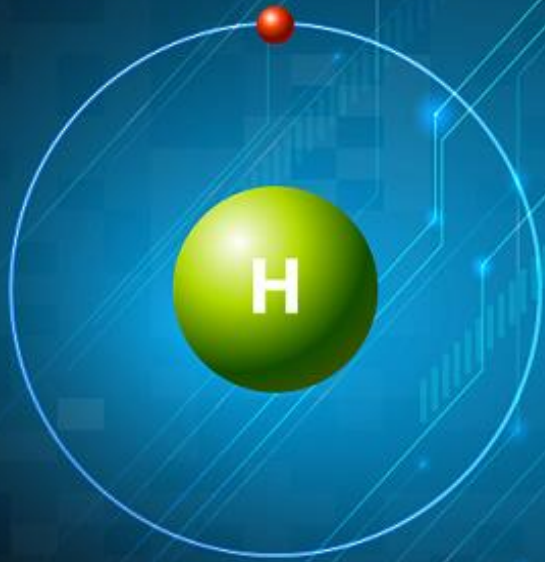
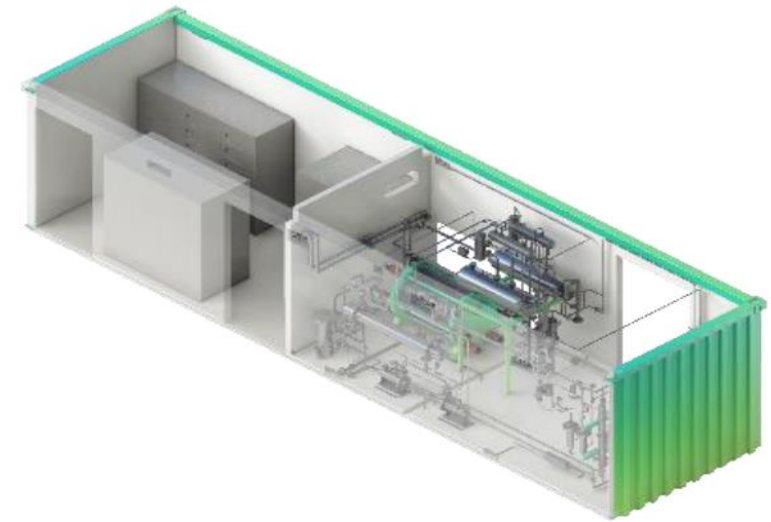


Hydrogen

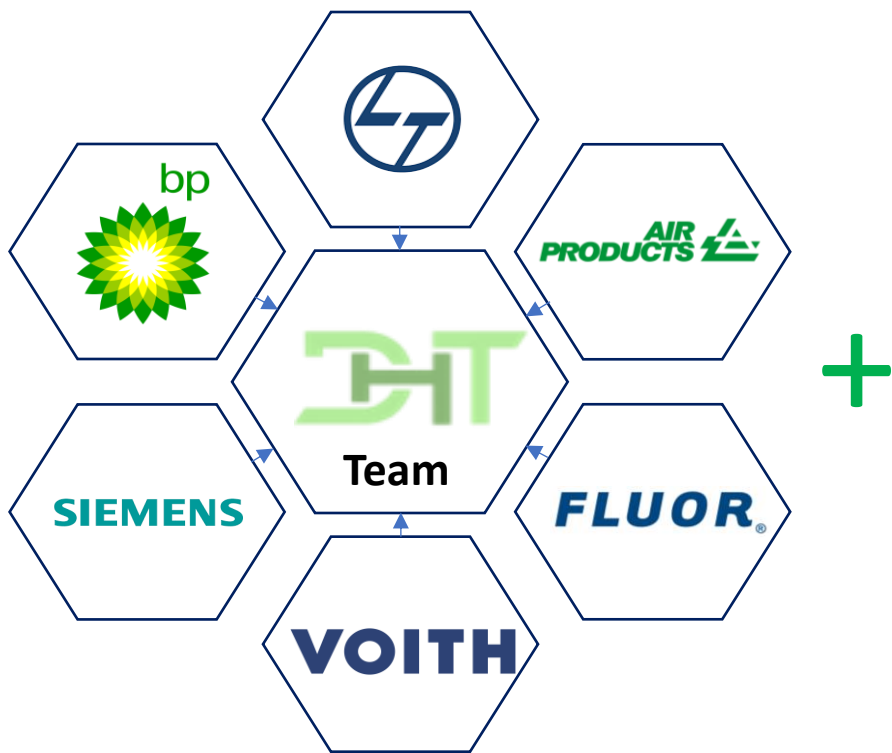


DHT – HyZenis Strategic Joint Development for Electrolyser Manufacturing

Advancing Green Hydrogen with 100% Automated Production



DHT – HyZenis (Management Team Strength)



+



-  Hydrogen Production Technology Development
-  On-site Hydrogenation Integrated Station Design and EPC
-  Hydrogen Production Base Operation and Maintenance
-  Hydrogen Equipment Manufacturing
-  Hydrogen Plant Design and EPC
-  Green Hydrogen Project Development

Investor

- Shaanxi Coal and Chemical Industry Group

Technology

The first tier R&D team from Tongji University

Team

Well-known electrolyzer management team

Government Support

Jiaxing, Zhejiang Province

DHT – HyZenis (Joint Development Mfg. Partner) – 3 GW Production Capacity

To implement the large-scale, fully-automated ALK electrolyzer production line by 3 phases.

