

PRESS RELEASE | 22nd March 2010 | Greenland/Denmark

Greenland's first hydrogen plant for renewable energy storage inaugurated

The first hydrogen plant for renewable energy storage was inaugurated at a public event today. The plant is a test system which shall help provide suggestions for how hydrogen can be used for future renewable energy storage in the country. H2 Logic A/S from Denmark has developed and delivered the hydrogen plant which is owned and operated by the national energy company Nukissiorfiit.

It was the three year old Andreas Anuik Hardenberg, who had the honour of placing the key in the lock when the first hydrogen plant opened in Greenland with the presence of representatives from the Greenlandic Government. It is the national energy company Nukissiorfiit that has procured the mobile plant which is now installed and in operation outside the company headquarter in Nuuk, the capital of the country. The plant is developed and supplied by H2 Logic A/S from Denmark.

Purpose of the test plant is to gain experiences with production, distribution and use of hydrogen as energy carrier and thereby investigate the opportunities for increasing the renewable energy share in the energy production from Nukissiorfiit.

Better use of the renewable energy

- In many periods of the year we have a reserve capacity at the hydro power plant that provides energy for the city of Nuuk. The idea is to use this capacity to produce electricity and split water into hydrogen and oxygen in the test hydrogen plant, - explained the energy director from Nukissiorfiit, Svend Hardenberg in his speech at the plant inauguration.

- In periods with larger energy consumption, typically during winter, we convert the hydrogen to electricity and heat in the fuel cell system in the test plant. This way the hydrogen functions as a battery that stores energy for later use whenever needed.

The plant will also function as a demonstration plant that is to increase the public awareness for hydrogen and fuel cells. Therefore the plant is equipped with large applied graphics on the exterior that explains about the plant and its technical composition and purpose.

Support for the hydrogen project

At the hydrogen plant inauguration was also the member of the Greenland Government for Houses, Infrastructure and Traffic, Jens B. Frederiksen. Among others he stated in his speech that:

- Dependency of fossil fuels makes it necessary to conduct long term investments in new technology, knowledge build-up and a strong believe in new development opportunities such as hydro, wind, solar and hydrogen energy technologies. The Greenlandic Government has since 2006 earmarked funds on the national budget for research and development of renewable energy. This is also the initiative that has supported this hydrogen plant and in the future is to put focus on energy supply for arctic regions.

The situation today

Around 60% of the energy – electricity and heat – that Nukissiorfiit produces today for the entire country comes from hydro power. The remainder is produced by use of expensive and polluting diesel. Especially the small settlements are depended on diesel power, and where many of them do not have the opportunity for establishment of other means of renewable energy in larger scale. Further diesel power is also used as reserve power in cities that today is supplied with energy from hydro power plants.

Future opportunities

With a continuous increase of production capacities of hydro power plants in combination with an aim for hydrogen and fuel cells, it may in long term be possible for Nukissiorfiit, to completely avoid use of diesel for electricity and heat production. Further the hydrogen can be used as fuel for the transportation sector and with the excessive potential for hydro power that the country posses, export of hydrogen may be a long term opportunity.

Experimental plant

The test plant produces hydrogen by using electricity to split water into hydrogen and oxygen. The hydrogen is stored for later conversion into electricity and heat in a fuel cell, whenever needed. The excess heat from both the hydrogen production and the fuel cell can be used for heating, while the electricity can be supplied to grid or used in the office building of Nukissiorfiit.

The plant also includes a compression and distribution system that enables storing of the hydrogen under pressure in distributable bulks. This way the hydrogen can be distributed to other cities and settlements in Greenland where it can be used for local energy production. The plant is also prepared for a future upgrade with a hydrogen refueling station, enabling use of hydrogen as fuel for transport.

Next phases

The next phases of the project are already under planning. One of the ideas is to distribute hydrogen from the plant to a nearby settlement or alternately move the entire plant, as it has been designed to be moveable.

More information

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Pictures & plant info sheet

Pictures of the hydrogen plant and an info sheet can be found at: www.nukissiorfiit.gl or www.h2logic.com



About Nukissiorfiit | www.nukissiorfiit.gl

Nukissiorfiit is one of the largest companies in Greenland, and acts as the national energy company, producing and distributing electricity, water and heat to the population. This is done through 14 local departments that are responsible for 17 cities and 54 settlements. The vision of Nukissiorfiit is to develop the energy supply in Greenland in a sustainable direction, ensuring low cost energy to the society and reducing dependency of oil. Nukissiorfiit employees 400 people and is owned by the Greenlandic Government.

About H2 Logic | www.h2logic.com

H2 Logic is a world leading developer of zero emission & sustainable Fuel Cell Power Systems for Material Handling vehicles and Hydrogen Refuelling Infrastructure for production and refuelling of hydrogen to vehicles.