

greenko



World's Leading Energy Transition & Decarbonisation Solutions Company



**World's First & Lowest Cost Provider of
Carbon Free Energy & Carbon Free Molecules**

**Greenko's operational
generating capacities:**

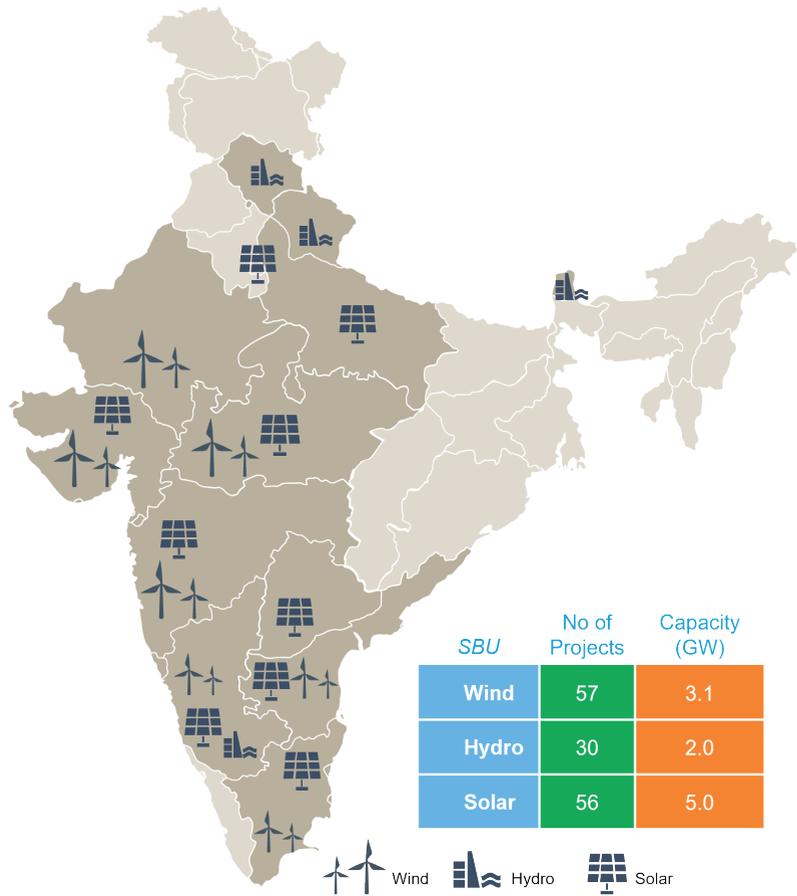
12 GW - by 2024

17 GW - by 2025

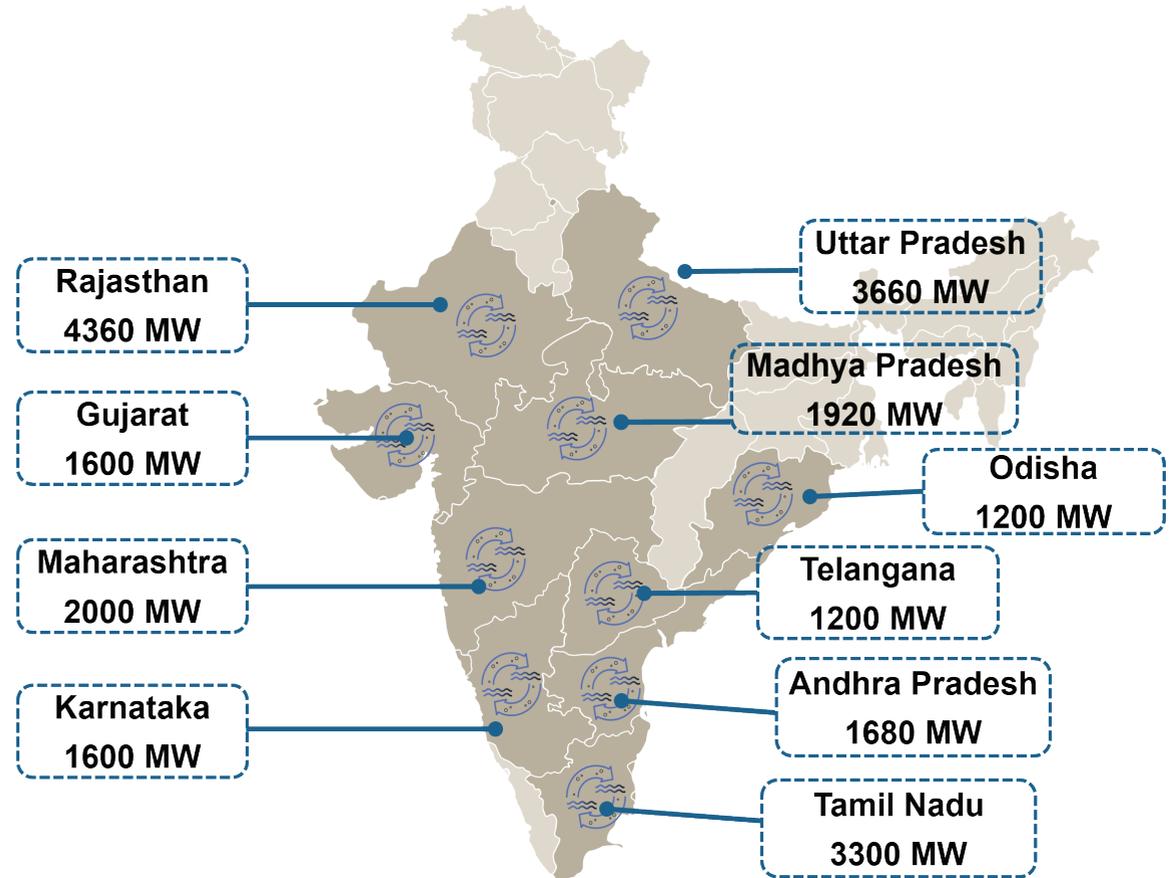
25 GW - by 2028

Greenko Group: Asset Base Geographical Diversification

Renewable Energy Operating Assets



RE Storage Assets Portfolio

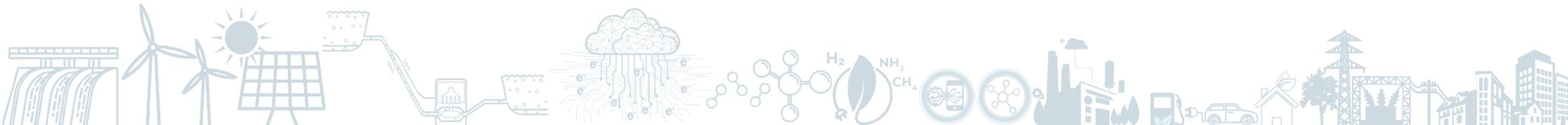


Renewable Energy Operating Assets Strengths

- Advanced **Predictive Analytics** resulting in highest asset availability integrate with **AI & Drone** - based technologies
- Multi-model **Forecasting** of wind & solar resources to map the **Energy Discharge**
- **Over 98%** of machine availability at the respective generating seasons

Energy Storage Assets Strengths

- Enables the **Firming** and **Dispatchability** of ~**100 GW** of renewable energy capacity
- Enables the democratisation of **Energy Transfer** between RE producers and RE consumers
- Total digital cloud platform to serve energy as service
- **24/7** Carbon-Free Energy
- **Peak Renewable Energy**
- **Ancillary Services** such as Frequency Regulation, Voltage Regulation, Black Start and Inertial Response



Greenko Evolution and Decarbonisation Strategy:



“Large Scale Clean-Tech IPP”

