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Innovating!
GOODENERGYSOLUTIONS



The Future of Clean Energy

Green Hydrogen, Power To X

An opportunity to Decarbonise our world

Presented by- Mr. Siddharth Mayur
Founder and CEO

h2e Power Systems Private Limited



An IIT – SINE Incubatee Company

The Startup Inspiration



alamy - F6NACT

For, each man can do best & excel in only that thing over which he is passionately fond, in which he believes, as I do, that he has the ability to do it, that he is in fact born & destined to do it.

— Dr. Homi Jehangir Bhabha

Unless India stands up to the world, no one will respect us. In this world, fear has no place. Only strength respects Strength.

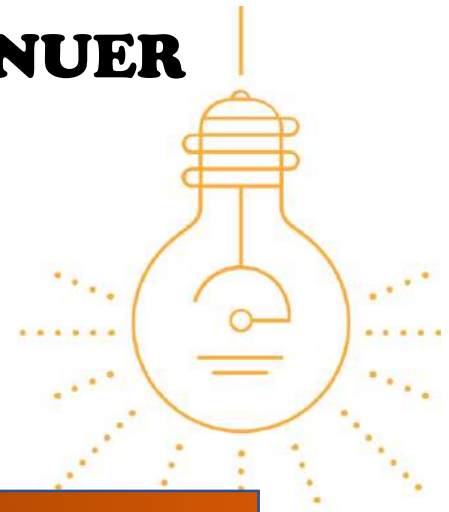
— A P J Abdul Kalam



MY JOURNEY AS AN Startup ENTREPRENEUR

PURPOSE

PASSION



Path to becoming a Social Entrepreneur
5 P'S

Vision



PERFORMANCE
Travel



Right Technology



Right Partner



PRESERVERANCE
Team Building



PATIENCE

The Climate Catastrophe

- **World's BIG Dilemma**
 - **Save the Planet**
 - **Grow & Develop**





Startup's in Hydrogen; Hydrogen itself is a Startup

NetZero is not a Software Startup

We are not a Zero to Hundred in 6 Second Industry

Innovation is the KEY

Hydrogen Opportunity In India



Refineries



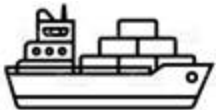
Aviation Industry



Fertilizers



CHP Buildings and Industry



Shipping



Agriculture
Farm to Fork “BJ-UJRA”



Chemical



H2 Gensets



Component Manufacturing



Electrolyser

We are manufacturing all types of Electrolyser
AWE, PEM, AEM, SOE



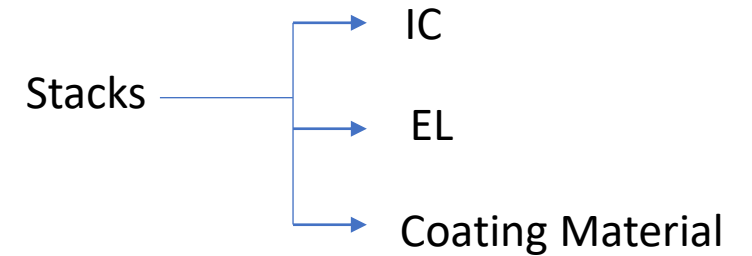
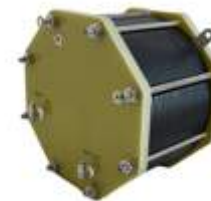
Hydrogen Compressor



