

Hydrogen Costs for Transit

Presentation by
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Key Factors Affecting Cost of Hydrogen

- Project Scale (1, 5, 25, etc...)
- Supply Mode
 - Gas vs. Liquid
 - Delivered vs On-Site Generation
- Distance from source
- Renewable Content
- Market Conditions at Outset

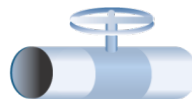


Project Scale vs. Cost Breakdown

- Duration of demonstration
 - Very short (days/weeks; 1 bus)
 - Medium (3+ years; 5-10 buses)
 - Long (5-10+ years; 10+ buses)



Quantity of Buses	H2 Fueling Solution	Convenience	Total Cost	Capital Cost	Per Unit H2 Cost	Scalability
1-5	Temporary	High	Low	V. Low	High	Low
5+ Buses	Liquid	Medium	Med-High	Medium	Lower	High
5+ Buses	On-Site	Medium	Med-High	Medium	Medium	Med.-High
25 Buses	Pipeline	Low	Med-High	Med.-High	Lowest	Med.-High



Distance from Source & Renewable Content

- It's all about geography
 - Nearest hydrogen sources
 - Nearest available renewable resource
 - Biogas
 - Power
- Can develop own plan or work with others
- Need to understand renewable landscape of availability, price, credits

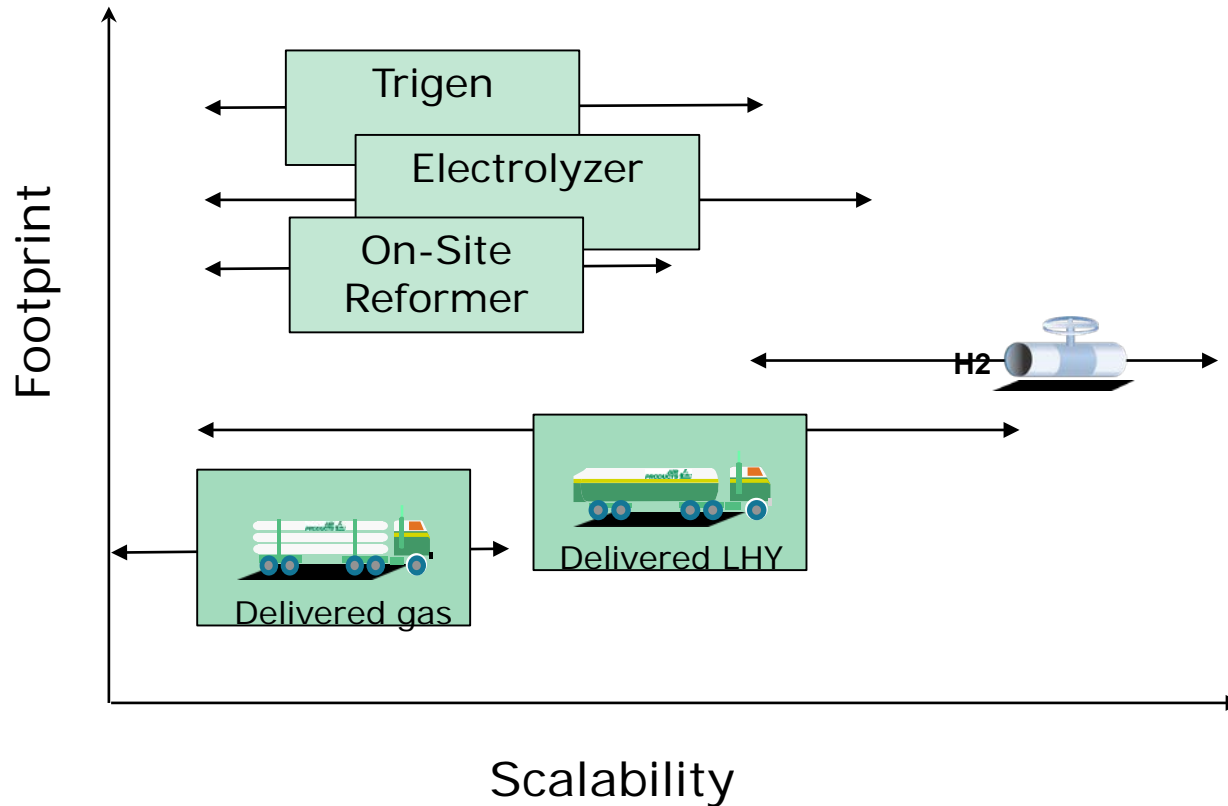


Market Conditions

- General H2 availability
- Growth rate of other H2 applications
 - Cars
 - Trucks
 - Forklifts
 - Ships
- Contract term
- Credits



Hydrogen Supply Options vs. Challenges



Thank you
tell me more

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