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| *Technical Assistance for the implementation of renewable energies and energy efficiency projects, including regulatory reforms" (Lot 2)* |
| **progress Report January to june 2017** |
| **August 2017****(Version 1)** |

***This Project is implemented by Consortium led by***

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| *in cooperation with:* |
|  | Mott MacDonald |
| logo | PESCARES Italia Srl |

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The authors take full responsibility for the contents of this report. The opinions expressed do not necessarily reflect the views of the European Union.

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# List of Acronyms

|  |  |
| --- | --- |
| **ACP** | African, Caribbean and Pacific Countries |
| **ADF** | African Development Fund |
| **AEGF** | Africa Energy Guarantee Fund |
| **AfDB** | African Development Bank |
| **AREF** | African Renewable Energy Fund |
| **CA** | Contracting Authority |
| **CTF** | Clean Technology Fund |
| **CPP** | Competitive Procurement Process |
| **CSP** | Concentrated Solar Power |
| **DoEM** | Department of Energy and Minerals |
| **DP** | Development Partners |
| **EABC** | East African Business Council |
| **EAC** | East African Community |
| **EBRD** | European Bank for Reconstruction and Development |
| **EC** | European Commission |
| **EDF** | European Development Fund |
| **EE** | Energy Efficiency |
| **EEP** | Energy and Environment Partnership |
| **EIB** | European Investment Bank |
| **ESIA** | Environmental and Social Impact Assessment |
| **ESIRSR** | Electricity Supply Industry Reform Strategy Roadmap  |
| **EU** | European Union |
| **EUD** | EU Delegation |
| **FIT** | Feed-in Tariff |
| **GCCA** | Global Climate Change Alliance |
| **GEEREF** | Global Energy Efficiency and Renewable Energy Fund |
| **GET FiT** | Global Energy Transfer Feed-in Tariff |
| **GHG** | Greenhouse Gas |
| **GIS** | Geographical Information System |
| **GIZ** | Die Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH |
| **GVEP** | Global Village Energy Partnership; now Energy 4 Impact |
| **IPP** | Independent Power Producer |
| **KE** | Key Expert |
| **KfW** | Kreditanstalt für Wiederafbau |
| **KIST** | Karume Institute of Science and Technology |
| **MCA** | Millennium Challenge Account |
| **MCC** | Millennium Challenge Corporation |
| **MDGs** | Millennium Development Goals |
| **MIGA** | Multilateral Investment Guarantee Agency |
| **MKUZA** | Swahili acronym for Zanzibar Strategy for Growth and Reduction of Poverty |
| **MoF&P** | Ministry of Finance and Planning |
| **MoLWE&E** | Ministry of Land, Water, Energy and Environment |
| **MoU** | Memorandum of Understanding |
| **NGOs** | Non-Governmental Agencies |
| **NKE** | Non-Key Expert |
| **OPIC** | Overseas Private Investment Corporation |
| **PD** | Project Director |
| **PPA** | Power Purchase Agreement |
| **PPIAF** | Public-Private Infrastructure Advisory Facility |
| **PPP** | Public-Private Partnership |
| **PV** | Photo-Voltaic |
| **RE**  | Renewable Energy |
| **RECP** | Renewable Energy Cooperation Programme |
| **RES** | Renewable Energy Sources |
| **RGoZ** | Revolutionary Government of Zanzibar |
| **SCCF** | Special Climate Change Fund |
| **SEFA** | Sustainable Energy for Africa |
| **SESA** | Strategic Environmental and Social Assessment |
| **SPPA** | Standard Power Purchase Agreement |
| **TA** | Technical Assistance |
| **TANESCO** | Tanzania Electricity |
| **TL** | Team Leader |
| **ToR** | Terms of Reference |
| **UNCTAD** | UN Conference on Trade and Development |
| **UNDP** | UN Development Programme |
| **UNIDO** | UN Industrial Development Organization |
| **WAIPA** | World Association of Investment Promotion Agencies |
| **WB** | World Bank |
| **ZCBE** | Zanzibar College of Business Education |
| **ZECO** | Zanzibar Electricity Company |
| **ZEMA** | Zanzibar Management Authority |
| **ZIP** | Zanzibar Investment Policy |
| **ZIPA** | Zanzibar Investment Promotion and Protection Authority |
| **ZURA** | Zanzibar Utility Regulatory Authority |

