

SECTOR SPECIFIC REPORT (Renewable Energy)

March 2022 Edition



*Policies
Covered In
The Edition*



1. "Renewable Energy Research and Technology Development Programme" Scheme

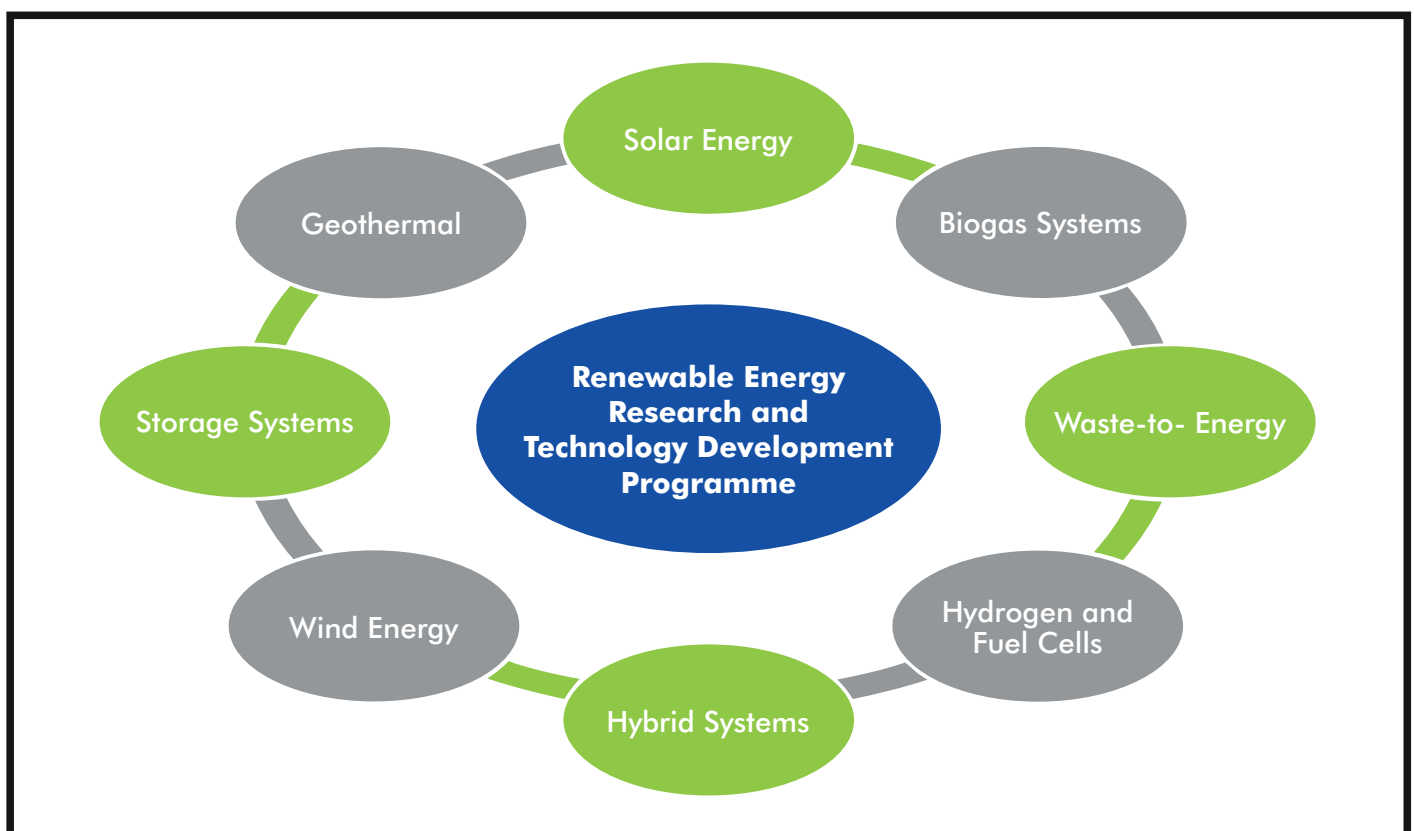
2. National Hydrogen Mission: To Develop a Sustainable Alternative fuel to Energise India's Growth

3. Revised Policy for Bio Mass Utilization for Power Generation in Coal Based Power Plants: Sustainable Solution to Utilize Agro Residue

"Renewable Energy Research and Technology Development Programme" Scheme

Recently the Ministry of Power and the Ministry of New and Renewable Energy have stated that under the Renewable Energy Research and Technology Development Programme (RE-RTD), research projects to develop indigenous technologies related to the development of hydrogen as a fuel source in near future are taking place. The scheme is providing support to the different model projects run by various research and academic institutions as well as industry partners in the country. These research projects also find support from the Department of Science and Technology (DST) and help in boosting the development of such projects to provide a sustainable path to the energy requirements and problems of India.

