

# Heavy Water Technologies and Diversified Activities

Manisha Rathee,  
SO/E, HWB

---

Heavy Water Board, a constituent Industrial unit under the Department of Atomic Energy has the primary mandate of supporting the three-stage Indian Nuclear Power Programme by production of Heavy Water & speciality materials required in the front end and back end of closed Nuclear Fuel cycle.

Today, India is the largest producer of Heavy Water across the globe. HWB is successfully meeting the requirements for Indian NPP and has established itself as a reputed supplier for premium quality Heavy Water in the International market. HWB has successfully developed, demonstrated, optimized and deployed the complex production technology of Heavy Water using H<sub>2</sub>S-H<sub>2</sub>O Bi-thermal process and NH<sub>3</sub>-H<sub>2</sub> Mono-thermal process.

Furthermore, HWB has set up production facilities to produce organo-phosphorus solvents, enriched Boron Carbide pellets and Nuclear Grade Sodium to meet DAE's requirements. HWB has also ventured in to development and promotion of non-nuclear applications of HW, Deuterium gas, Oxygen-18, d-labelled compounds and Deuterium Depleted Water to name a few. In the past few years, HWB through its technology demonstration initiatives has taken on its shoulders recovery of gallium, cobalt, nickel, hydrogen, helium to name a few.

The talk will focus on this remarkable journey of HWB in making India self-sufficient in HW production, from the import of HW to its export and further venture of HWB in the various diversification activities.