Cylinders

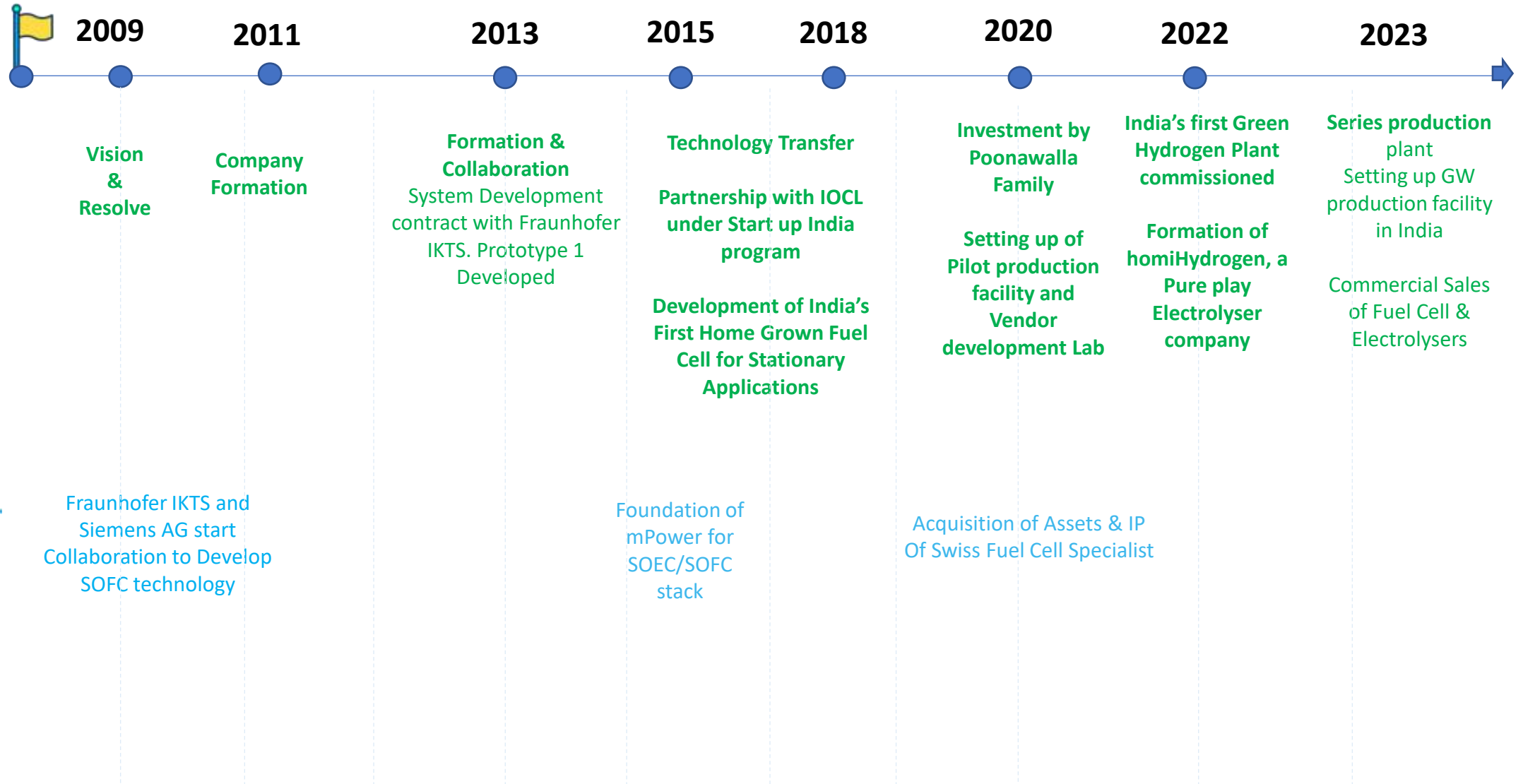


Balance of Plant (BoP)



