Enabel

TENDER SPECIFICATIONS

Public service contract for "**Consultancy services for technical diagnosis, solar PV expansion design and preparation of a tender-ready works procurement package for the Nagonha mini-grid**"

Reference №: **MOZ22005-10453**

Country: **Mozambique**

Negotiated Procedure without Prior Publication

Deadline for requesting clarifications:	Until the **tenth day** before the deadline for submission of tenders
Deadline for submission of tenders:	**02 November 2026** at **12PM (noon) (Mozambican time)**

Belgian development agency

enabel.be

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1 GENERAL REMARKS

1. THE CONTRACTING AUTHORITY

1.1. The contracting authority of this public contract is Enabel, public-law company with social purposes, with its registered office at Rue Haute 147, 1000 Brussels in Belgium (enterprise number 0264.814.354, RPM/RPR Brussels), called ' Enabel ' pursuant to the entry into force of Law of 23 November 2017 changing the name of the Belgian Technical Cooperation and defining the missions and functioning of Enabel, the Belgian agency for development cooperation.

1.2. Enabel has the exclusive competence for the execution, in Belgium and abroad, of public service tasks of direct bilateral cooperation with partner countries. Moreover, it may also perform other development cooperation tasks at the request of public interest organisations, and it can develop its own activities to contribute towards realisation of its objectives.

1.3. For this public contract Enabel, in Mozambique, is represented by :

Name	Position
Adriaan Tas	Country Director

1.4. **Attention : even if Enabel as contracting authority is based in Belgium, Enabel has different "permanent establishments" in partner countries, who are 'customer' in the sense of tax legislation.[1] As a result, services of this contract are deemed to be located in Mozambique and applicable tax legislation is legislation of Mozambique. For more information on this tax regime, you can contact Contracts management team, (clause 3 of chapter 3 Award Procedure).**

2. RULES GOVERNING THE PUBLIC CONTRACT

2.1. The following, among others, apply to this public contract:

(a) The Law of 17 June 2016 on public procurement;

(b) The Royal Decree of 18 April 2017 on the award of public contracts in the classical sectors;

(c) The Royal Decree of 14 January 2013 establishing the general rules for the execution of public contracts;

(d) The Law of 17 june 2013 on motivation, information, and remedies in public procurement, certain works, supply, and service contracts, and concessions;

(e) Circulars of the Prime Minister with regards to public procurement;

(f) Enabels policy regarding sexual exploitation and abuse – June 2019;

(g) Enabels policy regarding fraud and corruption risk management – June 2019.

2.2. All Belgian regulations on public contracts can be consulted on https://bosa.belgium.be/en/themes/public-procurement;

[1] **Article 13a of Council Implementing Regulation (EU) No 1042/2013: The place where a non-taxable legal person is established, as referred to in the first subparagraph of Article 56(2) and Articles 58 and 59 of Directive 2006/112/EC, shall be: the place where the functions of its central administration are carried out, or the place of any other establishment characterised by a sufficient degree of permanence and a suitable structure in terms of human and technical resources to enable it to receive and use the services supplied to it for its own needs (= permanent establishment).**

Enabel's Code of Conduct and the policies mentioned above can be consulted on Enabel's website via https://www.enabel.be/who-we-are/integrity/.

3. APPLICABLE LAW AND COMPETENT COURTS

3.1. Belgian legislation applies for this public contract and no other. In the event of a conflict regarding the interpretation, application or performance of these tender specifications, the parties will first try all conciliation possibilities. Except for an emergency, the parties avoid litigation in court without preliminary notification.

3.2. In case of court action, correspondence must (also) be sent to the following address:

Enabel S.A.
Global Procurement Services
To the attention of Ms Laura Jacobs
Rue Haute 147
1000 Brussels
Belgium

3.3. Any litigation regarding this public contract is the exclusive competence of the Brussels legal district courts and tribunals. French or Dutch are the languages of proceedings.

2 SUBJECT-MATTER AND SCOPE OF THE PUBLIC CONTRACT

1. TYPE OF CONTRACT

1.1. This public contract is a service contract for provision of:

• the technical diagnosis of the Nagonha mini-grid;

• the tender-level design of the additional solar PV generation capacity and associated modifications;

• the preparation of the complete works tender package, using Enabel templates and ready for publication subject to Enabel's procurement validation, for a design-and-build contract covering the supply, installation, integration, testing and commissioning of that capacity and those modifications, as set out in Section 5 of terms of reference.

The tender-level design shall be sufficient for bidders to prepare complete and comparable offers. Equipment-specific detailed design depends on the equipment offered. It will be carried out by the works contractor and approved by Enabel before installation.

2. LOTS

2.1. This public contract is not divided into lots.

3. ITEMS

3.1. This public contract consists of the items listed under clause 3 of chapter 8 Forms - Tender form - Prices.

3.2. These items are grouped together to form one single contract. It is not possible to tender for one or several items and the tenderer must submit price quotations for all items of the contract.

4. DURATION OF THE PUBLIC CONTRACT

1.1. This public contract starts **upon kick-off meeting** and ends **upon completion of performance** of all fixed and conditional tranches.

1.2. The fixed tranche shall be completed within four (4) weeks of the day following kick-off meeting including Enabel's review of Deliverable 1.

1.3. Conditional tranche 1 shall be completed within six (6) weeks of the day following notification of its affirmation.

1.4. Conditional tranche 2 runs from the day following notification of its affirmation until award of the works contract, and at the latest three (3) months after its affirmation.

1.5 This public contract **MAY NOT** be renewed.

5. VARIANTS

5.1. Variants are **NOT** allowed. Each tenderer may submit only one tender, no variants will be accepted.

6. OPTIONS

6.1. The tenderer may **NOT** submit options. Free options are forbidden. Any proposed option will be discarded.

3 AWARD PROCEDURE

SECTION (A) - GENERAL PROCEDURE INSTRUCTIONS

1. AWARD PROCEDURE

This public contract will be awarded through a Negotiated Procedure without Prior Publication pursuant to Article 42, § 1, °1, a) of the Law of 17 June 2016 on public procurement.

2. PUBLICATION

This contract is advertised in

2.1. The following platforms:

(a) Website of Enabel (www.enabel.be);

(b) Local newspaper

2.2. This publication constitutes an invitation to submit a tender.

3. FURTHER INFORMATION

3.1. **Public procurement administrator**

The awarding of this public contract is coordinated by:

Contracts management team

moz_csc_contracts@enabel.be

All communication between the contracting authority and (prospective) tenderers regarding this public contract must go through this contact. Any other form of contact with the contracting authority about this public contract is prohibited unless otherwise stated in these tender specifications.

3.2. **Requesting clarifications**

Prospective tenderers have until the **tenth day**, inclusive, before the deadline for submission of tenders to submit any questions regarding these tender specifications and the contract. All inquiries must be sent in writing to the procedure coordinator mentioned under clause 3.1 (moz_csc_contracts@enabel.be), and will be answered in the order received.

Until the notification of the award decision no information will be given about the evolution of the procedure.

3.3. **Publication of clarifications and/or amendments to the tender specifications**

The complete overview of questions and answers, as well as any amendments to these tender specifications, will be available at the tenth day before the deadline for submission of tenders, at the latest.

These updates will be published on the same platforms as mentioned under clause 2.

The tenderer is to submit his tender after reading and taking into account any corrections made to these tender specifications that are published or that are sent to him by e-mail. To do so, when the tenderer has downloaded the tender specifications, it is strongly advised that he gives his

coordinates to the public procurement administrator mentioned under clause 3.1 and requests information on any modifications or additional information.

SECTION (B) - INSTRUCTIONS FOR PREPARATION OF TENDERS

4. VALIDITY PERIOD OF TENDERS

The tenderers remain bound by their tender for a period of **90 (ninety) calendar days** from the tender reception deadline date.

5. DATA TO BE INCLUDED IN THE TENDER

5.1. Tenderers are advised to consult the general principles set out under Heading 1 of the Law of 17 June 2016 on public procurement, which are applicable to this award procedure.

5.2. The tender and all annexes to the tender form must be drawn up in:

(a) English.

5.3. By submitting a tender, the tenderer automatically waives any of their own general or specific sales conditions, even if these are mentioned in any annexes to their tender.

5.4. The tenderer must clearly indicate within their tender any information that is confidential and/or relates to technical or business secrets, which may not be divulged by the contracting authority.

5.5. The tenderer must use the tender forms provided in the annex:

(a) Identification form (clause 1 of chapter 8 Forms);

(b) List of subcontractors (clause 2 of chapter 8 Forms);

(c) Tender form - Prices (clause 3 of chapter 8 Forms);

(d) Declaration on honour - Exclusion grounds (clause 4 of chapter 8 Forms);

(e) Financial identification (clause 5 of chapter 8 Forms);

(f) Integrity Statement (clause 6 of chapter 8 Forms);

(g) Certificate of registration;

(h) Power of attorney;

(i) Criminal record of the legal representative/company;

(j) Certificate of payment of taxes;

(k) Certificate of payment of social contributions.

- Technical offer of maximum six (6) pages, excluding CVs and references, structured according to the three technical award criteria in Section 3.4.7.4:
- Understanding of the assignment and proposed diagnostic approach, including the main risks and data gaps;
- Methodology and work plan, with person-days per task and per expert and the timing of the field mission and proposed expertise;
- The CV of the team leader and of any additional expert proposed (maximum three (3) pages each);
- Two (2) comparable references completed in the past five (5) years, using Form 6.4, with client contact details;

Should the tenderer fail to use these forms, they shall bear full responsibility for ensuring that the documents submitted are in perfect concordance with the forms.

5.6. The tenderer also attaches the following to his tender:

(a) All documents demanded for the application of qualitative selection (see clause 13 and Terms of reference

Background

The Nagonha mini-grid, located in Nagonha, Locality of Alto Maganha, Pebane District, Zambézia Province, was developed under the RERD2 programme as part of efforts to expand access to reliable renewable electricity in rural areas of Mozambique.

The existing Nagonha photovoltaic power plant has an installed solar PV generation capacity of approximately 200 kWp and a battery energy storage capacity of approximately 1,171.2 kWh. The mini-grid also comprises the associated power conversion, control, protection, monitoring and electricity distribution infrastructure.

The battery system uses lithium-ion technology, with an installed capacity of approximately 1,171 kWh, and the mini-grid was commissioned in 2024. The inverter/charger system is based on Victron equipment, comprising 12 inverter/charger units rated at 15 kVA each. The mini-grid serves 853 connections and is operated by KK Lda, under the institutional responsibility of FUNAE Monitoring data is available through the Victron Remote Management (VRM) portal, with monthly operational reports covering July 2024 to June 2025.

Under the current Enabel portfolio, Nagonha is being developed as a pilot site through complementary interventions under Result 3 (Energy) and Result 4 (Water).

Under Result 3, Nagonha is a pilot site for Productive Use of Energy (PUE). The objective is to stimulate productive and income-generating activities, increase the productive use of electricity and test approaches that can contribute to the operational and economic sustainability of rural mini-grids.

Under Result 4, a water supply system is being designed as part of a broader Water–Energy Dual Utility Pilot. The planned water system is expected to have its own dedicated solar PV generation. It should therefore not automatically be counted as an additional load when sizing the mini-grid expansion. The overall dual-utility configuration and the technical interfaces, operational dependencies and coordination requirements between the water and energy systems shall nevertheless be considered.

Operational experience has shown that the batteries do not reach the required State of Charge during daytime operation. The assessment shall determine whether the existing system can serve the evolving load while allowing the batteries to recover to the required State of Charge and to remain within the intended Depth of Discharge limits.

This is particularly relevant as additional productive loads are introduced through the PUE pilot. The evolution of productive demand must be considered together with the operating characteristics and limitations of the existing generation and storage system. The aim is to avoid adverse impacts on battery performance, system reliability and equipment lifetime.

Enabel and FUNAE therefore intend to diagnose the causes of the current generation–storage imbalance, determine the most cost-effective technical response, and prepare the works tender for its implementation under a design-and-build contract.

The assignment shall contribute to the optimisation of the existing RERD2 infrastructure, accommodate the evolving productive-use demand under Result 3, and ensure technical compatibility with the development of Nagonha as a Water–Energy Dual Utility Pilot under Results 3 and 4.

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Objective

The objective of the assignment is to:

- diagnose why the Nagonha mini-grid battery bank does not reach the required State of Charge under current and expected loads;
- determine the most cost-effective technical response, expected to be additional solar PV capacity and any strictly necessary associated modifications;
- prepare the works tender package for the supply, installation, integration, testing and commissioning of that response, using the Enabel templates and ready for publication subject to Enabel's procurement validation.

The proposed solution shall be fully compatible with the existing mini-grid. It shall take into account the development of Nagonha as a Water–Energy Dual Utility Pilot, including the technical interfaces with the planned water system.

Expected results

- **R1 – Diagnosis and technical response defined (fixed tranche):** the causes of the batteries not reaching the required State of Charge are established, options are compared, and the capacity and configuration to be procured are recommended.
- **R2 – Tender-level design completed (conditional tranche 1):** the recommended option is designed to a level that allows bidders to prepare complete and comparable offers under a design-and-build contract.
- **R3 – Works tender package ready for publication (conditional tranche 1):** the works tender package, including all technical annexes, is finalised using the Enabel templates after Enabel and FUNAE comments, subject only to Enabel's procurement validation.
- **R4 – Works bidders' technical questions answered (conditional tranche 2):** technical clarification questions from works bidders are answered promptly and consistently with the works tender package.

Scope of work

The assignment is carried out in three phases, plus optional support during the works tender:

- Phase 1 constitutes the fixed tranche.
- Phases 2 and 3 constitute conditional tranche 1.
- Support during the works tender constitutes conditional tranche 2

Enabel inputs

At contract start, Enabel will provide:

- the available as-built documentation, equipment specifications, maintenance records and monitoring data of the Nagonha mini-grid;
- the productive use of energy (PUE) load scenario developed under Result 3;
- the design assumptions and interface points of the planned water system under Result 4;
- confirmation, in consultation with FUNAE, of the land available for the extension.

Missing or incomplete data shall be reported in Deliverable 1 and addressed through explicit, technically justified assumptions.

Phase 1 – Diagnosis and sizing (fixed tranche)

The Consultant shall:

- review the documentation and data provided by Enabel;
- carry out one field mission to Nagonha within three (3) weeks of contract start. The mission covers inspection of the PV generation, battery storage system, inverters and chargers, protection, control and monitoring equipment, and the available site area;
- analyse generation, demand, battery charging behaviour, State of Charge and Depth of Discharge, and identify the root cause(s) of the batteries not reaching the required State of Charge. Causes to be examined include PV capacity, battery state of health, inverter and charger limits, control settings and load profile;
- assess the impact of current and expected PUE loads, using the Result 3 scenario. Consider the interfaces with the planned water system, without counting loads to be supplied by its dedicated solar generation;
- assess whether the existing powerhouse/container has sufficient space, ventilation and protection for additional inverters and associated equipment. If it does not, define the requirements for an additional equipment shelter;
- compare two to three technical options on cost, technical risk and operation and maintenance implications, and recommend the capacity and configuration to be procured;
- identify the key risks and requirements for the extension, including:
    - compatibility with existing equipment and warranties;
    - land and site constraints;
    - environmental licensing requirements;
    - any design approval required by FUNAE or the energy regulator (ARENE);
- estimate the works value, to inform Enabel's choice of procurement procedure for the works.

Phase 2 – Tender-level design (conditional tranche 1)

The Consultant shall develop the recommended option to tender level. The design shall define all elements that determine compatibility with the existing system, safety and the comparability of offers:

- additional capacity;
- coupling architecture (AC/DC) and point of interconnection;
- compatibility requirements with the existing inverters, battery system and controls;
- protection philosophy and coordination requirements;
- earthing and lightning protection concept;
- integration with the monitoring system;
- site layout and footprint, including cable routes.

The tender-level design shall also define the structural design basis for PV mounting structures, foundations and any equipment shelter:

- design wind speed and applicable standard for cyclone-prone sites;
- corrosion category for a coastal environment;
- acceptable foundation types;
- the geotechnical investigation to be carried out by the works contractor.

Equipment-specific detailed design will be the responsibility of the works contractor. It shall stay within the parameters defined by the Consultant and is subject to Enabel's approval before installation. It includes:

- final string configuration;
- final cable sizing;
- structural design and calculations for the mounting structures and foundations, certified by a qualified structural engineer;

- construction/shop drawings.

The Consultant shall prepare:

- performance-based technical specifications;
- tender drawings (layout, single-line diagram, interconnection);
- the Bill of Quantities and price schedule;
- a confidential Engineer's Cost Estimate, including indicative lead times for major equipment;
- testing, commissioning and acceptance requirements;
- training, documentation, warranty, defects liability and spare parts requirements.

These requirements shall be suited to the operating and maintenance capacity of the entity responsible for the mini-grid.

Phase 3 – Works tender package (conditional tranche 1)

With the affirmation of conditional tranche 1, Enabel will confirm the procurement procedure for the works and provide the corresponding Enabel templates. The Consultant shall prepare the works tender package using those templates, ready for publication subject to Enabel's procurement validation. This includes:

- integration of all technical specifications, drawings, the BoQ and price schedule, and testing, commissioning and acceptance requirements;
- proposed selection criteria (technical capacity) and award criteria, including the technical evaluation grid;
- completion of contract-specific fields, based on Enabel's instructions: subject-matter, duration, lots, performance conditions, acceptance procedure, and payment milestones linked to works progress;
- provisions for a site visit by works bidders;
- provisional quantities for items that cannot be fixed before the geotechnical investigation, in particular foundations;
- the procedure for submission and approval of the works contractor's detailed design, including review periods.

Standard administrative, legal and contractual clauses of the Enabel templates shall not be modified without Enabel's written instruction. The Engineer's Cost Estimate shall be delivered separately and shall not be included in the works tender package. Enabel remains responsible for the final validation, approval and publication of the works tender package.

Support during the works tender (conditional tranche 2)

If conditional tranche 2 is affirmed, the Consultant shall answer technical clarification questions from works bidders, forwarded by Enabel, within three (3) working days, for up to two (2) expert-days.

Consistency and language

The Consultant shall ensure that the specifications, drawings, quantities, cost estimate and evaluation criteria are consistent with each other.

Deliverable 1 shall be in English. The works tender package and its technical annexes shall be in English, and shall allow works bidders to submit offers in English.

Duration and timeline

- The fixed tranche shall be completed within a maximum period of four (4) weeks of the day following kick-off meeting, including Enabel's review and approval of Deliverable 1.

- Conditional tranche 1 shall be completed within a maximum period of five (5) weeks of the day following notification of its affirmation.

- Conditional tranche 2 runs from the day following notification of its affirmation until award of the works contract, and at the latest three (3) months after its affirmation.

The field mission to Nagonha shall take place within two (2) weeks of contract start, taking into account access constraints linked to the rainy season in Zambézia Province. The mission shall be scheduled sufficiently early to allow its findings to be fully incorporated into Deliverable 1.

The work plan submitted with the technical offer shall show the sequencing of activities, the planned date and timing of the field mission, deliverable submission dates, Enabel/FUNAE review points, dependencies on Enabel inputs, and any access-related risks and mitigation measures.

Quantities

This public service contract is divided into one fixed tranche and two conditional tranches:

- **Fixed tranche (Phase 1):** diagnosis of the existing Nagonha mini-grid and determination of the technical response, including the additional solar PV capacity required (Deliverable 1);
- **Conditional tranche 1 (Phases 2 and 3):** tender-level design of the recommended option and preparation of the works tender package using the Enabel templates, ready for publication subject to Enabel's procurement validation (Deliverables 2 and 3);
- **Conditional tranche 2:** technical clarification support during the works tender, up to two (2) expert-days.

Enabel's commitment is limited to the fixed tranche. Each conditional tranche is performed only if Enabel affirms it and notifies the Consultant in writing:

conditional tranche 1: immediately following approval of Deliverable 1, subject to Enabel's decision to proceed; conditional tranche 2: after approval of Deliverable 3, and and no later than publication of the works tender. A conditional tranche that is not affirmed within its period lapses. The Consultant is not entitled to any compensation, holding fee or indemnity if a conditional tranche is not affirmed or lapses.

The tenderer shall price each tranche separately. Tenders are compared on the total price of the three tranches.

Methodology and approach

The Consultant shall apply a practical, engineering-based methodology combining document review, field verification, operational data analysis, system sizing, tender-level design and tender preparation, as set out in Section 5.4.

The Consultant shall identify the engineering tools, standards and main assumptions used. Assumptions made because of missing or incomplete data shall be stated explicitly and technically justified.

Before each submission, the Consultant shall carry out an internal quality check. This check ensures that the specifications, drawings, quantities, cost estimate and evaluation criteria are consistent with each other.

Minimum Team Composition and Qualifications

The assignment shall be led by a team leader who meets the following minimum profile:

- University degree in electrical engineering, energy engineering or a related field;
- At least eight (8) years of professional experience in solar PV, hybrid power systems and/or mini-grids;
- Demonstrated experience in the technical assessment or design of PV-battery systems;
- Full professional proficiency in English.

The tenderer may propose additional experts to complement the team leader, for example in civil/structural design, protection and system integration, or cost estimation. This is optional. A tender proposing only the team leader is fully admissible and is not disadvantaged. Any additional expert shall be named, with a CV, a defined role and a number of days in the work plan.

The team leader is responsible for all deliverables. Working knowledge of Portuguese within the team is an asset for fieldwork and interaction with FUNAE.

