Green Hydrogen Ecosystem Accelerating Green Mobility

05th Aug 2023

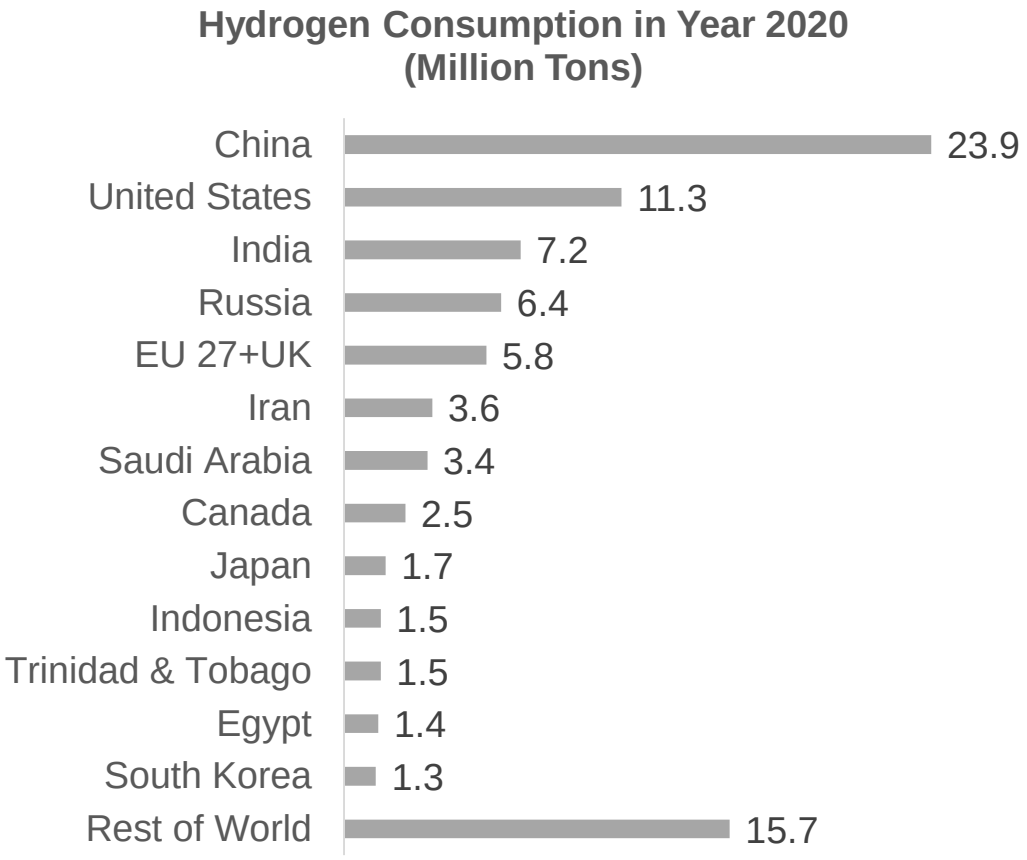
ReNew

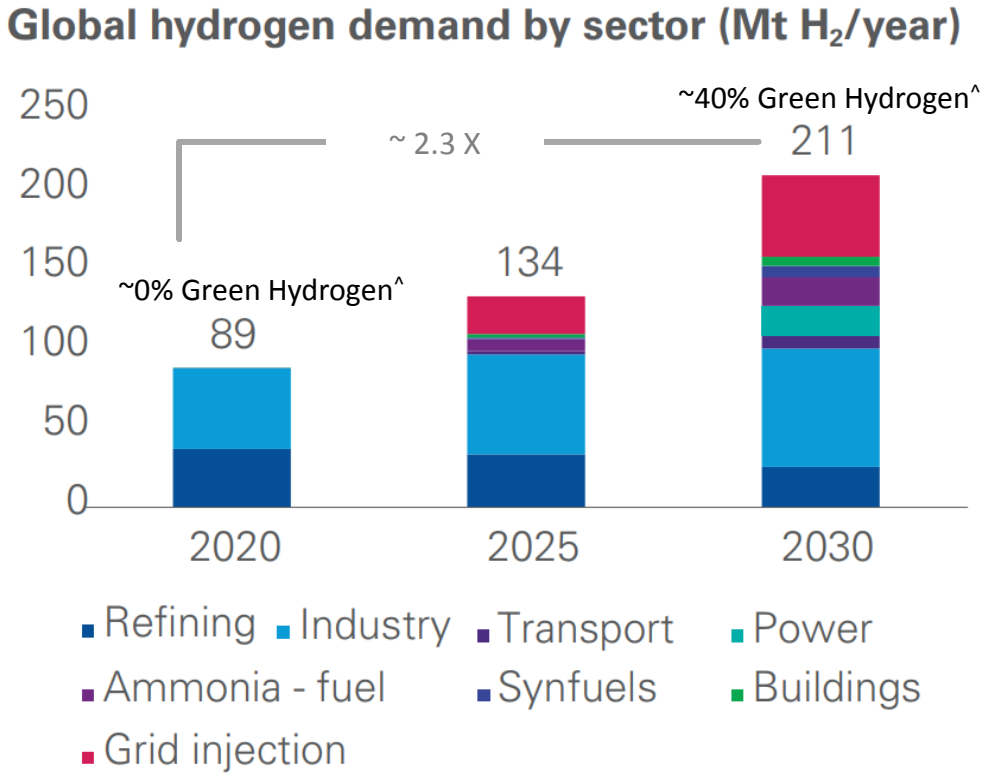
1. Global Outlook
2. Policy Landscape
3. National Hydrogen Policy and Odisha Policy
4. Support required from Govt.
5. Renew Vision and about ReNew

Creating a Green Hydrogen Ecosystem

Aug 2023

Hydrogen Demand is expected to increase from ~90 Million Tonne (MT) to ~200 MT by 2030 (Net Zero)





