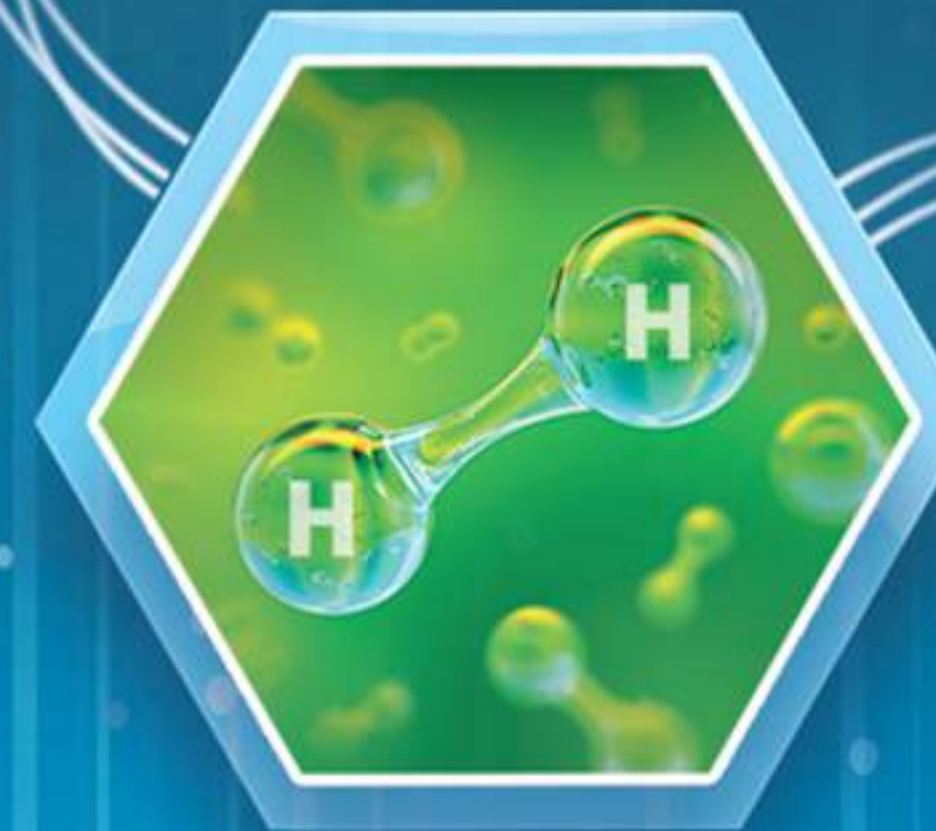


Integrating the Hydrogen Ecosystem

Forging a more efficient path to
net zero and energy security

YOKOGAWA 
Co-innovating tomorrow™



SCAN here
for website

"I believe that water will one day be employed as fuel, that hydrogen and oxygen which constitute it, used singly or together, will furnish an inexhaustible source of heat and light, of an intensity of which coal is not capable."

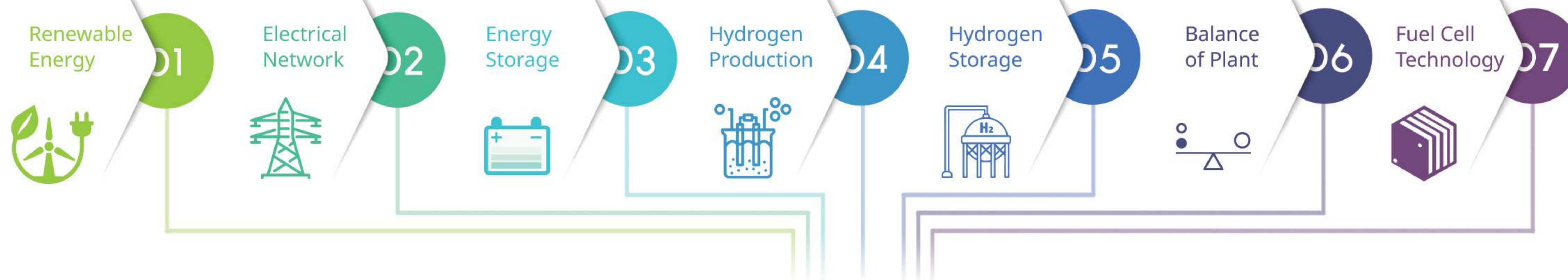
Jules Verne (1874 – The Mysterious Island)