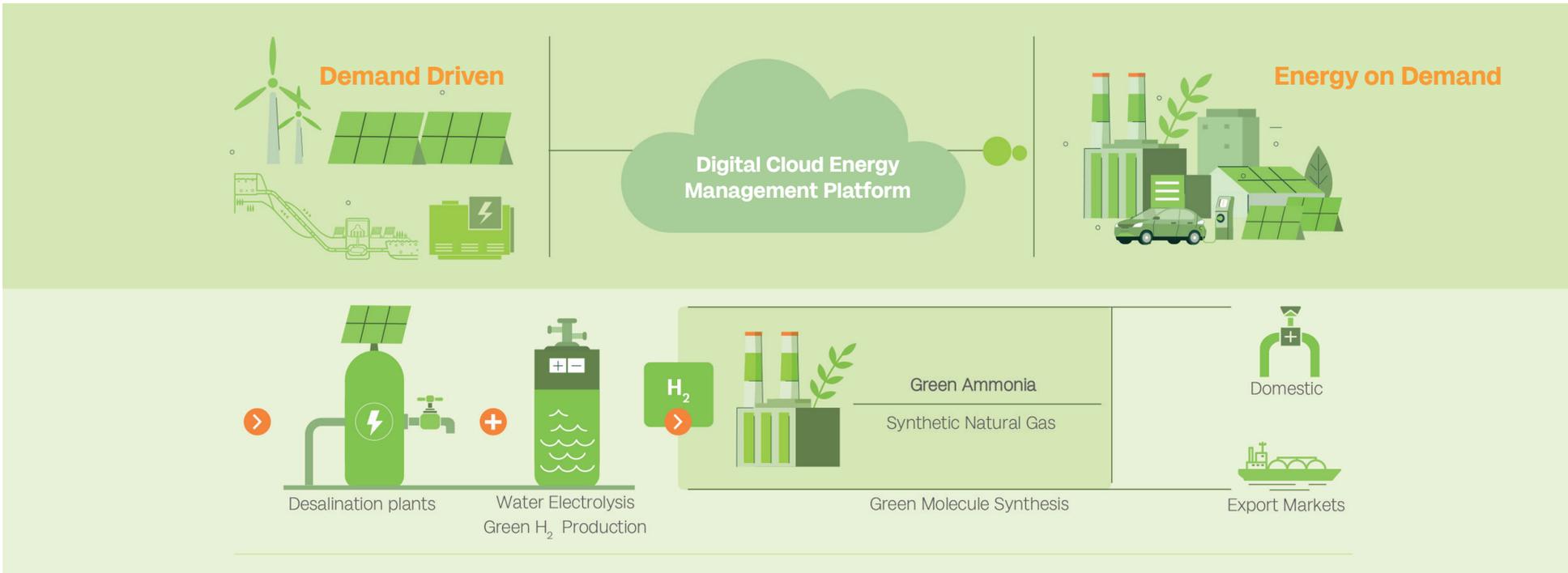
Electricity
Commercialization and Execution of Renewable Energy Projects at Scale

“Cloud Storage Services Specialist”

Electricity and Industrial
Globally Competitive Long Duration Energy Storage

“Decarbonisation Solution Provider”

Industrial and Global Energy Markets
Engineered Green Molecules



Globally Largest Storage & Green Molecule Platform:

