Government of Maharashtra
Department of Industries

MIDC

MAGNETIC MAHARASHTRA
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Magnetic Maharashtra 3.0

Renewable Energy & Green Hydrogen

Agenda

India & Maharashtra – Renewable and Green Hydrogen Sector Snapshot

Why Choose Maharashtra?

Maharashtra: Advancing Clean Energy & Decarbonization

Value Chain & Sub-Sectoral – Ecosystem & Opportunities

Policy: -

1. Maharashtra offers lucrative incentives under its Green Hydrogen Policy, 2023
2. Integrated/ non-transmission Non-Conventional Energy Generation Policy-2020
3. National Green Hydrogen Mission

India & Maharashtra – Leaders towards a Net Zero future.

India Overview

4th — **Global ranking in Installed RE Capacity**

199.58 GW overall installed renewable capacity

42.26% — **India's share in total RE installed capacity**

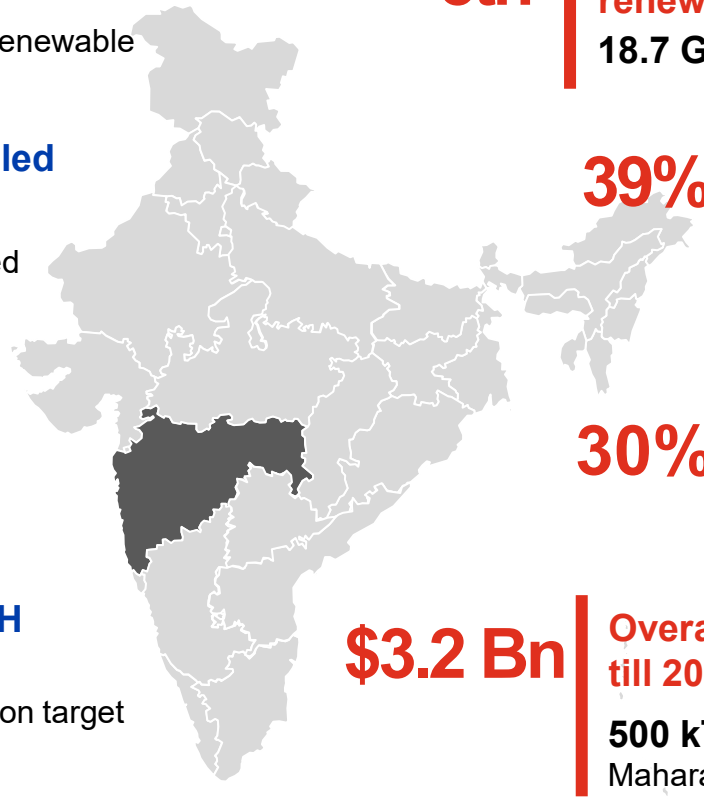
30x Increase in Solar Power installed capacity

$1Bn — **Tones of carbon emission reduction targeted by India**

~ 45% targeted reduction of carbon intensity in one decade

$100 Bn — **Overall investment in GH sector**

5 MTPA Overall GH production target of India



Maharashtra Overview

5th — **Maharashtra is the largest state in terms of renewable energy generation**

18.7 GW overall installed renewable capacity in Maharashtra

39% — **Maharashtra's RE share in total power generation**

12% of India's installed capacity of RE comes from Maharashtra

30% — **Maharashtra's targeted reduction of carbon intensity by 2030**

The GoM has nominated **43** cities to achieve Net-Zero emissions by 2040

$3.2 Bn — **Overall investment in GH sector in Maharashtra till 2023**

500 kTPA Overall GH production target set-forth by Maharashtra

Why Invest in RE

India has achieved its aim for 40% non-fossil fuel power.

