



सत्यमेव जयते

Office of Principal Scientific Adviser
to the
Government of India



INVEST INDIA
NATIONAL INVESTMENT PROMOTION
& FACILITATION AGENCY

Accelerating Growth of New India's Innovations

30 September 2021

Sector Insights: CLEAN ENERGY



243%

Increase in
Renewable Energy
Capacity (2013-21)



3rd

Largest Installed
capacity of Renewable
Energy



5th

Largest Solar
Installed Capacity in
the World



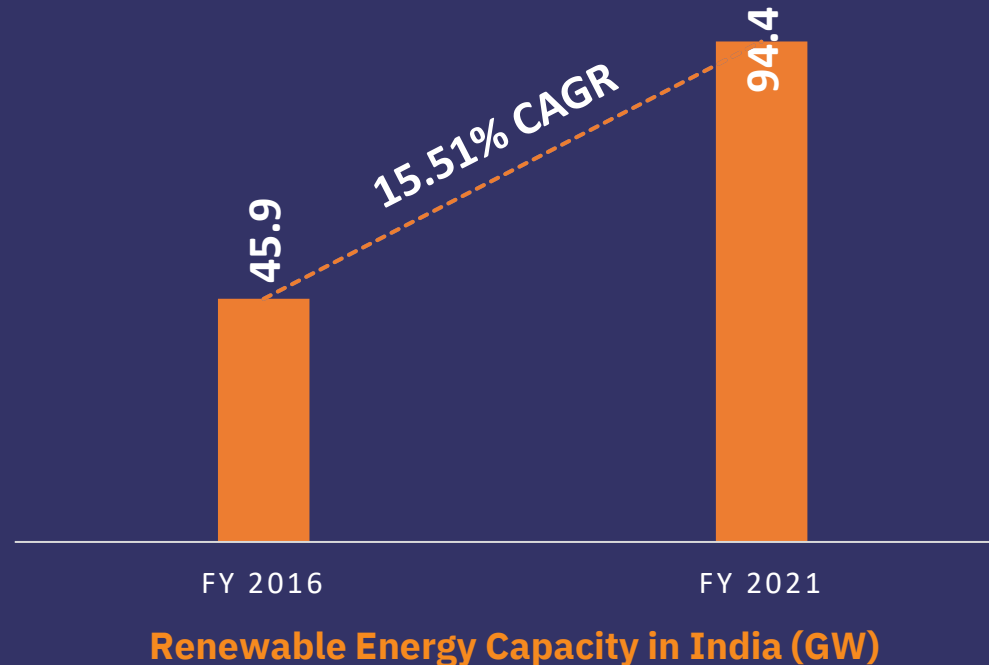
5x

5x growth in Solar
power capacity in
the last 5 years



4th

Largest Installed
Capacity of Wind
Power in the World



Investment Insights: CLEAN ENERGY