Award criteria

The contract will be awarded to the regular tender that is most economically advantageous, based on the following criteria:

- Technical offer: 70 points
- Price: 30 points

1. Technical Proposal (70 points)

Each criterion is scored on the following scale:

- **Excellent** (100% of points): specific to Nagonha, well-reasoned, no significant gaps.
- **Good** (70%): sound, with minor gaps or some generic elements.
- **Adequate** (40%): largely generic, or with significant gaps.
- **Insufficient** (0%): absent or not relevant.

Evaluation criteria	Max. Points	A high score requires
1. Understanding and diagnostic approach	1512	Plausible hypotheses for the battery under-charging (PV capacity, battery state of health, inverter/charger limits, control settings, load profile); how each will be tested (data analysis, on-site checks, battery capacity verification); data required and how gaps will be handled; key risks for the extension (compatibility with existing equipment and warranties, land, interface with the planned water system)
2. Methodology and work plan	25	Clear steps from diagnosis to tender-level design and works tender package; tools and standards identified; approach to preparing a consistent works tender package using the Enabel templates, including cross-checking between specifications, drawings, BoQ and evaluation criteria; realistic person-days per task and per expert; field mission within three weeks with a defined on-site programme; Enabel inputs and review periods reflected in the schedule

3. Key expert(s)	30	Team leader's experience beyond the minimum profile in Section 5.7: hands-on assessment or expansion of operational PV-battery mini-grids; hands-on experience with the inverter/charger platform installed at Nagonha (Victron); tender packages prepared for donor-funded or public works that were actually procured. Coverage of the competences the assignment needs (system diagnosis, protection and integration, structural design basis for cyclone-prone sites, tender specifications and cost estimation, working Portuguese), by the team leader alone or together with additional experts. The number of experts is not scored. Additional experts count only where their role and input are clearly defined in the work plan
	70	

Deliverables

Deliverable		**Content**	**Timing**
Fixed Tranche			
D1	Diagnostic and sizing note	Data reviewed and gaps; field mission findings; root-cause diagnosis of battery under-charging, including battery state of health; load scenarios including PUE; powerhouse space and condition assessment; comparison of two to three options on cost, technical risk and O&M implications; recommended capacity and configuration; key risks (compatibility and warranties, land, environmental licensing, design approval requirements); estimated works value	Within a maximum period of 4 weeks of contract start
Conditional 1			
D2	Draft works tender package	Draft works tender package using the Enabel templates, including: performance-based technical specifications; tender drawings (layout, single-line diagram, interconnection); structural design basis; BoQ and price schedule, with provisional quantities where applicable; testing, commissioning and acceptance requirements; training, documentation, warranty, defects liability and spare parts requirements; contractor design approval procedure; site visit provisions; proposed selection and award criteria with technical evaluation grid. Confidential Engineer's Cost Estimate, including indicative equipment lead times, delivered separately	Within a maximum period of6 weeks of notification of affirmation of conditional tranche 1
D3	Final works tender package	D2 revised to incorporate Enabel's and FUNAE's comments, with a comments-and-responses matrix; all source files in editable format (Word, Excel, DWG); final Engineer's Cost Estimate delivered separately	Within 5 working days of receipt of Enabel's comments on D2
Conditional 2			
D4	Written technical clarification responses (Works tender support)	Answers to technical clarification questions from works bidders, up to two (2) expert-days	From affirmation of conditional tranche 2 until award of the works contract (max. 3 months)

All deliverables shall be submitted electronically to the managing official.

Review and approval

Enabel will send consolidated comments, including FUNAE's, within five (5) working days of receiving each deliverable. The Consultant shall submit the revised deliverable within five (5) working days of receiving comments. Comments shall be incorporated at no additional cost.

Approval of D1 ends the fixed tranche. Affirmation of conditional tranches 1 and 2 is decided and notified in accordance with Section 2.4. With the notification of affirmation of conditional tranche 1, Enabel will confirm the procurement procedure for the works and provide the corresponding Enabel templates.

Annexes

Reference 1

Item	Information
Project title	
Client (full name of organisation)	
Client contact person (name, function, e-mail, telephone)	
Location (country, region)	
Period (start and end, month/year)	
Role of the tenderer (e.g. lead consultant, consortium member, subcontractor)	
Short description of the assignment and of the tenderer's own services (max. 150 words)	
Type of system (PV-battery mini-grid / hybrid mini-grid / off-grid system) and approximate size (kWp, kWh)	
Did the assignment include technical specifications and/or Bills of Quantities for a works or supply tender?	☐ Yes ☐ No

Reference 2

Item	Information
Project title	
Client (full name of organisation)	
Client contact person (name, function, e-mail, telephone)	
Location (country, region)	
Period (start and end, month/year)	
Role of the tenderer (e.g. lead consultant, consortium member, subcontractor)	
Short description of the assignment and of the tenderer's own services (max. 150 words)	

Type of system (PV-battery mini-grid / hybrid mini-grid / off-grid system) and approximate size (kWp, kWh)	
Did the assignment include technical specifications and/or Bills of Quantities for a works or supply tender?	☐ Yes ☐ No

Enabel may contact the clients indicated to verify the information provided.

(b) 6 Selection file) and award criteria (see clause 15);

(c) A detail of the prices quoted, listing for each item the various elements that are included in the price and the applicable taxes;

(d) The statutes and any other document required to establish the power of attorney of the signer(s).

5.7. Where the tender is submitted by a group of economic operators, it must include a copy of the following documents for each of the participants in the group:

(a) Identification form (clause 1 of chapter 8 Forms);

(b) Declaration on honour - Exclusion grounds (clause 4 of chapter 8 Forms);

(c) Integrity statement (clause 6 of chapter 8 Forms);

(d) The statutes and any other document required to establish the power of attorney of the signer(s);

(e) The association agreement signed by each participant, clearly showing who represents the association.

5.8. Participants in a group of economic operators must designate one member of the group who will represent the group vis-à-vis the contracting authority.

In accordance with Article 73 of the Royal Decree of 18 April 2017 on the award of public contracts in the classical sectors, where an economic operator wants to rely on the capacities of other entities (particularly subcontractors or independent subsidiaries) for replying to criteria of economic and financial capacity or technical and professional aptitude (see clause 13 and Terms of reference

Background

The Nagonha mini-grid, located in Nagonha, Locality of Alto Maganha, Pebane District, Zambézia Province, was developed under the RERD2 programme as part of efforts to expand access to reliable renewable electricity in rural areas of Mozambique.

The existing Nagonha photovoltaic power plant has an installed solar PV generation capacity of approximately 200 kWp and a battery energy storage capacity of approximately 1,171.2 kWh. The mini-grid also comprises the associated power conversion, control, protection, monitoring and electricity distribution infrastructure.

The battery system uses lithium-ion technology, with an installed capacity of approximately 1,171 kWh, and the mini-grid was commissioned in 2024. The inverter/charger system is based on Victron equipment, comprising 12 inverter/charger units rated at 15 kVA each. The mini-grid serves 853 connections and is operated by KK Lda, under the institutional responsibility of FUNAE Monitoring data is available through the Victron Remote Management (VRM) portal, with monthly operational reports covering July 2024 to June 2025.

Under the current Enabel portfolio, Nagonha is being developed as a pilot site through complementary interventions under Result 3 (Energy) and Result 4 (Water).

Under Result 3, Nagonha is a pilot site for Productive Use of Energy (PUE). The objective is to stimulate productive and income-generating activities, increase the productive use of electricity and test approaches that can contribute to the operational and economic sustainability of rural mini-grids.

Under Result 4, a water supply system is being designed as part of a broader Water–Energy Dual Utility Pilot. The planned water system is expected to have its own dedicated solar PV generation. It should therefore not automatically be counted as an additional load when sizing the mini-grid expansion. The overall dual-utility configuration and the technical interfaces, operational dependencies and coordination requirements between the water and energy systems shall nevertheless be considered.

Operational experience has shown that the batteries do not reach the required State of Charge during daytime operation. The assessment shall determine whether the existing system can serve the evolving

load while allowing the batteries to recover to the required State of Charge and to remain within the intended Depth of Discharge limits.

This is particularly relevant as additional productive loads are introduced through the PUE pilot. The evolution of productive demand must be considered together with the operating characteristics and limitations of the existing generation and storage system. The aim is to avoid adverse impacts on battery performance, system reliability and equipment lifetime.

Enabel and FUNAE therefore intend to diagnose the causes of the current generation–storage imbalance, determine the most cost-effective technical response, and prepare the works tender for its implementation under a design-and-build contract.

The assignment shall contribute to the optimisation of the existing RERD2 infrastructure, accommodate the evolving productive-use demand under Result 3, and ensure technical compatibility with the development of Nagonha as a Water–Energy Dual Utility Pilot under Results 3 and 4.

Enabel and FUNAE therefore intend to diagnose the causes of the current generation–storage imbalance, determine the most cost-effective technical response, and prepare the works tender for its implementation under a design-and-build contract.

The assignment shall contribute to the optimisation of the existing RERD2 infrastructure, accommodate the evolving productive-use demand under Result 3, and ensure technical compatibility with the development of Nagonha as a Water–Energy Dual Utility Pilot under Results 3 and 4.

Objective

The objective of the assignment is to:

- diagnose why the Nagonha mini-grid battery bank does not reach the required State of Charge under current and expected loads;
- determine the most cost-effective technical response, expected to be additional solar PV capacity and any strictly necessary associated modifications;
- prepare the works tender package for the supply, installation, integration, testing and commissioning of that response, using the Enabel templates and ready for publication subject to Enabel's procurement validation.

The proposed solution shall be fully compatible with the existing mini-grid. It shall take into account the development of Nagonha as a Water–Energy Dual Utility Pilot, including the technical interfaces with the planned water system.

Expected results

- **R1 – Diagnosis and technical response defined (fixed tranche):** the causes of the batteries not reaching the required State of Charge are established, options are compared, and the capacity and configuration to be procured are recommended.
- **R2 – Tender-level design completed (conditional tranche 1):** the recommended option is designed to a level that allows bidders to prepare complete and comparable offers under a design-and-build contract.
- **R3 – Works tender package ready for publication (conditional tranche 1):** the works tender package, including all technical annexes, is finalised using the Enabel templates after Enabel and FUNAE comments, subject only to Enabel's procurement validation.
- **R4 – Works bidders' technical questions answered (conditional tranche 2):** technical clarification questions from works bidders are answered promptly and consistently with the works tender package.

Scope of work

The assignment is carried out in three phases, plus optional support during the works tender:

- Phase 1 constitutes the fixed tranche.
- Phases 2 and 3 constitute conditional tranche 1.
- Support during the works tender constitutes conditional tranche 2

Enabel inputs

At contract start, Enabel will provide:

- the available as-built documentation, equipment specifications, maintenance records and monitoring data of the Nagonha mini-grid;
- the productive use of energy (PUE) load scenario developed under Result 3;
- the design assumptions and interface points of the planned water system under Result 4;
- confirmation, in consultation with FUNAE, of the land available for the extension.

Missing or incomplete data shall be reported in Deliverable 1 and addressed through explicit, technically justified assumptions.

Phase 1 – Diagnosis and sizing (fixed tranche)

The Consultant shall:

- review the documentation and data provided by Enabel;
- carry out one field mission to Nagonha within three (3) weeks of contract start. The mission covers inspection of the PV generation, battery storage system, inverters and chargers, protection, control and monitoring equipment, and the available site area;
- analyse generation, demand, battery charging behaviour, State of Charge and Depth of Discharge, and identify the root cause(s) of the batteries not reaching the required State of Charge. Causes to be examined include PV capacity, battery state of health, inverter and charger limits, control settings and load profile;
- assess the impact of current and expected PUE loads, using the Result 3 scenario. Consider the interfaces with the planned water system, without counting loads to be supplied by its dedicated solar generation;
- assess whether the existing powerhouse/container has sufficient space, ventilation and protection for additional inverters and associated equipment. If it does not, define the requirements for an additional equipment shelter;
- compare two to three technical options on cost, technical risk and operation and maintenance implications, and recommend the capacity and configuration to be procured;
- identify the key risks and requirements for the extension, including:
    - compatibility with existing equipment and warranties;
    - land and site constraints;
    - environmental licensing requirements;
    - any design approval required by FUNAE or the energy regulator (ARENE);
- estimate the works value, to inform Enabel's choice of procurement procedure for the works.

Phase 2 – Tender-level design (conditional tranche 1)

The Consultant shall develop the recommended option to tender level. The design shall define all elements that determine compatibility with the existing system, safety and the comparability of offers:

- additional capacity;
- coupling architecture (AC/DC) and point of interconnection;
- compatibility requirements with the existing inverters, battery system and controls;
- protection philosophy and coordination requirements;
- earthing and lightning protection concept;
- integration with the monitoring system;

- site layout and footprint, including cable routes.

The tender-level design shall also define the structural design basis for PV mounting structures, foundations and any equipment shelter:

- design wind speed and applicable standard for cyclone-prone sites;
- corrosion category for a coastal environment;
- acceptable foundation types;
- the geotechnical investigation to be carried out by the works contractor.

Equipment-specific detailed design will be the responsibility of the works contractor. It shall stay within the parameters defined by the Consultant and is subject to Enabel's approval before installation. It includes:

- final string configuration;
- final cable sizing;
- structural design and calculations for the mounting structures and foundations, certified by a qualified structural engineer;
- construction/shop drawings.

The Consultant shall prepare:

- performance-based technical specifications;
- tender drawings (layout, single-line diagram, interconnection);
- the Bill of Quantities and price schedule;
- a confidential Engineer's Cost Estimate, including indicative lead times for major equipment;
- testing, commissioning and acceptance requirements;
- training, documentation, warranty, defects liability and spare parts requirements.

These requirements shall be suited to the operating and maintenance capacity of the entity responsible for the mini-grid.

Phase 3 – Works tender package (conditional tranche 1)

With the affirmation of conditional tranche 1, Enabel will confirm the procurement procedure for the works and provide the corresponding Enabel templates. The Consultant shall prepare the works tender package using those templates, ready for publication subject to Enabel's procurement validation. This includes:

- integration of all technical specifications, drawings, the BoQ and price schedule, and testing, commissioning and acceptance requirements;
- proposed selection criteria (technical capacity) and award criteria, including the technical evaluation grid;
- completion of contract-specific fields, based on Enabel's instructions: subject-matter, duration, lots, performance conditions, acceptance procedure, and payment milestones linked to works progress;
- provisions for a site visit by works bidders;
- provisional quantities for items that cannot be fixed before the geotechnical investigation, in particular foundations;
- the procedure for submission and approval of the works contractor's detailed design, including review periods.

Standard administrative, legal and contractual clauses of the Enabel templates shall not be modified without Enabel's written instruction. The Engineer's Cost Estimate shall be delivered separately and shall not be included in the works tender package. Enabel remains responsible for the final validation, approval and publication of the works tender package.

Support during the works tender (conditional tranche 2)

If conditional tranche 2 is affirmed, the Consultant shall answer technical clarification questions from works bidders, forwarded by Enabel, within three (3) working days, for up to two (2) expert-days.

Consistency and language

The Consultant shall ensure that the specifications, drawings, quantities, cost estimate and evaluation criteria are consistent with each other.

Deliverable 1 shall be in English. The works tender package and its technical annexes shall be in English, and shall allow works bidders to submit offers in English.

Duration and timeline

- The fixed tranche shall be completed within a maximum period of four (4) weeks of the day following kick-off meeting, including Enabel's review and approval of Deliverable 1.

- Conditional tranche 1 shall be completed within a maximum period of five (5) weeks of the day following notification of its affirmation.

- Conditional tranche 2 runs from the day following notification of its affirmation until award of the works contract, and at the latest three (3) months after its affirmation.

The field mission to Nagonha shall take place within two (2) weeks of contract start, taking into account access constraints linked to the rainy season in Zambézia Province. The mission shall be scheduled sufficiently early to allow its findings to be fully incorporated into Deliverable 1.

The work plan submitted with the technical offer shall show the sequencing of activities, the planned date and timing of the field mission, deliverable submission dates, Enabel/FUNAE review points, dependencies on Enabel inputs, and any access-related risks and mitigation measures.

Quantities

This public service contract is divided into one fixed tranche and two conditional tranches:

- **Fixed tranche (Phase 1):** diagnosis of the existing Nagonha mini-grid and determination of the technical response, including the additional solar PV capacity required (Deliverable 1);
- **Conditional tranche 1 (Phases 2 and 3):** tender-level design of the recommended option and preparation of the works tender package using the Enabel templates, ready for publication subject to Enabel's procurement validation (Deliverables 2 and 3);
- **Conditional tranche 2:** technical clarification support during the works tender, up to two (2) expert-days.

Enabel's commitment is limited to the fixed tranche. Each conditional tranche is performed only if Enabel affirms it and notifies the Consultant in writing:

conditional tranche 1: immediately following approval of Deliverable 1, subject to Enabel's decision to proceed; conditional tranche 2: after approval of Deliverable 3, and and no later than publication of the works tender. A conditional tranche that is not affirmed within its period lapses. The Consultant is not entitled to any compensation, holding fee or indemnity if a conditional tranche is not affirmed or lapses.

The tenderer shall price each tranche separately. Tenders are compared on the total price of the three tranches.

Methodology and approach

The Consultant shall apply a practical, engineering-based methodology combining document review, field verification, operational data analysis, system sizing, tender-level design and tender preparation, as set out in Section 5.4.

The Consultant shall identify the engineering tools, standards and main assumptions used. Assumptions made because of missing or incomplete data shall be stated explicitly and technically justified.

Before each submission, the Consultant shall carry out an internal quality check. This check ensures that the specifications, drawings, quantities, cost estimate and evaluation criteria are consistent with each other.

Minimum Team Composition and Qualifications

The assignment shall be led by a team leader who meets the following minimum profile:

- University degree in electrical engineering, energy engineering or a related field;
- At least eight (8) years of professional experience in solar PV, hybrid power systems and/or mini-grids;
- Demonstrated experience in the technical assessment or design of PV-battery systems;
- Full professional proficiency in English.

The tenderer may propose additional experts to complement the team leader, for example in civil/structural design, protection and system integration, or cost estimation. This is optional. A tender proposing only the team leader is fully admissible and is not disadvantaged. Any additional expert shall be named, with a CV, a defined role and a number of days in the work plan.

The team leader is responsible for all deliverables. Working knowledge of Portuguese within the team is an asset for fieldwork and interaction with FUNAE.

Award criteria

The contract will be awarded to the regular tender that is most economically advantageous, based on the following criteria:

- Technical offer: 70 points
- Price: 30 points

1. Technical Proposal (70 points)

Each criterion is scored on the following scale:

- **Excellent** (100% of points): specific to Nagonha, well-reasoned, no significant gaps.
- **Good** (70%): sound, with minor gaps or some generic elements.
- **Adequate** (40%): largely generic, or with significant gaps.
- **Insufficient** (0%): absent or not relevant.

Evaluation criteria	Max. Points	A high score requires
1. Understanding and diagnostic approach	1512	Plausible hypotheses for the battery under-charging (PV capacity, battery state of health, inverter/charger limits, control settings, load profile); how each will be tested (data analysis, on-site checks, battery capacity verification); data required and how gaps will be handled; key risks for the extension (compatibility with existing equipment and warranties, land, interface with the planned water system)
2. Methodology and work plan	25	Clear steps from diagnosis to tender-level design and works tender package; tools and standards identified; approach to preparing a consistent works tender package using the Enabel templates, including cross-checking between specifications, drawings, BoQ and evaluation criteria; realistic person-days per task and per expert; field mission within three weeks with a defined on-site programme; Enabel inputs and review periods reflected in the schedule
3. Key expert(s)	30	Team leader's experience beyond the minimum profile in Section 5.7: hands-on assessment or expansion of operational PV-battery mini-grids; hands-on experience with the inverter/charger platform installed at Nagonha (Victron); tender packages prepared for donor-funded or public works that were actually procured. Coverage of the competences the assignment needs (system diagnosis, protection and integration, structural design basis for cyclone-prone sites, tender specifications and cost estimation, working Portuguese), by the team leader alone or together with additional experts. The number of experts is not scored. Additional experts count only where their role and input are clearly defined in the work plan
	70	

Deliverables

Deliverable		Content	Timing
Fixed Tranche			
D1	Diagnostic and sizing note	Data reviewed and gaps; field mission findings; root-cause diagnosis of battery under-charging, including battery state of health; load scenarios including PUE; powerhouse space and condition assessment; comparison of two to three options on cost, technical risk and O&M implications; recommended capacity and configuration; key risks (compatibility and warranties, land, environmental licensing, design approval requirements); estimated works value	Within a maximum period of 4 weeks of contract start
Conditional 1			
D2	Draft works tender package	Draft works tender package using the Enabel templates, including: performance-based technical specifications; tender drawings (layout, single-line diagram, interconnection); structural design basis; BoQ and price schedule, with provisional quantities where applicable; testing, commissioning and acceptance requirements; training, documentation, warranty, defects liability and spare parts	Within a maximum period of6 weeks of notification of affirmation of conditional tranche 1

		requirements; contractor design approval procedure; site visit provisions; proposed selection and award criteria with technical evaluation grid. Confidential Engineer's Cost Estimate, including indicative equipment lead times, delivered separately	
D3	Final works tender package	D2 revised to incorporate Enabel's and FUNAE's comments, with a comments-and-responses matrix; all source files in editable format (Word, Excel, DWG); final Engineer's Cost Estimate delivered separately	Within 5 working days of receipt of Enabel's comments on D2
Conditional 2			
D4	Written technical clarification responses (Works tender support)	Answers to technical clarification questions from works bidders, up to two (2) expert-days	From affirmation of conditional tranche 2 until award of the works contract (max. 3 months)

All deliverables shall be submitted electronically to the managing official.