Waste to GH2

TIMELINE

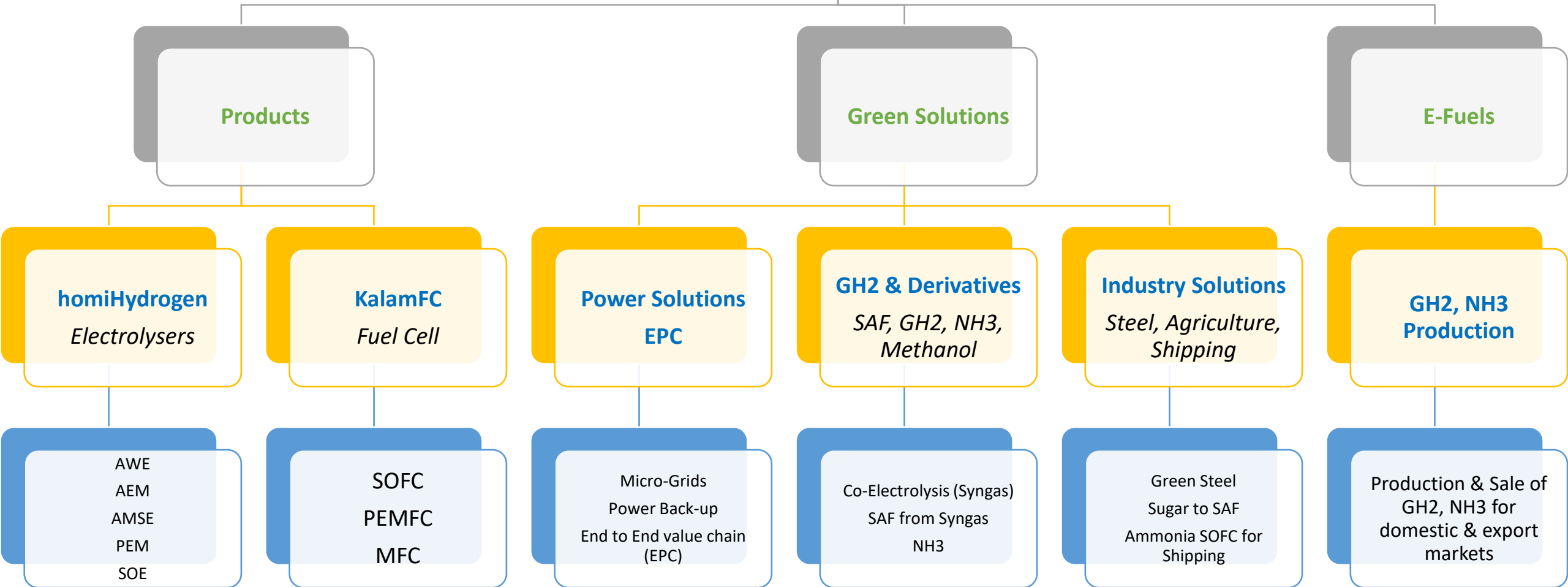


Fraunhofer IKTS and Siemens AG start Collaboration to Develop SOFC technology

Foundation of mPower for SOEC/SOFC stack

Acquisition of Assets & IP Of Swiss Fuel Cell Specialist

h2e's Business Profile



H2e's contribution to India's H2 dream



India's First Electrolyser
Manufacturing Company



AWE
Alkaline Water Electrolyser



AEM
Anion Exchange Membrane



SOE
Solid Oxide Electrolyser



PEM
Polymer Exchange Membrane



Fuel Cell Energy Solution from 1kW – MW
(Stationery and Mobility applications)



Ohm Cleantech Private is Greentech company focused
last mile NetZero Solutions for zero emission mobility &
clean cooking.

