

MAF Philippines Tidal Stream

Terms of Reference (ToR) for technical consultancy

Background

Though Philippine's renewable energy capacity is evolving, it is still low with about 3.2% (2023) and the Philippine energy sector still relies heavily on fossil fuels, which stand as the largest contributor to the country's greenhouse gas (GHG) emissions. This is reflected by the fact that most of the 2,000 inhabited islands of the Philippines are not connected to the national electric grids. Instead, they often rely on inefficient diesel generators as their only source of electricity supply. Consequently, these off-grid islands suffer from high local environmental pollution due to diesel combustion, a largely unreliable and part-time electricity supply, and high cost of electricity generation. This high cost requires considerable subsidies to cover the gap between affordable end-user tariffs and the true cost of generation.

In this context, a combination of Tidal Stream Energy (TSE) with other renewable energy technologies (hybrid systems) are a highly efficient solution. However, these systems are rarely used on a utility scale due to challenges such as (1) lack of access to favorable financing products, (2) lack of awareness about the effectiveness and effectivity of TSE and TSE hybrid systems and (3) the lack of a regulatory and policy framework to promote these technologies.

Implemented by Frankfurt School of Finance & Management and its partner Friedrichsdorfer Institut zur Nachhaltigkeit (IzN), the Program "Philippines – Decarbonization of Electricity Generation on Philippine Islands – Using Tidal Stream and Solar PV", has been selected by the Mitigation Action Facility (MAF) in September 2023 and shall start Implementation on October 1st, 2024. MAF has committed EUR 20 million grants for supporting the development of TSE in the Philippines to provide clean energy to islands so far not connected to the general electricity grid. The funding shall be used both for funding TSE projects via financial cooperation (FC) and advisory support via technical cooperation (TC). The FC component will offer long-term concessional loans via partner banks and blend those loans with CAPEX grants thus rendering the TSE hybrid system investment project viable. The TC component will support the different government institutions involved, small island energy providers and banks to integrate TSE into their procedures.

The expected impact of this Program is that **small island grid operators will be able to substitute fossil fuel-based electricity generation through TSE hybrid systems via replicable sustainable private investment projects**. These projects will install around 64 MW of TSE hybrid systems, and around 100 MWh battery storage in off-grid islands in the Philippines during the lifespan of the Program. Additionally, the Program expects to catalyze the market for privately financed TSE hybrid investment projects by making financing sources accessible and adjusting the regulatory conditions. The grants are expected to leverage some EUR 164 million from the public and private sectors.

The Program aims to develop the TSE technology to full market maturity. The Philippines, with its enormous potential of 170 GW of ocean energy among more than a thousand inhabited islands,

offers ideal conditions to convert old and inefficient diesel generators to modern hybrid energy systems based on renewable energies.

The Philippine partners are the Department of Energy (DOE) and the Climate Change Commission of the Philippines, which steer the program. Other stakeholders include the Energy Regulatory Commission (ERC), the NPC-SPUG (National Power Corporation – Small Power Utilities Group), and the Energy Cooperatives as direct buyers of the electricity generated, among other stakeholders.

The Program

The implementation of the program is divided in two phases: Pilot Phase (Implementation Phase 1: IP1) and Main Phase (Implementation Phase 2: IP2). Duration of IP1 is 18 months, then there will be a 1-month decision period to decide on the continuation to Phase 2, which is planned to last 48 months. Total program duration is 67 months. The expected outputs of the Program are:

- Output 1: TSE projects, either as stand-alone or hybrid with PV, are installed, grid connected and operational.
- Output 2: Legal and regulatory framework and promotional instruments for RE include TSE.
- Output 3: Business models for hybrid systems including TSE solutions are developed and tested for replication
- Output 4: A blended financing mechanism for TSE/PV projects is installed and in operation with the 2 Philippine development banks and financing options with private sector banks and international financing institutions are set on track.