MAKE SUSTAINABLE AND PROFITABLE DECISIONS

In the integrated hydrogen value chain

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Low Carbon Hydrogen plays an important role in the future energy system for storage and transport of energy, and for the decarbonization of hard to abate sectors. Through the System of Systems approach, Yokogawa optimizes the entire value chain, ensuring visibility and control and mitigating concerns on:

TRUST – The energy system is becoming increasingly diverse, with prosumers operating as separate business entities whilst also coordinating energy supply and demand. Low Carbon Hydrogen plants are part of this landscape. Disconnected from both downstream and upstream, a trust mechanism should be in place to enable data sharing between different business partners in the ecosystem and to enable interoperability.

ENERGY SECURITY – In a volatile world, energy security is high on the agenda. Low Carbon Hydrogen interconnects intermittent renewables with continuous downstream demand. Proper planning and scheduling are key for a successful operation.

SUSTAINABILITY - Efficient use of renewable sources is key to fulfilling the needs for sustainable energy. Providing services for grid operators (demand-side response, frequency regulation) with battery and hydrogen storage can be a real win-win for both partners.

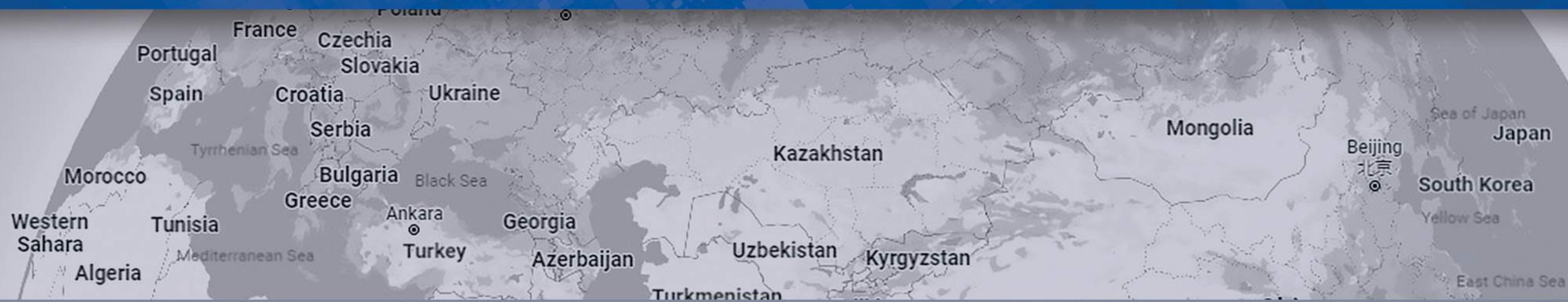


'System of Systems' Approach

CURRENT PROJECTS IN THE H₂ INDUSTRY

Co-inventor, optimizer, safety architect and integrator of H₂ projects

YOKOGAWA 
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MEGAWATT SCALE HYDROGEN PROJECTS

Increasingly, Yokogawa is being commissioned by major clients for megawatt scale hydrogen projects. In these projects, Yokogawa is selected as Integrator of All, bringing together the various components of these highly innovative plants. Managing variation is one of the key challenges Yokogawa is addressing. This type of project builds on the research investments Yokogawa has been making in large scale hydrogen over the past few years.

RESEARCHING THE NEW ENERGY SYSTEM

As the new energy system is unfolding, governments and industry are increasingly collaborating in research projects aimed at building high-tech infrastructure for production, distribution and use of hydrogen.

