



Guangdong Co-Win Technology Co., Ltd.

Making Distributed Hydrogen Practical

Methanol-Reformed Hydrogen & Fuel Cell Power Systems

For critical sites, mobility, refuelling infrastructure and off-grid power

HYDROGEN POWER, WHEREVER IT MATTERS.



WHO WE ARE

Methanol-to-Hydrogen Power Engineered for Real Deployment

Guangdong Co-Win Technology develops methanol-water hydrogen generators and methanol-reformed fuel cell power systems for on-demand hydrogen and dependable electricity.

Based in Guangdong, we support backup and emergency power, off-grid energy, hydrogen mobility, hydrogen-enriched combustion and refuelling infrastructure through equipment development, system integration and project delivery.

2013

Methanol Reforming R&D
Since

9

Representative Projects &
Field Validation

6

Published Product
Models



A Decade of Verifiable R&D, IP and Compliance



71

Utility Model
Patents

38

Invention Patents

6

Design Patents

7

Software
Copyrights

Selected Credentials & Results

— National High-Tech
Enterprise

— Quality Management
Certification

— Guangdong High-Tech
Products

— Registered
Technology
Achievements

— CE Product
Documentation

— On-Site Methanol-to-
Hydrogen Standard

Verifiable Credentials Build Confidence in Delivery

Corporate credentials, quality systems, product compliance and technical achievements support equipment development, system integration and project delivery.



01 National High-Tech Enterprise
Corporate R&D and Commercialisation Capability



02 Quality Management System
Controlled R&D, Production and Service Processes



03 CE Product Documentation
Machinery Directive Conformity Documents



04 Guangdong High-Tech Product
Methanol-Water Hydrogen Generator Achievement

R&D
Capability

Patents & Software
Copyrights



Quality
System

Process & Delivery Control



Product
Compliance

Certifications & Technical
Files



Project
Validation

Multi-Scenario Operating
Evidence

Note: Scope and validity are subject to the latest official certificates and product documentation.

Our Culture

01

Working Philosophy

Customer First. Service First. Practical R&D.

02

Corporate Spirit

Innovate. Keep Learning. Pursue Excellence.
Act with Purpose.

03

Management Principle

Empower People. Bring Out Their Best.



PURPOSE & VISION

Reliable Hydrogen Power for Constrained Environments

Using liquid methanol as the energy carrier, we address practical constraints across production, storage, transport and use with deployable distributed hydrogen and power systems.



01 Hydrogen on Demand

Produce hydrogen at the point of use from methanol-water, reducing reliance on high-pressure storage and long-distance pure-hydrogen transport.



02 Dependable Power

Hydrogen generation, purification, fuel cells, thermal management and controls are integrated for long-duration backup, prime power and emergency duty.



03 Flexible Deployment

Cabinet, skid, container and mobile-platform formats support indoor, outdoor, fixed and mobile deployment.

Vision

To be a trusted supplier of distributed methanol-reformed hydrogen and fuel cell power systems

OUR HISTORY

Every Validation Moves the System Closer to Scale

2013

Development begins on modular, on-demand methanol reforming

2018

China Mobile Guangzhou Tianhe 5G backup-power project commissioned

2021

Philippine island base station completes 72-hour continuous and 60-day network-entry tests

2022

Jiangmen 12-site backup trial and Mangzhou Island off-grid solar-hydrogen station delivered

2023

China Tower multi-climate demonstration and Geely 18-tonne vehicle project advance

