Requesting country or countries:	Republic of Maldives
Request title:	Exploring the Green Hydrogen Potential in the Maldives: An Assessment for Sustainable Energy Transition.
NDE	Ahmed Waheed Director Climate Change Department, Ministry of Climate Change, Environment and Energy ahmed.waheed@environment.gov.mv; climate@environment.gov.mv Handuvaree Hingun, Maafannu, Male, 20392, Maldives
Request Applicant:	Ahmed Ali Director General Energy Department, Ministry of Climate Change, Environment and Energy ahmed.ali@environment.gov.mv Handuvaree Hingun, Maafannu, Male, 20392, Maldives

Climate objective:

- ☐ Adaptation to climate change
- ☒ Mitigation of climate change
- ☐ Combination of adaptation and mitigation of climate change

Geographical scope:

- ☐ Community level
- ☐ Sub-national
- ☒ National
- ☐ Multi-country

If the request is at a sub-national or multi-country level, please describe specific geographical areas (provinces, states, countries, regions, etc.).

Problem statement related to climate change (up to one page):

Maldives is an island nation situated in the Indian Ocean, faces significant challenges due to its dispersed nature and dependence on imported fossil fuels to meet its energy needs. Energy plays a crucial role in the development of all sectors, necessity to frequently transport fuel from a centrally located place due to unavailability of space and proper fuel storage facilities in the outer islands makes fuel supply challenging, especially during rough weather conditions. The country is particularly vulnerable to the adverse effects of climate change due to its low-lying islands and fragile ecosystems, making it susceptible to raising sea levels, extreme weather events, and other climate related impacts.

Currently, Maldives depends almost on imported fossil fuels to meet its energy needs. The country spends about 13.5 percent of its gross domestic product for fuel imports, and this heavy reliance on foreign imports leaves it vulnerable to fluctuations in international fuel prices. In order reduce this dependency and enhance energy security, as well as to achieve the carbon net zero 2030 target

conditioned to available of finance and other means of implementation , it is important to diversify the energy mix by utilizing locally available renewable energy sources.

Given that ninety-nine percent of the Maldives is comprised of ocean, there is ample space to introduce floating solar platforms and harness solar energy to produce green hydrogen. Green hydrogen is valuable due to its transportability and storage capabilities. Once produced, it can be used to power vehicles and vessels. Additionally, there is significant potential for trading green hydrogen including the export potential, especially as an increasing number of countries aim to achieve net-zero emission by second half of the century.

Past and on-going efforts to address the problem (up to half a page):

To date Maldives has installed 53.3MW of solar PV hybrid systems and additional solar PV hybrid systems of 70MW being in the process of installation. At the same time Maldives is also exploring new potential available resources such as wind and ocean energies. Already pilot projects are being developed to explore the viability of these technologies in the Maldives. As Maldives has limited land and roofs we are initiating floating solar piolet projects together with battery energy storage systems. The plan is to transform the energy sector of the Maldives into a sector powered by renewable energy.

Specific technology[1] barriers (up to one page):

Even though we do not have enough roof and land space we have abundant ocean space in the Maldives which would be utilized for ocean related energy generation, such as Otech, Wave current and floating solar etc. However, we do not have human, financial resources and equipment to explore the technical and financial viability of these technologies. Hence, we require external support to assess low-carbon hydrogen potential as one of our decarbonisation pathways to support our transition towards meeting the net zero targets.

Sectors:

Please indicate the main sectors related to the request:

☐ Coastal zones	☐ Early Warning and Environmental Assessment	☒ Human Health	☐ Infrastructure and Urban planning
☒ Marine and Fisheries	☒ Water	☒ Agriculture	☒ Carbon fixation
☒ Energy Efficiency	☐ Forestry	☒ Industry	☒ Renewable energy
☒ Transport	☐ Waste management		

Please add other relevant sectors:

[1] *"**any equipment, techniques, practical knowledge and skills** needed for reducing greenhouse gas emissions and adapting to climate change" (Special Report on Technology Transfer, IPCC, 2000)*

Cross-sectoral enablers and approaches:

Please indicate the main cross-sectoral enablers and approaches

☒ Communication and awareness	☒ Economics and financial decision-making	☒ Governance and planning	☒ Community based
☒ Disaster risk reduction	☒ Ecosystems and biodiversity	☒ Gender	

Technical assistance requested (up to one page):

Based on the above problem statement and barriers, we request support from CTCN in conducting a feasibility study in exploring the Green hydrogen potential in the Maldives using different ocean sources.

Expected timeframe:

January – December 2024

Anticipated gender and other co-benefits from the technical assistance:

As a result of the feasibility study we will get the opportunity to introduce green hydrogen production in the Maldives. Which will enable engagement of men, women and youth is the green hydrogen production industry. This will lead to increase women and youth lead enterprises in the Maldives. This will also will have positive impact of the transport and electricity sector which are very much dependent on the day to day socio economic activities of the Maldivian island communities.

Key stakeholders:

Please list the stakeholders who will be involved in the implementation of the requested CTCN technical assistance and describe their role during the implementation (for example, government agencies and ministries, academic institutions and universities, private sector, community organizations, civil society, etc.).

Stakeholders	Role to support the implementation of the technical assistance
Climate Change Department, Ministry Climate Change, Environment and Energy	Facilitate and coordinate with donor
Energy Department, Ministry Climate Change, Environment and Energy	Implementation of the program
Ministry of Cities, Local Government and Public Works Utility Companies Ministry of Finance Ministry of Economic Development and Trade Utility Regulatory Authority	Provide necessary support, permissions and community engagement

Ministry of Transport and Civil Aviation	

Alignment with national priorities (up to 2000 characters including spaces):

The request will help to meet the National Climate Emergency Act and also the National Energy Act objectives as these Acts have made significant targets to increase renewable energy generation and also meet net zero targets on conditional manner. This also have significant potential for the socio-economic development of the Maldives as it will create more job opportunities especially among youth and it will also contribute to increase energy security and decrease dependency on imported diesel to meet the energy needs.

Reference document (please include date of document)	**Extract** (please include chapter, page number, etc.).
Nationally Determined Contribution (NDC)	Maldives updated NDC (2020) had emphasized the need to included renewables in its energy mix and also made conditional targets to achieve NetZero by 2030 (Please refer to Maldives updated NDC pages 1-12)
Technology Needs Assessment	The Maldives Technology Needs Assessment preparation work is already ongoing. The Assessment has already included exploring alternative energy sources as one of the priority areas to diversify the energy generation sources and increase share of renewables in the energy mix
National Adaptation Plans	Maldives NAP process has just initiated very recently and is expected to be completed by 2026.
Nationally Appropriate Mitigation Actions	N/A
Add others here as relevant	N/A

Development of the request (up to 2000 characters including spaces):

The request was developed in consolation main focal energy agency, the Energy Department of the Ministry. Similarly, the ongoing renewable energy programs and projects were reviewed while preparing the request. In addition, available literature and information on assessments were also studied while preparing the request. This included Maldives NDC, Climate Emergency Act, Maldives Energy Act.

Background documents and other information relevant for the request:

- Maldives NDC and updated NDC
- Maldives Climate Emergency Act
- Maldives Energy Act

OPTIONAL: Linkages to Green Climate Fund Readiness and Preparatory Support

The Maldives Readiness funds under GCF has already been committed through various donors

Monitoring and impact of the assistance:

Signature:	
NDE name:	Ahmed Waheed
Date:	12 January 2024
Signature:	

THE COMPLETED FORM SHALL BE SENT TO THE CTCN@UNEP.ORG

The CTCN is available to answer all questions and provide guidance on the application process.