GOVERNMENT OF INDIA
MINISTRY OF NEW AND RENEWABLE ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 6095
ANSWERED ON 01.04.2026

WATER REQUIREMENT FOR GREEN HYDROGEN PRODUCTION

6095. DR. KIRSAN NAMDEO

Will the Minister of NEW AND RENEWABLE ENERGY be pleased to state:

(a) the total projected annual water requirement for achieving the National Green Hydrogen Mission (NGHM) target of at least 5 Million Metric Tonnes (MMT) per annum of green hydrogen by the year 2030;
(b) the estimated water requirement per kilogram of green hydrogen production considered in Government planning;
(c) whether the Government has assessed freshwater availability in proposed green hydrogen hubs;
(d) if so, the proportion of projected water requirement expected to be met through freshwater, desalinated seawater and treated wastewater;
(e) the differential per-kg cost of green hydrogen production using freshwater, desalinated seawater and treated wastewater; and
(f) whether the Government's projected cost estimates for green hydrogen production assume access to freshwater and if so, whether cost projections have been revised to account for the additional capital and operational expenditure associated with desalination or wastewater treatment and if so, the details thereof?

ANSWER

THE MINISTER OF STATE FOR NEW & RENEWABLE ENERGY AND POWER

(SHRI SHRIPAD YESSO NAIK)

(a) & (b) For production of 1 kg of green hydrogen via electrolysis, around 10 litres of demineralized water is needed. Accordingly, the demineralized water requirement for achieving the National Green Hydrogen Mission (NGHM) target of 5 MMT Green Hydrogen production per annum will be about 50 Million Cubic Meter (MCM) per annum.

(c) to (f) As part of NGHM, four (4) hydrogen hubs have been recognised at Deendayal Port Kandla (Gujarat), Paradip Port (Odisha), V.O. Chidambaranar (Tuticorin) Port (Tamil Nadu) and Pudimadaka (Andhra Pradesh), in order to establish production capacities for green hydrogen and its derivatives of at least 1 lakh tonnes per annum. These four (4) designated hydrogen hubs are located in the vicinity of coastal areas and therefore have potential to utilize seawater via desalination for green hydrogen production.
The green hydrogen projects are developed predominantly through private sector participation, and the developer determines the selection of water source i.e. freshwater, or desalinated seawater, or treated wastewater, based on the local availability and techno economic considerations.
Project assessments indicate that the overall contribution of water to the cost of green hydrogen remains relatively modest, and primarily depends upon type of water available i.e. freshwater/seawater/wastewater.

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