



# Report on environmental management work in 2010 at The University of Gothenburg

Written by the Environmental Manager 14/2/11

Confirmed by the Vice-Chancellor 21/2/11

## Background

The report on environmental management work in 2010 is to be produced in accordance with Ordinance SFS 2009:907, Appendix 2. According to the ordinance, the report should be signed by the head of the authority and, in connection with the authority's annual report, be submitted to the department of the Swedish Government Offices that the authority comes under and to the Swedish Environmental Protection Agency. This means that the report should be submitted by 22 February 2011 at the latest.

To make reporting easier, the Swedish Environmental Protection Agency has produced a reporting template in Word along with a fictitious example of a report in order to show the suitable scope and type of response. All answers should be entered in the report and not be in the form of references or appendices. Send the report electronically in Word format to [registrator@naturvardsverket.se](mailto:registrator@naturvardsverket.se).

## Part 1 The environmental management system

### 1. Does the authority hold environmental certification?

Yes ISO14001 Yes EMAS

### 2. How is the authority's environmental policy worded?

The University of Gothenburg is to be one of the leading universities in Europe for education and research in the area of sustainable development and the environment.

- The University endeavours to make its students and staff aware of environmental and development issues and, through research, education and collaboration with the surrounding community, encourage tangible action to promote sustainable development.
- Through systematic environmental work, the University will endeavour to prevent or reduce its overall environmental impact. The University should have a certified environmental management system.



- Environmental considerations should be taken into account in all decisions. Research, instruction, administration, management and technical functions are all characterised by environmental consciousness.
- The University's environmental work should be continually improved and also evaluated through regular environmental audits.
- The University complies with appropriate environmental legislation and regulations and also other environmental requirements the university is affected by.

### **3. When did the authority last update its environmental report?**

In 2010

### **4. Which of the authority's activities have an important direct or indirect impact on the environment?**

Direct impact: Official journeys, Energy use, Waste production, Purchasing, Chemical handling

Indirect impact: Research, Education, Collaboration with the surrounding community, In-service training

### **5. What objectives has the authority laid down for the activities that have a considerable impact on the environment?**

Objective Research: The University will increase the amount of research in the area of sustainable development.

Objective Education: The University will integrate sustainable development into its education.

Objective Collaboration: The University will offer the surrounding community at least one public activity in the area of sustainable development each day.

Objective In-service training: All staff will know how they can contribute to sustainable development within their area of responsibility.

Objective Impact on climate: Official journeys: Reduce the emissions of gases from journeys and transport that have an impact on the climate.

Objective Impact on climate: Energy use: Reduce the use of electricity, heating and cooling at the University's premises.

Objective Use of resources; Waste and waste sorting: All waste arising at the University will be separated in accordance with the waste plan.

Objective Resource use: Purchasing and procurement: The University's purchases will act as an example to other universities when it comes to economic, social and environmental aspects.



Objective Hazardous chemicals: The University will reduce its use of hazardous chemical products.

## 6. What measures has the authority taken to achieve these objectives?

### Objective Research:

- Taken initiatives for and encouraged interdisciplinary research projects focused on sustainable development;
- Conducted an inventory of and described the research into sustainable development at the University;
- Arranged international conferences on sustainable development;
- Developed bibliometric methods in order to obtain an annual measure of the number of published scientific articles in the area of sustainable development.
- Applied for research funds in the area of sustainable development

### Objective Education:

- Supported those responsible for programmes and courses in integrating sustainable development into education through in-service training
- Organised a new graduate school in the area of sustainable development with the focus on “Environment and Health”
- Arranged a themed day for students with the focus on sustainable development;
- Made courses and programmes involving the environment and sustainable development visible in course prospectuses and on websites.
- Conducted a student survey that measured environmental awareness among the University’s students

### Objective Collaboration:

- Continued to develop a network with the focus on environmental issues and sustainable development between the University of Gothenburg, Chalmers, the public sector and trade and industry in Gothenburg and Region Västra Götaland.:
- Arranged several conferences on sustainable development;
- Conducted seminars on sustainable development, under our own auspices and in collaboration with other parties;
- Worked towards increasing the use of the Miljöportalen [The Environment Portal] and also measured the number of visitors per month.
- Supported and encouraged efforts to increase the elements of sustainable development in public events;
- Marketed the University’s environmental certification in printed matter and in public contexts.
- Initiated and carried out the Global Week event
- Participated in the Public and Private Social Responsibility Initiative (CSR Västsverige) and been a driving force in the “Sustainable Purchases” and “Sustainable Management” projects.