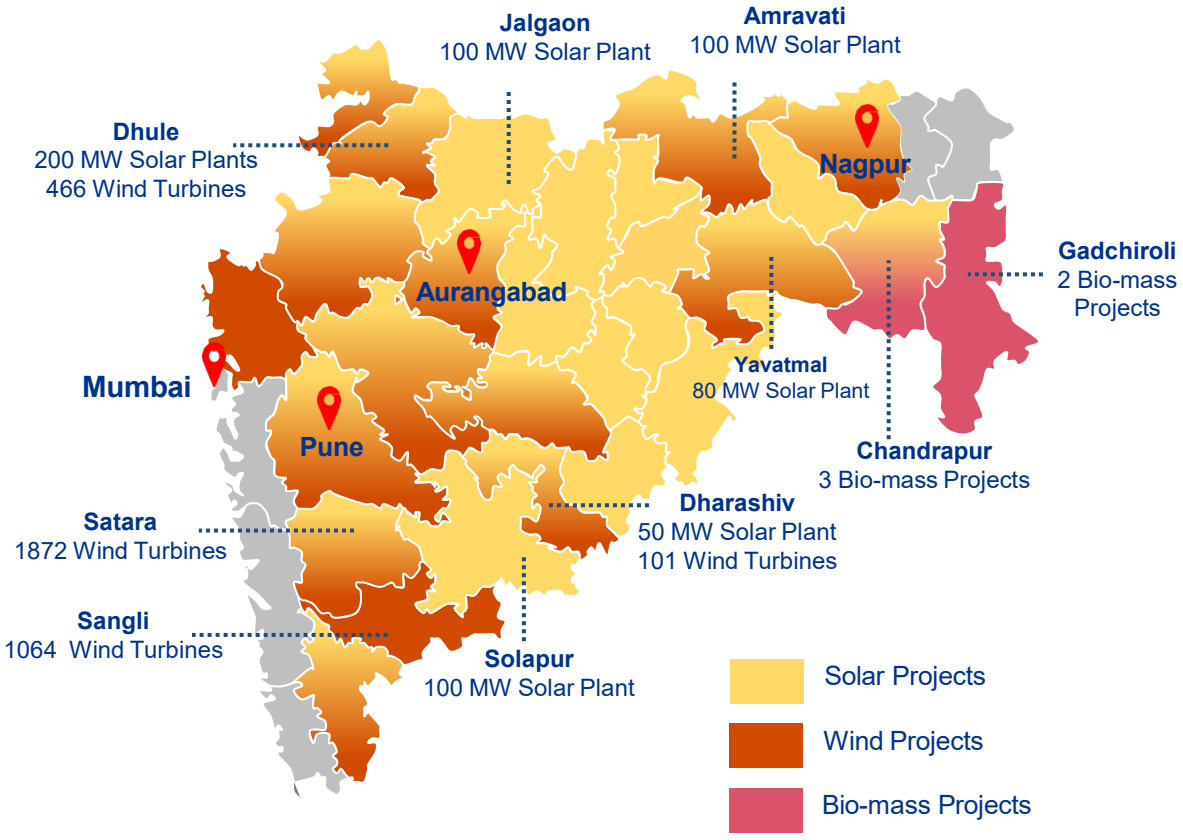
It targets a 33-35% reduction in GDP emissions intensity by 2030.

India plans to create an extra 2.5-3 billion tons of carbon sink by 2030.

Source: - Invest India., PIB, Indbiz, , India Budget, MNRE, ESM,

Maharashtra's journey towards Renewable Energy

Major Renewable Energy Projects in Maharashtra



Maharashtra is the first state in India to publish a Green Hydrogen Policy,

+12
Major Renewable Energy Projects

$ 33 Bn
Investment in GH_2 already made

+ 65,000
Potential employment to be created

Maharashtra: The Green Hydrogen Hub

Strong Business Ecosystem
- Integrated services from multiple state agencies to guide investors to successx
- Ranked 13 in EODB since last three years

Large Demand market
- State accounts for 15% of India's industrial output
- Leadingng export hub with strong road rail air and port infrastructure

World class supporting Infrastructure
- 6,447 km fairly developed gas infrastructure
- Largest network of water pipelines in Asia.

Renewable Energy
- RE Potential of 162 GW
- 10% of installed RES capacity
- 64 GW Transmission infrastructure for evacuation of power.

Source: - Invest India., PIB, Indbiz, , India Budget, MNRE, ESM,

Maharashtra: Advancing Clean Energy & Decarbonization

Maharashtra has a well developed ecosystem which can serve as a consumer market for Hydrogen

