



PROTON

THE LEADER IN **ON SITE** GAS GENERATION.

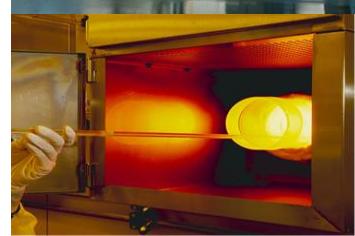


Onsite Hydrogen Production Using PEM water electrolysis

Improves Safety, Quality and Productivity in
Industrial Applications

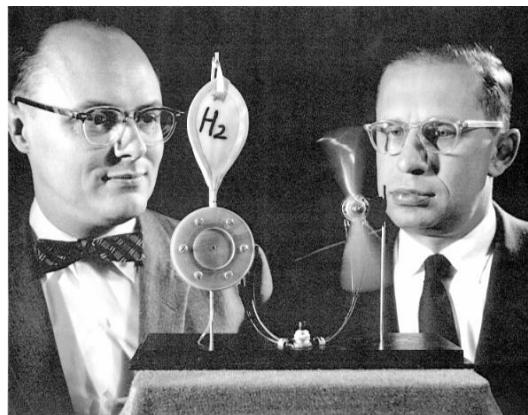
Company Overview

- Unique know-how in PEM water electrolysis
- HQ in Wallingford, CT, USA
- 100 employees, 10'000M²
- ISO 9001 certified
- TÜV approved for CE mark
- 2,500 Systems installed in 70 countries
 - Power Plants
 - Semiconductor
 - Glass Processing (Protective Atmosphere)
 - Metal Heat Treating (Annealing and Sintering)
 - Analytical lab
 - Fueling
 - Energy Storage
 - Military & Aerospace



Proton's roots

$2\text{H}_2\text{O} + \text{Electricity} \rightarrow 2\text{H}_2 + \text{O}_2$
100% emission free and carbon-free process



1955

GE develops PEM
Military & Aerospace
(Grubb & Neidrach)



1985

GE sells the technology
Military & Aerospace



1996

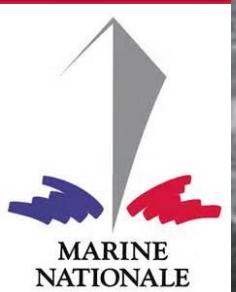
Proton develops
commercial products

Objective: Highest Safety & Reliability



Proton's technology used for the
US Space Program

Objective: Highest Safety & Reliability



Proton's technology used for the
US, UK & French Submarines

Global Support

- Worldwide service support hubs
 - China
 - SE Asia
 - Europe
 - India
 - Middle East
 - USA
- Regionally Trained Partners
- Onsite Installation & Startup
- Factory & Field Training
- 24/7 Technical support



