

SECTOR SPECIFIC REPORT



Ministry of Coal
Collaborating with Ministry
of New & Renewable
Energy for Promotion of
Green Energy

The Bureau of Energy
Efficiency Prepared
Scheme for Star Labelling
of Solar Panels

India and Saudi Arabia
Signed an MoU in
Electrical Interconnection
and Resilient Supply Chain
in Renewable Energy

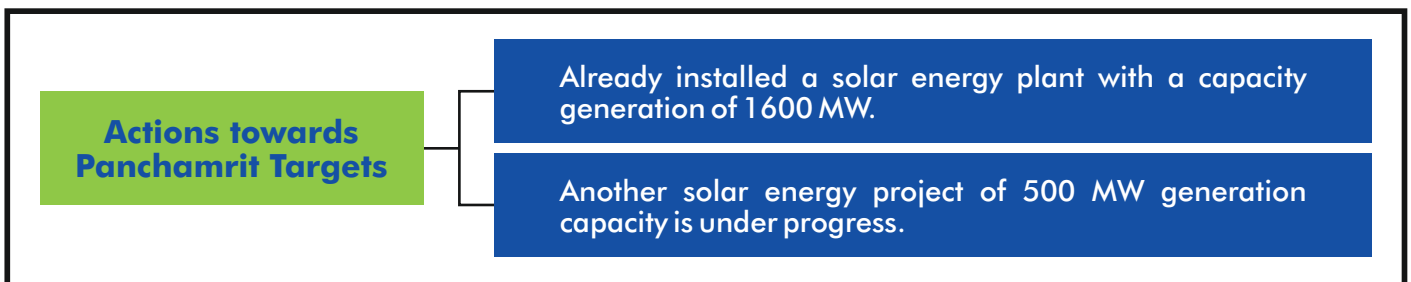
Green Energy Corridor
Phase II- Interstate
Transmission System to
Ensure Reliable Power
Supply from National Grid

The Renewable Energy
Research and Technology
Development Programme
has been extended till
2025-26

Eminent's Insight

Ministry of Coal Collaborating with Ministry of New & Renewable Energy for Promotion of Green Energy

The Ministry of Coal (MOC) along with the Ministry of New & Renewable Energy (MNRE) announced to work for the advancement of green energy on 27 October 2023 in New Delhi. Under this alliance, **the MNRE decided to support policy-making, technical assistance, and capacity-building and the MOC will furnish land and assets complemented with the administration of green hydrogen, solar energy, and others.** The central public sector undertakings (CPSU) under the MOC are already working for the net-zero agenda towards achieving Panchamrit targets.



Key highlights

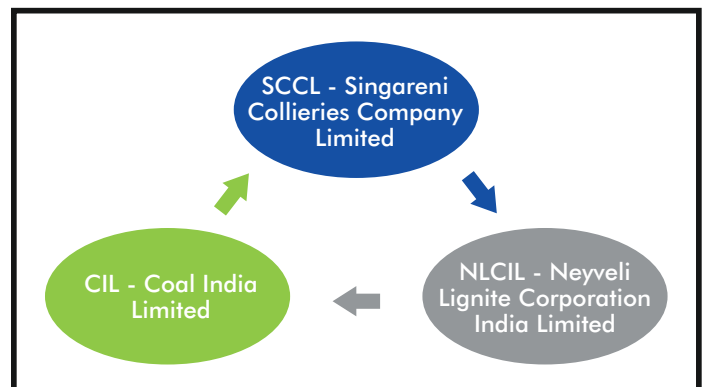
The MOC under the MNRE policy is looking for 10 landforms of more than 300 acres each for establishing green hydrogen projects by private players.

The CPSEs will create a 12 MW capacity generation plant by 2030

It was decided that the coal companies having excess land that went through the de-coaling process could be used for setting up green hydrogen plants by private players. **In addition to that in the coal-dominated areas, it was decided to cover around 50,000 residential houses and government buildings with rooftop solar plants in mission mode** for sustainability after assessment.

The Coal CPSEs have found a natural water storage reservoir in the open-cast mines having an average elevation of 100 meters which can be converted into a pump storage project by the construction of a top reservoir over it, approved by the ministry to support this association. Over time, **the MNRE will receive support from the National Institute of Solar Energy for MOC and its CPSEs along with knowledge sharing and capacity building** of engineers, technicians, etc through Solar Energy Corporation of India, IIT Roorkee, and others.