# EXECUTIVE SUMMARY

1. This Progress Report covers the period from January 1st to June 30st of 2017 and describes how assistance was delivered under the EU project ***“Technical Assistance for the implementation of renewable energies and energy efficiency projects, including regulatory reforms (Lot 2)”*** (EuropeAid/135818/IH/SER/TZ), Service Contract №FED/2016/375-441, hereafter interchangeably referred to as “the Project” and/or “RE & EE Lot 2”. It is financed by the European Union, under the Cotonou Agreement, through the **European Development Fund (EDF)**.
2. The Project is part of the comprehensive ***EU programme in support of the RE and EE Initiative in Zanzibar*** that consisted of the preparatory TA “Bridging Phase”, a contract for supply and installation of wind and solar measurement equipment (under implementation) and two (2) TA contracts for the implementation of the programme via 2 lots:
* Lot 1: Wind Resource and Solar Potential Analysis and full-scale Feasibility Studies of wind and solar farms in the perspective of developing 40 MW wind farms in Unguja, 4 MW in Pemba and solar farms[[1]](#footnote-1).
* Lot 2: Technical Assistance for the implementation of renewable energies and energy efficiency projects, including regulatory reforms – the present project.
1. At the issue of this report, the RE & EE Lot 2 project is a 24-month technical assistance effort, whose main objective is to support the development of renewable energies in Zanzibar, promote implementation of energy efficiency and adequate regulatory and institutional framework through appropriate transfer of knowledge and capacity developments of Key Stakeholders.
2. The contract is implemented by an international consortium, led by MWH SA/NV in cooperation with Mott MacDonald and PESCARES Italia Srl.
3. The Beneficiary country is the United Republic of Tanzania – Zanzibar, and the Contracting Authority is The Alternate National Authorizing Officer (NAO) representing the Revolutionary Government of Zanzibar (RGoZ).
4. The original schedule is a 24-month project which was divided into three project phases as follows:
* Inception Phase: Months 1.5 (Inception Report: week 6).
* **Implementation Phase: Months 2-23 (draft Final Report: end of month 23).**
* Completion Phase: Month 24 (Final Report: end of month 24).
1. The **EU RE&EE Programme Lot 2 Implementation Phase** execution schedule has been unfortunately delayed because complications in the execution and delivery of outputs from the contractor Lot 0 (“Wind and solar Measurement Masts and data provision”), and contractor Lot 1 (“Wind and solar mapping and technical feasibility of large renewable projects”). Recently, these delays were pointed out in the Technical Auditing report[[2]](#footnote-2) produced by KenTec where they reviewed all the metering masts and they found problems on standard procedures and incomplete series of measurement, from the wind and solar measurement masts. Clearly KenTec indicated in its report that the measured data can **form basis for a pre-feasibility study**, at initial stage bankable level, however to prepare a **full bankable feasibility study**, more than two years of measurements will generally be required. Then, basically all the measurement stage might restart again from “ZERO” affecting the potential development and construction schedule of any large renewable energy projects.
2. **Vis-à-vis this situation, recently the RGoZ, the EUD and the contractor Lot 1 agreed to extend the Lot 1 original contract for 15 months, until September 2018**, where the contractor Lot 1 would be responsible for deploying standardised refurbished and new measuring masts and instruments to allow completing the original underperformed contract from Lot 0 obligations and finally generated a full wind and solar mapping requirements, with identification of pre-feasibility projects sites.
3. Then, some of the draft outputs from Lot 1 linked to grid integration and absorption capacity, would be ready by end of July 2017 and presented in workshops in August 2017.
4. The RGoZ decided to wait until the grid integration and absorption capacity report output be available from Lot 1 contractor, and then proceed with further decisions. At the same time Lot 2 Contractor will develop any potential legal tool and framework to support the RGoZ in that regard.
5. At the closing of this report, the original Project Implementation Phase for Lot 2 was concentrating on the preparation of specified activities designed to deliver the agreed results of the Project. It would cover a period of 22 months (months 2 to 23) and includes seven major activities:
* Activity 1: Opportunities Assessment of RE/EE Technologies for Zanzibar.
* Activity 2: Legal, Regulatory and Institutional Framework for Zanzibar for RE & EE.
* Activity 3: Supporting Mechanisms Introduced by the RGoZ and Geared to the Private Project Promoters.
* Activity 4: Technical Support to the RGoZ for Private Projects Implementation.
* Activity 5: Technical Support to the RGoZ for State-run Projects Implementation.
* Activity 6: Training and Knowledge Transfer.
* Activity 7: Communication and Visibility.
1. Finally, the Project Completion phase of Lot 2 which was originally end up with the preparation and delivery of the Final Project Report and the Lot 2 deliverables will be impacted by the Lot 1 schedule extension, and it will affect the timeline of the Lot 2 deliverables.
2. This is the reason why in this new scenario, the EU RE&EE Programme Lot 2 Team is evaluating flexible options reducing the schedule dependency of the outputs from the contractor Lot 1 (“Wind and solar mapping and technical feasibility of large renewable energy projects”).

