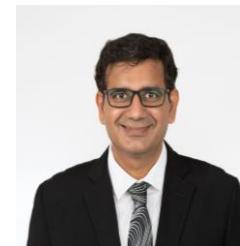




Challenges of H2 Economy In India & Way forward

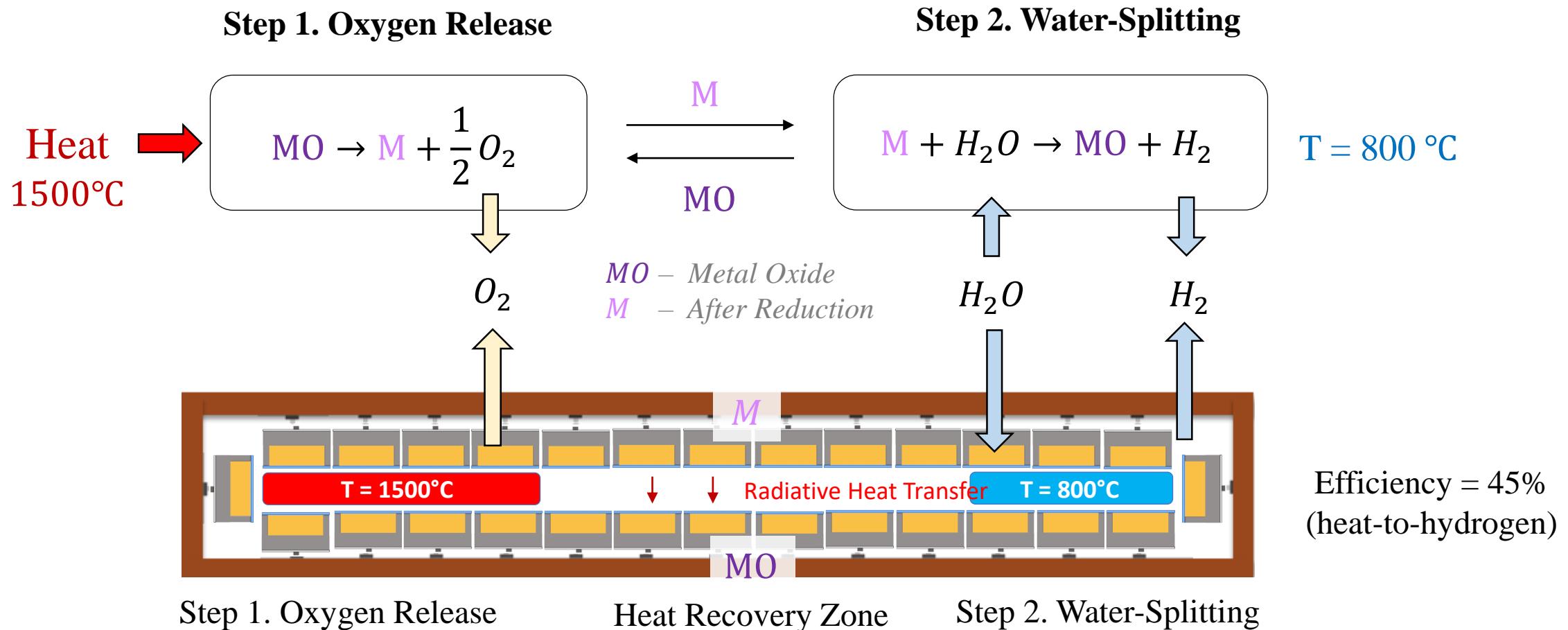


*Vikram Sharma
Vice President of Strategy & Operations,
CEC's Office*

Caselet 1 : Innovation ?

