



## **Borås Energi och Miljö**

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# OUR DREAM

## - A CITY FREE FROM FOSSIL FUELS

### Sweden



- 9 million People
- 450 000 km<sup>2</sup>
- Forest 53%
- Lakes & Rivers 9%
- European Union
- Nordic weather
- Swedish Language
- ~40 Universities
- World leading in R&D for a sustainable society

## Borås city

- Founded in 1621
- History as a textile city
- 100 000 inhabitants
- 13th city in Sweden
- A small city with a big vision: To become a sustainable society!



## About Borås Energy and Environment AB

Owners:	City of Borås
Sales:	€ 100 million
Number of employees:	225
District heating:	662 GWh
District cooling:	7,5 GWh
Electricity:	183 GWh
Vehicle fuel:	3 088 000 Nm <sup>3</sup>
Public filling stations:	3
Amount of processed waste:	210 000 tonnes
Delivered drinking water:	6 500 000 m <sup>3</sup>

*Valid for 2012.*



## Waste management in Sweden

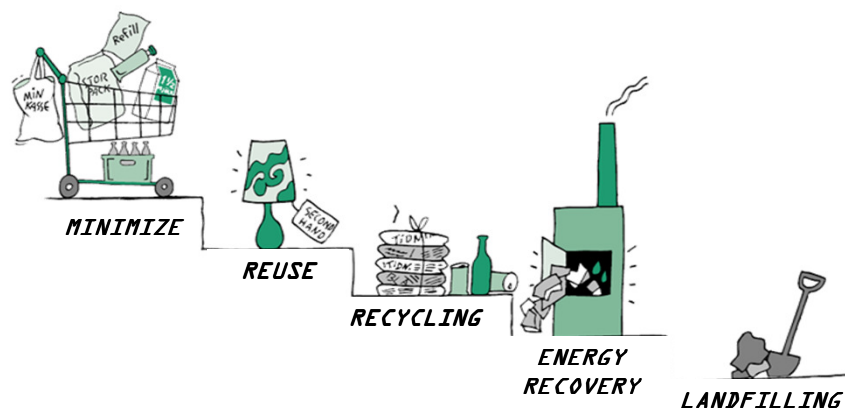
The EU's decision sets the framework for the Swedish waste management.

Parliamentary environmental objectives control the environmental aspect on waste management.

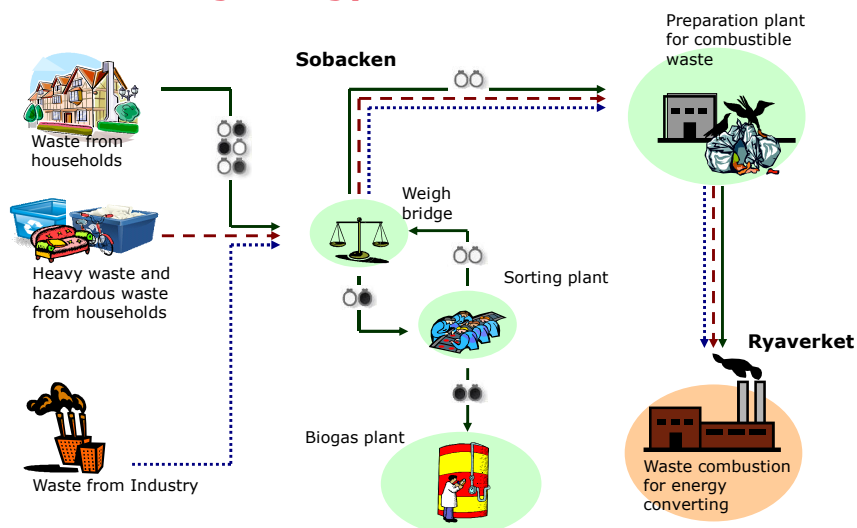
## Drivers for waste management in Sweden

1991	Municipal waste treatment plan
1994	Producer responsibility
1998	The local investment program (LIP)
2000	Landfilling tax (~ 27 EUR/tonne)
2002	Landfill ban on combustible waste
2005	Landfill ban extended to include all organic waste
2006	Landfill tax increased for the 3rd time (~ 47 EUR/tonne)
2006	Incineration tax (~ 8 - 47 EUR/tonne)

