

(1)	(2)	(3)	(4)
5.	Setting up / construction of around 1174 numbers of pre-fabricated Kitchen-cum-Store under Mid-day Meal at various locations in Manipur	Supported setting up/construction of around 1174 numbers of pre-fabricated Kitchen-cum-Store under Mid-day Meal at various locations in Manipur, funded to the extent of 75% by Education Department, Manipur Government.	Ongoing. 462 numbers have been constructed and delivered.

Energy generation from waste plastic

1398. SHRI SANJAY RAUT: Will the Minister of SCIENCE AND TECHNOLOGY be pleased to state:

(a) whether Government is considering to bring an affordable technological process developed by our scientist in the field of energy generation from waste plastics in the country, if so, the details thereof;

(b) whether this technology would be transferred to all municipal corporations, which are facing problems of plastic wastes in their areas; and

(c) if not, the reasons therefor?

THE MINISTER OF SCIENCE AND TECHNOLOGY (DR. HARSH VARDHAN):
(a) to (c) CSIR-Indian Institute of Chemical Technology (IICT), Hyderabad has developed a catalyst that can be used for conversion of waste plastics to fuel oils. CSIR- Indian Institute of Petroleum (IIP), Dehradun in collaboration with GAIL (India) Ltd. has developed a process by which waste polyethylene and propylene type plastics can be converted into petrol and diesel. 1 kg of waste polyethylene and polypropylene can be converted to either about 600-650 ml of petrol or 700-750 ml of diesel along with LPG. The process after being developed at the laboratory scale has been successfully revalidated at bench scale, feed capacity 7-10 Kg per day and 1 ton per day pilot/demo plant is being set up along with GAIL (India) Ltd. at Dehradun for converting waste plastics to automotive grade diesel (BS IV/VI).

The Department of Biotechnology (DBT) has established Centre for Energy Biosciences at Institute of Chemical Technology (ICT), Mumbai which has developed a new technology based on Catalytic Thermo Liquification (CTL) which can overcome the difficulties in treating plastic waste. The waste plastic can be converted into hydrocarbon fuels which can be burned as such or directly blended with kerosene. It operates at less than 250 °C temperature and gives 0.8 kg of hydrocarbon fuel per 1 kg of waste plastic.

The technology developed by CSIR-Indian Institute of Petroleum (IIP), Dehradun is ready for transfer to any interested party including municipal corporations.

Knowledge networks under NMSHE and NMSKCC

1399. SHRI DEREK O' BRIEN: Will the Minister of SCIENCE AND TECHNOLOGY be pleased to state:

(a) whether Government has developed a network of knowledge institutions for studies on the Himalayan ecosystem under the National Mission for Sustaining Himalayan Ecosystem (NMSHE) and if so, the details thereof;

(b) whether Government has developed a framework for cooperation with neighbouring countries to obtain knowledge and develop strategy under the NMSHE and if so, the details thereof; and

(c) whether Government has developed knowledge networks in various areas under the National Mission on Strategic Knowledge for Climate Change (NMSKCC) and if so, the details thereof?

THE MINISTER OF SCIENCE AND TECHNOLOGY (DR. HARSH VARDHAN):

(a) Yes Sir. A network of over 70 institutions have been brought under 6 Thematic Task Forces set up under the mission anchored around six lead national institutions for carrying out studies in Himalayan Ecosystem areas. In addition, State Climate Change Cells have been set up in 11 Himalayan States for building human and institutional capacity. An Inter-University Consortium of four Universities on "The Himalayan Cryosphere: Science, and Society" has also been set up.

(b) Yes, Sir, the Government is working closely with the International Centre for Integrated Mountain Development (ICIMOD), a regional intergovernmental Centre at Kathmandu, Nepal for developing regional cooperation for knowledge sharing and learning in Himalayan ecosystem areas.

(c) Yes Sir. Six knowledge networks have been developed under the National Mission on Strategic Knowledge for Climate Change (NMSKCC). These include; two each on Climate Modeling and Climate Change and Human Health; one each on Climate Change and Coastal Vulnerability and Climate Change and Aerosols. 66 projects have been sanctioned under these network programmes.