

# CURRENT AFFAIRS

26 OCTOBER 2022



## TOPIC: INTERNATIONAL BODIES

**World in 'first truly global energy crisis,' says IEA's Birol**

### International Energy Agency

- ✓ It is an autonomous Intergovernmental Organisation established in 1974 in Paris, France.
- ✓ It mainly focuses on its energy policies which include economic development, energy security and environmental protection. These policies are also known as the 3 E's of IEA.
- ✓ IEA Clean Coal Centre is dedicated to providing independent information and analysis on how coal can become a cleaner source of energy, compatible with the UN Sustainable Development Goals.

## Major Reports:

- ✓ World Energy Outlook Report.
- ✓ World Energy Investment Report.
- ✓ World Energy Statistics.
- ✓ World Energy Balances.
- ✓ Energy Technology Perspectives.
- ✓ India Energy Outlook Report.



## TOPIC: POLLUTION

# Deepavali fireworks suffocate city; AQI reaches severe levels in multiple localities

### Air Quality Index

- ✓ The measurement of air quality is based on eight pollutants, namely: Particulate Matter (PM10), Particulate Matter (PM2.5), Nitrogen Dioxide (NO<sub>2</sub>), Sulphur Dioxide (SO<sub>2</sub>), Carbon Monoxide (CO), Ozone (O<sub>3</sub>), Ammonia (NH<sub>3</sub>), and Lead (Pb).
- ✓ AQI has six categories of air quality. These are: Good, Satisfactory, Moderately Polluted, Poor, Very Poor and Severe.
- ✓ It has been developed by the CPCB in consultation with IIT-Kanpur and an expert group comprising medical and air-quality professionals.

## TOPIC: INDEPENDENT BODIES

**In another CCI rap,  
Google fined ₹936 cr.**

### Competition Commission of India (CCI)

- ✓ Its a statutory body of the Government of India responsible for enforcing the Competition Act, 2002, it was duly constituted in March 2009.
- ✓ The Monopolies and Restrictive Trade Practices Act, 1969 (MRTP Act) was repealed and replaced by the Competition Act, 2002, on the recommendations of Raghavan committee.
- ✓ Competition Commission of India aims to establish a robust competitive environment.

## Functions of CCI.

- ✓ To eliminate practices having adverse effect on competition, promote and sustain competition, protect the interests of consumers and ensure freedom of trade in the markets of India.
- ✓ To give opinion on competition issues on a reference received from a statutory authority established under any law and to undertake competition advocacy, create public awareness and impart training on competition issues.

# TOPIC: AGRICULTURE

## *A renewable energy revolution, rooted in agriculture*

**T**he beginnings of a renewable energy revolution rooted in agriculture are taking shape in India with the first bio-energy plant of a private company in Sangrur district of Punjab having commenced commercial operations on October 18. It will produce Compressed Bio Gas (CBG) from paddy straw, thus converting agricultural waste into wealth.

It has become common practice among farmers in Punjab, Haryana and western Uttar Pradesh to dispose of paddy stubble and the biomass by setting it on fire to prepare fields for the next crop, which has to be sown in a window of three to four weeks. This is spread over millions of hectares. The resultant clouds of smoke engulf the entire National Capital Territory of Delhi and neighbouring States for several weeks between October to December. This plays havoc with the environment and affects human and livestock health.

### Some measures

The Government of India has put in place several measures and spent a lot of money in tackling the problem. The Commission for Air Quality Management in National Capital Region and Adjoining Areas (CAQM) had developed a framework and action plan for the effective prevention and control of stubble burning. The framework/action plan includes in-situ management, i.e., incorporation of paddy straw and stubble in the soil using heavily subsidised machinery (supported by crop residue management (CRM) Scheme of the Ministry of Agriculture and Farmers Welfare). Ex-situ CRM efforts include the use of paddy straw for biomass power projects and co-firing in thermal power plants, and as feedstock for 2G ethanol plants, feed stock in CBG plants, fuel in industrial boilers, waste-to-energy (WTE) plants, and in packaging materials, etc.

Additionally, measures are in place to ban stubble burning, to monitor and enforce this, and initiating awareness generation. Despite these efforts, farm fires continued unabated.



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In Punjab, a project to use paddy straw to produce compressed bio gas is one that is replicable across India, and can transform the rural economy

Though paddy stubble burning in northwest India has received a lot of attention because of its severity of pollution, the reality is that crop residue burning is spreading even to rabi crops and the rest of the country. Unless these practices are stopped, the problem will assume catastrophic proportions.

### A project in place

In its search for a workable solution, NITI Aayog approached FAO India in 2019 to explore converting paddy straw and stubble into energy and identify possible ex-situ uses of rice straw to complement the in-situ programme. In technical consultations with the public and private sectors, the FAO published its study on developing a crop residue supply chain in Punjab that can allow the collection, storage and final use of rice straw for other productive services, specifically for the production of renewable energy.