Phase 1: 7,500 m² factory with high-end R&D center and 600MW automated production capacity.

Phase 2: 30,000 m² smart factory with 2GW automated capacity.

Phase 3: 16,667 m² land for future development.



Phase 1 commissioned on Aug 15th 2024



Phase 2 in construction



Located in Jiaxing City, Zhejiang province, one hour drive from Shanghai, Suzhou and Hangzhou.

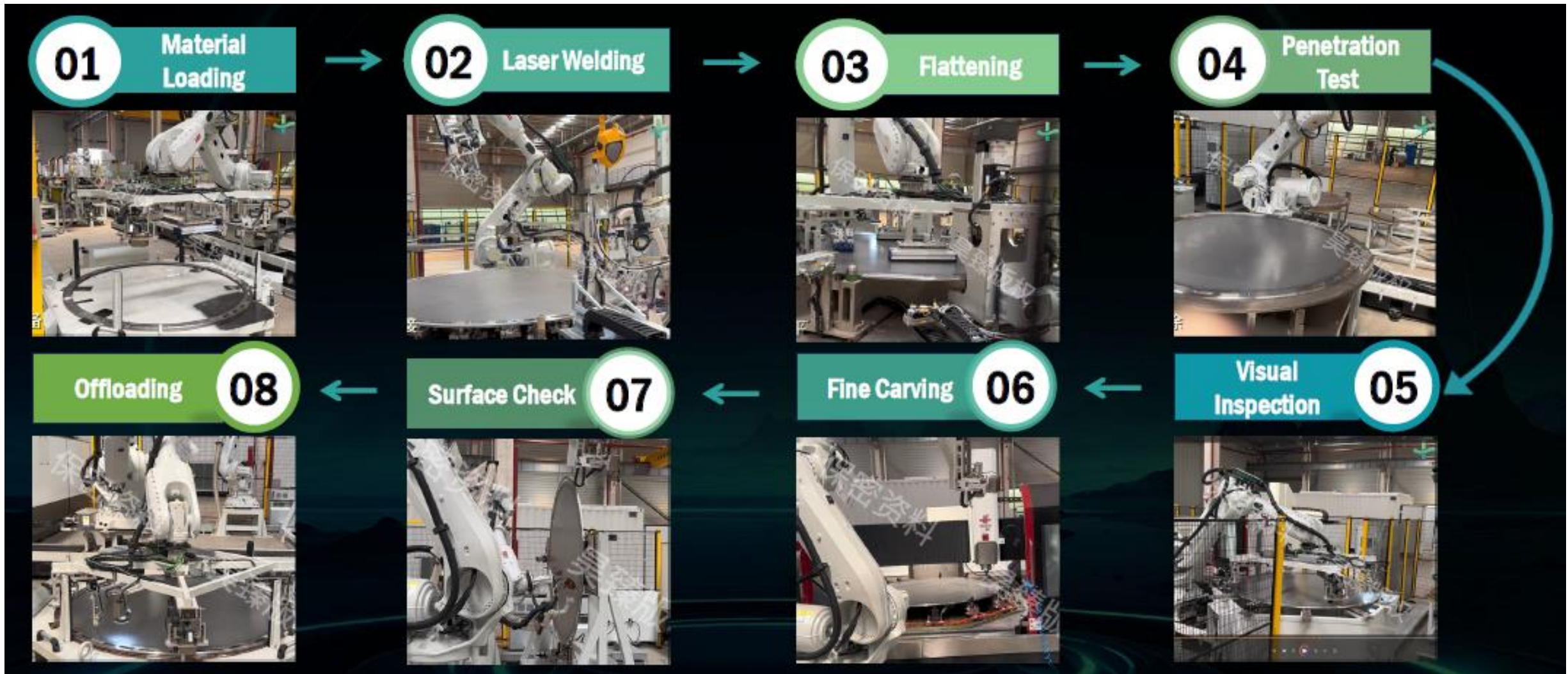
The First 100% Automated Production Line for Core Components in the Globe



- **100% Automated Operation**
- **100% Automated Inspection**
- **100% Automated Correction**
- **100% Tracing**

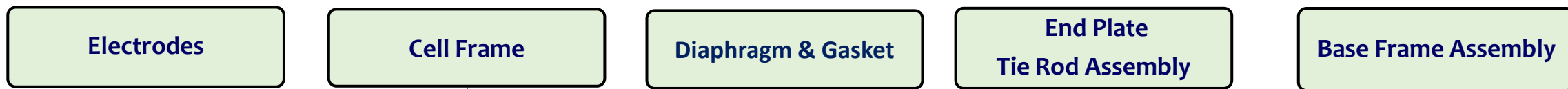
"The factory is equipped with cutting-edge facilities for electrolyzer stack manufacturing, automated robotic assembly, and comprehensive testing to ensure superior quality and performance."

