# India: Supporting Green Hydrogen Through High Technology

**Project Name**
Supporting Green Hydrogen Through High Technology

**Project Number**
55173-001

**Country / Economy**
India

**Project Status**
Proposed

**Project Type / Modality of Assistance**
Technical Assistance

**Source of Funding / Amount**

**Operational Priorities**
OP3: Tackling climate change, building climate and disaster resilience, and enhancing environmental sustainability

**Sector / Subsector**
Energy / Energy sector development and institutional reform

**Gender**
Effective gender mainstreaming

**Description**
This knowledge and support technical assistance (TA) aims to help India accelerate the energy transition from hydrocarbon to green hydrogen economy through novel technologies, suitable applications, and concrete development roadmaps. Hydrogen energy can be called 'green hydrogen when it is produced in the process of water electrolysis powered by renewable sources. This alternative energy is carbon-free to help reduce carbon dioxide (CO2) emissions in various energy-intensive sectors. Thus, the TA will support the climate change and the post coronavirus disease (COVID-19) green recovery. The TA plans to take a practical approach in pairing preparation of pilot projects and policy frameworks in tandem. The TA will identify and prepare green hydrogen project schemes for demonstration purposes with technical, financial, contractual, and capacity development arrangements. In parallel, the TA will help formulate the government’s sector level policy frameworks and the corporate level business strategies towards investments in pilot and subsequent projects.

**Project Rationale and Linkage to Country/Regional Strategy**
During 2020-2021, the Government of India announced the National Hydrogen Energy Mission (NHEM) to draw up a roadmap for using green hydrogen as an energy source. This initiative has the potential of transforming economic activities on energy, transportation, industry, agribusiness, and others since there are various usages of hydrogen in the multi-sectors. Currently, hydrogen is widely used for petrochemical and manufacturing industries to produce plastics, glasses, electronics, steel, solvents, methanol, and ammonia which can be further used to produce chemical fertilizers. Much hydrogen is also used in an oil refinery process to remove sulfur and others. Thus, the hydrogen consumption has been increasing with economic and industrial growth. The usage can further be expanded to blending to compressed natural gas and pipelined gas, fuel cells for heavy duty transport (e.g., buses and trucks), industrial heat, power generation, and renewable energy storage purposes.

**Impact**
Usage of green hydrogen increased in multiple sectors as aligned with the National Hydrogen Energy Mission

**Outcome**
Readiness for project investments in green hydrogen development and business enhanced

**Outputs**
Pilot hydrogen projects identified and prepared
Decarbonization oriented corporate strategies and business plans prepared
Hydrogen development knowledge sharing and awareness improvement among stakeholders promoted

**Geographical Location**
Nation-wide

## Summary of Environmental and Social Aspects

### Environmental Aspects
- Involuntary Resettlement

### Indigenous Peoples

### Stakeholder Communication, Participation, and Consultation
- **During Project Design**
- **During Project Implementation**

### Business Opportunities
- **Consulting Services**
n/a
- **Procurement**
n/a

### Responsible ADB Officer
- Son, Jongmi

### Responsible ADB Department
- South Asia Department

### Responsible ADB Division
- Energy Division, SARD

### Executing Agencies
- Ministry of Petroleum and Natural Gas

## Timetable
- **Concept Clearance**
  08 Nov 2021
- **Fact Finding**
  05 Nov 2021 to 05 Nov 2021
- **MRM**
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- **Approval**
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