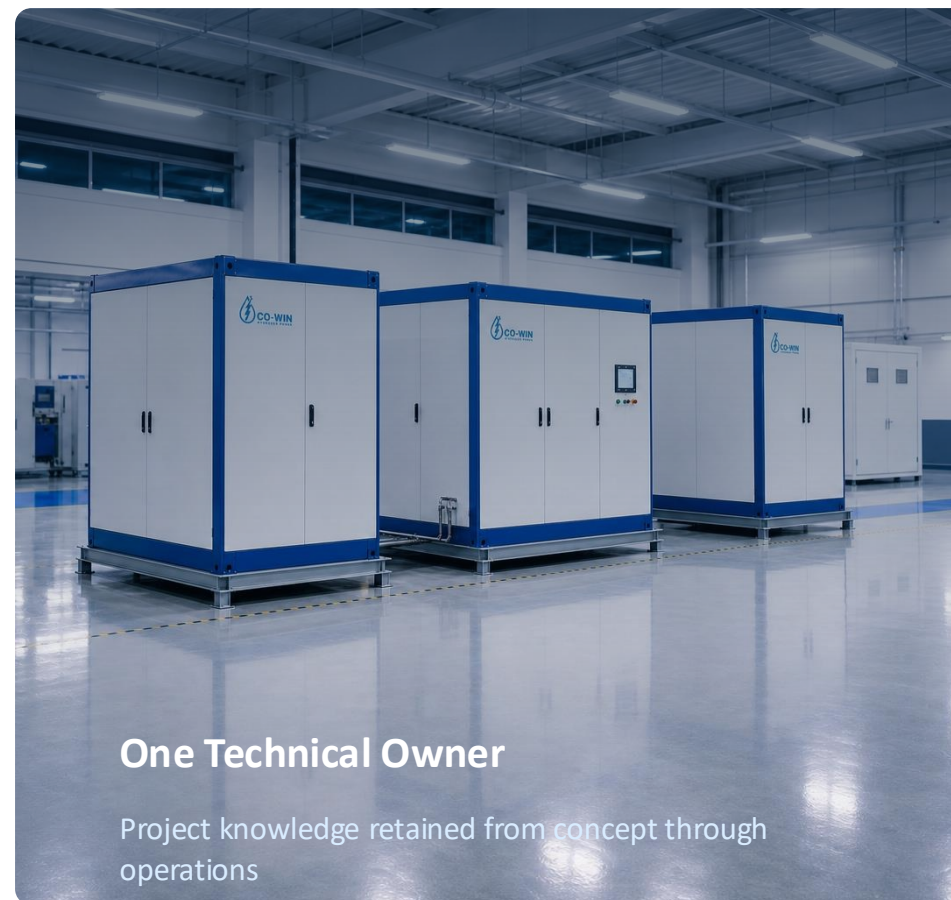
2024

Tianhe project reaches a longest recorded backup service period of 2,097 days

From one-site demonstrations to multi-site replication across telecom, off-grid, industrial and mobility applications

One Team. Fewer Interfaces. Better Project Continuity.

- | | | |
|----|---|---|
| 01 | Scenario & Requirement Definition | Operating conditions, load, duration, space and fuel logistics |
| 02 | System & Engineering Design | Equipment selection, thermal/electrical matching and safety limits |
| 03 | Equipment Development & Manufacturing | Integration of hydrogen generation, purification, power, controls and structure |
| 04 | Installation, Commissioning & Validation | Interface commissioning, performance tests and site handover |
| 05 | Monitoring, Diagnostics & O&M | Remote data, dynamic alerts and maintenance support |



WHAT SETS US APART

Technology, Systems and Deployment Work as One



01 Flexible Deployment

Systems are configured around footprint, power, runtime, fuel logistics and installation conditions.



02 Stable Long-Duration Power

Liquid methanol-water supports continuous hydrogen and power production with straightforward refuelling.



03 Clean, Intelligent Operation

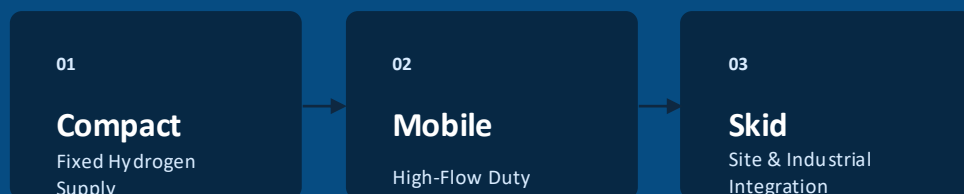
Remote monitoring, diagnostics, alarms and data visualisation support distributed asset management.

