

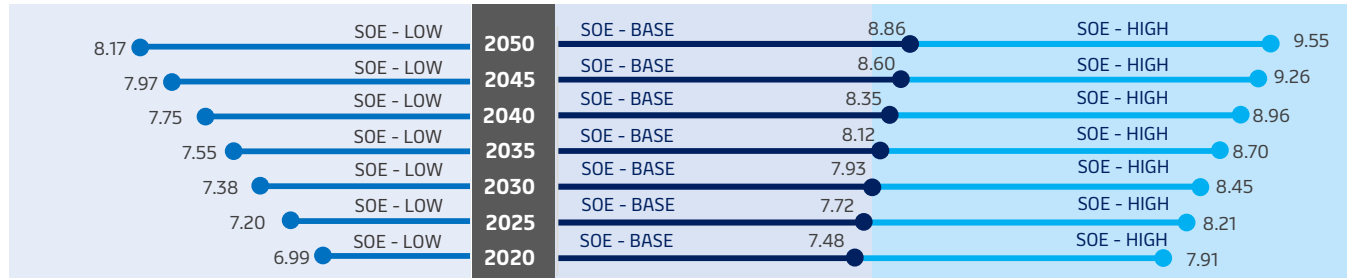
Modelling levelised cost of hydrogen under scenario based circumstances for India for Solid Oxide Electrolysis

Part-9 (Scaling policy, support infrastructure and trade opportunities for hydrogen in India with technology and policy comprehensive roadmap)

Levelised Cost of Hydrogen – Solid Oxide Electrolyser

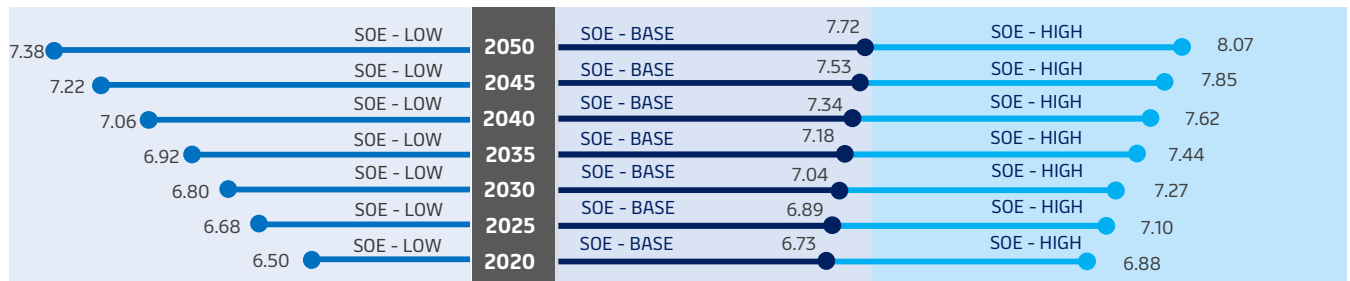
While using SOE technology the LCOH is projected to be USD 8.86/kWh by 2050 under Base Case Scenario while electricity is being fed through grid. Further, the LCOH is expected to be USD 9.55/kWh & USD 8.17/kWh under High Case Scenario & Low Case Scenario respectively by 2050.

Under base scenario the LCOH comes out to be USD 7.48/kWh in 2020 while using power through grid. Further, LCOH comes out to be USD 6.73/kWh while feeding power through solar & USD 6.60/kWh while feeding power through wind under in 2020.



Grid connected H₂ production cases (LCOH in USD/kWh)

Grid connected H₂ production cases (LCOH in USD/kWh)



Solar connected H₂ production cases (LCOH in USD/kWh)

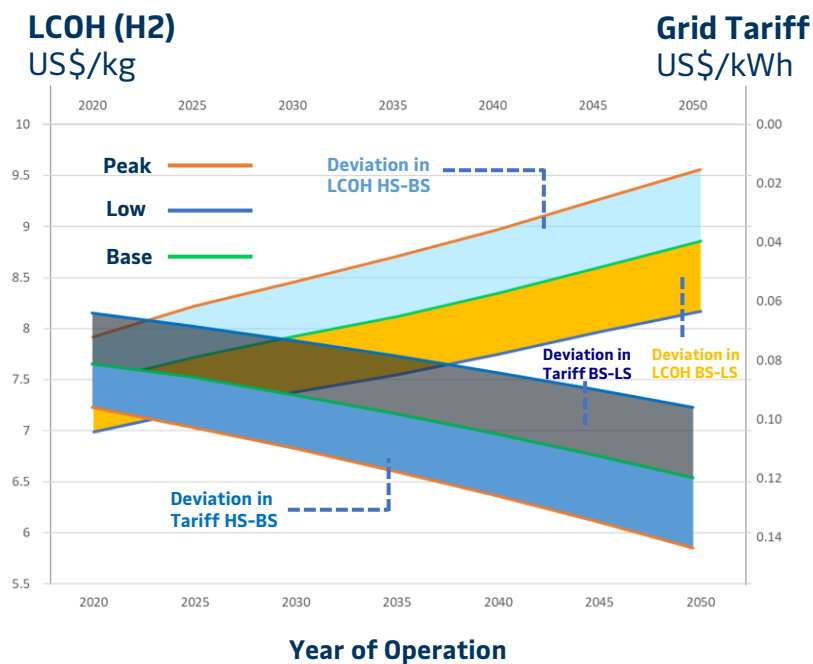
Solar connected H₂ production cases (LCOH in USD/kWh)



