



Hydrogen technology innovations

- Industry
- Transport
- Energy

Empowering generations with clean energy forever is the vision of Nel Hydrogen.

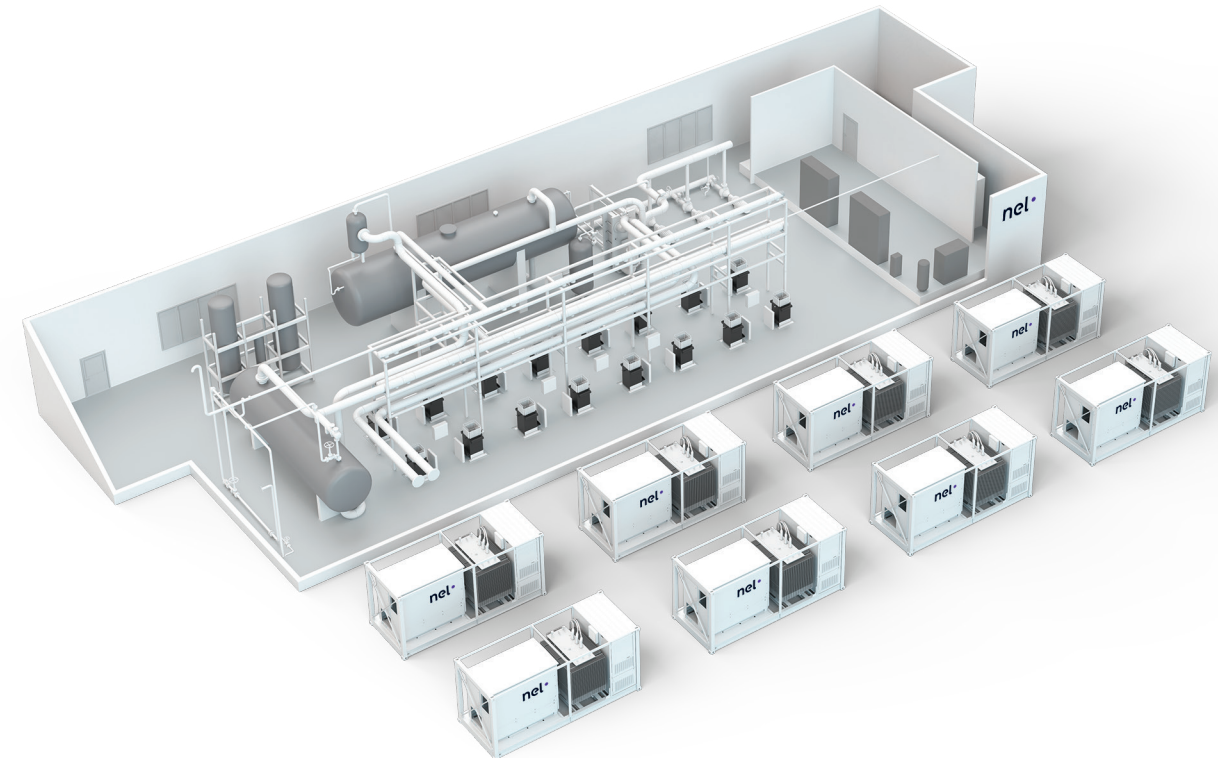
Our technology allows people and businesses to make everyday use of hydrogen, the most abundant element in the universe.

The world's hydrogen enabler

Nel Hydrogen is a global, dedicated hydrogen company, delivering optimal solutions to produce, store and distribute hydrogen from renewable energy. We serve industries, energy and gas companies with leading hydrogen technology.

Since 1927 Nel Hydrogen has proudly developed and continually improved hydrogen plants. Our proven hydrogen solutions cover the entire value chain – from hydrogen production to intermediate energy storage and manufacturing of hydrogen fueling stations, providing all fuel cell electric vehicles with the same fast fueling and long range as conventional vehicles today.

The global community demands zero emission solutions. Nel Hydrogen is positioned to build complete, cutting edge hydrogen infrastructure – unlocking the potential of renewables.



