ANOTH2ER WAY TO THE FUTURE

SAIPEM

IVHY™100

FOR YOUR GREEN HYDROGEN PRODUCTION PLANT

SAIPEM

WHAT IS GREEN HYDROGEN?

Green hydrogen is produced via electrolysis, a process whereby water is split into hydrogen and oxygen using electricity entirely generated from renewable energy sources.

HOW CAN GREEN HYDROGEN BE USED?

It can be used in **various sectors** in the existing industry, such as **petrochemical**, **fertilisers**, **refineries** and **biorefineries**. It can also be used for **mobility**, **heating**, **power** and **new products** such as **green ammonia**, **green methanol**, **e-fuel** and **e-methane**. This means embracing a decarbonization process to reduce carbon footprint **toward net zero**.

IN WHAT DIRECTION IS THE BUSINESS GOING?

According to several studies, green hydrogen production **is expected to grow significantly** in the next decades **gradually replacing grey hydrogen** consumption and satisfying **emerging applications demand**.

SAIPEM IVHY™100

GREEN HYDROGEN SOLUTION powered by nel

IVHY™ 100 is Saipem's **sustainable, reliable, industrialized, scalable and modular** solution for green hydrogen generation, based on Nel's alkaline technology.

IVHY™ 100 addresses the growing green hydrogen demand for the decarbonization of hard-to-abate industries and the production of green derivatives, such as ammonia, methanol and sustainable fuels, to support our Clients in their journey towards Net Zero.

FAST AND SECURE DELIVERY

EFFECTIVE AND PREDICTABLE OPERATION

GUARANTEED DESIGN AT SCALE

PRODUCT PERFORMANCE

H_2 Flowrate	about 19,000 Nm3/h
Capacity (scalable)	100 MW
H_2 Output P (adjustable)	30 barg
H_2 Output T	40°C
H_2 Purity	> 99.99%
Plant Footprint	Overall 23,000 m^2 Core 13,000 m^2

IVHY™100: SAIPEM AND NEL'S NEW TECHNOLOGY

GUARANTEED SCALE DESIGN.

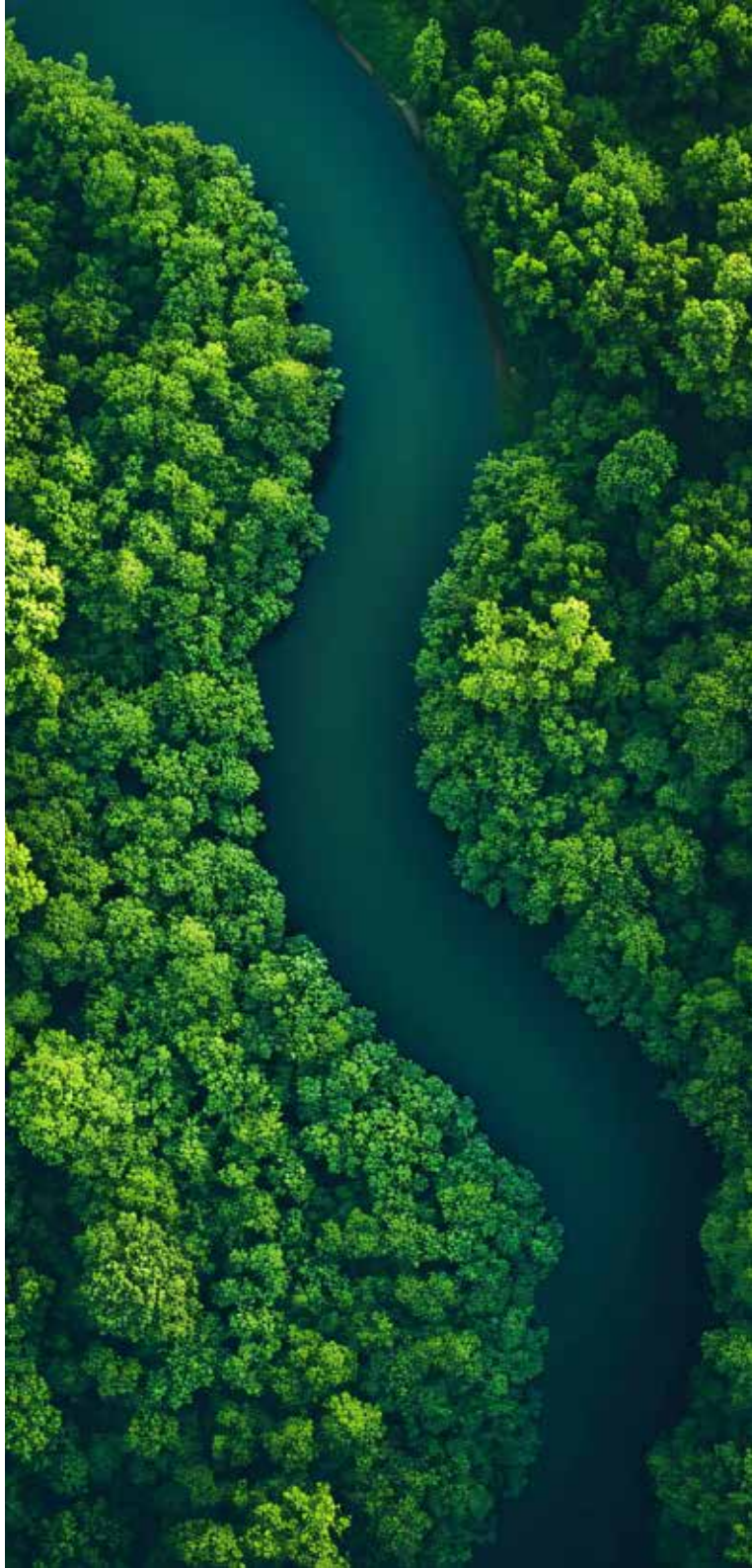
Combining Saipem's expertise in the field of development of "green grids," with that of Nel, a key electrolyser player in the market for nearly 100 years and an industry leader, means making **a reliable technology with guaranteed performance**.
Saipem's Green Hydrogen Industrialized **IVHY™100 solution** is **a pre-engineered, modular and scalable solution** that can produce hydrogen by using 5 electrolysis modules, each with a capacity of 20 MW.