Electrolyser Automated Production Process



100% Automated Production Process

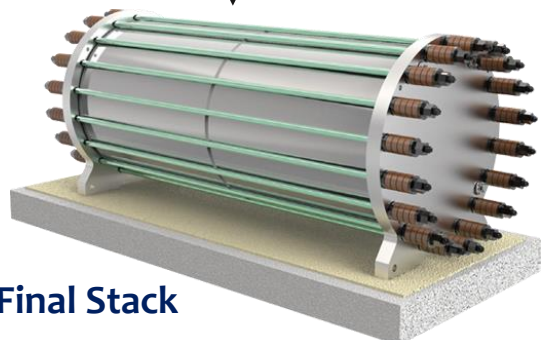
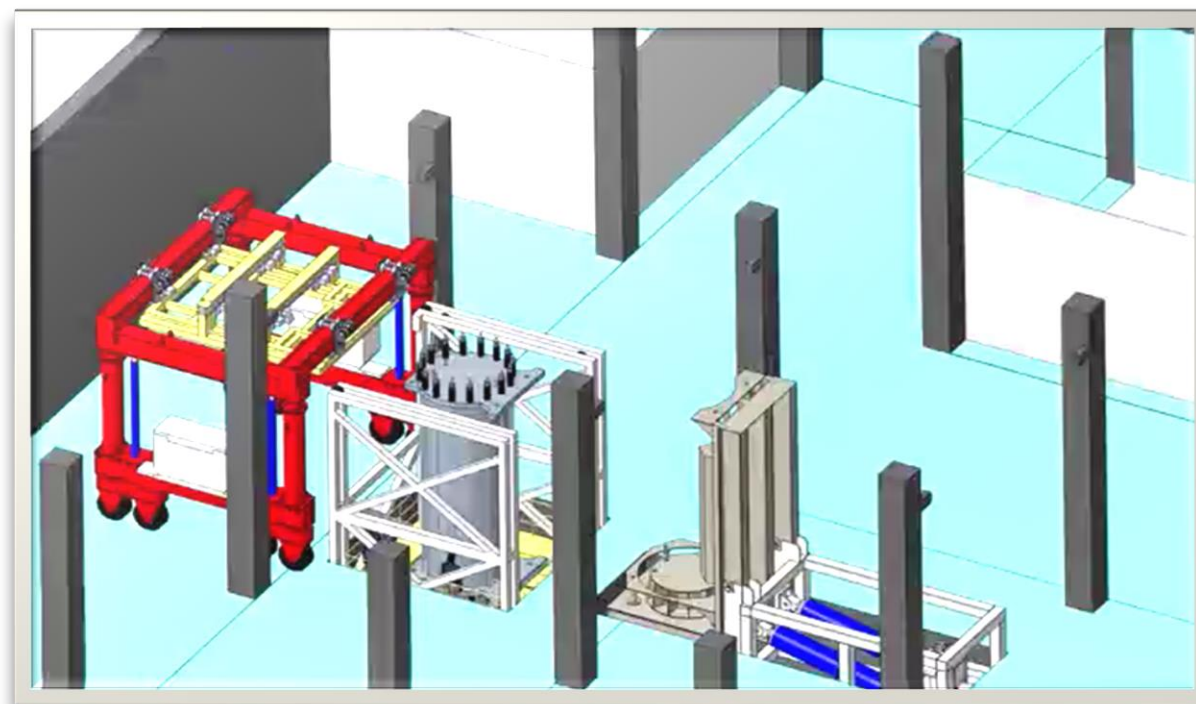
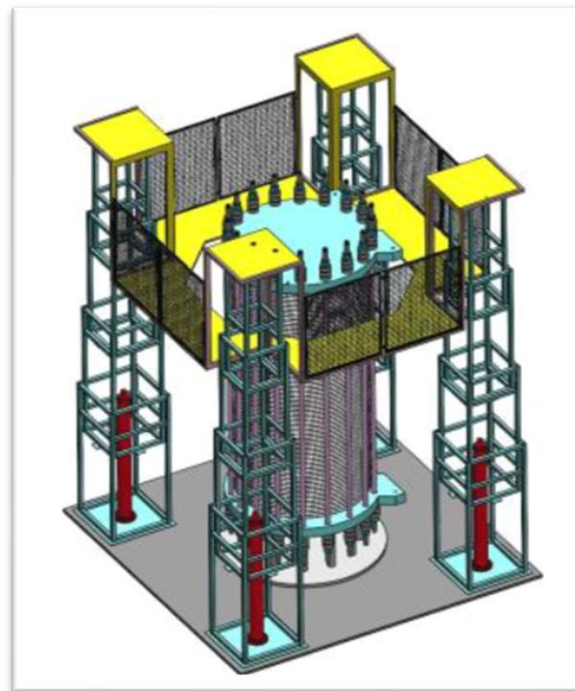
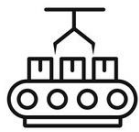
Stack Assembly Process & Testing Methods



Stack Assembly
(8 hr Approx.)