Two Product Paths: On-Site Hydrogen and Reliable Power

Select hydrogen supply or power generation first, then configure capacity, deployment format and load class.

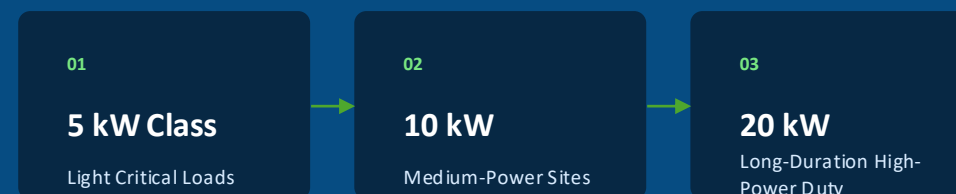
01 Hydrogen on Demand HG / MHS Series

Convert liquid methanol-water into high-purity hydrogen at the point of demand, avoiding high-pressure transport and storage constraints.



02 Integrated Power MFC Series

Hydrogen generation, purification, fuel cells and controls are integrated to provide prime or backup power for critical loads.



Three Hydrogen Platforms for Flexible Deployment



HG Fixed Series

4 / 7 / 10 Nm³/h

CW-HG4 / HG7 / HG10 · Integrates with 5–20 kW Generators



CW-HG36

36 Nm³/h @ 1 bar

Mobile High-Flow Hydrogen · Approx. 900 kg · 1–2 bar



CW-MHS500

Skid-Mounted Hydrogen Platform

Site-Scale & Industrial Integration · Project-Specific Configuration

Shared capabilities: methanol-water reforming · high-purity hydrogen · touchscreen/mobile/PC control · wired and wireless monitoring · on-demand supply