Diversified Energy Generation

Largest RE & Storage Company



25 GW Capacity

Wind: 3.2 GW
Solar: 4.3 GW
Hydro: 2.0 GW
PSP: 2.0 GW

~Platform to reduce upto 60 million tonnes of CO₂ avoided annually

Digital Energy Platform & Strategic Manufacturing

Largest Digital Platform

5 GW Manufacturing ~ 100TWh Managed Energy

Supply de-risking of solar modules
3 GW per annum

Electrolyser manufacturing capacity of 2
GW per annum

~100 TWh Digital Energy
Management Services



~100 GWh Storage Potential



~60 million tonnes of CO₂ avoided
annually

~25 TWh under management by 2025

Key products include peak power,
flexible energy and storage services

Globally Largest Energy Storage Cloud

Cloud Storage Solutions

10 GW Molecule Platform

~8 million tonnes of CO₂ avoided
annually

Green Molecules business to have 10 GW
installations by 2030

Electrolyser installations of ~3.5 GW by
2026-27

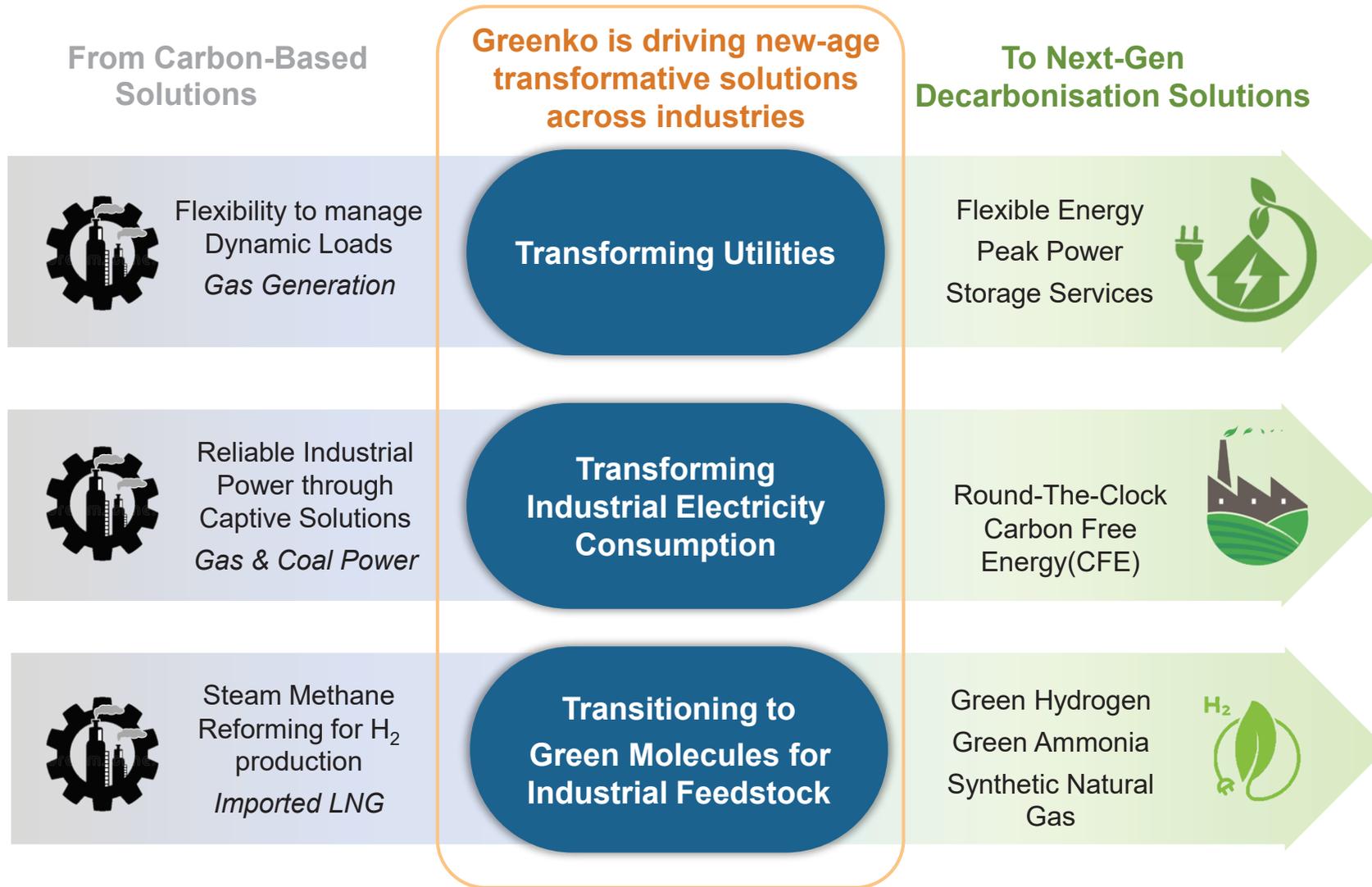


Largest Green Molecule Delivery by 2025

Green Molecules

Greenko Disruptive Solutions Enabling Shift from Conventional Energy:

