



# Solid Waste Management City Profile

## BORÅS, Sweden

### City Information

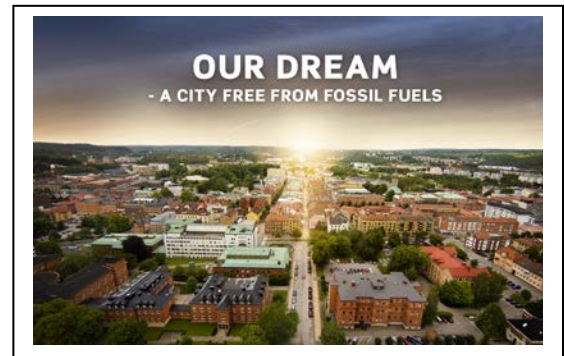
**Population:** 106,000

**Area (km<sup>2</sup>):** 973 km<sup>2</sup>

**Climate:** Moist Mid-Latitude Climates with Cold Winters

**Main Economic Activities:** Healthcare and trade

**City website:** <http://www.boras.se/>



### Country Information

**Population:** 9,658,301

**Area (km<sup>2</sup>):** 449,964 km<sup>2</sup>

#### **Economy and GNI/Capita**

[according to WB classification <http://data.worldbank.org/about/country-classifications> low, lower middle, upper middle and high income; GNI/Capita in USD]

High income; 59,139 (2013)

#### **Main Economic Activities**

Sweden is the seventh-richest country in the world in terms of GDP (gross domestic product) per capita and a high standard of living is experienced by its citizens. Sweden is an export-oriented mixed economy. Timber, hydropower and iron ore constitute the resource base of an economy with a heavy emphasis on foreign trade. Sweden's engineering sector accounts for 50% of output and exports, while

telecommunications, the automotive industry and the pharmaceutical industries are also of great importance.

The 20 largest (by turnover) registered Swedish companies in 2007 were Volvo, Ericsson, Vattenfall, Skanska, Sony Ericsson Mobile Communications AB, Svenska Cellulosa Aktiebolaget, Electrolux, Volvo Personvagnar, TeliaSonera, Sandvik, Scania, ICA, Hennes & Mauritz, IKEA, Nordea, Preem, Atlas Copco, Securitas, Nordstjernan and SKF. The vast majority of Sweden's industry is privately controlled, unlike many other industrialized Western countries.

#### **Government Agencies responsible for guidance on waste legislation**

Swedish Environmental Protection Agency is the government's central environmental authority. EPA supports the other authorities in their environmental efforts by:

- develop and disseminate knowledge
- formulate requirements and levels of ambition
- monitor and evaluate.

<http://www.swedishepa.se/>

**Ministry of Environment** is responsible for coordinating the Government's environmental policy and represents Sweden in the EU.

<http://www.government.se/sb/d/2066>

**The County Administrative Board** works with licensing, supervision, regulatory guidance and advice in the area of waste.

<http://www.lansstyrelsen.se/Sv/Pages/default.aspx>

## **MSW Sector Overview: City Level**

### **Classification of MSW**

Waste from households and waste from any other activity which, by its nature or composition, is similar to waste from households is considered MSW. The municipality (The City of Borås) is responsible for collection, handling and treatment. Although, commercial waste is to a relatively large amount treated in the same facilities as the household waste.

### **MSW Generation**

Total waste 25 500 tonnes/year, per capita 435 Kg/year

### **Collection Coverage and Type**

100 % of the MSW is collected and treated. There is a public system for collection and recycling of paper and packaging that the producers (FTI) are responsible for.

### **Waste Composition**

*Approximately (2012): Combustible 36%, Organic (food waste) 11%, Newspaper 8%, Paper packaging 2%, Plastic packaging 0,7%, Metal packaging 0,2%, Glass packaging 4%, Hazardous waste 2 %, WEEE 3%, Wood 10%, Garden waste 5%, Metal scrap 4%, other 7 %, residual (to landfill) 0,2%.*

### **Waste Management Practice**

In Borås around 55 % of the household waste is combusted with energy recovery (CHP plant with production of district heating, district cooling and electricity). 29 % of the total generated household waste is recycled (material recycling), 13 % is treated biologically with production of biogas as a vehicle fuel for the City's public busses, waste collecting trucks as well as being sold for private use. About 2,5 % is hazardous waste which is send for destruction. Less than 1 % goes for final disposal at the landfill.