0.52 Million tons

Total demand of Hydrogen in the state of Maharashtra

19

Refineries in the state

+230

Fertilizer production companies in the state

+90

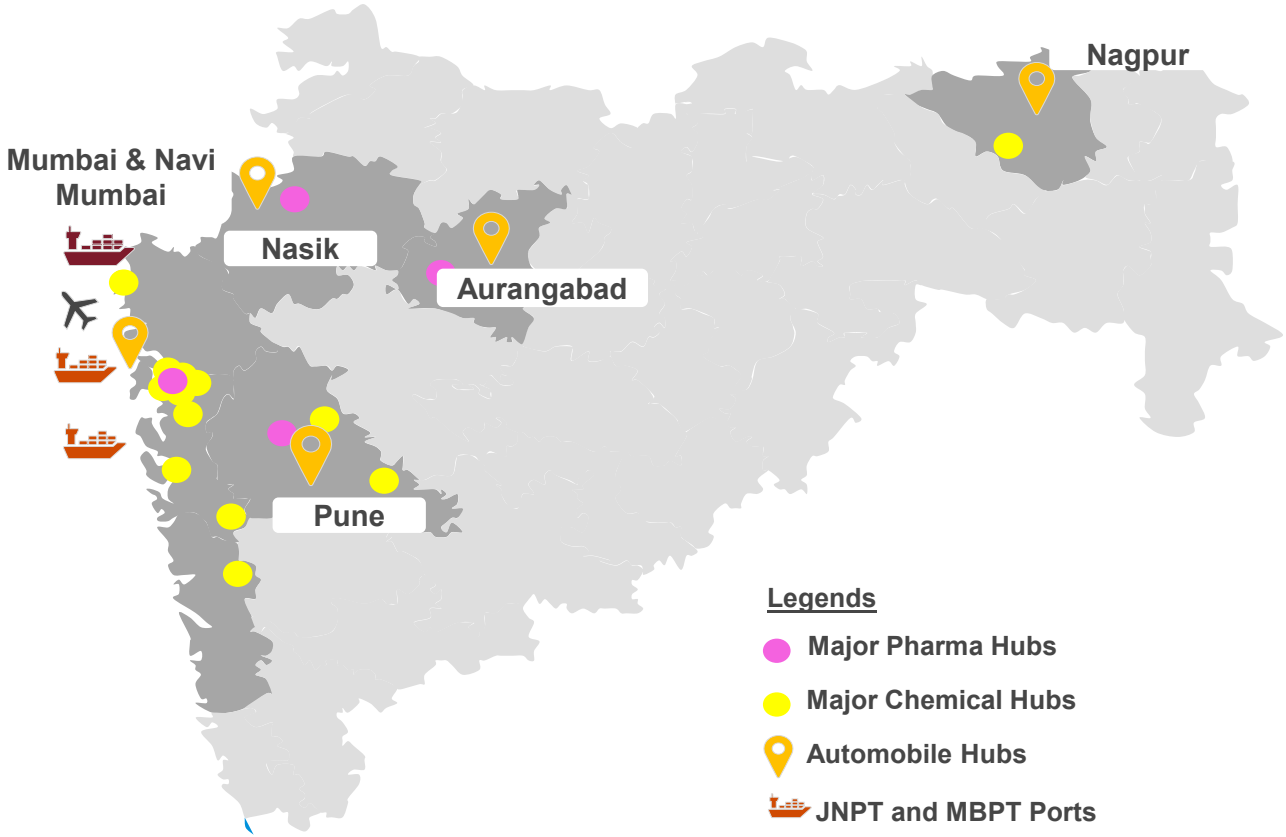
Steel production companies in the state

12

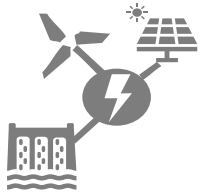
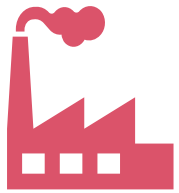
Major Chemical hubs

6

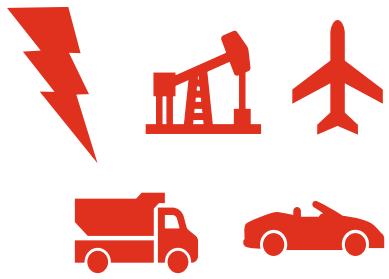
Major Pharmaceutical hubs



Value Chain & Sub-Sectoral – Ecosystem & Opportunities

Segments	Investment Opportunities	
 Renewable Energy Supply	Power Generation	Establishing a range of solar and wind parks, including both on-grid and off-grid installations as well as floating facilities
	Heavy Electrical	Establishing manufacturing facilities for panels, shafts, turbines, and other essential hardware components
	Battery Storage	Establishing effective battery storage solutions to maximize the use of renewable energy and reduce reliance on conventional energy sources..
 Production	Heavy Electrical	Manufacturing equipment utilized in the production of Green Hydrogen/RE components.
	Power Electronics	Setting up manufacturing and support centers for electronic to monitor the entire plant.
	Storage Capacity	Establishing effective cryogenic storage solutions to safely store and transport of the commodities.

