GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO. 2564
ANSWERED ON 23.03.2023

Water purification technology

2564 Shri V. Vijayasai Reddy:

Will the PRIME MINISTER be pleased to state:

(a) whether it is a fact that water purification technology developed by Bhabha Atomic Research Centre has been deployed in some villages;
(b) if so, the details of the technology and the extent to which it is cost-effective along with the details of villages and States where the above technology has been provided;
(c) whether Government has any plans for making this technology commercial; and
(d) if not, the reasons therefor?

ANSWER

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

(a) Yes Sir.

(b) Based on the water quality, the type of water purification technology is selected for field deployment. The details of technologies are mentioned below:

i. Online & offline Ultrafiltration (UF)-membrane based technologies for removal of microbial contamination & turbidity.
ii. Physicochemical process assisted ultrafiltration (UF) membrane-based technology for arsenic/iron removal.
iii. Brackish Water Reverse Osmosis (BWRO)-based membrane technology for removal of salinity (TDS up to 5000 ppm) and multiple contaminants.
iv. Sea Water Reverse Osmosis (SWRO)-based membrane technology for removal of salinity (TDS: 5000 to 35000 ppm).

These membranes based technologies are indigenous and cost effective. Especially, the domestic water purifiers based on these technologies are significantly (30-40%) cheaper than the equivalent commercially available variants.

The cost of community-size units based on these indigenous membrane modules is comparable to the commercially available. Typical capital / unit cost for water technology for various capacities is mentioned below:

Sr No.	Device [Capacity: litres per Hour (LPH); Litres per day (LPD)]	Capital / unit Cost (Rs.)
i	Online-connected to tap/overhead water tank (10 LPH) Offline –gravity driven (24 LPD) UF-PoU domestic water purifier.	Around Rs. 5,000/-
ii	BWRO-PoU domestic water purifier (10 LPH)	Around Rs. 10,000/-
iii	Community-size UF-based arsenic / iron removal unit (1000 LPH)	Around Rs.10,00,000/- including infrastructure like foundation & shed with structure.
iv	Community-size RO-based unit (1000/2000 LPH) based on BWRO membranes	Around Rs.12,00,000 to Rs.15,00,000/- including infrastructure like foundation & shed with structure.
v	Community-size RO-based unit (10,000 LPH) based on SWRO membranes	Around Rs.70,00,000 to Rs.85,00,000/- depending on soil conditions & cost including infrastructure like foundation & shed with structure.

Details of water technologies deployment by BARC based on the requirements received from various villages of 7 States are mentioned below.

Sr No.	Village	State
i.	Somthana, Dist. Nanded	Maharashtra
ii.	Ichhapur, Dist. North 24 Parganas	West Bengal
iii.	Harail, Dist. Samastipur	Bihar
iv.	Balasingh, Singipur Dist. Khordha	Odisha
v.	Vatra, Dist. Anand	Gujarat
vi.	Harpur saidabad, Dist. Samastipur	Bihar
vii.	Sagargaon, Dist. Khordha	Odisha
viii.	Khardoi Border outpost, Dist. Kutch	Gujarat
ix.	Sandeep Border outpost, Dist. Kutch	Gujarat
x.	Antroli, Dist. Junagadh	Gujarat
xi.	Chikkaullarti, Bosedevarahatti, Tanigehalli, Dist.Chitradurga	Karnataka
xii.	Darlipara, Nangandehi, Dist. Gariyaband	Chhattisgarh
xiii.	Kunkeshwar, Dist. Sindhudurg	Maharashtra

(c) & (d) These technologies are listed on BARC website (Entrepreneur's corner) for technology transfer on non-exclusive basis. Technologies have been transferred to more than 14 private entrepreneurs for commercial deployment at point of use or community scale. Also, UF-membrane based water purification technologies have been transferred to many rural entrepreneurs for deployment and dissemination of technology in rural India under AKRUTI programme.

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