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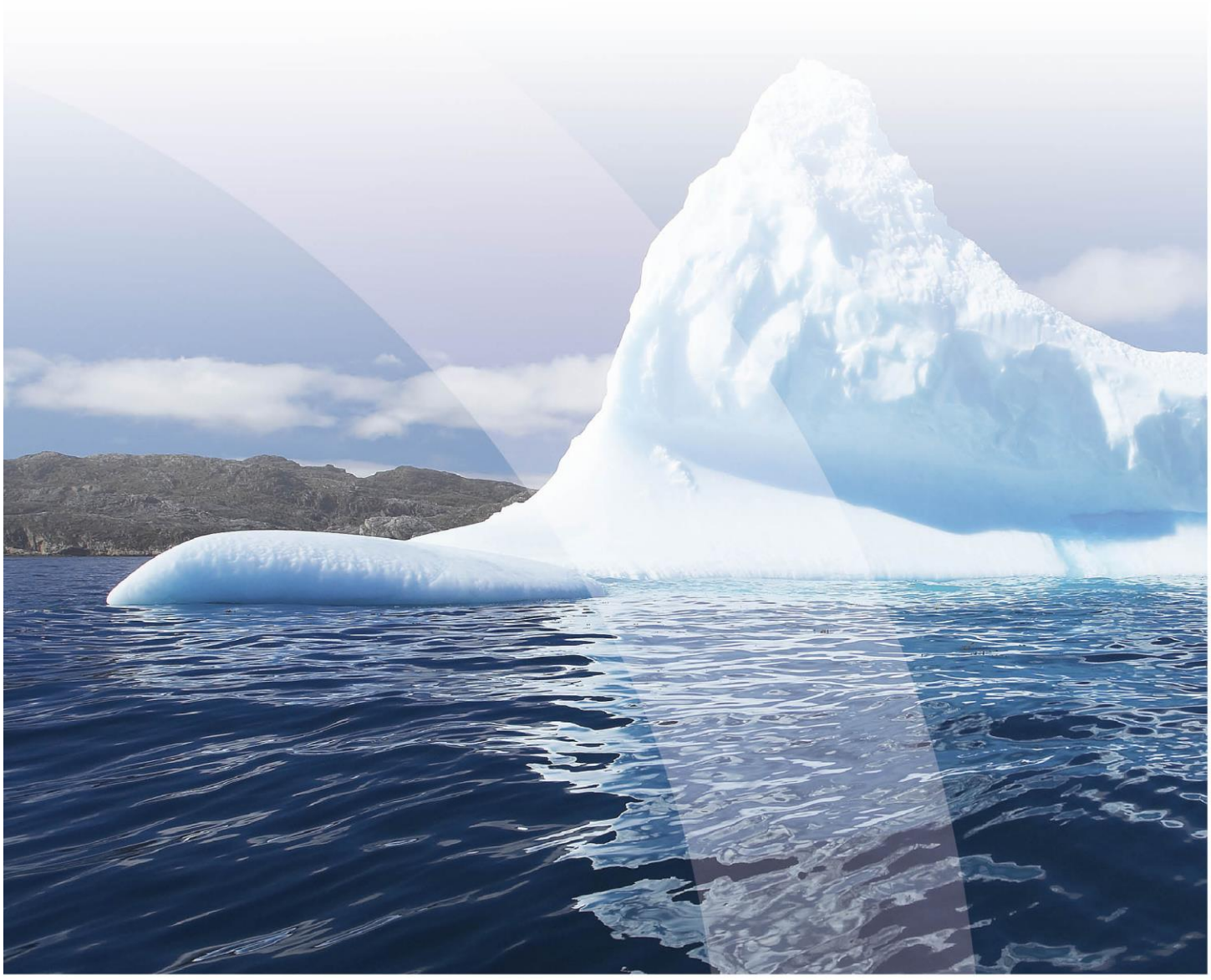
Norsk institutt for luftforskning
Norwegian Institute for Air Research

Environmental Management Report

2013



Contents

Environmental Management Report

1 NILU's Environmental Policy

The NILU Objectives state that part of the object of the foundation is: "*NILU shall through research enhance the understanding of processes and effects relating to the composition of the atmosphere, climatic changes, air quality, and environmental toxicants*" and "*NILU shall work to spread national and international research-based knowledge about the institute's core areas so that it becomes useful to society*".