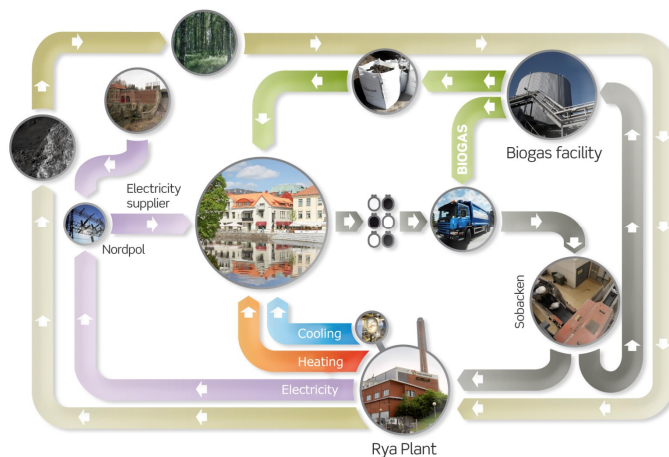
## The waste hierarchy



## Converting energy in Borås...



## Borås: the sustainable city



## Biogas

- Continued increase in deliveries – target 5 million Nm<sup>3</sup> within three years.
- A third public filling station was opened January 2011.





## Use for the gas

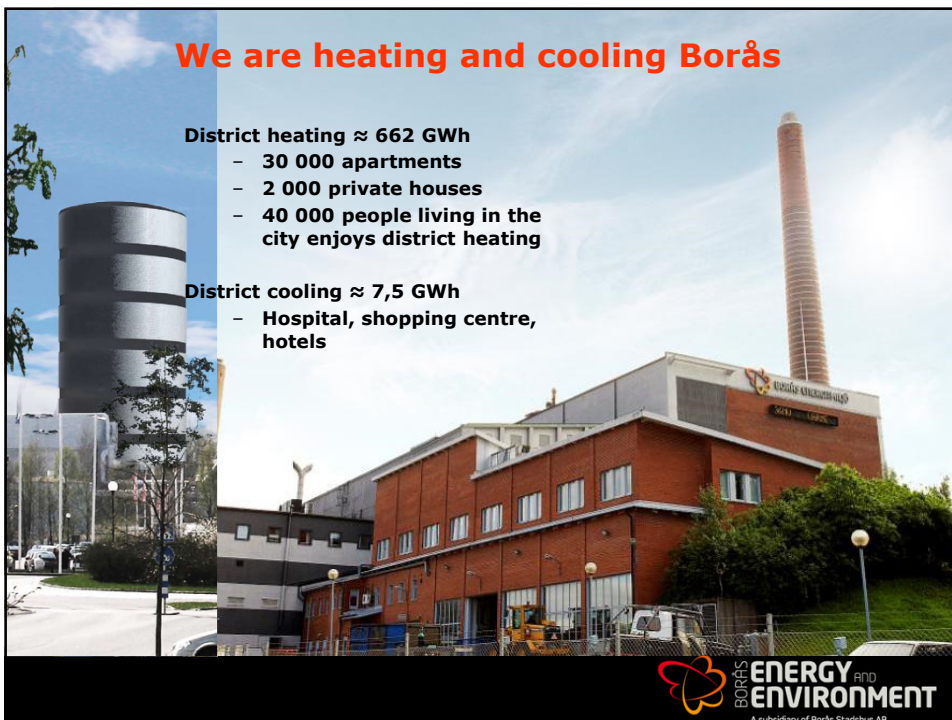
- 15 waste collection cars,
  - 50 local busses
- ...and an increasing number of company cars, Taxi, and private cars



## We are heating and cooling Borås

- District heating  $\approx$  662 GWh**
- 30 000 apartments
  - 2 000 private houses
  - 40 000 people living in the city enjoys district heating

- District cooling  $\approx$  7,5 GWh**
- Hospital, shopping centre, hotels



## District heating provides heat for Borås municipality

- 16% of single-family homes.
- 88% of apartment buildings.