### Objective In-service training:

- Planned, organised and conducted suitable training programmes in the area of sustainable development for different categories of personnel, in accordance with identified needs for skills for different positions;



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- Held seminars on “learning for sustainable development” which are aimed at the University’s staff.
- Integrated environmental issues in leadership development training and dealt with leadership from a sustainability perspective.
- Participated in the Public and Private Social Responsibility Initiative (CSR Västsverige) “Sustainable Management” project.

### Objective Impact on climate: Official journeys:

- Laid down the University’s climate strategy for 2011-2015
- Created a new travel and meeting policy as part of the University’s climate strategy.
- Coordinated and standardised systems, technology and resources for electronic meetings
- Created opportunities for environmentally sound official travel by carpool.
- Provided access to rental cycles in collaboration with the City of Gothenburg

### Objective Impact on climate: Energy use:

- Laid down the University’s climate strategy for 2011-2015
- Carried out an energy-saving project to reduce the University’s consumption of electricity, heating and cooling through campaigns, operating efficiencies and more energy-saving equipment
- Carried out energy seminars to encourage energy efficiencies at the University’s premises
- Worked towards energy-effective rented properties and building processes
- Worked towards purchasing more low energy computers and peripheral equipment at the University.
- Introduced guidelines for green IT use

### Objective Use of resources; Waste and waste sorting:

- Carried out waste and recycling seminars to increase waste sorting
- Updated the University’s waste plan;
- Worked towards all waste arising being sorted according to the waste plan
- Worked towards increasing the percentage of waste materials that are recycled;
- Followed up agreements on waste management with respective property owners

### Objective Resource use: Purchasing and procurement:

- Specified environmental requirements for both suppliers’ environmental work and products procured;
- Set requirements in procurements for ecolabelled/more environmentally friendly products to be highlighted by the supplier in web-based product catalogues;
- Carried out training courses for those responsible for procurements on environmental aspects of procurements
- The Service Department’s restaurant has been given the KRAV label
- Worked towards all printed material being Svan labelled.
- Participated in the Public and Private Social Responsibility Initiative (CSR Västsverige) “Sustainable Management” project



Objective Hazardous chemicals:

- Worked towards increased phasing-out and reduced volume of environmentally hazardous chemical products in favour of less hazardous alternatives, through substitution and methods development.
- Updated rules for environmentally sound handling of chemicals
- Arranged a day for sharing experiences on substituting chemicals for laboratory staff and suppliers
- Actively participated in the national substitution group for collaboration between universities and county councils on the substitution of hazardous chemicals
- Worked towards bringing in actual substitutions in the University's chemicals management system (KLARA)

**7. Report on how well the objectives have been achieved.**

Eight out of ten objectives have been achieved, i.e. 80% achievement of objectives

**Objective Research** has been achieved

3.2 percent of the University's publications are in the area of sustainable development, which is a reduction of 0.7 percentage points compared with last year. This is probably due to not all publications for 2010 having been reported yet. There are 316 researchers and postgraduate students connected to Gothenburg's environmental science centre's network, which is an increase of 14 percent compared with last year.

**Objective Education** has been achieved

Forty-four percent of the programmes and 25 percent of the courses at the University are ecolabelled. The percentage of ecolabelled programmes has increased by approximately 12 percentage points since last year while the percentage of ecolabelled courses has reduced by two percentage points since last year.

**Objective Collaboration** has been achieved

Six hundred and seven public activities mean an increase of 8% on last year.

**Objective In-service training:** has been achieved

Almost 650 people took part in the training courses, seminars or events on the environment and sustainable development that were arranged in 2010, an increase of 30 percent since 2009. This is equivalent to approximately 13 percent of our staff.

