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A Review on Government initiatives to improve the Air Quality and Efficient use of Electricity

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Abstract: In today's society, the value of air purification and energy and water conservation cannot be emphasised. Air purification is crucial for fostering wellbeing and reducing a range of respiratory and health issues brought on by air pollution. Next, given the worldwide dearth of freshwater resources, water conservation is crucial. Finally, energy efficiency and the reduction of carbon emissions can only be achieved with power savings. Energy-saving practises may be used to protect natural resources and build a more sustainable future. The critical need to prioritise air purification, water conservation, and energy efficiency is emphasised in this abstract in order to maintain public health, preserve the environment, and advance sustainable development.

The article examines the remedial strategies that governments may use to address the significance of air pollution control, water conservation, and energy efficiency. This study emphasises the necessity of policy interventions and regulatory frameworks in producing sustainable results, while also acknowledging the crucial role that governments play in environmental stewardship. First, the government may enforce higher emissions requirements for businesses, encourage the use of renewable energy sources, and encourage the development of cleaner technology to reduce air pollution. Governments can impose water consumption limitations, encourage effective irrigation systems, and spend money on infrastructure for water collecting and recycling as further water conservation measures. Governments can also set energy efficiency requirements, offer financial incentives for implementing energy-saving measures, and invest in renewable energy infrastructure in the context of power conservation. Governments may help to improve air quality, ensure water security, and lower greenhouse gas emissions by giving these corrective measures priority. In order to promote a sustainable and resilient future, this abstract emphasises the responsibility of governments in putting into place efficient policies and procedures to address the significance of cleaning the air, preserving water, and conserving power.

Keywords: Remedial Action, Government, Air Pollution, Water conservation, Water Recycling, Harvesting Infrastructure, Energy Efficiency Standards, Financial Incentives,

Renewable Energy Infrastructure, Air Quality Improvement.

Introduction:

In India, environmental rules and restrictions were initially implemented during British colonial rule in 1853 as a result of the Shore Nuisance Act. The Bengal Smoke Nuisance Act from 1905 and the Bombay Smoke Nuisance Act from 1912 were the first laws reportedly intended to reduce air pollution. While the rules that the authorities had hoped for were not produced by these laws, they did set the groundwork for the environmental laws and regulations that are currently in use in the nation. India inherited a number of British laws after gaining its independence from the British Empire, including those specifically related to environmental preservation. In 1976, India's constitution amendment through Article 48(A) of Part IV, which says: "The State shall endeavour to protect and improve the environment and to safeguard the forests and wildlife of the country." and through Article 51A(g), The state currently has various environmental laws in place according to the constitution.Other pollution and environment laws adopted include the following:

- In the subsection on pollution prevention and control:
- The 1974 Water Act
- The Environmental Protection Act of 1986, prompted by the Bhopal Gas Tragedy.
- The Forest Conservation Act of 1980
- The Air Act of 1981
- The Regulation and Control Rule for Noise Pollution of 2000.

According to the 2019 World Air Quality Report published by the pollution monitor IQ Air and Greenpeace, India is responsible for two-thirds of the world's most polluted cities, including 21 of the 30 most polluted, 14 of the worst 20, and 6 of the most 10. The comparison of PM2.5 values forms the basis of the ranking. When population is taken into consideration, Bangladesh has the highest average PM2.5 pollution levels, followed by Pakistan, while India is ranked fifth.

Around 9 million preventable deaths worldwide occur each year as a result of air pollutants like PM 2.5, or tiny particulate matter. Unfortunately, India is home to 14 of the world's 20 most polluted cities. Particularly dangerous air may be found in Noida, Delhi, and Ghaziabad. When New Delhi's post-Diwali air quality index reached 500, the "severe plus emergency" category, it was decided to declare a public health emergency.

Challenges Faced in the Indian scenario:

Serious hazards to human health, financial resources, and the environment as a whole are posed by air pollution. Lack of India-specific emission factors for a number of air contaminants might provide a significant obstacle to creating accurate emission inventories for Indian cities. The rising travel demand in the nation is not taken into account when assessing the utilisation parameters for cars, which show how frequently a vehicle is utilised during a specific period of time. The predicted air pollution emissions become questionable as a result. Another significant problem that makes it challenging to overcome the current obstacles is irresponsible human

behaviour. The ineffective traffic management system and lack of public interest in emission control measures are two significant barriers to achieving the aim of clean air. A major loss of investments in infrastructure facilities might occur from the public's disinterest in some government actions.

INITIATIVES BY THE GOVERNMENT:

A. National Clean Air Programme

An extended, time-limited, national policy to comprehensively address the country's growing air pollution problem. NCAP is projected to cost a total of Rs 637 crore. Along with expanding the nationwide network of air quality monitoring stations, a comprehensive management strategy is needed for the prevention, control, and mitigation of air pollution.

Intensive campaign to raise awareness, provide training, and create capacity, with a focus on expanding the staff and physical infrastructure of the Central Pollution Control Board (CPCB) and the State Pollution Control Boards (SPCBs). In order to ensure prompt, effective action, a reliable, transparent, and accountable data gathering and monitoring system must be in place. the expansion of monitoring stations, the publication of data, and public involvement in planning and execution. establishing an air information centre with data analysis, resource allocation studies, a national inventory, rural monitoring stations, and indoor air quality standards.

