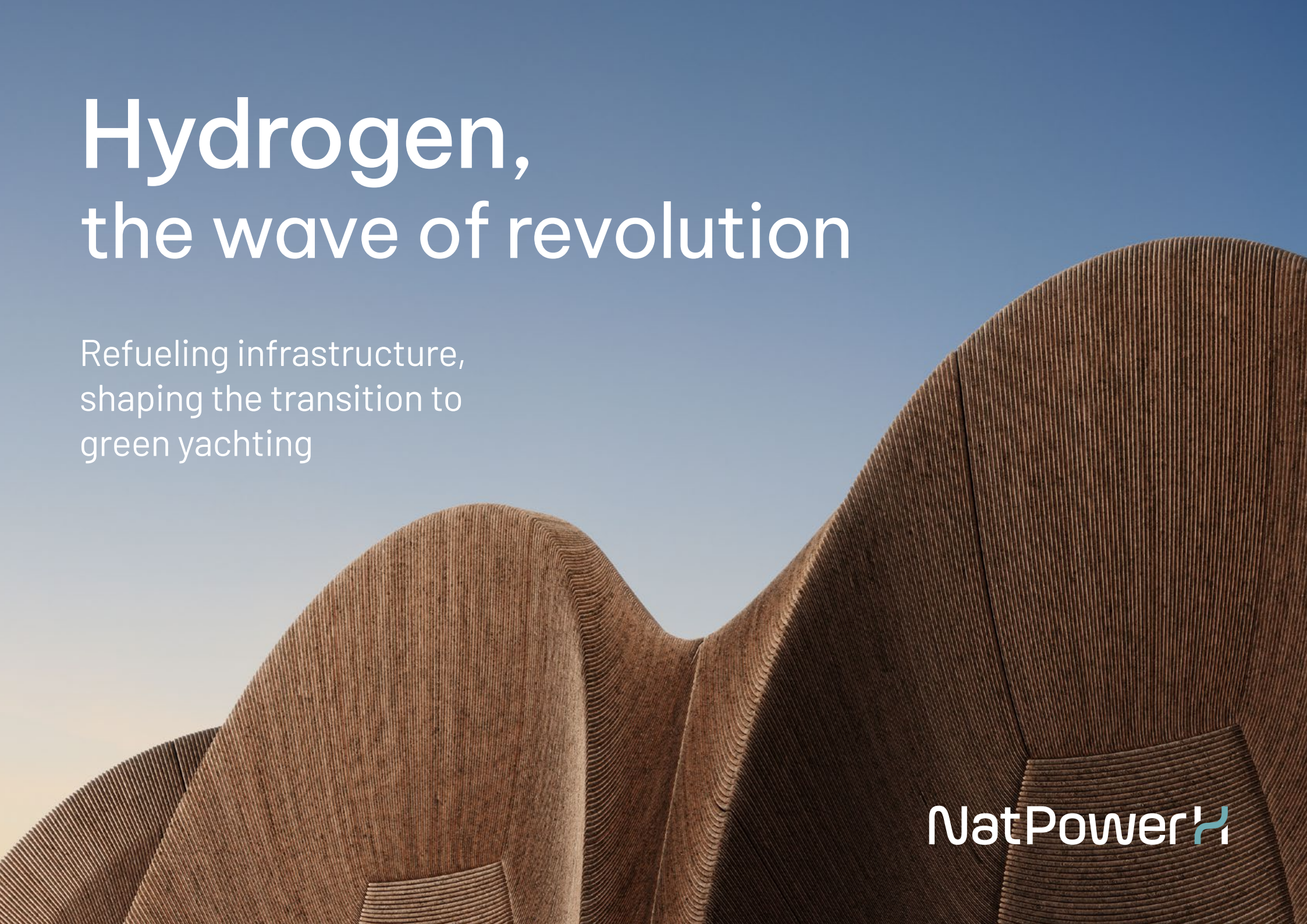
Hydrogen,
the wave of revolution

Refueling infrastructure,
shaping the transition to
green yachting



NatPowerH

Contents

Hydrogen.