Source: IEA, 2020

Currently more than 95% of hydrogen is produced using SMR and each kg of hydrogen is leading to 9-10 kg of CO2 generation

Source: IEF, IRENA, KPMG, ^ Niti aayog and internal estimates

EU, Japan, Korea, India, China and USA expected to constitute ~ 70MTPA of Green Hydrogen demand by 2030

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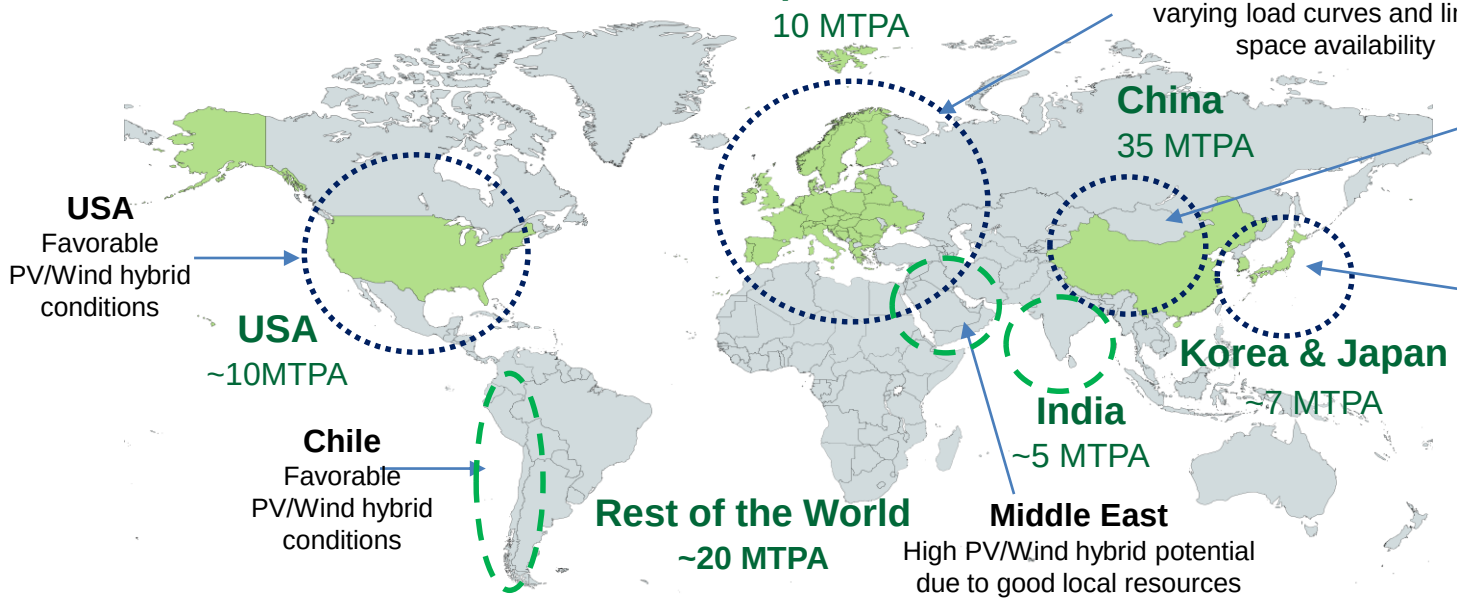
Key Drivers of Green Hydrogen

