



# 2011 Survey of resource efficiency policies in EEA member and cooperating countries

**COUNTRY PROFILE:**

# Sweden



Country information on resource efficiency policies,  
instruments, objectives, targets and indicators,  
institutional setup and information needs

**May 2011**

**This country profile is based on the information provided by Eva Ahlner from the Climate Change Department, Swedish EPA and Annica Carlsson from the Environmental Accounts, Statistics Sweden. The information is current as of February 2011.**

This country profile was prepared as part of the EEA-ETC/SCP 2011 survey of resource efficiency policies, which aims to collect, analyze and disseminate information about national experience in the development and implementation of resource efficiency policies in EEA member and collaborating countries. The work resulted in the following outcomes:

- **Short 'country profiles' (this document)** - self assessments prepared by countries, describing the current status of resource efficiency policies, including key strategies and action plans, policy objectives, instruments, targets and indicators used, institutional setup and information needs.
- **Summary report** - prepared by the EEA and ETC/SCP, the report reflects on trends, similarities and differences in policy responses, showcases selected policy initiatives from member countries and identifies information needs and knowledge gaps.
- A session on resource efficiency policies during the 2011 EIONET workshop to discuss further needs and to facilitate information sharing and experience exchange among EIONET members.

More information about resource efficiency policies, including an analytical report "Resource efficiency in Europe" and thirty one country profiles, can be found at:

<http://www.eea.europa.eu/resource-efficiency>

# 1. Resource use in Sweden – facts and figures

## 1.1 General facts and figures about the country



Source:  
<https://www.cia.gov/library/publications/the-world-factbook/index.html>

Population (projected inhabitants for 2010) [1]	9,340,682
➤ Percent of total EEA-32	1.6%
Surface area (km <sup>2</sup> ) [2]	450,295
➤ Percent of total EEA-32	7.9%
GDP at market prices – Purchasing Power Standard – Current Prices (Million Euro, 2009) [3]	260,409
➤ Percent of total EEA-32 (minus Liechtenstein)	2,0%
GDP per capita in Purchasing Power Standards (PPS) [4] EU27=100 (2009)	118
Urban population (rate of pop., 2009) [5]	84.6%
Main economic sectors and their share in total GDP (2009 est.) [2]	
Agriculture	1.7%
Industry	26.1%
Services	72.2%
EU accession date [6]	1.1.1995

Additional relevant background information on Sweden (and on 37 other EEA member and cooperating countries) can be found at the SOER2010 website:

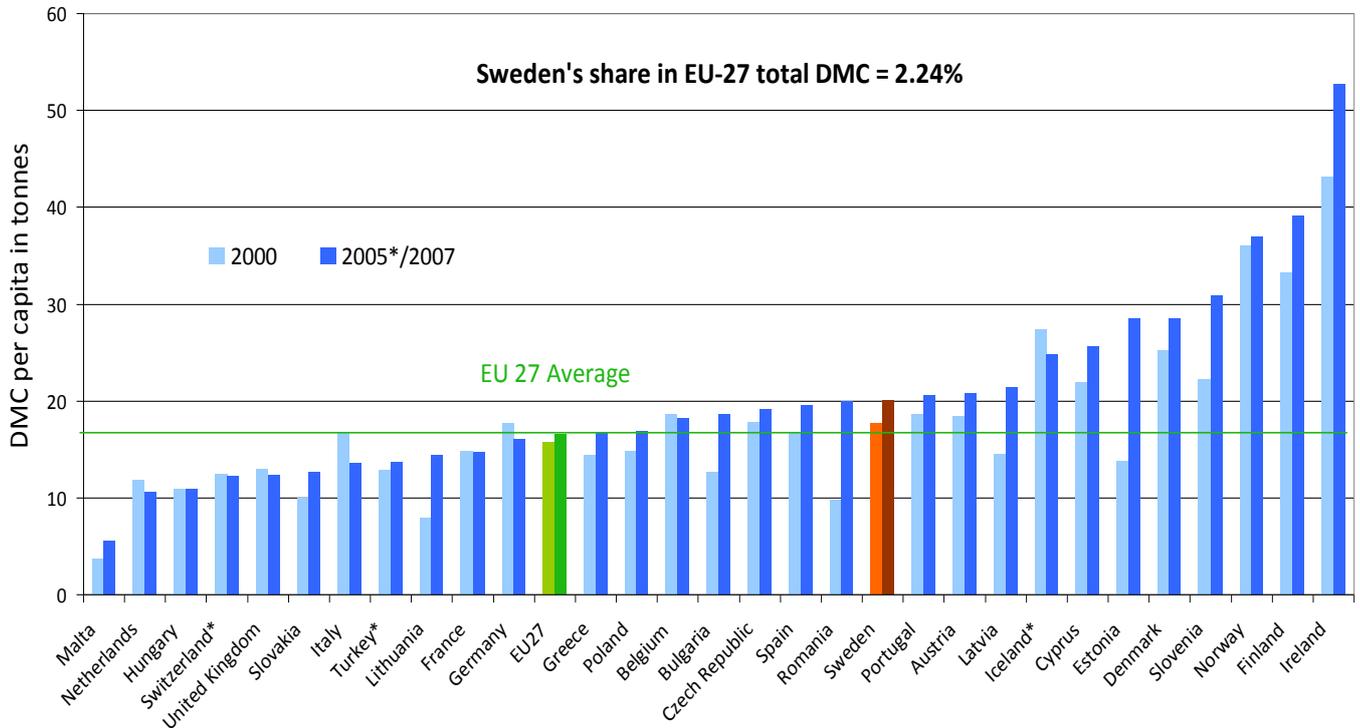
<http://www.eea.europa.eu/soer/countries/se>