From the Greek *hydro*, ‘water’, and *genao*, ‘I produce’.

Hydrogen is not only part of water
we think of it and identify it in relation to water.

And in the world of yachting, hydrogen must
be a central element of the energy transition.
The centre of a revolution, as unstoppable as a wave.
This our mission. Because we are NatPower H.

Power from nature

NATPOWER GROUP

NatPower is an independent developer of infrastructural projects for renewable energy generation, providing support to enterprises, utilities, and investors globally. Founded in 2019 by Fabrizio Zago, an experienced entrepreneur in the global green industry, the company boasts a team with 25 years of expertise, and in just a few years has earned a reputation **as one of the most prominent independent developers**, actively operating in seven different countries: Italy, UK, Kazakhstan, US, Canada, Tunisia and Chile. The company manages its operations from three main offices located in Milan (Italy), London (UK), and Washington, D.C. (US). NatPower employs about 80 people across three continents.

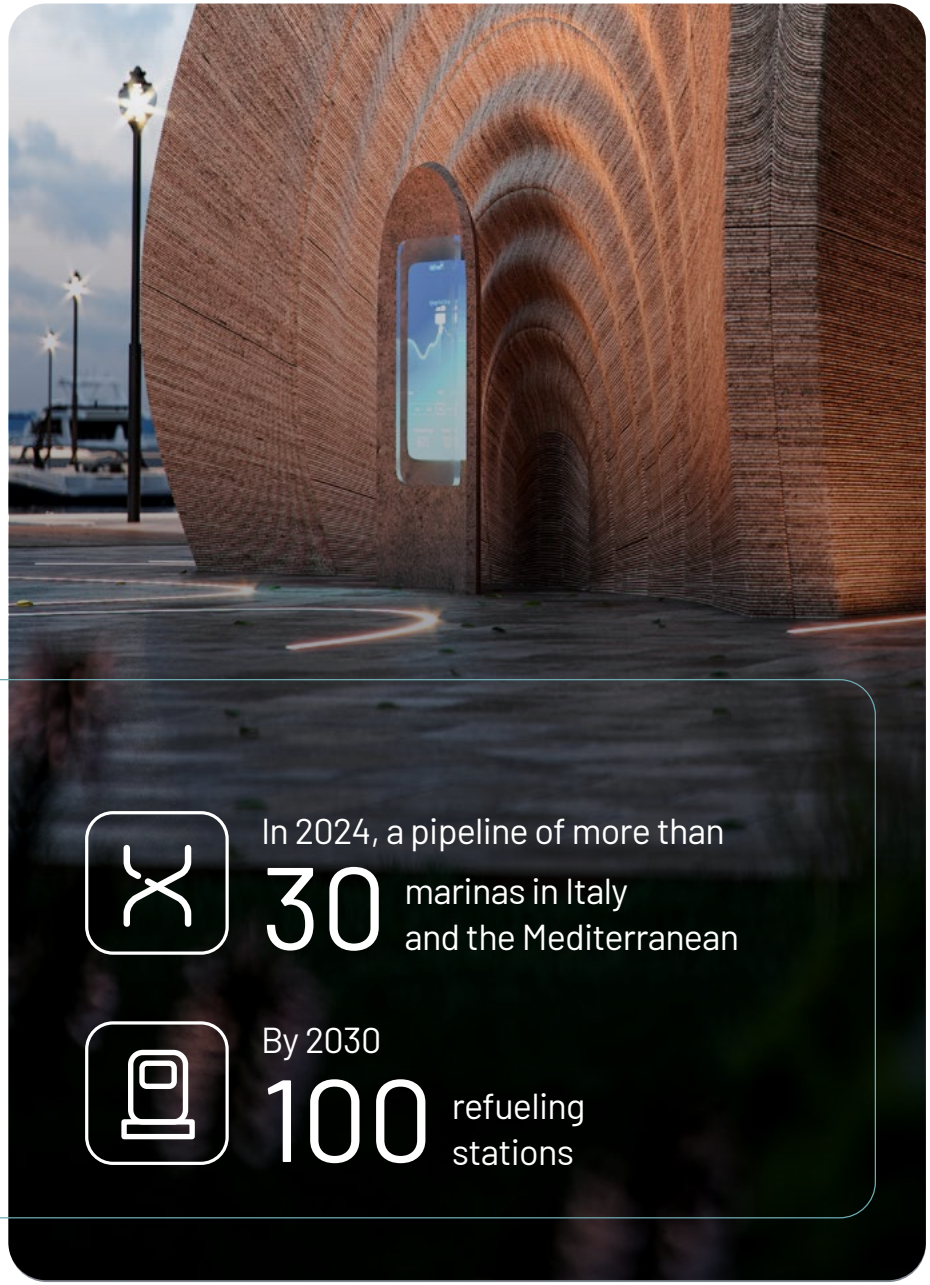
NatPower has one of the largest green project pipelines in the world - totalling more than 30 GW - and is driving the energy transition process across all major technologies, including solar, wind, battery energy storage and hydrogen. The group is playing a key role in promoting sustainable development, reducing greenhouse emissions, and helping to counter climate change.