Replacing conventional energy solutions across utilities & industries

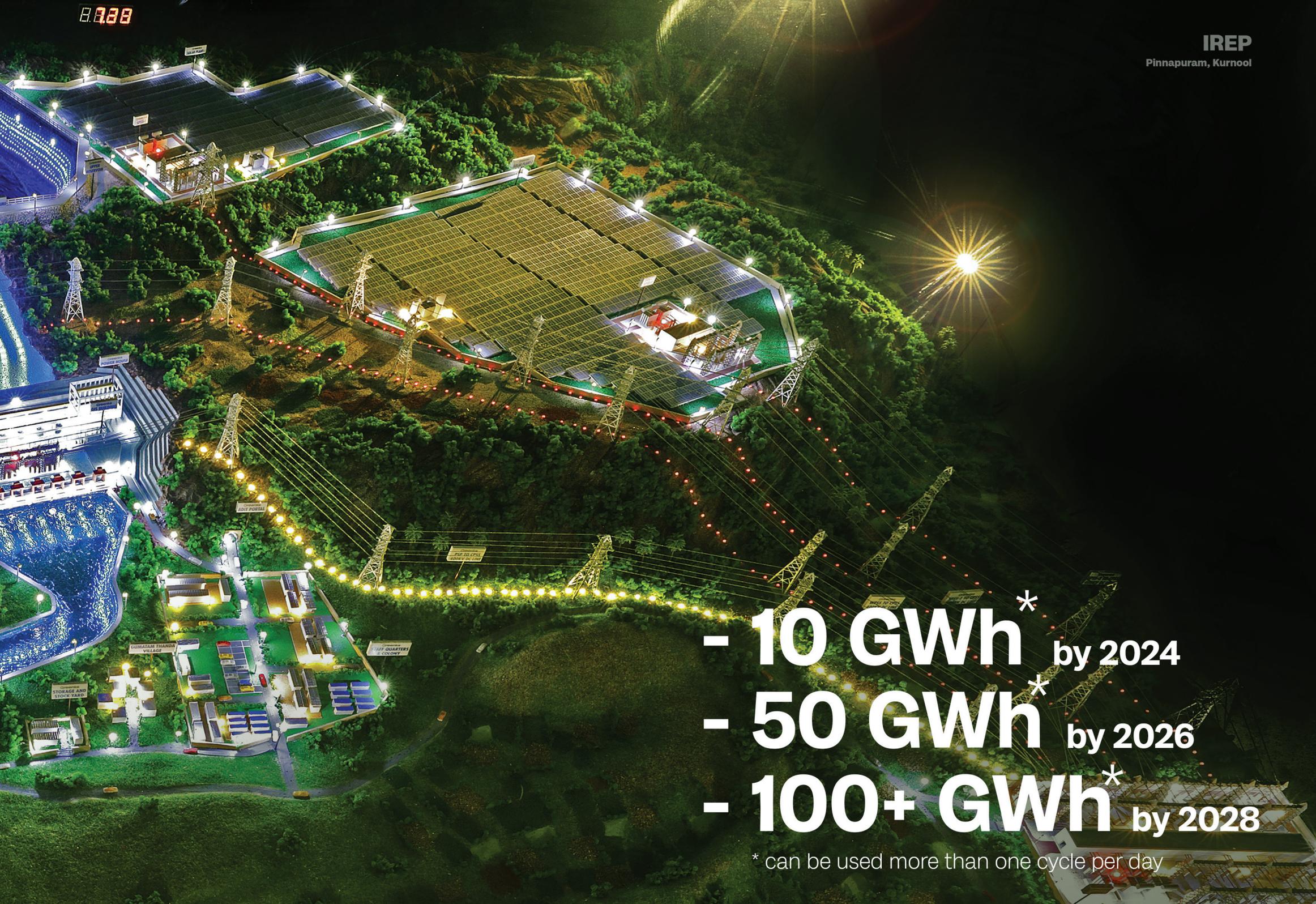


RE and Zero Carbon Fuels present a tremendous opportunity for India to be both Energy independent and become an exporter of Lowest Cost Carbon-Free Fuels and Molecules

Intelligent RE Cloud Storage Platform



8.888



- 10 GWh* by 2024
- 50 GWh* by 2026
- 100+ GWh* by 2028

* can be used more than one cycle per day

Case Study 1 - AP 01 IREP



The IRESP is a fulcrum of both Carbon-Free Energy and Zero Carbon Molecules which are critical in Deep Decarbonisation.

IRESP makes RE as Firm, Flexible, and Dispatchable and hence truly Carbon-Free Energy

Long duration energy storage is critical for synergistic and congruent development of RE capacity to enable transition towards Decarbonisation free of economic friction

AatmaNirbhar Bharat 100% Made in India

Project Overview	
Capacity	1680 MW
Storage Capacity	6 Hours / cycle / day 1680 X 6 = 10,080 MWh / cycle / day
Connectivity	400+ kV CTU National Grid
Location	Andhra Pradesh, India