### **Formal Waste Sector**

The City of Borås has assigned Borås Energy and Environment (Borås Energi och Miljö AB) to carry out all the waste management within the municipality. Borås Energy and Environment is a public company that is 100 % owned by the City of Borås. The company is working with the strategic planning and is responsible for the information and communication regarding the waste management. The company is also running the drinking water plant as well as the wastewater treatment plant. Borås Energy and Environment carries out the collection and owns the facilities for biological treatment, combustion, landfill and intermediate storage.

Waste that is covered by the producer's responsibility (newspaper, packaging, WEEE, tires, cars, batteries) is collected in the same system as other MSW, like for instance through Recycling stations and Recycling Centers, although most of the handling is carried out by the producers contractors.

### **Informal Waste Sector**

There is no noteworthy informal waste sector in the municipality.

### **Financing of MSW**

The budget for waste management is covered by a certain waste tax that every household pays to Borås Energy and Environment. The total budget is approximately 90 Million SEK /year and is not a significant part of the company's total budget since there are business areas that are run commercially e.g. BA Energy.

## MSW Sector Overview: Country Level

### General description and overview of common practice

*[e.g. approximately 85% of waste generated is not collected and disposed of in a sanitary manner. Improper disposal methods include burning, household burying, and open dumping along streams and roads]*

A very small part of waste generated in Sweden is not collected and disposed of in a sanitary manner.

### Waste Generation (per capita/year)

461,2 kg/capita 2013.

### Collection Coverage

*[% of population receiving collection services]*

Almost 100 % of the population in Sweden receives collection services. (Only a few exceptions.)

### Number of Landfills/MSW Disposal rate (tonnes/year)

33 300 tonnes of household waste were put on 47 landfills in 2013.

### Recycling Rate

*[if known; ideally for different fractions: metals, glass, plastics, paper & cardboard. If no figures are available descriptive information can be given]*

Recycling rate 2012:

Glass: 88,20 %

Cardboard: 75,60 %

Metal: 60 %

Plastic: 26,90 %

Newspaper: No numbers

(Source: <http://www.ftiab.se/180.html> )

### Waste management of Organic fraction (composting, anaerobic digestion)

*[Are practices like AD and composting in place and on what scale]*

711 450 tonnes of household waste were biologically treated in 2013 through anaerobic digestion or composting. Biological treatments stand for 16 % of the treatment of household waste.

### Energy Recovery Rate

*[Mention if energy is recovered from waste, and if so by what means (landfill gas; anaerobic digestion; thermal treatment etc.) and from what quantities of waste, if known.]*

Energy recovery through waste incineration is very common in Sweden. In 2013, 50,3 % of the household waste (2 235 930 tonnes) was incinerated.

# ***Plans, Strategies, Policies [including financial instruments] and National Objectives***

## ***City Level***

### **Aimed at improving Waste Management in General**

The City of Borås' Waste Management plan 2012-2020

(<http://www.borasem.se/vanstermeny/ommiljo/avfallsplan20122020.4.5315093d12da7c7ef17800020328.html>)

### **Aimed at addressing Climate change and reducing SLCPs through waste related activities**

The City of Borås' vision and strategy 2025

(<http://www.boras.se/download/18.3b4a384113d1b25cfa080003513/1390353852347/Broschyr.pdf>)

The City of Borås' Environmental objectives 2013-2016

(<http://miljobarometern.boras.se/content/docs/MK/Milj%C3%B6m%C3%A5l%202013-2016.pdf>)

The City of Borås' Energy- and climate strategy (Reviewed during 2014)