## Content

1. This Second Progress Report covers the following sections:
* Section 1: Executive Summary
* Section 2: Progress in the second reporting period.
* Section 3: Planning for the next reporting period.
* Section 4: Key issues during the second reporting period.
* Section 5: Project resources.
1. The Annexes contain the outputs produced in the reporting period, as mentioned in the various sections.

## Next steps

1. Despite the uncertainties mentioned above which are changing the original schedule and scope of work, the next steps will be likely focused on developing the project’s outputs by middle of 2018, this will include building consensus with the stakeholders’ in **adopting a fast track strategy to build an enabling environment attracting private investors and financiers which will deploy small and middle scale renewable energy and energy efficiency projects**, and providing training and capacity building in this subjects to main project beneficiaries (in particular, ZECO) meeting their needs and fulfilling the gaps.
2. It is quite relevant for the development of a consistent RE&EE programme in Zanzibar that the **new regulatory documents produced by SIDA II programme contribute to remove totally the existing Barriers detected by Lot 1 and Lot 2 contractors.** At request of the donors, the consultants from SIDA II programme and from EU RE&EE programme Lot 1 and Lot 2 are coordinating efforts to enhance the Zanzibar regulatory framework under development.
3. In addition, Zanzibar has **urgency in working on energy efficiency measures, and in building local renewable energy generation at least to serve its basic services to assure energy security and reliability**, decreasing the dependency from mainland energy supply.
4. A **workshop with all the key stakeholders in Zanzibar will be organised by August 2017 to present and discuss the findings of the RE&EE projects opportunity assessment report.** After the workshop, all the comments and questions will be collected and addressed in a final version of the current report.

## Acknowledgement

1. Finally, MWH consortium would like to acknowledge the kind cooperation provided by the staff of RGoZ to the project team during the second progress report preparation. In addition, we want to thank the officials of the Ministry of Finance, and the Ministry of Land, Water, Electricity, and Environment, ZECO and the Department of Energy and Minerals, and other public stakeholders who kindly shared their time and insights of the development of the EU RE & EE Lot 2 as a part of the EU support to the energy sector in Zanzibar.

# PROGRESS IN THE SECOND REPORTING PERIOD

## Introduction

1. On 15th June 2016, a joint Steering Committee and Donor Coordination Meeting was held and acted as a Kick-off Meeting for the RE & EE Lot 2 Project. The Inception Report was submitted on 27th July 2016 and approved by the Steering Committee in its meeting on 10th August 2016.
2. The management and coordination structure of the project was confirmed in the previous Progress Period. It includes:
* The Contracting Authority: The Alternate National Authorizing Officer (NAO).
* The Implementing Agency: The Ministry of Land, Housing, Water, and Energy (MLHWE).
* The Steering Committee established to monitor the Zanzibar Renewable Energy Programme and approve the main steps and decisions. It gathers representatives from different institutions, including Ministry of Finance (Chairman), MLWEE, ZECO, Ministry of Agriculture, Planning Commission, and EU as observer. The list of members is provided in annex A.
* The Technical Committee established under the tutelage of MLHWE to implement the programme. It is comprised of officers of DoEM, Department of Land, Department of Environment, Department of Forest and Natural Resources, Planning Commission, ZECO and Ministry of Finance (multilateral cooperation). The list of members is provided in **Annex A**.
* The Program Manager - Mr Maulid Shiraz to coordinate the implementation of the project. Mr Maulid Shiraz is an engineer working at ZECO in the Corporate Planning Department.
* The Secretary appointed to convene the Steering Committee and Technical Committee meetings and to ensure the coordination between MoF&P, the other institutions, and the development partners. Ms Sabra Machano is the project main point of contact representing the Contracting Authority and at the same time the appointed Secretary.
1. Due to the delay of Lot 1, the uncertainty of the RE resources has prevailed during this period. At the meeting on 23rd November, the Steering Committee requested further clarifications on the scope of the SIDA II project that had its Inception Report approved. Several overlaps were identified between the SIDA II project and the RE & EE Lot 2. SIDA II includes an update of the Energy Policy from 2009 and clarifications are needed to conclude if the update of the Energy Policy will also include strategies and strategic plans.
2. It is quite relevant for the development of a consistent RE&EE programme in Zanzibar that the **new regulatory documents produced by SIDA II programme contribute to remove totally the existing Barriers detected by Lot 1 and Lot 2 contractors.** At request of the donors, the consultants from SIDA II programme and from EU RE&EE programme Lot 1 and Lot 2 are coordinating efforts to enhance the Zanzibar regulatory framework under development.
3. These discussions under development and a tangible coordination solution is under way.