List of CPSEs



The approach and the utilization of the MOC and MNRE resources in sync will bring a big boom in the field of sustainable green energy transition in India. It will promise a much better future to live in by minimizing dependency on fossil fuels and subsequently building a strong economic nation with sustainable use of its energy resources.

The Bureau of Energy Efficiency Prepared a Scheme for Star Labelling of Solar Panels

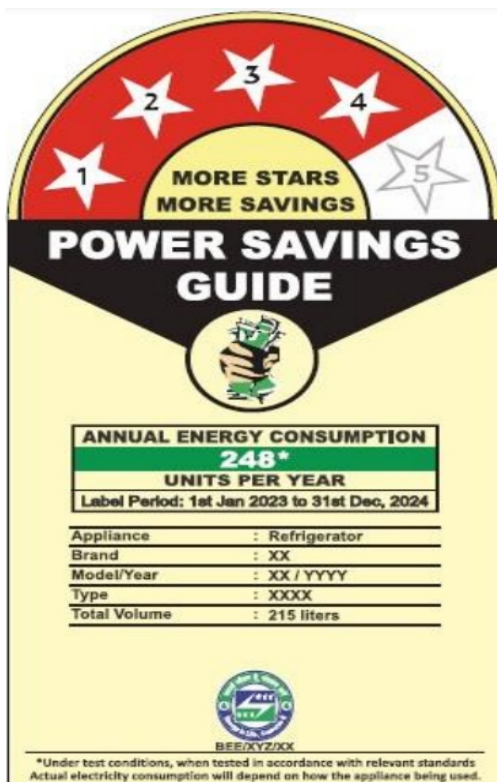
The Ministry of New & Renewable Energy launched the Standards & Labelling Programme for solar panels on 20 October 2023. The initiative was prepared by the Bureau of Energy Efficiency (BEE) for solar panels technically known as solar photovoltaic modules.

Program Outline

The assessment of this program estimates a carbon reduction of around 30 million tonnes per year by 2030

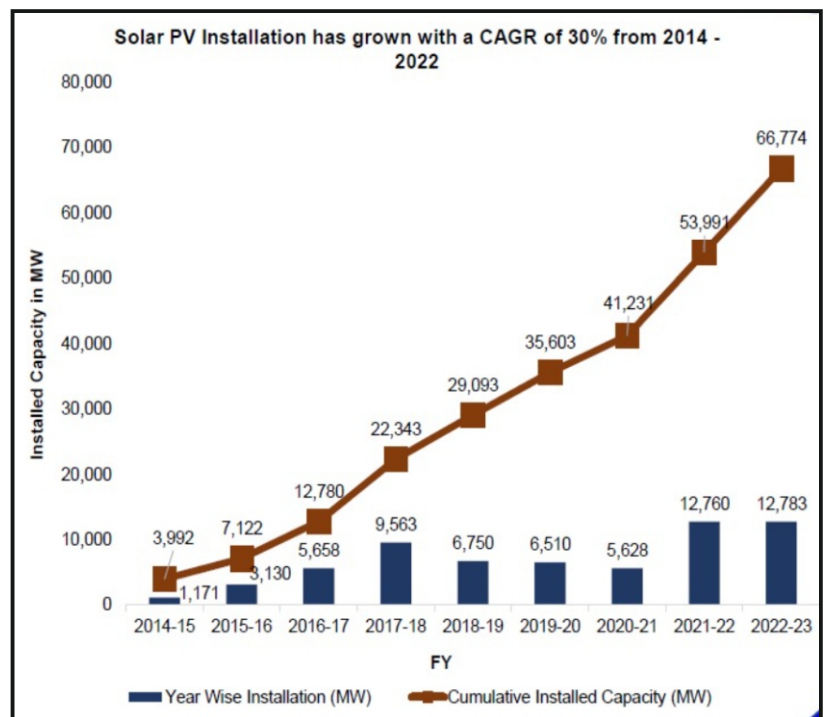
The star rating program has already contributed to a carbon reduction of around 58 million tonnes per year and under overall BEE programmes so far it is 300 million tonnes per year.