M4000



MC250



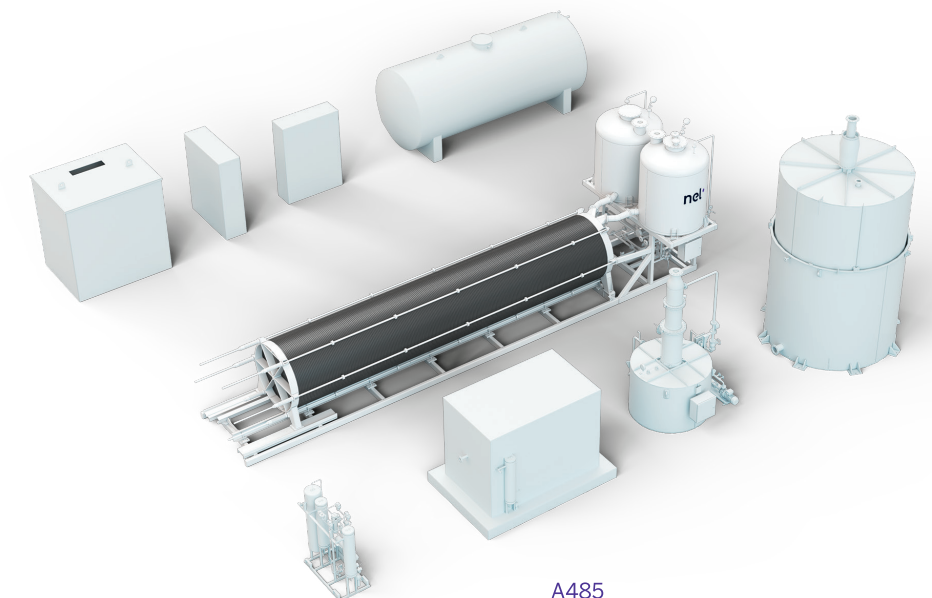
C30



H4



S10

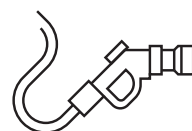


A485



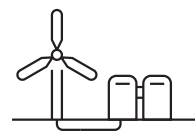
ELECTROLYSERS

More efficient and reliable than any other electrolyzers



FUELING

The pinnacle of hydrogen fueling technology



SOLUTIONS

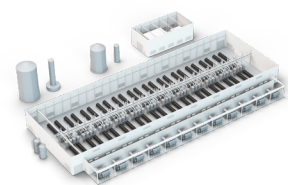
Unified delivery of complex renewable hydrogen solutions

Unrivalled electrolyser performance

With more than 3,500 reliable, cost efficient electrolysers installed around the globe, Nel Hydrogen is the recognized industry leader of alkaline and proton exchange membrane (PEM) water electrolysis. Our water electrolysers make a superior choice for industry, transport and power-to-x applications. Multiple, scalable, flexible, modular product ranges are set to meet any customer requirement.

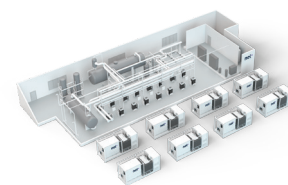
While Nel's A Series electrolysers utilize an atmospheric alkaline method for splitting water, its M, C, H and S Series electrolysers utilize PEM technology to produce pressurized, high volume, ultra-high purity hydrogen on-site. With efficiency in mind, these state-of-the-art systems sense demand and automatically adjust production accordingly.

Nel's units come in a variety of sizes and configurations to match any customer application. In addition, M Series can be containerized for easy deployment and setup. For larger applications, the cell stacks for the A and M Series electrolysers are grouped together to share balance of plant saving both capital and operational expenses.



A Series

The world's most energy efficient electrolysers, the A Series is based on our proven 2.1 MW cell stack design, with a power consumption from 3.8 to 4.4 kWh/Nm³ of hydrogen gas produced depending on the load. Nel has the capability to build a complete plant around this core technology, working on standardized platforms reaching up to 19,400 Nm³/h, or 42 tons per day, representing a plant of around 100 MW.



