

Detailed technology and economic analyses of hydrogen storage and transportation technologies



Challenge

One of the largest vertically integrated energy majors needed a more comprehensive understanding of the impact and developments for hydrogen storage and transportation.



Solution

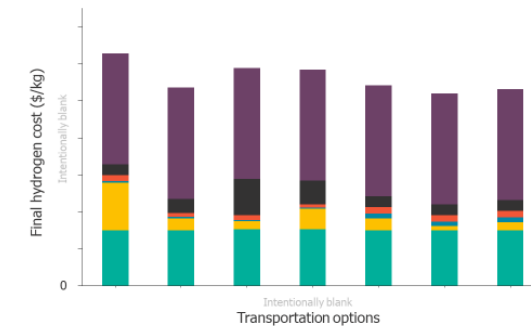
Lux created a map of players involved in hydrogen storage and transportation technologies and analyzed each technology category to determine which sector had the greatest potential for serious impact on the energy market and which would likely falter in commercialization or remain constricted to niche markets. Lux constructed a comprehensive economic framework, allowing the team and client to model scenarios for hydrogen storage or transportation based on different technology permutations, distances, and local energy costs.



Value

Through Lux's work, the client obtained comprehensive insights into the expected impacts from hydrogen storage technologies. Based on insights from extensive primary research and using the scenario framework as a tool, the client is now considering a shift in the company's hydrogen strategy.

Scenario 3: Mid-distance transportation over land



KEY INPUT PARAMETERS

Desired H2 output capacity (tons H2/day)	10
H2 production cost (\$/kg H2)	4.00
Storage time (days)	1.0
Transportation distance (km)	50
Subsidy as % of total investment (%)	10.0
H2 production subsidy (\$/kg H2)	1.00
Electricity cost (\$/kWh)	0.07
Cost of truck transport (\$/km)	0.65

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