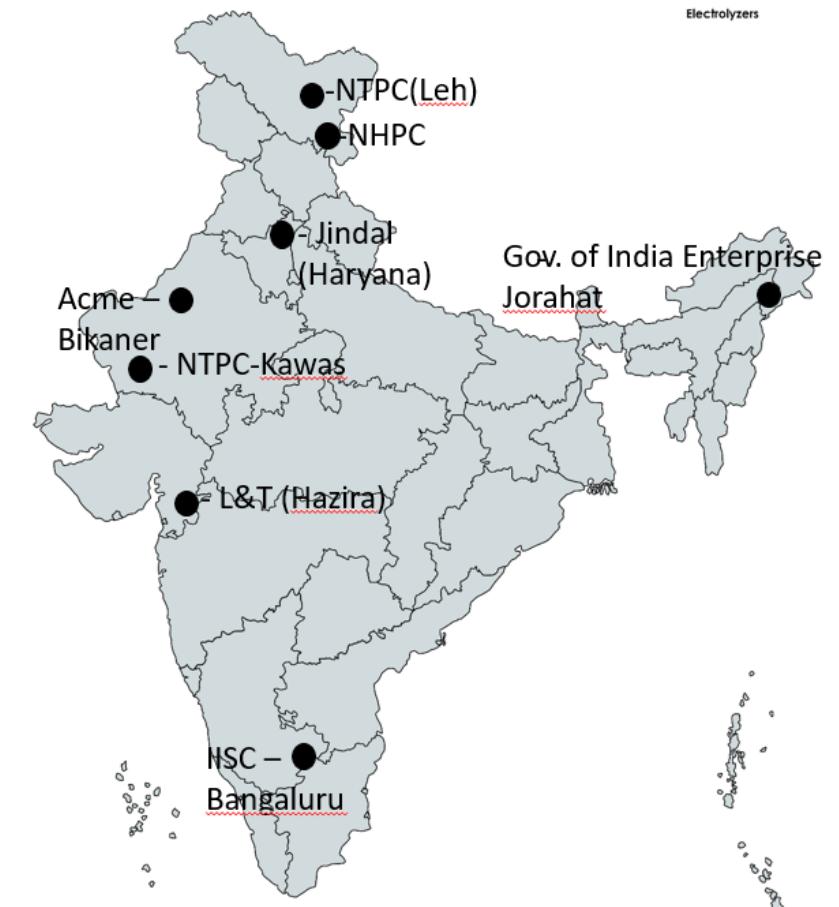
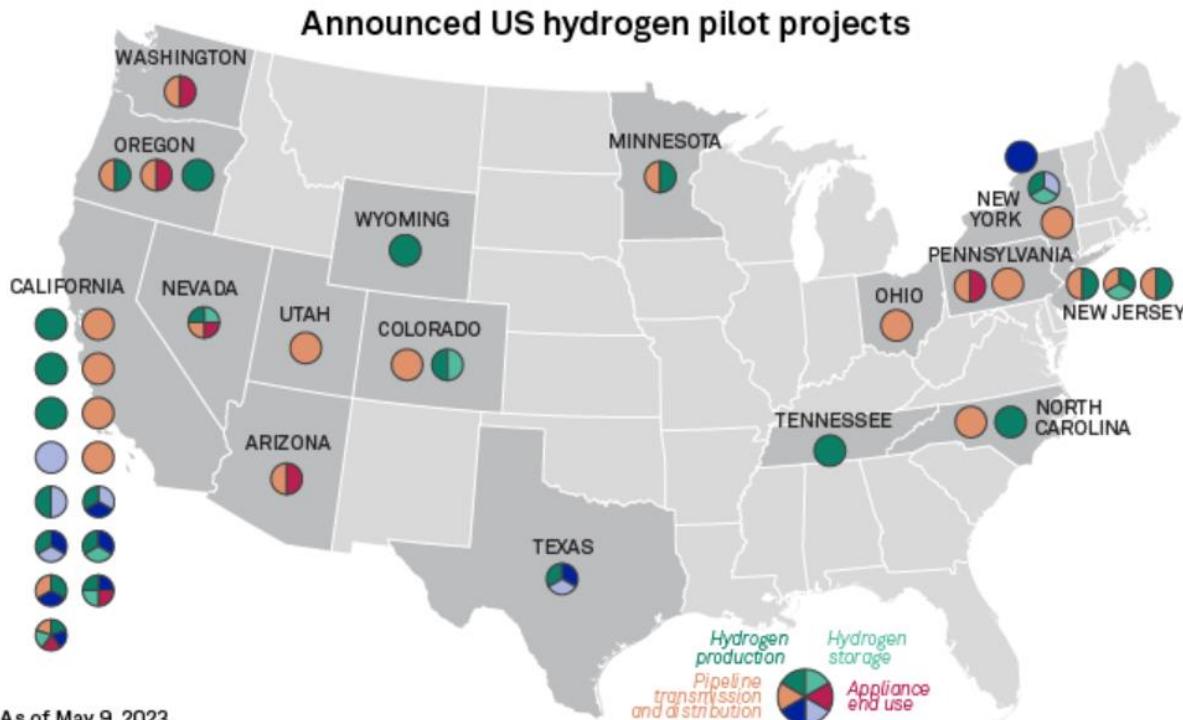
- Are we getting Myopic by just looking at electrolysis (Alklyne and PEM technologies)? –
 - Nobel Metals/ Minerals ? Upper limit to efficiency?
 - What about the photo electrochemical conversion, thermochemical conversion and biological conversion?

