ReNew

Your Decarbonization Partner

How India is building Green Ammonia Capacity?

Prabhat Mishra, Chief Business Development Officer

Agenda

1. About ReNew
2. Global Green Fuel Portfolio
3. India: Developing Landscape of Green Hydrogen and Green Ammonia
4. India as an Export Hub for Green Ammonia

About ReNew

ReNew

India's leading renewable energy provider on a mission to decarbonize world and build a fossil-free future through innovative and sustainable solutions

USD 9bn

Owns and operate Assets

~4%

~Share in total RE generation in India for 2022-23

14 GW

Clean Energy Assets and counting..

1

#1 Utility Scale Pureplay renewable power generation company in India and #10 largest globally

11 million ton

Life-time Carbon emissions removed/avoided through our operations

USD 4bn

worth of Green Bond Issuances in Offshore Debt Capital Markets

~2%

of India's total installed power capacity

Key Investors & Partners on our journey

Goldman Sachs

JERA

ADIA

CPP INVESTMENT BOARD

gef

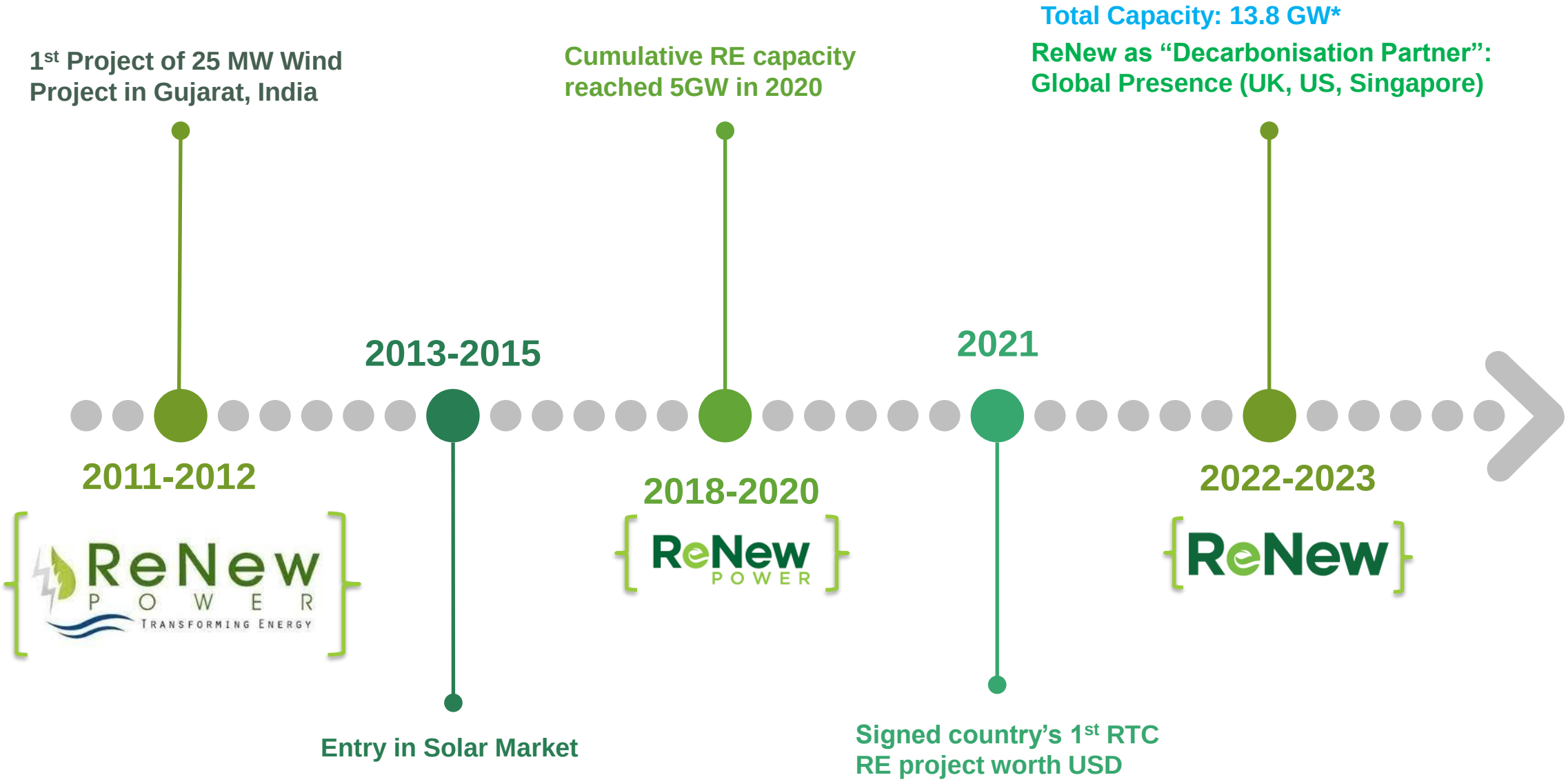
ADB

ReNew has Successfully Grown its Capacity ~4x Since FY2017 vs Industry Growth of 2x

ReNew

Journey

Journey from a RE Generator to a Decarbonisation Solution Provider



* as of March'23

A preferred decarbonization partner for addressing sustainability transition

Carbon

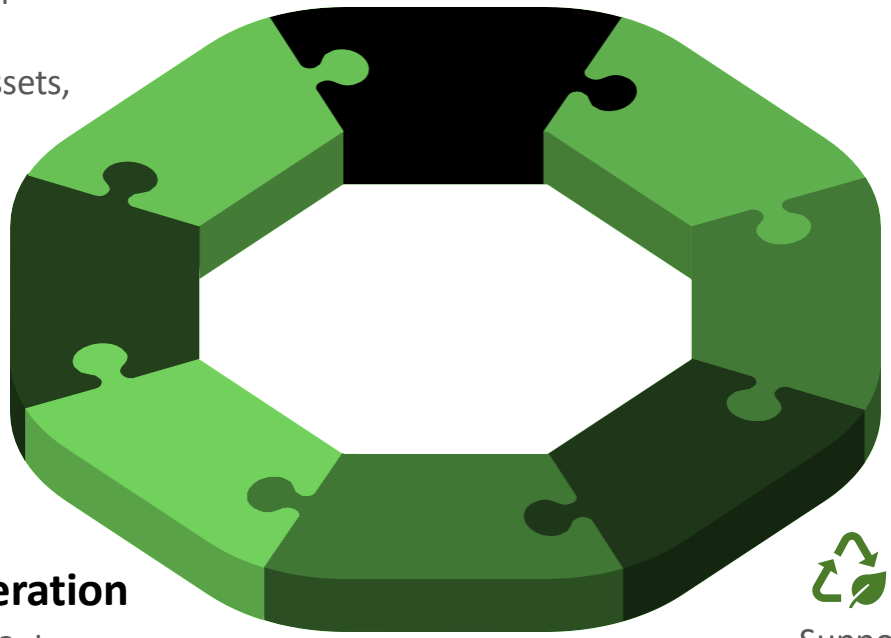
Developing high-quality credits from RE, cookstove, nature-based, and tech-based projects

Asset Management Services

RenServ utilizes modern technological solutions, methods, analytics and automation to manage Renewable Assets,

Green Hydrogen

Strategic Partners with GH project, Project Developments in India



Digital Services

ReNew Digital (ReD) is ReNew's advanced analytics AI & ML lab focused on realizing high business impact by leveraging power of data

Module Manufacturing

Developing in-house manufacturing facility for PV Panel (6 GWpa) & PV Cell (2 GWpa), Wind Turbines (2 GWpa)