**Objective Impact on climate; Official travel** has not been achieved



The total carbon dioxide emissions from official journeys and energy have reduced by 4.4. percent.

Emissions of carbon dioxide from official journeys have increased by 13.8 percent.

**Objective Impact on climate; Energy use** has been achieved with regard to carbon dioxide emissions.

**Objective Impact on climate; Energy use** has not been achieved with regard to consumption expressed in kWh/m<sup>2</sup>.

The total carbon dioxide emissions from official journeys and energy have reduced by 4.4. percent.

The number of kilowatt-hours of electricity and heating used has increased by 0.5 percent since last year.

Increased use of existing premises is one of the explanations for this year's result. Renovations at the Sahlgrenska Academy and the need for increased ventilation at these premises is another. At most premises, however, energy consumption per square metre has reduced as the result of energy-saving measures.

**Objective Use of resources; Waste and waste separation** has been achieved

All waste is sorted according to the waste plan

The total quantity of waste was 1,200 tonnes, which means a reduction of 20 percent.

The amount of waste per person per day was 0.165 kg, which is equivalent to a reduction of 21 percent.

The percentage of waste for composting, recycling of materials and hazardous waste has increased by 8 percent and now comes to 45 percent.

**Objective Resource use: Purchasing and procurement:** has been achieved

Total economic value of registered acquisitions with environmental and ethical requirements out of the total value of framework agreements and contracts of sale was 86 percent

Environmental and ethical requirements have been laid down for the product/service in 28 percent of the contracts of sale and framework agreement procurements carried out.

Environmental and ethical requirements have been laid down for the product/service in 83 percent of the framework agreement procurements carried out.

Questions about the supplier's internal environmental work have been asked in 76 percent of all contracts of sale and framework agreement procurements.

Questions about the supplier's internal environmental work have been asked in 92 percent of all framework agreement procurements.

**Objective Hazardous chemicals:** is not satisfied



During the year, a number of substitutions of hazardous chemicals have taken place. Methods development has continued within the area. The use of hazardous chemical products has increased.

There were 1636 entries in the PRIO database in 2010 (1574 in 2009) which is equivalent to an increase of 3.9 percent. It is believed that this is due to the University's chemical management system being relatively young and inventories of the system having improved.

## **8. What measures has the authority taken to provide employees with the knowledge they need to take consideration to the environment in their work?**

This is ensured though, among other things, continual seminars and training courses in the area of the environment and sustainable development for all employees. Almost 650 people took part in the training courses, seminars or events on the environment and sustainable development that were arranged in 2010, an increase of 30 percent since 2009. This is equivalent to approximately 13 percent of our staff.

## **9. In which way has the authority used information technology with a view to reducing its energy consumption?**

- The University of Gothenburg buys in energy-efficient electronic equipment in accordance with the University's commitments under Ordinance 2009:893 on energy-efficient measures for government agencies.
- Introduced green guidelines for computer use
- In the action plan for environmental work for 2011-2015 drawn up in 2010, the IT department is tasked with drawing up a new version of "Green guidelines for computer use" and communicating these throughout the entire organisation.
- Work on streamlining the University's server rooms is ongoing. The aim is to reduce the number of server rooms and to make the use of those remaining more effective.
- A project involving replacing printers with a new type that accepts "follow me" printing is ongoing. The project is expected to reduce both paper use and electricity consumption.
- Web-based systems for energy monitoring have made work on monitoring energy usage in the University's premises easier.

## **10. In which way has the authority used information technology with a view to reducing the number of official journeys?**

- About 20 video conferencing systems have been installed around the faculties.
- Through SUNET, the University of Gothenburg has access to an e-conferencing tool, Adobe Connect Pro and has trained personnel in this tool.
- A new travel and meeting policy for 2010 is steering the university towards replacing more journeys with so-called travel-free meetings.