The environmental policy of NILU is thus both to reduce, as far as possible, the direct environmental impact of the institute's activities and to contribute to better management of the environment by providing fundamental knowledge for authorities and other decision-makers.

Integral parts of NILU's environmental management system are an assessment of the environmental impacts and an implementation plan with actions to reduce the prioritized impacts as best as possible.

It is NILU's clear intention to always comply with relevant laws and regulations. NILU will continuously work to prevent pollution and to improve the institute's environmental impact.

2 Background

One of NILU's main goals is to study the impact of pollution. It is thus very important for the institute to have control of the impact the institute's own activities may have on the environment and to reduce the impact as far as possible.

NILU has for many years been working to reduce the impact. In order to take this one step further, it was decided that the institute should restructure the work according to a relevant environmental standard and to seek certification according to the same standard.

The chosen standard is ISO 14001:2004 (Environmental management systems-Requirements with guidance for use) and NILU achieved certification according to this standard in October 2010.

3 Overview of the status of the indicators

Each indicator is described in detail in chapter 4

Indicator	Parameter	2011	2012	2013	Evaluation/ Comments
Assessment of environmental impacts	Action plan	Yes	Yes	Yes	
Heating and cooling systems	District heating and cooling	Yes	Yes	Yes	
Energy efficiency	-	-	-	-	Not addressed in 2013
Travels and meetings	CO_2-emissions due to air travel (kg)	234 000	264 336	223 670	
	Distance travelled by car (km)	123 962	112 293	120 790	
Travels to and from the place of work	-	-	-	-	Not addressed in 2013
General waste	Amount of waste in relevant fractions	-	-	-	
Chemical waste	Chemical waste handled by certified receiver	Yes	Yes	Yes	
Water consumption	Consumption of water (m^3)	6 689	6 069	4 860	
Consumption of paper and other cellulose based products	Printers with registration of users	Yes	Yes	Yes	
	Pages of colour print-outs pr. employee	810	2 010	1 505	
	Pages of black-and white print-outs pr. employee	2 466	3 475	2 735	
Emissions to air	-	-	-	-	Not addressed in 2013

Emissions to water	-	-	-	-	Not addressed in 2013
Requirements for suppliers	-	-	-	-	Not addressed in 2013
Environment friendly products	-	-	-	-	Not addressed in 2013
NILU's research	Good examples	Yes	Yes	Yes	
NILU's research based services and products	Good examples	Yes	Yes	Yes	
Energy classification of the building at Kjeller	Energy Certificate	-	-	Yes	
Handling of dangerous materials	Compliance	Yes	Yes	Yes	

4 NILU's Environmental Indicators

4.1 Assessment of NILU's environmental impacts

4.1.1 Assessment of environmental impacts

Target location: Kjeller and Tromsø
In 2010, NILU carried out an assessment of the main environmental impacts of the institute's activities. A new assessment was carried out in 2013, as planned. An action plan for NILU's environmental work in coming years ("Miljøprogram") is established based on the assessment. The action plan is revised every year.

4.2 Energy consumption

4.2.1 Heating and cooling systems

Target location: Kjeller
NILU's main building is located at Kjeller and was, since it was built in 1993/1994, heated and cooled by electric power. In 2010 it was decided to substitute electric power with a centralized heating and cooling operation for the local district. This required major changes in the technical installations serving the building and had to be carried out in such a way that it did not interfere with NILU's daily routines.

The first step was removal of the existing cooling compressors and installation of the necessary heat exchangers. This was started at the end of 2010 and finished before cooling was necessary in March 2011. During the summer and fall of 2011, the new heating equipment was installed.