- Reduce reliance on fossil fuel
- Carbon Neutrality
- Access to low-cost renewable power
- Low Resource Utilization



EU
Likely to be high demand location
Renewable constrained due to varying load curves and limited space availability

China
Large Investments in hydrogen economy
Potential to be self sufficient

Japan & Korea
Strategy to scale up hydrogen consumption space and resources constraints;
Likely to import hydrogen

USA
Favorable PV/Wind hybrid conditions

Chile
Favorable PV/Wind hybrid conditions

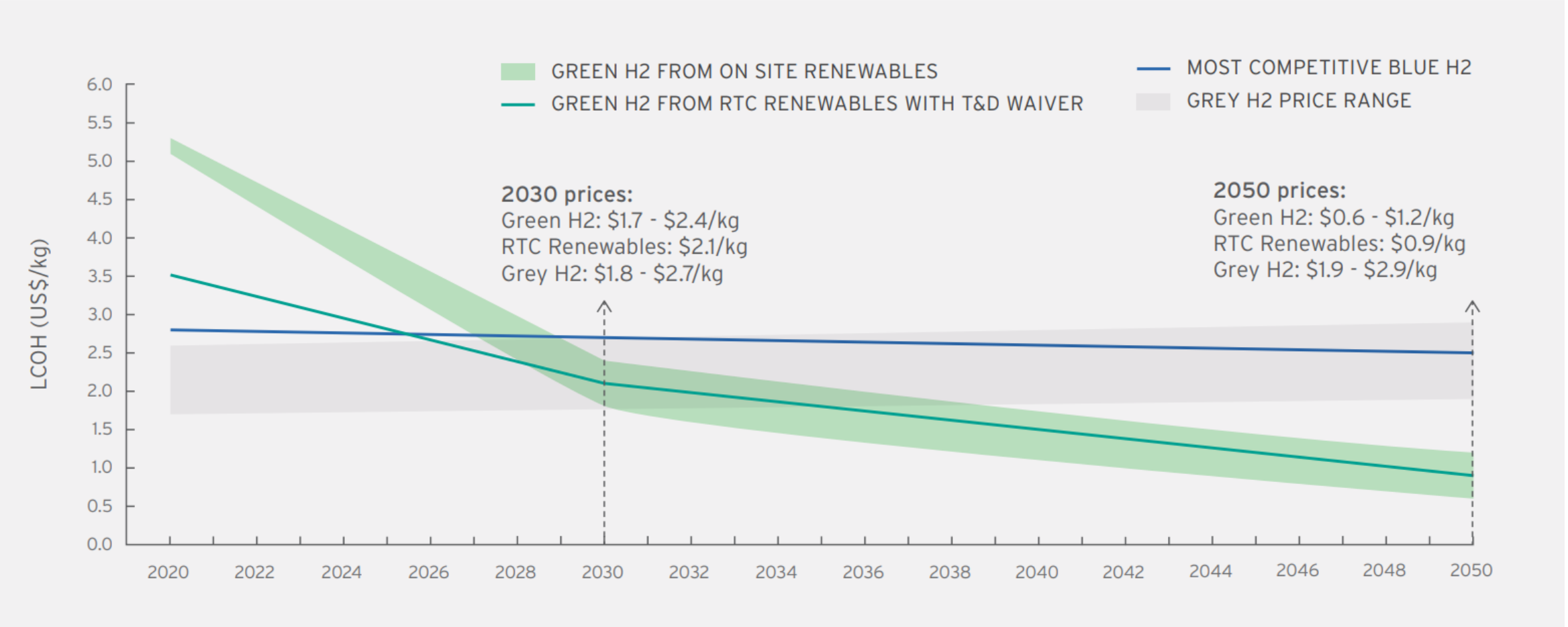
Middle East
High PV/Wind hybrid potential due to good local resources

