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NILU's Environmental Management Report

2014

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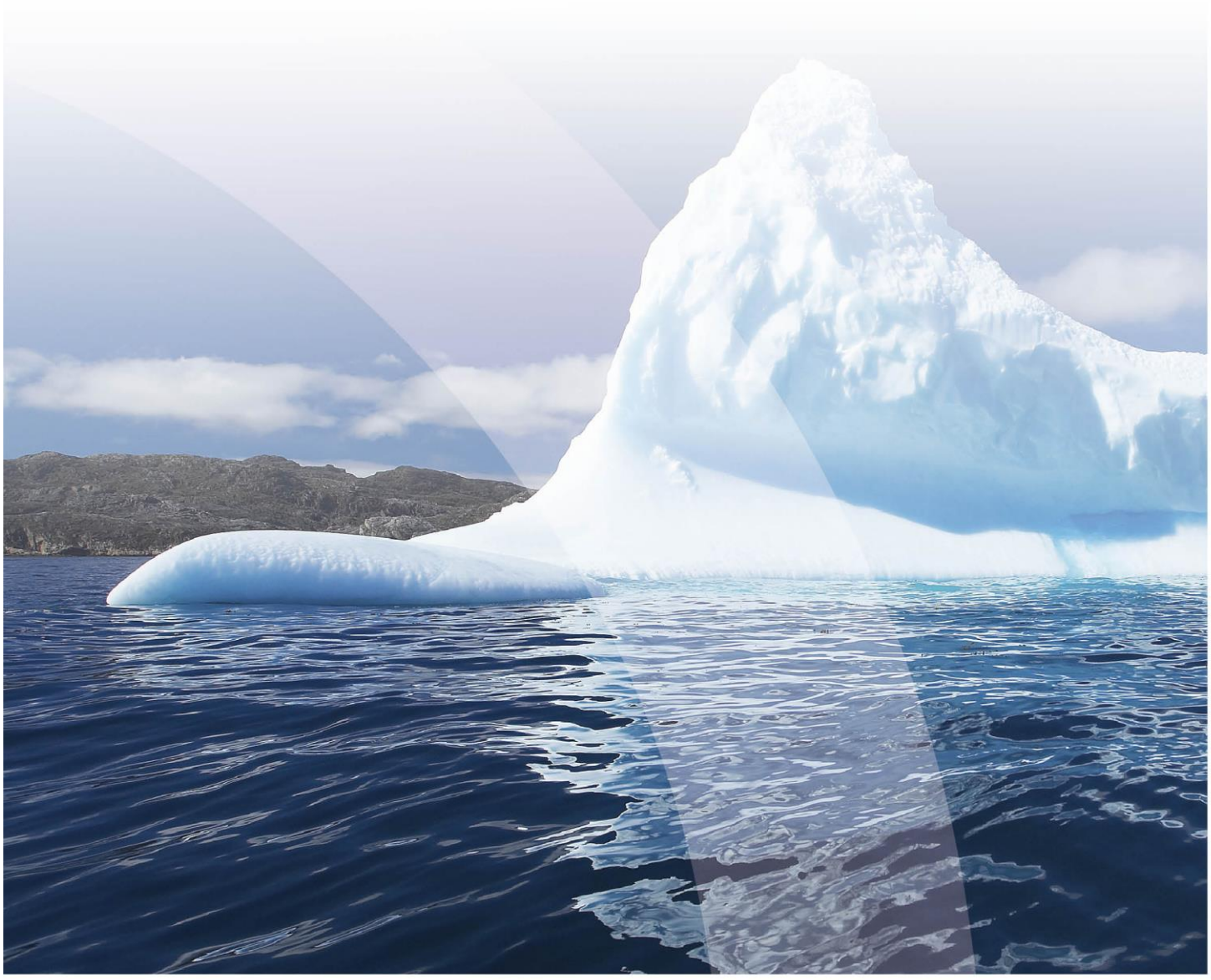

Contents

NILU's 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 negative 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 environmental consequences of emissions of pollutants and to create a knowledge base for decision makers. The impacts of this can thus be both positive and negative.

It is very important for the institute to have control of the impact the institute's activities may have on the environment and to reduce the negative impacts as far as possible.

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 Good Examples of NILU's contribution to improve the environment

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.

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 in pristine areas.

New Environmental Contaminants

NILU undertakes research and screening studies within the field of environmental chemistry. This includes conventional monitoring activities, but special focus is put on new environmental contaminants and how they spread in and affect the environment. Of special interests are the recent discoveries of high values of bisphenols (e.g. BPA) in the Oslo Fjord and high values of perfluorated compounds (especially PFOS) in "Golden Eagle".

Air quality assessment and abatement strategies

NILU is carrying out air quality assessments for cities in Norway and contributes to the development of abatement strategies for individual cities such as Oslo and Stavanger. The work includes identifying and quantifying main sources of urban air pollution, as well as advanced air quality calculations to study the effect of new measures to reduce air pollution in urban areas.

