technology (>50%), from an economical perspective the market is dominated by electricity!
How did we get here

• *Yesterday*: Local environmental problems
  => local engagement  => local restrictions
  => national legislations (policy instruments)
• *Yesterday*. “One problem measures”, e.g. low sulphur oil
• *Today*. Combined measures, e.g. district heating with coupled production and waste incineration
• *Today*. Market competition under a political framework:
  – Taxes and other policy instruments, building regulations, customer references, ...
On the path towards a sustainable heating system...

- **Production:**
  - District heating
    - Biomass
    - Recovered heat
    - Waste incineration
    - Coupled electricity and heat production
  - Heat pumps
    - High efficiency heat pumps
  - Biopellets
- **Improved efficiency reduces the useful energy demand:**
  - 0.5 - 1.0 [% / year]
  - Very energy efficient new buildings
What will happen in the future?
- District heating

• Stagnating /decreasing deliveries – at what pace?
• Increasing competition in all segments!
• Increasing demand for environmental friendly solutions, resource effectiveness and total energy solutions!
• Regulations and policy instruments?
• Confidence from customers?
Increasing heating efficiency
- Specific useful energy demand

- **Single family houses**
  - trend 1995-2010: -0,1% per year

- **Multifamily houses**
  - trend 1995-2010: -0,6% per year

- **Commercial & public buildings**
  - trend 1995-2010: -0,9% per year

Average demand, depending of scenario
The competition

With the present level of policy instruments, the customer could always, through the assumptions, motivate a heat pump.
Environmental and resources effectiveness
- District heating

Less fossil fuels and more of biomass, waste and recovered energy
- Will that make the customers satisfied?
The answers from district heating

- The customers in focus
- Be the number one alternative for the environment
- Increased internal economic efficiency
- Strive towards local, national and international regulations that take the system consequences into consideration
- Always and in all situations explain the possibilities and advantages with district heating in the sustainable society
What could the future look like
- Four possible scenarios

- Slow development
- More energy efficient houses
- More individualised heating
- Combined solutions
Final energy demand

- **Slow development**
- **Efficient houses**
- **More individual**
- **Combined solutions**

**Legend:**
- **Oil + gas**
- **Biomass**
- **Electricity**
- **District heating**
Thank you!