It will provide freedom to the consumers to choose the right product ensuring quality based on star ratings and labelling.



Source: <https://static.pib.gov.in/WriteReadData/specificdocs/documents/2023/oct/doc20231020263201.pdf>

Yearwise Solar PV Installation Statistics



Source: <https://pib.gov.in/PressReleaseframePage.aspx?PRID=1969458#:~:text=The%20star%20labelling%20scheme%20prepared,no%20labelling%20fee%20as%20well.>

Initially, the program will run in a voluntary mode from 01 January 2024 to 31 December 2025 with no labeling fees and will benefit cost and energy savings, enhance the use of renewable energy, and help to minimize emission intensity by 45% of GDP by 2030.

This program will give decisive power for making the right decisions based on the label supporting the quality of the solar modules instead of depending on the recommendation of the vendor and installer.

The Ministry is encouraging the solar industry to implement the star labeling program by making it voluntary for the first two years. It will be reviewed after one year and if the industry doesn't come forward it will be made compulsory in the public interest. **The government plans to manufacture solar panels in India and decided to bring policies for making the PV cells while ensuring quality by constantly updating ALMM (Approved List of Models and Manufacturers).** Besides this encouragement to the expansion of solar rooftops among citizens has also aimed to double the country's energy efficiency by 2030. **The Government has already issued a list of 15 mandatory items that can't be sold without star labeling followed by 19 voluntary items.**

The joint efforts of the ministry and the BEE ensure a long-term plan for attaining lower carbon emissions by 2030. Under the smart vision of branding solar panels based on their energy efficiency and cost-saving parameters under the noble program of star labeling, India is to revolutionize the solar industry for mass adaptation.

Proposed Star Rating	Effective efficiency η_{eff} (%)
Validity period: 1st January 2024 to 31st December, 2025	
1 Star	$\geq 17\%$ & $\leq 18\%$
2 Star	$> 18\%$ & $\leq 20\%$
3 Star	$> 20\%$ & $\leq 21\%$
4 Star	$> 21\%$ & $\leq 22\%$
5 Star	$> 22\%$

Source: <https://pib.gov.in/PressReleaseframePage.aspx?PRID=1969458#:~:text=The%20star%20labelling%20scheme%20prepared,no%20labelling%20fee%20as%20well>

List of 34 Appliances/Equipment

Mandatory

- 1) Frost Free Refrigerator
- 2) Direct Cool Refrigerator
- 3) Deep Freezers
- 4) Room Air Conditioner (Variable Speed)
- 5) Room Air Conditioner (Fixed Speed)
- 6) RAC (Cassette, Floor Standing Tower, Ceiling, Corner AC)
- 7) Light Commercial AC Fixed Speed
- 8) Stationary Storage Type Electric Water Heater
- 9) Tubular Fluorescent Lamps
- 10) LED LAMPS
- 11) Ultra-High Definition (UHD) Televisions
- 12) Colour Television
- 13) Distribution Transformer
- 14) Ceiling Fan
- 15) Chillers

Voluntary

- 1) General Purpose Industrial Motor
- 2) Agricultural Pump Set
- 3) Domestic Gas Stove
- 4) Washing Machine (Semi/Top Load/Front Load)
- 5) Computer
- 6) Ballast
- 7) Office Automation Products
- 8) Diesel Engine Driven Monoset Pumps for Agricultural Purposes
- 9) Solid State Inverter
- 10) Diesel Generator Set
- 11) Microwave Oven
- 12) Solar Water Heater
- 13) Air Compressors
- 14) High Energy Li-Battery
- 15) Tyres/Tires
- 16) Side by Side/Multi Door Refrigerator
- 17) Pedestal Fan
- 18) Table/Wall Fan
- 19) Induction Hob

Source: <https://static.pib.gov.in/WriteReadData/specificdocs/documents/2023/oct/doc20231020263201.pdf>

How AG Group Resources Can Help You

To incorporate global models and the best grid management services for your Renewable Energy Projects [Click Here](#)

India and Saudi Arabia Signed an MoU in Electrical Interconnection and Resilient Supply Chain in Renewable Energy

India and Saudi Arabia signed an MoU that will further establish strong cooperation in the area of electrical interconnections, facilitating the exchange of electricity at peak times of electricity consumption or in emergencies. Along with this co-development of energy projects, the co-production of green/ clean hydrogen and renewable energy has also been made part of it. This will facilitate the establishment of a secure, reliable, and resilient supply chain of green/clean hydrogen and renewable energy between these two countries.