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## Part 2 Follow-up of the effects of environmental management work

### 1. Official journeys and other transport

#### 1.1 Emissions of carbon dioxide in kg in total and per man-year from:

	Total	Per man-year
a Air journeys of less than 500 km	316957	64
b Car journeys on business (including own car, company car, leased car, taxi)	<b>215097</b>	43
c Train journeys	10	0.002
d Bus journeys	No information	No information
e Machines and other vehicles	No information	No information
1.2 Total emissions of carbon dioxide 1.1 a-e	532054	107
1.3 Air journeys of less than 500 km	3203243	643

Number of man-years:	4981
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#### 1.4 Description of results gathered

**a) Describe what has affected the result in a positive or negative direction, e.g. organisational changes, trends, new assignments.**

Negatively: The University has an objective of increasing the internationalisation of researchers, doctors, administrative staff and students, which appears counterproductive to the objective of reducing the emissions of gases that have an impact on the climate.

An unusually cold winter in 2009/10 led to great problem with train traffic, which may have caused an increase in air journeys of less than 500 km.

Positively: A new meeting and travel policy has been established, with the emphasis on travel-free meetings. By increasing the use of e-conferencing tools and video conferences, the objective of both reduced emissions and increased internationalisation can be achieved.

**b) Describe any problems and gaps in the material and how and when the authority plans to address these.**



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There is no systematic follow-up system for taxi and bus journeys. There was, however, a procurement exercise for bus journeys conducted in 2010 and a requirement of the procurement exercise was that the supplier would provide annual statistics on the number of kilometres driven on behalf of the University of Gothenburg, which will, hopefully, address the problem of monitoring emissions from bus journeys.

## 1.5 How is the information produced (if there is a difference between follow-up measurements, state what applies for each measurement)

- Own follow-up system
- Suppliers' information

## 1.6 The follow-up measurements in the replies to the questions are based on:

A standardised list that the Swedish Environmental Protection Agency provides.

*NB! The information on flights that has been received from the travel agencies was more in line with last year's template for calculating carbon dioxide so we have used it instead of this year's template. The flight distances we received from the travel agencies were divided into less than 500 km, 500-1000 km, 1000-2000 km, 2000-4000 km and over 4000 km, which is in line with last year's calculation template.*

## 2. Energy use

### 2.1 Annual energy use in kWh in total, per man-year and per m<sup>2</sup> divided into:

	KWh in total	KWh/man-year	kWh/m <sup>2</sup>
a) Operational electricity	39614976	7953.2	127.7
b) Other energy use	38880452	7805.8	125.3
2.2 Total annual energy use 2.1a and b	78495428	15759.0	253.1

Number of square metres	310 187
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### 2.3 Is heat consumption corrected for a normal year?

Yes



**2.4 The proportion of renewable energy in the total energy use (expressed as a percentage)**

72,2%

**Calculation data:**

**Electricity:**

- Electricity consumption with only renewable electricity (Good Environmental Choice or similar): 89.9 %
- Other electricity agreements (unspecified electricity mix): 10.1 % (approx 60 % of which is renewable electricity)

**Renewable electricity  $(39\,614\,976 * 0.899) + (39\,614\,976 * 0.101 * 0.6) = 38\,014\,531$  kWh**

**Other energy use (district heating Göteborg Energi):**

- “Good Environmental Choice” district heating: 26.8% (no fossil additives)
- Unspecified district heating: 73.2% (71% of which is fossil)

**Renewable district heating:  $(38\,880\,452 * 0.268) + (38\,880\,452 * 0.732 * 0.29) = 18\,682\,391$  kWh**

Total renewable energy:  $(38\,014\,531 + 18\,682\,391) / 78\,495\,428 = 0,722$

**Of the University of Gothenburg’s total energy use, 72.2 % is renewable energy.**

**2.5 Description of results gathered**

**a) Describe what has affected the result in a positive or negative direction, e.g. organisational changes, trends, new assignments.**

**Positively:** The University is running an energy-saving project that has affected consumption in individual properties. One result of the electricity-saving competition carried out at the Faculty of Art is that the use of electricity at night time has reduced. The result meant a reduction of between 2-24%, depending on the institution.

Closer cooperation with the property owners has meant better quality assurance of the energy statistics. Discussions on optimised and activity-adapted operating hours for ventilation and lighting have been held within the framework of the University’s energy saving project. The result of this work will manifest itself during the coming year.