Review and approval

Enabel will send consolidated comments, including FUNAE's, within five (5) working days of receiving each deliverable. The Consultant shall submit the revised deliverable within five (5) working days of receiving comments. Comments shall be incorporated at no additional cost.

Approval of D1 ends the fixed tranche. Affirmation of conditional tranches 1 and 2 is decided and notified in accordance with Section 2.4. With the notification of affirmation of conditional tranche 1, Enabel will confirm the procurement procedure for the works and provide the corresponding Enabel templates.

Annexes

Reference 1

Item	Information
Project title	
Client (full name of organisation)	
Client contact person (name, function, e-mail, telephone)	
Location (country, region)	
Period (start and end, month/year)	
Role of the tenderer (e.g. lead consultant, consortium member, subcontractor)	
Short description of the assignment and of the tenderer's own services (max. 150 words)	
Type of system (PV-battery mini-grid / hybrid mini-grid / off-grid system) and approximate size (kWp, kWh)	
Did the assignment include technical specifications and/or Bills of Quantities for a works or supply tender?	☐ Yes ☐ No

Reference 2

Item	Information
Project title	
Client (full name of organisation)	
Client contact person (name, function, e-mail, telephone)	
Location (country, region)	
Period (start and end, month/year)	
Role of the tenderer (e.g. lead consultant, consortium member, subcontractor)	
Short description of the assignment and of the tenderer's own services (max. 150 words)	
Type of system (PV-battery mini-grid / hybrid mini-grid / off-grid system) and approximate size (kWp, kWh)	
Did the assignment include technical specifications and/or Bills of Quantities for a works or supply tender?	☐ Yes ☐ No

Enabel may contact the clients indicated to verify the information provided.

5.10. 6 Selection file), it shall prove to the contracting authority that it will have at its disposal the resources necessary, for example, by producing a commitment by those entities to that effect.

6. TENDER CURRENCY

All prices given in the tender form must obligatorily be quoted in **euro**.

7. DETERMINATION OF PRICES

7.1. This public contract is a **lump-sum price** contract, meaning the global price is a flat fee that covers the whole of the contract or each of the items listed in the inventory.

7.2. In accordance with Article 37 of the Royal Decree of 18 April 2017 on the award of public contracts in the classical sectors, the contracting authority may for the purpose of verifying the prices carry out an audit of any and all accounting documents and perform on-the-spot checks with a view of verifying the correctness of the indications supplied.

8. ELEMENTS INCLUDED IN THE PRICE

8.1. The tenderer is to include in his global prices any charges and taxes generally applied to services according to the applicable tax legislation of Mozambique, with the exception of the value-added tax. The VAT percentage is quoted separately, if applicable.
As mentioned in clause 1 of chapter 1 General Remarks, **local tax regime is applicable**.
For the provision of services in Mozambique, the attention of tenderers who are non-tax residents of Mozambique is drawn to the tax on the profits of non-residents (20% (or possibly 32% or 10%)) applicable to this category of service provider. It is also the tenderer's responsibility to obtain information on all other tax provisions applicable in Mozambique.
The 20% (or possibly 32% or 10%) non-resident income tax will be withheld at source at the time of payment of the invoice. Make sure to verify whether any bilateral or regional non-double taxation treaties apply to your situation.

8.2. The global prices for this public contract must encompass any costs, measures, and charges related to the performance of the contract, including but not limited to:

(a) Administrative management and secretariat services;

(b) Documentation related to the services;

(c) Delivery of documents or records associated with the performance of the contract.

(d) Acceptance costs.

8.3. All relevant costs must be factored into the prices for this public contract.

SECTION (C) - SUBMISSION OF TENDERS

9. SUBMISSION OF TENDERS

9.1. Without prejudice to any variants, the tenderer may only submit one tender per contract.

9.2. In accordance with the rules governing means of communication, only tenders submitted by electronic means are accepted.

Consequently, the submission of tenders on paper is prohibited, and the contracting authority will only consider tenders submitted electronically.

9.3. For this public contract, tenders will be submitted electronically via **tendersmoz@enabel.be**

9.4. **Tenders must be submitted no later than 02 November 2026 at 12PM (noon) (Mozambican time)**.

10. TENDER SIGNATURE

10.1. Signatures are placed by the person(s) empowered or mandated to commit the tenderer. This obligation applies to each participant when the tender is submitted by a group of economic operators (consortium). These participants are jointly liable.

10.2. When the submission report is signed by a mandatary, he or she must clearly indicate whom he or she represents. The mandatary attaches the original electronic deed or private document that transfers these powers to him or her or a scanned copy of that proxy.

11. DEADLINE FOR SUBMISSION AND OPENING OF TENDERS

11.1. Tenders must be in the possession of the contracting authority before **02 November 2026** at **12PM (noon) (Mozambican time)**.

1.5. Tenders are opened behind closed doors.

SECTION (D) - SELECTION, AWARDING & CONCLUSION

12. EXCLUSION GROUNDS

12.1. The obligatory and facultative grounds for exclusion are provided in the declaration on honour attached to these tender specifications (see clause 4 of chapter 8 Forms).

12.2. By submitting the declaration enclosed in the annex to these tender specifications, the tenderer certifies that they are not in any of the exclusion cases listed in Articles 67 to 70 of the Law of 17 June 2016 on public procurement, nor Articles 61 to 64 of the Royal Decree of 18 April 2017 on the award of public contracts in the classical sectors.

The grounds for exclusion apply to all participants submitting a joint bid as a consortium of economic operators and third parties (in particular subcontractors or independent subsidiaries) whose capacity is invoked with regard to the criteria of economic and financial capacity or technical and professional aptitude (see clause 13 and Terms of reference

Background

The Nagonha mini-grid, located in Nagonha, Locality of Alto Maganha, Pebane District, Zambézia Province, was developed under the RERD2 programme as part of efforts to expand access to reliable renewable electricity in rural areas of Mozambique.

The existing Nagonha photovoltaic power plant has an installed solar PV generation capacity of approximately 200 kWp and a battery energy storage capacity of approximately 1,171.2 kWh. The mini-grid also comprises the associated power conversion, control, protection, monitoring and electricity distribution infrastructure.

The battery system uses lithium-ion technology, with an installed capacity of approximately 1,171 kWh, and the mini-grid was commissioned in 2024. The inverter/charger system is based on Victron equipment, comprising 12 inverter/charger units rated at 15 kVA each. The mini-grid serves 853 connections and is operated by KK Lda, under the institutional responsibility of FUNAE Monitoring data is available through the Victron Remote Management (VRM) portal, with monthly operational reports covering July 2024 to June 2025.

Under the current Enabel portfolio, Nagonha is being developed as a pilot site through complementary interventions under Result 3 (Energy) and Result 4 (Water).

Under Result 3, Nagonha is a pilot site for Productive Use of Energy (PUE). The objective is to stimulate productive and income-generating activities, increase the productive use of electricity and test approaches that can contribute to the operational and economic sustainability of rural mini-grids.

Under Result 4, a water supply system is being designed as part of a broader Water–Energy Dual Utility Pilot. The planned water system is expected to have its own dedicated solar PV generation. It should therefore not automatically be counted as an additional load when sizing the mini-grid expansion. The overall dual-utility configuration and the technical interfaces, operational dependencies and coordination requirements between the water and energy systems shall nevertheless be considered.

Operational experience has shown that the batteries do not reach the required State of Charge during daytime operation. The assessment shall determine whether the existing system can serve the evolving load while allowing the batteries to recover to the required State of Charge and to remain within the intended Depth of Discharge limits.

This is particularly relevant as additional productive loads are introduced through the PUE pilot. The evolution of productive demand must be considered together with the operating characteristics and limitations of the existing generation and storage system. The aim is to avoid adverse impacts on battery performance, system reliability and equipment lifetime.

Enabel and FUNAE therefore intend to diagnose the causes of the current generation–storage imbalance, determine the most cost-effective technical response, and prepare the works tender for its implementation under a design-and-build contract.

The assignment shall contribute to the optimisation of the existing RERD2 infrastructure, accommodate the evolving productive-use demand under Result 3, and ensure technical compatibility with the development of Nagonha as a Water–Energy Dual Utility Pilot under Results 3 and 4.

Enabel and FUNAE therefore intend to diagnose the causes of the current generation–storage imbalance, determine the most cost-effective technical response, and prepare the works tender for its implementation under a design-and-build contract.

The assignment shall contribute to the optimisation of the existing RERD2 infrastructure, accommodate the evolving productive-use demand under Result 3, and ensure technical compatibility with the development of Nagonha as a Water–Energy Dual Utility Pilot under Results 3 and 4.

Objective

The objective of the assignment is to:

- diagnose why the Nagonha mini-grid battery bank does not reach the required State of Charge under current and expected loads;
- determine the most cost-effective technical response, expected to be additional solar PV capacity and any strictly necessary associated modifications;
- prepare the works tender package for the supply, installation, integration, testing and commissioning of that response, using the Enabel templates and ready for publication subject to Enabel's procurement validation.

The proposed solution shall be fully compatible with the existing mini-grid. It shall take into account the development of Nagonha as a Water–Energy Dual Utility Pilot, including the technical interfaces with the planned water system.

Expected results

- **R1 – Diagnosis and technical response defined (fixed tranche):** the causes of the batteries not reaching the required State of Charge are established, options are compared, and the capacity and configuration to be procured are recommended.
- **R2 – Tender-level design completed (conditional tranche 1):** the recommended option is designed to a level that allows bidders to prepare complete and comparable offers under a design-and-build contract.
- **R3 – Works tender package ready for publication (conditional tranche 1):** the works tender package, including all technical annexes, is finalised using the Enabel templates after Enabel and FUNAE comments, subject only to Enabel's procurement validation.
- **R4 – Works bidders' technical questions answered (conditional tranche 2):** technical clarification questions from works bidders are answered promptly and consistently with the works tender package.

Scope of work

The assignment is carried out in three phases, plus optional support during the works tender:

- Phase 1 constitutes the fixed tranche.
- Phases 2 and 3 constitute conditional tranche 1.
- Support during the works tender constitutes conditional tranche 2

Enabel inputs

At contract start, Enabel will provide:

- the available as-built documentation, equipment specifications, maintenance records and monitoring data of the Nagonha mini-grid;
- the productive use of energy (PUE) load scenario developed under Result 3;
- the design assumptions and interface points of the planned water system under Result 4;
- confirmation, in consultation with FUNAE, of the land available for the extension.

Missing or incomplete data shall be reported in Deliverable 1 and addressed through explicit, technically justified assumptions.

Phase 1 – Diagnosis and sizing (fixed tranche)

The Consultant shall:

- review the documentation and data provided by Enabel;
- carry out one field mission to Nagonha within three (3) weeks of contract start. The mission covers inspection of the PV generation, battery storage system, inverters and chargers, protection, control and monitoring equipment, and the available site area;

- analyse generation, demand, battery charging behaviour, State of Charge and Depth of Discharge, and identify the root cause(s) of the batteries not reaching the required State of Charge. Causes to be examined include PV capacity, battery state of health, inverter and charger limits, control settings and load profile;
- assess the impact of current and expected PUE loads, using the Result 3 scenario. Consider the interfaces with the planned water system, without counting loads to be supplied by its dedicated solar generation;
- assess whether the existing powerhouse/container has sufficient space, ventilation and protection for additional inverters and associated equipment. If it does not, define the requirements for an additional equipment shelter;
- compare two to three technical options on cost, technical risk and operation and maintenance implications, and recommend the capacity and configuration to be procured;
- identify the key risks and requirements for the extension, including:
    - compatibility with existing equipment and warranties;
    - land and site constraints;
    - environmental licensing requirements;
    - any design approval required by FUNAE or the energy regulator (ARENE);
- estimate the works value, to inform Enabel's choice of procurement procedure for the works.

Phase 2 – Tender-level design (conditional tranche 1)

The Consultant shall develop the recommended option to tender level. The design shall define all elements that determine compatibility with the existing system, safety and the comparability of offers:

- additional capacity;
- coupling architecture (AC/DC) and point of interconnection;
- compatibility requirements with the existing inverters, battery system and controls;
- protection philosophy and coordination requirements;
- earthing and lightning protection concept;
- integration with the monitoring system;
- site layout and footprint, including cable routes.

The tender-level design shall also define the structural design basis for PV mounting structures, foundations and any equipment shelter:

- design wind speed and applicable standard for cyclone-prone sites;
- corrosion category for a coastal environment;
- acceptable foundation types;
- the geotechnical investigation to be carried out by the works contractor.

Equipment-specific detailed design will be the responsibility of the works contractor. It shall stay within the parameters defined by the Consultant and is subject to Enabel's approval before installation. It includes:

- final string configuration;
- final cable sizing;
- structural design and calculations for the mounting structures and foundations, certified by a qualified structural engineer;
- construction/shop drawings.

The Consultant shall prepare:

- performance-based technical specifications;
- tender drawings (layout, single-line diagram, interconnection);
- the Bill of Quantities and price schedule;
- a confidential Engineer's Cost Estimate, including indicative lead times for major equipment;

- testing, commissioning and acceptance requirements;
- training, documentation, warranty, defects liability and spare parts requirements.

These requirements shall be suited to the operating and maintenance capacity of the entity responsible for the mini-grid.

Phase 3 – Works tender package (conditional tranche 1)

With the affirmation of conditional tranche 1, Enabel will confirm the procurement procedure for the works and provide the corresponding Enabel templates. The Consultant shall prepare the works tender package using those templates, ready for publication subject to Enabel's procurement validation. This includes:

- integration of all technical specifications, drawings, the BoQ and price schedule, and testing, commissioning and acceptance requirements;
- proposed selection criteria (technical capacity) and award criteria, including the technical evaluation grid;
- completion of contract-specific fields, based on Enabel's instructions: subject-matter, duration, lots, performance conditions, acceptance procedure, and payment milestones linked to works progress;
- provisions for a site visit by works bidders;
- provisional quantities for items that cannot be fixed before the geotechnical investigation, in particular foundations;
- the procedure for submission and approval of the works contractor's detailed design, including review periods.

Standard administrative, legal and contractual clauses of the Enabel templates shall not be modified without Enabel's written instruction. The Engineer's Cost Estimate shall be delivered separately and shall not be included in the works tender package. Enabel remains responsible for the final validation, approval and publication of the works tender package.

Support during the works tender (conditional tranche 2)

If conditional tranche 2 is affirmed, the Consultant shall answer technical clarification questions from works bidders, forwarded by Enabel, within three (3) working days, for up to two (2) expert-days.

Consistency and language

The Consultant shall ensure that the specifications, drawings, quantities, cost estimate and evaluation criteria are consistent with each other.

Deliverable 1 shall be in English. The works tender package and its technical annexes shall be in English, and shall allow works bidders to submit offers in English.

Duration and timeline

- The fixed tranche shall be completed within a maximum period of four (4) weeks of the day following kick-off meeting, including Enabel's review and approval of Deliverable 1.

- Conditional tranche 1 shall be completed within a maximum period of five (5) weeks of the day following notification of its affirmation.

- Conditional tranche 2 runs from the day following notification of its affirmation until award of the works contract, and at the latest three (3) months after its affirmation.

The field mission to Nagonha shall take place within two (2) weeks of contract start, taking into account access constraints linked to the rainy season in Zambézia Province. The mission shall be scheduled sufficiently early to allow its findings to be fully incorporated into Deliverable 1.

The work plan submitted with the technical offer shall show the sequencing of activities, the planned date and timing of the field mission, deliverable submission dates, Enabel/FUNAE review points, dependencies on Enabel inputs, and any access-related risks and mitigation measures.

Quantities

This public service contract is divided into one fixed tranche and two conditional tranches:

- **Fixed tranche (Phase 1):** diagnosis of the existing Nagonha mini-grid and determination of the technical response, including the additional solar PV capacity required (Deliverable 1);
- **Conditional tranche 1 (Phases 2 and 3):** tender-level design of the recommended option and preparation of the works tender package using the Enabel templates, ready for publication subject to Enabel's procurement validation (Deliverables 2 and 3);
- **Conditional tranche 2:** technical clarification support during the works tender, up to two (2) expert-days.

Enabel's commitment is limited to the fixed tranche. Each conditional tranche is performed only if Enabel affirms it and notifies the Consultant in writing:

conditional tranche 1: immediately following approval of Deliverable 1, subject to Enabel's decision to proceed; conditional tranche 2: after approval of Deliverable 3, and and no later than publication of the works tender. A conditional tranche that is not affirmed within its period lapses. The Consultant is not entitled to any compensation, holding fee or indemnity if a conditional tranche is not affirmed or lapses.

The tenderer shall price each tranche separately. Tenders are compared on the total price of the three tranches.

Methodology and approach

The Consultant shall apply a practical, engineering-based methodology combining document review, field verification, operational data analysis, system sizing, tender-level design and tender preparation, as set out in Section 5.4.

The Consultant shall identify the engineering tools, standards and main assumptions used. Assumptions made because of missing or incomplete data shall be stated explicitly and technically justified.

Before each submission, the Consultant shall carry out an internal quality check. This check ensures that the specifications, drawings, quantities, cost estimate and evaluation criteria are consistent with each other.

Minimum Team Composition and Qualifications

The assignment shall be led by a team leader who meets the following minimum profile:

- University degree in electrical engineering, energy engineering or a related field;
- At least eight (8) years of professional experience in solar PV, hybrid power systems and/or mini-grids;
- Demonstrated experience in the technical assessment or design of PV-battery systems;

- Full professional proficiency in English.

The tenderer may propose additional experts to complement the team leader, for example in civil/structural design, protection and system integration, or cost estimation. This is optional. A tender proposing only the team leader is fully admissible and is not disadvantaged. Any additional expert shall be named, with a CV, a defined role and a number of days in the work plan.

The team leader is responsible for all deliverables. Working knowledge of Portuguese within the team is an asset for fieldwork and interaction with FUNAE.

Award criteria

The contract will be awarded to the regular tender that is most economically advantageous, based on the following criteria:

- Technical offer: 70 points
- Price: 30 points

1. Technical Proposal (70 points)

Each criterion is scored on the following scale:

- **Excellent** (100% of points): specific to Nagonha, well-reasoned, no significant gaps.
- **Good** (70%): sound, with minor gaps or some generic elements.
- **Adequate** (40%): largely generic, or with significant gaps.
- **Insufficient** (0%): absent or not relevant.

Evaluation criteria	Max. Points	A high score requires
1. Understanding and diagnostic approach	1512	Plausible hypotheses for the battery under-charging (PV capacity, battery state of health, inverter/charger limits, control settings, load profile); how each will be tested (data analysis, on-site checks, battery capacity verification); data required and how gaps will be handled; key risks for the extension (compatibility with existing equipment and warranties, land, interface with the planned water system)
2. Methodology and work plan	25	Clear steps from diagnosis to tender-level design and works tender package; tools and standards identified; approach to preparing a consistent works tender package using the Enabel templates, including cross-checking between specifications, drawings, BoQ and evaluation criteria; realistic person-days per task and per expert; field mission within three weeks with a defined on-site programme; Enabel inputs and review periods reflected in the schedule
3. Key expert(s)	30	Team leader's experience beyond the minimum profile in Section 5.7: hands-on assessment or expansion of operational PV-battery mini-grids; hands-on experience with the inverter/charger platform installed at Nagonha (Victron); tender packages prepared for donor-funded or public works that were actually procured. Coverage of the competences the assignment needs (system diagnosis, protection and integration, structural design basis for cyclone-prone sites, tender specifications and cost estimation, working

		Portuguese), by the team leader alone or together with additional experts. The number of experts is not scored. Additional experts count only where their role and input are clearly defined in the work plan
	70	

Deliverables

Deliverable		Content	Timing
Fixed Tranche			
D1	Diagnostic and sizing note	Data reviewed and gaps; field mission findings; root-cause diagnosis of battery under-charging, including battery state of health; load scenarios including PUE; powerhouse space and condition assessment; comparison of two to three options on cost, technical risk and O&M implications; recommended capacity and configuration; key risks (compatibility and warranties, land, environmental licensing, design approval requirements); estimated works value	Within a maximum period of 4 weeks of contract start
Conditional 1			
D2	Draft works tender package	Draft works tender package using the Enabel templates, including: performance-based technical specifications; tender drawings (layout, single-line diagram, interconnection); structural design basis; BoQ and price schedule, with provisional quantities where applicable; testing, commissioning and acceptance requirements; training, documentation, warranty, defects liability and spare parts requirements; contractor design approval procedure; site visit provisions; proposed selection and award criteria with technical evaluation grid. Confidential Engineer's Cost Estimate, including indicative equipment lead times, delivered separately	Within a maximum period of6 weeks of notification of affirmation of conditional tranche 1
D3	Final works tender package	D2 revised to incorporate Enabel's and FUNAE's comments, with a comments-and-responses matrix; all source files in editable format (Word, Excel, DWG); final Engineer's Cost Estimate delivered separately	Within 5 working days of receipt of Enabel's comments on D2
Conditional 2			
D4	Written technical clarification responses (Works tender support)	Answers to technical clarification questions from works bidders, up to two (2) expert-days	From affirmation of conditional tranche 2 until award of the works contract (max. 3 months)

All deliverables shall be submitted electronically to the managing official.

Review and approval

Enabel will send consolidated comments, including FUNAE's, within five (5) working days of receiving each deliverable. The Consultant shall submit the revised deliverable within five (5) working days of receiving comments. Comments shall be incorporated at no additional cost.

Approval of D1 ends the fixed tranche. Affirmation of conditional tranches 1 and 2 is decided and notified in accordance with Section 2.4. With the notification of affirmation of conditional tranche 1, Enabel will confirm the procurement procedure for the works and provide the corresponding Enabel templates.