## ***Country Level***

### **Aimed at improving Waste Management in General**

The national waste plan 2012-2017

The EU's waste hierarchy

RECO Baltic 21 Tech - A common waste strategy for the 10 Baltic countries

National Environmental Objectives

### **Aimed at addressing Climate change and reducing SLCPs through waste related activities**

### **City Level**

#### **Legislation governing MSW management**

The City of Borås' local waste regulations

(<http://www.borasenergimiljo.se/download/18.577d2f0e139c3d461a0800013385/1390338262172/F%C3%B6reskrifter+f%C3%B6r+avfallshantering+2012-.pdf>)

#### **Guidance for MSW management (after legislation, before inspection activities)**

The City of Borås' Waste Management plan 2012-2020

(<http://www.borasem.se/vanstermeny/ommiljo/avfallsplan20122020.4.5315093d12da7c7ef17800020328.html>)

How to sort waste in Borås

(<http://www.borasenergimiljo.se/english/customer/sortingguide.4.63fbc1fa126f45b1ad78000138664.html>)

#### **Inspection activities/supervision and enforcement of legislation**

Certified through ISO 14001, ISO 9001 and OHSAS 18001

### **National Level**

#### **Legislation governing MSW management**

The Environmental Code (1998)

The waste decree (2011:927)

The Producers responsibility

#### **Guidance for MSW management (after legislation, before inspection activities)**

The Swedish Association of Local Authorities and Regions, SALAR, is an organization that represents and advocates for local government in Sweden. All of Sweden's municipalities, county councils and regions are members of SALAR. The Swedish Waste Management and recycling association is another organization with 400 members from both the public and the private waste management and recycling sectors. Both organizations provide guidelines for their members.

#### **Inspection activities/supervision and enforcement of legislation**

Responsible for supervision of legislation for waste management is the Swedish Environmental Protection Agency.

## *Involvement to date in CCAC MSW Initiative*

Until 2014 the City of Borås has no involvement in CCAC MSW Initiative.

## *Current Projects or activities aimed at reducing SLCP Emissions*

The city of Borås and Borås Energy and Environment works together with the University of Borås and SP technical research center when it comes to international projects. The partnership is called Borås Waste Recovery. Our model is to use the public, private partnership, PPP, to be able to reach long term capacity building and sustainable solutions for the waste management.

Municipal partnership projects financed by the Swedish Development Cooperation Agency (SIDA) through ICLD, International Center for Local Democracy:

- Kota Palu, Indonesia (2012-2014)
- Kota Sleman, Indonesia (2012-2014)
- Kota Pontianak, Indonesia (2013)
- Da Nang, Vietnam (2013-2015)
- Ungheni, Moldova (2013)
- Orhei, Moldova (2013)

The aim is to build PPP between academia, research, public and private entities where the focus is to transfer knowledge and experience within sustainable waste management. Regarding the projects that run for 3 years, the objective is to build up strategic waste plans for the municipalities. The 1 year projects are pre-studies. The project in Kota Palu has also opened up to a part project where a Swedish company (Biogas Systems AB) have delivered equipment for and build up a plant for landfill gas extraction where the gas is used to produce electricity. This project was financed by the Swedish Agency for Economic and Regional Growth together with the city of Palu (<http://projektbank.tillvaxtverket.se/projektbanken#page=a0025>).

Other projects:

Blumenau, Region of Santa Catarina, Brazil. A two week's training program in sustainable waste management was carried out by Borås Waste Recovery during 2012 for managers and technicians in 14 municipalities (AMMVI) of Santa Catarina. The cooperation resulted in an application and project through Sweden's Innovation Agency, VINNOVA, during 2013. The [project](#) focused on building a network and knowledge within the waste management sector.

Santiago, Chile. A discussion has been going on aiming to find the right project proposal and financing to be able to cooperate. Two persons from Borås Energy and Environment joined the Expo URBANA, International seminar for sustainable societies in Santiago de Chile, 9<sup>th</sup>-12<sup>th</sup> of October 2013, to present Borås.

Quito, Ecuador. Discussions are ongoing on project proposals and financing. Fact finding trip is planned to 14<sup>th</sup>-21<sup>st</sup> of June 2014.

Moscow, Russia. In April 2013 Borås Energy and Environment's business developer in risk held a seminar regarding our business and approach, the development and the trends affecting the future. This was at an expo in Moscow where managers from different Russian Energy companies was represented. So far there haven't been any more activities with Russia.