Factsheet on national waste policies for Sweden is available at:

[http://scp.eionet.europa.eu/facts/factsheets\\_waste/2009\\_edition/factsheet?country=SE](http://scp.eionet.europa.eu/facts/factsheets_waste/2009_edition/factsheet?country=SE)

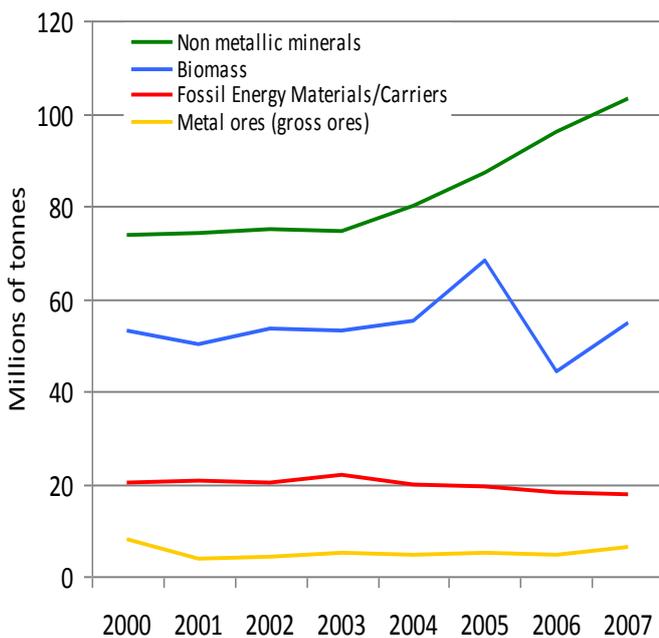
## 1.2 Facts and figures on resource efficiency for Sweden

### Use of resources per capita 2000 and 2007 [tonnes DMC/capita]



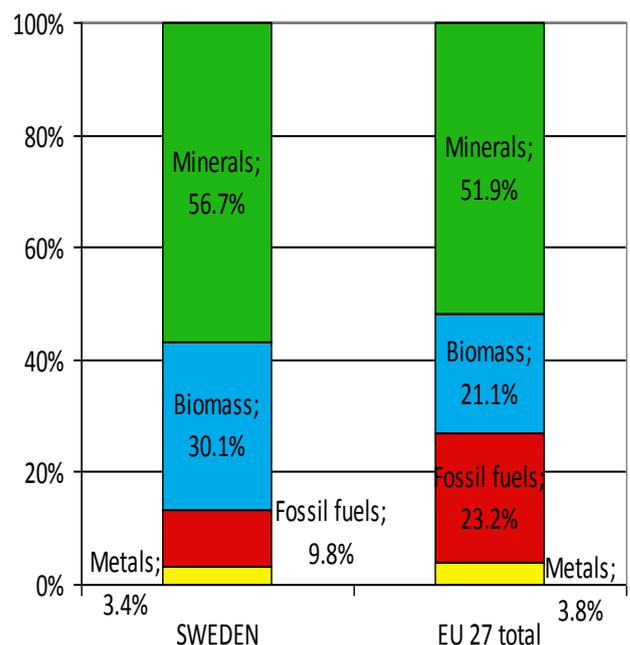
Source: Eurostat, OECD and Total Economy Database [7] \* = For these countries data is for 2000 and 2005.