The results suggest that to mobilise 30% of the rice straw produced in Punjab, an investment of around ₹2,201 crore (\$309 million) would be needed to collect, transport and store it within a 20-day period. This would reduce greenhouse gas (GHG) emissions by about 9.7 million tonnes of CO<sub>2</sub> equivalent and around 66,000 tonnes of PM<sub>2.5</sub>. Further, depending on market conditions, farmers can expect to earn between ₹550 and ₹1,500 per ton of rice straw sold, depending on market conditions.

A techno-economic assessment of energy technologies suggested that rice straw can be cost-effective for producing CBG and pellets. Pellets can be used in thermal power plants as a substitute of coal and CBG as a transport fuel. With 30% of the rice straw produced in Punjab, a 5% CBG production target set by the Government of India scheme, "Sustainable Alternative Towards Affordable Transportation (SATAT)" can be met. It could also increase local entrepreneurship, increase farmers' income and reduce open burning of rice straw. In Punjab, Sangrur, Ludhiana and Barnala were recommended as the most promising districts for

these interventions. Verbio India Private Limited, a 100% subsidiary of the German Verbio AG, got approval from the Punjab government in April 2018 to set up a bio-CNG project that will utilise about 2.1 lakh tonnes of a total of 18.32 million tonnes of paddy straw annually. The plant is in Bhutal Kalan village of Lehra Gaga tehsil in Sangrur district, Punjab. The plant will use one lakh tonnes of paddy straw produced from approximately 16,000 hectares of paddy fields. Paddy residue will be collected from this year to produce 33 tons of CBG and 600-650 tonnes of fermented organic manure/slurry per day – this will reduce up to 1.5 lakh tonnes of CO<sub>2</sub> emissions per year.

### Many benefits

Thus, from paddy stubble, CBG valued at ₹46 per kg as per the SATAT scheme will be produced. Paddy straw from one acre of crop can yield energy output (CBG) worth more than ₹17,000 – an addition of more than 30% to the main output of grain. This initiative is an ideal example of a 'wealth from waste' approach and circular economy.

There are several other benefits: the slurry or fermented organic manure from the plant (CBG) will be useful as compost to replenish soils heavily depleted of organic matter, and reduce dependence on chemical fertilizers. The plant will also provide employment opportunities to rural youth in the large value chain, from paddy harvest, collection, baling, transport and handling of biomass and in the CBG plant. This will boost the economy of Punjab. It is pertinent to mention that straw from many other crops contains higher energy than paddy straw.

This appears to be a first win-win initiative in the form of environmental benefits, renewable energy, value addition to the economy, farmers' income and sustainability. This initiative is replicable and scaleable across the country and can be a game changer for the rural economy.

*The views expressed are personal*



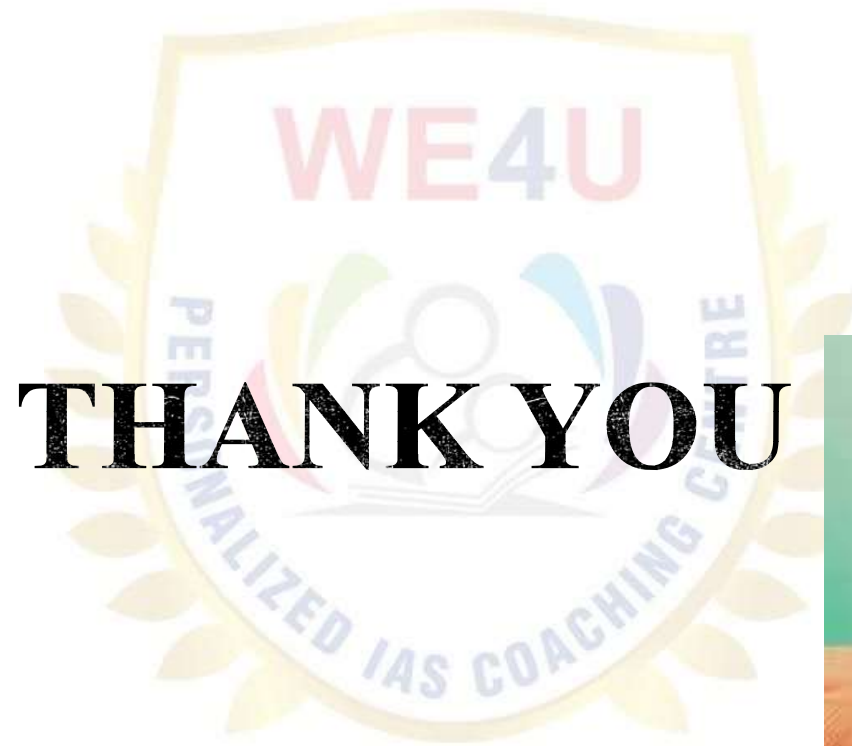


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**THANK YOU**