Hydrotest – 50 bar, 3 hr
Leak Test – 35 bar, 15 hr

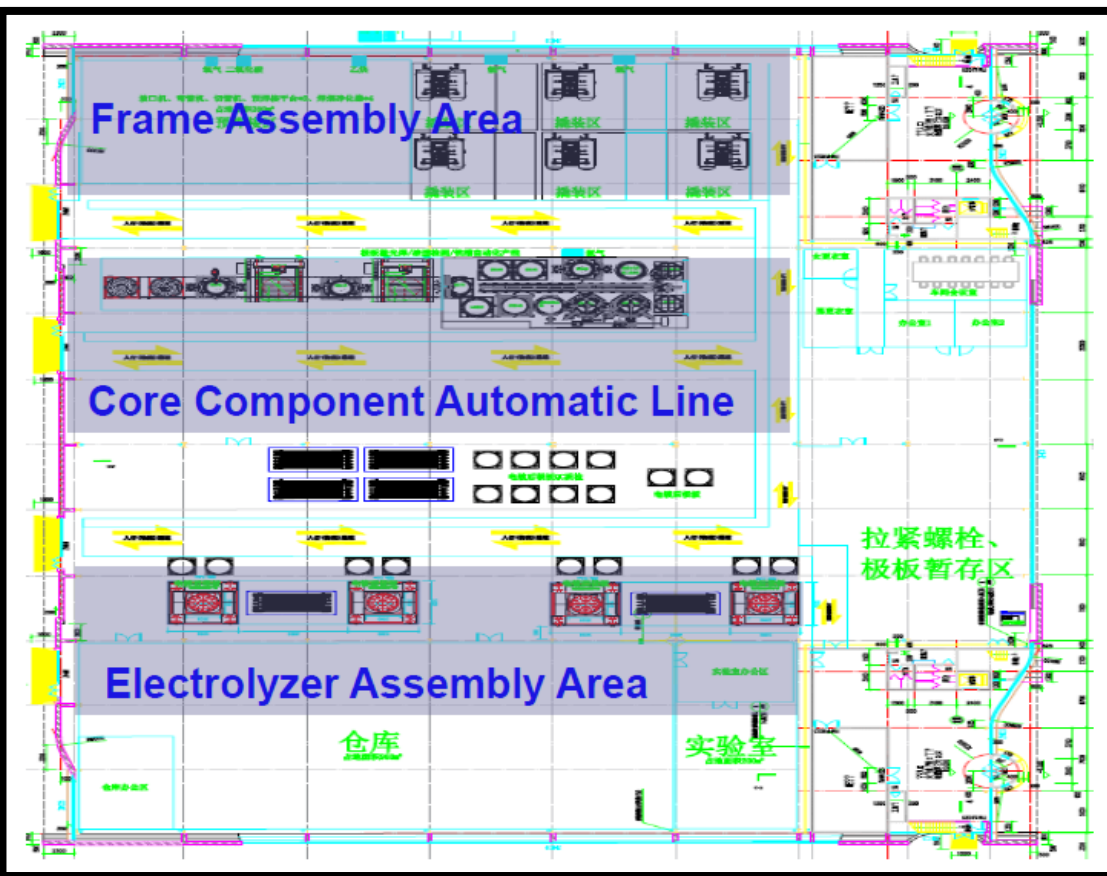
Activation – 24 hr
Functional Tests – 24 hr