Thermochemical Water-Splitting in a Novel Reactor Train System

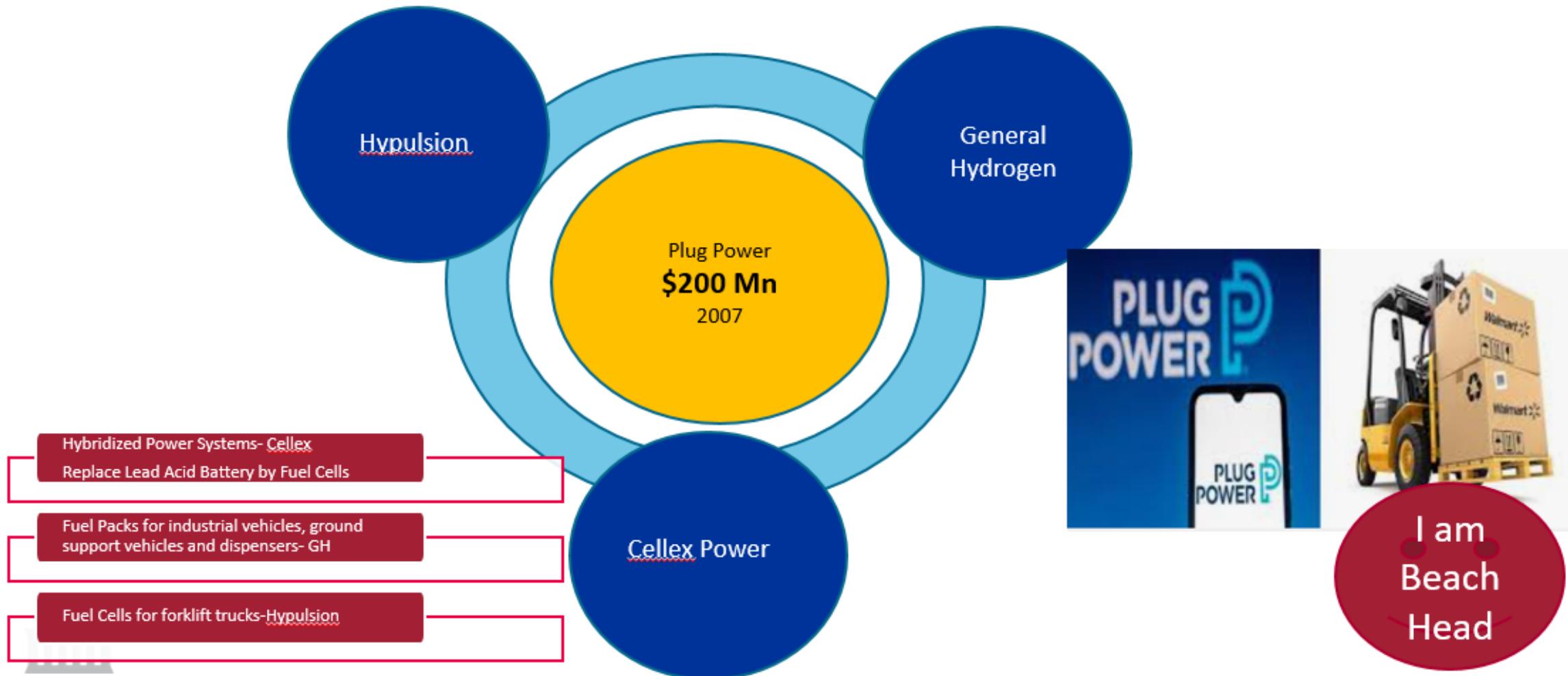


- 6X efficiency gains driven by internal heat recovery and efficient oxygen removal.
- Developed by members of the founding team at MIT (Patent filed August '22).