The MoU took place during the Middle East and North Africa (MENA) Climate Week 2023 in Riyadh, Saudi Arabia. This MoU will support India's ambitious energy transition landscape to strengthen its fight against climate change and promise to accelerate combined efforts in supporting various aspects of the renewable energy transition. It will help India achieve its targets set under the updated NDC and take significant action to reduce the carbon emission intensity by 45% of its GDP by 2030 and achieve a net zero emission target by 2070.



Source: <https://pib.gov.in/PressReleaselframePage.aspx?PRID=1965771>

Point of cooperation under India-Saudi Arabia Energy Sector MoU

Renewable Energy, Energy Efficiency, Hydrogen, Electricity and Grid Interconnection between the two countries along with Cooperation in the Area of Petroleum, Natural Gas, Strategic Petroleum Reserves, and Energy Security

Encouraging bilateral investment in Renewable Energy, Electricity, Hydrogen, and Storage, and Oil & Gas

Circular Economy and its technologies to reduce the effects of climate change, such as Carbon Capture, Utilization, and Storage

Promoting digital transformation, innovation, and cyber security and AI in Energy Sector

Working on developing qualitative partnerships between the two countries to localize materials, products, and services related to all sectors of energy, supply chains, and its technologies

Strengthening the cooperation with companies specialized in the field of energy

Any other fields related to the energy sector that the two countries agree upon

India's committed role in achieving green energy transition in addition to the formation of the Global Biofuel Alliance, and the launch of the National Green Hydrogen Mission have brought the country into the forerunners of clean energy players across the globe. **The US\$ 2.3 billion allocation to the green hydrogen mission brings major hopes for investment in the area between the two countries.** India's first call for the MENA countries to strengthen policy formulation for global clean energy transition efforts by joining the Global Biofuel Alliance has also encouraged Saudi Arabia to envisage this cooperation with India.

The event brought major stakeholders of both countries together and allowed brainstorming on various aspects of the economy and security in the energy sector to address the challenges of climate change. **The association between the two countries will promise many opportunities to explore the area of energy production, and consumption as well as a sustainable**



Source: <https://pib.gov.in/PressReleasePage.aspx?PRID=1966200>

transition to clean energy at a global scale by following the world's best practices for the collective economic prosperity of the region while shaping the future of sustainable growth.



Green Energy Corridor Phase II- Interstate Transmission System to Ensure Reliable Power Supply from National Grid

Recently, the Cabinet Committee on Economic Affairs approved the **Green Energy Corridor (GEC) Phase II, Inter-State Transmission System (ISTS) project for 13 GW of Renewable Energy in Ladakh.**

In this project, the transmission lines will pass through Himachal Pradesh and Punjab, ending at Kaithal in Haryana where these lines will be interconnected with the National Grid. The transmission lines in Leh will be interconnected with the existing Ladakh grid to make sure Ladakh receives a reliable power supply, and it will be connected with the Leh-Alusteng-Srinagar line ensuring power supply to the Jammu and Kashmir region. It will establish a framework of a 713 km transmission line, comprising of 480 km HVDC line and HVDC terminal of 5GW capacity each at Kaithal (Haryana) and Pang (Ladakh) and **will contribute to attaining the target of 500 GW installed power generation from non-fossil fuels by 2030.**



Source: https://www.manoramayearbook.in/current-affairs/india/2023/10/19/green-energy-corridor.html?utm_source=newsletter&utm_medium=email

Quick Highlights of the Project

The project is expected to be established by FY 2029-2030

Total estimated cost for the project is INR 20,773.70 crore

The Central Financial Assistance (CFA) will bear 40% of the project cost amounting to INR 8309.48 crore

The Power Grid Corporation of India Limited (POWERGRID) will be the Implementing Agency

POWERGRID can handle defense sensitive Ladhak region, difficult terrain and bad climatic conditions for the project