Zero Mobility Solutions



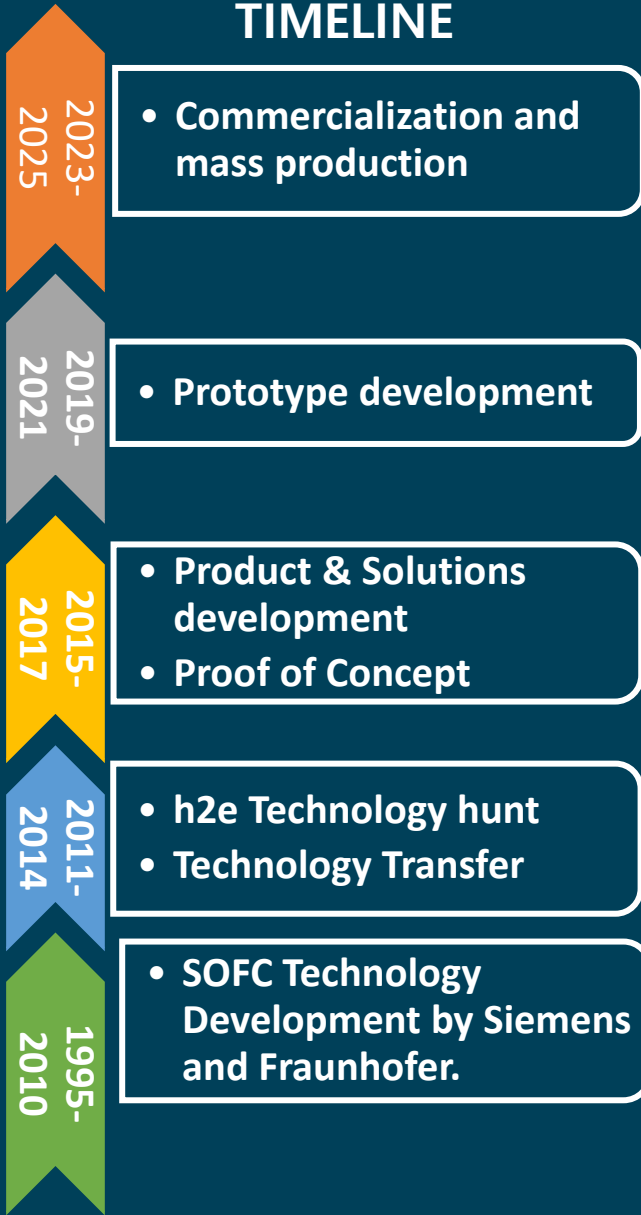
Clean Cooking-Annapurna Multi-Purpose Energy Pod



H2E IP CREATION AND DEVELOPMENT TIMELINE

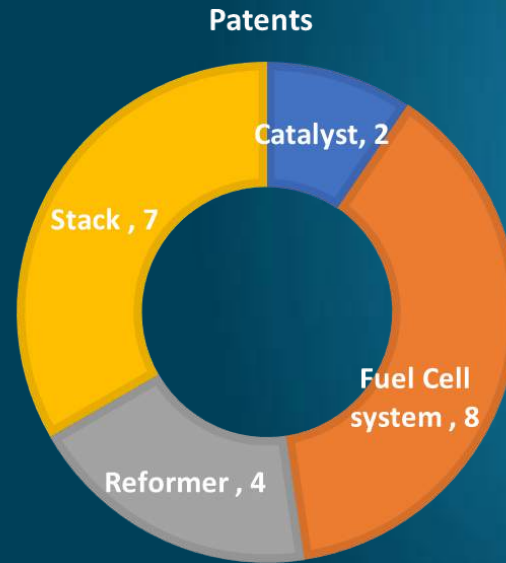


TIMELINE



TECHNOLOGY READINESS LEVEL (TRL): 8

PRODUCT READINESS LEVEL (PRL): 7.5



Key Patents description

Patents: 30+

- THERMALLY INTEGRATED HOTBOX WITH PASSIVE DEVICE
- ADAPTIVE ELECTRICAL HEATER FOR FUEL CELL SYSTEMS
- INTEGRATION OF MULTIPLE POWER SOURCE WITH OPTIMIZATION OF POWER SOURCE AND LOAD CONDITION