MFC Series: Modular Hydrogen Power for Critical Loads



CW-MFC5

Rated 4 kW · Peak 5 kW

Integrated Fuel 50 L · IP54 Protection



CW-MFC10

Rated 8 kW · Peak 10 kW

Integrated Fuel 50 L · IP54 Protection



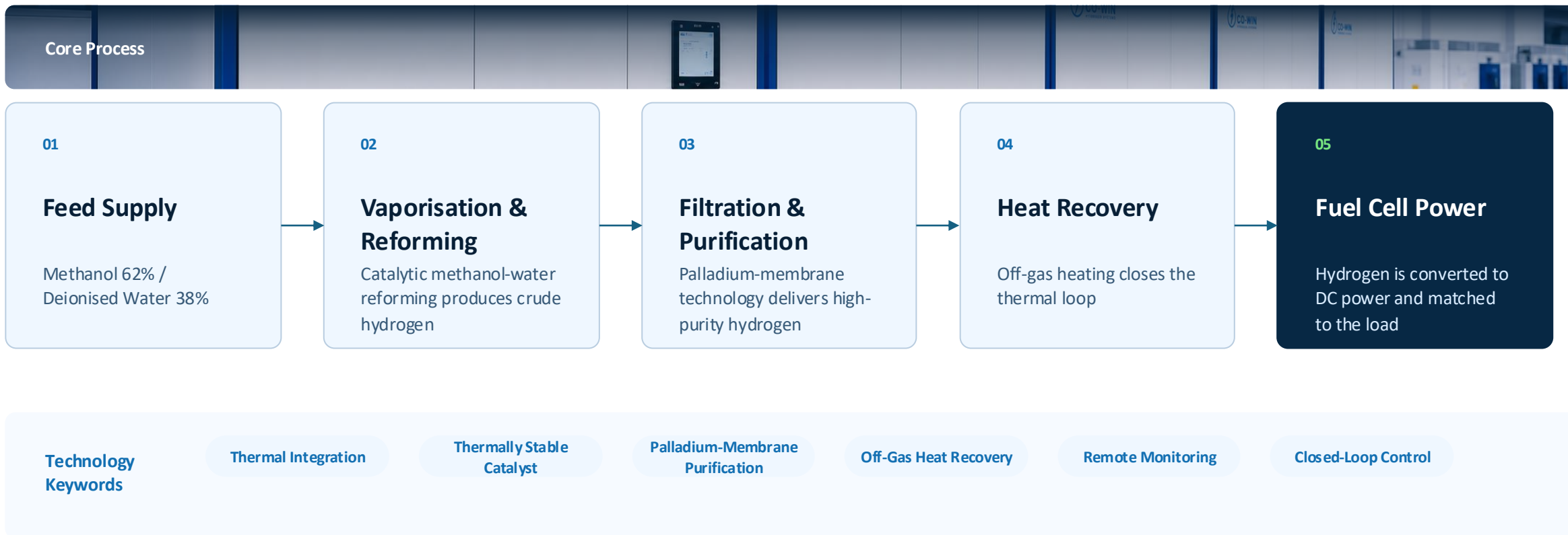
CW-MFC20

Rated 15 kW · Peak 20 kW

Integrated Fuel 100 L · IP55 Protection

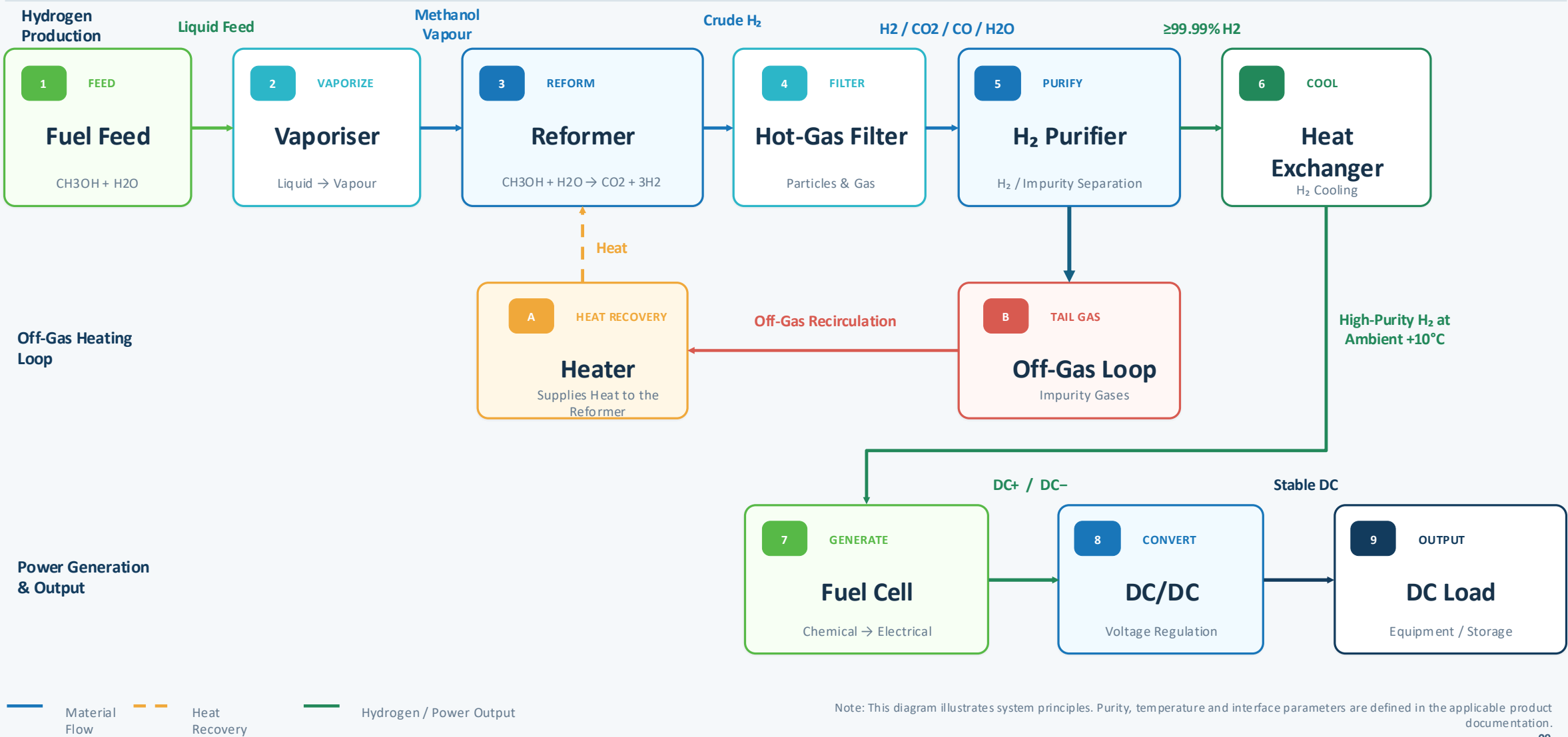
Shared capabilities: programmable -48 VDC output · RS-485 / CAN / Modbus / MQTT / J1939 · touchscreen, Wi-Fi, 4G and PC control · wired/wireless monitoring

