

ABOUT US

Helping You Make The Best Energy and Sustainability Choices



ROTHGRAY.com is a dynamic group of Green Energy and sustainability professionals, passionate about helping our clients roll out Green Energy and Sustainability Solutions. We are the Engineers, Innovators, Inventors, System Integrators and Operators you need to take your next step in your Green Energy and Sustainability Transition.



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Energy Solutions & Net Zero

We help you achieve NET ZERO in a sustainable and actionable way

- Sustainable energy harvesting
 - Sustainable industry
 - Sustainable construction
 - Sustainable transportation
- Sustainable residential and commercial properties
 - Sustainable living

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- Identify and implement projects which maximize your sustainability profile and potential.
- Implement transformation projects
- Deliver and maintain proven technology
- Develop long-term partnerships

ABOUT US

What does **ROTH**GRAY deliver?

-  Highly **INNOVATIVE**
-  Environmentally **FRIENDLY**
-  Energy **EFFICIENT**
-  Cost **EFFECTIVE**

SOLUTIONS for clean, quiet and efficient energy harvesting and production

Leading

Global Technology Partnerships

Cutting

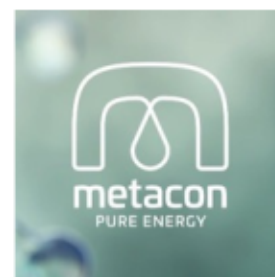
Edge Design Combined With Energy Efficiency

Scalable

Solutions

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Meet Some Of Our Technology Partners



We Lead The Way On Green Hydrogen Life Cycle Systems

Green/Blue H₂ harvesting

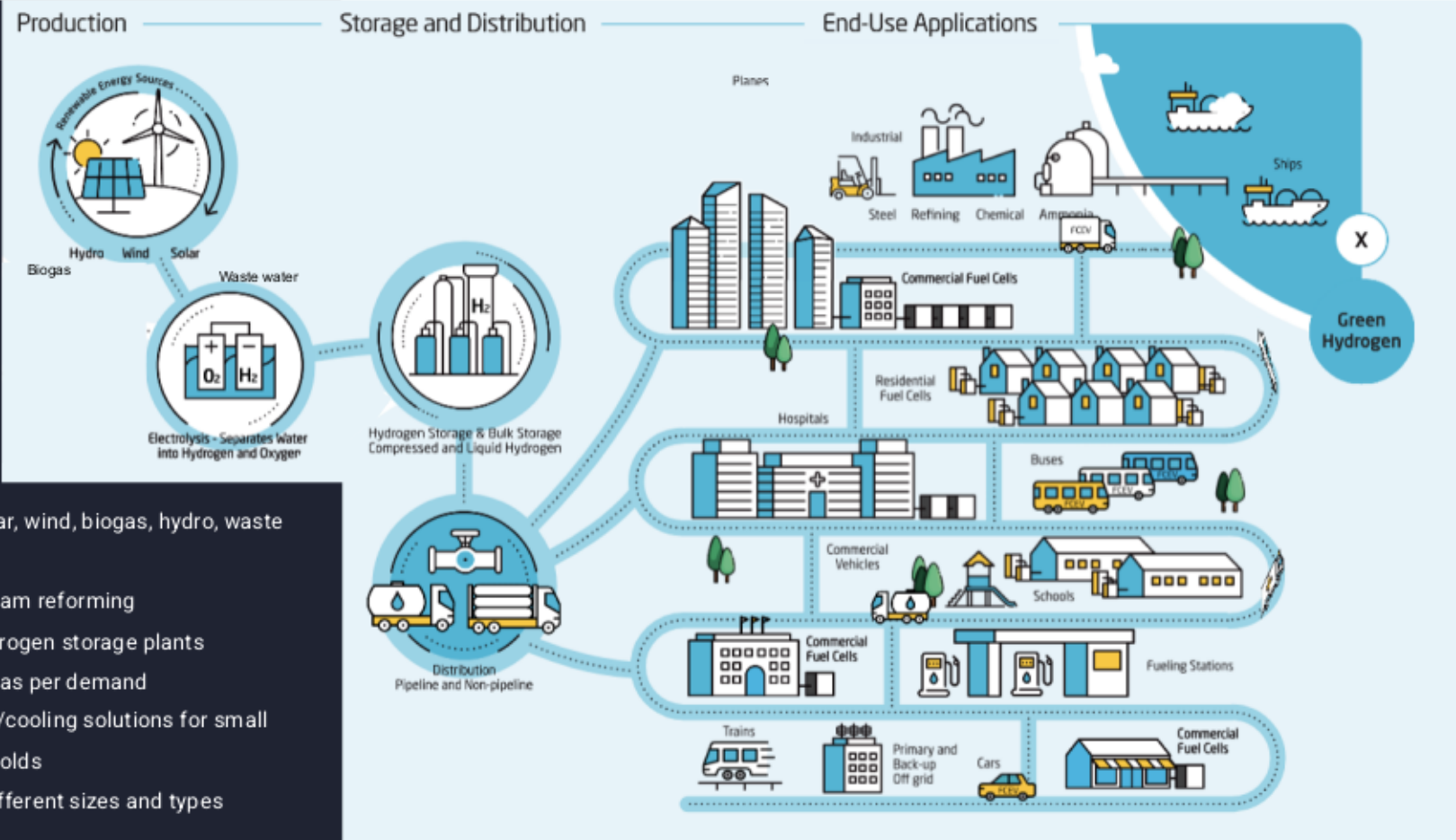
- Source of energy - wind, sun, biogas
- Electrolysis, steam reforming
- We deliver the whole H₂ lifecycle systems (harvesting, storage and distribution systems - liquid, low, high pressure)



The Green Hydrogen Life Cycle

Green/Blue H2 harvesting

- Supply of Renewable Energy (solar, wind, biogas, hydro, waste water)
- ALK/PEM Electrolysis/Biogas steam reforming
- Distribution and semi-central hydrogen storage plants
- H₂ on-site storage and transport as per demand
- CHP/APU Combined heat/power/cooling solutions for small size industrial projects or households
- Hydrogen refueling stations of different sizes and types



Green Hydrogen Production

How do we do it?