## Reduce use of energy in Borås, through energy analyses and energy efficiency measuring

- Accredited control agency for energy declarations.
- KeepAnEye helps customers track their energy consumption.





## More renewable electricity

- Rebuilding turbines.
- Increasing renewable electricity by 50 GWh/year.



## Wind power – renewable electricity

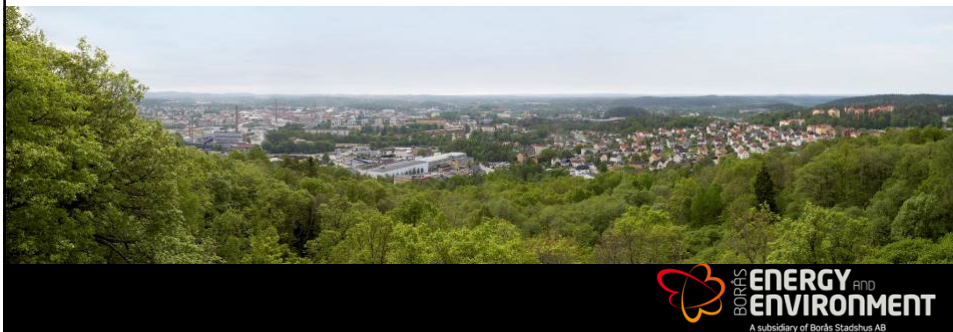
- Planning for two wind parks
- Pre study for a first step to start up 14 wind mills , with the capacity to produce 70 Gwh



## Research and Development

### Partners

- Dalkia/Veolia
- Waste Refinery
- University of Borås, University of Chalmers
- SP, Swedish Technical Research Centre
- ..... and many other companies



## Global network

Indonesia  
*Sleman/ Yogyakarta,  
Palu  
Makassar*

USA  
APWA

Brazil  
Moldavia  
Vietnam  
Mekong  
Russia



## Waste Recovery - development network.....

- City of Borås
- Borås Energi and Environment
- University of Borås
- SP, Swedish Technical Research Centre

Waste Recovery in Borås  
– International Partnership  
[www.wasterecovery.se](http://www.wasterecovery.se)



- SAKAB
- Uponor
- Metso
- FOV
- Navet
- KTH
- Sweco
- Biogas Systems

Partners to Waste Recovery Collaboration



## Biogas in Indonesia



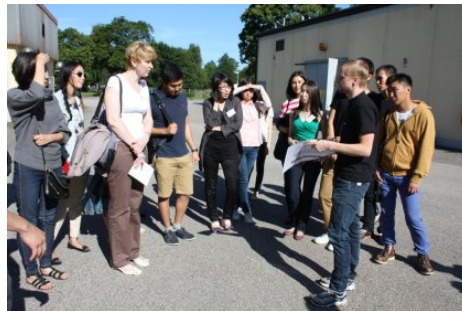
October 2010

February 2011



## Waste Recovery Academy

- A coalition between Boras Energy and Environment, University of Boras and SP Technical Research Institute of Sweden.
- Basic training program in waste identification, collecting, fractioning, sorting and energy converting.
- Indonesia, Palu region, Sulawesi
- Mekong Countries
- Brazil, St. Catharina region
- Russia, St. Petersburg region



Boras Energy and Environment, of Royal interest.....





## Global Sustainable Cities Network

Swedish cities chosen by Clean Energy Ministerial, CEM:

Waste to Energy:

- Borås
- Linköping
- Göteborg
- Umeå

Demand Side Management:

- Stockholm
- Malmö



**BORÅS ENERGY AND ENVIRONMENT**  
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## United Nations International Event

IPLA Conference in  
Boras September  
2013



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## Borås – a city free from fossil fuels



## Information campaigns for Borås residents

- Recycling and sorting information.
- Information campaign for schools.
- The summer's coolest job, Kanal Boris.
- Kretsloppet 18 September 2010 (fun run).