Industrial Processes	Power Sector	Power to Fuel	Transport	Heating
▪ Refining ▪ Ammonia & Methanol Synthesis ▪ DRI for Steel	▪ Flexible Power Generation ▪ Energy Storage	▪ Ammonia ▪ Synthetic Fuel ▪ Renewable Gases	▪ Road ▪ Train ▪ Shipping ▪ Aviation	▪ Industrial ▪ Residential ▪ Commercial

Optimal RE (Solar & Wind) Potential coupled with favourable Govt. Policies in MENA Region, Morocco, Chile, Australia and India could drive the competitive Green Hydrogen Production

Source: Niti Aayog, internal estimates

Green hydrogen is expected to achieve the price parity by 2030



RTC renewable prices are expected to reduce to USD 2.1/KG which is expected to bring in the price parity with Grey hydrogen by 2030

Source: Niti Aayog

Until hydrogen parity is achieved Govt. is taking various measures to promote Green Hydrogen

US IRA proposed to offer green hydrogen production subsidy of upto $3/kg of H2

EU: Ambitious RE and clean fuel targets under REDII directives; EU innovation fund of €40 bn.

H2 Global, set up by GIZ, DWV & German Hydrogen to provide subsidy of €2 bn

Net Zero Hydrogen Fund provides subsidy up to £240 mn of CAPEX/ DEVEX support

Spain: EUR 1.56 bn (US $ 1.63 bn) is allocated towards boosting R&D and the value chain

Norway - Goal to reduce 50-55% GHG by 2030. Plans to triple tax from $60.3/t to $204/t CO_2 by 2030.

Japan: Aggressive targets to adopt clean fuels; Green innovation fund of $15 bn for investment in R&D

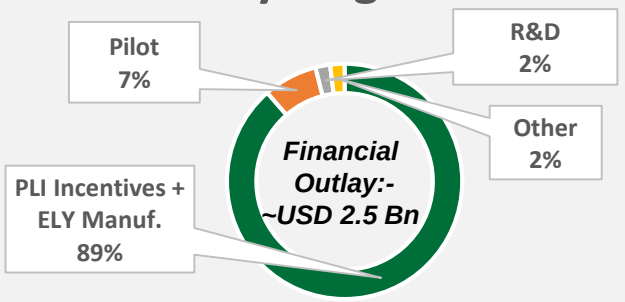
France: $ 2.2bn of Govt. funding for hydrogen development

Central Govt. of India has launched National Green Hydrogen Mission to promote India as Export hub for Green Hydrogen …….

Objective

- To produce at least 5 MMT of GH per annum by 2030, with potential to reach 10 MMT to cater exports
- Make India, the Global Hub for production, usage and export of GH and its derivatives

National Hydrogen Mission



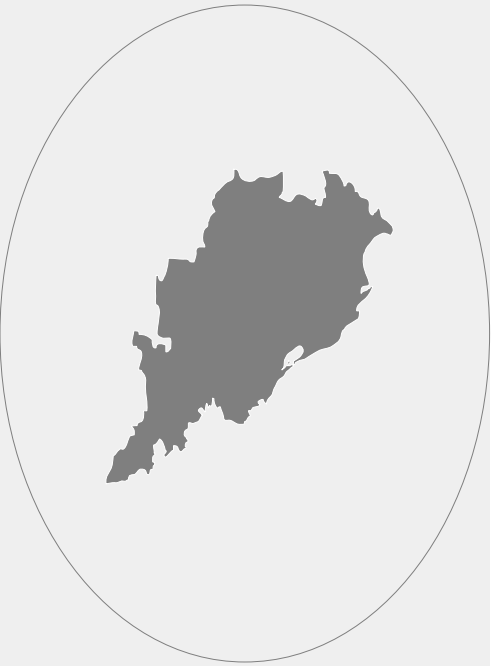
USD Mn.

