Hydrogen: A Disruptive Technology

by

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a Crash Course on Innovation

Introduction of product/ service into an established market that performs better, mostly at a lower cost and thereby dethrones the market leaders in that segment and transform the industry

Developing a leadership style for innovation

The importance of innovation

The difference between creativity and innovation

The difference between innovation and invention

Why most innovations fail?

How disruptive innovation creates new markets?

What are the downsides of the incremental innovations?

What is Customer Centric Innovation?

Applying the customer centric innovation in your business

What is Open Innovation?

How to make Open Innovation happen?

The Innovation mix- a recipe for innovation

The major myths about disruptive innovation that is not true.

The five major forces of disruptive innovations

What is Breakthrough Innovation?

What is Competitive innovation (AKA Incremental innovation)

When to apply incremental innovation in your business?

Developing a culture for innovation

How to incubate the innovation culture?

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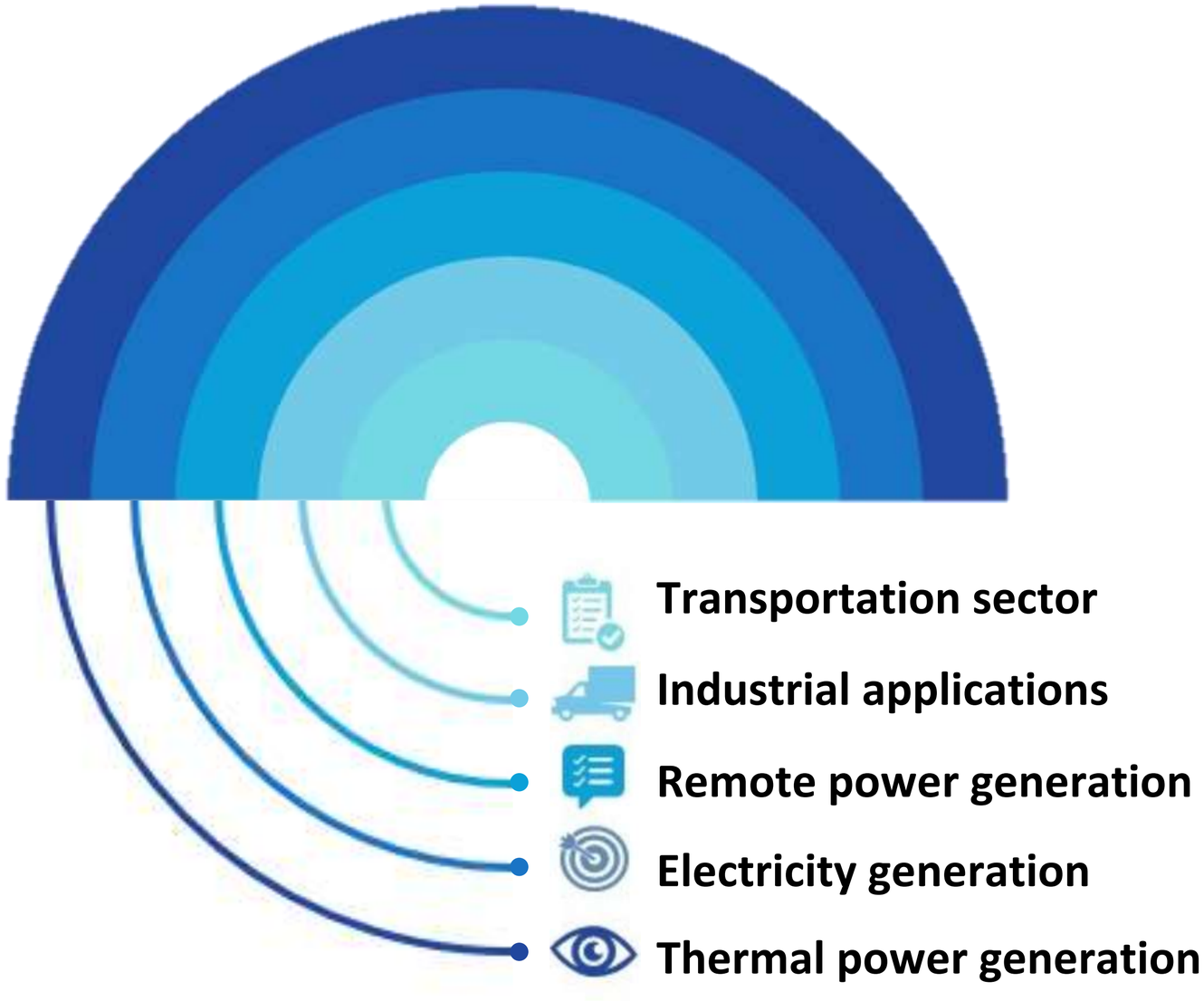
12 DISRUPTIVE TECHNOLOGIES
Artificial intelligence
Advanced oil & gas exploration and recovery
Renewable energy
Global internet penetration
Automation of knowledge work
3D printing
Internet of things
Virtual/ augmented reality
Next-generation genomics
Autonomous and near-autonomous vehicles
Advanced robotics
Cloud technology