RE Generation

- Utility Scale Solar
- Utility Scale Wind
- Hydropower
- Energy Markets

Net Zero Solutions for Corporates

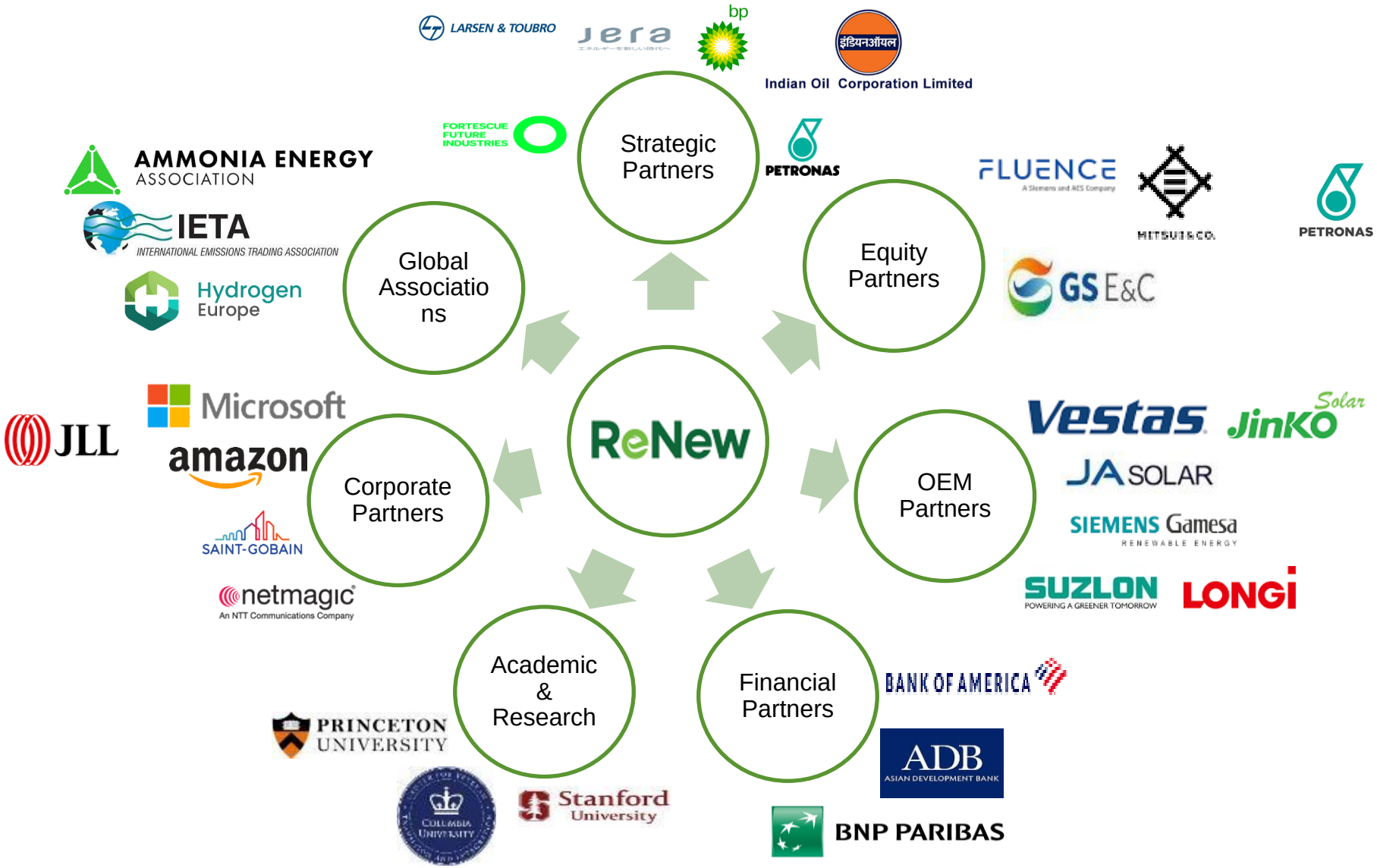
Supports traditional, renewable and storage technologies.

