

## Fact sheet – electrolysis and green hydrogen projects

October 18, 2018

### Electrolysis at Nouryon, already at 1000 megawatt scale

- In our chlor-alkali process – a total installed capacity in the Netherlands and Germany of 380 megawatt and production of up to 38 kton of hydrogen per year.
- In our sodium chlorate process – installed capacity of 620 megawatt (electric capacity) and production of up to 62 kton of hydrogen per year.
- Water electrolysis – a total installed capacity in Norway of 10 megawatt, with production of up to 1.5 kton of hydrogen per year.
- Overall hydrogen production in existing processes of around 100 kton per year.

### We are partnering to build a green hydrogen market and achieve scale, projects in execution or approved

- **Bus pilot Frankfurt-Höchst Industrial Park, Germany**

As part of the German National Innovation Program for Hydrogen and Fuel Cell Technology, two hydrogen-powered fuel cell buses are running at Frankfurt-Höchst Industrial Park. They are operated by Infraser H Höchst, the company managing the industrial park, and hydrogen is supplied by Nouryon. The hydrogen is a byproduct of our chlorine production at the industrial park.

For more info: see [media release](#)

- **Bus pilot Delfzijl, the Netherlands**

A hydrogen refueling station is located next to the Chemiepark Delfzijl in the Netherlands. The station has been built under the High V.LO-City project and is operated by PitPoint clean fuels with Nouryon supplying the hydrogen by pipeline. The hydrogen is a by-product from our chlorine production, produced sustainably by electrolysis, using electricity produced from wind energy.

For more info: see [media release](#)

- **CertifHy – Certification of green hydrogen**

Together with Air Products, Nouryon is participating in a pilot to obtain guarantees of origin for sustainable 'green' hydrogen produced in our facility in Rotterdam. It is one of four pilots under the European CertifHy program to issue the first Guarantee of Origins in the EU, to differentiate between green hydrogen produced from sustainable sources and that produced from fossil fuels.

For more info: see [website](#)

- **Carbon2Chem, Germany**

Carbon2Chem is a major project coordinated by thyssenkrupp, the Fraunhofer Society and the Max Planck Society and involving 15 further partners from research and industry. The project aims to use emissions from the steelmaking process – including the CO<sub>2</sub> they contain – as a raw material for chemicals such as methanol, one of the most widely produced organic chemicals. To use steel mill gases as feedstock for chemical production large amounts of hydrogen is needed and we coordinate the 'Sustainable Methanol Production' subproject. In September 2018 a pilot plant was launched on the premises of thyssenkrupp Steel Europe in Duisburg, Germany.

For more info: see [blogpost](#)

- **RISE, Sweden**

We partnered with Swedish state-owned research institute RISE, forestry group Södra, and packaging materials company BillerudKorsnäs to explore opportunities for green hydrogen and 'electrofuels'. We are a major user of electricity in Sweden, and contribute our expertise in electrochemistry to the partnership.

For more info: see [media release](#)

## Projects under development or discussion

- **20 megawatt water electrolyser, the Netherlands**

Together with gas network operator Gasunie we are investigating the large scale conversion of sustainable electricity into green hydrogen via the electrolysis of water. Intended for use in the chemical industry in Delfzijl in the Netherlands, the installation would use a 20 megawatt water electrolysis unit to convert sustainably produced electricity into 3 kton of green hydrogen a year – enough to fuel 300 hydrogen buses. A final decision on the project is expected in 2019.

For more info: see [media release](#)

- **Hydrogen test centre Zernike, the Netherlands**

Together with research institute ISPT, the Hanze University of Applied Sciences and various partner companies, we are starting a test center where researchers and students can develop and test applications for the production of hydrogen with electrolysis. The goal is to speed up development of technology to produce green hydrogen at a large scale.

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### About Nouryon

We are a global specialty chemicals leader. Markets worldwide rely on our essential chemistry in the manufacture of everyday products such as paper, plastics, building materials, food, pharmaceuticals, and personal care items. Building on our nearly 400-year history, the dedication of our 10,000 employees, and our shared commitment to business growth, strong financial performance, safety, sustainability, and innovation, we have established a world-class business and built strong partnerships with our customers. We operate in over 80 countries around the world and our portfolio of industry-leading brands includes Eka, Dissolvine, Trigonox, and Berol.