### Domestic Material Consumption by category over time, Sweden



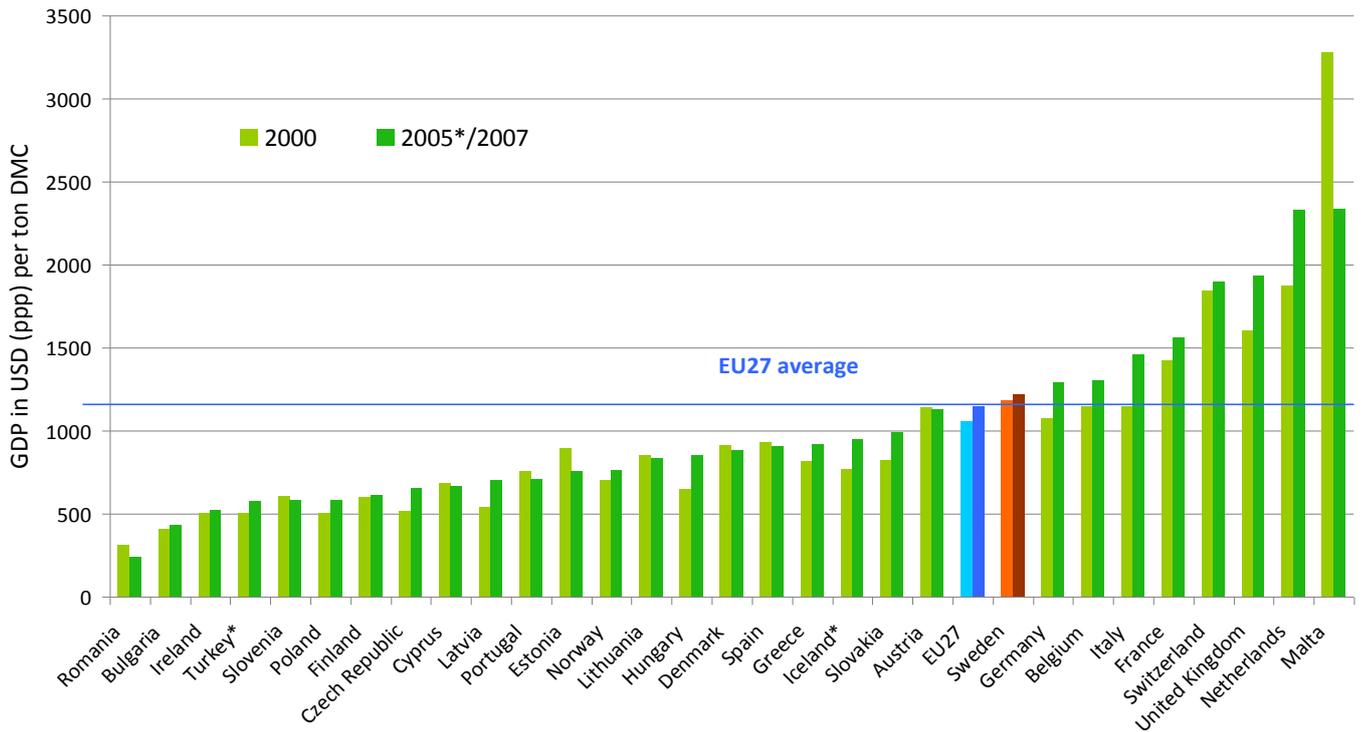
Source: Eurostat [8]

### Breakdown of DMC by type of materials (2007)



Source: Eurostat [8]