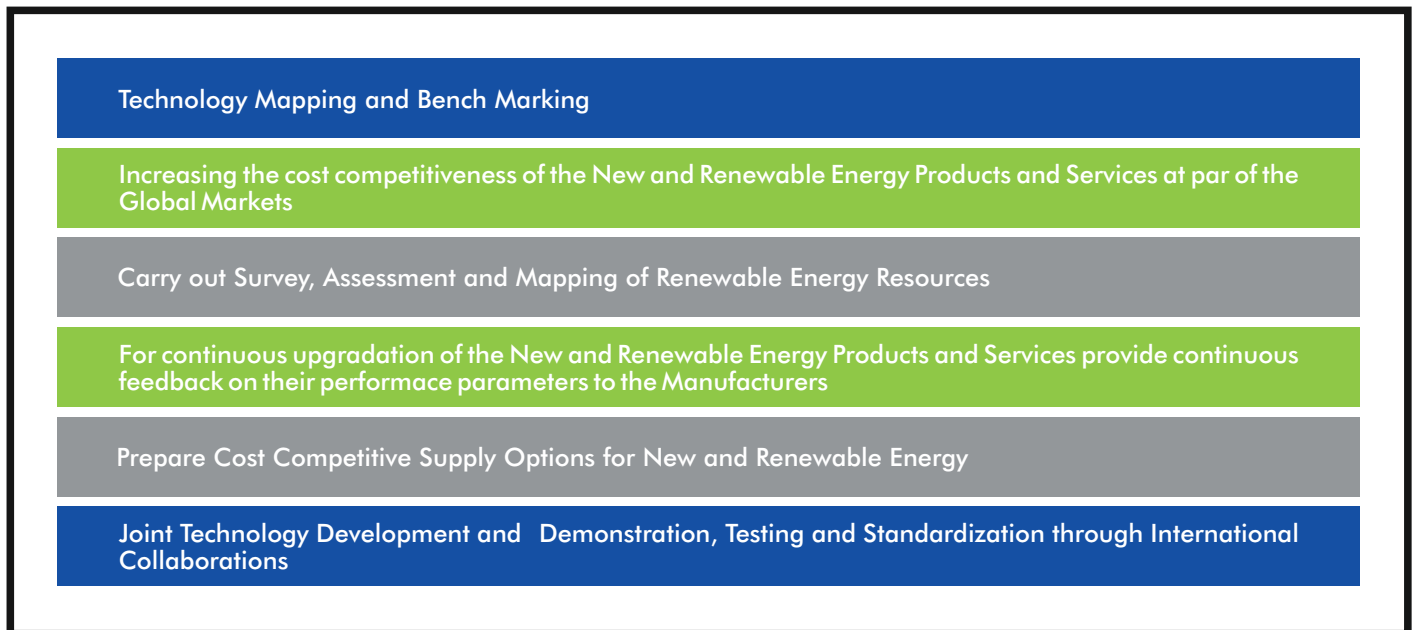
The scheme which was launched in 2019 has received continuation approval for the period of the financial year 2021-22 to the financial year 2025-26. The approval was given in December 2021 with a total cost allocation of Rs 228 crore. The broad objective of this scheme is to promote research and development of the state-of-the-art technology and manufacturing capacities within the country in the field of new and renewable energy such as:



The research projects under the scheme will be focused to provide manufacturing solutions in the field for vivid applications in the areas of mobility, urban planning, rural development, industrial development, etc cost-effectively and sustainably and address the challenges of fossil fuel without