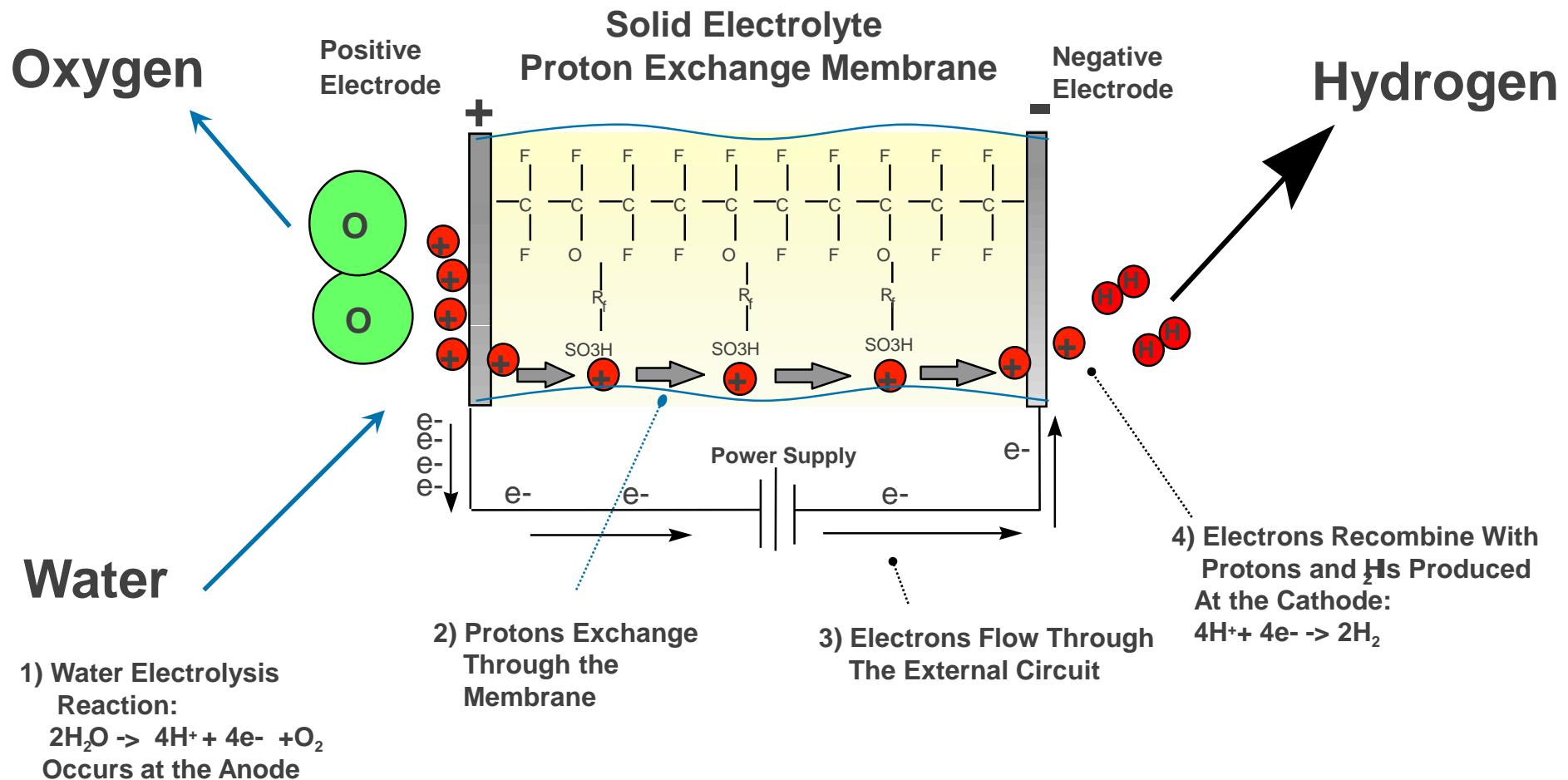
Advantages of On-site Hydrogen Supply

- Improved process results: high purity H₂
- Improved productivity
- Enhanced gas supply reliability: eliminates runouts
- No personnel required for 24*7 hydrogen supply
- Production **on demand** (0 to 100%)
- No off-spec product: identified impurities
- **Safer:** near zero inventory
- Small footprint, more space-efficient
- Stable and reduced costs