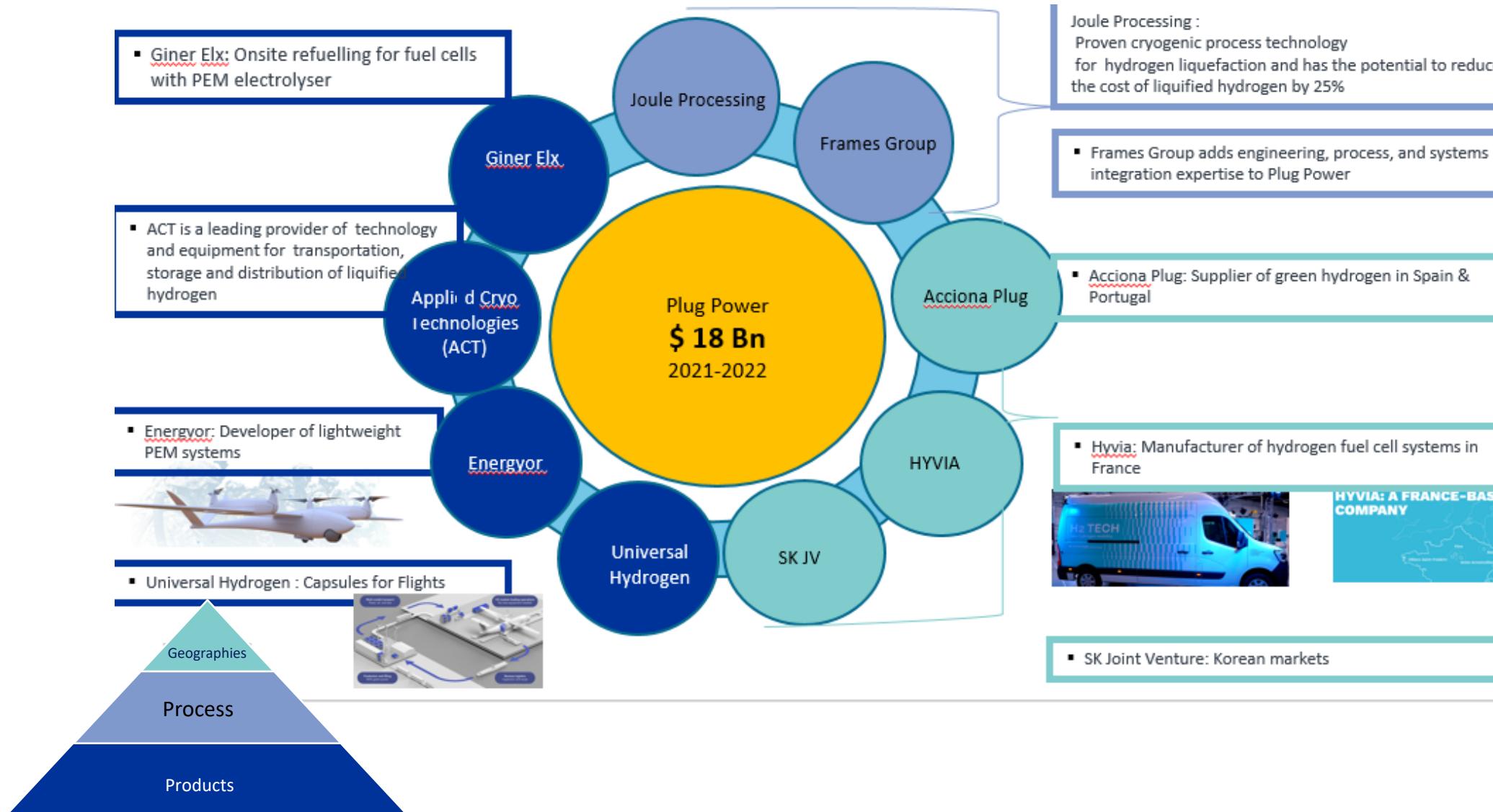
Caselet 2: Pilots ?



Caselet 3- Across the domain build up of Hydrogen Capability.



Case Study 3- Across the domain build up of Hydrogen Capability



India – Learning and Implementing Fast - \$2.5 Bn Hydrogen Mission

Innovation

- IIT Madras develops seawater electrolyser.
- IIT Indore develops hydrogen from plastic waste.



Pilot Projects

Green Hydrogen Pilots in India Conference – An excellent R&D roadmap for green hydrogen ecosystem released in Oct,2023

- Mission Mode
- Grand Challenge
- Blue Sky Projects

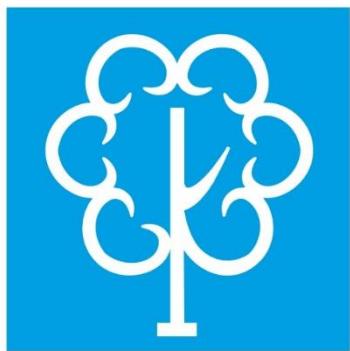
Global Partnerships

- **Strategic Partnerships:** The private sector is gung ho and have done multiple global partnerships for technology transfer.

Way Forward.. Innovate...Pilot...Scale.....



- Spreading our Technology Base – Beyond PEM ; Look for mineral reserves of platinum group metals within country
- Focus on more pilots – across the value chain –generation, transport and storage
- Promote more international partnerships, capability development and acquisitions across the range- A way towards integrated player creation with domestic manufacturing..
- Create masters degree programs in Hydrogen at NITs/NPTI/ State Engineering Colleges- an estimate of 600,000 manpower requirement by 2030



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