From Methanol-Water to Hydrogen and Power



Methanol Reforming & Fuel Cell Power

On-Site Reforming · Off-Gas Heat Recovery · Hydrogen on Demand



Four Solutions Bring the Core Technology into Real Energy Applications

01	Hydrogen Production & Refuelling	Integrated on-site hydrogen generation, purification, compression, storage and dispensing	Industrial Parks / Logistics Hubs / Demonstration Stations / Captive Fleets
02	Backup Power for Telecom Sites & Equipment Rooms	Long-duration backup, fast response and lower diesel dependence	Operators / Towers / Equipment Rooms / Remote Sites
03	Hydrogen-Enriched Combustion	Produce hydrogen near the load and blend dynamically with natural gas	Boilers / Kilns / Furnaces / Industrial Heat Loads
04	Fixed & Mobile Hydrogen Supply	Modular hydrogen supply reduces high-pressure hydrogen logistics	On-Site Supply / Emergency Vehicles / Heavy Transport / Off-Grid Projects

On-Site Hydrogen & Refuelling, Close to Demand



Value Delivered

Reduce delivered-hydrogen dependence

Improve supply predictability

Scale capacity in phases

01 On-Site Hydrogen

Methanol reforming produces hydrogen close to the dispensing point.

02 Station Integration

Hydrogen generation, purification, compression, storage and dispensing are planned as one system.

SOLUTION 02

Telecom Backup: Long-Duration, Low-Emission Power for Distributed Critical Sites

Fuel cell systems provide long-duration prime or backup power for base stations, equipment rooms and remote communications sites.

01 Long-Duration Backup

Covers backup durations beyond the practical range of battery-only solutions.

02 Multi-Scenario Installation

Supports outdoor base stations, rooftops, equipment rooms and off-grid sites.

03 Digital O&M

Remote monitoring, alarms and diagnostics reduce the burden of maintaining distributed assets.



Hydrogen-Enriched Combustion for Lower-Carbon Industrial Heat



Co-Win produces hydrogen from methanol on demand and blends it dynamically into natural gas for boilers, kilns, furnaces and other industrial heat loads.

Responsive

Hydrogen output follows the load

Compatible

Works with Existing Natural-Gas Energy Systems

Solution Value

- Produce hydrogen near the heat load
- Match output to actual demand
- Reuse natural-gas infrastructure
- Reduce pure-hydrogen supply-chain pressure and cost

Fixed and Mobile Hydrogen: Deploy Supply Wherever the Mission Requires



Fixed Hydrogen Supply Containerised and modular systems scale to each application



Mobile Emergency Power Fuel, hydrogen generation and power integrated on a mobile platform

Dongpeng Avenue: Integrated Hydrogen Refuelling



An integrated captive methanol-to-hydrogen refuelling station in Guangzhou Huangpu District, with station equipment supplied by Guangdong Co-Win Technology.