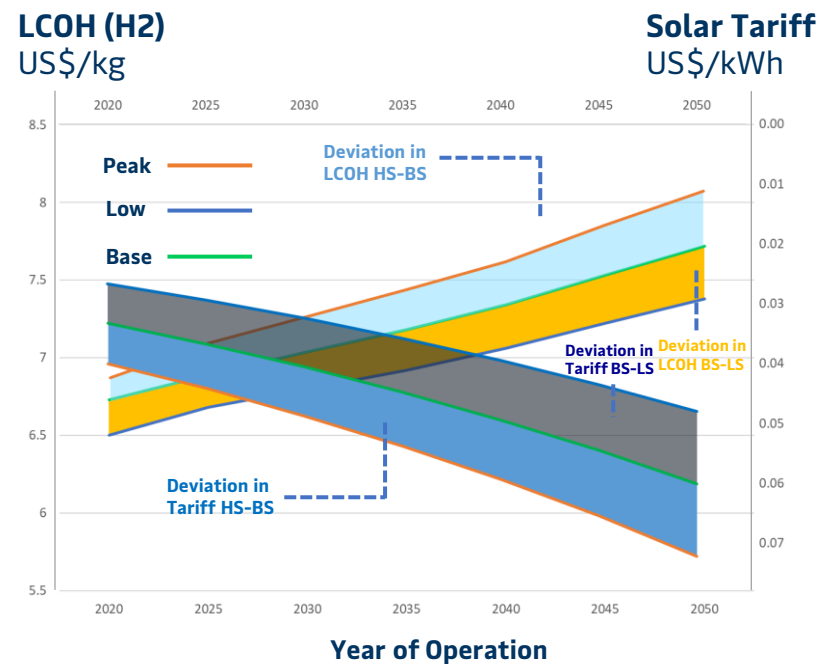
Wind connected H₂ production cases (LCOH in USD/kWh)

Wind connected H₂ production cases (LCOH in USD/kWh)

Sensitivity Analysis – Solid Oxide Electrolyser



Grid Fed: Under **base case** scenario the LCOH for year 2020 & 2050 comes out to be USD 7.18/kWh & USD 8.86/kWh respectively. Under **lower case** scenario the LCOH for year 2020 & 2050 comes out to be USD 6.99/kWh & USD 8.17/kWh respectively. Under **high case** scenario the LCOH for year 2020 & 2050 comes out to be USD 7.91/kWh & USD 9.55/kWh respectively.

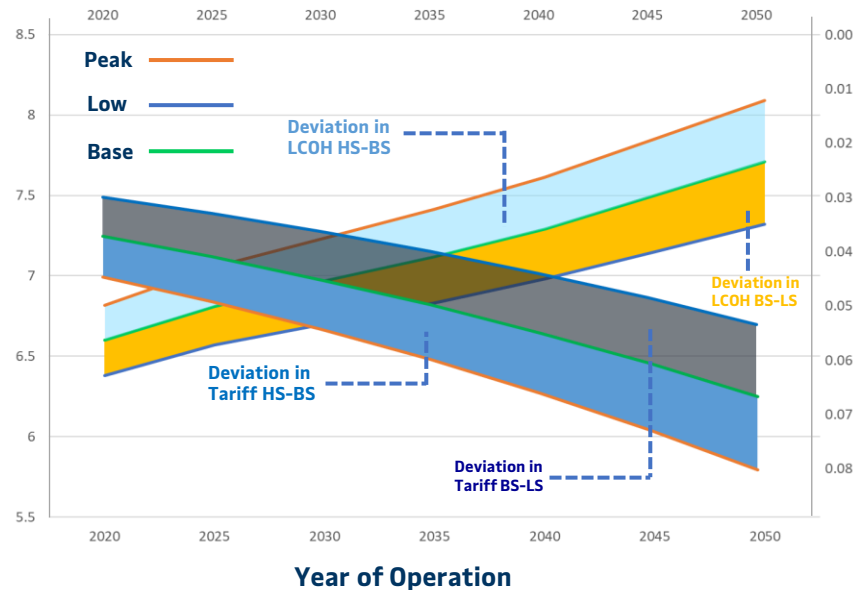


Solar Fed: Under **base case** scenario the LCOH for year 2020 & 2050 comes out to be USD 6.73/kWh & USD 8.07/kWh respectively. Under **lower case** scenario the LCOH for year 2020 & 2050 comes out to be USD 6.5/kWh & USD 7.38/kWh respectively. Under **high case** scenario the LCOH for year 2020 & 2050 comes out to be USD 6.88/kWh & USD 8.07/kWh respectively.

Sensitivity Analysis – Solid Oxide Electrolyser

LCOH (H₂)
US\$/kg

Wind Tariff
US\$/kWh



Wind Fed: Under **base case** scenario the LCOH for year 2020 & 2050 comes out to be USD 6.60/kWh & USD 7.71/kWh respectively. Under **lower case** scenario the LCOH for year 2020 & 2050 comes out to be USD 6.38/kWh & USD 7.32/kWh respectively. Under **high case** scenario the LCOH for year 2020 & 2050 comes out to be USD 6.81/kWh & USD 8.09/kWh respectively.

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