Green Hydrogen Technology: Next Disruptive Technology

- Green Hydrogen as a clean source of energy produced using renewables
- Green hydrogen produced can then be used in multiple ways
  - For transportation in the form of a fuel cell
  - Large store of energy (as compared to batteries) in power generation
  - clean fuel source for polluting industries using high temperature processes like steel making which burns coal.
- Cost need to be lower


Solar Energy
Tidal Energy
Biomass Energy
Wave Energy
Geothermal Energy
Hydroelectric Power
Wind Energy
Renewable Energy

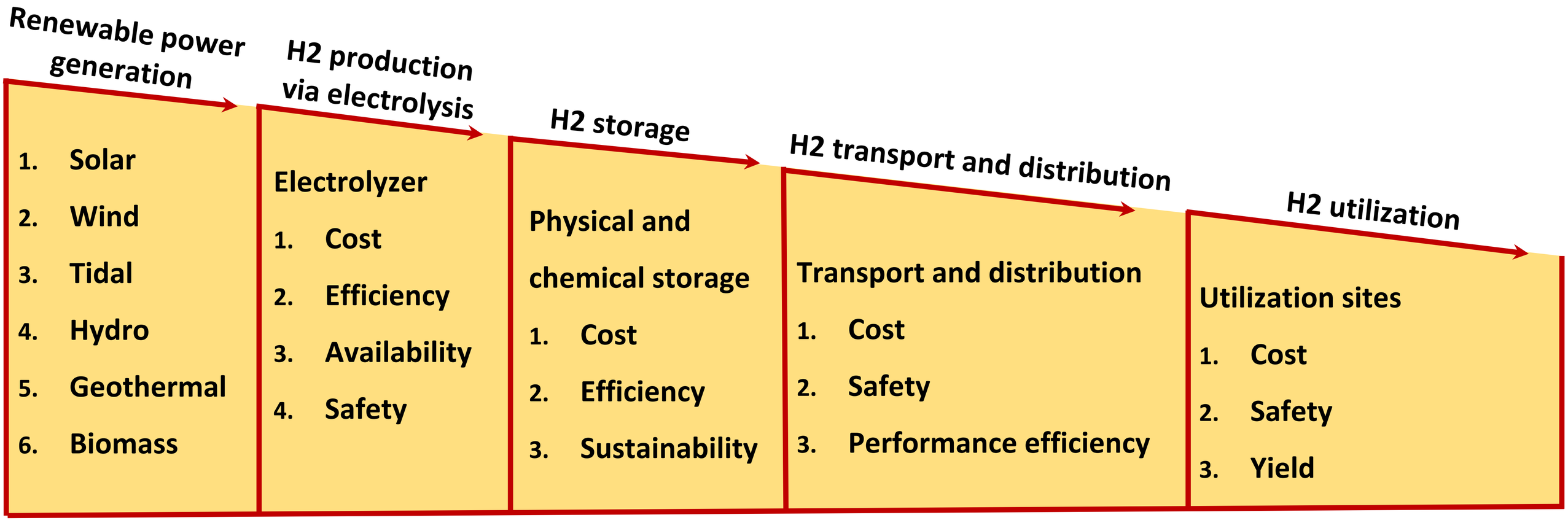
Green Hydrogen Usage



- Green hydrogen can decarbonize automotive sector
- Many industries undergo chemical reactions involving hydrogen
- Remote power generation sites function by using H2 as carrier for simpler transportation
- Fuel cells combine H2 and O2 to produce electricity
- H2 has high calorific value for thermal power generation

Green Hydrogen Adoption Cost

- Primary expenditure for proving green hydrogen is the cost of renewables
- Fortunately, that is declining due to technological advancements
- H2 technology can be a disruptive innovation if cost and efficiency for its production, transport, and distribution improves



Conclusion

- Hydrogen will become a disruptive innovation when cost subsides for the green hydrogen supply chain
- Efficiency of the existing H2 production, storage, and utilization systems is low snd need to be increased
- Need to work on improving technology with regards to safety, raw material availability, efficiency, performance, storage capacity, cost, sustainability, and other case specific requirements
- The present technology for fuel infrastructure needs to be modified to slowly transit to partial hydrogen economy before complete replacement
- Hydrogen technology will then dethrone the fossil fuel market leaders and transform the existing supply chain for green energy adoption