GOVERNMENT OF INDIA
ATOMIC ENERGY
LOK SABHA

STARRED QUESTION NO:268
ANSWERED ON:22.07.2009
CONVERSION OF SEA WATER INTO POTABLE WATER
Owaisi Shri Asaduddin

Will the Minister of ATOMIC ENERGY be pleased to state:

(a) whether the sea water could be converted into potable water by using atomic energy;

(b) if so, the details thereof;

(c) whether the Government has set up any project for the purpose;

(d) if so, the details thereof including the location where such projects have been set up;

(e) the cost of conversion of sea water into potable water per litre; and

(f) the modalities worked out by the Government to ensure the cost effectiveness of such conversion?

Answer

THE MINISTER OF STATE FOR SCIENCE & TECHNOLOGY AND EARTH SCIENCES (INDEPENDENT CHARGES), PMO, PERSONNEL, PUBLIC GRIEVANCES AND PENSIONS AND PARLIAMENTARY AFFAIRS(SHRI PRITHVIRAJ CHAVAN)

(a) to (f) A statement is laid on the Table of the House.

GOVERNMENT OF INDIA DEPARTMENT OF ATOMIC ENERGY

STATEMENT REFERRED TO IN REPLY TO LOKSABHA STARRED QUESTION NO.268 BY SHRI ASADUDDIN OWAISI REGARDING CONVERSION OF SEA WATER INTO POTABLE WATER

(a) Yes, Sir.

(b) De-salination of sea water is possible by using either Reverse Osmosis (RO) or Thermal processes. Electrical and/or thermal energy from atomic power station or nuclear research reactor can be used for this purpose.

(c) Yes, Sir.

(d) Bhabha Atomic Research Centre (BARC) has developed desalination plants based on both RO as well as thermal processes.RO plants that have been developed have capacities ranging from five thousand litres per day to eighteen lakh litres per day. An 18 (eighteen) lakh litres per day capacity desalination plant operating on the RO process has been set up, as part of Nuclear Desalination Demonstration Project (NDDP) at Kalpakkam, Tamil Nadu. Multi Stage Flash (MSF) evaporation based thermal process has been demonstrated up to the level of four lakh litres per day at Trombay and a MSF plant with capacity of forty five lakh litres per day has been set up at Kalpakkam.

BARC has also set up desalination plants at Sheelgaon village in Barmer District, Rajasthan (30,000 litres/day capacity) and Satlana village in Jodhpur District, Rajasthan (30,000 litres/day capacity) in cooperation with Defence Laboratory, Jodhpur for providing drinking water from borewell/brackish water sources. Three desalination plants (5000 litres/day capacity each) have been set up in the Tsunami affected areas of Tamil Nadu for providing drinking water.

(e) The cost of conversion of seawater into potable water using the above technologies varies between 5 to 10 paise/litre depending on local conditions, quality of end product and the technology in use.

(f) The economy in scale will provide further reduction in cost when large scale plants are built. BARC has also taken up R&D projects on desalination and water purification technologies for development of cost reduction strategies through technological innovations.Some of these projects are:

i) development of membrane for RO process
ii) Advanced desalination technology studies
iii) Solar energy driven desalination systems
iv) Experimental studies for recovery of valuable elements from brine.