Yokogawa actively collaborates at early stages in multi-party research, focussing on control and integration designs.

INTEGRATING HYDROGEN

The integration of hydrogen plants into the pipeline infrastructure is key to enabling the energy transition. Yokogawa works with clients to operate plants securely, and to integrate them into the surrounding infrastructure, supporting the supply of key industries with renewable infrastructure in industrialized regions.

INDUSTRY COLLABORATION

Inter-industry collaboration is key to effective carbon recycling and resource optimization.

Yokogawa has begun work on an inter-industry collaborative study project for the achievement of carbon neutrality at an industrial complex in the Goi district of Ichihara City in Chiba Prefecture. The study will examine the feasibility for collaboration by companies in different industries in a carbon recycling business.



WORLD BUSINESS COUNCIL FOR SUSTAINABLE DEVELOPMENT

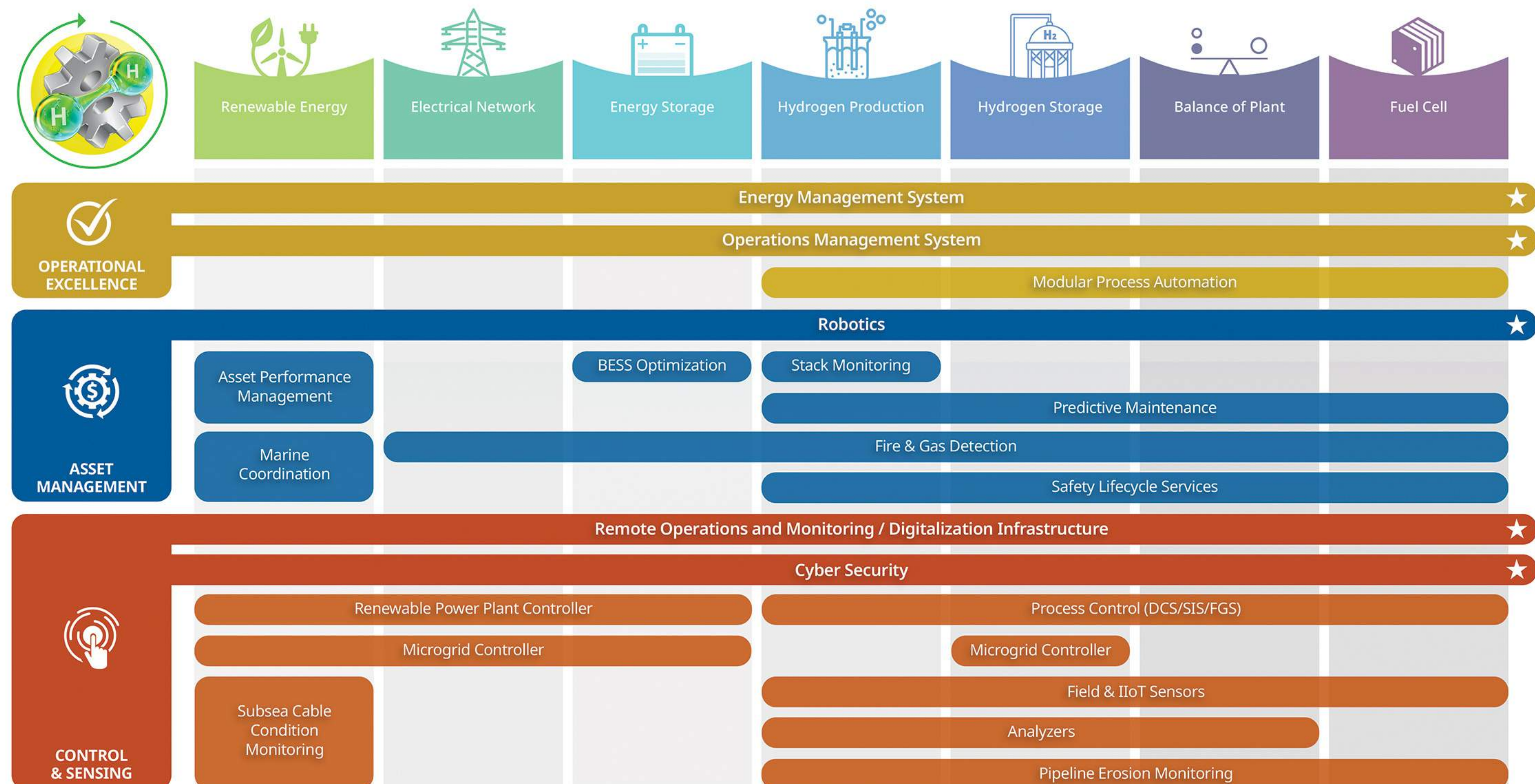
Yokogawa is a member of WBCSD and an active contributor to the Hydrogen working groups.

