Nedstack
PEM FUEL CELLS

To be sure.

PRESS RELEASE

Solvay proudly presents Nedstack's Megawatt fuel cell

Arnhem, February 6 2012 – Today, Solvay proudly presents Nedstack's fuel cell system to the press. The system was installed on schedule in September 2011. After a few weeks of testing, it has now been running continuously for 2 months. The performance is impressive: The electrical efficiency has proven to be 50 %, with a total efficiency -including heat recuperation- of 80 %. The availability is meeting high expectations too, even in this early phase of operation, it has been 99 % over the past two months. Solvay's personnel have quickly learnt to operate this hassle-free plant.

The fuel cell system is called a "PEM Power Plant". It is a major milestone in the global fuel cell industry. With 1 MW of electric power output, delivered by 12,600 fuel cells, it is the largest of this type in the world. The PEM Power Plant converts hydrogen, a by-product in the chlorine industry, into electricity and heat. Chlor-alkali and chlorate production industries are very energy-intensive. Nedstack's PEM Power Plant enables them to self-generate 20 or 40% respectively of their electricity consumption. Solvay's PEM Power Plant generates 1 MW of electricity and generates 500 kW of heat, to be reused in the production process for significant additional cost savings. In addition, PEM fuel cells are emission-free. With PEM Power Plants, the industry significantly contributes to meeting the European targets to reduce energy consumption and CO_2 emissions.

In 2007, Nedstack delivered a smaller model, with a capacity of 70 kW, at AkzoNobel's chlorine production plant in Delfzijl. Nedstack's fuel cells proved to have a remarkably long life span. The most recent generation of Nedstack's fuel cells have recently reached 13,000 hours of continuous operation and are expected to last over 20,000 hours. The Akzo PEM Power Plant, which has been in operation for almost five years now, requires minimum maintenance and is monitored at a distance by Nedstack.

Nedstack sees an enormous market for these systems, especially in India and China, where large quantities of the by-product hydrogen are available and the value of electricity is high because the power supply of these fast-growing economies cannot always keep up with demand.

About Nedstack

Nedstack produces Proton Exchange Membrane (PEM) hydrogen fuel cells, the most versatile type of fuel cells available. Nedstack's customers integrate these into systems to power various applications:

- Backup electricity supply for telecom, rail and utilities, as a replacement for batteries. Fuel cells environmentally friendly and have a very high reliability and life span
- Continuous power supply for telecom base stations and radio towers in developing countries, to replace diesel generators. Fuel cells have low fuel and maintenance costs, and generate no noise or fine particles
- Continuous energy supply in the chlorine, caustic soda and sodium chlorate industries through conversion of the by-product hydrogen
- Electricity supply for electric city buses, as a replacement for diesel-powered vehicles, trolleys and trams.

Nedstack
fuel cell technology B.V.

Westervoortsedijk 73
6827 AV ARNHEM

P.O. Box 5167
6802 ED ARNHEM
The Netherlands

Phone +31 (0)26 319 7600
Fax +31 (0)26 319 7601
E-mail info@nedstack.com

Trade Register Arnhem
nr. 09102161

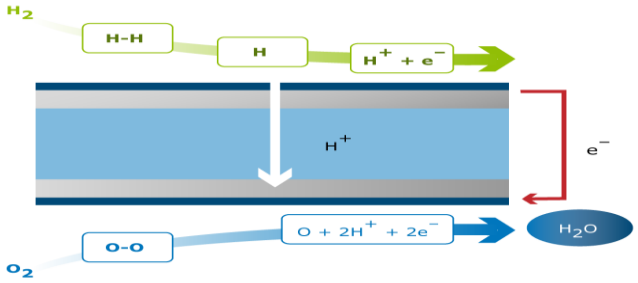
www.nedstack.com

Nedstack is the largest independent PEM fuel cell producer in Europe and the second worldwide. AkzoNobel started the development of fuel cells in 1989. This expertise was transferred to Nedstack when it started as an independent enterprise in 1998. Nedstack's fuel cells have been in commercial operation since 2007. Nedstack now employs 50 people.

The fuel cell principle

A fuel cell generates electricity from hydrogen and air. A catalyst enables very efficient chemical conversion of hydrogen (H_2) and oxygen (O_2) from the air into water (H_2O). It is a combustion without fire or moving parts. A fuel cell generates electricity without noise, fine particle emissions, or friction and wear.

This solid state technology compares to a diesel generator like an iPod to a turntable.



Financing

The cross-border Interreg project Hydrogen Region Flanders-South Netherlands contributed to the realization of the Nedstack 1 MW hydrogen fuel cell Power Plant. The Hydrogen Region project, coordinated by WaterstofNet, uses its overall budget of € 14 M to develop hydrogen knowledge and projects within the Flanders-South Netherlands region. The program focuses on sustainable hydrogen and early markets. Application areas are maritime, logistics, and cities. Completion of the 1 MW PEM Power Plant is the first mile stone of the programme.

Note to the editors:

A video of the transport of the PEM Power Plant is available via Nedstack's website http://www.nedstack.com/applications/chlorine-h2-recovery

Pictures attached:

Photo 1: Nedstack PEM fuel cell stack
Photo 2: PEM Power Plant under construction
Photo 3: PEM Power Plant on transport
Photo 4: PEM Power Plant installed

For more information:

Nedstack
Jorg Coolegem
Tel: +31 26 3197 600
jorg.coolegem@nedstack.com
www.nedstack.com