Final Stack

Electrolyser Assembly Process

Manufacturing Factory : Dust Free & 5S



Phase 1 : Factory Area - 7500 m²

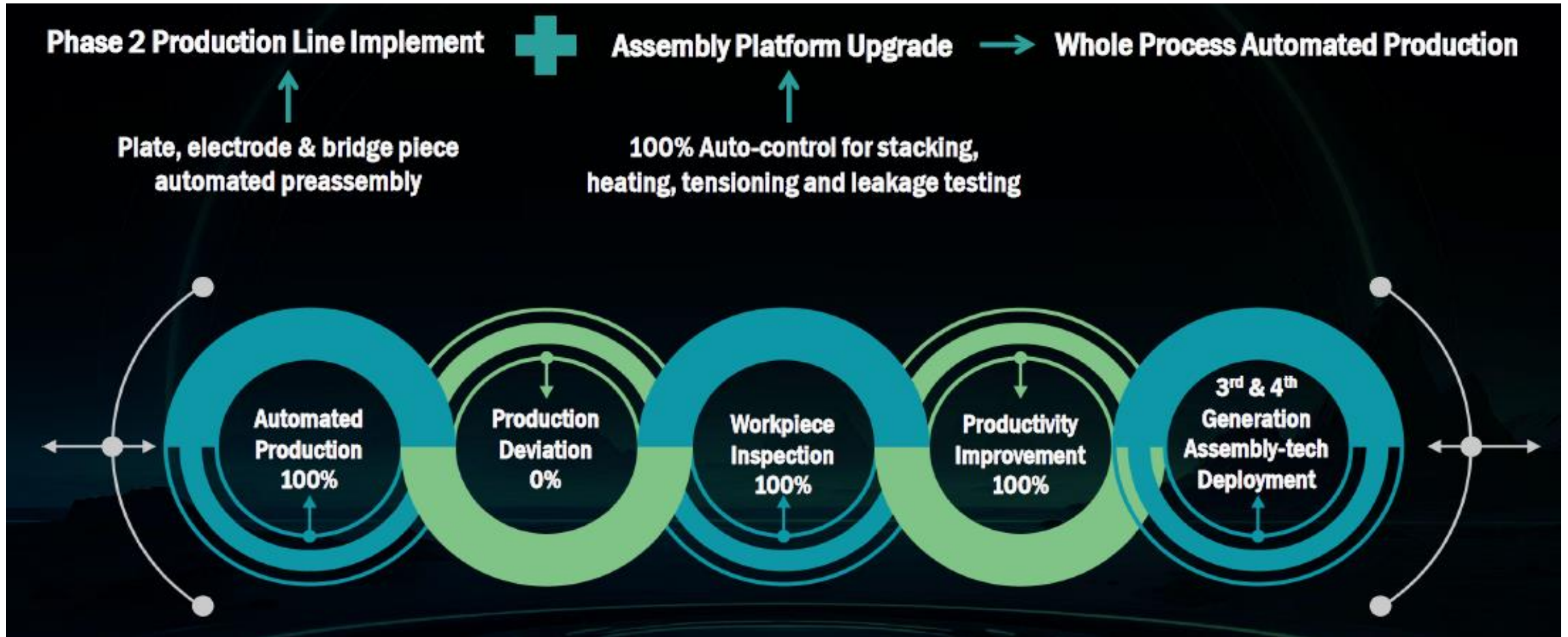


Component Automation Line



Electrolyser Assembly Area

Automated Production Line Upgrade Roadmap

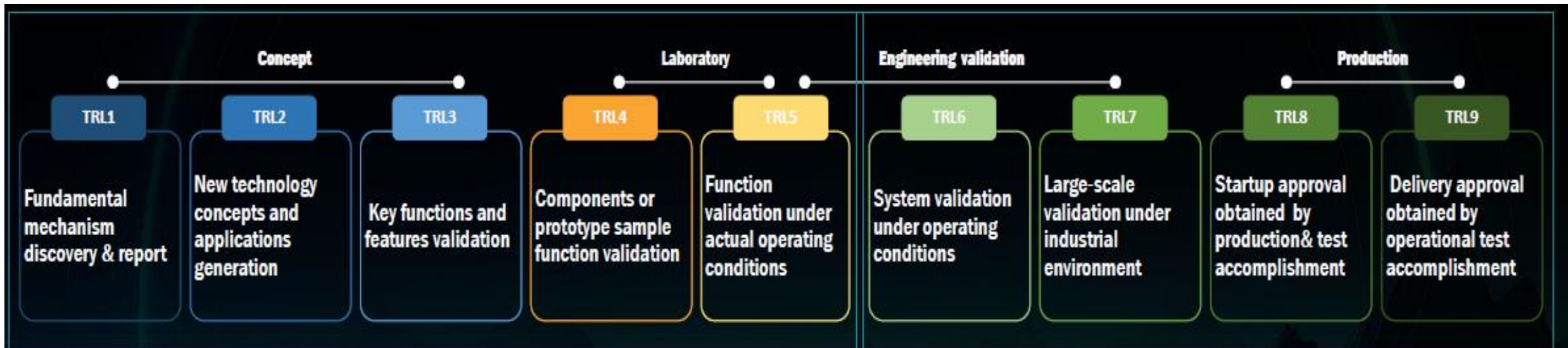


100% Complete Automated Production Process

DHT – HyZenis (Research & Development Programme)

Research & Innovation

Product Development & Engineering Application Research



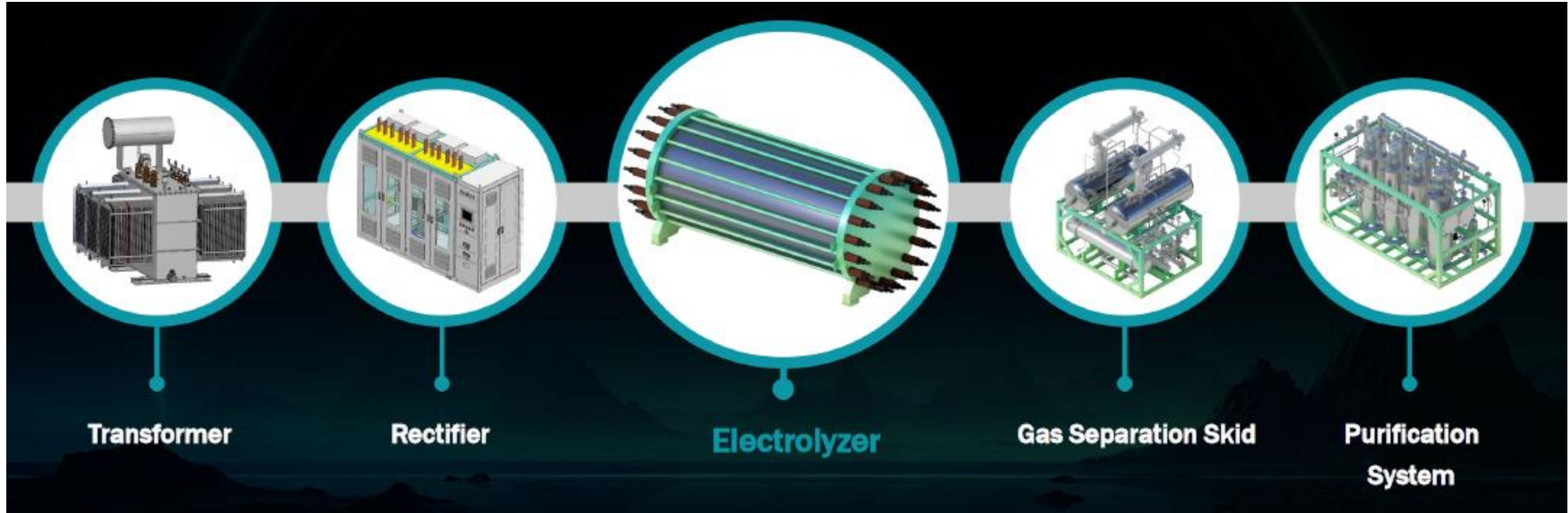
DHT – HyZenis (Base Line Model Product Parameters)