Both district heating and cooling has been in use in NILU's building at Kjeller since October 2011. However, in 2013 the installed heat-exchanger had to be changed since it was discovered that it was too small. This was done in December 2013.

4.2.2 Energy efficiency

Target location: Kjeller
After NILU's building at Kjeller has fully switched to district heating and cooling, use of electric power will be substantially reduced. When the new heat-exchanger has been in operation long enough, we will go carefully through the remaining use of electric power in order to evaluate the potential for reduction in the energy consumption.

4.2.3 Travels and meetings

Target location: Kjeller and Tromsø
In 2010, NILU installed equipment for video conferences both at Kjeller and Tromsø. In January 2012, such equipment was also installed in Abu Dhabi. However, technicalities in connection with NILU's relocation in Abu Dhabi made the equipment unusable during the whole of 2012. The equipment for video conferences has significantly reduced the need for travel and has improved communication.

When ordering a travel, the employee must describe why it was not possible to use the equipment for video conference.

In order to monitor the environmental impact, NILU has established two parameters:

- CO_2-emissions due to air travel (kg)
- Distance travelled by car (km)

The emissions of CO_2 due to air travel in 2013 was 15 % lower than in 2012.

In 2013, the registered distance travelled by car was 8 % higher than in 2012.

4.2.4 Travels to and from the place of work

This has not been addressed in 2013.

4.3 Waste

4.3.1 General waste

Target location: Kjeller
NILU has for several years separated the waste into the following categories:

- Paper and other cellulose-based products
- Glass
- Plastics
- Food waste
- Chemical waste
- Electronic equipment
- Batteries
- General waste

In 2010 we started to evaluate the waste handling and the process of finding one company that could receive all our waste in order to establish an overview of the total amount of each category. The set main goal is to reduce the amount of "General waste". The process will be finalized as soon as possible.

4.3.2 Chemical waste

Target location: Kjeller and Tromsø
NILU has, for many years, delivered chemical waste to a certified receiver and will continue to do so.

4.4 Raw materials and resources

4.4.1 Water consumption

Target location: Kjeller
In order to monitor the environmental impact, NILU has established the following parameter:

- Consumption of water (m^3)

The consumption of water in 2013, 4 860 m^3, was 20 % lower than in 2012.

4.4.2 Consumption of paper and other cellulose-based products

Target location: Kjeller and Tromsø
In 2011, NILU installed five new and identical printers/scanners/copy machines in the Norwegian locations. The user must log in, using his/her ID-card, before printing starts. The system allows monitoring of the number of print-outs, both aggregated to a specified group or on an individual basis.

In order to monitor the environmental impact, NILU has established the following parameters:

- Number (pages) of colour print-outs pr. employee
- Number (pages) of black-and white print-outs pr. employee

In 2013, the employees at Kjeller and Tromsø on average printed 2 735 pages in black-and-white and 1 505 pages in color. The total printing in 2013 was thus 23 % lower than in 2012.

4.5 Emissions

4.5.1 Emissions to air

This has not been addressed in 2013.

4.5.2 Emissions to water

This has not been addressed in 2013.

4.6 Procurements

4.6.1 Requirements for suppliers

This has not been addressed in 2013.

4.7 Products

4.7.1 Environmentally friendly products

This has not been addressed in 2013.

4.8 Environmental impacts of NILU's activities

4.8.1 NILU's research

Target location: Kjeller and Tromsø
The positive environmental impacts of NILU's research are illustrated by describing a few good examples (Chapter 5).

4.8.2 NILU's research-based services and products

Target location: Kjeller and Tromsø
The positive environmental impacts of NILU's research-based services and products are illustrated by describing a few good examples (Chapter 5).

4.9 Energy classification

4.9.1 Energy classification of the building at Kjeller

Target location: Kjeller
It is a requirement that all corporate buildings in Norway, with an area of more than 1000 m^2, shall be classified according to the energy consumption. Since NILU in 2011 switched to district heating and cooling, it was decided that the energy classification will be carried out in 2013. The classification was carried out as planned in 2013.