Annexes

Reference 1

Item	Information
Project title	
Client (full name of organisation)	
Client contact person (name, function, e-mail, telephone)	
Location (country, region)	
Period (start and end, month/year)	
Role of the tenderer (e.g. lead consultant, consortium member, subcontractor)	
Short description of the assignment and of the tenderer's own services (max. 150 words)	
Type of system (PV-battery mini-grid / hybrid mini-grid / off-grid system) and approximate size (kWp, kWh)	
Did the assignment include technical specifications and/or Bills of Quantities for a works or supply tender?	☐ Yes ☐ No

Reference 2

Item	Information
Project title	
Client (full name of organisation)	
Client contact person (name, function, e-mail, telephone)	
Location (country, region)	
Period (start and end, month/year)	
Role of the tenderer (e.g. lead consultant, consortium member, subcontractor)	
Short description of the assignment and of the tenderer's own services (max. 150 words)	
Type of system (PV-battery mini-grid / hybrid mini-grid / off-grid system) and approximate size (kWp, kWh)	
Did the assignment include technical specifications and/or Bills of Quantities for a works or supply tender?	☐ Yes ☐ No

Enabel may contact the clients indicated to verify the information provided.

12.4. 6 Selection file), in accordance with Article 73 § 1 of the Royal Decree of 18 April 2017 on the award of public contracts in the classical sectors.

12.5. The contracting authority will verify the accuracy of this declaration on honour for the tenderer with the highest ranked tender. To this end, the contracting authority will request the tenderer concerned to provide the necessary information or documents to verify their personal situation. The tenderer must submit this information by the fastest means and within the deadline set by the contracting authority.

12.6. The tenderer may attach these documents directly to his tender. If the tenderer fails to deliver the requested document(s) on time, the contracting authority reserves the right to exclude the tenderer.

12.7. Tenderers are strongly advised not to wait for the request of the contracting authority and to request the documents they have not attached to their tender as soon as possible from the competent authorities of the country where they are based. After all, in some cases, it may take a long time to obtain particular documents.

12.8. The contracting authority will directly obtain any information or documents that can be accessed free of charge by digital means from the instances that manage the information or documents. This is the case for Belgian tenderers (via the Telemarc platform), with the exception of the extract from the criminal record, which must be requested by the tenderer himself.

12.9. **Conflicts of Interest – Revolving Doors (Article 51 of the Royal Decree of 18 April 2017 on the award of public contracts in the classical sectors)** Without prejudice to Articles 6 and 69, paragraph 1, 5° of the Law of 17 June 2016 on public procurement, a conflict of interest also includes any "revolving doors" situation. This occurs when a natural person who previously worked for a contracting authority — whether as internal staff, in a hierarchical position, as a civil servant, public officer, or in any other capacity linked to the contracting authority — subsequently intervenes under a public contract awarded by that same contracting authority. A conflict of interest arises when there is a connection between the activities previously performed by the individual for the contracting authority and the activities carried out under the awarded contract.

13. QUALITATIVE SELECTION

By means of the documents requested in the 'Selection file' (Terms of reference

Background

The Nagonha mini-grid, located in Nagonha, Locality of Alto Maganha, Pebane District, Zambézia Province, was developed under the RERD2 programme as part of efforts to expand access to reliable renewable electricity in rural areas of Mozambique.

The existing Nagonha photovoltaic power plant has an installed solar PV generation capacity of approximately 200 kWp and a battery energy storage capacity of approximately 1,171.2 kWh. The mini-grid also comprises the associated power conversion, control, protection, monitoring and electricity distribution infrastructure.

The battery system uses lithium-ion technology, with an installed capacity of approximately 1,171 kWh, and the mini-grid was commissioned in 2024. The inverter/charger system is based on Victron equipment, comprising 12 inverter/charger units rated at 15 kVA each. The mini-grid serves 853 connections and is operated by KK Lda, under the institutional responsibility of FUNAE Monitoring data is available through the Victron Remote Management (VRM) portal, with monthly operational reports covering July 2024 to June 2025.

Under the current Enabel portfolio, Nagonha is being developed as a pilot site through complementary interventions under Result 3 (Energy) and Result 4 (Water).

Under Result 3, Nagonha is a pilot site for Productive Use of Energy (PUE). The objective is to stimulate productive and income-generating activities, increase the productive use of electricity and test approaches that can contribute to the operational and economic sustainability of rural mini-grids.

Under Result 4, a water supply system is being designed as part of a broader Water–Energy Dual Utility Pilot. The planned water system is expected to have its own dedicated solar PV generation. It should therefore not automatically be counted as an additional load when sizing the mini-grid expansion. The overall dual-utility configuration and the technical interfaces, operational dependencies and coordination requirements between the water and energy systems shall nevertheless be considered.

Operational experience has shown that the batteries do not reach the required State of Charge during daytime operation. The assessment shall determine whether the existing system can serve the evolving load while allowing the batteries to recover to the required State of Charge and to remain within the intended Depth of Discharge limits.

This is particularly relevant as additional productive loads are introduced through the PUE pilot. The evolution of productive demand must be considered together with the operating characteristics and limitations of the existing generation and storage system. The aim is to avoid adverse impacts on battery performance, system reliability and equipment lifetime.

Enabel and FUNAE therefore intend to diagnose the causes of the current generation–storage imbalance, determine the most cost-effective technical response, and prepare the works tender for its implementation under a design-and-build contract.

The assignment shall contribute to the optimisation of the existing RERD2 infrastructure, accommodate the evolving productive-use demand under Result 3, and ensure technical compatibility with the development of Nagonha as a Water–Energy Dual Utility Pilot under Results 3 and 4.

Enabel and FUNAE therefore intend to diagnose the causes of the current generation–storage imbalance, determine the most cost-effective technical response, and prepare the works tender for its implementation under a design-and-build contract.

The assignment shall contribute to the optimisation of the existing RERD2 infrastructure, accommodate the evolving productive-use demand under Result 3, and ensure technical compatibility with the development of Nagonha as a Water–Energy Dual Utility Pilot under Results 3 and 4.

Objective

The objective of the assignment is to:

- diagnose why the Nagonha mini-grid battery bank does not reach the required State of Charge under current and expected loads;
- determine the most cost-effective technical response, expected to be additional solar PV capacity and any strictly necessary associated modifications;
- prepare the works tender package for the supply, installation, integration, testing and commissioning of that response, using the Enabel templates and ready for publication subject to Enabel's procurement validation.

The proposed solution shall be fully compatible with the existing mini-grid. It shall take into account the development of Nagonha as a Water–Energy Dual Utility Pilot, including the technical interfaces with the planned water system.

Expected results

- **R1 – Diagnosis and technical response defined (fixed tranche):** the causes of the batteries not reaching the required State of Charge are established, options are compared, and the capacity and configuration to be procured are recommended.
- **R2 – Tender-level design completed (conditional tranche 1):** the recommended option is designed to a level that allows bidders to prepare complete and comparable offers under a design-and-build contract.
- **R3 – Works tender package ready for publication (conditional tranche 1):** the works tender package, including all technical annexes, is finalised using the Enabel templates after Enabel and FUNAE comments, subject only to Enabel's procurement validation.
- **R4 – Works bidders' technical questions answered (conditional tranche 2):** technical clarification questions from works bidders are answered promptly and consistently with the works tender package.

Scope of work

The assignment is carried out in three phases, plus optional support during the works tender:

- Phase 1 constitutes the fixed tranche.
- Phases 2 and 3 constitute conditional tranche 1.

- Support during the works tender constitutes conditional tranche 2

Enabel inputs

At contract start, Enabel will provide:

- the available as-built documentation, equipment specifications, maintenance records and monitoring data of the Nagonha mini-grid;
- the productive use of energy (PUE) load scenario developed under Result 3;
- the design assumptions and interface points of the planned water system under Result 4;
- confirmation, in consultation with FUNAE, of the land available for the extension.

Missing or incomplete data shall be reported in Deliverable 1 and addressed through explicit, technically justified assumptions.

Phase 1 – Diagnosis and sizing (fixed tranche)

The Consultant shall:

- review the documentation and data provided by Enabel;
- carry out one field mission to Nagonha within three (3) weeks of contract start. The mission covers inspection of the PV generation, battery storage system, inverters and chargers, protection, control and monitoring equipment, and the available site area;
- analyse generation, demand, battery charging behaviour, State of Charge and Depth of Discharge, and identify the root cause(s) of the batteries not reaching the required State of Charge. Causes to be examined include PV capacity, battery state of health, inverter and charger limits, control settings and load profile;
- assess the impact of current and expected PUE loads, using the Result 3 scenario. Consider the interfaces with the planned water system, without counting loads to be supplied by its dedicated solar generation;
- assess whether the existing powerhouse/container has sufficient space, ventilation and protection for additional inverters and associated equipment. If it does not, define the requirements for an additional equipment shelter;
- compare two to three technical options on cost, technical risk and operation and maintenance implications, and recommend the capacity and configuration to be procured;
- identify the key risks and requirements for the extension, including:
    - compatibility with existing equipment and warranties;
    - land and site constraints;
    - environmental licensing requirements;
    - any design approval required by FUNAE or the energy regulator (ARENE);
- estimate the works value, to inform Enabel's choice of procurement procedure for the works.

Phase 2 – Tender-level design (conditional tranche 1)

The Consultant shall develop the recommended option to tender level. The design shall define all elements that determine compatibility with the existing system, safety and the comparability of offers:

- additional capacity;
- coupling architecture (AC/DC) and point of interconnection;
- compatibility requirements with the existing inverters, battery system and controls;
- protection philosophy and coordination requirements;
- earthing and lightning protection concept;
- integration with the monitoring system;
- site layout and footprint, including cable routes.

The tender-level design shall also define the structural design basis for PV mounting structures, foundations and any equipment shelter:

- design wind speed and applicable standard for cyclone-prone sites;
- corrosion category for a coastal environment;
- acceptable foundation types;
- the geotechnical investigation to be carried out by the works contractor.

Equipment-specific detailed design will be the responsibility of the works contractor. It shall stay within the parameters defined by the Consultant and is subject to Enabel's approval before installation. It includes:

- final string configuration;
- final cable sizing;
- structural design and calculations for the mounting structures and foundations, certified by a qualified structural engineer;
- construction/shop drawings.

The Consultant shall prepare:

- performance-based technical specifications;
- tender drawings (layout, single-line diagram, interconnection);
- the Bill of Quantities and price schedule;
- a confidential Engineer's Cost Estimate, including indicative lead times for major equipment;
- testing, commissioning and acceptance requirements;
- training, documentation, warranty, defects liability and spare parts requirements.

These requirements shall be suited to the operating and maintenance capacity of the entity responsible for the mini-grid.

Phase 3 – Works tender package (conditional tranche 1)

With the affirmation of conditional tranche 1, Enabel will confirm the procurement procedure for the works and provide the corresponding Enabel templates. The Consultant shall prepare the works tender package using those templates, ready for publication subject to Enabel's procurement validation. This includes:

- integration of all technical specifications, drawings, the BoQ and price schedule, and testing, commissioning and acceptance requirements;
- proposed selection criteria (technical capacity) and award criteria, including the technical evaluation grid;
- completion of contract-specific fields, based on Enabel's instructions: subject-matter, duration, lots, performance conditions, acceptance procedure, and payment milestones linked to works progress;
- provisions for a site visit by works bidders;
- provisional quantities for items that cannot be fixed before the geotechnical investigation, in particular foundations;
- the procedure for submission and approval of the works contractor's detailed design, including review periods.

Standard administrative, legal and contractual clauses of the Enabel templates shall not be modified without Enabel's written instruction. The Engineer's Cost Estimate shall be delivered separately and shall not be included in the works tender package. Enabel remains responsible for the final validation, approval and publication of the works tender package.

Support during the works tender (conditional tranche 2)

If conditional tranche 2 is affirmed, the Consultant shall answer technical clarification questions from works bidders, forwarded by Enabel, within three (3) working days, for up to two (2) expert-days.

Consistency and language

The Consultant shall ensure that the specifications, drawings, quantities, cost estimate and evaluation criteria are consistent with each other.

Deliverable 1 shall be in English. The works tender package and its technical annexes shall be in English, and shall allow works bidders to submit offers in English.

Duration and timeline

- The fixed tranche shall be completed within a maximum period of four (4) weeks of the day following kick-off meeting, including Enabel's review and approval of Deliverable 1.

- Conditional tranche 1 shall be completed within a maximum period of five (5) weeks of the day following notification of its affirmation.

- Conditional tranche 2 runs from the day following notification of its affirmation until award of the works contract, and at the latest three (3) months after its affirmation.

The field mission to Nagonha shall take place within two (2) weeks of contract start, taking into account access constraints linked to the rainy season in Zambézia Province. The mission shall be scheduled sufficiently early to allow its findings to be fully incorporated into Deliverable 1.

The work plan submitted with the technical offer shall show the sequencing of activities, the planned date and timing of the field mission, deliverable submission dates, Enabel/FUNAE review points, dependencies on Enabel inputs, and any access-related risks and mitigation measures.

Quantities

This public service contract is divided into one fixed tranche and two conditional tranches:

- **Fixed tranche (Phase 1):** diagnosis of the existing Nagonha mini-grid and determination of the technical response, including the additional solar PV capacity required (Deliverable 1);
- **Conditional tranche 1 (Phases 2 and 3):** tender-level design of the recommended option and preparation of the works tender package using the Enabel templates, ready for publication subject to Enabel's procurement validation (Deliverables 2 and 3);
- **Conditional tranche 2:** technical clarification support during the works tender, up to two (2) expert-days.

Enabel's commitment is limited to the fixed tranche. Each conditional tranche is performed only if Enabel affirms it and notifies the Consultant in writing:

conditional tranche 1: immediately following approval of Deliverable 1, subject to Enabel's decision to proceed; conditional tranche 2: after approval of Deliverable 3, and and no later than publication of the works tender. A conditional tranche that is not affirmed within its period lapses. The Consultant is not entitled to any compensation, holding fee or indemnity if a conditional tranche is not affirmed or lapses.

The tenderer shall price each tranche separately. Tenders are compared on the total price of the three tranches.

Methodology and approach

The Consultant shall apply a practical, engineering-based methodology combining document review, field verification, operational data analysis, system sizing, tender-level design and tender preparation, as set out in Section 5.4.

The Consultant shall identify the engineering tools, standards and main assumptions used. Assumptions made because of missing or incomplete data shall be stated explicitly and technically justified.

Before each submission, the Consultant shall carry out an internal quality check. This check ensures that the specifications, drawings, quantities, cost estimate and evaluation criteria are consistent with each other.

Minimum Team Composition and Qualifications

The assignment shall be led by a team leader who meets the following minimum profile:

- University degree in electrical engineering, energy engineering or a related field;
- At least eight (8) years of professional experience in solar PV, hybrid power systems and/or mini-grids;
- Demonstrated experience in the technical assessment or design of PV-battery systems;
- Full professional proficiency in English.

The tenderer may propose additional experts to complement the team leader, for example in civil/structural design, protection and system integration, or cost estimation. This is optional. A tender proposing only the team leader is fully admissible and is not disadvantaged. Any additional expert shall be named, with a CV, a defined role and a number of days in the work plan.

The team leader is responsible for all deliverables. Working knowledge of Portuguese within the team is an asset for fieldwork and interaction with FUNAE.

Award criteria

The contract will be awarded to the regular tender that is most economically advantageous, based on the following criteria:

- Technical offer: 70 points
- Price: 30 points

1. Technical Proposal (70 points)

Each criterion is scored on the following scale:

- **Excellent** (100% of points): specific to Nagonha, well-reasoned, no significant gaps.
- **Good** (70%): sound, with minor gaps or some generic elements.
- **Adequate** (40%): largely generic, or with significant gaps.
- **Insufficient** (0%): absent or not relevant.

Evaluation criteria	Max. Points	A high score requires

1. Understanding and diagnostic approach	1512	Plausible hypotheses for the battery under-charging (PV capacity, battery state of health, inverter/charger limits, control settings, load profile); how each will be tested (data analysis, on-site checks, battery capacity verification); data required and how gaps will be handled; key risks for the extension (compatibility with existing equipment and warranties, land, interface with the planned water system)
2. Methodology and work plan	25	Clear steps from diagnosis to tender-level design and works tender package; tools and standards identified; approach to preparing a consistent works tender package using the Enabel templates, including cross-checking between specifications, drawings, BoQ and evaluation criteria; realistic person-days per task and per expert; field mission within three weeks with a defined on-site programme; Enabel inputs and review periods reflected in the schedule
3. Key expert(s)	30	Team leader's experience beyond the minimum profile in Section 5.7: hands-on assessment or expansion of operational PV-battery mini-grids; hands-on experience with the inverter/charger platform installed at Nagonha (Victron); tender packages prepared for donor-funded or public works that were actually procured. Coverage of the competences the assignment needs (system diagnosis, protection and integration, structural design basis for cyclone-prone sites, tender specifications and cost estimation, working Portuguese), by the team leader alone or together with additional experts. The number of experts is not scored. Additional experts count only where their role and input are clearly defined in the work plan
	70	

Deliverables

Deliverable		**Content**	**Timing**
Fixed Tranche			
D1	Diagnostic and sizing note	Data reviewed and gaps; field mission findings; root-cause diagnosis of battery under-charging, including battery state of health; load scenarios including PUE; powerhouse space and condition assessment; comparison of two to three options on cost, technical risk and O&M implications; recommended capacity and configuration; key risks (compatibility and warranties, land, environmental licensing, design approval requirements); estimated works value	Within a maximum period of 4 weeks of contract start
Conditional 1			
D2	Draft works tender package	Draft works tender package using the Enabel templates, including: performance-based technical specifications; tender drawings (layout, single-line diagram, interconnection); structural design basis; BoQ and price schedule, with provisional quantities where applicable; testing, commissioning and acceptance requirements; training, documentation, warranty, defects liability and spare parts requirements; contractor design approval procedure; site visit provisions; proposed	Within a maximum period of6 weeks of notification of affirmation of conditional tranche 1

		selection and award criteria with technical evaluation grid. Confidential Engineer's Cost Estimate, including indicative equipment lead times, delivered separately	
D3	Final works tender package	D2 revised to incorporate Enabel's and FUNAE's comments, with a comments-and-responses matrix; all source files in editable format (Word, Excel, DWG); final Engineer's Cost Estimate delivered separately	Within 5 working days of receipt of Enabel's comments on D2
Conditional 2			
D4	Written technical clarification responses (Works tender support)	Answers to technical clarification questions from works bidders, up to two (2) expert-days	From affirmation of conditional tranche 2 until award of the works contract (max. 3 months)

All deliverables shall be submitted electronically to the managing official.

Review and approval

Enabel will send consolidated comments, including FUNAE's, within five (5) working days of receiving each deliverable. The Consultant shall submit the revised deliverable within five (5) working days of receiving comments. Comments shall be incorporated at no additional cost.

Approval of D1 ends the fixed tranche. Affirmation of conditional tranches 1 and 2 is decided and notified in accordance with Section 2.4. With the notification of affirmation of conditional tranche 1, Enabel will confirm the procurement procedure for the works and provide the corresponding Enabel templates.

Annexes

Reference 1

Item	Information
Project title	
Client (full name of organisation)	
Client contact person (name, function, e-mail, telephone)	
Location (country, region)	
Period (start and end, month/year)	
Role of the tenderer (e.g. lead consultant, consortium member, subcontractor)	
Short description of the assignment and of the tenderer's own services (max. 150 words)	
Type of system (PV-battery mini-grid / hybrid mini-grid / off-grid system) and approximate size (kWp, kWh)	
Did the assignment include technical specifications and/or Bills of Quantities for a works or supply tender?	☐ Yes ☐ No

Reference 2

Item	Information
Project title	
Client (full name of organisation)	
Client contact person (name, function, e-mail, telephone)	
Location (country, region)	
Period (start and end, month/year)	
Role of the tenderer (e.g. lead consultant, consortium member, subcontractor)	
Short description of the assignment and of the tenderer's own services (max. 150 words)	
Type of system (PV-battery mini-grid / hybrid mini-grid / off-grid system) and approximate size (kWp, kWh)	
Did the assignment include technical specifications and/or Bills of Quantities for a works or supply tender?	☐ Yes ☐ No

Enabel may contact the clients indicated to verify the information provided.

13.2. 6 Selection file), the tenderer must demonstrate sufficient capacity to successfully perform this public contract.

13.3. Only tenders from tenderers who meet the selection criteria will be taken into consideration to participate in the comparison of tenders based on the award criteria outlined in clause 15 subject to the regularity of these tenders.

13.4. To meet the criteria of economic and financial capacity and the criteria on technical and professional aptitude, the tenderer may rely on the capacity of:

(a) all participants submitting a joint bid as a consortium of economic operators;

(b) other entities (in particular subcontractors or independent subsidiaries) regardless of the legal nature of the relationship with these entities, in accordance with Article 73 § 1 of the Royal Decree of 18 April 2017 on the award of public contracts in the classical sectors.

13.5. For all such participants or entities, the contracting authority must verify that there are no grounds for exclusion.

13.6. In accordance with Article 73 of the Royal Decree of 18 April 2017 on the award of public contracts in the classical sectors, where an economic operator wants to rely on the capacities of other entities (particularly subcontractors or independent subsidiaries) for replying to criteria of economic and financial capacity or technical and professional aptitude, it shall prove to the contracting authority that it will have at its disposal the resources necessary, for example, by producing a commitment by those entities to that effect.

14. OVERVIEW OF THE PROCEDURE

14.1. In a first phase, the tenders submitted by the selected tenderers will be evaluated as to their formal and material regularity.