Type	HZA-0.2	HZA-10	HZA-100	HZA-200	HZA-500	HZA-1000	HZA-1500	HZA-2000
Hydrogen production (Nm ³ /h)	0.2	10	100	200	500	1000	1500	2000
DC power consumption (kwh/Nm ³)	/	4.4-4.6	4.3-4.5	4.3-4.5	4.3-4.5	4.0-4.4	4.2-4.4	4.2-4.5
H ₂ purity before purification	/	≥99.8%	≥99.8%	≥99.8%	≥99.8%	≥99.8%	≥99.8%	≥99.8%
H ₂ purity after purification	/	≥99.999%	≥99.999%	≥99.999%	≥99.999%	≥99.999%	≥99.999%	≥99.999%
Operating pressure (MPa)	Room temperature	1.8/3.2	1.8	1.8	1.8	1.8	1.8	1.8
Operating temperature (°C)	90±5	90±5	90±5	90±5	90±5	90±5	90±5	90±5
Adjustment range	/	40-110%	30-110%	30-110%	30-110%	20-110%	20-110%	20-110%
Cold start time (minutes)	External heating	80	60	60	60	30	30	30
Hot start time (minutes)	External heating	10	8	8	8	5	5	5
Overhaul cycle (years)	/	10	10	10	10	10	10	10

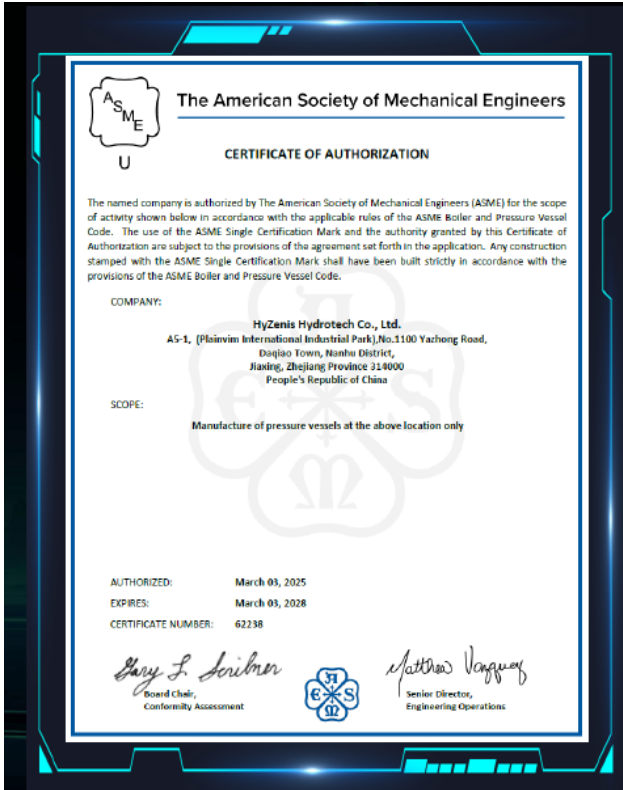
Note:

1. Cold start: The time from starting at ambient temperature until the product gas meets the requirements.
2. Hot start: The time from starting at 60°C until the product gas meets the requirements.
3. Parameters such as the adjustment range and start - up time are related to the specific configuration.