Energy Storage

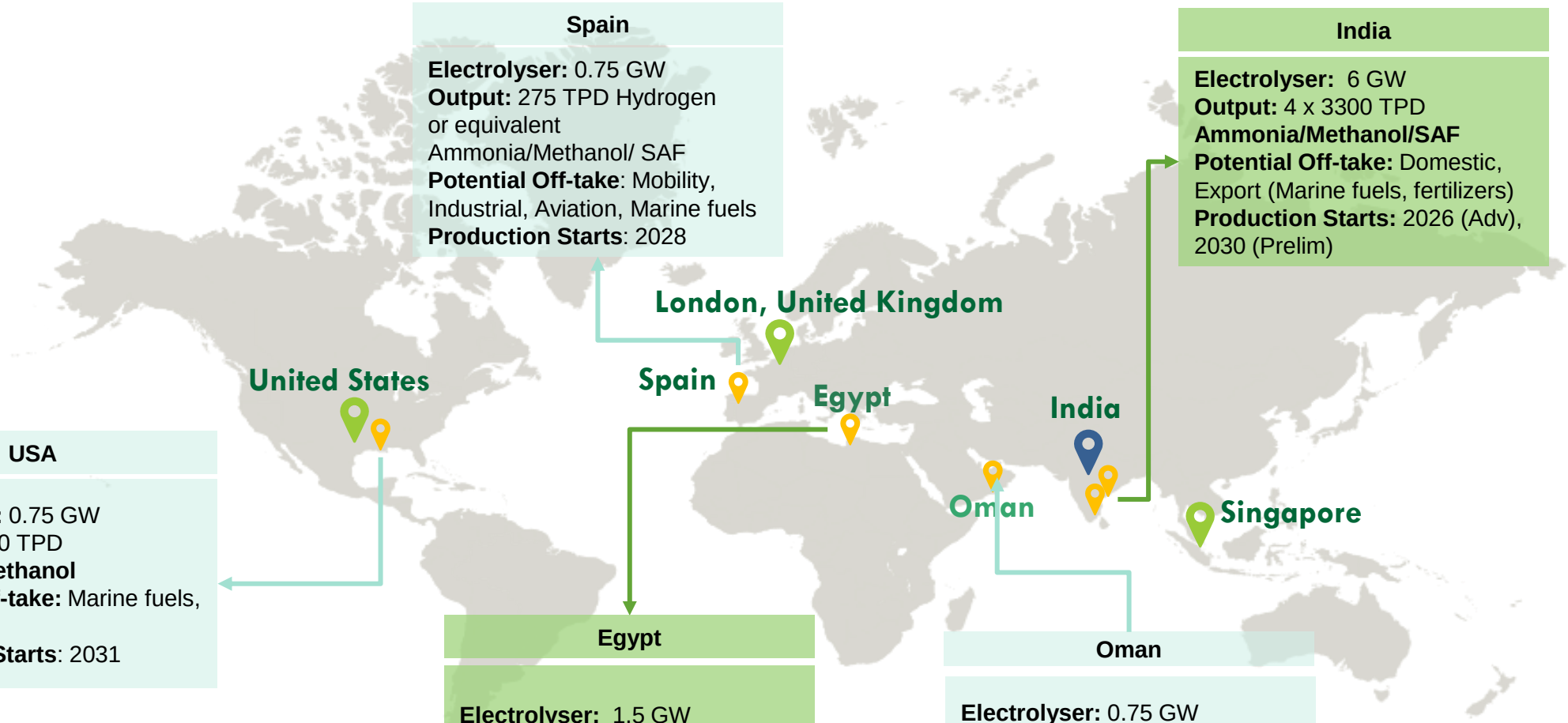
Partnered with Fluence in a 50:50 JV to provide energy storage solutions.

ReNew is a trusted partner across an international spectrum of stakeholders

And adding more names…..



Global projects under development



Spain

Electrolyser: 0.75 GW
Output: 275 TPD Hydrogen or equivalent Ammonia/Methanol/ SAF
Potential Off-take: Mobility, Industrial, Aviation, Marine fuels
Production Starts: 2028

India

Electrolyser: 6 GW
Output: 4 x 3300 TPD
Ammonia/Methanol/SAF
Potential Off-take: Domestic, Export (Marine fuels, fertilizers)
Production Starts: 2026 (Adv), 2030 (Prelim)

USA

Electrolyser: 0.75 GW
Output: 1,500 TPD
Ammonia/Methanol
Potential Off-take: Marine fuels, fertilizers
Production Starts: 2031

Egypt

Electrolyser: 1.5 GW
Output: 3000 TPD Ammonia
Potential Off-take: Export (Europe)
Production Starts: 2027

Oman

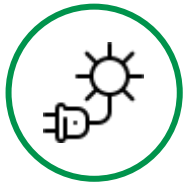
Electrolyser: 0.75 GW
Output: 1,500 TPD
Ammonia/Methanol
Potential Off-take: Marine fuels, fertilizers
Production Starts: 2031

Head Office Regional Offices Project Sites

ReNew

India: Developing Landscape of Green Hydrogen and Green Ammonia

India’s advantage for production of Low-Cost Hydrogen and Derivatives at Scale



High Solar and Wind Potential

India is resource rich in renewable energy with a potential of about 700GW of wind and 750GW of solar.