NatPowerH

In 2024 NatPower Group launched **NatPower H, the first global developer of innovative infrastructure in the green hydrogen and yachting industry**. We aim to install sustainable energy hubs in major international marinas, creating the ideal conditions to facilitate the development and use of hydrogen-powered vessels.

The project, which involves an investment of 100 million euros, will support the yachting industry's energy transition. In 2024, **the project already has a pipeline of more than 30 marinas in Italy and the Mediterranean** and aims to install at least **100 refueling stations by 2030**.

Investment of
100 million
of euros



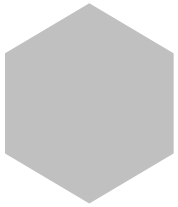
Inside Hydrogen

AN ELEMENTAL ENERGY

Hydrogen is the lightest and most abundant element in the universe, a colourless, odourless and water-insoluble gas.
It rarely occurs in its natural state because it is generally combined with other elements. For this reason, hydrogen is not defined, technically, as a primary energy source, but as an energy carrier.
And in fact, it is **an extremely powerful one: compared to conventional fuels, it has the highest energy content per unit weight, three times greater than gasoline.**

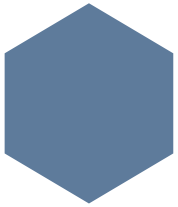
COLOURS OF HYDROGEN

The processes used to produce hydrogen vary,
and **depending on the process, it is identified by different 'colours'.**



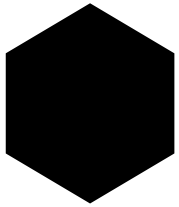
Grey Hydrogen:

obtained from natural gas or the conversion of coal. The method used to produce it releases CO_2 into the atmosphere.



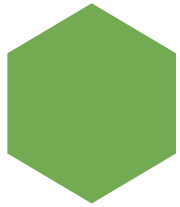
Blue Hydrogen:

similar to Grey Hydrogen, but with 90% de-carbonization and no harmful emissions, because the CO_2 is captured rather than being released into the air.



Black Hydrogen:

extracted from water by electrolysis, but the energy used to produce it comes from coal-or-oil-fired power plants.



Green hydrogen:

production does not involve the use of fossil fuels because it is extracted using electrolysis with electricity from renewable sources such as solar, wind or hydro power.

PRODUCING HYDROGEN: ELECTROLYSIS

The basic principle of electrolysis is to **split water into oxygen and hydrogen with the help of electricity.**

The splitting occurs in a two-part reaction which takes place at the two electrodes – cathode (-) and anode (+) – in the electrolysis cell. In practice, **electrolysers consist of several interconnected electrolysis cells, also called stacks. When voltage is applied, hydrogen is produced at the cathode and oxygen at the anode.**

+

−

Between these two reactions, **charge equalisation takes place in the form of ion** conduction via an electrically conductive substance known as an electrolyte.

