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Commission for Air Quality Management in  
NCR and Adjoining Areas

Indian Oil Bhavan, 1, Sri Aurobindo Marg,  
Yusuf Sarai, New Delhi 110016

**Dated: 28<sup>th</sup> July, 2021**

**Advisory No: 6 of 2021**

To

The Chief Secretary,  
Government of Haryana,  
4<sup>th</sup> Floor, Haryana Civil Secretariat,  
Sector-1, Chandigarh -160019

**ADVISORY FROM THE COMMISSION**

**Subject: Ex-situ stubble management for tackling the problem of stubble burning: reg.**

1. Whereas, the Commission in various meetings held with the representatives of State Governments of Punjab, Haryana, Uttar Pradesh, Rajasthan, Government of NCT of Delhi and other stakeholders/knowledge institutions like Indian Council of Agricultural Research(ICAR), Indian Agriculture Research Institute (IARI), Indian Space Research Organization (ISRO), NGOs, and civil society groups etc. working in the National Capital Region (NCR) has observed that Paddy stubble burning has been a matter of grave concern in view of its adverse impact on air quality in NCR ;
2. Whereas, the Commission has provided an effective framework and steps to be taken to tackle the problem of stubble burning to the State Governments of Punjab, Haryana, Uttar Pradesh, Rajasthan and GNCTD, and issued Directions dated 10<sup>th</sup> June, 2021 to prepare a

detailed/comprehensive plan of action, based on the contours contained in the frame-work provided to tackle the problem of stubble burning;

3. Whereas, ***Ex-situ Crop Residue management (CRM)*** is one of the vital strategies of the framework to tackle the problem of stubble burning;
4. Whereas, a meeting dated 13<sup>th</sup> July, 2021 on the subject of *Ex-situ* stubble management was chaired by Chairperson of Commission and attended by the representatives of the State Governments of Punjab, Haryana and Uttar Pradesh, Ministries of Power, Agriculture and Farmers Welfare, New and Renewable Energy, Government of India and National Thermal Power Corporation (NTPC) and the meeting *inter alia* discussed utilization of stubble in Coal based Thermal Power Plants;
5. Whereas, the major alternate usage of paddy straw as fuel is in thermal power plants, waste to energy plants, brick kilns etc. and also as end products as pellets/ briquettes, bio-fuels (bio-ethanol, compressed bio-gas), particle board, compressed agri-panel, panel furniture, packaging material etc. was highlighted in the meeting;
6. Whereas, the Commission had emphasised and reiterated that the major challenge, in making the *ex-situ* options workable is to ensure a continuous and assured availability of paddy straw to the various end users and to develop a sound policy framework for robust supply chain mechanism covering both the supply side and demand side requirements;
7. Whereas, NTPC a potential major end user of the paddy straw in Thermal Power Plants in the form of pellets/ torrefied pellets, *inter-alia* highlighted that :

- i) It is technically feasible and implementable to co-fire bio-mass pellets with coal in proportion upto 5-10% in Thermal Power Plants ;
- ii) There is no technical constraints in utilising paddy straw pellets for co-firing in super critical plants and such co-firing is already being done in super-critical boilers in three NTPC plants ;
- iii) NTPC is expanding the use bio-pellets in thermal power plants and actions have been initiated for the use bio-mass pellets in 17 plants to utilise about 5 million tonnes of bio-mass per annum;
- iv) To promote supply of paddy straw/ bio-mass pellets to the thermal power plants by private entrepreneurs and vendors, State Governments should take necessary steps to create an ecosystem for this purpose ;
- v) NTPC is committed to utilise paddy straw pellets which are made available to them at the gate of the plants;
- vi) Since many thermal power plants in the states of Punjab and Haryana are operated by State Government agencies, they may also use biomass pellets in such power plants and considering the proximity, the transportation and logistics costs would be competitive.

- 8. Whereas, Ministry of Power, Government of India has launched a National Biomass Mission for utilization of biomass with representatives from CEA, NTPC, DVC and NLC, where NTPC will provide the logistic and infrastructural support for the Mission;
- 9. Whereas, the Commission was apprised that Ministry of New and Renewable Resources, Government of India have provisions for providing subsidies for various bio-fuel projects and soft loans for supporting biomass supply chains ;

10. Whereas, there is a compelling necessity to promote *ex-situ* crop residue management and create a policy framework and eco-system for the purpose;

11. And therefore the State Government of Haryana is advised to take steps and initiatives in this regard and such steps *inter-alia* may include :-

- (i) Developing and Piloting small scale, affordable equipment (cutters, rakers, balers) that can be used in a versatile manner and across seasons through shared economy models;
- (ii) Enabling entrepreneurs to procure and share residue management equipments in greater numbers;
- (iii) Developing low cost, long-term paddy straw storage facilities by creating a convergence of subsidies, loan guarantees, lowering collateral etc.;
- (iv) Demonstrating price discovery model of paddy residue for farmers, by connecting a variety of end-users across the paddy straw value chain with entrepreneurs / FPO;
- (v) Demonstrating the profitability of paddy straw residue end use;
- (vi) Deploying and scaling decentralized innovations, which deliver higher value for paddy straw through multiple sustainable high-value end products.

12. And further the State Government of Haryana is advised to take note that paddy straw based biomass pellets and torrefied charcoal can be successfully used in thermal power plants for co-firing upto a blend ratio of



10 %, without any boiler design modifications and therefore initiate the following steps for utilisation of paddy straw in thermal power plants :-

- (i) To formulate a policy framework for ensuring assured and continuous supply of raw materials to *ex-situ* plants utilizing paddy crop residue.
- (ii) To use paddy straw pellets as fuel for co-firing in thermal power plants operated by State Governments in NCR, since huge quantities of straw are available proximate to thermal power plants.
- (iii) To promote and facilitate setting up of paddy straw pelletising units / torrefying units at strategic geographical locations in the state to optimize on the supply chain logistics.
- (iv) To have detailed deliberations with NTPC for assistance in using paddy straw in thermal power plants operated by NTPC as well as TPPs operated by the States. Such a possibility may also be explored for the private power plants.
- (v) To tap the expertise of the National Biomass Mission and NTPC by State Government of Haryana for required assistance in this regard.
- (vi) To take benefit and required assistance under different schemes for *ex-situ* projects including providing subsidies and soft loans from Ministry of New and Renewable Resources, Government of India.

The Action Taken Report on the above advisory be apprised to the Commission.

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