Pasig city, Philippines. Discussions are ongoing on project proposals and financing. MoU has been signed between Borås Waste Recovery and Pasig city.

## Key Stakeholders

City of Borås

Borås Energy and Environment

University of Borås

SP, technical research institute of Sweden

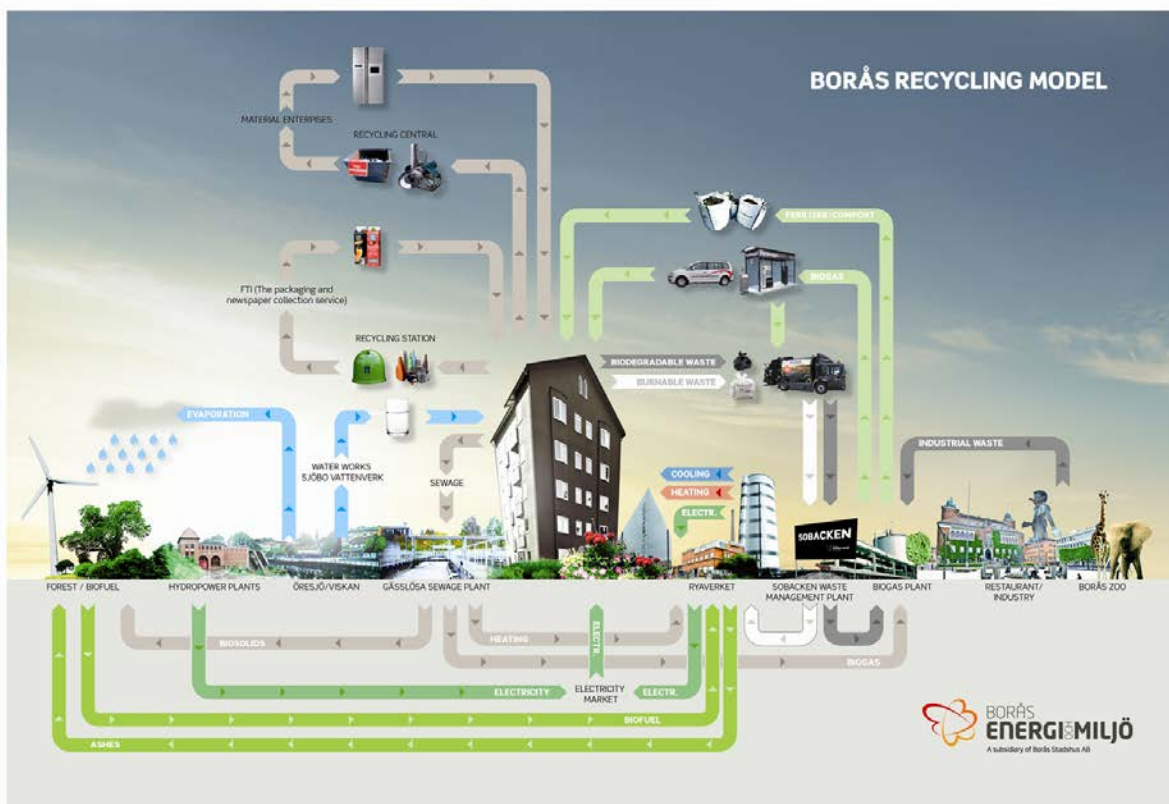
<http://www.boras.se/>

<http://www.borasem.se/>

<http://www.hb.se/>

<http://www.sp.se/sv/Sidor/default.aspx>

## Additional useful information



Areas in which Borås can provide assistance and cooperation

- General knowledge transfer in the area of sustainable solid waste management

Climate and Clean Air Coalition Municipal Solid Waste Initiative

<http://waste.ccacoalition.org/>



- Support to strategic long-term planning of waste management
- Support for triple helix cooperation (that is cooperation between different organization and institutions)
- Treatment methods of organic waste for the production of biogas
- Incineration of waste for the production of heat and electricity

## Contacts

### MSW Initiative City Lead

### MSW Initiative City Representative

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