Total Financial Outlay	**2,468**
PLI Incentives + Eectrolyzer Manufacturing	**2,186**
Pilot Projects	**183**
R&D	**50**
Other	**49**

Incentive Program / Govt. Support
▪ PLI for Domestic **manufacturing of electrolysers**
▪ **PLI for Production of green hydrogen**
▪ **Inter State Transmission charge waiver**
▪ Facilitating RE banking
▪ USD denominated Bids for GH / GA, and funding through Green Bonds
▪ Support to Infra build-up for storage and delivery of GH and its derivatives like Port Infra, Pipelines
▪ Boost domestic manufacturing of electrolysers for its availability at significantly lower costs
▪ Solar like Approved List of Models & Manufacturers (ALMM) to be specified by Govt for GH production and participation in bidding.

- **PLI subsidy of INR 50 Rs/KG, INR 40 Rs/KG, INR 30 Rs/KG on Hydrogen Production expected to be provided during initial three years respectively**
- **CTU Charges waivers for RE projects dedicated for GH for projects commissioned before 2030**

… further enabled by Odisha State Govt. favourable Policy

Odisha	Incentives for Green Hydrogen Projects	Incentives for Captive Renewable within State
	✓ **30% capital subsidy over period of 5 years** ✓ STU charges Waiver/ reimbursement on RE energy consumed for period of 20 years ✓ Waiver/ reimbursement of CSS, ASC on RE energy consumed for period of 20 years ✓ Electricity duty waiver for 20 Years ✓ Reimbursement of 3 Rs./Unit purchased from State Discom for period of 20 years ✓ Net SGST reimbursement upto 100% of cost of plant & machinery	✓ 30% capital subsidy for captive RE within state over 5 years *(Floating/Rooftop Solar, BESS, hydro, Pump storage hydro)* ✓ Monthly Banking subject to OERC regulations ✓ STU charges waiver/ reimbursement for 20 years ✓ Electricity duty waiver for 20 Years for RE power ✓ Priority allocation of sites/ reservoirs for RE Plants / battery

➢ **30 % Capital subsidy, STU charges & E.D waiver for 20 years on RE power consumption**

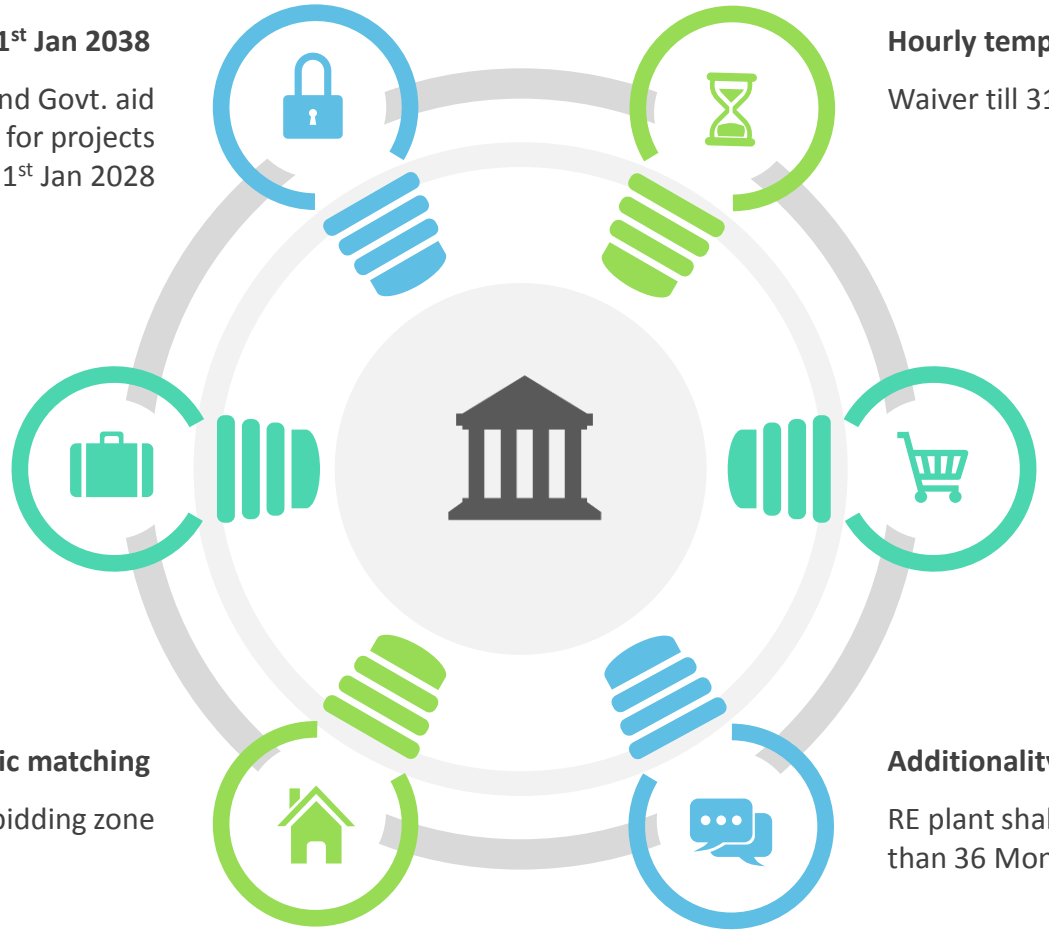
European Union regulations pertaining to Green Hydrogen are not favorable