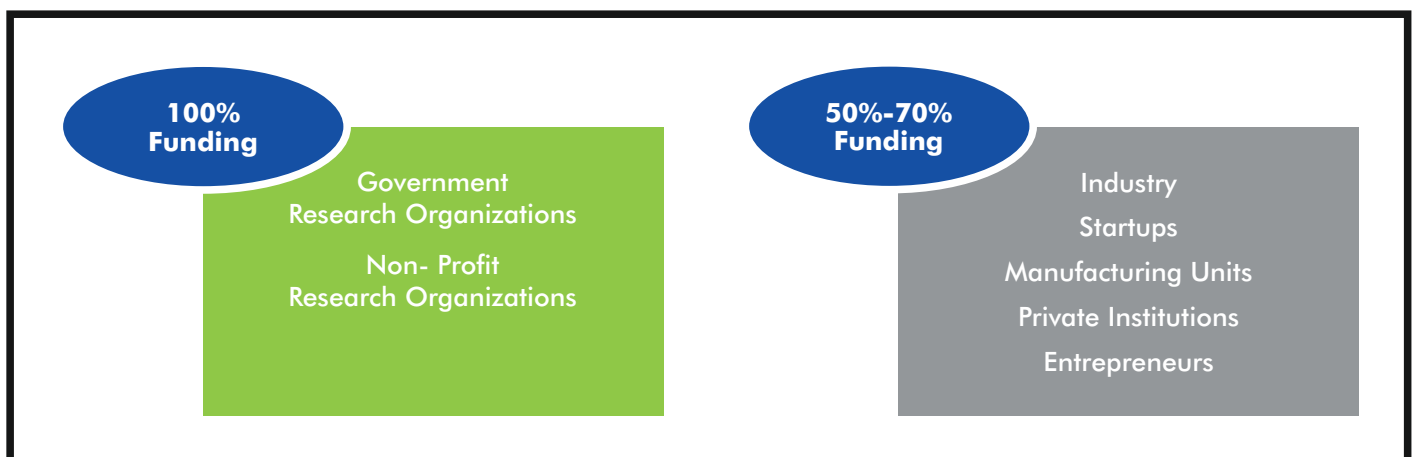
"Renewable Energy Research and Technology Development Programme" Scheme

wasting much time. To enhance the competitiveness and growth of this industry the scheme is providing thrust to make it self-sustainable in the following ways:



Funding Criteria:

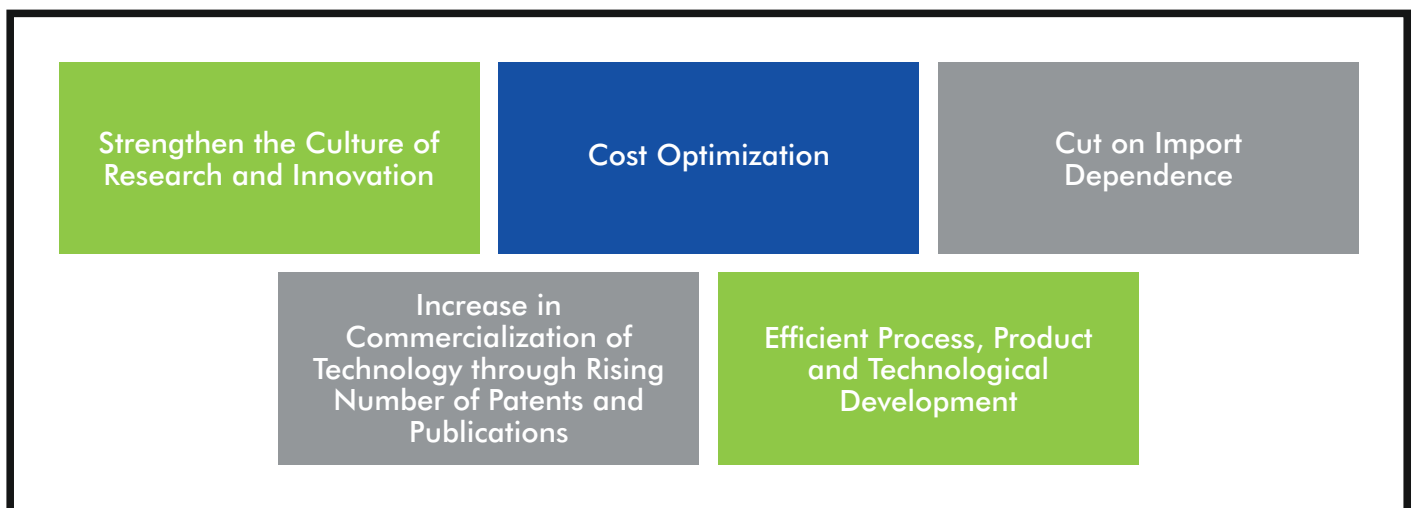
The scheme pushes technological development in the area of new and clean energy in a collaborative manner where the total allocation of Rs 62.47 crore within 3 years has been done. Through the adoption of the following funding support mechanism to different research proposals under the scheme such as the development of cost-effective battery and charging technologies, Indigenous technology development in the field of deployment, modelling and simulation to tap wind energy potential, etc through various research units in the country:



