

# Green account for Sanaartormik Ilinniarfik 2005

This is Sanaartormik Ilinniarfik's first green account for the year 2005. There is the idea that this green account should form the basis for the annual publication; it should also be developed and include all the natural factors for measuring school's impact on the environment.



This first green account is rather simple, but a very important beginning at the time, when there is more and more focus on the environment. For the moment it has only a collection of continuous data of electricity, water and fuel consumption, but in the future it will also include data connected with refuse and fuel used by vehicles.

## Vision

This is the vision of Sanaartormik Ilinniarfik that the green account will be for the whole institution together with its dormitories and apartments for guests. In this way the common impact on the environment will be less; and as the public institution we will take our mutual responsibility for it.

There are also plans around the green purchase policy, and we also work hard to reduce resource consumption on all the levels, from paper and making copies to electricity and fuel.

Throughout the everyday educational process and life in the dormitory, employees, as well as students, apprentices and course participants, are to be concerned about the environmental problems. In this way they can bring along their awareness further for the benefit and pride of all Greenlandic nature.



# Electricity consumption

The starting point for green accounts in Sanaartornermik Ilinniarfik was a big usage of electricity, that's why it attracted most of our attention. Both because of the environmental awareness, and because school can save money reducing this consumption.

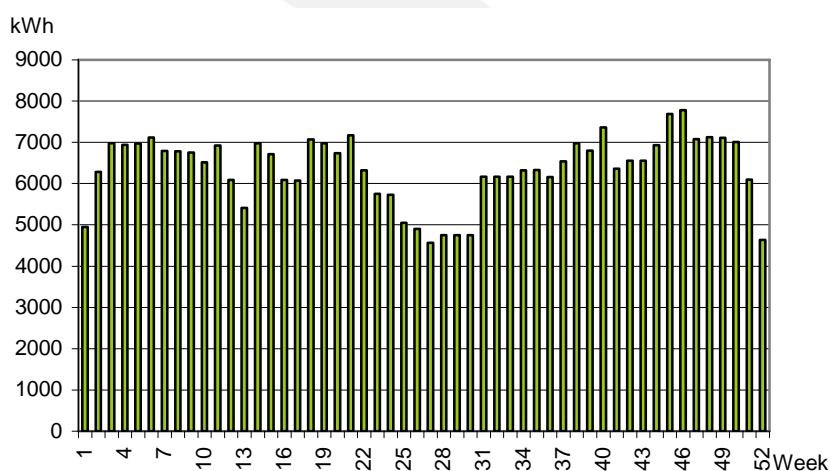
In 2005 the school consumed all in all 331,669 kWh/year, which corresponds to 61.4 kWh/m<sup>2</sup>. This figure is above the average one, which is 42.4 kWh/m<sup>2</sup>, the amount the similar types of schools in Denmark use<sup>1</sup>.

The interesting point around the electricity consumption in Sanaartornermik Ilinniarfik is, that its weekly use is approximately 6,362 kWh/week, with maximum 7,170 kWh/week and minimum 4,570 kWh/week during summer vacations. It means that school's consumption of electricity is never less than two third of the average; so, in spite of there are people at school or not, the basic weekly usage of electricity at school is 4,500 kWh.

So this consumption happens not because of lamps or computers, which are not switched on during summer holidays, but may be because of ventilation or some other stationary equipment. It means that all our efforts to make students and employees save electricity are not efficient enough. There should be introduced some more radical actions if we want considerably to reduce this consumption.