Project will use Extra High Voltage Alternating Current (EHVAC) and state of the art Voltage Source Converter (VSC) based High Voltage Direct Current (HVDC) system for deployment

The ISTS GEC Phase 2 program estimates addition of 10753 km of transmission lines and 27546 MVA capacity of substations having estimated project cost of INR 12,031.33 crore and Central Financial Assistance (CFA) @ 33% costing INR 3970.34 crore

The project will develop long-term energy security and boost sustainable eco-friendly growth through decarbonization. It will create employment assets for skilled/non-skilled personnel in power and related sectors mainly in the Ladakh region. **The project is supported by Green Energy Corridor (GEC) Phase 2, Inter-State Transmission System (ISTS)** ie. already undergoing implementation in various States like Rajasthan, Gujarat, Kerala, Himachal Pradesh, Uttar Pradesh, Tamil Nadu, and Karnataka for grid interconnection and power supply of around 20 GW of renewable energy and is expected to be completed by 2026.

Since the announcement for setting up a 7.5 GW solar park in Ladakh by the Government of India, **the ministry came up with the master plan for achieving the targeted renewable energy generation and having a Battery Energy Storage System (BESS) of 12 GWh in Pang, Ladakh** through this approval. It will give a quantum leap to the inter-state transmission infrastructure in the region to support socio-economic growth and prosperity.

State-wise RE Project Details

State	Estimated project cost (₹ Crore)	Central Financial Assistance (CFA) (₹ Crore)	Length of transmission lines envisaged (ckm)	Capacity of substations envisaged (MVA)	RE addition envisaged (MW)
Gujarat	3636.73	1200.12	5138	5880	4000
Himachal Pradesh	489.49	161.53	62	761	317
Karnataka	1036.25	341.96	938	1225	2639
Kerala	420.32	138.71	224	620	452
Rajasthan	880.92	290.70	1170	1580	4023
Tamil Nadu	719.76	237.52	624	2200	4000
Uttar Pradesh	4847.86	1599.80	2597	15280	4000
Total	12,031.33	3970.34	10753	27546	19431

Source: <https://powermin.gov.in/en/content/green-energy-corridor>



Cabinet approves Intra-State Transmission System – Green Energy Corridor Phase-II

- To facilitate grid integration and power evacuation of approximately **20 GW of Renewable Energy projects in 7 States**
- Gujarat, Himachal Pradesh, Karnataka, Kerala, Rajasthan, Tamil Nadu and Uttar Pradesh
- Total estimated cost **Rs. 12,031 crore**
- Central Financial Assistance at **33% of project cost** i.e. Rs. 3970.34 crore
- To be created **over a period of five years**

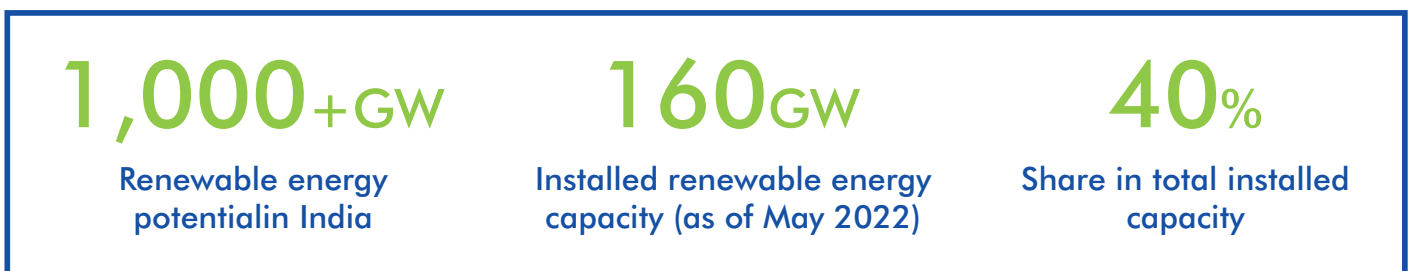
How AG Group Can be a Help

For effective assessment of your extensive renewable energy projects and their successful implementation [Click Here](#)

The Renewable Energy Research and Technology Development Programme has been extended till 2025-26