"Renewable Energy Research and Technology Development Programme" Scheme

Outcome Expected:

The 21st century world is going to be led by digital innovations and sustainable energy choices. Thus, the scheme is well knitted to provide thrust to technological innovation in the field of new and renewable energy areas and able to tap the enormous potential of solar, wind, water, and hydrogen energy on Indian land to use as fuel and other power sources. Technological research and development are thusable to fulfill the rising energy and power demands of the country's huge population over time sustainably. The major outcome expected to receive from the continued implementation of this scheme for the sector as well as the economy will be:



The Scheme is well equipped to find India's true potential in the field and helped India establish itself as one of the most attractive (rank Fourth) new and renewable energy markets across the globe. The 250% rise in renewable energy capacity of the country in the last 7 years is showing the trends of tremendous growth in this sector through technological interventions and innovative research. It will also pave the way for the development of cost-effective sustainable fuel sources in the coming years to energize the economic growth of the country along with the corresponding supply chain management.



National Hydrogen Mission: To Develop a Sustainable Alternative fuel to Energise India's Growth

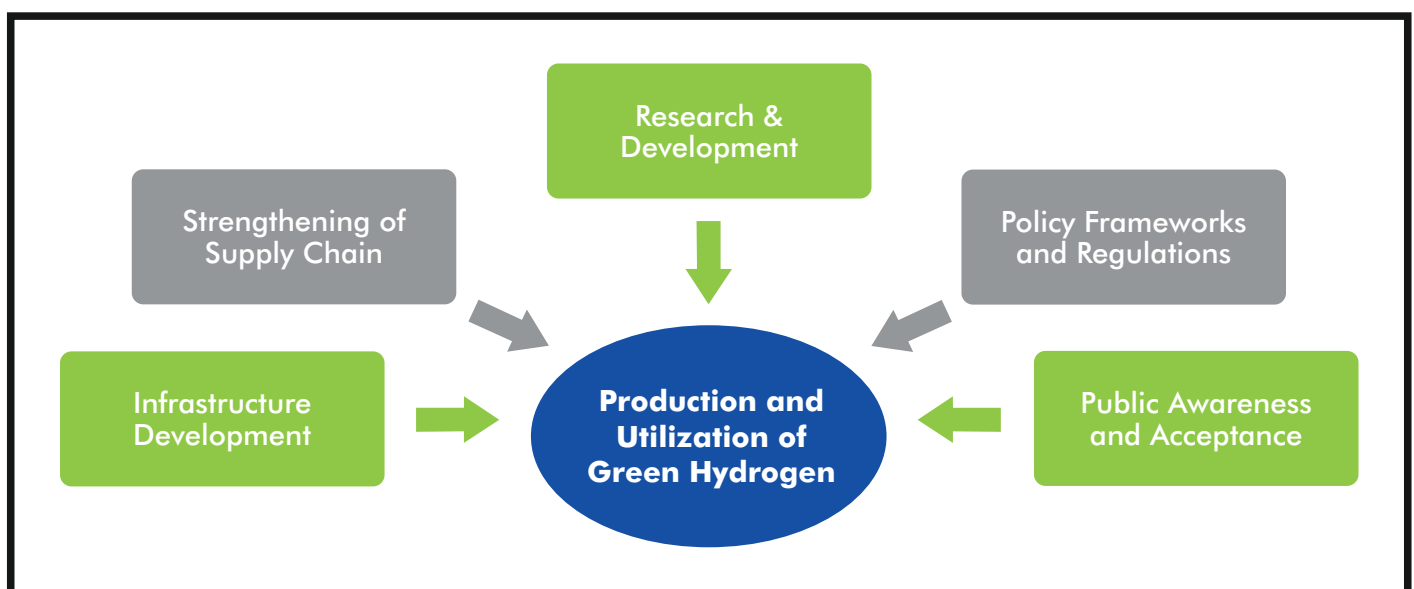
The Ministry of New and Renewable Energy has proposed the draft National Hydrogen Mission document after the consultation of respective Industry giants and the international players in the field of leveraging the power of green hydrogen. The move will help India to meet its climate targets and prepare India to become a green hydrogen Hub across the global renewable energy market through the adoption of various best global practices in the areas of technological innovation, policymaking, and regulations thereof which will boost the adaption of this clean energy source by the Indian masses.