Type	Integrated Renewable Energy Storage Project - Off Stream Closed Loop Pumped Storage
Asset life	75+ Years
RE Integration Capacities	Solar: 4000 MW Wind: 1000 MW
AP01 Services / Products:	Carbon Free Energy Round The Clock Renewables CFE for Green Molecules Ancillary Grid Services Renewable Firming and Energy Shifting



GREENKO's INTELLIGENT ENERGY CLOUD PLATFORM

(Digital Energy Management, Artificial Intelligence/Machine Learning based Energy Forecasting & Scheduling, Portfolio Dispatch, VPP, IoT Platform)

Products & Services from IRESP

SECI MW Peak Power Peak power supply to Rajasthan, DVC & Bihar	Arcelor Mittal Green steel production in Arcelor Mittal's Gujarat steel plant	RE IPPs Third party services for their storage and energy firming needs.	Green H2/ Ammonia Production of Green Hydrogen, Green Ammonia and Green Methanol to export across the World	Ancillary Service <ul style="list-style-type: none"> • Frequency regulation • Voltage Regulation • Black start service • Inertial response
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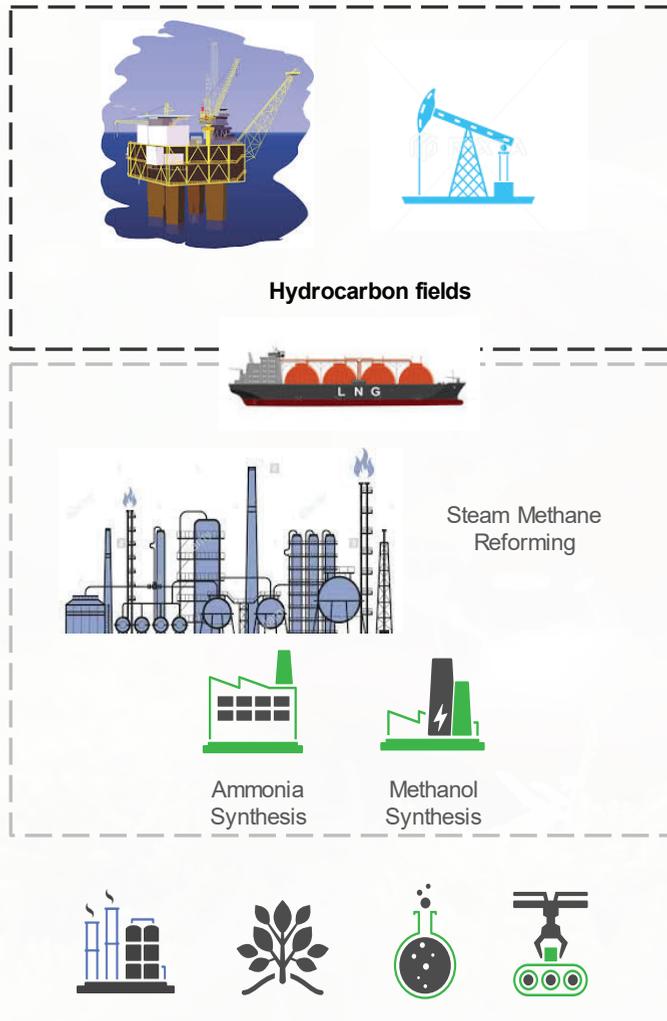
ENABLING ENERGY TRANSITION

