TERMS OF REFERENCE

Green Hydrogen Opportunities Mapping

Publication date: 3rd Dec 2021
Submission date: 22nd Dec 2021
Project Location: India
Duration: 3 months

Description of procurement:

The World Bank, with an objective to allow it to help India in deepening the penetration of Green Hydrogen (Gh2) in various sectors of the economy, would like to map the demand and supply centres within the country, thereby better understanding opportunities to increase uptake of this energy vector. This is an all-India level study.

Description of Responsibilities:

As a part of the engagement, a Geographic Information System (GIS) mapping on a scale of 1:50,000 will be done to map the industries that have a strong causal relationship with promotion of the hydrogen economy. This would include oil refineries, steelmaking, fertilizers, chemical industries (such as methanol), cement, and heavy haul land transport. These are being collectively referred as 'industrial clusters' in the terms of reference. To undertake this exercise, the following tasks are proposed:

- Task 1: Collection of information/data/maps and GIS mapping of [a] aforementioned (existing and proposed) industries operating either out of an industrial cluster, SEZ park or on a standalone basis; and, [b] existing transportation corridors consisting of roadways, railways, waterways and ports connecting the mapped industrial clusters.
- Task 2: Undertake GIS based mapping of land us-land cover (LULC) (using secondary sources, for example, Bhuvan) in close vicinity (within 50 km of radius [indicative and will be confirmed at the RfP stage]) of various industrial clusters (as mapped in task 1), which has a potential for establishing green hydrogen (Gh2) production facilities.
- Task 3: Undertake GIS based mapping of existing water bodies (such as reservoirs) in close vicinity (within 10 km of radius [indicative and will be confirmed at the RfP stage]) of the industrial clusters identified in tasks 1 and 2. The (mapped) water body would then be assessed for its suitability to supply water (type of water body, possible volume if available, etc.) for electrolysis.
- Task 4: Undertake GIS based mapping of the existing as well as of the proposed utility-scale grid-connected Renewable Energy projects (such as, onshore wind, offshore wind, utility scale solar, hybrid RE parks, hydro, etc.). All Renewable Energy projects with nameplate capacity of over 100 MW would be included in the mapping exercise.
- Task 5: Undertake GIS based mapping of the existing and proposed transportation corridors (including waterways, roadways, railways, pipelines, and ports) and infrastructure linkages which supports logistics (heavy haul land transport) such as Delhi-Mumbai Industrial Corridor and may also be strategic/important for the

establishment of the GH production facility. Such exercise will need to be done for the nodes identified as per Tasks 1-4 above.

- Task 6: Rank various clusters with respect to their inherent capability of supporting a Gh2 economy (either production or consumption or both). This would be based on the various attributes mapped in Tasks 1 – 5 (by superimposing all attributes collected from all the aforementioned layers) and would provide an indication of how easy or difficult (ranked in terms of level of difficulty – Easy, Medium, Difficult, Extremely Difficult) would transitioning to Gh2 be for the various mapped clusters.

Eligibility criteria:

Key qualifications of the firm/consortium should include:

1. Demonstrated experience of GIS mapping at the state level for natural resources management. Desirable to have an experience at the country level.
2. Demonstrated experience of handling and creation of at least one state-level GIS dataset. Desirable to have an experience at the country level.
3. Understanding of renewable energy, transport/logistics, and industrial sectors.
4. Experience of working with state/central government agencies related to at least one of these sectors – transport/logistics, energy, industry, natural resources.

For more information, please email to info@tenderingproject.es