"Of every effort being made by India today, the thing that is going to help India with a quantum leap in terms of climate is the field of Green Hydrogen."

– Shri Narendra Modi, Prime Minister of India

In line with this, the ministry has also proposed to develop the required infrastructure support for the storage and distribution of Green Hydrogen to the manufacturers of Green Hydrogen and Green Ammonia through the setting up of bunkers. The move will strengthen the supply chain requirements under National Hydrogen Mission and prepare a robust infrastructure to cater to export and domestic demand in a short span.

The initial allocation of Rs 800 Crore to the Ministry of New and Renewable Energy, under the mission to increase the production capacity of Green Hydrogen along with its higher utilization in the next 3 years will be broadly focused on the following areas:



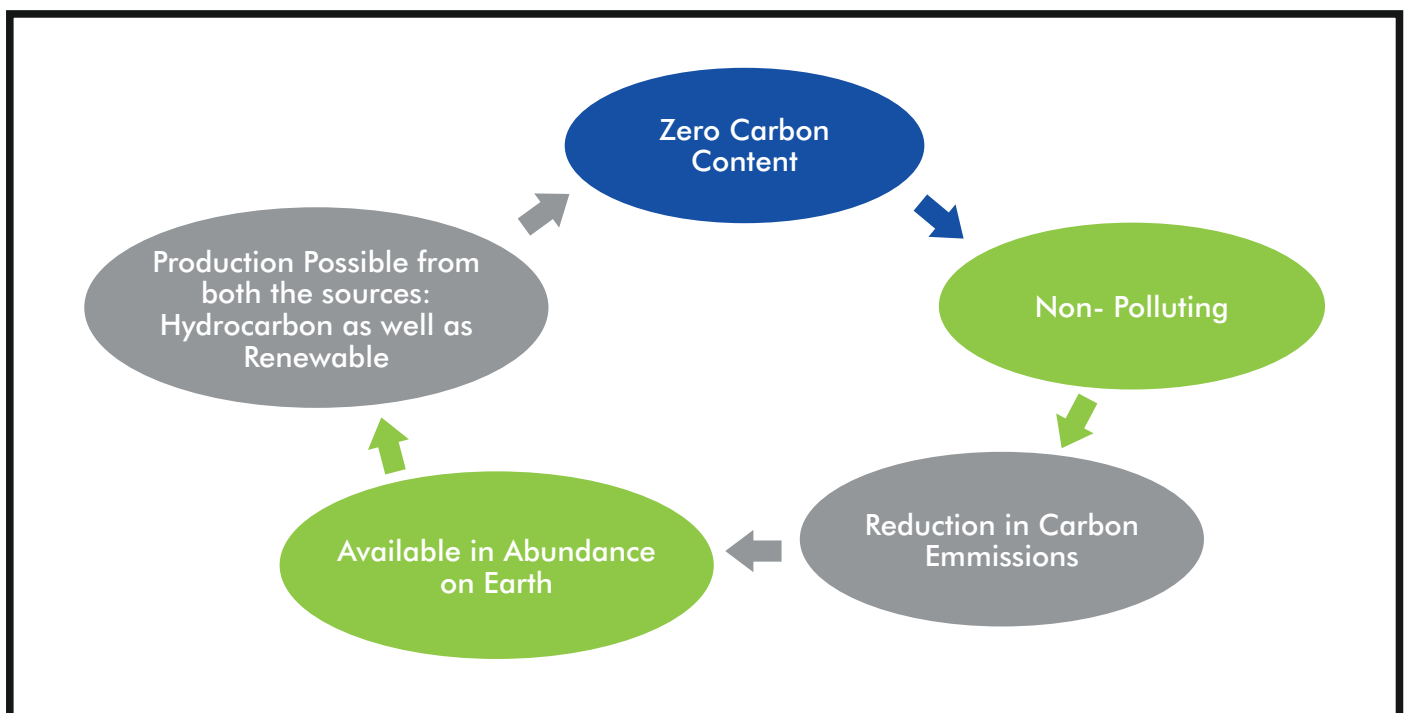
National Hydrogen Mission: To Develop a Sustainable Alternative fuel to Energise India's Growth