4.10 Dangerous materials

4.10.1 Handling of dangerous materials

Target location: Kjeller and Tromsø
In 2009, a new regulation on handling of dangerous materials was published in Norway (FOR-2009-06-08-602). In 2013, NILU went carefully through this regulation and concluded that we are still in compliance (see Chapter 6).

5 Good Examples

Impacts of climate change policies on urban air quality

NILU is working to contribute to the understanding of the emission of new harmful pollutants associated with the combustion of bio-ethanol via measurements, air dispersion model and integrated analysis. The evaluation of the results and the new methodological techniques will provide greater knowledge about the impact of climate change policies on urban air quality.

Air pollution in the Arctic and Antarctica

NILU is carrying out extensive measurement programs at the Zeppelin Observatory in the Arctic and the Troll Observatory in Antarctica. These two observatories give a very good overview of the state of the globe when it comes to levels of air pollution due to the locations in pristine areas.

European Environmental Agency (EEA)

NILU contributes to the work of the European Environmental Agency (EEA) within the areas of Air Quality monitoring, modelling, assessments and indicators and capacity building. The concrete tasks are defined each year and described in the ETC/ACM Implementation Plan.

Environmental Toxins

NILU´s research is of high quality, and its work in the field of environmental chemistry is widely recognized. Samples are carefully prepared before being analysed, using advanced instruments. Scientists identify environmental toxins, both known and unknown, in the samples.

Long-range transport of air pollution

The European Monitoring and Evaluation Programme (EMEP) is a scientifically based and policy driven programme under the Convention on Long-range Transboundary Air Pollution (CLRTAP) for international co-operation to solve transboundary air pollution problems. In the EMEP programme NILU acts as the Chemical Coordinating Centre (EMEP-CCC). In this capacity, NILU has the tasks of developing monitoring strategies, recommending methodologies, offering training and audits and compiling and providing quality assurance for observation data received from the Parties to the EMEP protocol.

Quality Control and Traceability

NILU is working to ensure the quality of the measuring data from various measuring networks by using a comprehensive quality control system. The system states procedures for the operators of the instruments in their daily work. The system ensures the comparability of the collected data by using measuring instruments calibrated with reference standards that are traceable to common national reference standards.

Health Effect Laboratory

In the health effect laboratory, NILU is investigating the direct health impact of pollution, climate change and new materials on humans and animals. Its establishment completes the “circle” of monitoring, modelling, analysing, evaluation and effects implemented at NILU.

6 Laws and regulations

NILU's clear policy is to be in compliance with all relevant laws and regulations. Every third year we carry out a thorough evaluation of the laws and regulations relevant for NILU and our activities. The conclusion of the evaluation carried out in 2013 is that we are in compliance with all laws and regulations.

The evaluation will be repeated in 2016.

7 Actions in 2014

In 2014, NILU's environmental management system will mainly focus on the following tasks:

- Maintaining and improving the Environmental Management System (EMS)
- Evaluate and implement the routine for acceptance and ordering of travels
- Further development of indicators and parameters
- Establish a system that will give total overview of the amounts of waste in the various fractions

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ABSTRACT
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NILU has for many years been working to reduce the impact. In order to take this one step further, it was decided that the institute should restructure the work according to a relevant environmental standard and to seek certification according to the same standard.

The chosen standard is ISO 14001:2004 (Environmental management systems—Requirements with guidance for use) and NILU achieved certification according to this standard in October 2010. This report summarizes the results of the system.

NORWEGIAN TITLE
Årsrapport for miljøstyring 2013

KEYWORDS		
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ABSTRACT (in Norwegian)

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A Unclassified (can be ordered from NILU)
B Restricted distribution
C Classified (not to be distributed)

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NILU is an independent, nonprofit institution established in 1969. Through its research NILU increases the understanding of climate change, of the composition of the atmosphere, of air quality and of hazardous substances. Based on its research, NILU markets integrated services and products within analyzing, monitoring and consulting. NILU is concerned with increasing public awareness about climate change and environmental pollution.