Both the ion charge and the type of electrolyte differ in the various **electrolysis technologies**.

A new era for yachting

ENERGY TRANSITION

Climate change shows us that **sustainability is a duty as well as a goal**. Energy transition is accelerating, and **it is necessary to increase independence from fossil fuels.**

Renewable energies will lead the way in cutting emissions, in line with the European Union's commitment to reducing emissions by at least 55% by 2030 and making the EU climate-neutral by 2050.

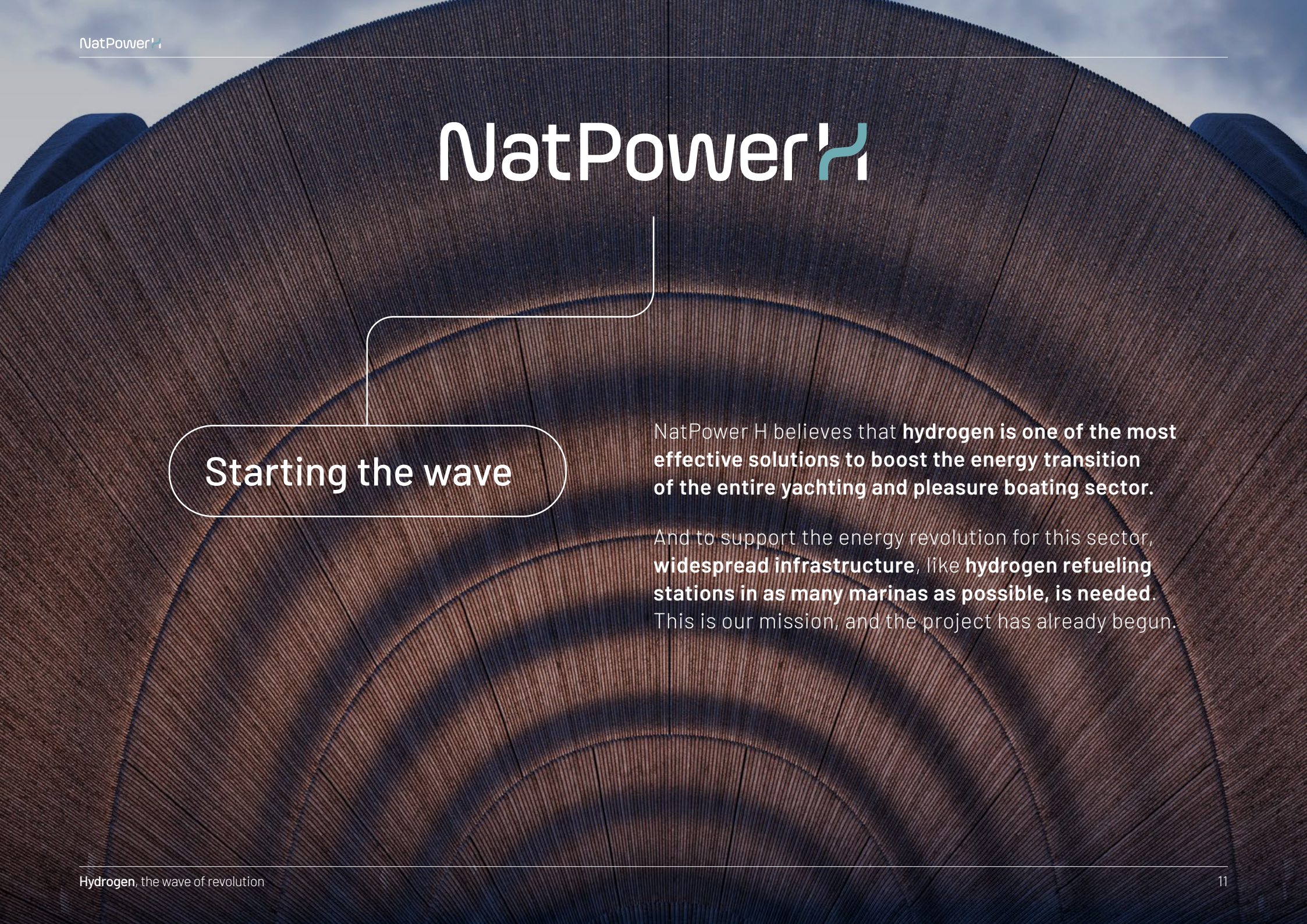
SUSTAINABILITY ON THE SEA

The yachting scene is seeing an increasing commitment to sustainable vessels, with numerous shipyards promoting a range of solutions to reduce the impact of their activities on the ecosystem.

The **increasing delimitation of marine protected areas**, with bans on diesel engines, also highlights the importance of sustainability in the yacht and mega-yacht sector, **pushing the entire industry towards eco-friendly innovation**.

At the same time, agreements among institutions and the various stakeholders in the industry are also pushing for a change of course. One example is the **European Union's FuelEU initiative**, a project **promoting more renewable and low-carbon fuels to reduce the carbon footprint of the maritime sector in the EU**, thus bringing maritime transport **in line with the trajectory of the EU's climate goals for 2030 and 2050.**

But this rapid energy transition is slowed down by the **lack of infrastructure** for the distribution and supply of **zero-impact energy sources**.



Starting the wave

NatPower H believes that **hydrogen is one of the most effective solutions to boost the energy transition of the entire yachting and pleasure boating sector.**

And to support the energy revolution for this sector, **widespread infrastructure**, like **hydrogen refueling stations in as many marinas as possible, is needed**. This is our mission, and the project has already begun.