The Government has set an ambitious target of producing 5million tonnes of Green Hydrogen within10 years i.e., by 2030 including the development of required renewable energy capacity in terms of storage and infrastructure. The continuous cut in coal import of India is also showing a positive trend that the industry is ready to welcome renewable energy sources such as Green Hydrogen and Green Ammonia as sustainable fuel sources and discouraging the use of fossil fuels for its energy requirements.

This trend will help India to tap the numerous cost-effective opportunities available in the areas of solar and wind energy by utilizing the availability of a large landscape within the country for the production of green hydrogen and ammonia. To leverage this production, India can become an exporter of green hydrogen and Ammonia to Asian countries such as Japan, South Korea, etc and Europe.

Significance of Hydrogen Energy

In the 21st century, rising temperature and global warming are the major issues before the world and this can only be addressed by keeping a strong check on pollution levels and cutting fossil fuels to address energy demands. As per the data, In India, around 1.5 billion tons of carbon emission is expected to be reduced in 2021 with the use of hydrogen energy for industrial and commercial purposes only. In such a scenario, the significant features of hydrogen energy will prove to be a masterstroke to address the rising challenges of climate change for the country:



National Hydrogen Mission: To Develop a Sustainable Alternative fuel to Energise India's Growth

Hydrogen is an element that has the highest energy by weight but the lowest energy in terms of volume and can also be stored in a variety of forms such as liquid, solid-state, and gaseous states in cryo-compressed tanks. Thus, to fulfill the renewable energy requirements of the country, the pilot projects of producing green hydrogen and green ammonia for the use as fuel are on priority.

Currently, these are used by oil refineries, ammonia and methanol production industries, and steel industries in India. But under the mission, the possibilities to find opportunities for large-scale production and storage of green hydrogen to cater to the needs of the evolving Indian transportation sector such as shipping and aviation. It can thus provide an option as a low carbon fuel source and help in cutting the imports of fossil fuels significantly.



India as one of the rising global power, is also participating in various missions across the globe to fast track the R&D in the field of green hydrogen and to resolve the various bottleneck issues in the areas of technology, production, storage, supply chain, and use of hydrogen as a renewable fuel source. The participation is inline with the contemporary Indian energy market scenario and India's future clean energy requirements. Thus, all this can bring momentum to the National Hydrogen Mission of India by leveraging the required technology and research support on its way of producing 3/4th of hydrogen in the country through renewable sources and making a way for a clean and green India.



Revised Policy for Bio Mass Utilization for Power Generation in Coal Based Power Plants: Sustainable Solution to Utilize Agro Residue

The Ministry of Power has recently revised the existing policy on “Biomass Utilization for Power Generation Through Co-firing in Coal Based Power Plants” to mandatory blend the biomass pellets primarily produced from agriculture residue in the coal-based thermal plants. Thus, a subtle tweak in the policy has been done to keep the check on the burning of agriculture residue on farms which in turn increases the air pollution levels every year.

The revised policy has the following features to address the utilization of agriculture residue in power generation through coal-based power plants and provide additional income to the farmers through a single policy implementation:

Thermal Plants in the country are required to use 5% Blend of Biomass Pellets, which is primarily from agriculture residue along with the coal with effect from one year from the policy issue.

The blending level will increase to 7% (Except for Entities having Ball and Tube Mill) with effect from two years after the issue of this revised policy guidelines.

The Minimum contract period will be of 7 years for procurement of biomass by generating plants to check the delays in award of contract for the same and develop long term supply chain of biomass pellets.

