

PLANNING COMMISSION  
(ENERGY DIVISION)

STUDY ON ASSESSMENT OF WATER FOOTPRINTS OF INDIA'S LONG-TERM ENERGY SCENARIOS

BACKGROUND

The Planning Commission initiated the development of an energy modeling project, India Energy Scenarios 2047 earlier this year, with energy security as the key consideration, in collaboration with energy sector experts, think-tanks and research organizations. This initiative explores a range of potential future energy scenarios for India, across energy supply sectors such as renewable energy, oil, gas, coal, and nuclear, and energy demand sectors such as transport, industry, agriculture, cooking, lighting and appliances, etc. The outcomes of this model also evaluate costs, emissions, and land-use implications for different energy scenarios.

The outcomes of India Energy Scenarios 2047 model open up opportunities to compare and explore the environmental considerations associated with different energy trajectories for India.

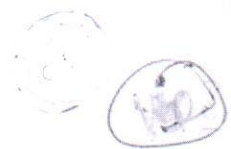
Water availability, in particular, is a key factor in assessing the feasibility of future energy scenarios for India.

- 1.1 The power generation sector is one of the largest consumers of water, and water footprints can vary significantly amongst different power generation technologies.
- 1.2 India also experiences significant regional and temporal variations rainfall and water availability, and there are large disparities in regions of high energy demand, high energy resource availability and water availability.
- 1.3 Given that water is a critical resource for India, and we have access to only 4% of the world's water resources, it is important to further study India's water-energy 'nexus' and water footprints associated with different future energy scenarios for India.

OBJECTIVES

- 2.1 To assess the water footprint of India's long-term energy scenarios
- 2.2 To investigate the potential for improving water efficiency in the sector.

TERMS OF REFERENCE

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- 3.1 The study will evaluate the regional water requirement for various scenarios  
3.2 It will also assess the applicability and economic viability of technological and non-technological measures to reduce water use in thermal power plants  
3.3 Assess the water footprints of plants using coal washing

#### DELIVERABLES

- 4.1 Draft report of the study will be discussed with stakeholders and sector experts in a workshop.
- 4.2 Study Report - 50 copies