LEADING GLOBAL DECARBONISATION

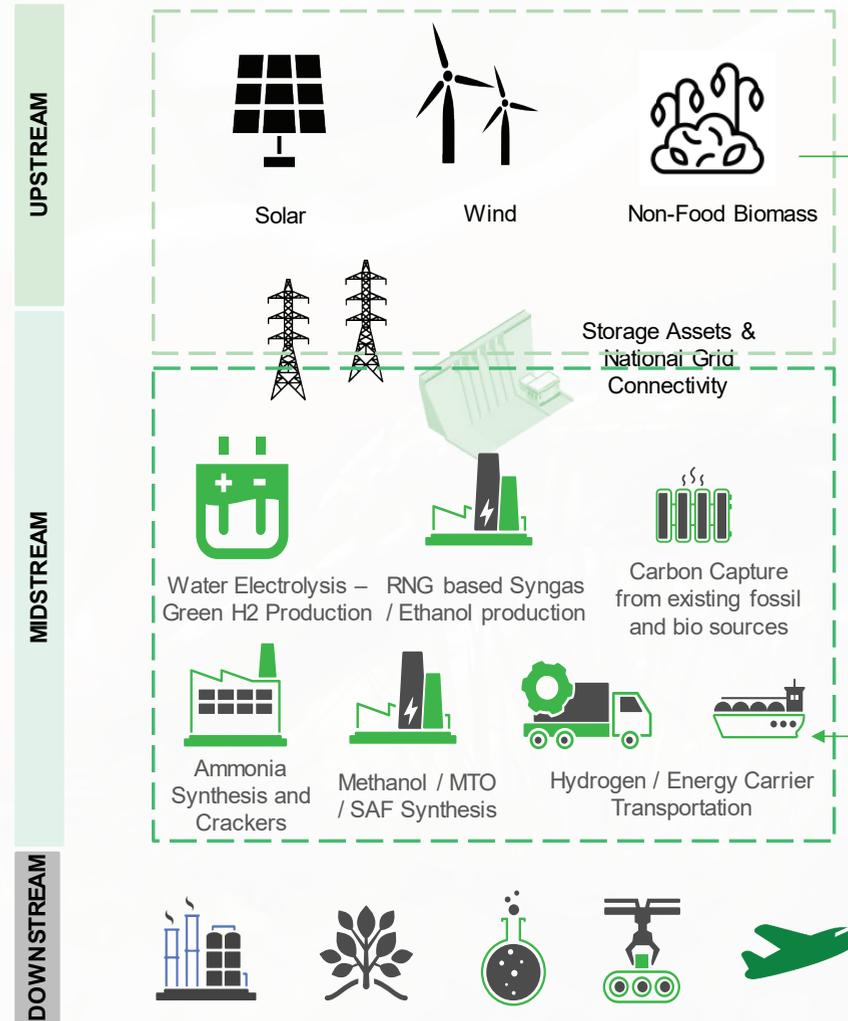


Energy Transition: New Global Energy Architecture

Traditional Energy Value Chain



New Energy Value Chain



Greenko: Key Operational Numbers

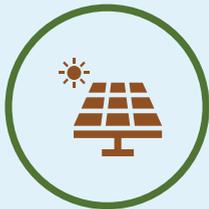
Energy Assets 30 GW / 24 TWh



Hydro
**2.0 GW /
10 TWh**



Wind
**3.2 GW /
7.3 TWh**

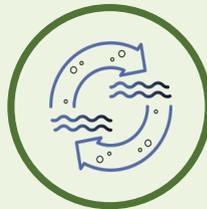


Solar
**4.3 GW /
6.7 TWh**

Cloud Storage Solutions 100+ GWh



RTC Power
**60 GWh
/ 51 TWh**



Energy Storage
& Peak Power
**72 GWh
/ 19 TWh**



Market
Operations and
Grid Services
22 TWh

Digital Services and Manufacturing



Digital
Services
100+ GWh



Greenko commits to Climate Pledge

Greenko has joined 114 businesses across the globe and accepted the challenge of Climate Pledge. This requires Greenko to Decarbonise, Report and Offset.

THE CLIMATE PLEDGE

Circular Economy Initiative: E- Waste Recycling Technologies