M Series

With minimal maintenance and siting requirements, M Series electrolysers can produce up to 4,920 Nm³/h of hydrogen gas at 99.9995% purity on-demand. Featuring a scalable design, these systems offer solutions that are well-suited for a variety of industrial, fueling and renewable energy applications.



MC Series

In situations where plant space is at a premium, customers may want to site their electrolysers outside. At other times customers may want to configure an electrolyser for a more turnkey operation. To satisfy those needs, we suggest containerization. MC Series units are delivered and sited in free standing containers for maximum flexibility.



C Series

The C Series electrolysers are ideal for a variety of industrial applications. Producing up to 30 Nm³/h of hydrogen gas at 99.9998% purity, these units replace the need for hydrogen tube trailers or liquid hydrogen storage. They are easy to install in general purpose areas.



H Series

H Series electrolysers offer turnkey solutions for small-scale applications requiring up to 6 Nm³/h of hydrogen gas at 99.9995% purity. These units make a minimal impact to facility floor space and are easy to maintain.



S Series

Producing high purity hydrogen of 99.9995% at up to 1.05 Nm³/h, S Series electrolysers replace the need for hydrogen cylinders in a variety of industrial processes. Each unit is low maintenance, compact, quiet, and can be installed virtually anywhere in a facility.

The benchmark of hydrogen fueling

Presenting the highest reported availability in the world and being the first to comply with the latest standards for refueling, our solutions for hydrogen production and fueling are becoming the benchmark for the industry.

From a customer's first dispenser to establishing complete nationwide fueling networks, Nel Hydrogen is ready for delivery.

The H2Station™ is the newest generation hydrogen fueling station for all types and sizes of fuel cell vehicles. It offers fast fueling with the world's most compact footprint. Its design is based on years of R&D and operational experience, and is renowned for providing high fueling reliability. It is the world's first UL listed and CE marked hydrogen fueling station module, allowing for easy local authority approval.

H2Station

CAPACITY

Capacity of more than 1,500 kg per day
Maximum capacity 110 kg/h @ 70MPa
or 200 kg/h @ 35 MPa

MANUFACTURING CAPABILITY

Lean volume manufacturing capability
of up to 300 stations/year

STORAGE

Hydrogen storage dimensioned
to fit any preferred capacity and
supply source ranging from on-site
production to trucked-in delivery

STANDARDIZED

Standardized product design
based on extensive development
and testing

DISPENSER

Compact hydrogen dispenser with a
footprint of only 0.52m x 0.635m that can
be placed right next to gasoline dispensers,
70MPa fueling according to SAE 2601-1 or
JPEC S0003, or 35 MPa fueling according to
SAE 2601-2 and Optifill™

PLACEMENT

Modular and flexible placement
of H2Station modules at site



Station modules only available in galvanized steel.

Talk to us about station modules, fueling storage, dispensers and fueling supply.

Leading the way to reduce the world's carbon footprint

Sustainability is an integral part of Nel's identity. Its vision, to empower generations with clean energy forever, drives Nel's ambitions and priorities. Combating climate change is high on Nel's corporate agenda and the company always incorporates sustainability into its strategic decision-making processes.

Leading the organization from its corporate headquarters in Oslo, Norway, Nel consists of electrolyser production facilities in Norway and the USA, and one fueling station production facility in Denmark. In addition, Nel has a sales and support network with global reach, including service organizations close to the main markets for fueling stations – the U.S. West Coast, South Korea, and Northern Europe.

Nel supports the UN Sustainable Development Goals and strives to document the actions it is taking to meet them. Presented in 2015, the 17 goals were developed to address the most prominent sustainability concerns we are facing as a society at large.

The color of hydrogen

On the hydrogen emission spectrum we find the color purple, with a wavelength of 410 nm. Nel is the color of hydrogen.



Are you next?

