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UK university, IIT Ropar make tech marvel to end stubble burning

Rohan Dua, TNN | Jul 3, 2013, 12:54 PM IST

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ROPAR: Finally, there is a technology to put an end to environmentally disastrous practice of hazardous stubble burning that the Punjab government has shown little urgency in tackling.

Jointly developed by a UK-based Aston University and IIT Ropar, Pyroformer — a tech marvel that takes waste products and residues (such as husks and straw) and converts them into oils, gas and biochar — was installed in three villages— Khuaspura, Hussainpur and Ladal— of the district on Tuesday.

The machine will be used for two main purposes, to extract bio-oil from wheat as well as rice straw, and run diesel engine with its blending in the ratio of 70 (diesel):30 (bio-oil).

The technology is such that the plant first converts straws into pellets, using a pelletiser, and then goes to pyroformer and condenser to convert into either of by-products: bio-oil or bio char.

TOI, in February had reported that an inexpensive prototype of a community bio-oil generation plant was being made at Punjab's first IIT as part of a research project EnergyHarvest taken by the European bioenergy research institute (EBRI) of Aston University in Birmingham.

The functional unit, which will consist of pyroformer, pelletiser and a diesel engine will come at a cost of Rs 30 lakhs.

"The problem of open field burning and its contribution to climate Change had become serious. The work being undertaken through EnergyHarvest could help to eradicate open field burning and transform life in rural India forever," said visiting professor Robert Berry, executive dean, school of engineering and applied sciences, Aston University.

On an average, 23.5 million are put on fire by the farmers every year. And, an estimated 12 mega-tonnes of CO₂, a greenhouse gas, is said to be released in the air through this .

On November 5 last year, the NASA images had shown Punjab pockmarked with red dots which corresponded to paddy stubble blazes deliberately lit by farmers

Besides, the environment experts also say that the soil also loses its fertility and farmer-friendly insects and micro nutrients.

Already, the oil being extracted from paddy stubble at the Khuaspura unit is being used to run a generator which is lighting up a whole school in a nearby village.

Bio-char - a form of coal will be used both as a fuel in small domestic stove or as fertiliser while bio gas produced would be used to produce electricity or burnt for light and heat.

"This technology also has the potential to stimulate growth and provide a cost-effective, reliable and sustainable form of decentralised power generation to address the local needs of heat and energy," said M K Surappa, director, IIT Ropar.

At present, the project, which seeks to bring end of has been installed in the villages as part of pilot operations at free of cost.

The research team of IIT Ropar and Aston are now looking for assistance from the state government.