Greenko and C- MET entered into a joint venture to establish centre of excellence (CoE) on E-Waste recycling. The CoE is engaged in scaling up the recycling of End of Life Silicon Solar cells, Permanent Magnets, End of Life Li-ion batteries and PCBs.

Greenko School of Sustainability

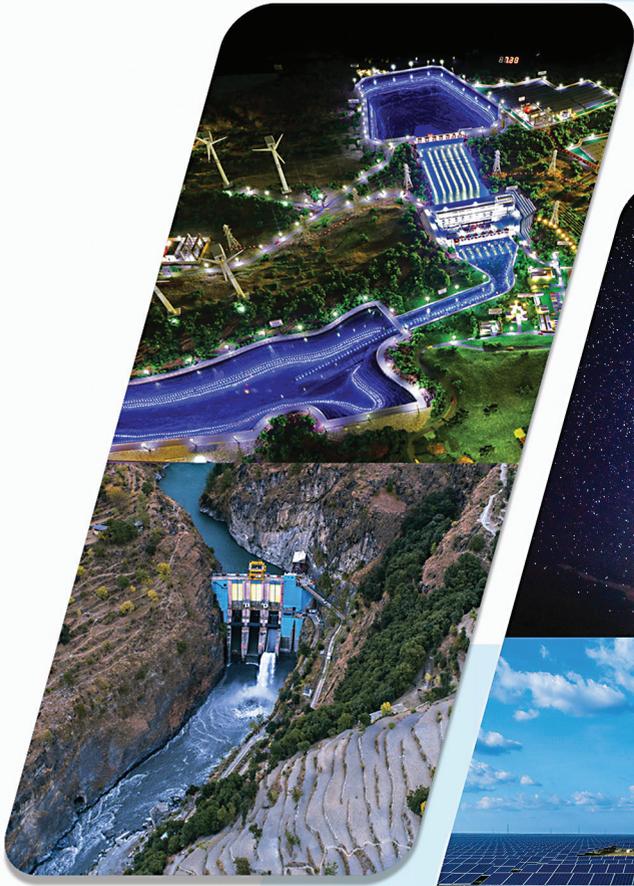
Greenko has partnered with the Indian Institute of Technology Hyderabad to establish the Greenko School of Sustainability. The school is established with the aim of conducting R&D in processes, products, and systems to achieve sustainable development goals.

The school offers a variety of programs in Sustainable Science and Technology. The School will also act as a resource center for curriculum development and teacher's training to introduction of Sustainable Science and Technology.

The school will be structured as an interdisciplinary centre.



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