Transitional Phase: Until 1st Jan 2038

Conditions of Additionality and Govt. aid are not applicable for projects commissioned before 1st Jan 2028

Hourly temporal Matching

Waiver till 31 Dec 2029



Demonstration of Compliance

Govt. Subsidy disallowed

Capital Aid and Operating Aid on RE not allowed

Geographic matching

Requirement of same bidding zone

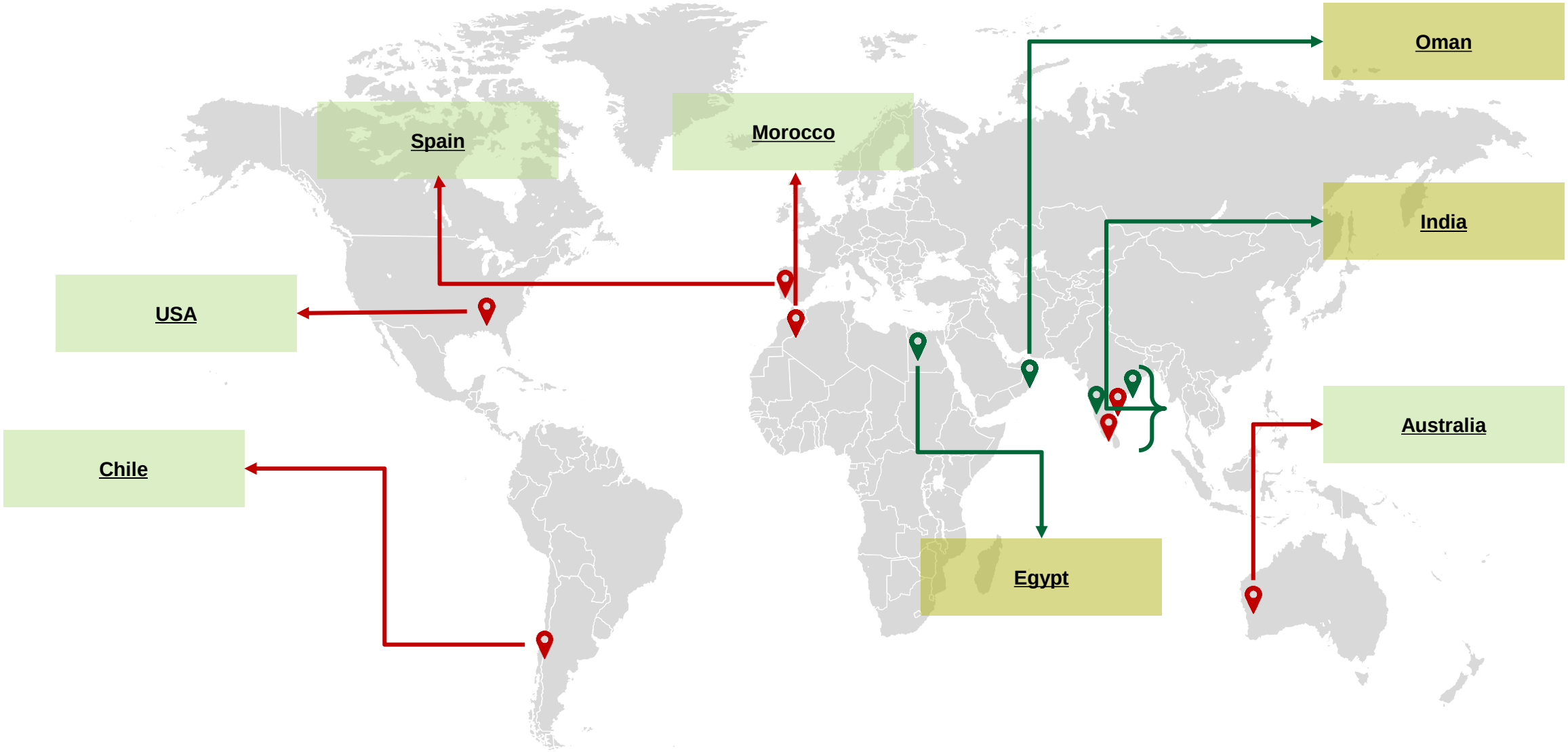
Additionality

RE plant shall be into operation not earlier than 36 Months

Support required from Government

- Energy banking facility for 30 days; with exemption on banking charges
- 100% waiver on STU charges, losses, Electricity Duty and Demand Charges for 25 years
- Capital subsidy for green hydrogen plant
- Interest subsidy
- Set offtake mandate to procure green hydrogen by refinery and fertilizer industry
