

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.324
TO BE ANSWERED ON 23.07.2015

CONVERSION OF SEA WATER INTO POTABLE WATER

324. KUMARI SELJA:

Will the PRIME MINISTER be pleased to state:

- (a) whether sea water can be converted into potable water by atomic energy;
- (b) if so, the details thereof including the projects set up for this purpose along with the quantity of the potable water produced by them;
- (c) the cost of conversion of sea water into potable water by using atomic energy; and
- (d) whether Government proposes to set up more such projects in the country during the current financial year, and if so, the details thereof along with the funds allocated for such projects?

ANSWER

THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND
PRIME MINISTER'S OFFICE (Dr. JITENDRA SINGH):

- (a) Yes, Sir.
- (b) Desalination of seawater is possible by using Thermal Desalination Technology and/or Membrane Technology like Reverse Osmosis (RO). Thermal and/or Electrical energy from Atomic Power Station or Nuclear Research Reactor/s can be used for this purpose. A seawater desalination plant setup as part of Nuclear Desalination Demonstration Project (NDDP) at Kalpakkam, Tamil Nadu produces 45 lakh litres of water per day by Thermal Desalination process, drawing nuclear low pressure steam from the operating Madras Atomic Power Station (MAPS) and 18 lakh litres of water per day using membrane based technology using electrical energy from MAPS grid. The plant is the largest operating hybrid nuclear desalination plant in the world. The plant produces dual quality of water – water for high-end industrial applications of quality less than 10 mg per litre of TDS (Total Dissolved Solids) and potable water of less than 500 mg per litre of TDS for drinking and other applications.
- (c) The sea water desalination plant set up at Kalpakkam is a demonstration plant. The cost of water produced depends upon many factors like cost of electricity, quality of required end product, choice of technologies, seawater quality, local infrastructure and logistics etc. On an average, the cost of conversion of seawater into desalinated water is about 10 paise per litre of water produced.
- (d) No, Sir. At present, there is no proposal before the Government to set up a sea water Desalination plant using Atomic Energy.