The Ministry's move to set up the SAMARTH initiative as “Sustainable Agrarian Mission on Use of Biomass in Coal-based Thermal Power Plants” is also helping to effectively address the burning of agriculture residue or biomass on the farmland and increase temperature and air pollution levels in the country, especially in Northern India. Parallely, as per the finance minister, the biomass blending will also reduce the carbon footprint generated by coal-based thermal power plants by around 38 MMT on annual basis and thus needs this priority revision in place to tap multiple benefits across the sectors.

The policy is well designed to address multiple issues of power generation as well as the agriculture sector and provide opportunities for various stakeholders in a greener way. The corresponding

Revised Policy for Bio Mass Utilization for Power Generation in Coal Based Power Plants: Sustainable Solution to Utilize Agro Residue

mission also states the following objectives to create positive change in a span of a minimum of five years:

To increase the co-firing level of biomass pellets from current 5% to higher levels to generate carbon neutral power through coal based power plants

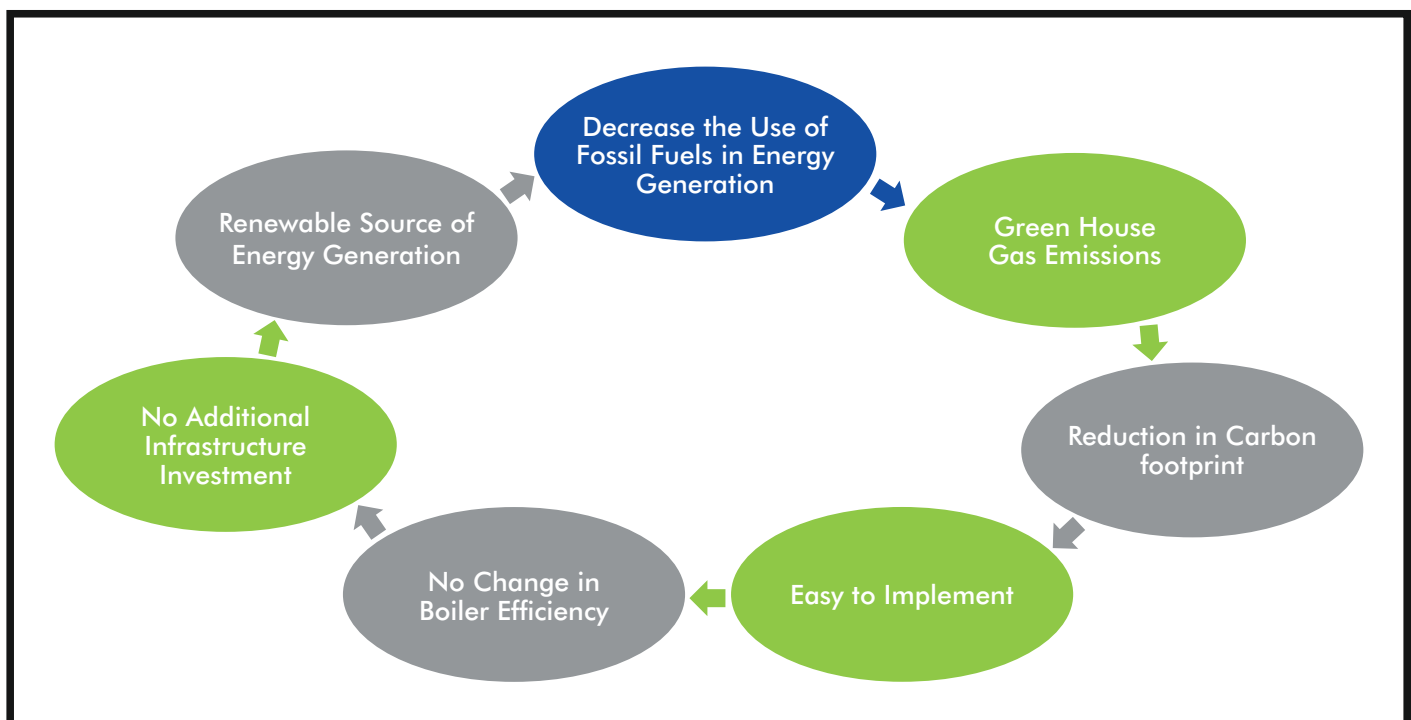
Increase R&D activities related to boiler design in thermal power plants to make them ready to handle high amount of silica and alkalis with increasing blending levels of biomass pellets.