Dissemination of air quality information – measurements and forecasts

NILU has a key role in the dissemination of air quality information to the public. Forecasts for the largest cities in Norway and on-line data from all the monitoring stations in Norway are shown on the web-portal www.luftkvalitet.info. The web-portal is hosted and maintained by NILU on behalf of the Norwegian Public Roads Administration and the Norwegian Environment Agency. NILU is together with the Norwegian Meteorological Institute, responsible for the development and operation of a modelling system for air quality prognosis. The prognosis are used for air quality forecasts in Norway, to inform the public and support the local authorities concerning the need for implementing short-term actions in alert situations

Complementing environmental observing systems

Recognizing the role of citizens and civil society in environmental management, NILU is building environmental monitoring infrastructure that allows the public to take active part in collecting relevant environmental data. These data are used

to improve the current environmental management tools, including air quality maps. Awareness raising in the society and direct contribution to environmental management systems are some of the aspects of such activities.

Reduction of climate gas emissions

NILU is involved in projects aiming at the development and implementation of technologies leading to reduction of greenhouse gases, particularly Carbon Capture and Storage (CCS) installations. Technological, environmental, economic and social challenges is assessed and measures to overcome various technological and non-technological barriers proposed. The results will result in lowering the CO_2 emissions and thus reduction of climate change impacts on the environment and human health.

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. Based on such measurements with traceability and adequate quality, the decision makers can implement measures that will reduce emission of pollutants.

4 Overview of the status NILU's environmental indicators

Each indicator is described in detail in chapter 5.

Indicator	Parameter	2012	2013	2014	Evaluation
NILU's research	Good examples	Yes	Yes	Yes	
NILU's research based services and products	Good examples	Yes	Yes	Yes	
Assessment of environmental impacts	Action plan	Yes	Yes	Yes	
Heating and cooling systems	District heating and cooling	Yes	Yes	Yes	
Travels and meetings	CO_2-emissions due to air travel (kg)	264 336	223 670	164 583	
	Distance travelled by car (km)	112 293	120 790	106 434	
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)	6 069	4 860	5153	
Consumption of paper and other cellulose based products	Printers with registration of users	Yes	Yes	Yes	
	Pages of colour print-outs pr. employee	2 010	1 505	1323	
	Pages of black-and white print-outs pr. employee	3 475	2 735	2153	

Energy classification of the building at Kjeller	Energy Certificate	-	Yes	Yes	
Handling of dangerous materials	Compliance	Yes	Yes	Yes	

5 NILU's Environmental Indicators

5.1 Assessment of NILU's environmental impacts

5.1.1 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.

5.2 Energy consumption

5.2.1 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.

Both district heating and cooling has been in use in NILU's building at Kjeller since October 2011. 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.

5.2.2 Energy efficiency

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

5.2.3 Travels and meetings

Target location: Kjeller and Tromsø
NILU has installed equipment for video conferences both at Kjeller and Tromsø. 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 video conference equipment.

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 2014 was 26 % lower than in 2013.

In 2014, the registered distance travelled by car was 12 % lower than in 2013.

5.2.4 Travels to and from the place of work

This was not addressed in 2014.

5.3 Waste

5.3.1 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

We have started the process of finding one company that can 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.

5.3.2 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.

5.4 Raw materials and resources

5.4.1 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 2014 , 5 153 m^3, was 6 % higher than in 2013.

5.4.2 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. 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 2014, the employees at Kjeller and Tromsø on average printed 2 153 pages in black-and-white and 1 323 pages in color. The total printing in 2014 was thus 18 % lower than in 2013.

5.5 Emissions

5.5.1 Emissions to air

This was not addressed in 2014.

5.5.2 Emissions to water

This was not addressed in 2014.

5.6 Procurements

5.6.1 Requirements for suppliers

This was not addressed in 2014.

5.7 Products

5.7.1 Environmentally friendly products

This was not addressed in 2014.

5.8 Environmental impacts of NILU's activities

5.8.1 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 3).

5.8.2 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 3).

5.9 Energy classification

5.9.1 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. The classification of NILU's building at Kjeller was carried out in 2013.

5.10 Dangerous materials

5.10.1 Handling of dangerous materials

Target location: Kjeller and Tromsø

In 2013, NILU went carefully through the regulation on handling of dangerous materials (FOR-2009-06-08-602) and concluded that we are in compliance (see Chapter 6).

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.

A new thorough evaluation of all laws and regulations relevant for NILU and our activities will be repeated in 2016.

7 NILU's actions in 2015

In 2015, 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
One of NILU's main goals is to study the impact of pollution and supply decision-makers with a sound scientific platform for choosing measures to reduce the negative impacts. It is also very important for the institute to have control of the impact the institute's own activities may have on the environment and to reduce negative impacts as far as possible.

NILU has for many years been working to improve the status of the environment and to reduce negative impacts. 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
NILUs miljøstyringsrapport - 2014

KEYWORDS		
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ABSTRACT (in Norwegian)

** Classification*
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.