## Activities 1 to 5

1. The **EU RE&EE Programme Lot 2 Implementation Phase** execution schedule has been unfortunately delayed because complications in the execution and delivery of outputs from the contractor Lot 0 (“Wind and solar Measurement Masts and data provision”), and contractor Lot 1 (“Wind and solar mapping and technical feasibility of large renewable projects”). Recently, these delays were pointed out in the Technical Auditing report[[3]](#footnote-3) produced by KenTec where they reviewed all the metering masts and they found problems on standard procedures and incomplete series of measurement, from the wind and solar measurement masts. Clearly KenTec indicated in its report that the measured data can **form basis for a pre-feasibility study**, at initial stage bankable level, however to prepare a **full bankable feasibility study**, more than two years of measurements will generally be required. Then, basically all the measurement stage might restart again from “ZERO” affecting the potential development and construction schedule of any large renewable energy projects.
2. **Vis-à-vis this situation, recently the RGoZ, the EUD and the contractor Lot 1 agreed to extend the Lot 1 original contract for 15 months, until September 2018**, where the contractor Lot 1 would be responsible for deploying standardised refurbished and new measuring masts and instruments to allow completing the original underperformed contract from Lot 0 obligations and finally generated a full wind and solar mapping requirements, with identification of pre-feasibility projects sites.
3. Then, some of the draft outputs from Lot 1 linked to grid integration and absorption capacity, would be ready by end of July 2017 and presented in workshops in August 2017.
4. The lack of infrastructure was identified as a major obstacle for development of larger solar and wind parks. This is not a surprise, as the present system is optimised for distribution from a single point on Unguja, as well as Pemba.
5. The RGoZ decided to wait until the grid integration and absorption capacity report output be available from Lot 1 contractor, and then proceed with further decisions. At the same time Lot 2 Contractor will develop any potential legal tool and framework to support the RGoZ in that regard.
6. At the Technical Committee Meeting on 10th November 2016. the possible topics for Energy Efficiency were discussed, namely:
* Improved cooking stoves;
* Building Codes – improving the building envelope;
* Replacing electric water heaters with solar thermal (by outlawing electric water heaters);
* Electric appliances – households and commercial (everything from toasters to air conditioners and further all electrical tools), by applying a labelling system similar to the EU;
* Regular inspection of emissions from vehicles to be combined with inspection of general roadworthiness;
* Replacement of two stroke engines by outlawing their import (two stroke engines are leaving a trail of inefficient combusted oil that is not evaporating and remains as a thin film of oil on water and on land).
1. For implementing Energy Efficiency actions, three main possibilities exist 1) use of the tax system (exceptions, subsidies, enforce extra taxes on undesired behaviour), 2) laws and injunctions (orders), or 3) voluntary achievements through campaigns. A mix of 1 & 2 is possible and should be combined with 3. Using voluntary achievements alone has shown not to be efficient in the long run. Therefore, it was agreed to proceed with a mix of 1, 2 and 3 which was also reported and approved at the Steering Committee Meeting on 23rd November.
2. It must be noted that these topics are not an official approved policy for Zanzibar, however they have been included as a part in the proposed policy document in the A1 Report “Opportunities Assessment of RE/EE Technologies for Zanzibar” which has been prepare in this period and it has also included details on:
* Demand forecast for Zanzibar and subsea cables capacity constraint assessment.
* A review of the RE and EE financial options best practice indicating key financial instruments used in various case studies, including the World Bank REFINe tool.
* Market Appraisal for RE & EE technologies in Zanzibar was prepared.
* The preparation of the database of existing RE projects in Zanzibar started.
* The preparation of the Cost-Benefit Analysis and Multi-Criteria Matrix of projects started as well in the reporting period.
* The RE and EE financial models and strategies.
* A Policy Proposal Document with indication of detail budget implementation in short-term, mid-term and long-term run until 2030.
1. Further details are provided in a copy of a PPT presentation on the A1 Report in **Annex B.**
2. At the urgent request of the Department of Energy and Mineral of a PPA model for discussing with investors on March 7, 2017, a basic standard PPA Template model for RE installations (PV Solar) was provided by the EU RE&EE Team Lot 2 on March 9, 2017.
3. Further details are provided in a copy of this basic standard PPA Template model in **Annex C.**
4. As part of preparing the legal and regulatory of RE&EE framework, the NKE Legal has made some Legal Regulatory Tools on the RE&EE Project in Zanzibar including:
* Draft Zanzibar Electricity and RE Development Act,
* Draft Zanzibar Model PPA for Solar and Wind projects for Zanzibar; and
* Draft Electricity Generation and Electricity Supply Licence Templates.
1. **Remark: Those legal documents quoted above will be provided in final version in the Activity 2 Report, A2 Report “Legal, Regulatory and Institutional Framework for Zanzibar for RE & EE” not included in this progress report.**