Group's Engagement towards building the Hydrogen Value Chain in India



- India's first SOFC for electricity/heat installed at IOCL R&D
- India's first Hydrogen based forklift: PEM fuel cell zero emission forklift, a challenge undertaken and delivered by team h2e.
- Fuel Cell Hybrid for off-grid EV charging infrastructure as part of startup program. Charge2GO will provide independent power infrastructure for EV charging using Biogas. City's waste to Power City's Vehicles
- h2e has filed 6 Joint Patents with Indian Oil
- h2e is currently building a Solid Oxide electrolyser for Indian Oil, to be commissioned in April 2023



Group's Engagement towards building the Hydrogen Value Chain in India



- Successfully commissioned **India's first Green Hydrogen** and Blending plant at PS3, Jorhat
- 100KWh of renewable energy to produce **10Kg of Green Hydrogen per day** with capacity to scale up to 30Kg per day with a Blending Skid for Blending GH2 with NG
- Hydrogen **Fuel Cell Bus** flagged off by the **Honorable Prime Minister**
- **Development of LOHC** as part of SNEH, Startup Initiative of OIL



Urja Udhyami Program

- . An integrated skill development program for developing energy entrepreneurs.
- . A 9-month end-to-end program on the functional training for on ground implementation of NetZero Solutions.
- . We target creating 100,000 Urja Udhyami, thus creating > 1 Million Green Jobs & a billion NetZero Indians.

Climate change
"vaccine"

FOR A CLEANER WORLD



NetZero Solutions

- . Mini / Micro Grid
- Residential, Industry
- . PTX
- . Green Agriculture
- . Green Steel
- . Storage - LOHC, Metal hydrite cylinders

Green Hydrogen

- . Electrolysers
- AWE, PEM, AEM, SOE
- . e- fuels
- Ammonia
- SAF
- Methanol

E-Mobility

- . EV Charging Infrastructure
- . ZEV
 - Fuel Cell 3-wheeler
 - Fuel cell bus

Fuel Cell

- . SOFC
(Input- NG, Methanol, H₂, NH₃)
- . PEMFC (Input- H₂)

Electrolysers - Fuel Cell

Our Brands

"Local, Yet Global"

Global Partners



Best time to be an Indian Startup, but are we ready to set Benchmarks?

- My **German Experience** and the praise for India in Germany
- **Handholding Support** by DPIIT & InvestIndia: Never felt so pampered 😊
- Ecosystem in place **Proactive Ministers, Hyper active Ministries**
- **India's image Globally** Thanks to India's Brand Ambassador, Our beloved Prime Minister

- Are we Ready?
 - We are still **not an innovator**
 - Failure is still **a Crime**
 - How much you have, **and not how much you know**, gets business
 - **Ethical** Codes

A Startup's Big Opportunity in GH2 in India (Challenges for company)

- The **China+** opportunity
- Honorable Prime Ministers Vision of making **India, Energy Independent (Zero Imports) by 2047 & NetZero by 2070**
- The National **Green Hydrogen Mission** backed by action on ground opens up a Billion \$ opportunity
- **Startup's** best positioned to deliver the leadership position in GH2 to India
- Greater the Opportunity, bigger the Challenge
 - **Green Hydrogen's L1 Curse**
 - **Walk the Talk, easier said than done**
 - **Is India serving European Interests?**
 - **Banking Infrastructure for Startup's**
 - **How many Indian companies in Top 10 GH2 startups? Zero (Germany: 2, Canada: 3, UK: 2, USA: 1, Estonia: 1, Israel: 1)**

How do we save our Planet & Make Good Business

Conserve

Converge

Collaborate

- To become Climate Responsible
- To Build a Climate Change Vaccine

6.2 million deaths due to COVID-19

**Death due to
Climate Change:
5 million per year**



The Climate Change Vaccine

- Conserve - Converge - Collaborate - Climate Responsibility



Swing for the Fences

When you swing for the fences you're putting every ounce of strength into hitting the ball as far as possible. You know that your bat might miss the ball entirely – but that if you succeed in making a contact, the rewards are huge.

The goal just isn't incremental progress.

It's to put the full force of our efforts and resources behind the big bets that, if successful, will save and improve lives.