It is envisaged, that at the end of IP1, 2-3 first mover-projects with an installed capacity of up to 7,2 MW (thereof up to 1,3 MW TSE) is under construction, partially operating or at least at financial close. At the end of IP2, up to 42 MW shall be installed and operational and 22 MW shall be in or close to financial close (thereof TSE 22.1 MW).

Scope of the Consultant Assignment:

The Program is seeking a consulting firm or a consortium of consulting firms to support the implementation of the TC component. These Terms of Reference (ToR) outline the activities for both phases, however the initial contract with the awarded contractor will be signed only for Phase 1. Extension to Phase 2 will be decided upon and designed at the end of Phase 1.

The TA activities include:

1. Update the training needs of the key stakeholders,
2. Analyse training offers of other institutions and programs active in the field of ocean energy/renewable energy and elaborate cooperation options,
3. Elaborate a training program for Phase 1 (detailed) and Phase 2 (general) in accordance with DoE's ocean energy strategy for all identified stakeholders,
4. Provide training to banks in financial assessment and monitoring of TSE projects,

5. Support DoE on road mapping and spatial planning for Ocean Energy,
6. Train staff of main government stakeholders (DoE, ERC, NPC-SPUG, NEA) on Ocean Energy and specifically TSE,
7. Analyse important regulatory guidelines (Offshore/marine regulatory guidelines; ERC's permitting guidelines and processes),
8. Develop changes and draft templates to adopt TSE in regulatory and permitting procedures of ERC, DENR and the program in general (Permitting, Consenting, Power Supply Agreement, Financing Application),
9. Support and train small island cooperatives in understanding and working with TSE in coordination with developers/investors,
10. Support developers/investors in the community consultation process if necessary (e.g. Information, Education, & Communication Campaign; special attention to Gender Equality & Social Inclusion) collaboratively organized by the relevant project developer/s and DOE
11. Advise environmental baseline study and monitoring of the Program
12. Contribute to the development of ideas for a gender component in the projects and/or stakeholder institutions,
13. Support regular exchange of lessons learnt through workshops and conferences,
14. Support populating the Program Website to be a functioning information exchange and learning platform.

Qualifications / Skill Set

The contractor and proposed experts should demonstrate relevant expertise in the topic and geographical region of the Program. This should include

- Experience in developing and ideally implementing tidal stream and/or other ocean energy projects in the Asia-Pacific region
- Experience in working with government authorities and regulators in the Philippines like DOE, ERC is a must
- Experience in working with financial institutions and private sector in supporting ocean energy projects
- Experience in providing technical expertise to hybrid projects and trainings for stakeholders
- Experience in legal aspects of permitting and licensing in the energy sector
- Experience in scientifically analyse and monitor environmental effects of tidal stream projects

The contractor's project team should demonstrate the capacity to execute the works and should include all essential roles filled with personnel with relevant experience. CVs of the personnel proposed should be submitted. The following are the **minimum positions** that should be included

on the team. Bidders should assess the additional positions needed (if any) to complete the assignment as per ToR:

- i. Institutional Expert and Team Leader (Engineer or economist)
- ii. Local Consultant (also as government liaison)
- iii. Consultant Hybrid Offgrid Energy Systems – international
- iv. Consultant in environmental and social impact analysis
- v. Consultant Administrative Support – local

The activities include travel to project sites, island visits, land/sea travel, in-person workshops. The bidder should budget travel expenses in the financial proposal.

Submission Details

The Bidder should submit a proposal outlining

- Brief description of the organization(s), types of activities undertaken, including relevance of specialized knowledge and experience on similar engagements done in the past. Similar engagement/service in this case is defined as providing technical advisory services on areas of ocean energy and other related topics.
- Description of the approach and methodology for meeting or exceeding the requirements of the ToR
- Key Personnel Proposed
- Financial Proposal outlining number of days and rates for each position proposed

The offer is to be sent to y.jain@fs.de by 30.09.2024.

Frankfurt School shall not be liable for any work, costs or expenses related to the preparation and presentation of the offer or this Invitation to Tender, which shall not be compensated.