## Activity 6

1. The training activities started with the mobilisation of a senior local Non-Key Expert who started the preparation of the training programme in the previous reporting period (November 2016).
2. To create awareness among the stakeholders, the senior local Non-Key Training Expert participated in the Stakeholders meeting celebrated in Unguja as part of the C&V Activity in January 2017.
3. The senior local Non-Key Training Expert participated in several meetings which were held with various stakeholders and institutions to identify the training needs.
4. The senior local Non-Key Training Expert prepared drafts of the following key documents:
* Training needs assessment report;
* Preparation of RE and EE syllabus and stakeholders’ attending list; and
* Coordination with other donors’ scope of work adapting training courses, particularly in Energy Efficiency

Further details are provided about the Draft Training needs assessment report are found in **Annex D.**

## Activity 7

1. Activity 7 progressed with the mobilisation of two Non-Key Experts (one senior international and one junior) starting in September 2016.
2. Data collection was performed as a baseline study for the preparation of the Communication and Visibility Plan. The data was analysed including segmenting stakeholders for preparation of the Communication and Visibility Plan.
3. The draft Communication and Visibility Plan was submitted to the Technical Committee and Steering Committee that approved the plan on its meeting on 23rd November 2016.
4. The concept notes for the forum on RE & EE enabling environment that is scheduled to take place in January 2017 was prepared.
5. Graphic designers were consulted for the preparation of project visibility materials and quotations collected for the services.
6. The work on the contents of visibility materials started and a consultation was done regarding a possible slogan for the project. The selected slogan is "**Green Energy for Zanzibar**" and in Swahili it is "**Nishati Rafiki kwa Zanzibar**". The slogan can be used in both languages with one language in a larger font and the other language in a smaller font. The occasion determines which language is used in the larger font.
7. The following main tasks were performed in the period January – June 2017:
* Stakeholders’ Forum Unguja celebrated in January 2017;
* Launching Facebook page “Green Energy for Zanzibar” in January 2017;
* Participation in the EU Promoting EE in Building workshop in mainland in February 2017;
* Purchase of the Transportation Vehicle for C&V Activities in the Island in February/March 2017;
* Stakeholders’ Forum Pemba celebrated in February/March 2017;
* Organization of the Journalists’ awareness tour in March 2017;
* Clarification of activities with SIDA Project in March 2017;
* Awareness material (T-shirts/caps and RE&EE pamphlets) in May 2017;
* Coordination donors’ meeting in May 2017;
* Received Media equipment (photo camera and professional projector) in May 2017;
* Celebrated agreement and organization planning with REZA for implementing community awareness campaign in June, to be implemented in July 2017
* Developed main stakeholders’ visit to RE&EE mainland facilities, and 40-minute documentary done in June 2017
1. Further details are provided in the C&V 6-month report in **Annex E**