*Weekly consumption of electricity 2005.*



# Water consumption

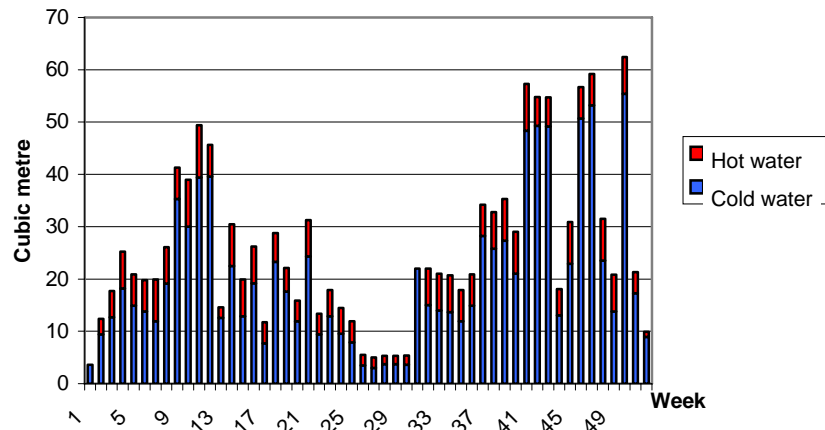


In 2005 the school used all in all 1,340 m<sup>3</sup> (3.7 m<sup>3</sup>/per day) of cold water, which is primarily spent for wc flushing, washing hands, cleaning up, as well as in labs and painting workshop.

Water consumption swings a lot, and we still can't find the reason of it. No leakages were found, and the high water usage was followed by the low, which proves that there is no leak in the lines.

Thus the cold water consumption is 170 l/person/week or 8.9 m<sup>2</sup>/year, the amount the similar types of schools in Denmark<sup>2</sup> use. Hot water consumption is part of the cold one, and it is heated by school's boiler. The hot water consumption is 36 l/person/week or 52 l/m<sup>2</sup>/year and is primarily spent for washing hands and cleaning up.

*Weekly consumption of water 2005*



# Refuse



There is no system to register the amount of refuse, but in 2005 the containers with waste were taken 89 times, which corresponds to 89 tonnes (1 tonne per container).

It means 11 kg/person/week, and covers household refuse, wood waste and metal waste. The last two mentioned are sorted separately because of the requirements at the refuse disposal plant.

No extra sorting is undertaken, neither of glass, cardboard or waste paper, but the school has placed battery containers and tries to collect the electronic waste.

School's amount of refuse per student is a little bit less than the figures from The Agency of Environmental Protection for educational institutions, and is 18 kg/person/year<sup>3</sup>.

# Oil consumption

The school is supplied with heating from two boilers with 4 separate hour meters. With some calculations they give the picture of oil consumption at school. In autumn 2005 new boilers were installed; they were not properly adjusted yet, so we measure our oil consumption with certain reservations.



In 2005 the school consumed 121,141 l oil for heating of water and the premises, which corresponds to 15.5 l/person/week.

As far as the heating area of school is approximately 5,400 m<sup>2</sup> the annual consumption is 22 l/m<sup>2</sup>. It gives the figure of energy usage of 224 kWh/m<sup>2</sup>, which is within the limits of building regulations for houses in Greenland suggested by Home Rule<sup>4</sup>.

# Fuel consumption



The school has 5 vehicles: 3 personnel cars, one excavator and one snow plough. All vehicles use diesel, and in 2005 consumed 7,680 l fuel.

In addition there comes the unknown amount of oil, fluid for windscreen washer and so on.

Thus driving these 5 vehicles the school, in the year 2005, contributed to the release of greenhouse gases with app. 20,000 kg CO<sub>2</sub>, and emission of SO<sub>2</sub> with app. 0.65 kg<sup>5</sup>.

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## Facts:

Students: 150

Staff: 46

School area: 5,400 m<sup>2</sup>

## References:

1. ELO Nøgletalsrapport, 2005.
2. Henze, M., et al. Spildevandsrensning, Polyteknisk Forlag, 1992.
3. Christensen, T. H., Affaldsteknologi, IngeniørenBøger, 2001.
4. Køster, J., Energy-efficient building, Center for Arktisk Teknologi, 2005.
5. Andersen, E. S., et al., Databog fysik kemi, F&K Forlag, 2003.