- Fuels: methane, LPG, NG, propane, biogas
- Capacity: 20-200 Nm³/h H₂ production
- H₂ production by electrolysis
- H₂ production by steam reforming
- H₂ refueling stations and final consumption



PEM Electrolysis

Advantages of PEM Electrolyzers

- Both normal and pressurized stack (0-3.0 MPa)
- Large capacity of stack (300 Nm³/h = 1.5 MW)
- Area saving (1:5 compared with ALK electrolyzers)
- Higher efficiency
- DC power consumption ≤ 4.3 kW/Nm³ H₂
- AC system power consumption ≤ 5.0 kW/Nm³ H₂





Steam Reforming

Industrial Hydrogen Generation

- 10-300 Nm³ of H₂ per hour
- Suitable for refueling stations, larger industrial applications and complex power plant solutions

Turn Key Projects

01

Ning Xia Province, China

2020 / PV to H₂, 3000
Nm³/hr



02

Utsira Island, near SW coast of Norway

2010, fully off-grid wind to
H₂, 10 Nm³/hr



03

Turkey Linde project

2020, 60 Nm³/hr



04

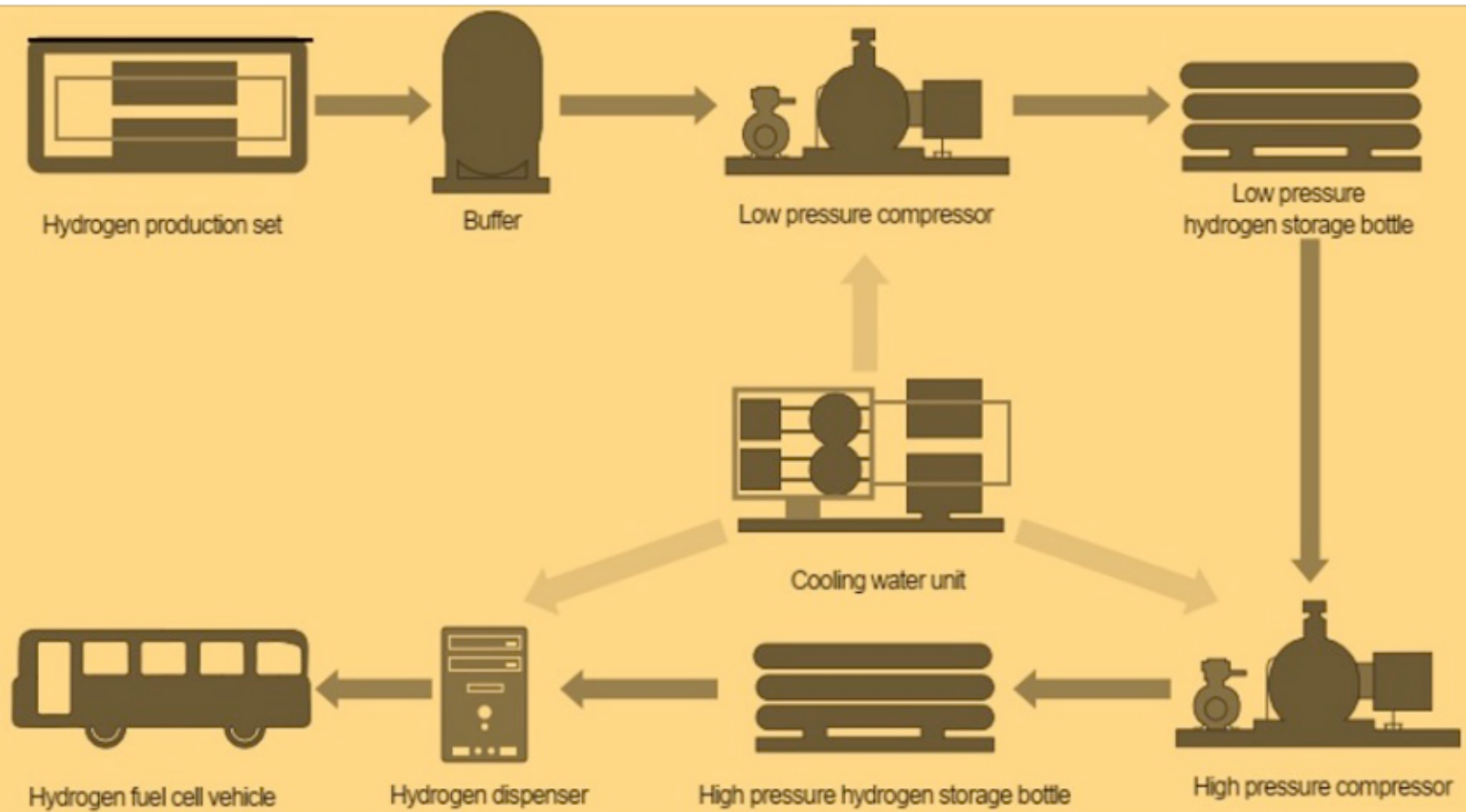
Hebei Province, China

2021 / wind to H₂, 3000
Nm³/hr



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Hydrogen Refueling



Hydrogen Refueling

