

**GOVERNMENT OF INDIA  
SCIENCE AND TECHNOLOGY  
LOK SABHA**

UNSTARRED QUESTION NO:4885

ANSWERED ON:13.08.2014

FUEL FROM PLASTIC WASTE

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**Will the Minister of SCIENCE AND TECHNOLOGY be pleased to state:**

- (a) whether certain countries are producing liquid hydrocarbon oil from plastic waste;
- (b) if so, the details thereof;
- (c) whether any research has been undertaken in the country in this regard;
- (d) if so, the details thereof; and
- (e) the current status of plastic to fuel technology in the country?

**Answer**

MINISTER OF STATE (INDEPENDENT CHARGE) OF THE MINISTRY OF SCIENCE AND TECHNOLOGY; MINISTER OF STATE (INDEPENDENT CHARGE) OF THE MINISTRY OF EARTH SCIENCES; MINISTER OF STATE IN THE PRIME MINISTER'S OFFICE; AND MINISTER OF STATE IN THE MINISTRY OF PERSONNEL, PUBLIC GRIEVANCES AND PENSIONS (DR. JITENDRA SINGH)

(a) & (b): Yes Madam. A number of countries including USA, Germany, Japan, Australia and United Kingdom (UK) etc. are working on development of lab scale technologies for conversion of plastic waste in to liquid hydrocarbon oil. A company based in New York , USA has pioneered the development of a process that drives ultra-clean, ultra-low sulphur fuel which does not require further refining, directly from unwashed, unsorted waste plastics. Approximately 85 to 90 percent of the hydrocarbon composition in the feedstock is converted into a "near diesel" fuel, while about 8 percent is converted to a usable off gas much like natural gas. In addition, only one percent of the plastic becomes residue, and that residue does not contain any highly toxic elements and is safe for landfill disposal.

Germany has also developed such technology on laboratory scale to convert plastic waste in to liquid hydrocarbon oil. The Thermo catalytic Low Temperature Converter (Loop Reactor) has been demonstrated in the 1980's by the University of Applied Sciences in Tübingen and in 2006 by the University of Applied Sciences in Giessen-Friedberg.

In addition to the above, a Japanese company has developed a technique to convert plastic waste in to oil and electricity using the recyclable plastic. The Company has installed small demonstration unit in Hiratsuka city, Japan.

(c) & (d): The CSIR institute - Indian Institute of Petroleum (IIP), Dehradun has developed a technology for the conversion of waste plastic into petroleum products after nearly a decade long experimental research. Gas Authority of India Ltd. has sponsored the entire project for developing a combination of catalyst which can convert plastic either into gasoline or diesel or aromatics along with LPG as a common byproduct. The unique feature of the technology is that liquid fuel, gasoline and diesel, meets Euro-III fuel specifications and different products can be obtained from the same raw material by simply changing the catalysts and operating parameters.

(e) Indian Institute of Petroleum, Dehradun (IIP) is exploring the economic viability of the technology in order to refine the technology, so that it may be available to public for future use.