OUR H₂ PORTFOLIO

Fully committed to our sustainable development goals

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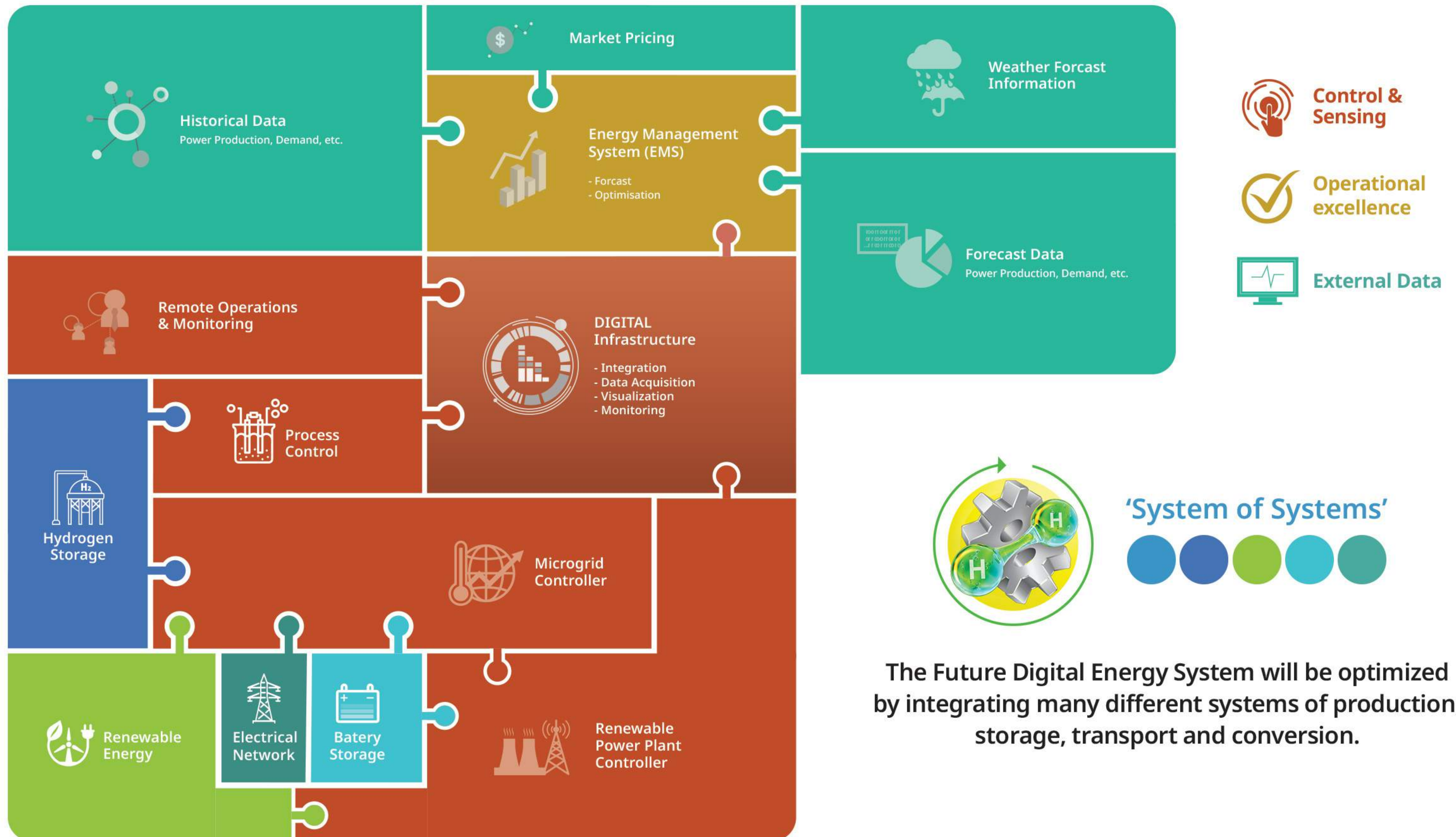
Yokogawa offers a comprehensive range of solutions to fully support the Future **Digital Energy System**. Highlighting the 'System of Systems' approach, our business solutions integrate the entire H₂ value chain.