# PLANNING FOR THE THIRD REPORTING PERIOD

## Activities 1 to 5

1. About Activity 1, once approved by the steering committee, the A1 Report “Opportunities Assessment of RE/EE Technologies for Zanzibar” outcomes would be discussed at a Stakeholders Workshop to include their comments.
2. About the other activities from 2 to 5**, recently the RGoZ, the EUD and the contractor Lot 1 agreed to extend the Lot 1 original contract for 15 months, until September 2018,** where the contractor Lot 1 would be responsible for deploying standardised refurbished and new measuring masts and instruments to allow completing the original underperformed contract from Lot 0 obligations and finally generated a full wind and solar mapping requirements, with identification of pre-feasibility projects sites.
3. Then, some of the draft outputs from Lot 1 linked to grid integration and absorption capacity, would be ready by end of July 2017 and presented in workshops in August 2017.
4. The RGoZ decided to wait until the grid integration and absorption capacity report output be available from Lot 1 contractor, and then proceed with further decisions. At the same time Lot 2 Contractor will develop any potential legal tool and framework to support the RGoZ in that regard, the preparation of the Activity 2 Report, A2 Report “Legal, Regulatory and Institutional Framework for Zanzibar for RE & EE”.
5. Subject to the availability and the RGoZ needs, the team will proceed with
* the analysis of the legal, regulatory and institutional framework, including proposals for a conducive legal, regulatory and institutional framework in Zanzibar for RE & EE, and practical roll-out plans and documentation.
* Supporting mechanisms and instruments and proposals, recommendation and drafting of related supporting documents (guidelines, audits, etc).
* the drafting of technical support documents for private projects implementation, including bidding and contractual documents adopted by the Government and eventually to be used for licencing private investors.
* the drafting of technical support documents for state-run projects implementation, including feasibility study reports and methods for business planning, financing, EE awareness raising, and monitoring and evaluation plan.

## Activity 6

1. Training proposals were developed based on the identified needed and consulted with the stakeholders. The vocational training centre in Pemba will be approached for further collaboration.
2. The identification and mobilisation of trainers is under work and it supposed to be finalised by end August 2017 to deploy the training programme.
3. A meeting with key stakeholders has been schedule mid-July to define the training plan and it will be concreted soon. Further details are provided about the Draft of the Training Plan is found in **Annex F.**

## Activity 7

1. The C&V plan is following its schedule smoothly as previewed.
2. The visibility materials were delivered as expected. Awareness raising and visibility campaigns will be launched, including the dissemination of the visibility materials produced.
3. Online information dissemination started and it is actively implemented.
4. RE awareness campaigns programs are running through the media.
5. Cultural events including road shows for a wide public and households to disseminate visibility materials and energy efficiency technologies are under development.
6. The participation of key stakeholders in exhibitions to disseminate RE & EE technologies is to be facilitated.
7. The RE stakeholders list will be maintained up to date and new members added.
8. Further details are provided in the C&V 6-month report in **Annex E**

## Workplan

1. The revised workplan for the remaining duration of the project as well as the indicative mobilisation of the experts and hours worked in the project are provided below.

The work plan below shows the original dates in colour and the revised dates in grey (Part1 of 2).



The work plan below shows the original dates in colour and the revised dates in grey (Part 2 of 2).



**Allocation of expert working days per expert/month**



# KEY ISSUES DURING THE SECOND REPORTING PERIOD

## Delays in implementation of Lot 1

1. During the visits to the measuring masts on Unguja, it became evident that the masts are not generating data according to what was planned. The reports received on the operation of the masts indicates that it will take a huge effort to present data of a quality needed for investors.
2. The contract with the contractor erecting the masts was cancelled and efforts are made to bring the masts up to the standard originally commissioned, in that regard, the RGoZ, the EUD and the contractor Lot 1 agreed to extend the Lot 1 original contract for 15 months, until September 2018, where the contractor Lot 1 would be responsible for deploying standardised refurbished and new measuring masts and instruments to allow completing the original underperformed contract from Lot 0 obligations and finally generated a full wind and solar mapping requirements, with identification of pre-feasibility projects sites.
3. The delay in accessing reliable data has affected and might further affect the feasibility studies to be prepared by Lot 1, and which are also essential for Lot 2 to progress. Some of the draft outputs from Lot 1 linked to grid integration and absorption capacity, would be ready by end of July 2017 and presented in workshops in August 2017.
4. The RGoZ decided to wait until the grid integration and absorption capacity report output be available from Lot 1 contractor, and then proceed with further decisions. At the same time Lot 2 Contractor will develop any potential legal tool and framework to support the RGoZ in that regard, the preparation of the Activity 2 Report, A2 Report “Legal, Regulatory and Institutional Framework for Zanzibar for RE & EE”.