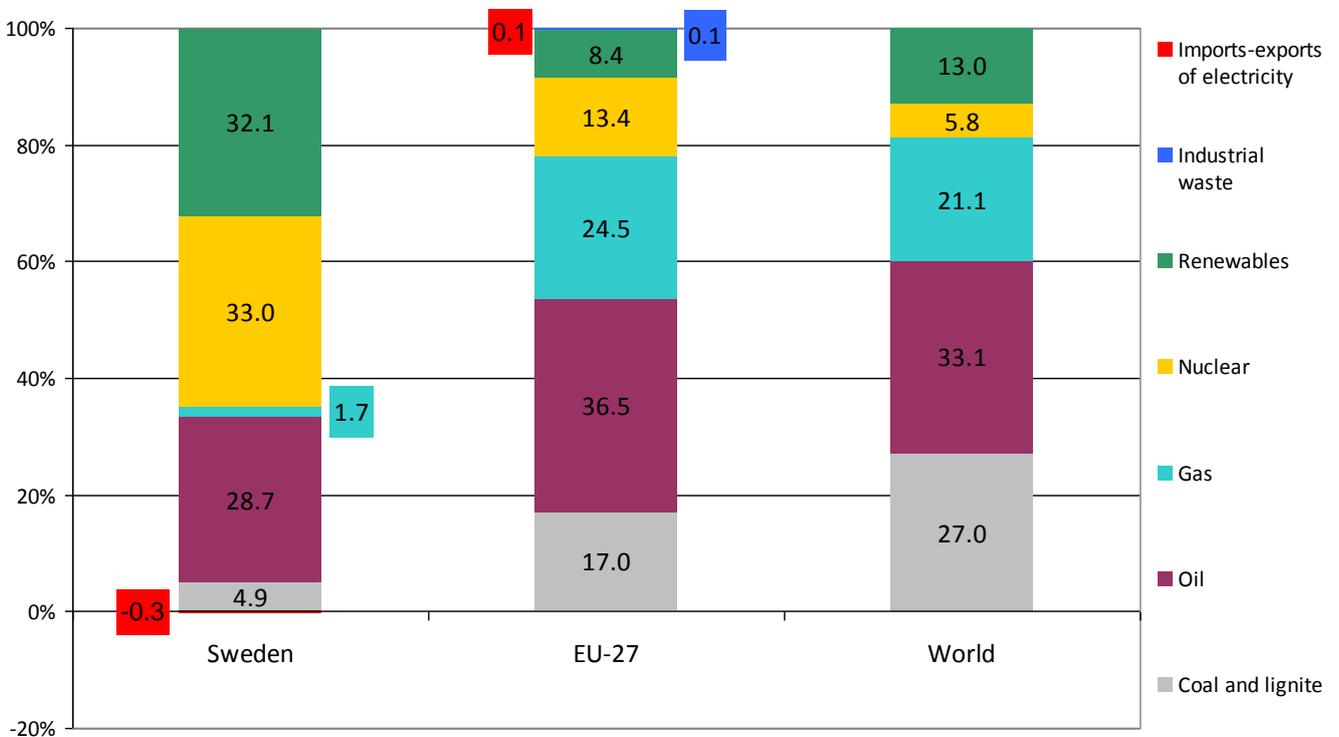
### Material productivity 2000 and 2007 [USD ppp/ton DMC]



Source: The Conference Board, Total Economy Database, Eurostat [9]

\* = For these countries data is for 2000 and 2005.

### Primary energy consumption



Source: Eurostat [10]

## 2. Evolution and main drivers for the development of resource efficiency policies

The general considerations of resources in i) the **Swedish Environmental Code** (introduced 1998), see chapter 3, and chapter 7, together with ii) the overall objective of Swedish environmental policy to solve the major environmental problems within one generation without causing increased impact on health and environment outside Sweden (introduced 2010) and iii) the work with the **16 Swedish Environmental Quality Objectives** (introduced 1999) have been key policy areas. In the environmental quality objectives there are, for example, interim targets for waste (generation) and resource management (e.g. extractions of natural gravel), as well as objectives for Sustainable forest and Good-quality groundwater. (The term interim targets will be dropped in the system of Environmental Quality Objectives instead milestone targets will be used).

To a large extent waste management and waste prevention have been main drivers in policies of resources.

One recent topic in focus is that Swedish consumption puts significant pressure on the environment in other countries. In its latest report, [de Facto 2010](#) (in Swedish only, English summary), the Environmental Objectives Council stressed that the negative pressures on the environment and human health resulting from consumption in Sweden need to be reduced, both inside and outside the country's borders.

Sweden historically have had plenty of natural resources, like iron and other metals, wood and hydropower at low costs, founding our national wealth, so security of supply in terms of access to international resources has not been a principle driver for resource efficiency in Sweden.

As mentioned a new overall generation goal have been introduced in the system of Environmental Quality Objectives. In its **Environmental Objectives Bill** in March 2010, the Swedish Government stated that the overall goal of environmental policy was to hand over to the next generation a society in which the major environmental problems in Sweden have been solved, and that this should be done without increasing environmental and health problems outside Sweden's borders. The Bill was approved by the Riksdag in June of the same year.