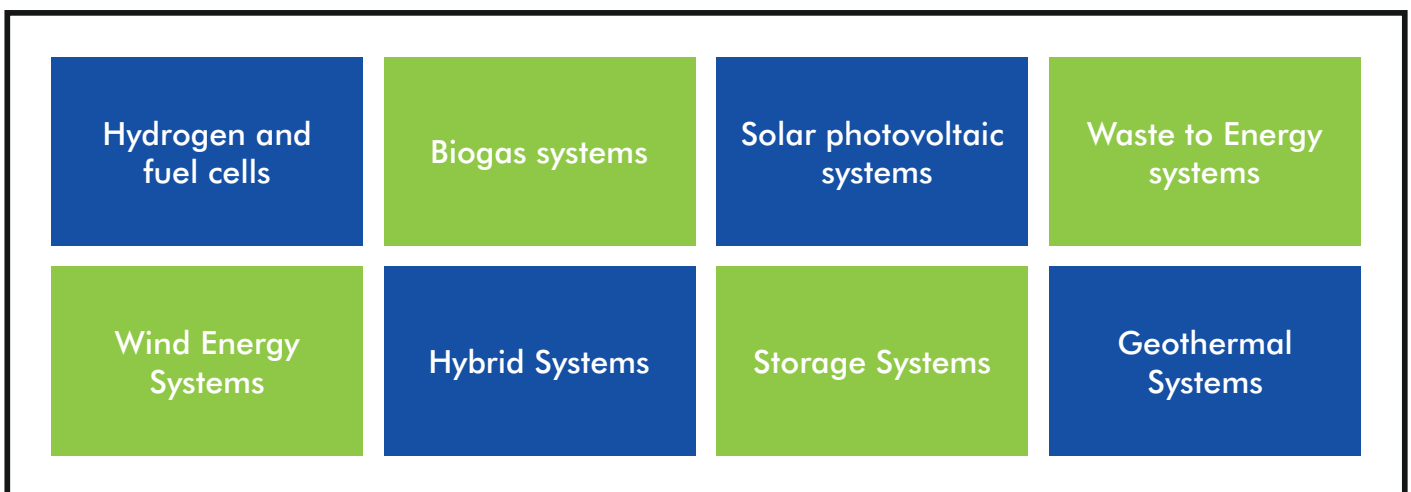
The Ministry for New & Renewable Energy (MNRE) approves **the continuation of the RE-RTD Programme (Renewable Energy Research and Technology Development) for carrying through FY 2021-22 TO 2025-26 with an overall budget of INR 228 crore.** The objective of this scheme is to enhance the R&D exposure supported via diverse research institutions and industries to witness state-of-the-art technology development, showcasing efficiency and cost-saving features that can be manufactured for various applications under the New and Renewable Energy sector in India.

India's Renewable Energy Landscape



The guidelines and the policies issued by the MNRE from time to time strengthen the research program and creative innovation based on the survey done by the Ministry on the R&D investment supporting the green energy transition of the country. Earlier a committee was established along with the external panel which evaluated the contribution of the R&D program, and funding framework in India and highlighted the key areas ensuring the growth in the usage of renewable sources in India's energy sector.

RE Sources



The has released The "Technology and Innovation Report 2023" released by the United Nations Conference on Trade and Development has highlighted the potential of the country's expertise in developing innovative renewable energy technology. **The financial aid under this scheme is up to 100% for the government and non-profit organizations and start-ups, industries, manufacturing units, private players and entrepreneurs is up to 70%.**

Yearwise Financial Allocation

Components	Year 1 (2021-22)	Year 2 (2022-23)	Year 3 (2023-24)	Year 4 (2024-25)	Year 5 (2025-26)	Total
	Amount in crores					
1. Support for R&D for Research/ Design/Technology/ Development/ Demonstration						
a) Non-recurring	20	25	25	25	25	120
b) Recurring	15	14	15	15	17	76
2. Support for Start-ups	4	5	6	6	6	27
3. Innovation competition/studies/ meetings/conclaves/ monitoring	1	1	1	1	1	5
Total	40	45	47	47	49	228

Source: <https://cdnbbsr.s3waas.gov.in/s3716e1b8c6cd17b771da77391355749f3/uploads/2023/01/2023011018.pdf>

The extension of the RE-RTD Programme is to bring out the innovation capacity in the diverse areas of the New and Renewable Energy sector by producing improved processes and products showcasing self-sustainability for commercial, and industrial purposes, witnessing growth in terms of usage and profitability in the interest of the nation.