14.2. The contracting authority reserves the right to have the irregularities in a tender regularised.

14.3. In a second phase, the formally and materially regular tenders will be evaluated as to their content by an evaluation commission. The contracting authority will restrict the number of tenders to be negotiated by applying the award criteria stated in these tender specifications (clause 15). This evaluation will be conducted on the basis of the award criteria and aims to set a shortlist of tenderers with whom negotiations will be conducted.

14.4. Then, the negotiation phase follows. In view of improving the contents of the tenders, the contracting authority may negotiate with tenderers the initial tenders and all subsequent tenders that they have submitted, except final tenders. The award criteria are not negotiable. However, the contracting authority may also decide not to negotiate. In this case, the initial tender is the final tender.

14.5. When the contracting authority intends to conclude the negotiations, it will so advise the remaining tenderers and will set a common deadline for the submission of any BAFO's (*Best and Final Offer*). Once negotiations have closed, the BAFO's will be evaluated as to its regularity and compared on the basis of the award criteria. The tenderer whose BAFO shows the best value for money (obtaining the best score based on the award criteria given under clause 15) will be designated the succesful service provider for this public contract, after having been verified for absence of exclusion grounds and respect for the criteria of qualitative selection.

15. AWARD CRITERIA

15.1. The contracting authority will select the regular tender that it considers to be the most economically advantageous, based on the following criteria:

Award Criterion	Criterion Weight (%)	Criterion Evaluation or Formula
Technical proposal	70	Understanding and diagnostic approach, Methodology and work plan, Key expert(s). Refer to page 29 to see the breakdown of points.
Price	30	Points tender A = (amount of lowest tender) / (amount of tender A) × 30

15.2. The scores for the award criteria will added up. This public contract will be awarded to the tenderer that submitted the tender with the highest final score, after the contracting authority has verified the accuracy of the declaration on honour of this tenderer and provided the control shows that the declaration on honour corresponds with reality.

16. AWARDING THE PUBLIC CONTRACT

16.1. This public contract will be awarded to the tenderer who has submitted the most economically advantageous tender.

16.2. In accordance with Article 85 of the Law of 17 June 2016 on public procurement, the contracting authority is under no obligation to award the contract. The contracting authority may choose either not to award the public contract or to restart the procedure, if necessary, through another award procedure.

17. CONCLUDING THE CONTRACT

1.6. In accordance with Article 95, °2 of the Royal Decree of 18 April 2017 on the award of public contracts in the classical sectors, the contract is formed upon notification to the successful tenderer of the approval of their tender.

17.1. Notification is made via digital platforms or email, and, on the same day, by registered post.

17.2. The full public contract consists of the following documents:

(a) These tender specifications and their annexes;

(b) The approved BAFO and all of its annexes;

(c) The registered letter notifying the award decision;

(d) Any later documents accepted and signed by both parties, as appropriate.

17.3. In the interest of transparency, Enabel commits to publishing an annual list of recipients of its contracts. By submitting their tender, the successful tenderer agrees to the publication of the contract title, nature and object of the contract, their name and location, and the contract amount.

4 SPECIAL CONTRACTUAL PROVISIONS

1. This chapter of these tender specifications holds the specific administrative and contractual provisions that apply to this public contract by way of derogation from the 'General Implementing Rules for public procurement' of the Royal Decree of 14 January 2013 (Royal Decree of 14 January 2013 establishing the general rules for the execution of public contracts), hereinafter referred to as "GIR", or as a complement or an elaboration thereof. The numbering of the articles below (between brackets) follows the numbering of the "GIR" articles. Unless indicated, the relevant provisions of the "GIR" apply in full.

2. These tender specifications do not derogate from the "GIR".

SECTION (A) - GENERAL

3. USE OF ELECTRONIC MEANS (ART. 10)

The use of electronic means for exchanges during the performance of the contract is permitted unless stated otherwise in these tender specifications. In such cases, notifications from the contracting authority will be sent to the address or registered office mentioned in the tender.

4. MANAGING OFFICIAL (ART. 11)

1.7. The managing official for this public contract is **Anabela Nunes**, email: anabela.nunes@enabel.be . The managing official is responsible for overseeing the performance of the contract.

4.1. Once this public contract is concluded, the managing official serves as the primary point of contact for the service provider. All correspondence or questions regarding the performance of the contract should be directed to him/her, unless otherwise explicitly stated in these tender specifications.

4.2. The managing official has full authority to monitor the satisfactory performance of the contract, which includes issuing service orders, preparing reports and statements, approving services, progress reports, and reviews. They may order changes to the contract with regards to its subject-matter or performance, provided that such changes remain within its original scope.

4.3. However, the signing of amendments or any other decision or agreement implying derogation from the initial terms and conditions of the contract are not part of the competence of the managing official. For such decisions the contracting authority is represented as stipulated under clause 1 of chapter 1 General Remarks.

4.4. Under no circumstances is the managing official allowed to modify the terms and conditions (e.g. performance deadline) of the contract, even if the financial impact is nil or negative. Any commitment, change or agreement that deviates from the conditions in these tender specifications and that has not been notified by the contracting authority, will be considered null and void.

5. CONFIDENTIALITY (ART. 18)

5.1. Service providers who, during the performance of the contract, receive information or documents or data of any kind that are classified as confidential and relate, in particular, to the subject matter of the contract, the resources required for its performance and the operation of the contracting authority's services, shall take the necessary measures to prevent such information, documents or data from being disclosed to third parties who have no right to know them.

5.2. Service providers who, in the performance of the contract, have knowledge of a drawing or model, know-how, method or invention belonging to the contracting authority or jointly to the contracting authority and the service provider, shall refrain from any communication concerning the drawing or model, know-how, method or invention to third parties, unless those elements are the subject of the contract.

6. PROTECTION OF PERSONAL DATA

6.1. **Processing of personal data by the contracting authority**

The contracting authority undertakes to process the personal data that are communicated to it in response to the call for the tenders with the greatest care, in accordance with legislation on the protection of personal data (General Data Protection Regulation, GDPR). Where the Belgian law of 30 July 2018 on the protection of natural persons with regard to the processing of personal data contains stricter provisions, the contracting authority will act in accordance with said law.

6.2. **Processing of personal data by the service provider**

Where during contract performance, the service provider processes personal data of the contracting authority or in execution of a legal obligation, the following provisions apply :

For any processing of personal data carried out in connection with this public contract, the service provider is required to comply with Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data (GDPR) and the Belgian law of 30 July 2018 on the protection of natural persons with regard to the processing of personal data.

By simply participating in the contracting process, the tenderer certifies that he will strictly comply with the obligations of the GDPR for any processing of personal data conducted in connection with that public contract.

Given the public contract, it is to be considered that the contracting authority and the service provider will each be responsible, individually, for the processing.

7. INTELLECTUAL PROPERTY (ART. 19 TO 23)

7.1. The contracting authority **acquires** the intellectual property rights created, developed, or used during performance of the public contract.

SECTION (B) - FINANCIAL GUARANTEES

8. PERFORMANCE BOND (ART. 25 TO 33)

No performance bond is required for this public contract.

SECTION (C) - THE PUBLIC CONTRACT DOCUMENTS

9. CONFORMITY OF PERFORMANCE (ART. 34)

The services must comply in all respects with the procurement documents. In the absence of specific technical specifications in the procurement documents, the performance of the contract must meet the highest standards of good practice in the relevant field.

SECTION (D) - CHANGES TO THE PUBLIC CONTRACT

10. REPLACEMENT OF THE SERVICE PROVIDER (ART. 38/3, °1)

10.1. Scope

The clause may be applied in case the service provider is unable to continue the performance of the contract due to termination of the contract (art. 61, 62 or 62/1, °2 of the “GIR”) or after taking an ex officio measure (art. 47 of the “GIR”).

10.2. Nature of the amendment

In derogation of art. 47, § 2, °3 of the “GIR”, the contracting authority may, in all the above cases, immediately award a new contract to the subcontractor(s) of the service provider already involved in the performance of the contract or to the second-ranked tenderer, for all or part of the contract still to be performed, and this without initiating a new award procedure. This agreement will take the form of an amendment to the original contract to be concluded between the contracting authority and the new service provider.

10.3. Conditions under which this revision clause may be used

Provided that they meet the selection criteria and the exclusion grounds set out in this document, and if they can meet the initial conditions of the contract, the contracting authority may conclude a contract for account with the service provider 's subcontractor(s) already involved in the performance of the contract.
To this end, the contracting authority shall contact the subcontractor(s) or his (their) representative(s), asking whether he (they) can meet the original terms of the contract.
If the subcontractor(s) cannot meet the original conditions, a contract for account may be concluded under amended conditions. Before concluding such an amended contract, the contracting authority shall check whether the new conditions are still more advantageous than those of the tenderer ranked second during the evaluation of the tenders under the original award procedure. If this is not the case, the contracting authority will conclude a contract for account as referred to in the paragraph below.

If the contracting authority is unable or unwilling to avail itself of the option mentioned in the preceding paragraph, a contract for account may be concluded with the tenderer who was ranked second during the evaluation of the tenders under the original award procedure, provided that he meets the selection criteria and the exclusion grounds set out in this document.
To this end, the contracting authority contacts the second-ranked tenderer or his representative to ask whether he agrees to maintain his bid. If that bidder agrees without reservation, the contracting authority proceeds to award and conclude the contract for account.
If the tenderer in question does not agree to maintain the terms of his initial tender or if his modified tender does not remain the most economically advantageous on the basis of the evaluation of the tenders under the original award procedure (after exclusion of the initial service provider), the contracting authority shall address itself:

(a) either successively, according to the ranking, to the other regular the tenderers. In this case too, the contracting authority contacts the tenderer concerned or his representative to ask whether he agrees to maintain his tender. If that tenderer agrees without reservation, the contracting authority proceeds to award and conclude the contract for account ;

(b) or simultaneously to all the other regular tenderers, asking them to revise their tender, on the basis of the initial terms of the contract, in order to award and conclude the contract on the basis of the tender that has become the most economically advantageous.

In any case, the contracting authority shall ensure that verification of the absence of grounds for exclusion and compliance with the selection criteria has taken place in an impartial and transparent manner, either in the context of the initial award procedure or at the time of the conclusion of the contract for account, so that no contract is awarded to a tenderer (or subcontractor) who should have been excluded or who does not meet the selection criteria. The minimum requirements of qualitative selection may, where appropriate, be adjusted in

proportion to the remaining part of the contract if the contract for account is concluded only for part of the contract still to be performed.

The contract for account will be concluded by means of an amendment to the original contract, which will be signed by the contracting authority and the new service provider. If the contract has already been partially performed, this amendment will accurately mention all parts of the contract that still need to be performed. The amendment shall also mention all the changed conditions compared to the original tender of the initial service provider, and compared to the original tender of the new service provider. If necessary, the amendment shall state the method of application of the original conditions to the remaining part of the contract. All other conditions stated in the contract documents (the tender specifications and the original tender of the initial or new service provider), shall continue to apply unchanged.

If a contract for account is concluded, a copy of the amendment concerning the contract to be concluded shall be sent to the initial service provider by electronic transmission, in deviation from art. 47, § 3 (3) of the "GIR".
If, following the application of an ex officio measure (art. 47 of the "GIR"), the price of the new contract for account concluded is higher than that of the initial contract, the initial service provider shall bear the additional costs.

11. REVISION OF PRICES (ART. 38/7)

Price revisions are not allowed under this contract.

12. INDEMNITIES FOR SUSPENSIONS ORDERED BY THE CONTRACTING AUTHORITY DURING CONTRACT PERFORMANCE (ART. 38/12)

12.1. The contracting authority reserves the right to suspend the performance of the contract for a given period, mainly because it considers that the procurement contract cannot be performed without inconvenience at that time.

12.2. The performance period is extended by the period of delay caused by this suspension, provided that the contractual performance period has not expired. If it has expired, the return of fines for late performance may be agreed.

12.3. When activities are suspended, based on this clause 12.3, the service provider is required to take all necessary precautions, at his expense, to protect the services already performed and the materials from potential damage caused by unfavourable weather conditions, theft or other malicious acts.

12.4. The service provider has a right to damages for suspensions ordered by the contracting authority when:

(a) The suspension lasts in total longer than one twentieth of the performance period and at least ten working days or fifteen calender days, depending on whether the performance period is expressed in working days or calendar days;

(b) The suspension is not due to unfavorable weather conditions or other circumstances beyond the contracting authority's control which, in the contracting authority's discretion, constitute an obstacle to the continued performance of the contract at that time;

(c) The suspension occurs during the contract's performance period.

13. UNFORESEEABLE CIRCUMSTANCES

13.1. As a general rule, the service provider is not entitled to request modifications to the contractual terms for circumstances unknown to the contracting authority.

13.2. A decision by the Belgian state to suspend cooperation with a partner country, or a decision of a government of a partner country to suspend cooperation with the Belgian state, constitutes an unforeseeable circumstance under this clause 13. In the event that the Belgian state or the partner country terminates or ceases activities, which implies therefore the financing of this public contract, Enabel will make reasonable efforts to negotiate a fair maximum compensation amount.

14. TAXATION HAVING AN EFFECT ON THE VALUE OF THE PUBLIC CONTRACT (ART. 38/8)

14.1. For this public contract, a price revision resulting from a change in taxation is possible if the case occurs in Belgium or in the country of performance concerned by this public contract and has an incidence on the value of the public contract.

14.2. Such price revision is only possible if both the following conditions apply:

(a) The change entered into force after the tenth day preceding the deadline for submission of tenders, and

(b) Either directly, or indirectly by means of an index, such taxation is not included in the revision formula provided for in procurement documents in application of Article 38/7 of the "GIR".

14.3. In the event of an increase in charges, the service provider must prove that it has actually borne the additional charges it has claimed and that they are related to the performance of the contract.

In case of a reduction, there is no revision if the service provider proves that he paid the charges at the old rate.

15. TERMS OF INTRODUCTION (ART. 38/14 TO 38/17)

15.1. The contracting authority or the service provider who wishes to rely on one of the review clauses, as referred to in Articles 38/9 to 38/12 of the "GIR", must give written notice of the facts or circumstances invoked on which it relies within 30 days, either after they occurred or after the date on which the contracting authority or the service provider should normally have known about them.

15.2. The service provider may only invoke the application of one of these review clauses if it succinctly discloses the influence of the facts or circumstances invoked on the course and cost of the contract to the contracting authority within the period mentioned under clause 15.1, regardless of whether the contracting authority is aware of the facts or circumstances.

SECTION (F) - PERFORMANCE MODALITIES

16. DEADLINES AND TERMS (ART. 147)

16.1. The service provider must complete the services within a period expressed in **calendar days**, which the tenderer must propose and indicate in their tender. All days are indistinguishably included in the period.

16.2. Performance shall start from **the day after the kick-off meeting.**

16.3. Since the performance period is an award criterion, failure to include it in the tender will render it **substantially irregular**.

17. PLACE OF PERFORMANCE (ART. 149)

The services must be performed at the following address: **Nagonha locality, Pebane district, Zambezia province, Mozambique**.

18. INSPECTION OF THE SERVICES (ART. 150)

18.1. If irregularities are identified during the performance of this contract, the service provider will be promptly notified by e-mail, followed by confirmation via registered letter. The service provider is required to rectify the non-compliant services.

18.2. The service provider must notify the managing official in writing, either by registered post or e-mail (with proof of the exact dispatch date), specifying the date on which the services will be available for inspection.

19. LIABILITY OF THE SERVICE PROVIDER (ART. 152-153)

19.1. The service provider assumes full responsibility for any mistakes or deficiencies in the services delivered.

19.2. The service provider shall indemnify the contracting authority against any damages it may incur as a result of liability towards third parties arising from delays in the performance of the services or any failure by the service provider to fulfill its obligations.

SECTION (G) - MEANS OF ACTION

20. FAILURE OF PERFORMANCE (ART. 44)

20.1. The service provider shall be considered in breach of this public contract under the following circumstances:

(a) When contract performance is not carried out in accordance with the conditions specified in the procurement documents;

(b) When, at any time, contract performance has not progressed in such a way that it can be fully completed on the due dates;

(c) When the service provider fails to comply with written orders issued in due form by the contracting authority.

Any failure to comply with the provisions of the public contract, including the non-compliance with orders from the contracting authority, will be documented in a report ('process verbal'). A copy of this report will be sent immediately to the service provider either by registered post or e-mail (with proof of the exact dispatch date).

20.2. The service provider must address the defects without delay. He may assert his right of defence, either by registered post or e-mail (with proof of the exact dispatch date), addressed to the contracting authority within fifteen days from the date of dispatch of the report (process verbal). Silence on his part after this period shall be deemed as acknowledgement of the reported facts.

20.3. Any defects that can be attributed to the service provider may result in the application of one or more measures as provided in Articles 45 to 49, 154 and 155 of the “GIR”.

21. FINES FOR DELAY (ART. 46 AND 154)

21.1. Fines for delay differ from penalties referred to in Article 45 of the "GIR". They are due, without the need for notice, by the mere lapse of the performance period without the issuing of a report and they are automatically applied for the total number of days of delay.

21.2. Fines for delay are calculated, according to Article 154 of the "GIR", at a rate of **0.1%** per day of delay, with a **maximum of 7.5%**, of the value of all or part of the services that were performed with the same delay.

21.3. If the execution deadline is an award criterion, the penalty rate may increase to a **maximum of 10%**, depending on the weight assigned to this criterion in the tender specifications.

21.4. Without prejudice to the application of these fines, the service provider shall indemnify the contracting authority where appropriate against any damages owed to third parties on account of its delay in performing the contract.

22. MEASURES AS OF RIGHT (ART. 47 AND 155)

22.1. When, upon the expiration of the deadline specified in Article 44, § 2 of the "GIR", to present justifications, the service provider has remained inactive or has submitted justifications deemed insufficient by the contracting authority, the latter may invoke the measures as of right outlined in clause 22.2 However, the contracting authority may apply these measures before the expiration of the aforementioned term when the service provider has explicitly acknowledged the identified shortcomings.

22.2. The measures as of right are:

(a) Unilateral termination of the contract. In this case the entire performance bond, or if no bond has been posted an equivalent amount, is acquired as of right by the contracting authority as lump sum damages. This measure excludes the application of any fine for delay in performance in respect of the terminated part;

(b) Completion of all or part of the unfulfilled contract by the contracting authority itself;

(c) Conclusion of one or more replacement contracts with one or more third parties for all or part of the contract remaining to be performed.

The measures outlined in points (a), (b), and (c) will be executed at the expense, risk, and peril of the defaulting service provider. However, any fines or penalties imposed during the performance of a replacement contract will be borne by the new service provider.

SECTION (H) - END OF THE PUBLIC CONTRACT

23. ACCEPTANCE OF THE SERVICES PERFORMED (ART. 64 AND 156)

23.1. The managing official will closely follow up the services during their performance. The services will not be accepted until after having satisfied the inspections, technical acceptance operations and prescribed tests.

23.2. Final Acceptance will occur upon service delivery completion, marking full contract completion.

23.3. When the contracting authority is in possession of the list of services provided or the invoice and the total or partial completion of the services is established in accordance with the procedures laid down in the contract documents, the contracting authority shall carry out the verification, proceed with the acceptance formalities and notify the service provider of the result. In any event, the verification shall be carried out within the processing period referred to in Article 160(1) of the "GIR" (clause 24).

23.4. If the services are completed before or after the expected date, the service provider must notify the managing official by registered letter or electronic mail that provides equivalent assurance of the exact date of dispatch, and shall request that the acceptance procedure be carried out.

23.5. Any progress payment shall be preceded by partial acceptance. The last partial acceptance is considered final acceptance and concludes the services under the contract.

24. INVOICING AND PAYMENT (ART. 66-72 AND 160)

24.1. The contracting authority shall verify and pay the amount due to the service provider within a processing period of thirty days from the date on which it is established that all or part of the services have been completed, the terms of which shall be laid down in the contract documents. However, payment can only be made if the contracting authority is in possession of the duly established invoice.

24.2. Only services that have been performed correctly may be invoiced. The invoice must be issued in EURO.

24.3. The service provider sends (one copy only of) the invoices and the contract acceptance report (original copy) to the following address: **invoice.moz@enabel.be**.

24.4. Payment will be made in accordance with one of the following arrangements:

- Fixed tranche: 100% of the fixed tranche price, after approval of Deliverable 1;

1.8. Conditional tranche: 80% of the conditional tranche price, after approval of Deliverable 3.

1.9. Conditional tranche: 20% of the conditional tranche price, after approval of Deliverable 4.

- Comments shall be incorporated at no additional cost before approval.

25. ADVANCE PAYMENTS

25.1. Notwithstanding clause 24.2 and in accordance with Articles 12/1 to 5 of the Law of 17 June 2016 on public procurement, inserted by the Law of 22 December 2023 amending the regulations on public procurement in order to promote SMEs' access to these contracts, an advance of 15 per cent of the reference value may be granted to the service provider.

25.2. The advance is calculated on the basis of the reference value of the public contract, i.e.:

(a) If the duration of the public contract is equal to or less than 12 months, the reference value is equal to the initial value of the public contract, all taxes included;

(b) If the duration of the public contract is greater than 12 months, the reference value is an amount equal to 12 times the initial value of the public contract, including taxes, divided by the duration of the contract expressed in months;

(c) In the case of an open-ended public contract, the reference value is the value per month of the public contract multiplied by 12.

For the calculation of the initial value of the contract, neither conditional blocks nor renewals shall be taken into account.

25.3. No advance is granted before:

(a) Notification of the conclusion of the public contract;

(b) A written dated demand submitted to the contracting authority;

(c) A financial guarantee for the full amount of the advance is provided. The guarantee will only be released when the amount of the advance has been fully covered by the performance of the public contract and has been the subject of invoices approved by the contracting authority. This financial guarantee must enable the contracting authority to obtain reimbursement of the advance it has paid in the event of total or partial non-performance of the public contract.