SYSTEM INTEGRATION

Future Digital Energy Landscape

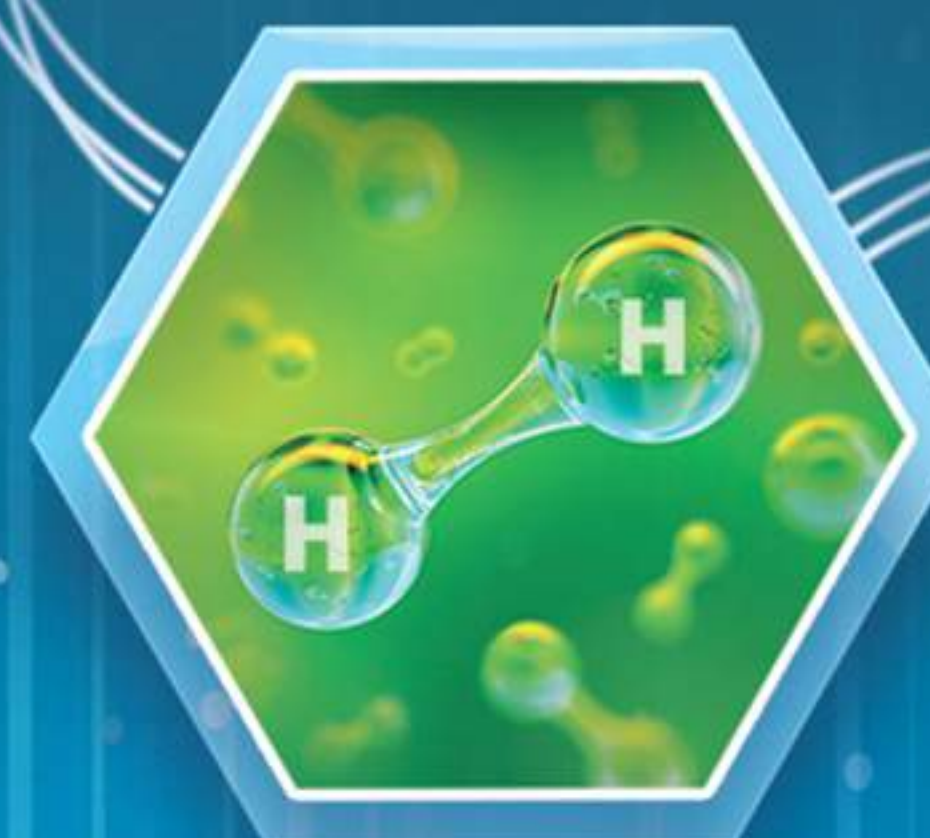
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Get in touch!

Connect with us using the contact details below and let's reengineer tomorrow's hydrogen industry together.



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