Our revolutionary refueling stations

Designed by
ZAHA HADID ARCHITECTS

With its hydrogen refueling stations, NatPower H represents a revolution for pleasure boating.

This innovative station combines technology and design thanks to **our partnership with prestigious international architectural firm Zaha Hadid Architects**.

The NatPower H refueling stations revisit the fundamental principles of architecture, where **structural strength derives not only from materials but also from geometry. Using state-of-the-art 3D concrete printing techniques**, stations will be both a cutting-edge technological product and an iconic work of art.

BEAUTY AND TECHNOLOGY

The design of the structure and the techniques used to build it not only reduce its ecological footprint, making the structure recyclable, but will also utilise **organic forms that integrate seamlessly with the built environment**, celebrating the beauty and diversity of the landscape. The structure is fully compliant with all safety requirements.

These stations will thus become **technological outposts on the border between land and sea, acting as a link between the consolidated past of ancient construction techniques and advanced sustainable and circular technologies.** A concrete manifestation of NatPower H's dedication to an ecologically responsible future.

THE REFUELING EXPERIENCE

Hydrogen refueling for boats works in a similar manner to the refueling of cars and trucks.

A nozzle is inserted into the boat's fuel inlet and **the transfer of fuel takes place via pressure difference between the station and the vessel's tank.**

The procedure is automated and the **presence of operators** at the control stations ensures **constant monitoring**.

The wave continues with new projects

WITH BLUEGAME FOR THE AMERICA'S CUP CHASE BOAT

NatPower H has developed a partnership with Bluegame, a company from the Sanlorenzo Group, to become the **official technical sponsor for Bluegame chase boat in the America's Cup 2024**.