- Impose carbon cess on usage of grey hydrogen

ReNew Power's Vision is to become Global leading supplier of Green Hydrogen & its derivative across multiple geographies



ReNew Power has secured 13+ GW aggregate RE portfolio across pan India in collaboration with World leading business partners

Our funding

USD 7.3 bn raised in both equity and debt till date

Our presence

India's leading clean energy IPP
Presence in 9 **states, 135+ sites, pan India 13+ GW aggregate portfolio**

Our contribution

Contributes **1.8%** to India's power capacity
Helps avoid **1.1%** of the emissions from the power sector

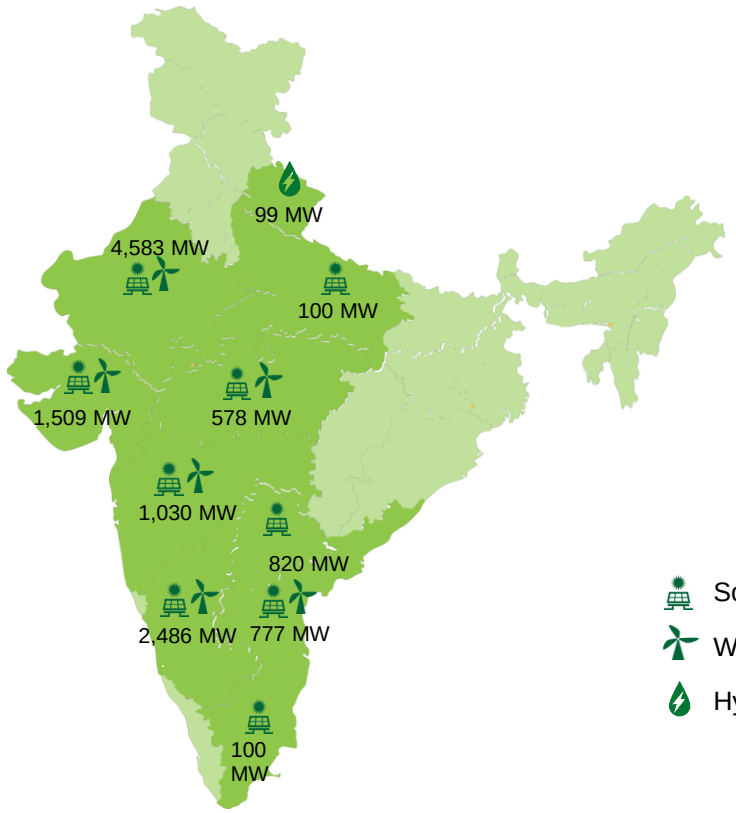
Our achievement

We are the only **Indian RE company** with more than **7.5 GW** of commissioned capacity