EFFECTIVE AND PREDICTABLE OPERATION.

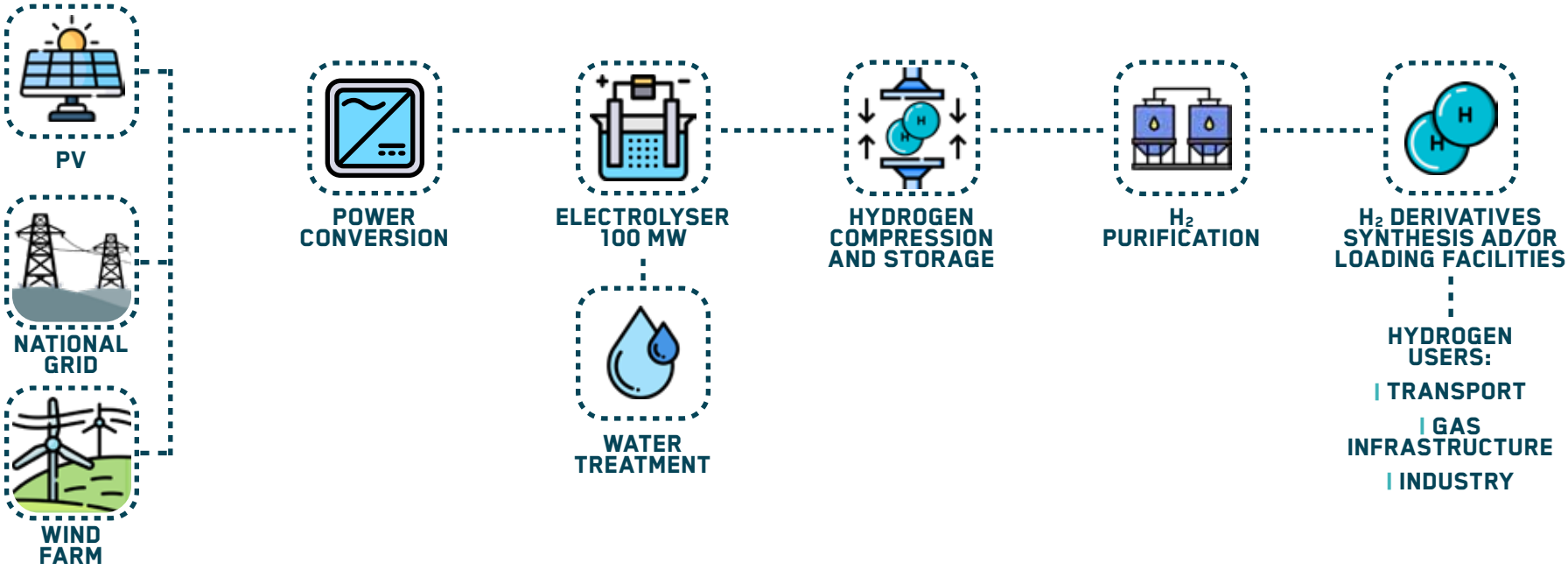
With a **simple and robust design**, Saipem **IVHY™100** can be built with **fixed and competitive time and cost**, to create a Power to Gas Hydrogen plant that uses alkaline technology, follows a replicable production approach to achieve capex/opex reduction, and is constantly improving technology, ensuring LCOH reduction.

FAST AND SECURE DELIVERY.

IVHY™100 is a turnkey, **off-the-shelf solution** consisting of transformers, rectifiers, electrolyser, and all the technology needed for hydrogen compression and purification. **Installation is quick**, as is commissioning, thanks to Saipem's expertise as an EPC contractor and Saipem's pre-engineered package ready for EPC projects.



For many years, Saipem has been engaged in the design and construction of **several hydrogen generation plants** and more than **130,000 km of onshore and offshore pipelines** to transport liquids and gas. But, at the same time, Saipem is also developing studies for the transportation of H_2 and is implementing projects to change existing pipelines and compressor stations for hydrogen use.



SAIPEM ACTS AS OVERALL PLANT INTEGRATOR AND SINGLE POINT RESPONSIBILITY

SAIPEM AND NEL
A UNIQUE PARTNERSHIP

Choosing a partner like Nel, leader in alkaline electrolysers, means reliability, efficiency and safety.

1 ENERGY EFFICIENT ELECTROLYSERS

Nel's state-of-the art electrolyser technology demonstrates the **highest energy efficiency** figures in the market during the lifetime of the electrolyser, backed by **solid performance guarantees**.

2 TESTED AND PROVEN TECHNOLOGY

Nel has almost **a century of experience** developing electrolysers that are tested and proven by clients **across the world**.

3 RELIABLE FLEXIBILITY

Nel's **atmospheric pressure design** offers the flexibility to operate between 15-100%, this ensures a high level of plant availability, and **minimizes costs** related to shutdown and maintenance.

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LET'S KEEP IN TOUCH

www.saipem.com

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