25.4. Payment of the advance may be suspended if it is found that the service provider does not comply with his contractual obligations or if they contravene the provisions of Article 7 of the Law of 17 June 2016 on public procurement.

25.5. The advance granted is charged to the amounts owed to the service provider, as follows: The 20% advance payment shall be deducted from the final invoice once the services have been fully completed and accepted by the Contracting Authority.

5 TERMS OF REFERENCE

Terms of reference

Background

The Nagonha mini-grid, located in Nagonha, Locality of Alto Maganha, Pebane District, Zambézia Province, was developed under the RERD2 programme as part of efforts to expand access to reliable renewable electricity in rural areas of Mozambique.

The existing Nagonha photovoltaic power plant has an installed solar PV generation capacity of approximately 200 kWp and a battery energy storage capacity of approximately 1,171.2 kWh. The mini-grid also comprises the associated power conversion, control, protection, monitoring and electricity distribution infrastructure.

The battery system uses lithium-ion technology, with an installed capacity of approximately 1,171 kWh, and the mini-grid was commissioned in 2024. The inverter/charger system is based on Victron equipment, comprising 12 inverter/charger units rated at 15 kVA each. The mini-grid serves 853 connections and is operated by KK Lda, under the institutional responsibility of FUNAE Monitoring data is available through the Victron Remote Management (VRM) portal, with monthly operational reports covering July 2024 to June 2025.

Under the current Enabel portfolio, Nagonha is being developed as a pilot site through complementary interventions under Result 3 (Energy) and Result 4 (Water).

Under Result 3, Nagonha is a pilot site for Productive Use of Energy (PUE). The objective is to stimulate productive and income-generating activities, increase the productive use of electricity and test approaches that can contribute to the operational and economic sustainability of rural mini-grids.

Under Result 4, a water supply system is being designed as part of a broader Water–Energy Dual Utility Pilot. The planned water system is expected to have its own dedicated solar PV generation. It should therefore not automatically be counted as an additional load when sizing the mini-grid expansion. The overall dual-utility configuration and the technical interfaces, operational dependencies and coordination requirements between the water and energy systems shall nevertheless be considered.

Operational experience has shown that the batteries do not reach the required State of Charge during daytime operation. The assessment shall determine whether the existing system can serve the evolving load while allowing the batteries to recover to the required State of Charge and to remain within the intended Depth of Discharge limits.

This is particularly relevant as additional productive loads are introduced through the PUE pilot. The evolution of productive demand must be considered together with the operating characteristics and limitations of the existing generation and storage system. The aim is to avoid adverse impacts on battery performance, system reliability and equipment lifetime.

Enabel and FUNAE therefore intend to diagnose the causes of the current generation–storage imbalance, determine the most cost-effective technical response, and prepare the works tender for its implementation under a design-and-build contract.

The assignment shall contribute to the optimisation of the existing RERD2 infrastructure, accommodate the evolving productive-use demand under Result 3, and ensure technical compatibility with the development of Nagonha as a Water–Energy Dual Utility Pilot under Results 3 and 4.

Enabel and FUNAE therefore intend to diagnose the causes of the current generation–storage imbalance, determine the most cost-effective technical response, and prepare the works tender for its implementation under a design-and-build contract.

The assignment shall contribute to the optimisation of the existing RERD2 infrastructure, accommodate the evolving productive-use demand under Result 3, and ensure technical compatibility with the development of Nagonha as a Water–Energy Dual Utility Pilot under Results 3 and 4.

Objective

The objective of the assignment is to:

- diagnose why the Nagonha mini-grid battery bank does not reach the required State of Charge under current and expected loads;
- determine the most cost-effective technical response, expected to be additional solar PV capacity and any strictly necessary associated modifications;
- prepare the works tender package for the supply, installation, integration, testing and commissioning of that response, using the Enabel templates and ready for publication subject to Enabel's procurement validation.

The proposed solution shall be fully compatible with the existing mini-grid. It shall take into account the development of Nagonha as a Water–Energy Dual Utility Pilot, including the technical interfaces with the planned water system.

Expected results

- **R1 – Diagnosis and technical response defined (fixed tranche):** the causes of the batteries not reaching the required State of Charge are established, options are compared, and the capacity and configuration to be procured are recommended.
- **R2 – Tender-level design completed (conditional tranche 1):** the recommended option is designed to a level that allows bidders to prepare complete and comparable offers under a design-and-build contract.
- **R3 – Works tender package ready for publication (conditional tranche 1):** the works tender package, including all technical annexes, is finalised using the Enabel templates after Enabel and FUNAE comments, subject only to Enabel's procurement validation.
- **R4 – Works bidders' technical questions answered (conditional tranche 2):** technical clarification questions from works bidders are answered promptly and consistently with the works tender package.

Scope of work

The assignment is carried out in three phases, plus optional support during the works tender:

- Phase 1 constitutes the fixed tranche.
- Phases 2 and 3 constitute conditional tranche 1.
- Support during the works tender constitutes conditional tranche 2

Enabel inputs

At contract start, Enabel will provide:

- the available as-built documentation, equipment specifications, maintenance records and monitoring data of the Nagonha mini-grid;
- the productive use of energy (PUE) load scenario developed under Result 3;
- the design assumptions and interface points of the planned water system under Result 4;
- confirmation, in consultation with FUNAE, of the land available for the extension.

Missing or incomplete data shall be reported in Deliverable 1 and addressed through explicit, technically justified assumptions.

Phase 1 – Diagnosis and sizing (fixed tranche)

The Consultant shall:

- review the documentation and data provided by Enabel;
- carry out one field mission to Nagonha within three (3) weeks of contract start. The mission covers inspection of the PV generation, battery storage system, inverters and chargers, protection, control and monitoring equipment, and the available site area;
- analyse generation, demand, battery charging behaviour, State of Charge and Depth of Discharge, and identify the root cause(s) of the batteries not reaching the required State of Charge. Causes to be examined include PV capacity, battery state of health, inverter and charger limits, control settings and load profile;
- assess the impact of current and expected PUE loads, using the Result 3 scenario. Consider the interfaces with the planned water system, without counting loads to be supplied by its dedicated solar generation;
- assess whether the existing powerhouse/container has sufficient space, ventilation and protection for additional inverters and associated equipment. If it does not, define the requirements for an additional equipment shelter;
- compare two to three technical options on cost, technical risk and operation and maintenance implications, and recommend the capacity and configuration to be procured;
- identify the key risks and requirements for the extension, including:
    - compatibility with existing equipment and warranties;
    - land and site constraints;
    - environmental licensing requirements;
    - any design approval required by FUNAE or the energy regulator (ARENE);
- estimate the works value, to inform Enabel's choice of procurement procedure for the works.

Phase 2 – Tender-level design (conditional tranche 1)

The Consultant shall develop the recommended option to tender level. The design shall define all elements that determine compatibility with the existing system, safety and the comparability of offers:

- additional capacity;
- coupling architecture (AC/DC) and point of interconnection;
- compatibility requirements with the existing inverters, battery system and controls;
- protection philosophy and coordination requirements;
- earthing and lightning protection concept;
- integration with the monitoring system;
- site layout and footprint, including cable routes.

The tender-level design shall also define the structural design basis for PV mounting structures, foundations and any equipment shelter:

- design wind speed and applicable standard for cyclone-prone sites;
- corrosion category for a coastal environment;
- acceptable foundation types;
- the geotechnical investigation to be carried out by the works contractor.

Equipment-specific detailed design will be the responsibility of the works contractor. It shall stay within the parameters defined by the Consultant and is subject to Enabel's approval before installation. It includes:

- final string configuration;
- final cable sizing;
- structural design and calculations for the mounting structures and foundations, certified by a qualified structural engineer;

- construction/shop drawings.

The Consultant shall prepare:

- performance-based technical specifications;
- tender drawings (layout, single-line diagram, interconnection);
- the Bill of Quantities and price schedule;
- a confidential Engineer's Cost Estimate, including indicative lead times for major equipment;
- testing, commissioning and acceptance requirements;
- training, documentation, warranty, defects liability and spare parts requirements.

These requirements shall be suited to the operating and maintenance capacity of the entity responsible for the mini-grid.

Phase 3 – Works tender package (conditional tranche 1)

With the affirmation of conditional tranche 1, Enabel will confirm the procurement procedure for the works and provide the corresponding Enabel templates. The Consultant shall prepare the works tender package using those templates, ready for publication subject to Enabel's procurement validation. This includes:

- integration of all technical specifications, drawings, the BoQ and price schedule, and testing, commissioning and acceptance requirements;
- proposed selection criteria (technical capacity) and award criteria, including the technical evaluation grid;
- completion of contract-specific fields, based on Enabel's instructions: subject-matter, duration, lots, performance conditions, acceptance procedure, and payment milestones linked to works progress;
- provisions for a site visit by works bidders;
- provisional quantities for items that cannot be fixed before the geotechnical investigation, in particular foundations;
- the procedure for submission and approval of the works contractor's detailed design, including review periods.

Standard administrative, legal and contractual clauses of the Enabel templates shall not be modified without Enabel's written instruction. The Engineer's Cost Estimate shall be delivered separately and shall not be included in the works tender package. Enabel remains responsible for the final validation, approval and publication of the works tender package.

Support during the works tender (conditional tranche 2)

If conditional tranche 2 is affirmed, the Consultant shall answer technical clarification questions from works bidders, forwarded by Enabel, within three (3) working days, for up to two (2) expert-days.

Consistency and language

The Consultant shall ensure that the specifications, drawings, quantities, cost estimate and evaluation criteria are consistent with each other.

Deliverable 1 shall be in English. The works tender package and its technical annexes shall be in English, and shall allow works bidders to submit offers in English.

Duration and timeline

- The fixed tranche shall be completed within a maximum period of four (4) weeks of the day following kick-off meeting, including Enabel's review and approval of Deliverable 1.

- Conditional tranche 1 shall be completed within a maximum period of five (5) weeks of the day following notification of its affirmation.

- Conditional tranche 2 runs from the day following notification of its affirmation until award of the works contract, and at the latest three (3) months after its affirmation.

The field mission to Nagonha shall take place within two (2) weeks of contract start, taking into account access constraints linked to the rainy season in Zambézia Province. The mission shall be scheduled sufficiently early to allow its findings to be fully incorporated into Deliverable 1.

The work plan submitted with the technical offer shall show the sequencing of activities, the planned date and timing of the field mission, deliverable submission dates, Enabel/FUNAE review points, dependencies on Enabel inputs, and any access-related risks and mitigation measures.

Quantities

This public service contract is divided into one fixed tranche and two conditional tranches:

- **Fixed tranche (Phase 1):** diagnosis of the existing Nagonha mini-grid and determination of the technical response, including the additional solar PV capacity required (Deliverable 1);
- **Conditional tranche 1 (Phases 2 and 3):** tender-level design of the recommended option and preparation of the works tender package using the Enabel templates, ready for publication subject to Enabel's procurement validation (Deliverables 2 and 3);
- **Conditional tranche 2:** technical clarification support during the works tender, up to two (2) expert-days.

Enabel's commitment is limited to the fixed tranche. Each conditional tranche is performed only if Enabel affirms it and notifies the Consultant in writing:

conditional tranche 1: immediately following approval of Deliverable 1, subject to Enabel's decision to proceed; conditional tranche 2: after approval of Deliverable 3, and and no later than publication of the works tender. A conditional tranche that is not affirmed within its period lapses. The Consultant is not entitled to any compensation, holding fee or indemnity if a conditional tranche is not affirmed or lapses.

The tenderer shall price each tranche separately. Tenders are compared on the total price of the three tranches.

Methodology and approach

The Consultant shall apply a practical, engineering-based methodology combining document review, field verification, operational data analysis, system sizing, tender-level design and tender preparation, as set out in Section 5.4.

The Consultant shall identify the engineering tools, standards and main assumptions used. Assumptions made because of missing or incomplete data shall be stated explicitly and technically justified.

Before each submission, the Consultant shall carry out an internal quality check. This check ensures that the specifications, drawings, quantities, cost estimate and evaluation criteria are consistent with each other.

Minimum Team Composition and Qualifications

The assignment shall be led by a team leader who meets the following minimum profile:

- University degree in electrical engineering, energy engineering or a related field;
- At least eight (8) years of professional experience in solar PV, hybrid power systems and/or mini-grids;
- Demonstrated experience in the technical assessment or design of PV-battery systems;
- Full professional proficiency in English.

The tenderer may propose additional experts to complement the team leader, for example in civil/structural design, protection and system integration, or cost estimation. This is optional. A tender proposing only the team leader is fully admissible and is not disadvantaged. Any additional expert shall be named, with a CV, a defined role and a number of days in the work plan.

The team leader is responsible for all deliverables. Working knowledge of Portuguese within the team is an asset for fieldwork and interaction with FUNAE.

Award criteria

The contract will be awarded to the regular tender that is most economically advantageous, based on the following criteria:

- Technical offer: 70 points
- Price: 30 points

1. Technical Proposal (70 points)

Each criterion is scored on the following scale:

- **Excellent** (100% of points): specific to Nagonha, well-reasoned, no significant gaps.
- **Good** (70%): sound, with minor gaps or some generic elements.
- **Adequate** (40%): largely generic, or with significant gaps.
- **Insufficient** (0%): absent or not relevant.

Evaluation criteria	Max. Points	A high score requires
1. Understanding and diagnostic approach	1512	Plausible hypotheses for the battery under-charging (PV capacity, battery state of health, inverter/charger limits, control settings, load profile); how each will be tested (data analysis, on-site checks, battery capacity verification); data required and how gaps will be handled; key risks for the extension (compatibility with existing equipment and warranties, land, interface with the planned water system)
2. Methodology and work plan	25	Clear steps from diagnosis to tender-level design and works tender package; tools and standards identified; approach to preparing a consistent works tender package using the Enabel templates, including cross-checking between specifications, drawings, BoQ and evaluation criteria; realistic person-days per task and per expert; field mission within three weeks with a defined on-site programme; Enabel inputs and review periods reflected in the schedule

3. Key expert(s)	30	Team leader's experience beyond the minimum profile in Section 5.7: hands-on assessment or expansion of operational PV-battery mini-grids; hands-on experience with the inverter/charger platform installed at Nagonha (Victron); tender packages prepared for donor-funded or public works that were actually procured. Coverage of the competences the assignment needs (system diagnosis, protection and integration, structural design basis for cyclone-prone sites, tender specifications and cost estimation, working Portuguese), by the team leader alone or together with additional experts. The number of experts is not scored. Additional experts count only where their role and input are clearly defined in the work plan
	70	

Deliverables

Deliverable		**Content**	**Timing**
Fixed Tranche			
D1	Diagnostic and sizing note	Data reviewed and gaps; field mission findings; root-cause diagnosis of battery under-charging, including battery state of health; load scenarios including PUE; powerhouse space and condition assessment; comparison of two to three options on cost, technical risk and O&M implications; recommended capacity and configuration; key risks (compatibility and warranties, land, environmental licensing, design approval requirements); estimated works value	Within a maximum period of 4 weeks of contract start
Conditional 1			
D2	Draft works tender package	Draft works tender package using the Enabel templates, including: performance-based technical specifications; tender drawings (layout, single-line diagram, interconnection); structural design basis; BoQ and price schedule, with provisional quantities where applicable; testing, commissioning and acceptance requirements; training, documentation, warranty, defects liability and spare parts requirements; contractor design approval procedure; site visit provisions; proposed selection and award criteria with technical evaluation grid. Confidential Engineer's Cost Estimate, including indicative equipment lead times, delivered separately	Within a maximum period of6 weeks of notification of affirmation of conditional tranche 1
D3	Final works tender package	D2 revised to incorporate Enabel's and FUNAE's comments, with a comments-and-responses matrix; all source files in editable format (Word, Excel, DWG); final Engineer's Cost Estimate delivered separately	Within 5 working days of receipt of Enabel's comments on D2
Conditional 2			
D4	Written technical clarification responses (Works tender support)	Answers to technical clarification questions from works bidders, up to two (2) expert-days	From affirmation of conditional tranche 2 until award of the works contract (max. 3 months)

All deliverables shall be submitted electronically to the managing official.

Review and approval

Enabel will send consolidated comments, including FUNAE's, within five (5) working days of receiving each deliverable. The Consultant shall submit the revised deliverable within five (5) working days of receiving comments. Comments shall be incorporated at no additional cost.

Approval of D1 ends the fixed tranche. Affirmation of conditional tranches 1 and 2 is decided and notified in accordance with Section 2.4. With the notification of affirmation of conditional tranche 1, Enabel will confirm the procurement procedure for the works and provide the corresponding Enabel templates.

Annexes

Reference 1

Item	Information
Project title	
Client (full name of organisation)	
Client contact person (name, function, e-mail, telephone)	
Location (country, region)	
Period (start and end, month/year)	
Role of the tenderer (e.g. lead consultant, consortium member, subcontractor)	
Short description of the assignment and of the tenderer's own services (max. 150 words)	
Type of system (PV-battery mini-grid / hybrid mini-grid / off-grid system) and approximate size (kWp, kWh)	
Did the assignment include technical specifications and/or Bills of Quantities for a works or supply tender?	☐ Yes ☐ No

Reference 2

Item	Information
Project title	
Client (full name of organisation)	
Client contact person (name, function, e-mail, telephone)	
Location (country, region)	
Period (start and end, month/year)	
Role of the tenderer (e.g. lead consultant, consortium member, subcontractor)	
Short description of the assignment and of the tenderer's own services (max. 150 words)	

Type of system (PV-battery mini-grid / hybrid mini-grid / off-grid system) and approximate size (kWp, kWh)	
Did the assignment include technical specifications and/or Bills of Quantities for a works or supply tender?	☐ Yes ☐ No

Enabel may contact the clients indicated to verify the information provided.

6 SELECTION FILE

TECHNICAL AND PROFESSIONAL APTITUDE

1. SUBCONTRACTING

The tenderer must provide a description of the part of the contract that the service provider may wish to subcontract.

7 OVERVIEW OF THE DOCUMENTS TO BE SUBMITTED

(a) Identification of the tenderer (for each participant for tenders submitted by a group) (see clause 1 of chapter 8 Forms);

(b) List of subcontractors (see clause 2 of chapter 8 Forms);

(c) Tender form - Prices (clause 3 of chapter 8 Forms)

(d) The declaration on honour – Exclusion grounds (for each participant for tenders submitted by a group) (see clause 4 of chapter 8 Forms);

(e) Integrity Statement;

(f) Financial identification form;

(g) All documents demanded in Terms of reference

Background

The Nagonha mini-grid, located in Nagonha, Locality of Alto Maganha, Pebane District, Zambézia Province, was developed under the RERD2 programme as part of efforts to expand access to reliable renewable electricity in rural areas of Mozambique.

The existing Nagonha photovoltaic power plant has an installed solar PV generation capacity of approximately 200 kWp and a battery energy storage capacity of approximately 1,171.2 kWh. The mini-grid also comprises the associated power conversion, control, protection, monitoring and electricity distribution infrastructure.

The battery system uses lithium-ion technology, with an installed capacity of approximately 1,171 kWh, and the mini-grid was commissioned in 2024. The inverter/charger system is based on Victron equipment, comprising 12 inverter/charger units rated at 15 kVA each. The mini-grid serves 853 connections and is operated by KK Lda, under the institutional responsibility of FUNAE Monitoring data is available through the Victron Remote Management (VRM) portal, with monthly operational reports covering July 2024 to June 2025.

Under the current Enabel portfolio, Nagonha is being developed as a pilot site through complementary interventions under Result 3 (Energy) and Result 4 (Water).

Under Result 3, Nagonha is a pilot site for Productive Use of Energy (PUE). The objective is to stimulate productive and income-generating activities, increase the productive use of electricity and test approaches that can contribute to the operational and economic sustainability of rural mini-grids.

Under Result 4, a water supply system is being designed as part of a broader Water–Energy Dual Utility Pilot. The planned water system is expected to have its own dedicated solar PV generation. It should therefore not automatically be counted as an additional load when sizing the mini-grid expansion. The overall dual-utility configuration and the technical interfaces, operational dependencies and coordination requirements between the water and energy systems shall nevertheless be considered.

Operational experience has shown that the batteries do not reach the required State of Charge during daytime operation. The assessment shall determine whether the existing system can serve the evolving load while allowing the batteries to recover to the required State of Charge and to remain within the intended Depth of Discharge limits.

This is particularly relevant as additional productive loads are introduced through the PUE pilot. The evolution of productive demand must be considered together with the operating characteristics and limitations of the existing generation and storage system. The aim is to avoid adverse impacts on battery performance, system reliability and equipment lifetime.

Enabel and FUNAE therefore intend to diagnose the causes of the current generation–storage imbalance, determine the most cost-effective technical response, and prepare the works tender for its implementation under a design-and-build contract.

The assignment shall contribute to the optimisation of the existing RERD2 infrastructure, accommodate the evolving productive-use demand under Result 3, and ensure technical compatibility with the development of Nagonha as a Water–Energy Dual Utility Pilot under Results 3 and 4.

Enabel and FUNAE therefore intend to diagnose the causes of the current generation–storage imbalance, determine the most cost-effective technical response, and prepare the works tender for its implementation under a design-and-build contract.

The assignment shall contribute to the optimisation of the existing RERD2 infrastructure, accommodate the evolving productive-use demand under Result 3, and ensure technical compatibility with the development of Nagonha as a Water–Energy Dual Utility Pilot under Results 3 and 4.