Interconnected ONE-Grid

India’s grid network is inter-connected and power can be transmitted between any two locations, using Interstate (ISTS) and Intrastate (InSTS) transmission network

Waiver of ISTS charges

Govt. of India (GOI) has waived ISTS charges for all renewable power projects commissioned before June-2025*

**expected to be extended*

Energy banking facility

India allows energy banking facility, wherein power produced at one time block can be banked and drawl at another time block. This facility helps in larger integration of RE power

Must-run status of RE

RE projects are given must-run status, hence, RE power scheduling is preferred over thermal, gas, nuclear projects. This ensures operation of power projects at all times

ReNew

Indian National Green Hydrogen Mission | Impetus to Indian Production

Mission's Objectives

- Production of 5+ MMT of GH/year 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 derivates.

Mission's Financial Outlay – USD 2.4 bn

- Incentives – USD 2.12 bn
- Pilot Projects - USD 180 m
- R&D – USD 500 m
- Other components – USD 48 m

Mission's Financial Outlay – USD 2.4 bn

- Technology: Production-linked Incentives (PLI) for Domestic manufacturing of electrolysers
- Production: PLI for production of Green Hydrogen
- Facilitation: Time bound grant of Open Access and connectivity
- Financial: USD denominated Bids for GH / GA, and funding through Green Bonds
- Infrastructure: Support to build-up for storage and delivery of GH and its derivatives like Port Infra, Pipelines. Green ammonia bunkers and refueling facilities will be set up at least at one port by 2025.
- Quality: Approved List of Models & Manufacturers (ALMM) to be specified by Govt

On top of it, Indian states are announcing their own conducive policies/incentives making pure commercial case of GH/GA

India as an Export Hub for Green Ammonia

India’s unmatched characteristics make it best suitable as an export hub

Low risk country

Indians prefer to do business with people they know, as relations are built on mutual trust and respect. India is well equipped with efficient private sector and services.

Stable exchange rate

Despite depreciating this year, Indian rupee (INR) is among the more stable currencies.

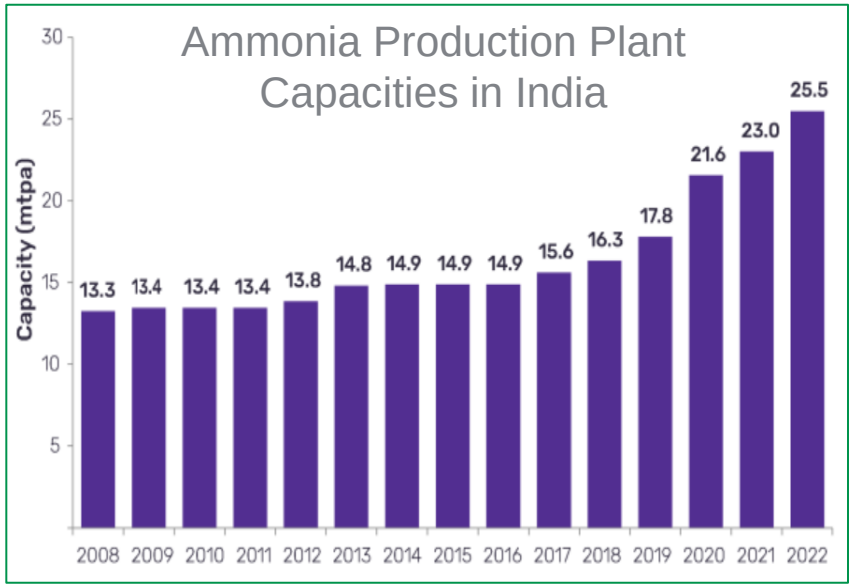
High availability of Human Resources

India has 62.5% of its population in the age group of 15-59 years which is ever increasing and will be at the peak around 2036 when it will reach approximately 65%.