## 3. Overall Policy Approach for Resource Efficiency

The [Swedish Environmental Code](#) – package of environmental laws in Sweden – provides a general consideration of resources. For example: “The Environmental Code shall be applied in such a way as to ensure that; the use of land, water and the physical environment in general is such as to secure a long term good management in ecological, social, cultural and economic terms; and reuse and recycling, as well as other management of materials, raw materials and energy are encouraged with a view to establishing and maintaining natural cycles”.

Sweden has [16 Swedish Environmental Quality Objectives](#).

The environmental quality objectives describe what quality and state of the environment are sustainable in the long term. Several of the environmental objectives are interlinked to

management of resources. There are interim targets for waste (generation) and resource management (e.g. extractions of natural gravel), as well as objectives for sustainable forest and good-quality groundwater. One resource aspect of the environmental objective “A varied agricultural landscape” is the availability of arable land to promote continuous eco system services. This is, for example, in the interim target, “The farmed landscape will be managed in such a way as to minimize adverse environmental impacts and promote biodiversity”. Energy efficiency is an important cross cutting issue in the whole system of environmental quality objectives.

The systematic approach of the Environmental Quality Objectives covers several issues of resource efficiency, however not always with quantitative targets.

The Environmental Objectives system has been changed following a Parliamentary decision in June 2010, but the 16 environmental quality objectives have been kept. A generation goal has been introduced, defining the direction of the changes that need to occur within one generation (timeframe around 2020-2025) if the environmental quality objectives are to be met. Four out of the seven most important changes appointed are strongly connected to resource efficiency, namely “the eco-cycles are resource effective and as far as possible free from hazardous substances”, “a good housekeeping with resources”, “consumption patterns of products and services give raise to as little environmental and health problems as possible”.

Before the revision of the Environmental Quality Objective System a national strategy on resource efficiency and non-toxic substances and a strategy for management of land, water and the built environment were being developed in a cooperative action between Swedish agencies (2004-2010). Activities proposed, are now integrated in the regular responsibility of the agencies.

#### **4. Strategies or action plans to improve resource efficiency for individual economic sectors, products or product groups**

A new **National Waste Plan** is under preparation (to be finalised in 2011). Waste prevention generated in the resource intensive construction and demolition industry is one of the key issues. The existing [2005 National Waste Plan](#) had five general commitments:

1. Apply existing regulations and policy instruments and review their effect
2. Shift focus towards reducing the volume and hazardous nature of waste
3. Contribute to knowledge of toxic pollutants
4. Make waste separation straightforward for households
5. Expand Sweden’s involvement in the EU’s work on waste management

A **National Program for Waste Prevention** is under preparation (to be finalised in 2013). Key topics among all are to decrease food waste and increase recycling of textiles. A national liaison group for decrease of food waste has also been created with representatives from national authorities, retailers and wholesalers, food companies, consumers and the association of Swedish Waste Management.

The consumption perspective and especially the global environmental impact from Swedish consumption has been estimated for GHG, other emissions to air, chemicals, water use and land

use, but so far the result have not been used in any national strategy. For further information please see the [2010 project report](#).

## 5. Individual types of resources identified as priority for national or sector-specific resource efficiency policies

- Natural gravel, phosphorus and waste are high-lighted in the Swedish Environmental Quality Objectives.
- There is an obligation of reforestation on productive forest land in Sweden (SFS 2008:662).
- The existing goals on energy efficiency and the work to make that happen have influence on use of resources.
- The EU common targets on climate emissions, as well as the CLRTAP are also part of the more general resource agenda.

In the system for environmental quality objectives there are objectives of relevance for both biomass and soil protection. The environmental quality objective of **Sustainable Forests** for example reads;

- *“The value of forests and forest land for biological production must be protected, at the same time as biological diversity and cultural heritage and recreational assets are safeguarded.”*

Within the objective of **A non-toxic environment** two examples of targets of relevance for soil protection are:

- *“Studies will have been carried out and, where necessary, appropriate action will have been taken by the end of 2010 at all contaminated sites that pose an acute risk on direct exposure, and at contaminated sites that threaten important water sources or valuable natural environments, today or in the near future”*
- *“Between 2005 and 2010, measures will be implemented at a sufficiently large portion of the prioritized contaminated sites to ensure that the environmental problem as a whole can be solved by 2050 at the latest.”*

The environmental quality objective **A Varied Agricultural Landscape**:

- *“The value of the farmed landscape and agricultural land for biological production and food production must be protected, at the same time as biological diversity and cultural heritage assets are preserved and strengthened.”*

## 6. Strategic objectives, targets and indicators on resource efficiency

The overall objectives of Swedish environmental policy is to solve the major environmental problems within one generation (see also chapter 3), without causing increased impact on health and environment outside Sweden. This requires, among others that eco-cycles are resource-effective and do not contain hazardous chemicals, the eco-systems are recovering, biodiversity is preserved, the share of renewable energy is increasing and that consumption levels are kept within the global carrying capacity.