The potential of solar energy is not fully tapped, so far. The Government is making efforts to harness the available potential through various schemes and programs. Several steps have been taken by the Government to promote renewable energy, including solar energy, in the country.

Shri R. K. Singh
Union Minister for New & Renewable Energy and Power
Government of India



1. <https://pib.gov.in/PressReleaselframePage.aspx?PRID=1971967>
2. <https://government.economictimes.indiatimes.com/news/governance/green-energy-push-coal-ministry-and-ministry-of-new-renewable-energy-join-hands/104755014>
3. https://thecsrjournal.in/coal-ministry-new-renewable-energy-green-energy/#google_vignette
4. <https://pib.gov.in/PressReleaselframePage.aspx?PRID=1969458#:~:text=The%20star%20labelling%20scheme%20prepared,no%20labelling%20fee%20as%20well>
5. <https://beeindia.gov.in/en>
6. <https://static.pib.gov.in/WriteReadData/specificdocs/documents/2023/oct/doc20231020263201.pdf>
7. <https://pib.gov.in/PressReleasePage.aspx?PRID=1956415>
8. <https://pib.gov.in/PressReleasePage.aspx?PRID=1966200>
9. <https://pib.gov.in/PressReleaselframePage.aspx?PRID=1965771>
10. <https://www.livemint.com/news/india/india-and-saudi-arabia-sign-mou-for-green-hydrogen-supply-chain-and-power-grid-interconnection-11696773021692.html>
11. <https://pib.gov.in/PressReleaselframePage.aspx?PRID=1968732#:~:text=The%20project%20will%20entail%20setting,fossil%20fuels%20by%20year%202030>
12. <https://government.economictimes.indiatimes.com/news/governance/cabinet-approves-green-energy-corridor-phase-iiinter-state-transmission-system-for-13-gw-re-project-in-ladakh/104530787>
13. <https://ddnews.gov.in/national/cabinet-approves-green-energy-corridor-phase-ii-giant-leap-renewable-energy-ladakh>
14. <https://pib.gov.in/PressReleaselframePage.aspx?PRID=1947474>
15. <https://www.livemint.com/industry/energy/renewable-energy-research-tech-development-programme-to-continue-till-fy26-11691670689306.html>
16. <https://cdnbbsr.s3waas.gov.in/s3716e1b8c6cd17b771da77391355749f3/uploads/2023/01/2023011018.pdf>
17. <https://pib.gov.in/PressReleaselframePage.aspx?PRID=1947140>

AG GROUP



We expand your Horizon

AG was established in the year 1998. In the due course of time AG has become multi-functional, multi-disciplinary organization offering a wide range of consultancy services to multiple sectors for implementation of projects under one roof from "Concept to Commissioning" AG shareholders has track record in the development of mega projects in country & overseas in field of sports, hospitality, tourism, flood management, turf farms, F&B, real estate, fashion & clothing, import & exports, chemical & fertilizers.

The integration and coordination of our in-house experts deliver the pragmatic solutions in the today's world. Quality and Service delivery are the key elements of AG Group corporate philosophy. The highly motivated, experienced and multi-disciplined team plans, develop and implement the need of client and exceed their expectations. We can synergize our experience with your projects to make it a success.

OUR SERVICES

Project Research

Project Advisory

Project Management Consultancy

Transaction Advisory

Financial Advisory

Business Acceleration & Growth

OUR SECTORS

Transport

- Railway
- Aviation
- Ropeway
- Electric Vehicle
- Traffic Management

Engineering

- Textile
- IT & Telecom
- Power & Renewable Energy
- Infrastructure: Highway/Tunnels

Environmental

- Water
- Irrigation
- Agriculture
- Animal Husbandry
- Horticulture & Forestry

Social & Public Sector

- Sports
- Tourism
- Education
- Healthcare

Sustainability

- ESG
- SDG
- Carbon Credit
- Climate Change



Chennai



Delhi



Gurugram



Guwahati



Hyderabad



Imphal