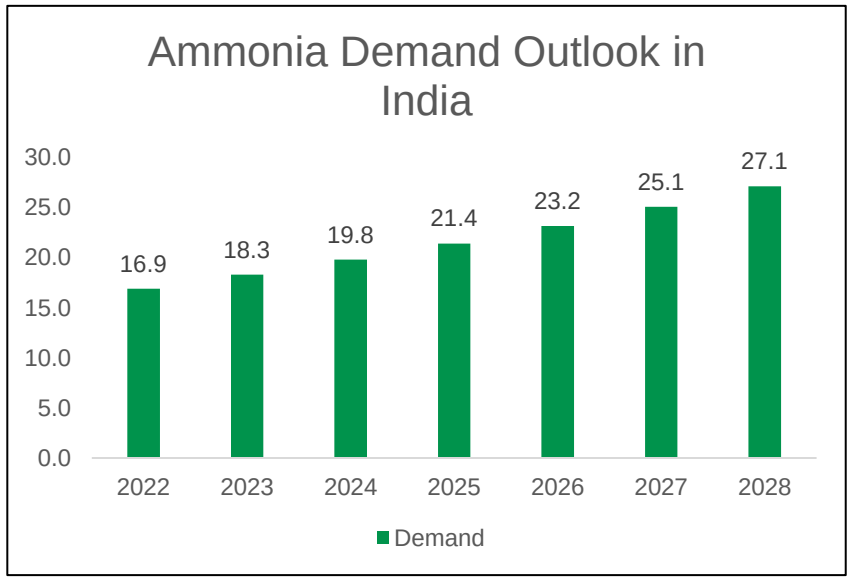
Long shoreline and developed ports

India has a very long coastline measuring over 7,500 km bordering the mainland and the islands with the Bay of Bengal in the East, the Indian Ocean on the South and the Arabian Sea on the West. It is serviced by 13 major ports and 187 notified minor and intermediate ports.

Ammonia Demand & Supply across the Globe and India



The global ammonia industry is poised to register a total growth of 23% from 230 MTPA in 2020 to 284 MTPA in 2025.



Amongst the countries, India is expected to lead the global capacity additions, as per GlobalData, a leading data and analytics company.

Self-sufficiency vs Export

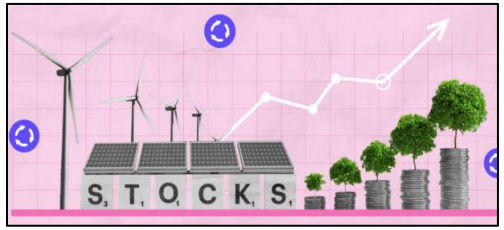
- India is no doubt looking at Green Ammonia as an avenue for import substitution.
- Due to high and growing demand, India will look for self-sufficiency.
- But at the same time, NHM has a mandate to export 10% of the global demand.
- Production capacities are increasing fast.

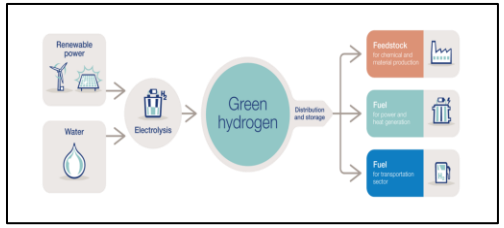
Source: GlobalData, & Expert Market Research

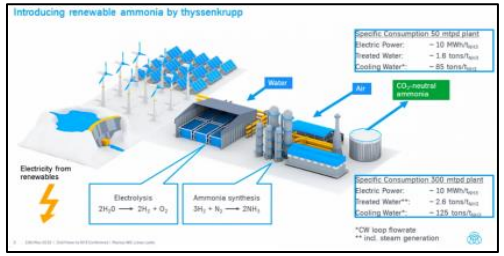
ReNew

Private Sector is already leading the GH/GA landscape

~$300 bn	Investments expected in the renewable energy sector by 2030
~$500 bn	Investments expected in GH ecosystem by 2030
~$200bn	15 large private players have already committed for RE & GH value chain
~ 25MTPA	Ammonia Production Plans are in advanced phases







ReNew

ReNew

Your Decarbonization Partner

Gurugram

London

Singapore

New York

Thank You

#ReNewTheFuture

Get in touch with International Business Team
IBD@renewpower.in