As mentioned in chapter 3, the Swedish Environmental Quality objectives include targets of relevance for resource efficiency. Management of waste has been in focus so far. In the environmental quality objective of **A good built environment** there are some sub targets that refer to management of waste, extraction of natural gravel, and use of phosphorus on productive land:

- By 2010 extraction of natural gravel in the country will not exceed 12 million tonnes per year.
- The quantity of waste disposed of to landfill, excluding mining waste, will be reduced by at least 50% by 2005 compared with 1994.
- By 2010 at least 50% of all household waste will be recycled through materials recovery, including biological treatment. By 2010 at least 35% of food waste from households, restaurants, caterers and retail premises will be recovered by means of biological treatment. This target relates to food waste separated at source for both home composting and centralized treatment.
- By 2010 food waste and comparable wastes from food processing plants etc. will be recovered by means of biological treatment. This target relates to waste that is not mixed with other wastes and that is of such a quality as to be suitable, following treatment, for recycling into crop production.
- By 2015 at least 60% of phosphorus compounds present in wastewater will be recovered for use on productive land. At least half of this amount should be returned to arable land.

The 16 Environmental Quality Objectives of Sweden cover a wide range of issues of which several are of relevance for resources and management of resources. The five bullets above were selected from the interim targets of the Environmental Quality Objectives as examples of targets or relevance for resource management. (The term interim targets will be dropped in the system of Environmental Quality Objectives instead milestone targets will be used).

The Swedish Environmental Quality Objectives are evaluated continually. The Environmental Objectives Portal currently presents some 100 [national indicators](#) tracking progress towards the environmental quality objectives and interim targets. A summary of the Council's overall assessment of progress towards the environmental quality objectives, is set out in the report de Facto 2010: Sweden's environmental objectives – Swedish consumption and global environmental pressures (Swedish only).

As most EU member countries, Sweden compile data on **Economy-Wide Material Flow Accounts** (EW-MFA). These data are used on the EU level for the indicator of Resource productivity. Yet, there are no national objectives or targets that are followed up with this type of indicator or data on EW-MFA. (No recent data presented at the website of Statistics Sweden. Data for Sweden is to be found at the website of [Eurostat](#)).

The environmental taxes on natural gravel and fossil fuel (mentioned above) are annually accounted for in the Swedish Environmental Accounts Environmental taxes in Sweden 1999-2009 - [Current prices, SEK million](#)

## 7. The institutional setup for the development and implementation of resource efficiency policies

The Swedish Environmental Protection Agency is responsible for co-ordinating the whole follow-up system of the Environmental Quality Objectives including provision of data.

A parliamentary committee has recently been introduced in the system. Its mission is to advise the government regarding the introduction of new goals and strategies based on a broad agreement between the members coming from all parties and experts representing government, industry and NGOs. The level of achievement of objectives is evaluated on a regular basis by the government.

The environmental objectives system consists of goals on three levels;

- A generational goal, defining the direction of the changes in society that need to occur within one generation if the environmental quality objectives are to be met. Decisions concerning this goal will be taken by the Riksdag.
- Environmental quality objectives, defining the state of the Swedish environment which environmental action is to result in. Decisions on the environmental quality objectives will be taken by the Riksdag.
- Milestone targets, which are steps on the way to achieving the generational goal and the environmental quality objectives. In the first instance, such targets will be decided by the Government. If it is evident that the Riksdag should decide, or if the Government considers it appropriate, milestone targets will be decided by the Riksdag.

For each of the 16 Environmental Quality Objectives there is a responsible authority. 10 out of 16 belong to the Swedish EPA. In the whole system of Swedish Environmental Quality Objectives there are 25 different authorities with individual responsibilities for part of the system.

Several inter-institutional committees / working groups lead or support work on resource use or resource efficiency.