1,000 kg

Designed Refuelling Capacity per 24 Hours

500 Nm³/h

Hydrogen Compressor Discharge Capacity

50–80

Estimated Service Vehicles at 16 Operating Hours per Day

4 Vehicles

Dual-Hose, Dual-Metering Configuration

Telecom Projects Validate Long-Term Operation, Replication and Climate Resilience



China Mobile Guangzhou Tianhe 5G

Commissioned in 2018

Longest recorded backup service: 2,097 days
(as of 28 Jun 2024)



China Telecom Jiangmen

12 Sites

Stable operation since Jun 2022
Supports equipment-room and rooftop retrofits

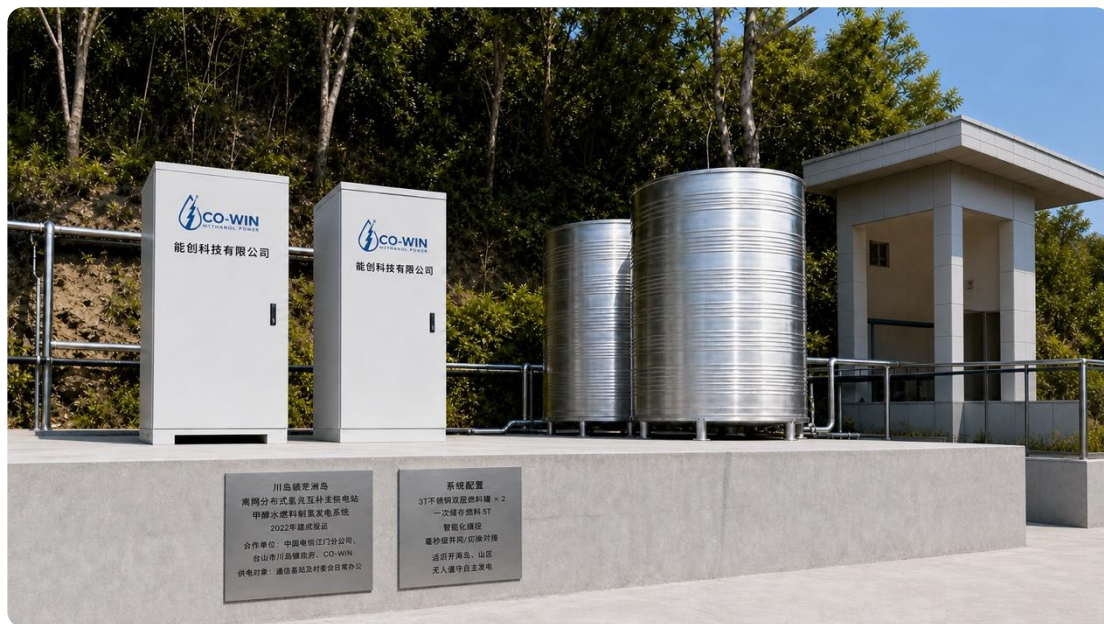


China Tower Multi-Climate Demonstration

3 Sites

Island / Plateau / Mountain
Delivered Aug 2023

Off-Grid and Island Projects Prove Adaptability in Energy-Constrained Environments



Mangzhou Island Off-Grid Solar-Hydrogen Station

Commissioned in 2022 · Solar-hydrogen hybrid prime power
Supplies both the telecom site and village office



Philippine Island Base-Station Network Test

72-hour continuous test + 60-day national network-entry test
Variable-load operation for 3–8 hours per day

Quanzhou Glass Plant: Dynamic Hydrogen Blending



The project uses skid-mounted on-site methanol reforming to blend hydrogen dynamically into natural gas as kiln load changes, enabling a phased fuel upgrade without dependence on a pure-hydrogen supply chain.

23%

Hydrogen Blend Ratio

15.30%

Reference-Model Total Fuel-Cost Savings

RMB 25.70M

Reference-Model Annual Fuel-Cost Reduction

Figures are based on the public project reference model. Actual results depend on fuel prices, load profile and operating conditions.

Onboard Hydrogen Projects Validate Integration for Heavy-Duty Transport



FAW Jiefang Heavy Truck

Onboard Hydrogen: 650–1,200 L/min
On-line Methanol-Water Reforming +
Fuel Cell Powertrain



Geely 18-Tonne Transport Vehicle

18,000 kg Gross Mass
Methanol-to-Hydrogen + Fuel Cell
Powertrain

A Closed Loop from Site Deployment to Continuous Power and Intelligent O&M



Flexible Deployment

Cabinet / Skid / Container / Mobile Platform

Configured around footprint, power, runtime, fuel logistics and installation conditions.