For the first time, the 37th **America's Cup protocol requires each participating team to build and operate a hydrogen-powered foil boat**

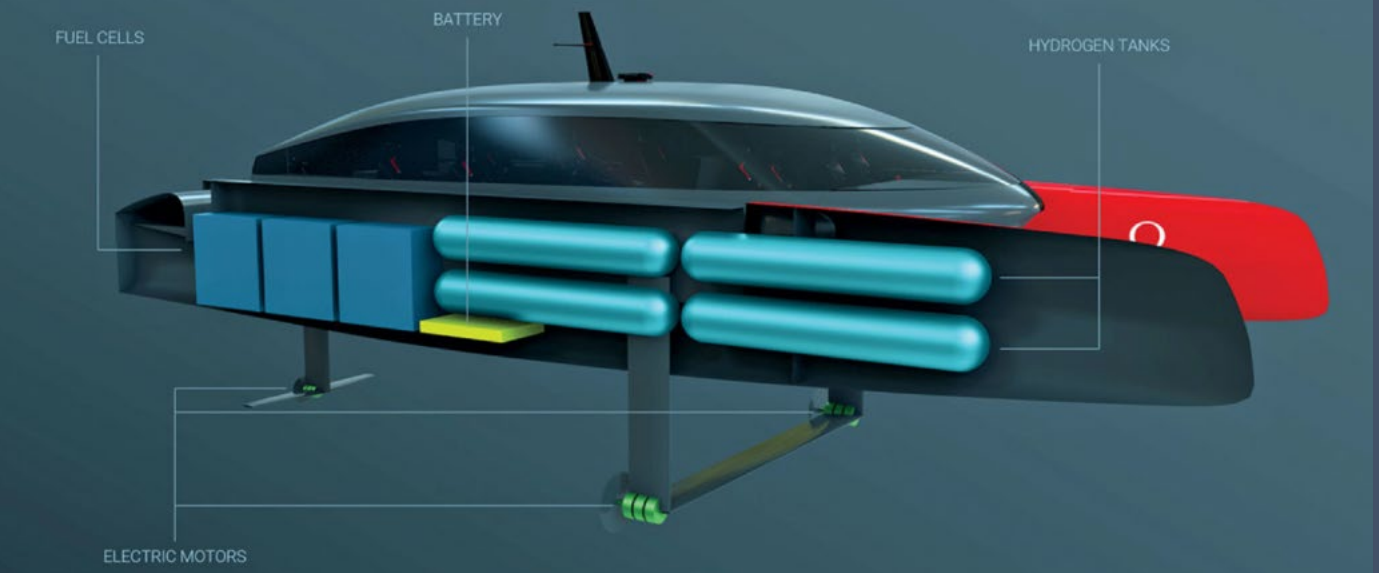
that must be at least
10 metres long

reach a maximum speed of
50 knots

and have a range of
180 miles

To mark the occasion, NatPower H will provide green hydrogen for the support boat of Bluegame, **adopted by the New York Club American Magic (US) team and Orient Express Racign Team, the French team, during the testing** and preparation phases of the competition for Barcelona.

The agreement also provides for a **strict definition and management of storage commissioning procedures and a meticulous analysis of all the risk factors involved in refueling operations**. This is **a unique opportunity to put the spotlight on the immense innovation which hydrogen enables in the marine sector**, while simultaneously ensuring high performance and safety.



The partnership with Bluegame is part of **a broader programme** which sees **NatPower H in active dialogue with key players in the global marine industry**, providing evidence that it is now finally possible to guarantee the widespread supply of hydrogen to the growing market of sustainable recreational boating.

HYDROGEN IN VENICE

During the 5th Venice Boat Show, from the 29th of May to the 2nd of June 2024, NatPower H will present a fully hydrogen-powered vessel. The 9.5-metre-long boat has been built **in collaboration with Hyrex,** a Norwegian company that provides and develops hydrogen propulsion technology.

Venice is also the city chosen by NatPower H for its first refueling station, which will be open by the end of summer 2024 at the Marina di Sant'Elena. The location provides a high-profile context where each day the balance between the environment and the sea becomes a more vital and decisive factor.

Project partners

Bringing hydrogen to the world's marinas has led **NatPower H** to establish valuable partnerships to power the wave of revolution.

In addition to **Zaha Hadid Architects** and **Bluegame**, **Linde** and **DBA Group** are also part of the project.

Zaha Hadid Architects

BLUEGAME

Linde

DBA GROUP

NatPowerH

natpower.com