*As of 10th April 2022

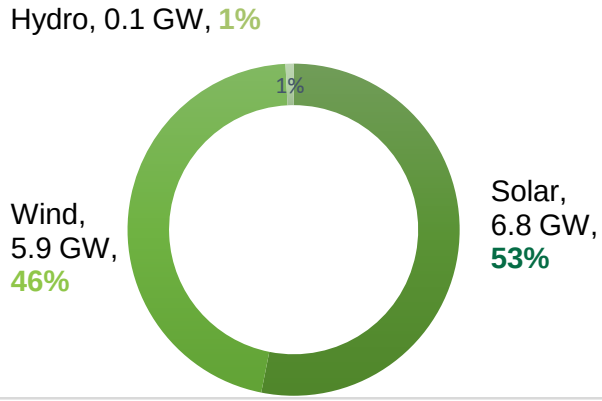
Highly diversified portfolio of contracted assets

ReNew's diversified utility portfolio[1]



Largest operating portfolio in India[1]

Balanced asset mix



1. As of 15th Jun, 2022; Map includes only operational and committed capacity
2. Committed capacity means projects for which a PPA has been signed or projects for which the bid has been won and a letter of award has been received, or in the case of an acquisition, where binding agreements have been signed

Market leading platform and scale allowing cost benefits

110+
Projects & site offices

119
Active wind masts

1,400+
Employees

~1,750
Turbines

06
Regional offices

23,000
Acres of land acquired (owned/leased) + Visibility on 40,000 acres of land for future development

10
States

10+
Years of resource data

ReNew Power have Proven track record of delivering round-the-clock, customized RE solutions

Round-the-Clock Power Supply

Developing 400 MW round-the-clock renewable power supply, maintaining 80% plant availability annually

Peak Demand Supply with Battery Storage

Developing 300 MW wind-solar project with battery storage to provide firm renewable supply for 4 hours during peak demand

High CUF Wind-Solar Hybrid

Operational capacity of 55 MW of wind-solar projects and a pipeline of another 550+ MW, supplying renewable power to Discoms & C&I customers

As part of expansion strategy, ReNew Plans to venture into new businesses across the value chain including Solar and Wind Equipment manufacturing

Energy Storage

Jan'22, ReNew partnered with Fluence in a 50:50 JV to provide energy storage solutions to a diversified customer base in the Indian energy market

Green Hydrogen

Apr'22, ReNew partnered with IOCL and L&T to tap the emerging green hydrogen business in India

Manufacturing

Solar modules: 6 GW annually being set up in Rajasthan & Gujarat

Wind Turbine: ~2 GW manufacturing capacity being set up in Tamil Nadu

Energy Markets

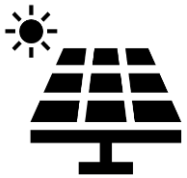
ReNew aims to provide integrated solutions including dispatchable green power, support project development pipeline and other customized solutions to a varied set of off-takers

Hydropower

Aug'21, ReNew acquired 99 MW L&T hydropower plant

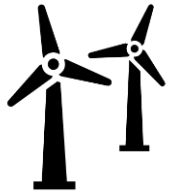
In-house manufacturing allows ReNew to better control supply security and manage pricing risk

Integration across the value chain with entry in Solar and Wind Equipment manufacturing



Solar modules manufacturing

- ✓ 6 GW module manufacturing capacity under construction in Rajasthan and Gujarat
- ✓ Supplies expected to commence soon
- ✓ Capacity to meet inhouse IPP and GH/GA RE projects' demand; excess to be exported



Wind Turbine manufacturing

- ✓ ~2 GW manufacturing capacity being set up in Tamil Nadu
- ✓ Partnership with world-class technology providers
- ✓ Capacity to meet inhouse IPP and GH/GA RE projects' demand

In-house manufacturing allows ReNew to better control supply security and manage pricing risk

Why ReNew Power is supplier of choice?

Availability of Low-cost firm RE power

Global Investor Outreach

Leader in clean energy/ innovative solutions

Strong Strategic Alliance for technical capabilities

Thank You

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