Objective

The objective of the assignment is to:

- diagnose why the Nagonha mini-grid battery bank does not reach the required State of Charge under current and expected loads;
- determine the most cost-effective technical response, expected to be additional solar PV capacity and any strictly necessary associated modifications;
- prepare the works tender package for the supply, installation, integration, testing and commissioning of that response, using the Enabel templates and ready for publication subject to Enabel's procurement validation.

The proposed solution shall be fully compatible with the existing mini-grid. It shall take into account the development of Nagonha as a Water–Energy Dual Utility Pilot, including the technical interfaces with the planned water system.

Expected results

- **R1 – Diagnosis and technical response defined (fixed tranche):** the causes of the batteries not reaching the required State of Charge are established, options are compared, and the capacity and configuration to be procured are recommended.
- **R2 – Tender-level design completed (conditional tranche 1):** the recommended option is designed to a level that allows bidders to prepare complete and comparable offers under a design-and-build contract.
- **R3 – Works tender package ready for publication (conditional tranche 1):** the works tender package, including all technical annexes, is finalised using the Enabel templates after Enabel and FUNAE comments, subject only to Enabel's procurement validation.
- **R4 – Works bidders' technical questions answered (conditional tranche 2):** technical clarification questions from works bidders are answered promptly and consistently with the works tender package.

Scope of work

The assignment is carried out in three phases, plus optional support during the works tender:

- Phase 1 constitutes the fixed tranche.
- Phases 2 and 3 constitute conditional tranche 1.
- Support during the works tender constitutes conditional tranche 2

Enabel inputs

At contract start, Enabel will provide:

- the available as-built documentation, equipment specifications, maintenance records and monitoring data of the Nagonha mini-grid;
- the productive use of energy (PUE) load scenario developed under Result 3;
- the design assumptions and interface points of the planned water system under Result 4;
- confirmation, in consultation with FUNAE, of the land available for the extension.

Missing or incomplete data shall be reported in Deliverable 1 and addressed through explicit, technically justified assumptions.

Phase 1 – Diagnosis and sizing (fixed tranche)

The Consultant shall:

- review the documentation and data provided by Enabel;
- carry out one field mission to Nagonha within three (3) weeks of contract start. The mission covers inspection of the PV generation, battery storage system, inverters and chargers, protection, control and monitoring equipment, and the available site area;
- analyse generation, demand, battery charging behaviour, State of Charge and Depth of Discharge, and identify the root cause(s) of the batteries not reaching the required State of Charge. Causes to be examined include PV capacity, battery state of health, inverter and charger limits, control settings and load profile;
- assess the impact of current and expected PUE loads, using the Result 3 scenario. Consider the interfaces with the planned water system, without counting loads to be supplied by its dedicated solar generation;
- assess whether the existing powerhouse/container has sufficient space, ventilation and protection for additional inverters and associated equipment. If it does not, define the requirements for an additional equipment shelter;
- compare two to three technical options on cost, technical risk and operation and maintenance implications, and recommend the capacity and configuration to be procured;
- identify the key risks and requirements for the extension, including:
    - compatibility with existing equipment and warranties;
    - land and site constraints;
    - environmental licensing requirements;
    - any design approval required by FUNAE or the energy regulator (ARENE);
- estimate the works value, to inform Enabel's choice of procurement procedure for the works.

Phase 2 – Tender-level design (conditional tranche 1)

The Consultant shall develop the recommended option to tender level. The design shall define all elements that determine compatibility with the existing system, safety and the comparability of offers:

- additional capacity;
- coupling architecture (AC/DC) and point of interconnection;
- compatibility requirements with the existing inverters, battery system and controls;
- protection philosophy and coordination requirements;
- earthing and lightning protection concept;
- integration with the monitoring system;
- site layout and footprint, including cable routes.

The tender-level design shall also define the structural design basis for PV mounting structures, foundations and any equipment shelter:

- design wind speed and applicable standard for cyclone-prone sites;
- corrosion category for a coastal environment;
- acceptable foundation types;
- the geotechnical investigation to be carried out by the works contractor.

Equipment-specific detailed design will be the responsibility of the works contractor. It shall stay within the parameters defined by the Consultant and is subject to Enabel's approval before installation. It includes:

- final string configuration;
- final cable sizing;
- structural design and calculations for the mounting structures and foundations, certified by a qualified structural engineer;
- construction/shop drawings.

The Consultant shall prepare:

- performance-based technical specifications;
- tender drawings (layout, single-line diagram, interconnection);
- the Bill of Quantities and price schedule;
- a confidential Engineer's Cost Estimate, including indicative lead times for major equipment;
- testing, commissioning and acceptance requirements;
- training, documentation, warranty, defects liability and spare parts requirements.

These requirements shall be suited to the operating and maintenance capacity of the entity responsible for the mini-grid.

Phase 3 – Works tender package (conditional tranche 1)

With the affirmation of conditional tranche 1, Enabel will confirm the procurement procedure for the works and provide the corresponding Enabel templates. The Consultant shall prepare the works tender package using those templates, ready for publication subject to Enabel's procurement validation. This includes:

- integration of all technical specifications, drawings, the BoQ and price schedule, and testing, commissioning and acceptance requirements;
- proposed selection criteria (technical capacity) and award criteria, including the technical evaluation grid;
- completion of contract-specific fields, based on Enabel's instructions: subject-matter, duration, lots, performance conditions, acceptance procedure, and payment milestones linked to works progress;
- provisions for a site visit by works bidders;
- provisional quantities for items that cannot be fixed before the geotechnical investigation, in particular foundations;
- the procedure for submission and approval of the works contractor's detailed design, including review periods.

Standard administrative, legal and contractual clauses of the Enabel templates shall not be modified without Enabel's written instruction. The Engineer's Cost Estimate shall be delivered separately and shall not be included in the works tender package. Enabel remains responsible for the final validation, approval and publication of the works tender package.

Support during the works tender (conditional tranche 2)

If conditional tranche 2 is affirmed, the Consultant shall answer technical clarification questions from works bidders, forwarded by Enabel, within three (3) working days, for up to two (2) expert-days.

Consistency and language

The Consultant shall ensure that the specifications, drawings, quantities, cost estimate and evaluation criteria are consistent with each other.

Deliverable 1 shall be in English. The works tender package and its technical annexes shall be in English, and shall allow works bidders to submit offers in English.

Duration and timeline

- The fixed tranche shall be completed within a maximum period of four (4) weeks of the day following kick-off meeting, including Enabel's review and approval of Deliverable 1.

- Conditional tranche 1 shall be completed within a maximum period of five (5) weeks of the day following notification of its affirmation.

- Conditional tranche 2 runs from the day following notification of its affirmation until award of the works contract, and at the latest three (3) months after its affirmation.

The field mission to Nagonha shall take place within two (2) weeks of contract start, taking into account access constraints linked to the rainy season in Zambézia Province. The mission shall be scheduled sufficiently early to allow its findings to be fully incorporated into Deliverable 1.

The work plan submitted with the technical offer shall show the sequencing of activities, the planned date and timing of the field mission, deliverable submission dates, Enabel/FUNAE review points, dependencies on Enabel inputs, and any access-related risks and mitigation measures.

Quantities

This public service contract is divided into one fixed tranche and two conditional tranches:

- **Fixed tranche (Phase 1):** diagnosis of the existing Nagonha mini-grid and determination of the technical response, including the additional solar PV capacity required (Deliverable 1);
- **Conditional tranche 1 (Phases 2 and 3):** tender-level design of the recommended option and preparation of the works tender package using the Enabel templates, ready for publication subject to Enabel's procurement validation (Deliverables 2 and 3);
- **Conditional tranche 2:** technical clarification support during the works tender, up to two (2) expert-days.

Enabel's commitment is limited to the fixed tranche. Each conditional tranche is performed only if Enabel affirms it and notifies the Consultant in writing:

conditional tranche 1: immediately following approval of Deliverable 1, subject to Enabel's decision to proceed; conditional tranche 2: after approval of Deliverable 3, and and no later than publication of the works tender. A conditional tranche that is not affirmed within its period lapses. The Consultant is not entitled to any compensation, holding fee or indemnity if a conditional tranche is not affirmed or lapses.

The tenderer shall price each tranche separately. Tenders are compared on the total price of the three tranches.

Methodology and approach

The Consultant shall apply a practical, engineering-based methodology combining document review, field verification, operational data analysis, system sizing, tender-level design and tender preparation, as set out in Section 5.4.

The Consultant shall identify the engineering tools, standards and main assumptions used. Assumptions made because of missing or incomplete data shall be stated explicitly and technically justified.

Before each submission, the Consultant shall carry out an internal quality check. This check ensures that the specifications, drawings, quantities, cost estimate and evaluation criteria are consistent with each other.

Minimum Team Composition and Qualifications

The assignment shall be led by a team leader who meets the following minimum profile:

- University degree in electrical engineering, energy engineering or a related field;
- At least eight (8) years of professional experience in solar PV, hybrid power systems and/or mini-grids;
- Demonstrated experience in the technical assessment or design of PV-battery systems;
- Full professional proficiency in English.

The tenderer may propose additional experts to complement the team leader, for example in civil/structural design, protection and system integration, or cost estimation. This is optional. A tender proposing only the team leader is fully admissible and is not disadvantaged. Any additional expert shall be named, with a CV, a defined role and a number of days in the work plan.

The team leader is responsible for all deliverables. Working knowledge of Portuguese within the team is an asset for fieldwork and interaction with FUNAE.

Award criteria

The contract will be awarded to the regular tender that is most economically advantageous, based on the following criteria:

- Technical offer: 70 points
- Price: 30 points

1. Technical Proposal (70 points)

Each criterion is scored on the following scale:

- **Excellent** (100% of points): specific to Nagonha, well-reasoned, no significant gaps.
- **Good** (70%): sound, with minor gaps or some generic elements.
- **Adequate** (40%): largely generic, or with significant gaps.
- **Insufficient** (0%): absent or not relevant.

Evaluation criteria	Max. Points	A high score requires
1. Understanding and diagnostic approach	1512	Plausible hypotheses for the battery under-charging (PV capacity, battery state of health, inverter/charger limits, control settings, load profile); how each will be tested (data analysis, on-site checks, battery capacity verification); data required and how gaps will be handled; key risks for the extension (compatibility with

		existing equipment and warranties, land, interface with the planned water system)
2. Methodology and work plan	25	Clear steps from diagnosis to tender-level design and works tender package; tools and standards identified; approach to preparing a consistent works tender package using the Enabel templates, including cross-checking between specifications, drawings, BoQ and evaluation criteria; realistic person-days per task and per expert; field mission within three weeks with a defined on-site programme; Enabel inputs and review periods reflected in the schedule
3. Key expert(s)	30	Team leader's experience beyond the minimum profile in Section 5.7: hands-on assessment or expansion of operational PV-battery mini-grids; hands-on experience with the inverter/charger platform installed at Nagonha (Victron); tender packages prepared for donor-funded or public works that were actually procured. Coverage of the competences the assignment needs (system diagnosis, protection and integration, structural design basis for cyclone-prone sites, tender specifications and cost estimation, working Portuguese), by the team leader alone or together with additional experts. The number of experts is not scored. Additional experts count only where their role and input are clearly defined in the work plan
	70	

Deliverables

Deliverable		**Content**	**Timing**
Fixed Tranche			
D1	Diagnostic and sizing note	Data reviewed and gaps; field mission findings; root-cause diagnosis of battery under-charging, including battery state of health; load scenarios including PUE; powerhouse space and condition assessment; comparison of two to three options on cost, technical risk and O&M implications; recommended capacity and configuration; key risks (compatibility and warranties, land, environmental licensing, design approval requirements); estimated works value	Within a maximum period of 4 weeks of contract start
Conditional 1			
D2	Draft works tender package	Draft works tender package using the Enabel templates, including: performance-based technical specifications; tender drawings (layout, single-line diagram, interconnection); structural design basis; BoQ and price schedule, with provisional quantities where applicable; testing, commissioning and acceptance requirements; training, documentation, warranty, defects liability and spare parts requirements; contractor design approval procedure; site visit provisions; proposed selection and award criteria with technical evaluation grid. Confidential Engineer's Cost Estimate, including indicative equipment lead times, delivered separately	Within a maximum period of6 weeks of notification of affirmation of conditional tranche 1

D3	Final works tender package	D2 revised to incorporate Enabel's and FUNAE's comments, with a comments-and-responses matrix; all source files in editable format (Word, Excel, DWG); final Engineer's Cost Estimate delivered separately	Within 5 working days of receipt of Enabel's comments on D2
Conditional 2			
D4	Written technical clarification responses (Works tender support)	Answers to technical clarification questions from works bidders, up to two (2) expert-days	From affirmation of conditional tranche 2 until award of the works contract (max. 3 months)

All deliverables shall be submitted electronically to the managing official.

Review and approval

Enabel will send consolidated comments, including FUNAE's, within five (5) working days of receiving each deliverable. The Consultant shall submit the revised deliverable within five (5) working days of receiving comments. Comments shall be incorporated at no additional cost.

Approval of D1 ends the fixed tranche. Affirmation of conditional tranches 1 and 2 is decided and notified in accordance with Section 2.4. With the notification of affirmation of conditional tranche 1, Enabel will confirm the procurement procedure for the works and provide the corresponding Enabel templates.

Annexes

Reference 1

Item	Information
Project title	
Client (full name of organisation)	
Client contact person (name, function, e-mail, telephone)	
Location (country, region)	
Period (start and end, month/year)	
Role of the tenderer (e.g. lead consultant, consortium member, subcontractor)	
Short description of the assignment and of the tenderer's own services (max. 150 words)	
Type of system (PV-battery mini-grid / hybrid mini-grid / off-grid system) and approximate size (kWp, kWh)	
Did the assignment include technical specifications and/or Bills of Quantities for a works or supply tender?	☐ Yes ☐ No

Reference 2

Item	Information
Project title	
Client (full name of organisation)	

Client contact person (name, function, e-mail, telephone)	
Location (country, region)	
Period (start and end, month/year)	
Role of the tenderer (e.g. lead consultant, consortium member, subcontractor)	
Short description of the assignment and of the tenderer's own services (max. 150 words)	
Type of system (PV-battery mini-grid / hybrid mini-grid / off-grid system) and approximate size (kWp, kWh)	
Did the assignment include technical specifications and/or Bills of Quantities for a works or supply tender?	☐ Yes ☐ No

Enabel may contact the clients indicated to verify the information provided.

(h) 6 Selection file (see clause 13 of chapter 3 Award Procedure);

(i) All documents demanded in clause 15 of chapter 3 Award Procedure (award criteria);

(j) Where an economic operator wants to rely on the capacities of other entities (particularly subcontractors or independent subsidiaries) with regard to the criteria of economic and financial capacity or technical and professional aptitude (see clause 13 of chapter 3 Award Procedure and Terms of reference

Background

The Nagonha mini-grid, located in Nagonha, Locality of Alto Maganha, Pebane District, Zambézia Province, was developed under the RERD2 programme as part of efforts to expand access to reliable renewable electricity in rural areas of Mozambique.

The existing Nagonha photovoltaic power plant has an installed solar PV generation capacity of approximately 200 kWp and a battery energy storage capacity of approximately 1,171.2 kWh. The mini-grid also comprises the associated power conversion, control, protection, monitoring and electricity distribution infrastructure.

The battery system uses lithium-ion technology, with an installed capacity of approximately 1,171 kWh, and the mini-grid was commissioned in 2024. The inverter/charger system is based on Victron equipment, comprising 12 inverter/charger units rated at 15 kVA each. The mini-grid serves 853 connections and is operated by KK Lda, under the institutional responsibility of FUNAE Monitoring data is available through the Victron Remote Management (VRM) portal, with monthly operational reports covering July 2024 to June 2025.

Under the current Enabel portfolio, Nagonha is being developed as a pilot site through complementary interventions under Result 3 (Energy) and Result 4 (Water).

Under Result 3, Nagonha is a pilot site for Productive Use of Energy (PUE). The objective is to stimulate productive and income-generating activities, increase the productive use of electricity and test approaches that can contribute to the operational and economic sustainability of rural mini-grids.

Under Result 4, a water supply system is being designed as part of a broader Water–Energy Dual Utility Pilot. The planned water system is expected to have its own dedicated solar PV generation. It should therefore not automatically be counted as an additional load when sizing the mini-grid expansion. The overall dual-utility configuration and the technical interfaces, operational dependencies and coordination requirements between the water and energy systems shall nevertheless be considered.

Operational experience has shown that the batteries do not reach the required State of Charge during daytime operation. The assessment shall determine whether the existing system can serve the evolving load while allowing the batteries to recover to the required State of Charge and to remain within the intended Depth of Discharge limits.

This is particularly relevant as additional productive loads are introduced through the PUE pilot. The evolution of productive demand must be considered together with the operating characteristics and limitations of the existing generation and storage system. The aim is to avoid adverse impacts on battery performance, system reliability and equipment lifetime.

Enabel and FUNAE therefore intend to diagnose the causes of the current generation–storage imbalance, determine the most cost-effective technical response, and prepare the works tender for its implementation under a design-and-build contract.

The assignment shall contribute to the optimisation of the existing RERD2 infrastructure, accommodate the evolving productive-use demand under Result 3, and ensure technical compatibility with the development of Nagonha as a Water–Energy Dual Utility Pilot under Results 3 and 4.

Enabel and FUNAE therefore intend to diagnose the causes of the current generation–storage imbalance, determine the most cost-effective technical response, and prepare the works tender for its implementation under a design-and-build contract.

The assignment shall contribute to the optimisation of the existing RERD2 infrastructure, accommodate the evolving productive-use demand under Result 3, and ensure technical compatibility with the development of Nagonha as a Water–Energy Dual Utility Pilot under Results 3 and 4.

Objective

The objective of the assignment is to:

- diagnose why the Nagonha mini-grid battery bank does not reach the required State of Charge under current and expected loads;
- determine the most cost-effective technical response, expected to be additional solar PV capacity and any strictly necessary associated modifications;
- prepare the works tender package for the supply, installation, integration, testing and commissioning of that response, using the Enabel templates and ready for publication subject to Enabel's procurement validation.

The proposed solution shall be fully compatible with the existing mini-grid. It shall take into account the development of Nagonha as a Water–Energy Dual Utility Pilot, including the technical interfaces with the planned water system.

Expected results

- **R1 – Diagnosis and technical response defined (fixed tranche):** the causes of the batteries not reaching the required State of Charge are established, options are compared, and the capacity and configuration to be procured are recommended.
- **R2 – Tender-level design completed (conditional tranche 1):** the recommended option is designed to a level that allows bidders to prepare complete and comparable offers under a design-and-build contract.
- **R3 – Works tender package ready for publication (conditional tranche 1):** the works tender package, including all technical annexes, is finalised using the Enabel templates after Enabel and FUNAE comments, subject only to Enabel's procurement validation.
- **R4 – Works bidders' technical questions answered (conditional tranche 2):** technical clarification questions from works bidders are answered promptly and consistently with the works tender package.

Scope of work

The assignment is carried out in three phases, plus optional support during the works tender:

- Phase 1 constitutes the fixed tranche.
- Phases 2 and 3 constitute conditional tranche 1.
- Support during the works tender constitutes conditional tranche 2

Enabel inputs

At contract start, Enabel will provide:

- the available as-built documentation, equipment specifications, maintenance records and monitoring data of the Nagonha mini-grid;
- the productive use of energy (PUE) load scenario developed under Result 3;
- the design assumptions and interface points of the planned water system under Result 4;
- confirmation, in consultation with FUNAE, of the land available for the extension.

Missing or incomplete data shall be reported in Deliverable 1 and addressed through explicit, technically justified assumptions.

Phase 1 – Diagnosis and sizing (fixed tranche)

The Consultant shall:

- review the documentation and data provided by Enabel;
- carry out one field mission to Nagonha within three (3) weeks of contract start. The mission covers inspection of the PV generation, battery storage system, inverters and chargers, protection, control and monitoring equipment, and the available site area;
- analyse generation, demand, battery charging behaviour, State of Charge and Depth of Discharge, and identify the root cause(s) of the batteries not reaching the required State of Charge. Causes to be examined include PV capacity, battery state of health, inverter and charger limits, control settings and load profile;
- assess the impact of current and expected PUE loads, using the Result 3 scenario. Consider the interfaces with the planned water system, without counting loads to be supplied by its dedicated solar generation;
- assess whether the existing powerhouse/container has sufficient space, ventilation and protection for additional inverters and associated equipment. If it does not, define the requirements for an additional equipment shelter;
- compare two to three technical options on cost, technical risk and operation and maintenance implications, and recommend the capacity and configuration to be procured;
- identify the key risks and requirements for the extension, including:
    - compatibility with existing equipment and warranties;
    - land and site constraints;
    - environmental licensing requirements;
    - any design approval required by FUNAE or the energy regulator (ARENE);
- estimate the works value, to inform Enabel's choice of procurement procedure for the works.

Phase 2 – Tender-level design (conditional tranche 1)

The Consultant shall develop the recommended option to tender level. The design shall define all elements that determine compatibility with the existing system, safety and the comparability of offers:

- additional capacity;
- coupling architecture (AC/DC) and point of interconnection;
- compatibility requirements with the existing inverters, battery system and controls;
- protection philosophy and coordination requirements;
- earthing and lightning protection concept;
- integration with the monitoring system;
- site layout and footprint, including cable routes.

The tender-level design shall also define the structural design basis for PV mounting structures, foundations and any equipment shelter:

- design wind speed and applicable standard for cyclone-prone sites;
- corrosion category for a coastal environment;
- acceptable foundation types;
- the geotechnical investigation to be carried out by the works contractor.

Equipment-specific detailed design will be the responsibility of the works contractor. It shall stay within the parameters defined by the Consultant and is subject to Enabel's approval before installation. It includes:

- final string configuration;
- final cable sizing;
- structural design and calculations for the mounting structures and foundations, certified by a qualified structural engineer;
- construction/shop drawings.