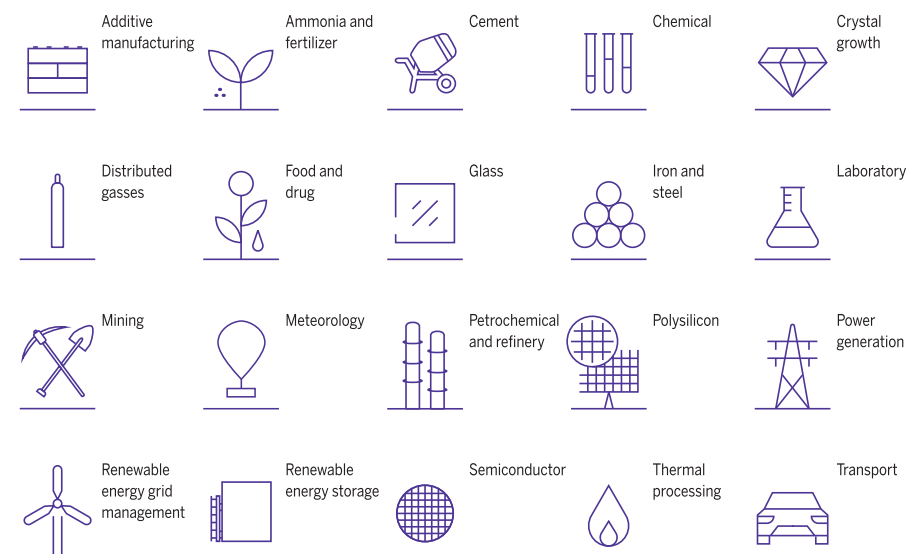
Hydrogen business development

Moving into hydrogen implies new territory and many opportunities. Investing in renewable hydrogen infrastructure requires solid solutions for operation, maintenance, ownership and financing. Nel realizes technological advancement takes place in a wider context in which we can give advice, facilitate and play different roles.

Committed to the success of every customer, Nel Hydrogen has valuable experience across categories, covering most aspects of hydrogen entrepreneurship.

Nel Hydrogen has delivered more than 110 fueling stations in 13 countries, many which today are used on a daily basis for fueling of fuel cell electric vehicles from the major international car manufacturers. We build hydrogen production facilities of all sizes and configurations. Our biggest hydrogen plants to date: 135 MW. Challenge us, and we will be happy to discuss what solutions will fit your needs.

Markets we serve



Pioneering renewable hydrogen for nearly a century

- 1927 • Building of the first small electrolyser installation at Norsk Hydro at Notodden, Norway. Testing for pure hydrogen for fertilizer production.
- 1929 • World's largest installation of water electrolysers at Rjukan, Norway. Increasing over time to 3 plants and 440 electrolysers, exceeding 60,000 Nm³/h. Sourced by hydro power.
- 1953 • Creation of a second large-scale hydro powered electrolyser plant for supplying hydrogen for ammonia production in Glomfjord, Norway
- 1974 • Our renowned electrolyser technology made available for other companies and other industries
- 1988 • The world's first electrolyser supplier to provide non-asbestos alkaline electrolysers
- 2003 • Nel opens the world's first publicly available hydrogen fueling station in Reykjavik, Iceland
- 2004 • The world's first Power-to-Power demonstration project at the island of Utsira, Norway, enabling power to 10 households from stored hydrogen produced by excess wind power
- 2014 • Nel becomes the first 100% dedicated hydrogen company listed on the Oslo Stock Exchange
- 2015 • Nel acquires H2 Logic A/S, adding world leading hydrogen fueling technology to the product portfolio
- 2016 • Initiates construction of the world's largest manufacturing plant for hydrogen fueling stations, with a capacity of 300 units per year
- 2017 • Nel acquires Proton Energy Systems, Inc., adding world leading PEM electrolysis technology to the product portfolio, becoming the world's largest electrolyser company

More than 90 years of hydrogen innovation. And we are just at the beginning.

H₂ is ∞