01



Long-Duration Power

Liquid-Fuel Replenishment / On-Site Hydrogen / Continuous Power

No long-term high-pressure hydrogen storage is required, making the system suitable for remote and critical sites.

02



Intelligent Operation

Monitoring / Alarms / Diagnostics / Dispatch / Data Visualisation

Local and remote control improve safety, maintenance efficiency and asset transparency.

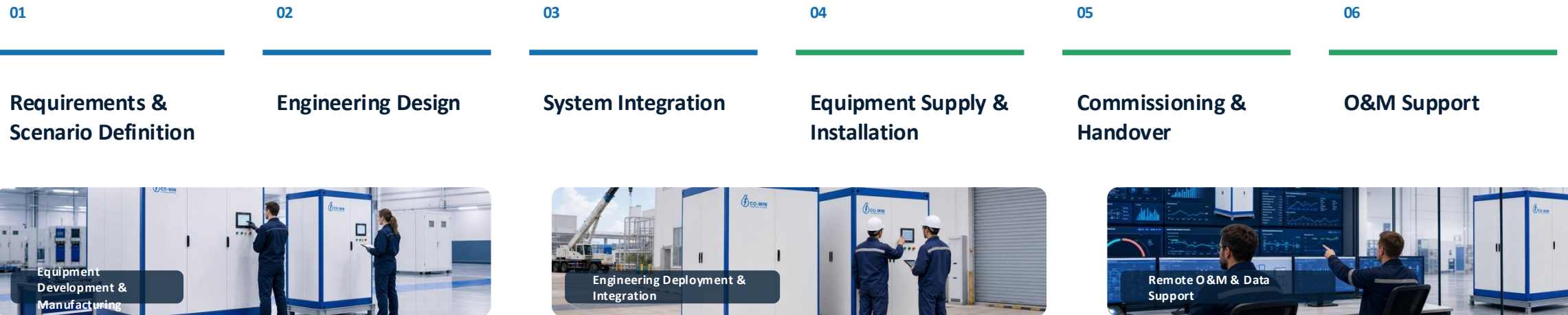
03

Safety Is Not an Add-On. It Is Part of the Architecture.

From fuel handling and reformer control to hydrogen use and power generation, safety logic runs through design, integration, deployment and remote operations.

- 01 Hydrogen detection and ventilation interlocks
- 02 Fault shutdown and protection logic
- 03 Real-time operating data and dynamic alarms
- 04 Local, Wi-Fi, 4G and PC multi-device control
- 05 Remote diagnostics and unattended dispatch support

Delivery Models for Every Project Stage



Commercial & Partnership Models

- 01 Equipment Supply & Installation
- 02 Engineering Design & System Integration
- 03 Build–Own–Operate (BOO)
- 04 Leasing & Mobile Deployment
- 05 Operations & Maintenance Support

Safety, Quality, IP and Partnerships Support Reliable Project Delivery

Safety by Design

Fuel handling, reformer control, hydrogen detection, ventilation logic, shutdown protection and remote diagnostics are embedded throughout the system architecture.

Quality & Compliance

National High-Tech Enterprise status, quality-management certification, registered technology achievements, Guangdong high-tech products and CE product documentation.

Selected Partners



Our collaboration network also includes industrial groups, telecom operators, universities and hydrogen-energy partners.



Reliable Hydrogen Power Where It Matters Most

Methanol-Reformed Hydrogen Equipment · Fuel Cell Power Systems · Distributed-Energy Integration

- 01 Continuous R&D and Field Validation Since 2013
- 02 On-Demand Hydrogen without On-Site High-Pressure Storage
- 03 Fixed, Mobile and Mission-Critical Applications
- 04 Equipment Supply, System Integration, BOO, Leasing and O&M

Start a Hydrogen Project Conversation

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