To make supply chain and transportation upto the thermal power plants for biomass pellets and agriculture residue smoother by addressing the bottlenecks

Taking Consideration of regulatory affairs of biomass co-firing

The biomass co-firing levels are on increase through such policy interventions and thus able to tap the benefits as under

Benefits of Biomass Co-firing



Revised Policy for Bio Mass Utilization for Power Generation in Coal Based Power Plants: Sustainable Solution to Utilize Agro Residue

To achieve the best results from this sustainable mission and policy revision, its implementation is governed by a Steering Committee comprising the Secretary of the Ministry of Power (As Head of the Committee) along with the representatives of various allied ministries such as the Ministry of New and Renewable Energy, Ministry of Petroleum and Natural Gas, etc and other logistic and infrastructure support stakeholders such as NTPC, Central Electricity Authority, etc.

Thus, the use of biomass pellets in thermal power plants will provide an additional push to achieve the targets under the National Clean Air Programme of India and significantly address the unemployment issue in the rural areas of the country. The policy intervention will help India to transition to renewable energy sources with cost-effectivity. It will also pave the way for the promotion of technology developments in the area of grid power generation and drive each stakeholder towards clean energy sources in a short time.



Resources

1. https://mnre.gov.in/img/documents/uploads/file_f-1639111951695.pdf
2. <https://pib.gov.in/PressReleasePage.aspx?PRID=1813809>
3. <https://pib.gov.in/PressReleasePage.aspx?PRID=1812028>
4. <https://pib.gov.in/PressReleasePage.aspx?PRID=1808349>
5. <https://pib.gov.in/PressReleaselframePage.aspx?PRID=1795250>
6. <https://www.saurenergy.com/solar-energy-news/mnre-extends-re-research-and-technology-development-programme>
7. <https://pib.gov.in/PressReleaselframePage.aspx?PRID=1808350>
8. <https://pib.gov.in/PressReleasePage.aspx?PRID=1696498>
9. <https://pib.gov.in/PressReleasePage.aspx?PRID=1799067>
10. <https://static.pib.gov.in/WriteReadData/specificdocs/documents/2022/mar/doc202232127201.pdf>
11. https://powermin.gov.in/sites/default/files/Green_Hydrogen_Policy.pdf
12. <https://pib.gov.in/PressReleaseDetail.aspx?PRID=1812023>
13. <https://mnre.gov.in/new-technologies/hydrogen-energy>
14. <https://pib.gov.in/PressReleasePage.aspx?PRID=1788648>
15. <https://www.iea.org/policies/13949-national-hydrogen-mission>
16. <https://www.niti.gov.in/verticals/energy>
17. <https://pib.gov.in/PressReleasePage.aspx?PRID=1742793>
18. <https://www.ibef.org/research/newstrends/india-s-fight-against-climate-change-will-be-aided-by-the-national-hydrogen-mission>
19. <https://www.investindia.gov.in/siru/green-hydrogen-indias-sunrise-sector>
20. <https://idsa.in/issuebrief/india-national-hydrogen-mission-n-gcc-lpriya-270821>
21. <https://pib.gov.in/PressReleaselframePage.aspx?PRID=1808350>
22. <https://pib.gov.in/PressReleasePage.aspx?PRID=1790832>
23. <https://pib.gov.in/PressReleasePage.aspx?PRID=1693907>

About Us

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 delivers the pragmatic, valued solutions expected in the markets of today. Quality and Service delivery are key elements of AG Group corporate philosophy and are upheld by a professional management team. The highly motivated, experienced and multi-disciplined team, plans, develop and implement that meet, and often exceed client expectations. We can synergies our experience with your projects to make it a success.



Disclaimer

The documentation created is by using information available on public domain as general in nature. It does not address to any particular situation or source. However, the information received from these sources is believed to be reliable. This information might be partially amended and it's also subject to revision.

A G Horizon Pvt. Ltd. does not make any warranties, expressed or implied, as to the accuracy of such information. We do not accept any liability whatsoever, for any direct or consequential loss arising from this document or its contents.

Contact Details

+91-11- 45356553, 54 +91-9810046249
 info@aggrp.in www.aggrp.in
 ★ New Delhi ★ Mumbai ★ Hyderabad ★ Imphal

