Intro to Nel and electrolytic hydrogen

Katherine Ayers, VP R&D
90+ years of experience in electrolyzer technology

- Strong field know-how & manufacturing capacity
  - Alkaline electrolysis: established in 1927
    - >800 systems fielded
    - 2 production sites in Norway
    - Herøya plant capacity scalable to 2 GW/year
  - PEM electrolysis: established in 1996
    - >2700 systems fielded
    - Production in Wallingford, CT
    - Capacity scalable to ~150 MW/year with current plant footprint
  - Hydrogen fueling: established in 2003
    - 50+ stations delivered
    - Production in Herning, Denmark
    - 300 station/year capacity

NEL IN BRIEF: 4 MANUFACTURING FACILITIES
Markets have grown as unit scale increases

PEM electrolysis has been sustained by applications with varying price points.

- Analytical Labs
- Weather Balloon Filling
- Heavy Duty Vehicle Fueling
- Industrial Processes
- Power Plant Cooling
NEL HYDROGEN ELECTROLYSER

Alkaline product scale

1 electrolyzer (2.2MW)
Built for future expansion up to any capacity size

176 electrolyzers (~400MW)
PEM product scale

Areas for cost reduction:

• System and power electronics scale: leverage common industries & standards

• Manufacture: automation, volume, labor reduction
  • Higher process capability
  • Higher performance parts

• Material utilization: membrane thickness, catalyst loading

• Higher current density: less cells needed for capacity rating

M Series

1.25-2.5 MW solution

Larger Installations

5-25 MW solution