## 8. Selected policy instruments or initiatives on resource efficiency presented in more detail

Waste and waste prevention have been in focus. There are for example several policies for reduction of waste (household) to landfill:

- A landfill tax was introduced in 2000, currently at 435 SEK/tonne (~\$55 or €40).
- There is a tax on household waste to incineration. The tax is calculated based on an assumed standard content of fossil carbon (87 to 508 SEK/tonne), depending on how much heat/electricity the plant generates.
- A ban on landfill of organic and combustible waste, since 2002 and 2005 (2001:512).
- All municipalities must develop municipal/regional waste management plans, including all waste streams and measures for waste prevention.
- To stimulate source separation there are differentiated fees for municipal waste collection.

For specific types of products there are producer responsibilities: Batteries (2008:834); Packaging (2006:1273); Paper/newsprint (194:1236); Tyres, cars/ELV (2007:185), WEEE (2005:209), Light bulbs and certain light fittings (2008:208).

There is a deposit-refund system for beverage containers (2005:220).

The Eco-design directive is implemented in Swedish legislation.

As introduced in chapter 2 and chapter 7, the pressure of Swedish consumption in other countries is one key concern.

The generational goal – the overall goal of Swedish environmental policy – defines the direction of the changes in society that need to occur within one generation if the country's environmental quality objectives are to be achieved. With that as a starting point, the generational goal is intended to guide environmental action at every level in society. One is that efforts to solve Sweden's environmental problems must not come at the price of environmental and health problems being exported to other countries. In a recent report from Swedish EPA is for example the Land required and the water consumption, both in Sweden and abroad, due to Swedish consumption were accounted for. An example is that between 30 and 50 per cent of all the land required to produce the food Sweden consumes is outside the country's borders and a large proportion of the water used by consumers in Sweden is 'hidden' in the products they consume.

### Research

The Swedish Environmental Protection Agency is founding a research programme on Towards Sustainable Waste Management. The purpose of the programme is to identify policy instruments and strategic decisions that contribute to the development of a more sustainable waste management. The research is carried out in an interdisciplinary network of Swedish researchers. The research program surveys existing as well as potential policy instruments; develops future scenarios illustrating how a more sustainable waste management can be designed. Furthermore, the research programme investigates systems for source separation and collection aiming to

develop knowledge that is needed to adapt these systems to consumers; organisations and companies; investigates the processes of the recycling industry aiming to improve their environmental performance. The primary target groups for the findings of **Towards Sustainable Waste Management** is the Swedish Environmental Protection Agency and other policymakers in the field of waste management at European, national, regional and local levels, recycling companies, waste management companies and R&D organisations in waste management.

A new research program on environment and consumption has been proposed by the Swedish EPA and is currently under preparation. According to the plans it will start in 2011 and continue for three years.

The idea of the **national liaison group on food waste** is to provide a network of contacts and exchanges between actors in the food chain in order to increase the awareness of food losses and what steps could be taken in order to reduce it. The work of the group aiming at collecting knowledge; organizing joint activities, avoids mixed messages, and duplication of work. The group consists for the moment of representatives from the Environmental Protection Agency, National Food Administration, Swedish Board of Agriculture, Consumer NGO's and Environmental NGO's, researchers from four Universities, food industry, retailers, restaurants, wholesalers and communicators (blogger), The technical research institute of Sweden (SP) and Stockholm International Water Institute (SIWI). A workshop was arranged in November 2010 on *How to prevent food waste from retailers and wholesalers*. During 2011 the group is planning a press release in order to encourage other actors to work more intensely with this issue. This will highlight the amounts of food that are being wasted, the environmental impact from the production and give examples on how different actors in the food chain can contribute to reduce their waste amounts.

## 9. Topics of interest and information needs for follow up work

- Strategic objectives, targets and indicators on resource efficiency.
- Outline a common structure for monitoring, reporting and knowledge base on resource efficiency policies in Europe.
- Another area could be policies for management of stocks of resources, for example metals, in society. This could as well include methods for identifying stocks of resources in society; both as potential source for loss of resources (diffuse emissions and future generation of waste). But also the importance of stocks as a potential for increased recycling of resources – (see for example UNEP 2010 Metal Stocks in Society, Scientific Synthesis. International Panel for Sustainable Resource Management).

## 10. References

### 10.1 Facts and figures about the country

[1] Eurostat, 2011 [demo\_pjan]

[http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=demo\\_pjan&lang=en](http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=demo_pjan&lang=en)

[2] CIA World Factbook (2009 est.)