## Change of electricity tariff

1. Presently ZURA is still preparing a regulation of electricity prices based on actual costs. Tariff is still dictated by the government and not based on an estimate of the real costs.
2. This is one of the reasons ZECO annual balance sheet is showing losses every year.

## Coordination with other donors

1. The SIDA II project has started and that calls for close cooperation within several areas. The SIDA II project is to support training and awareness in the energy sector, and the preparation of a Draft Energy Policy.
2. At request of the donors, the consultants from SIDA II programme and from EU RE&EE programme Lot 1 and Lot 2 are coordinating efforts to enhance the Zanzibar regulatory framework under development.

## Problems and barriers encountered

1. The main difficulty encountered has been the access to previous studies and reports produced with the support of development donors. The transmission lines are constrained in their capacity and do not allow handling production from large renewable energy projects.
2. Further information on the Barriers Assessment Report is included in **Annex G**.

## Team Leader resignation, and new Team Leader appointment

1. On April 26, 2017, Mr. Niels Juhl Thomsen submitted his resignation as the original team leader of MWH Team in the EU RE&EE Programme Lot 2 in Zanzibar.
2. After some weeks of research and with the approval of the RGoZ, the EUD and the MWH Management, Mr. Jan Van Vreden has been appointment as the new Team Leader from July 27, 2017.

# PROJECT RESOURCES

1. The following table gives an overview of overall use of resources in the first reporting period: (To be updated)

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Name** | **Number of man days (CONTRACT)** | **Number of man days (USED TO END JUN 2017)****(% USED)** |
| Key Experts | Key Expert 1: Team Leader | Niels Thomsen replaced by Jan van Vreden | 350 | 169 48% |
| Key expert 2: EE and RE Economist | Alejandro Saenz-Core | 240 | 131,5 55% |
| Non-Key Experts | Senior International Experts | Mark Jeffery | 50 | 25.5 51% |
| TBD | 50 | - |
| Senior Local Experts | Matthew Matimbwi | 100 | 36,5 37% |
| TBD | 80 | - |
| Junior Local Experts  | Sebastian Paschal | 220 | 159 72% |
| TBD | 80 | - |
| Legal Expert | George Mhina | 50 | 18 36% |
| Incidental Expenditure |  | 220,000 | 392,36 0,2% |
| Expenditure verification |  | 25,000 | 6250 25% |

1. The use of the resources is in line with the overall implementation progress of the project.
2. The Incidental Expenditure budget has been mainly used starting 2017 for the communication and visibility and training activities.

# ANNEXES

##### Annex A: **List of Steering Committee and Technical Committee members**

List of the Steering Committee Members of the Zanzibar Renewable Energy Programme

|  |
| --- |
| **Steering Committee Member of the Zanzibar Renewable Energy Programme** |
| **Name** | **Designation** | **Institution** | **Email** |
| Mr. Khamis M. Omar | Principal Secretary | MoF&P | khamis\_tra@hotmail.com |
| Mr. Ali Khalil Mirza | Principal Secretary | MLHWE | akmirza@zanlink.com |
| Mr. Abdalla A. Omar | President | ZNCCI | tarabeni1960@gmail.com |
| Ms. Mwandawa K. Moh’d | D. Chairperson | ANGOZA | Disabledwomen2012@gmail.com |
| Eng. Leopold Lwajabe | Engineer | EDF-PSU DNAO | llwajabe@psu.go.tz |

In addition, possible SC invitees can be: General Manager – ZECO; Director of DoEM; Commissioner of External Finance; Commissioner of Planning Commission; Project Manager RE & EE; Secretary; EU delegation.