**Negatively:**



The level of use for premises with laboratory activities has increased, which increases the energy use per square metre. The more research grants, the greater amount of energy used!

Renovations and extensions to the Sahlgrenska Academy have meant the use of electricity increasing in 2010.

**b) Describe any problems and gaps in the material and how and when the authority plans to address these.**

The University of Gothenburg rents premises from many different property owners. Small property owners and housing co-operatives have not always been able to send the information required, as they have not employed staff for these duties. The University also rents individual floors in larger properties without specific electricity and remote heating measurements. For 2010, however, there are complete energy statistics for 93 % of the rented premises space.

Work on the installation of electricity meters is planned for a number of premises.

**2.6 How is the information produced (if there is a difference between follow-up measurements, state what applies for each measurement)?**

Own follow-up system: (Web-based energy monitoring system from Göteborg Energi)

Suppliers' information

**3. Environmental requirements in procurements**

**3.1 Proportion of registered acquisitions where environmental requirements are specified out of the total number of registered acquisitions per year.**

Number of acquisitions with environmental requirements	15
Total number of acquisitions	54
Proportion (%) of acquisitions with environmental requirements	28

**3.2 Economic value of registered acquisitions with environmental requirements out of the total value of registered acquisitions per year.**

Value of acquisitions with environmental requirements (SEK)	434 175 000
Total value of registered acquisitions (SEK)	503 146 000



Proportion (%) of acquisitions with environmental requirements	86
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### 3.3 Description of results gathered:

**a) Describe what has affected the result in a positive or negative direction, e.g. organisational changes, trends, new assignments.**

During 2010, the University of Gothenburg has carried out 12 framework agreement procurement exercises and 42 contract of sale procurement exercises. In a total of 54 procurement exercises, environmental and ethical requirements have been laid down for the product/service and these have also formed the basis for the award of procurement contracts in 28 percent of the total number of procurements. The equivalent figure when it comes to the economic value of the procurements is 86 percent. The framework agreements run for 2-4 years and the entire value of the procurements is included in the calculation. The procurements reported are only those concluded in 2010.

From and including 2010, the means of reporting have been improved and exact figures for contracts of sale and framework agreements where environmental and ethical requirements have been laid down are reported, unlike in 2009, where only environmental and ethical requirements in the framework agreements could be reported. For 2009, an estimate of the categories of purchase where there have generally been environmental and ethical requirements laid down is, therefore, reported, estimated for the economic value of each category of purchase.

Since we are not reporting according to the same principles this year, it is difficult to make a good comparison between 2009 and 2010. A clear improvement can, however, be seen when comparing the statistics for the framework agreements. In 2009, environmental and ethical requirements were laid down for 59 percent of the framework agreements and the equivalent figure for 2010 was 83 percent.

The University of Gothenburg has a routine of always laying down environmental requirements in connection with public procurements. The person responsible for the procurement should always take environmental requirements into consideration before each new procurement and contact the Environmental Unit for support and assistance. The collaboration between the Procurement Unit and the Environmental Unit is regarded as a success.

In some cases where **intellectual services or advanced research equipment** are involved, it may be difficult to lay down relevant environmental requirements, but, in larger procurements of products that have an environmental impact, this is often easier and it is also these procurements that correspond to the greatest economic values. Guidance on how environmental requirements should be laid down for individual purchases/suborders has also been produced by the Environmental Unit, see

<http://www.mls.adm.gu.se/Resursforbrukning/Inkop/Miljotips/>



**b) Describe any problems and gaps in the material and how and when the authority plans to address these.**

The difficulty for us is being able to follow up on each individual purchase, as there are more than 3,000 unique placers of orders at the University and there is no good tool for follow-ups. The Government has decided that all state authorities with more than 50 employees must have introduced some form of electronic ordering system by the end of 2013 at the latest. This work is ongoing at the moment and, once the system is fully implemented, it will make it easier for us to see and report acquisitions where environmental requirements have been taken into account.

**3.4 How is the information produced (if there is a difference between follow-up measurements, state what applies for each measurement)?**

Own follow-up system