3rd

In Renewable Energy
Country
Attractiveness Index



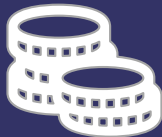
400

Early stage venture
capital deals in
2020



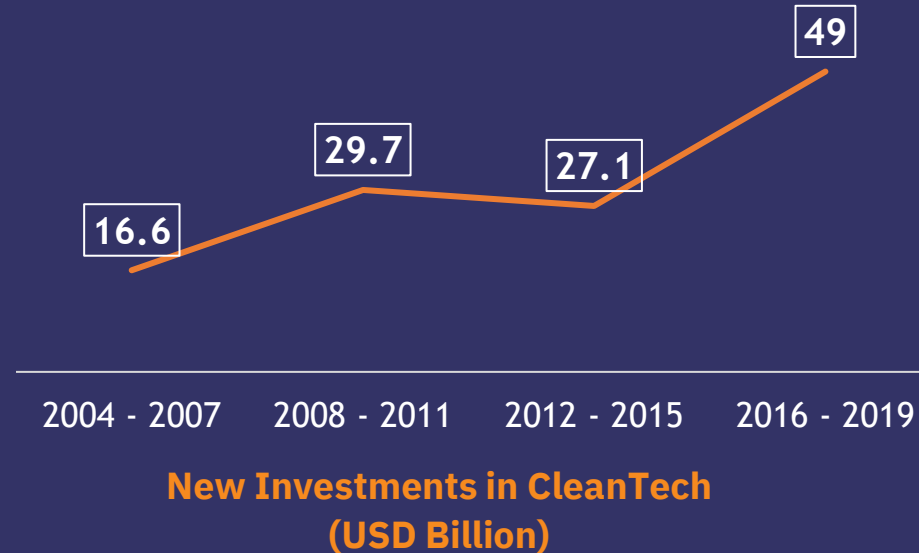
\$225 Bn

Investment
Opportunities



100%

FDI allowed for
renewable energy
generation &
distribution

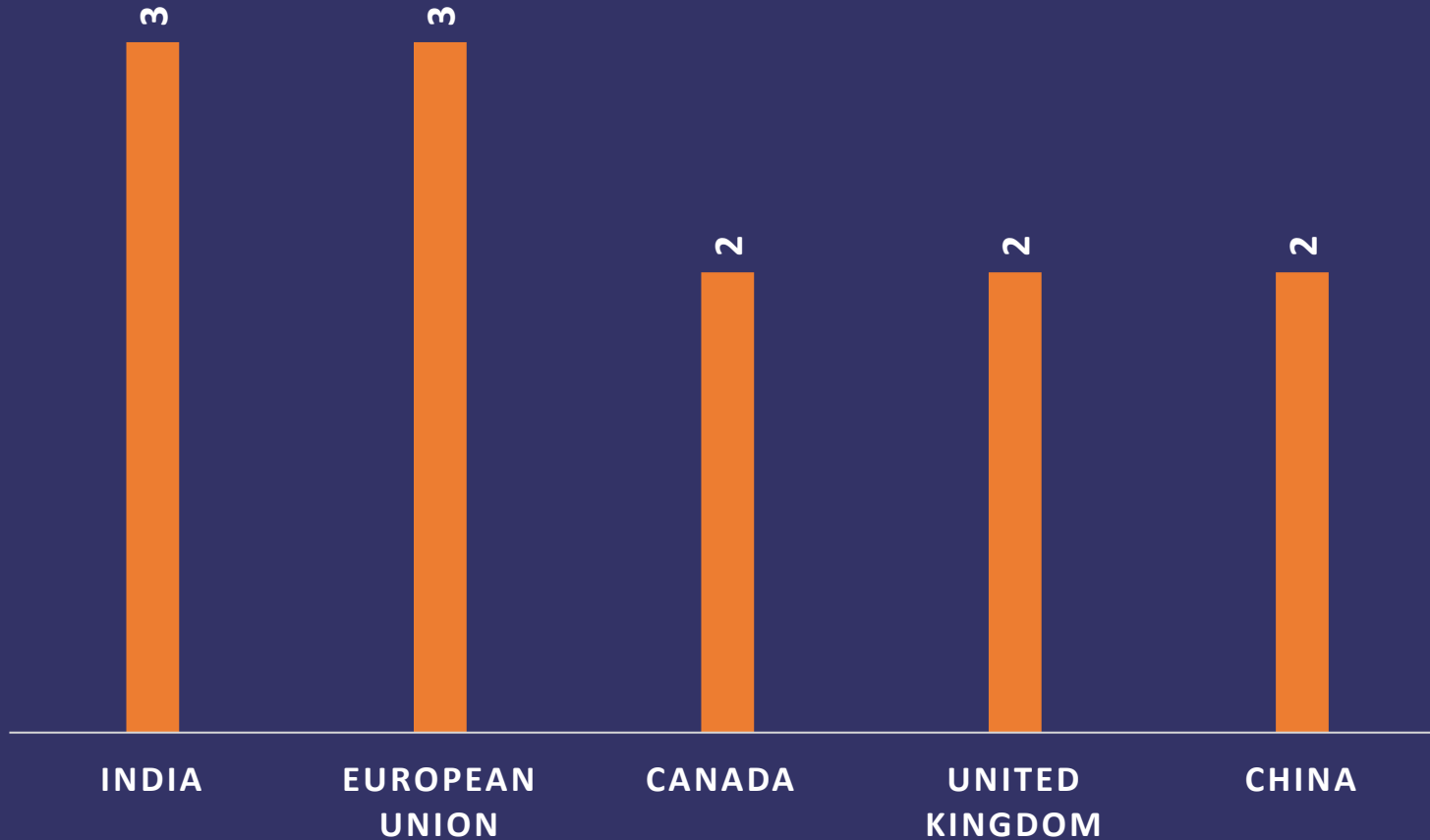


450 GW

Targeted renewable
energy capacity of
by 2030

Innovation: CLEAN ENERGY

International cooperation in clean energy RD&D:



Mission Innovation Challenges Lead

4th

Largest energy start-up ecosystem in the world with 183 startups (2016-20)