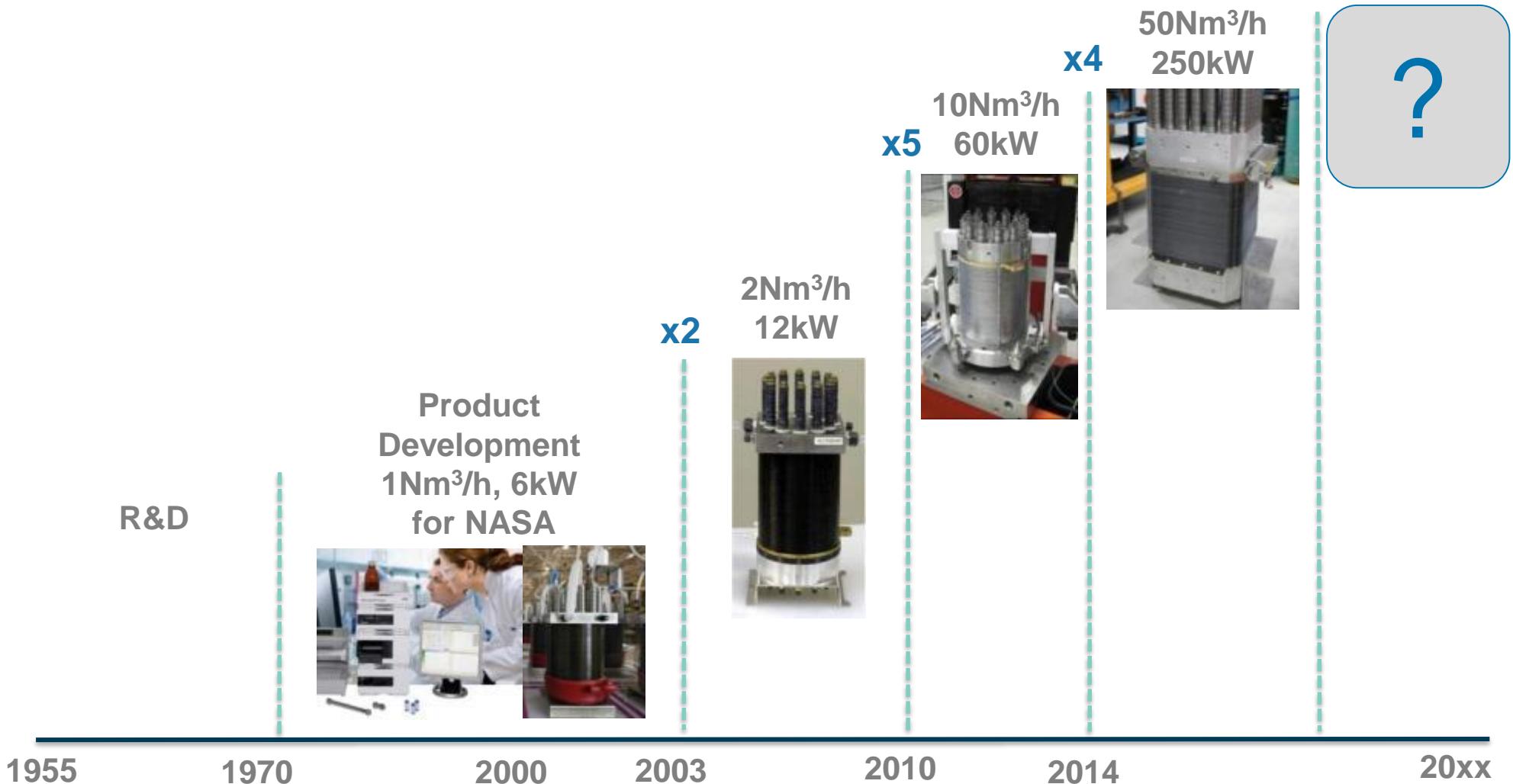


Proton's electrolysis technology

- PEM (Proton Exchange Membrane) Electrolysis



Core System Development



Over 35 years unique leveraged experience
in PEM water electrolysis

Wide Product Range to Meet Diverse Needs



G Series

200 - 600 cc/min



H Series

282 - 1'050 L/h



M Series

50 to 400 Nm³/h

S Series



C Series



From Core Technology to Turnkey Systems



Cell Stack



H₂ Generator
& Auxiliaries



Complete
Systems



Our PEM system technical advantages

- Differential pressure design → No risk of Oxygen contamination
- Negligible H₂ quantity in the system (0,08 to 0,18Nm³)
- No nitrogen purge needed
- No harmful chemicals used (No KOH)
- Installation in general purpose area → (no ATEX zone 2 required)
- No gas separators → no gas mixture risk
- No need for UPS for safe shutdown



2'500 H₂ Installations Worldwide



Annealing SS Tubes
Ukraine



Sintered Metal Parts
USA



Chemicals Rubber
India



Semiconductors – MOCVD
USA



Power to Wind
USA



Power Plant
Saudi Arabia

Proton team added value

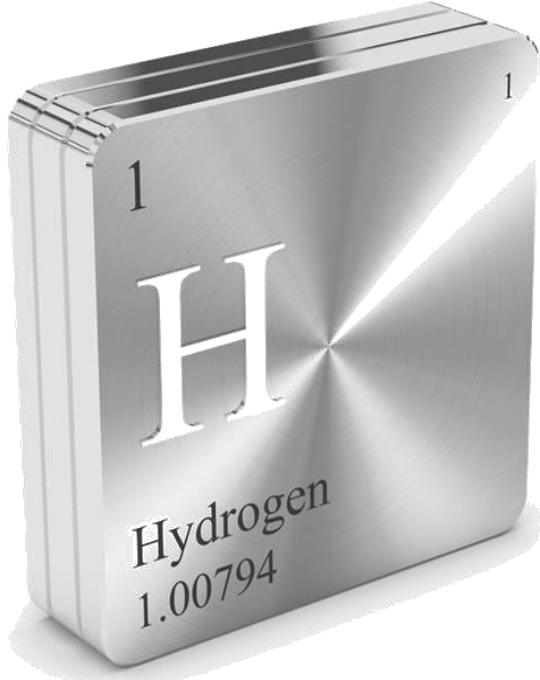
HITACHI
Inspire the Next

- Direct contact with manufacturer
- Used to deliver big projects
- Needed staff and facility to deliver ontime
- Strong Partner in the region (Focistar)
- Dedicated R&D and Technology team
- Support during civil works and project phase
- Worldwide start-up and after-sales service
- Recognized by major companies
- More than 2'500 units delivered since 1996



ENKA





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