The Consultant shall prepare:

- performance-based technical specifications;
- tender drawings (layout, single-line diagram, interconnection);
- the Bill of Quantities and price schedule;
- a confidential Engineer's Cost Estimate, including indicative lead times for major equipment;
- testing, commissioning and acceptance requirements;
- training, documentation, warranty, defects liability and spare parts requirements.

These requirements shall be suited to the operating and maintenance capacity of the entity responsible for the mini-grid.

Phase 3 – Works tender package (conditional tranche 1)

With the affirmation of conditional tranche 1, Enabel will confirm the procurement procedure for the works and provide the corresponding Enabel templates. The Consultant shall prepare the works tender package using those templates, ready for publication subject to Enabel's procurement validation. This includes:

- integration of all technical specifications, drawings, the BoQ and price schedule, and testing, commissioning and acceptance requirements;
- proposed selection criteria (technical capacity) and award criteria, including the technical evaluation grid;
- completion of contract-specific fields, based on Enabel's instructions: subject-matter, duration, lots, performance conditions, acceptance procedure, and payment milestones linked to works progress;
- provisions for a site visit by works bidders;
- provisional quantities for items that cannot be fixed before the geotechnical investigation, in particular foundations;
- the procedure for submission and approval of the works contractor's detailed design, including review periods.

Standard administrative, legal and contractual clauses of the Enabel templates shall not be modified without Enabel's written instruction. The Engineer's Cost Estimate shall be delivered separately and shall not be included in the works tender package. Enabel remains responsible for the final validation, approval and publication of the works tender package.

Support during the works tender (conditional tranche 2)

If conditional tranche 2 is affirmed, the Consultant shall answer technical clarification questions from works bidders, forwarded by Enabel, within three (3) working days, for up to two (2) expert-days.

Consistency and language

The Consultant shall ensure that the specifications, drawings, quantities, cost estimate and evaluation criteria are consistent with each other.

Deliverable 1 shall be in English. The works tender package and its technical annexes shall be in English, and shall allow works bidders to submit offers in English.

Duration and timeline

- The fixed tranche shall be completed within a maximum period of four (4) weeks of the day following kick-off meeting, including Enabel's review and approval of Deliverable 1.

- Conditional tranche 1 shall be completed within a maximum period of five (5) weeks of the day following notification of its affirmation.

- Conditional tranche 2 runs from the day following notification of its affirmation until award of the works contract, and at the latest three (3) months after its affirmation.

The field mission to Nagonha shall take place within two (2) weeks of contract start, taking into account access constraints linked to the rainy season in Zambézia Province. The mission shall be scheduled sufficiently early to allow its findings to be fully incorporated into Deliverable 1.

The work plan submitted with the technical offer shall show the sequencing of activities, the planned date and timing of the field mission, deliverable submission dates, Enabel/FUNAE review points, dependencies on Enabel inputs, and any access-related risks and mitigation measures.

Quantities

This public service contract is divided into one fixed tranche and two conditional tranches:

- **Fixed tranche (Phase 1):** diagnosis of the existing Nagonha mini-grid and determination of the technical response, including the additional solar PV capacity required (Deliverable 1);
- **Conditional tranche 1 (Phases 2 and 3):** tender-level design of the recommended option and preparation of the works tender package using the Enabel templates, ready for publication subject to Enabel's procurement validation (Deliverables 2 and 3);
- **Conditional tranche 2:** technical clarification support during the works tender, up to two (2) expert-days.

Enabel's commitment is limited to the fixed tranche. Each conditional tranche is performed only if Enabel affirms it and notifies the Consultant in writing:

conditional tranche 1: immediately following approval of Deliverable 1, subject to Enabel's decision to proceed; conditional tranche 2: after approval of Deliverable 3, and and no later than publication of the works tender. A conditional tranche that is not affirmed within its period lapses. The Consultant is not entitled to any compensation, holding fee or indemnity if a conditional tranche is not affirmed or lapses.

The tenderer shall price each tranche separately. Tenders are compared on the total price of the three tranches.

Methodology and approach

The Consultant shall apply a practical, engineering-based methodology combining document review, field verification, operational data analysis, system sizing, tender-level design and tender preparation, as set out in Section 5.4.

The Consultant shall identify the engineering tools, standards and main assumptions used. Assumptions made because of missing or incomplete data shall be stated explicitly and technically justified.

Before each submission, the Consultant shall carry out an internal quality check. This check ensures that the specifications, drawings, quantities, cost estimate and evaluation criteria are consistent with each other.

Minimum Team Composition and Qualifications

The assignment shall be led by a team leader who meets the following minimum profile:

- University degree in electrical engineering, energy engineering or a related field;
- At least eight (8) years of professional experience in solar PV, hybrid power systems and/or mini-grids;
- Demonstrated experience in the technical assessment or design of PV-battery systems;
- Full professional proficiency in English.

The tenderer may propose additional experts to complement the team leader, for example in civil/structural design, protection and system integration, or cost estimation. This is optional. A tender proposing only the team leader is fully admissible and is not disadvantaged. Any additional expert shall be named, with a CV, a defined role and a number of days in the work plan.

The team leader is responsible for all deliverables. Working knowledge of Portuguese within the team is an asset for fieldwork and interaction with FUNAE.

Award criteria

The contract will be awarded to the regular tender that is most economically advantageous, based on the following criteria:

- Technical offer: 70 points
- Price: 30 points

1. Technical Proposal (70 points)

Each criterion is scored on the following scale:

- **Excellent** (100% of points): specific to Nagonha, well-reasoned, no significant gaps.
- **Good** (70%): sound, with minor gaps or some generic elements.
- **Adequate** (40%): largely generic, or with significant gaps.
- **Insufficient** (0%): absent or not relevant.

Evaluation criteria	Max. Points	A high score requires
1. Understanding and diagnostic approach	1512	Plausible hypotheses for the battery under-charging (PV capacity, battery state of health, inverter/charger limits, control settings, load profile); how each will be tested (data analysis, on-site checks, battery capacity verification); data required and how gaps will be handled; key risks for the extension (compatibility with

		existing equipment and warranties, land, interface with the planned water system)
2. Methodology and work plan	25	Clear steps from diagnosis to tender-level design and works tender package; tools and standards identified; approach to preparing a consistent works tender package using the Enabel templates, including cross-checking between specifications, drawings, BoQ and evaluation criteria; realistic person-days per task and per expert; field mission within three weeks with a defined on-site programme; Enabel inputs and review periods reflected in the schedule
3. Key expert(s)	30	Team leader's experience beyond the minimum profile in Section 5.7: hands-on assessment or expansion of operational PV-battery mini-grids; hands-on experience with the inverter/charger platform installed at Nagonha (Victron); tender packages prepared for donor-funded or public works that were actually procured. Coverage of the competences the assignment needs (system diagnosis, protection and integration, structural design basis for cyclone-prone sites, tender specifications and cost estimation, working Portuguese), by the team leader alone or together with additional experts. The number of experts is not scored. Additional experts count only where their role and input are clearly defined in the work plan
	70	

Deliverables

Deliverable		**Content**	**Timing**
Fixed Tranche			
D1	Diagnostic and sizing note	Data reviewed and gaps; field mission findings; root-cause diagnosis of battery under-charging, including battery state of health; load scenarios including PUE; powerhouse space and condition assessment; comparison of two to three options on cost, technical risk and O&M implications; recommended capacity and configuration; key risks (compatibility and warranties, land, environmental licensing, design approval requirements); estimated works value	Within a maximum period of 4 weeks of contract start
Conditional 1			
D2	Draft works tender package	Draft works tender package using the Enabel templates, including: performance-based technical specifications; tender drawings (layout, single-line diagram, interconnection); structural design basis; BoQ and price schedule, with provisional quantities where applicable; testing, commissioning and acceptance requirements; training, documentation, warranty, defects liability and spare parts requirements; contractor design approval procedure; site visit provisions; proposed selection and award criteria with technical evaluation grid. Confidential Engineer's Cost Estimate, including indicative equipment lead times, delivered separately	Within a maximum period of6 weeks of notification of affirmation of conditional tranche 1

D3	Final works tender package	D2 revised to incorporate Enabel's and FUNAE's comments, with a comments-and-responses matrix; all source files in editable format (Word, Excel, DWG); final Engineer's Cost Estimate delivered separately	Within 5 working days of receipt of Enabel's comments on D2
Conditional 2			
D4	Written technical clarification responses (Works tender support)	Answers to technical clarification questions from works bidders, up to two (2) expert-days	From affirmation of conditional tranche 2 until award of the works contract (max. 3 months)

All deliverables shall be submitted electronically to the managing official.

Review and approval

Enabel will send consolidated comments, including FUNAE's, within five (5) working days of receiving each deliverable. The Consultant shall submit the revised deliverable within five (5) working days of receiving comments. Comments shall be incorporated at no additional cost.

Approval of D1 ends the fixed tranche. Affirmation of conditional tranches 1 and 2 is decided and notified in accordance with Section 2.4. With the notification of affirmation of conditional tranche 1, Enabel will confirm the procurement procedure for the works and provide the corresponding Enabel templates.

Annexes

Reference 1

Item	Information
Project title	
Client (full name of organisation)	
Client contact person (name, function, e-mail, telephone)	
Location (country, region)	
Period (start and end, month/year)	
Role of the tenderer (e.g. lead consultant, consortium member, subcontractor)	
Short description of the assignment and of the tenderer's own services (max. 150 words)	
Type of system (PV-battery mini-grid / hybrid mini-grid / off-grid system) and approximate size (kWp, kWh)	
Did the assignment include technical specifications and/or Bills of Quantities for a works or supply tender?	☐ Yes ☐ No

Reference 2

Item	Information
Project title	
Client (full name of organisation)	

Client contact person (name, function, e-mail, telephone)	
Location (country, region)	
Period (start and end, month/year)	
Role of the tenderer (e.g. lead consultant, consortium member, subcontractor)	
Short description of the assignment and of the tenderer's own services (max. 150 words)	
Type of system (PV-battery mini-grid / hybrid mini-grid / off-grid system) and approximate size (kWp, kWh)	
Did the assignment include technical specifications and/or Bills of Quantities for a works or supply tender?	☐ Yes ☐ No

Enabel may contact the clients indicated to verify the information provided.

(k) 6 Selection file), it shall prove to the contracting authority that it will have at its disposal the resources necessary, for example, by producing a commitment by those entities to that effect;

(l) A detail of the prices quoted, listing for each item the various elements that are included in the price and the applicable taxes;

(m) The statutes and any other document required to establish the power of attorney of the signer(s) (for each participant for tenders submitted by a group);

(n) Where the tender is submitted by a group of economic operators, the association agreement signed by each participant, clearly showing who represents the association.

8 FORMS

1. IDENTIFICATION FORM

Enabel

Identification form Natural person

This form must be completed, signed and accompanied by a legible photocopy of the identity document.

Please complete the form in CAPITAL LETTERS and LATIN LETTERS.

I. PERSONAL DATA	
FAMILY NAME(S) *As indicated on the official document.*	
FIRST NAME(S) *As indicated on the official document.*	
DATE OF BIRTH *DD MM YYYY*	
PLACE OF BIRTH *(town, village)*	
TYPE OF IDENTITY DOCUMENT *(identity card, passport, driving licence etc.)*	
ISSUING COUNTRY	
IDENTITY DOCUMENT NUMBER	
ADDRESS (permanent) *Street+ P.O. Box* *Postal code* *City, Region/Province* *Country*	
TELEPHONE NUMBER	
E-MAIL	
II. BUSINESS DATA	
PLEASE SPECIFY YOUR STATUS:	☐ Duly registered independent ☐ Unregistered self-employed (no official formalisation) ☐ other (please specify): ....
REGISTRATION NUMBER (if applicable)	

VAT NUMBER (if applicable)	
PLACE OF REGISTRATION (if applicable)	
COUNTRY	

Identification form Legal person

This form must be completed, signed and accompanied by a copy of the official documents (articles of association, trade register(s), extract from the publication in the official gazette or VAT registration) substantiating the information given.

Please complete the form in CAPITAL LETTERS and LATIN LETTERS.

PRIVATE/PUBLIC-LAW ENTITY WITH A LEGAL FORM

OFFICIAL NAME *As indicated on the official document.*	
COMMERCIAL NAME *(if different from official name)*	
ABBREVIATION *(if applicable)*	
LEGAL FORM	
TYPE OF ORGANISATION *(Delete as appropriate)*	- FOR PROFIT - NOT FOR PROFIT - NGO
PRINCIPAL REGISTRATION NUMBER	
SECONDARY REGISTRATION NUMBER *(if applicable)*	
PLACE OF REGISTRATION *City* *Country*	
DATE OF REGISTRATION *DD MM YYYY*	
VAT NUMBER	
ADDRESS OF REGISTERED OFFICE *Street+ P.O. Box* *Postal code* *City, Region/Province* *Country*	
TELEPHONE NUMBER	
E-MAIL	

Identification form Public actor - entity

This form must be completed, signed and accompanied by a copy of the official documents (law, resolution, trade register(s), official gazette, VAT registration etc) substantiating the information given.

Please complete the form in CAPITAL LETTERS and LATIN LETTERS.

OFFICIAL NAME *As indicated on the official document.*	
ABBREVIATION *(if applicable)*	
LEGAL FORM	
PRINCIPAL REGISTRATION NUMBER	
SECONDARY REGISTRATION NUMBER *(if applicable)*	
PLACE OF REGISTRATION *City* *Country*	
DATE OF REGISTRATION *DD MM YYYY*	
VAT NUMBER	
ADDRESS OF REGISTERED OFFICE *Street+ P.O. Box* *Postal code* *City, Region/Province* *Country*	
TELEPHONE NUMBER	
E-MAIL	

2. LIST OF SUBCONTRACTORS

I (we) declare that the share of the public contract to be subcontracted is as indicated below.

List of subcontractors planned to be engaged in the implementation of the contracts				
Name and legal form	Address / Registered office	Object of engagement	LOT in which will be engaged *(if applicable)*	Other entity within the meaning of paragraph 1er of Article 73 of the R.D. of 18 April 2017 (YES/NO)*

* In accordance with Article 73 of the Royal Decree of 18 April 2017, where an economic operator wants to rely on the capacities of other entities (particularly subcontractors or independent subsidiaries) for economic and financial capacity criteria and technical and professional aptitude criteria, it shall prove to the contracting authority that it will have at its disposal the resources necessary, for example, by producing a commitment by those entities to that effect.

2.1. Any change of subcontractor compared to those indicated in the tender submitted will be submitted for approval to the contracting authority before intervention in contract performance, in particular in order to verify that the latter has the required capacity and does not subject to a reason for exclusion (Art. 73 – the Royal Decree of 18 April 2017 on the award of public contracts in the classical sectors; Art. 12-13 – Royal Decree of 14 January 2013 establishing the general rules for the execution of public contracts).

3. TENDER FORM - PRICES

The prices for each item in the inventory are established relative to the value of these items in relation to the total value of the tender. Each tranche price shall be broken down by deliverable, showing fees (days × rate) and travel costs separately;

International Travel: Not to be included in the price and will be reimbursed. The flight choice must be the most advantageous and approved by Enabel beforehand.
Local Travel: Not to be included in the price. Enabel will directly book local flights to the provinces for consultants and provide one car with driver for fieldwork (any additional local transportation needs should
be included in the price).

Item	Type	Total price
Diagnostic and sizing note	Lump-sum price	€
Draft works tender package	Lump-sum price	€
Final works tender package	Lump-sum price	€
Works tender support	Lump-sum price	€
Total VAT exclusive		
VAT Rate %		
Total VAT Inclusive		

4. DECLARATION ON HONOUR - EXCLUSION GROUNDS

Hereby, I / we, acting as legal representative(s) of above-mentioned tenderer/beneficiary/partner/co-contractor declare that the tenderer is not in any of the following cases of exclusion:

** Please tick the boxes to confirm each situation*

☐ **The counterparty or one of its directors has not been convicted by a final judicial decision of any of the following offenses:**

a. Participation in a criminal organization;

b. Corruption;

c. Fraud;

d. Terrorist offenses, offenses linked to terrorist activities or incitement to commit such offenses, complicity, or attempt;

e. Money laundering or terrorism financing;

f. Child labor and other forms of trafficking in human beings;

g. Employment of third-country nationals in illegal residence;

h. Creation of offshore companies.

☐ **The counterparty fulfills its obligations related to the payment of taxes, duties, and social security contributions for an amount exceeding €3,000, unless it can demonstrate that it holds one or more certain, due, and unencumbered claims against a contracting authority for at least the amount corresponding to the overdue tax or social debt.**

☐ **The counterparty is not in a state of bankruptcy, liquidation, cessation of activities, judicial reorganization, has not admitted bankruptcy, is not the subject of liquidation or judicial reorganization, or any analogous situation derived from similar procedures in other national regulations.**

☐ **The counterparty has not committed any serious professional misconduct that questions its integrity. Serious professional misconduct particularly includes:**

a. Breach of Enabel's policy on sexual exploitation and abuse;

b. Breach of Enabel's policy on fraud and corruption risk management;

c. Violation of local legislation concerning sexual harassment at work;

d. Serious false statements or use of false documents in providing information required for exclusion checks or selection criteria, or concealing information;

e. Evidence sufficient to conclude anti-competitive acts, agreements, or arrangements;

Regarding conflict of interest:

Please tick the applicable box

- ☐ The counterparty or its directors have no actual or potential conflict of interest, no real or potential business or family relationship, nor appear to have such, with any member of Enabel's Board, personnel, or others involved in tender preparation, selection, or contract execution.

or

- ☐ The counterparty informs Enabel of any actual, potential, or reasonably perceived conflict of interest that may affect or appear to affect impartiality in the procurement, granting, selection, or contract execution process.

  ➔ *A detailed description of any such conflicts, including nature and persons involved, will be annexed to this declaration.*

☐ **The counterparty has not committed any serious or persistent failures during the execution of a prior essential contractual obligation with another contracting authority resulting in measures, damages, or comparable sanctions.**

☐ **The counterparty attests that no restrictive measures have been taken against it related to international peace and security violations such as terrorism, human rights violations, destabilization of sovereign states, or proliferation of WMD.**

☐ **The counterparty does not appear on any sanction lists maintained by the United Nations, European Union and Belgium .**

I/we commit to promptly inform Enabel of any change in the above points, including sanctions or embargo measure adopted by the United Nations, the European Union and/or Belgium occurring after our signature of this Declaration.

Done at:		**Date:**	
By (Name of entity):		Represented by (Full name)	
Signature of authorised representative:			

5. FINANCIAL IDENTIFICATION

BANKING DETAILS	
ACCOUNT NAME [2]	
IBAN/ACCOUNT NUMBER[3]	
NIB	
CURRENCY	
BIC/SWIFT CODE	
BANK NAME	

ADDRESS OF BANK BRANCH		
STREET & NUMBER		
TOWN/CITY	POST CODE	
COUNTRY		
ACCOUNT HOLDER'S DATA AS DECLARED TO THE BANK		
ACCOUNT HOLDER		
STREET & NUMBER		
TOWN/CITY	POST CODE	
COUNTRY		
SIGNATURE OF ACCOUNT HOLDER (Obligatory)	DATE (Obligatory)	

6. INTEGRITY STATEMENT

Hereby, I / we, acting as legal representative(s) of above-mentioned tenderer, declare the following:

- Neither members of administration or employees, or any person or legal person with whom the tenderer has concluded an agreement in view of performing the public contract, may obtain or accept from a third party, for themselves of for any other person or legal person, an advantage appreciable in cash (for instance, gifts, bonuses or any other kind of benefits), directly or indirectly related to the activities of the person concerned for the account of Enabel.
- The board members, staff members or their partners have no financial or other interests in the businesses, organisations, etc. that have a direct or indirect link with Enabel (which could, for instance, bring about a conflict of interests).
- I have / we have read and understood the articles about deontology and anti-corruption included in the Tender Documents (see 1.7.), as well as *Enabel's Policy regarding sexual exploitation and abuse* of June 2019 and *Enabel's Policy regarding fraud and corruption risk management* of June 2019 and I / we declare fully endorsing and respecting these articles.

If above-mentioned public contract is awarded to the tenderer, I/we declare, moreover, agreeing with the following provisions:

- In order to avoid any impression of risk of partiality or connivance in the follow-up and control of the performance of the public contract, it is strictly forbidden to the public contractor (i.e. members of the administration and workers) to offer, directly or indirectly, gifts, meals or any other material or immaterial advantage, of whatever value, to the employees of Enabel who are concerned, directly or indirectly, by the follow-up and/or control of the performance of the public contract, regardless of their hierarchical rank.
- Any (public) contract will be terminated, once it appears that contract awarding or contract performance would have involved the obtaining or the offering of the above- mentioned advantages appreciable in cash.
- Any failure to comply with one or more of the deontological clauses will be considered as a serious professional misconduct which will lead to the exclusion of the contractor from this and other public contracts for Enabel.
- The public contractor commits to supply, upon the demand of the contracting authority, any supporting documents related to the performance conditions of the contract. The contracting authority will be allowed to proceed to any control, on paperwork or on site, which it considers necessary to collect evidence to support the presumption of unusual commercial expenditure.

Finally, the tenderer takes cognisance of the fact that Enabel reserves the right to lodge a complaint with the competent legal instances for all facts going against this statement and that all administrative and other costs resulting are borne by the tenderer.

Signature preceded by 'read and approved', in writing, and indication of name and function of the person signing:

Assinatura precedida da menção «lido e aprovado», por escrito, e indicação do nome e cargo da pessoa que assina:

Place, date