52.7%

Share of clean energy start-ups in total energy start-ups

2

Out of top 10 leading B2B start-ups, by funding are from clean energy sector

Case Study: CLEAN ENERGY



- One of the top companies in India by Asset Size, ReNew Power operates utility scale wind, utility scale solar and rooftop solar projects
- Only renewable sector company in India with over 5 GW of operational capacity
- First renewable energy company in the world to be recognized a 'Lighthouse' by the World Economic Forum.
- Operates across 9 states in India and involved in over 110 utility-scale project



- Pure play solar power company providing low-cost and reliable solar power solutions
- First Indian energy asset to be listed on the New York Stock Exchange
- Azure Power has listed the first solar green bond on the Singapore Stock Exchange.
- It has a solar assets base of ~2 GW of operational capacity and over 5.1 GWs of capacity under construction and in the pipeline.

Future Outlook: CLEAN ENERGY



Challenges

- Lack of adequate transmission capacity available for interstate trade
- High initial unit capital costs of renewable projects lead to financing challenges and initial burden
- Only **38%** share of the total installed capacity is derived from Renewable sources
- Existing long-term physical Purchase Power Agreements (PPA's) represent about **90-95%** of total generation



Govt. Initiatives

- Green energy corridor –**12600 KM** of transmission lines planned
- PLI scheme in Solar PV manufacturing with financial outlays of INR **4,500 Cr.** under Atmanirbhar Bharat 3.0
- **100** Smart city projects – provision for Solar rooftop & mandatory **10%** renewable energy
- **60** solar cities approved and **\$1.3 bn** allocated for setting up **50** solar parks of **40GW** by 2020



Accelerating Growth of New India's Innovations

Prime Minister's Science Technology and Innovation Advisory Council (PM-STIAC)



National Missions



Artificial Intelligence



Biodiversity



**Deep Ocean
Exploration**



Quantum Frontier



Electric Vehicles



Genomics



Waste to Wealth



**Indian Language
Translation**

AGNii: Accelerating Growth of New India's Innovations



Provides dedicated support for scouting technologies across India's R&D, innovation and startup ecosystem



Provides a platform for innovators to bring market ready products/ solutions to industry



Enables matchmaking between technology providers and technology seekers

Technology Scouting



67

Open Innovation Challenges



Focus Areas

AI, Cyber Security, Automotive, Agri & Food, Mobility, Water, Pollution, Sanitation, Clean Tech, AI/ML, AR/VR, Health, Education, Defence



Outcomes Achieved

Every partner offered at least one of the below to 1-3 innovators in each open innovation focus area:

- ✓ Pilot
- ✓ Incubation
- ✓ Licensing
- ✓ Market access
- ✓ Funding
- ✓ Access to R&D facility

Technology Showcases



44

Technology Showcases



Focus Sectors

- ☐ CleanTech
- ☐ Defence
- ☐ Waste Management
- ☐ Agriculture
- ☐ Auto & EV



Outcomes Achieved

Every partner offered at least one of the below to shortlisted innovations in each technology showcase:

- ✓ Pilot
- ✓ Licensing
- ✓ Market access
- ✓ Funding

Key Highlights



Area of Interest: Embrace emerging tech to achieve carbon neutrality and identify alternatives to natural gas, diesel and other source of carbon generation.

AGNli Mission shortlisted 28 technologies from the areas of alternate energy generation, alternate solar panel material, hydrogen as fuel, energy efficiency and management.

Support rendered: Paid pilot at manufacturing plant, full-fledged contract opportunities if found suitable



Area of Interest: Enhancing solar panel efficiency, Recycling of wind turbine blades, discarded solar panels and used Li Ion batteries

MoP shortlisted 2 innovations from the AGNli Energy portfolio – double axis solar panel and waterless solar panel cleaner.

The solution would be deployed through SJVN – JV Gov. of India and Gov. of Himachal Pradesh.



Area of Interest: Industrial Low Carbon Technology, Deeptech, Resource Efficiency, Food & Agriculture, Commercial & Residential Energy Use, Storage Technology.

AGNli Mission supported UNIDO's Low Carbon Technology Accelerator program by scouting innovations from the startup ecosystem. 200+ applications received. Result announcement in Oct 2021.

Thank You



Twitter: @AGNli_GOI
Facebook: AGNliGOI
LinkedIn: AGNli

Twitter: @InvestIndia
Facebook: InvestIndiaIPA
LinkedIn: Invest India

monil.khatri@investindia.org.in