The composition of Alkaline Electrolysis System



Certification



ASME Certificate

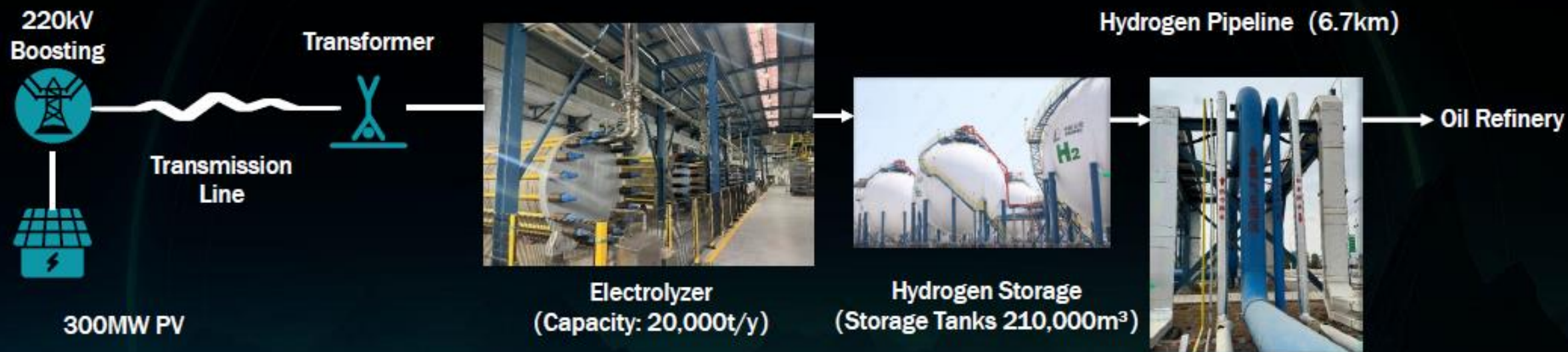


Quality, Environment and Health System Certification



H2 Refinery -Sinopec Project

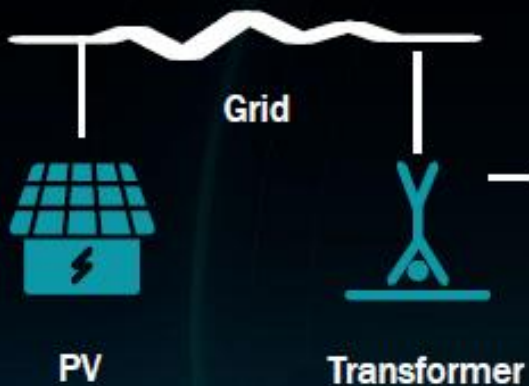
The world's first large-scale photovoltaic hydrogen production project, using 52 units of 1000Nm³/h Alkaline Electrolysis System, using green hydrogen instead of natural gas to produce hydrogen, reducing CO₂ emissions by an estimated 260,000 t/y.



- ✓ Our technical team won the bid for 24 sets of 1000Nm³/h Alkaline Electrolysis Systems, accounting for approximately 50% of the total order .
- ✓ All products were fully delivered within three months, from July to October 2022.
- ✓ The project went into operation and was successfully commissioned by mid-2023.

Green Methanol -Baofeng Large-Scale Renewable Energy Hydrogen Production Project

- World's **first** large-scale green hydrogen project at the moment
- Utilizing **30** units of 1000Nm³/h alkaline electrolysis systems
- Reducing part of coal-based hydrogen with green hydrogen
- Reducing CO₂ emissions by an estimated **430,000 t/y**.



→ H₂ into Baofeng methanol production system

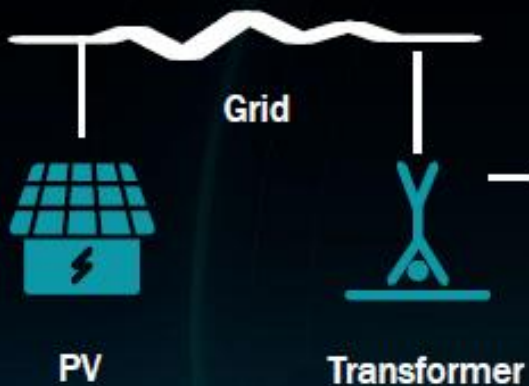
→ O₂ into Baofeng coal gasification plant

Green H₂ Plant

- ✓ Our team won **22 of total 30** units in the bidding.
- ✓ And for the first time in the industry, we adopted a **2-to-1** modular hydrogen production system.

Green Methanol -Baofeng Large-Scale Renewable Energy Hydrogen Production Project

- World's **first** large-scale green hydrogen project at the moment
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→ H₂ into Baofeng methanol production system

→ O₂ into Baofeng coal gasification plant

Green H₂ Plant

- ✓ Our team won **22 of total 30** units in the bidding.
- ✓ And for the first time in the industry, we adopted a **2-to-1** modular hydrogen production system.

Semiconductor Industry–Air Liquid Project for TSMC in Taiwan

The world's largest electrolysis hydrogen production project in the gas industry, providing hydrogen for semiconductor and integrated circuit clients. The project is expected to reduce CO₂ emissions by 70,000 t/y.

Grid



Hydrogen (H₂) is supplied to downstream semiconductors and integrated circuit factories.

Alkaline Electrolysis System

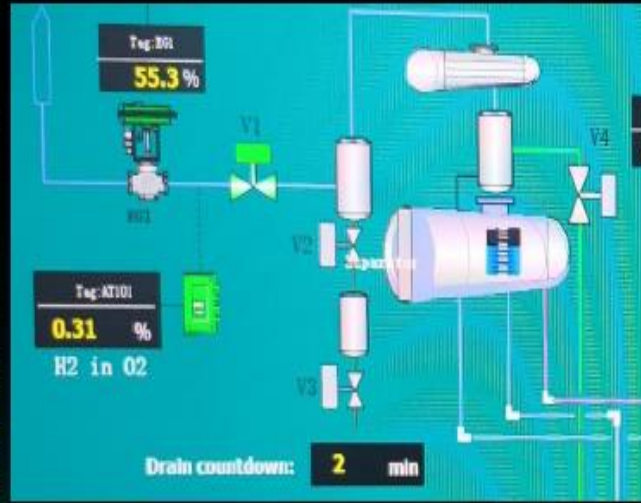
- ✓ A total 5 sets of alkaline water electrolysis hydrogen production systems
- ✓ In order to meet the high standards and strict requirements of the semiconductor industry, two models of 1000Nm³/h and 600Nm³/h are specially customized, with the purity of hydrogen and oxygen as high as 99.999%.
- ✓ Professionalism and safety have obtained the CE certification issued by TÜV SÜD.