B. The Central Pollution Control Board (CPCB)

The Ministry of Environment, Forests, and Climate Change (Mo.E.F.C.) oversees it as a statutory entity. The Water (Prevention and Control of Pollution) Act of 1974 allowed for its establishment. It also has authority and responsibility under the 1981 Air (Prevention and Control of Pollution) Act. Under the guidelines of the Environment (Protection) Act of 1986, it offers technical assistance to the Ministry of Environment and Forests. By offering advice and technical support, it coordinates the work of the State Pollution Control Boards and arbitrates conflicts between them. It is the country's top organisation for pollution control.

C. LiDAR (Light Detection and Ranging):

Utilised to vertically monitor Delhi-NCR's air quality, To monitor a pollutant's development over time, In order to find organic pollution leaks in industrial settings like oil refineries and storage facilities, In order to determine the height and structure of mixing layers, To gauge the movement and dispersion of plumes or particle clouds, To assess smoke-plume opacity remotely.

D. Climate & Clean Air Coalition

Reduces short-lived climate pollutants (SLCP) across sectors to bring together governments, public society, and the commercial sector in their commitment to safeguarding the climate and improving air quality in the next decades.

E. National Air Quality Index (AQI)

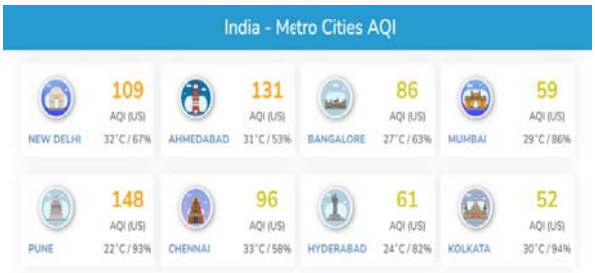
Each day, air quality is reported using the AQI index. It reveals if the air is clean or contaminated. The degree of air pollution and the resulting health concern increase as the AQI

number rises. According to research, the main sources of PM 2.5 during the summer are the transportation sector (20%), industry (20%), and dust and building activities (35%).

Table: 1 AQI Interpretation

AQI	Interpretation	Health Impacts
0 – 50	Good	Minimal impact
51 – 100	Satisfactory	Minor breathing discomfort for sensitive people
101 – 200	Moderate	Breathing discomfort for people with lungs, asthma, and heart diseases
201 – 300	Poor	Breathing discomfort to most people on prolonged exposure
301 – 400	Very Poor	Respiratory illness on prolonged exposure
401 – 500	Severe	Affects healthy people and seriously impacts those with existing diseases

Table: Indian Cities Ranked under AQI Index



*Source: IQAir. (2023, July)

F. Centre-run System of Air Quality and Weather Forecasting and Research (SAFAR)

The Indian Institute of Tropical Meteorology in Pune created it locally. The India Meteorological Department (IMD) is in charge of it. The goal is to deliver a 72-hour weather prediction in addition to a real-time, color-coded air quality index that is available around-the-clock. A further objective is to provide health advisories so that citizens are well-prepared.

G. GreenCo Rating System

India's Intended Nationally Determined Contribution (INDC) document mentions the GreenCo Rating system. It is employed by Indian business and the private sector as a pro-active voluntary activity to address climate change. Confederation of Indian Industry (CII) created it. The CII is a non-profit, business-led, and industry-managed organisation.

Access to public transport is increased, the fleet of vehicles is electrified, emissions from factories and power plants are increased or priced, and new technology alternatives to polluting industries like steel and cement are developed. All of these actions result in cleaner air (and lower carbon emissions). Health crises

have improved air quality. It is the obligation of the international community to advance that.

Schemes to Promote Energy Conservation and Energy Efficiency:

1. Energy Conservation Building Codes (ECBC)
2. Demand Side Management (DSM) Scheme
3. School Education Program
4. National Mission for Enhanced Energy Efficiency (NMEEE)
5. Bachat Lamp Yojana (BLY)
6. Super-Efficient Equipment Programme (SEEP)
7. Energy Efficiency Financing Platform (EEFP)
8. Framework for Energy Efficient Economic Development (FEEED)
9. Partial Risk Guarantee Fund for Energy Efficiency (PRGFEE)
10. Venture Capital Fund for Energy Efficiency (VCFEE)
11. National Energy Conservation Awards
12. Promotion of Electric vehicle - National Electric Mobility Mission Plan (NEMMP): In the Union Budget for 2015–16, the government introduced the Faster Adoption and Manufacturing of Hybrid & Electric Vehicles (FAME India) programme under NEMMP 2020. The programme would provide both hybrid and electric car adoption and market development a significant boost in the nation. The programme focuses on four areas: demand generation, pilot projects, technology development, and charging infrastructure.
13. Promotion of Energy Efficient LED Bulbs – UJALA scheme
14. School Education Program by Bureau of Energy Efficiency and NCERT

Conclusion:

Governments are stepping up their efforts to address environmental issues. These programmes demonstrate a dedication to societal well-being, public health, and sustainable development. To assure their efficacy and modify them for changing environmental issues, it is crucial to keep track of and evaluate these activities. We can work together to build a cleaner, more sustainable world for future generations.

The Perform, Achieve and Trade (PAT) plan is a distinctive and ground-breaking effort that may have never been done before in history. From a business standpoint, PAT would develop into a desirable model for other nations to emulate for their own energy efficiency schemes. The plan for standards and appliance and equipment labelling has transformed the market.

A comprehensive approach to emission control is necessary for success. It should combine effectively implemented scientific theories with technical breakthroughs, benefit the economy, and have popular support. In the preceding sections, several actions done by the Indian government to reduce air pollution in Indian cities have been mentioned. Only if they are successfully implemented in the upcoming years will these measures have any chance of combating pollution.

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