Value Chain & Sub-Sectoral – Ecosystem & Opportunities

Segments	Investment Opportunities	
 Storage and Transportation	Marine (Shipping)	The export of hydrogen gas to various other countries involves shipping hydrogen from one nation to another.
	Inland Shipping	Investing in cryogenic pipelines, tanks and truck to efficiently and safely transport the gas.
	Automotive	Establishing a facility for hydrogen-powered automotive manufacturing
 Application/ End User	Chemicals	Maharashtra hosts several chemical clusters (including refineries, fertilizer plants, etc) that facilitate the utilization of domestically produced hydrogen in their processes.
	Iron & Steel	Given the presence of over 90 steel manufacturers within the state, there is a significant demand for hydrogen.
	Automotive	Establishing re-fueling stations for hydrogen-powered automotive

Maharashtra offers lucrative incentives under its Green Hydrogen Policy, 2023

Policy Benefits

01 Source being used to produce Green Hydrogen

- **Transmission and Wheeling Charges:** These charges will be reduced from **50% to 60%** for a 10-year period.
- **Electricity Duty Exemption:** Electricity duty will be fully exempted for 10 years and 15 years respectively.

02 Land acquired for production, conversion, storage and transportation

- **100%** exemption from local body tax and non-agriculture tax during the policy period.
- Will receive **100%** exemption from stamp duty

03 Green Hydrogen Transportation

- **Green hydrogen pipeline projects: Rs. 2.5 Cr/km** for up to 10 km, with **30% CAPEX** subsidy, maxing at 50 km. Plus, 1% interest subsidy on fixed loans for 10 years and 10 km per beneficiary.

04 Green Hydrogen as a Vehicle Fuel

- **Vehicle Subsidy:** Green Hydrogen Cars Get 30% State Subsidy: Up to Rs. 60 Lakh Per Vehicle for first 500 vehicles
- **Refueling Station Subsidy: 30%** CAPEX subsidy for the first 20 green hydrogen refueling stations, capped at Rs. 4.5 crore per station through the state transport department.

Access Policy Document Here

Integrated/ non-transmission Non-Conventional Energy Generation Policy-2020

Access Policy Document Here

Open Access & Electricity Sale

- In order to make the project financially viable, the period of open access should be at least **10 years** and this period will be finally decided by the Maharashtra Electricity Regulatory Commission.

Transmission Connection

- Eligible projects with minimum **5MW** capacity can be provided with the transmission connections upto the prescribed purpose

Facilitation

- Priority will be given to the development of hybrid projects by combining wind and / or solar projects with other conventional / non-conventional energy sources and incorporating storage capacity as required.
- Solar power generation projects will be facilitated for registration if required and deemed as industry component.
- Non-agricultural status will be applicable for wind project lands.

Power Purchase Agreement (PPA)

- Provisions for power purchase agreement subject to the rules prescribed by the Maharashtra Electricity Regulatory Commission

Others

- For projects exceeding **Rs. 1500 Cr**, MahaUrja provides an 'Assistance Officer' to facilitate approval processes and coordinate with relevant agencies to address any issues.

National Green Hydrogen Mission

Fiscal Incentives Highlights

₹19,744 crore.
Financial Outlay of the Mission

₹ 1,466 crore
Allocated to pilot projects.

Electrolyser Manufacturing
Receive a subsidy of **US$ 54 per kW** of electrolyzer capacity in the initial year of production

Others
- Tax Benefits and Incentives
- Waiver of inter-state transmission charges

₹ 17,490 crore
Budget for The SIGHT programme

₹ 400 Cr
For R&D to be caried out within the sector

Production Incentives
Rs 50/kg in year one, **Rs 40/kg** in year two, and Rs **30/kg** in year three.

Non Fiscal Incentives

- Green Hydrogen/Ammonia manufacturers can buy **renewable power from the exchange, set up their renewable energy capacity, or work with other developers anywhere**.
- The manufacturers of Green Hydrogen / Ammonia and the renewable energy plant shall be given **connectivity to the grid on priority basis** to avoid any procedural delays.
- The **Renewable Purchase Obligation (RPO)** will incentivize both hydrogen/ammonia manufacturers and distribution licensees for utilizing renewable power.
- Open access will be provided within **15 days** upon receiving the application.

Key Players

Renewable Energy

BOROSIL renewables
SMA
HINDUJA RENEWABLES
ReNew POWER
TATA POWER
AVAADA
espro
Natural Energy Sourcing Professionals
SUZLON
POWERING A GREENER TOMORROW
STERLING & WILSON
ADITYA BIRLA RENEWABLES
CONTENDRE SOLAR
JURCHEN TECHNOLOGY
FERMI SOLAR
JBM SOLAR

Biofuels

MEE MY ECO ENERGY
Bharat Petroleum energising lives
aris BIOENERGY
Reliance Industries Limited
इंडियनऑयल IndianOil

Green Hydrogen

ReNew POWER
WELSPUN
GREENZO ENERGY PVT. LTD.
AVAADA
WAAREE | RTL Execution with Pace & Comfort
INOX AIR PRODUCTS

Thank You

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