Nonferrous Metal Smelting - Overseas Projects

Grid



Electrolyzer



H₂ into the
cemented
carbide
factory



- ✓ A total of 2 sets of alkaline water electrolysis hydrogen production systems.
- ✓ The entire process, from design and production assembly to transportation, fully implements reliability management.

DHT – HyZenis : Mission



Mission

Dedicate ourself to carbon neutrality and contribute to the global environmental sustainability.

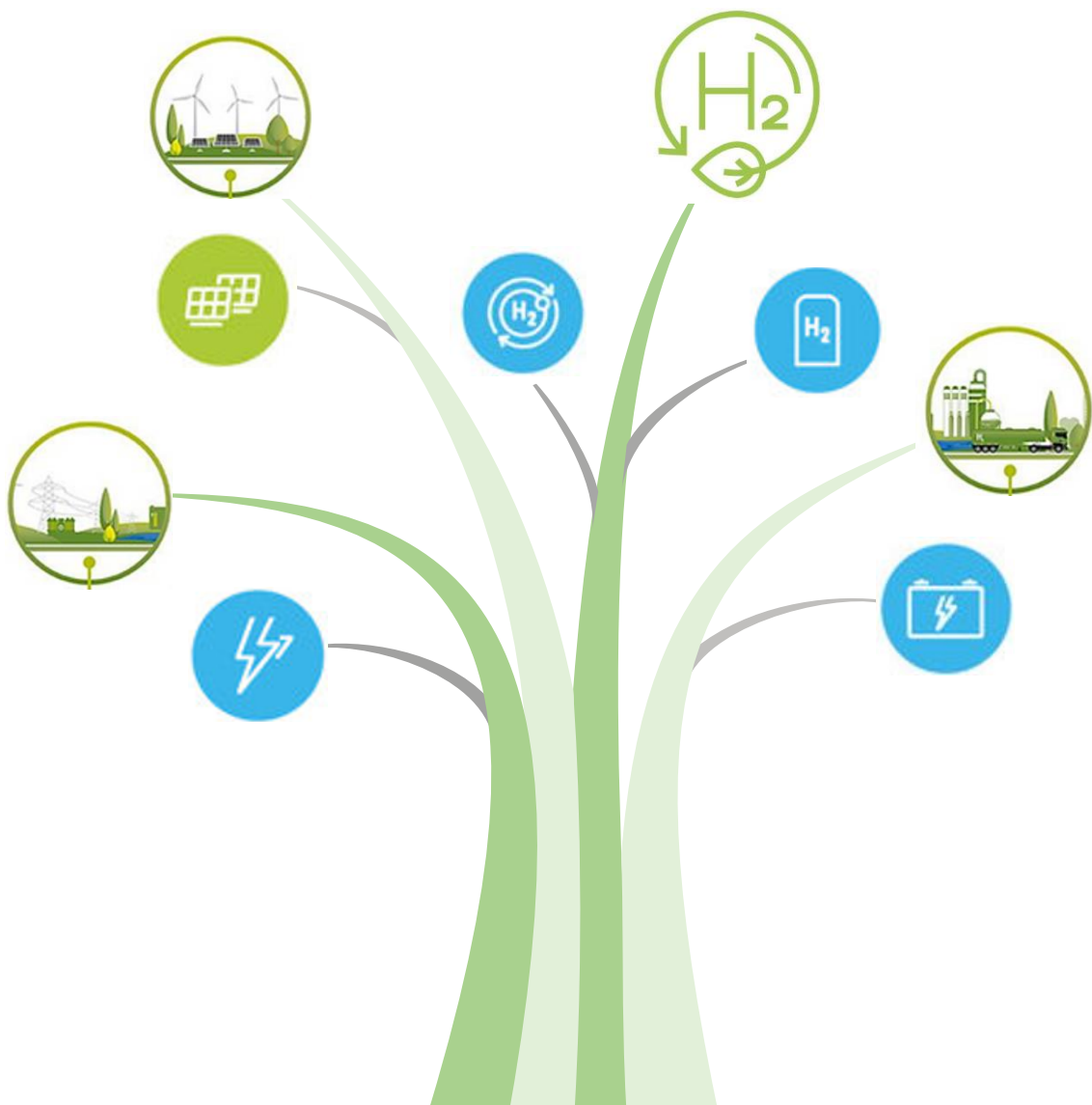
Vision

Committed to continuous innovation in hydrogen technology to become the top global company in hydrogen industry.

RELIABILITY

STABILITY

PERFORMANCE



Thank You