

Keep calm and optimize. Maximize the life and efficiency of your hydrogen plant.



Hydrogen plants constitute a significant part of refinery energy input, costs, and environmental impact. With pressure to increase reliability, cost effectively improve efficiencies, maintain safety and meet environmental regulations, upgrades and improvements to existing assets are critical.

As one of the world's leading suppliers of hydrogen production technologies and plants, Linde Engineering North America (LENA) has the expertise to upgrade and service these plants and their equipment to maximize performance, safety and return on investment.

Engineering services

- Studies for:
- Relife
 - Optimization
 - Repurposing for feedstock flexibility
 - Debottlenecking

Steam methane reformer

- Header replacements
- Retubing
- Addition of low NOx burners
- Convection section upgrades and replacements
- PGB/steam system upgrades

Pressure swing adsorption

- Addition of pressure swing adsorption (PSA) technology to purify hydrogen stream and improve plant efficiency
- Expansions of existing PSA plants
- Repairs and upgrades
- Adsorbent replacement

Selective catalytic reduction

- Addition of SCR systems for NOx reduction

Controls upgrades → Automation upgrades for improved efficiency, reliability, safety and ease of operation

Material supply → Global sourcing of spare parts and equipment to secure best value
→ OEM quality materials
→ Rigorous quality and inspection program

Field services → Startup and commissioning
→ Turnarounds/reliefs
→ Complete construction management
→ Fitness for service inspections
→ Shutdown demolition and erection
→ Emergency rebuilds
→ Heater/burner repairs and maintenance
→ 24/7 schedules

