



IDEA2022

Building Connections

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INTERNATIONAL
DISTRICT ENERGY
ASSOCIATION

Integrating Renewable Energy & Greenhouse Gas Reduction

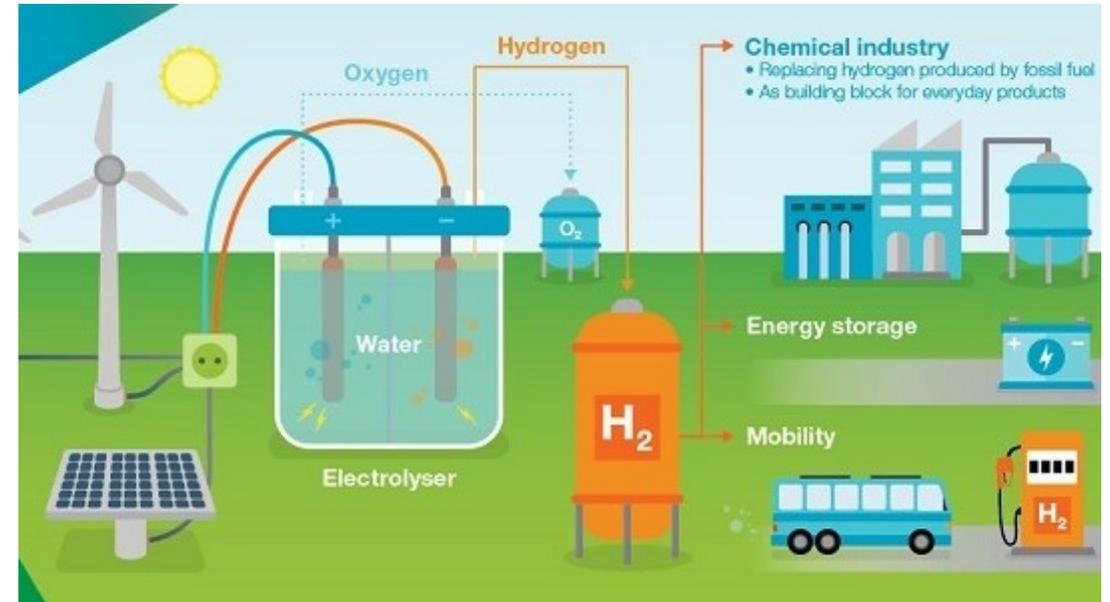
Jeremy Smith, P.E.



Hydrogen as the Answer

Hydrogen

- Can be generated with all electric or small footprint CO₂ with steam-methane-reformer technology
- Can reduce greenhouse gas emissions when deployed in the field with renewables (PV, wind, renewable gas)
- Significant regulatory and safety concerns, relating mostly to lack of education



How to get Hydrogen Approved

Nuvera Fuel Cell Facility in Billerica, MA

Addressing the concerns

- Code compliance and third-party certified systems whenever possible
- Due diligence by a hydrogen system expert not directly employed by the system manufacturer
- Show a systemic approach to system design and safety incorporation
- Hazard handling plan with emergency response



The Hazard Plan and Emergency Response

Hazard plan will answer the following:

- How much hydrogen, where is it stored and what form?
- Where are the safety detectors and what type are they?
- Where are the e-stops, what do they do?
- Emergency Response
 - Actual people and phone numbers
 - How to shutdown safely
 - Update the plan on an annual basis



Key take-aways from the process

Early engagement is key

- Get out in front of the “Hydrogen Issue” on your project as early as possible.
- Provide success stories of installations that have years of trouble-free operation.
- Stress the deliberate, thoughtful process that leads to the decision to use hydrogen as the delivery method of the end-use energy.
- Do the paperwork to document the hazard and have a plan of what to do in an emergency.
- Invite the 1st responders to walk the project with you after completion, get them familiar with your equipment and its layout.



Q&A



Thank You!

Jeremy Smith, P.E.



