

**GOVERNMENT OF INDIA  
NEW AND RENEWABLE ENERGY  
LOK SABHA**

UNSTARRED QUESTION NO:4225  
ANSWERED ON:18.12.2014  
ALTERNATIVE FUELS  
Singh Shri Uday Pratap

**Will the Minister of NEW AND RENEWABLE ENERGY be pleased to state:**

- (a) whether algae has the potential to provide a better fuel alternative and it can be used as fuel by converting it into ethanol;
- (b) if so, the details thereof;
- (c) whether algae soaks up carbon di- oxide in large quantities from the atmosphere and 100 to 150 kg bio-fertilizer and 90 litres of ethanol may be produced from one ton algae;
- (d) if so, the details thereof; and
- (e) the measures being undertaken by the Government to promote the use of algae?

**Answer**

THE MINISTER OF STATE FOR POWER, COAL & NEW AND RENEWABLE ENERGY (INDEPENDENT CHARGE) (SHRI PIYUSH GOYAL)

- (a)&(b): Yes, Madam. Algae are considered a potential feedstock for production of ethanol which can be used as an alternative fuel.
- (c)&(d): Yes, Madam. Department of Biotechnology (DBT) has informed that like other plants, algae use photosynthesis to harness sunlight and carbon dioxide as a carbon source for its growth. Some strains of algae can produce 100-150 kg bio-fertilizer and about 90 litres ethanol per tonne of algal biomass.
- (e): The Council of Scientific and Industrial Research (CSIR) is implementing a research and development project for production and utilization of algal biomass as well as other ligno-cellulosic biomass, for production of bio-energy. Under another research and development project, CSIR undertook cultivation of algae at 100 kg scale for production of biomass for extraction of oil for production of biodiesel for use as transport fuel. In addition, the DBT has supported a network programme on Algal Biofuels and Biodiesel. Ministries of Science & Technology and New and Renewable Energy are also supporting research and development on production of ethanol from ligno-cellulosic biomass, which is relevant to algal biomass after extraction of oil from algae.