<https://www.cia.gov/library/publications/the-world-factbook/index.html>

[3] Eurostat, 2011 [nama\_gdp\_c]

<http://appsso.eurostat.ec.europa.eu/nui/show.do>

[4] Eurostat 2011 [tsieb010]

<http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&language=en&pcode=tsieb010&plugin=0>

[5] World Bank, Migration and Remittances Factbook 2011

<http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTDECPROSPECTS/0,,contentMDK:21352016~pagePK:64165401~piPK:64165026~theSitePK:476883,00.html>

[6] European Commission 2008

[http://europa.eu/abc/12lessons/key\\_dates/index\\_en.htm](http://europa.eu/abc/12lessons/key_dates/index_en.htm) visited December 15, 2008

[7] Eurostat, OECD and Total Economy Database

DMC data from Eurostat Database, Material Flow Accounts, and OECD, Population data from Eurostat Database, Population, and The Conference Board — Total Economy Database, September 2010. [www.conference-board.org/data/economydatabase/](http://www.conference-board.org/data/economydatabase/)

[8] Eurostat

Material flow accounts, env\_ac\_mfa, uploaded June 2010

[9] The Conference Board, Total Economy Database, Eurostat

GDP data from The Conference Board — Total Economy Database, September 2010, [www.conference-board.org/data/economydatabase/](http://www.conference-board.org/data/economydatabase/); DMC data from Eurostat Database on Environmental Accounts, and OECD.

[10] Eurostat

Energy statistics, uploaded Oct 2010

<http://epp.eurostat.ec.europa.eu/portal/page/portal/energy/data/database>

[11] Total Economy Database, IFF Database. WI Database, Eurostat, OECD, IEA Database

GDP data and Labour data from The Conference Board — Total Economy Database, September 2010, [www.conferenceboard.org/data/economydatabase/](http://www.conferenceboard.org/data/economydatabase/); DMC data for 1970–1999 (EU-15): IFF database; DMC data for 1992–1999 (EU-12): WI database; DMC data for 2000–2007: Eurostat Database on Material Flow Accounts except Turkey: OECD database; TPES data from IEA Database

## 10.2 Resource Efficiency Policy References

de Facto 2010

<http://www.miljomal.nu/Environmental-Objectives-Portal/>

Swedish Environmental Code

<http://www.regeringen.se/content/1/c4/13/48/385ef12a>

Swedish Environmental Quality Objectives

<http://www.naturvardsverket.se/en/In-English/Menu/Swedens-environmental-objectives--for-a-sustainable-society/>

National Waste Plan

<http://www.naturvardsverket.se/en/In-English/Menu/Products-and-waste/Waste/Objectives-strategies-and-results/>

Swedish Consumption and the Global Environment

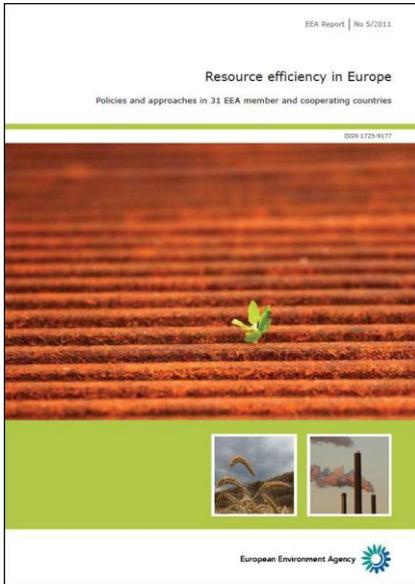
<http://www.naturvardsverket.se/Documents/publikationer/978-91-620-1285-4.pdf>

Environmental Objectives Portal

<http://www.miljomal.nu/Environmental-Objectives-Portal/Environmental-indicators/>

Swedish Environmental Accounts Environmental taxes in Sweden 1999-2009

[http://www.scb.se/Pages/TableAndChart\\_39451.aspx](http://www.scb.se/Pages/TableAndChart_39451.aspx)



# Resource efficiency in Europe

## Policies and approaches in 31 EEA member and cooperating countries

Further information about resource efficiency policies, including the analytical report and thirty-one detailed country profiles, are available on the EEA website:

<http://www.eea.europa.eu/resource-efficiency>

### Selected examples of resource efficiency policies, instruments or targets presented in the thirty one detailed country profiles