List of the Technical Committee Members

|  |
| --- |
| **Members of the Technical Committee** |
| Mrs. Sabra I. Machano. | Ministry of Finance |
| Mr. Maulid Shiraz | ZECO |
| Mr. Sayyidomar Idarous | Dept. of Energy and Minerals |
| Mr. Salim H. Bakar | Dept. of Environment |
| Mr. Miza S. Khamis  | Department of Environment |
| Mr. Mohamed Habib | Department of Land |
| Mrs. Maryam Dhahir | Planning Commission |

##### Annex B: Copy of the PPT presentation on the Draft A1 Report

##### Annex C: Copy of basic standard PPA Template model for 5 MW RE/Solar projects

**DRAFT - POWER PURCHASE AGREEMENT TEMPLATE**

**-- Between --**

***[LEGAL NAME OF DISTRIBUTION COMPANY/OFF-TAKER]***

**- and -**

***[GENERATION COMPANY/SELLER]***

**AGREEMENT**

**BETWEEN**:

*[****Legal name, form, and address of Generation Company/Seller entity****]*) having its registered office at *[complete Address of entity] (*"SUPPLIER”) **and**

*[****Legal name, form, and location of Distribution Company/Buyer entity****]*) having its registered office at *[complete Address of entity]* ("OFF-TAKER”).

SUPPLIER and OFF-TAKER may be referred to individually as a "PARTY" and collectively as "PARTIES" made this date, [*date of agreement execution] 1st January 2017 at 00:00 hours.*

**WHEREAS:**

1. SUPPLIER declares that its generation facilita is fully tested and commissioned to ensure reliability and comply with established legal, technical and commercial practices from ZECO (Zanzibar Electricity Corporation); and it is ready to supply the power and energy requested by the OFF-TAKER under the terms and conditions of this Agreement;
2. SUPPLIER and OFF-TAKER agree to fulfill all the Pre-Conditions before the starting date of this power and energy commercial transaction, look at Section 1 below "PRE-CONDITIONS");
3. SUPPLIER agrees to make available and to deliver and sell the Power and Energy Committed from its facilities to the OFF-TAKER; and
4. OFF-TAKER wishes to purchase the electrical power and energy generated and/or delivered by the SUPPLIER pursuant to the terms and conditions in this Agreement;

**NOW, THEREFORE,** in consideration of the mutual benefits to be derived, the representations, warranties, conditions and promises contained in this Agreement, and intending to be legally bound by this Agreement, the PARTIES agree as follows.

**1. PRE-CONDITIONS**

* 1. The PARTIES have valid Licenses issued and provided by the Zanzibar Utility Regulatory Agency (ZURA);
	2. The PARTIES are registered with ZIPA, MLWE&E and ZECO, and they have a valid registration to connect to the ZECO Electricity Network;
	3. The PARTIES have installed the proper metering devices (principal meter and backup meter) in compliance with the ZECO Metering Department specifications and the following the Metering Rules/Code.
	4. The PARTIES commit to register this power purchase agreement or Agreement with the Zanzibar Utility Regulatory Agency (ZURA) for its approval.
	5. The PARTIES acknowledge that this power purchase agreement or Agreement is regulated and binding in compliance with the ZURA monitoring requirements.

**2. SUPPLY OF POWER AND ENERGY**

2.1 Supply of power and energy to the OFF-TAKER. Subject to, and in accordance with, the terms of this Agreement, the SUPPLIER shall make available, deliver and sell to the OFF-TAKER, and the OFF-TAKER shall purchase from SUPPLIER on a “take or pay” basis[[4]](#footnote-4), [the Supply of Power and Energy of 5 MW and its associated energy or according to the schedule indicated in Section 5, “POWER AND ENERGY SCHEDULE”]

2.2 Starting Date of the Agreement Execution. 1st January 2017

2.3 Delivery Point. The Supply of Power and Energy will be delivered in the [33] kV "busbar" of its connection with ZECO [transmission/distribution] substation, the delivery point is considered the only access to the ZECO Electricity Network.

2.4 Power and Energy Prices. The amount of the payments due from OFF-TAKER to SUPPLIER for the Supply of Power and Energy shall be negotiated between the Parties; and it should be submitted under the Zanzibar Utility Regulatory Agency (ZURA) for its approval. The Power and Energy Prices agreed are indicated in **Appendix A.**

The payments shall be made at the times specified in Section 4.2 (Billing and Payment).

2.5 Prices Review. Every FIVE YEARS the PPA Power and Energy prices will be evaluated, and if the Internal Rate of Return (IRR) has been more than 10% in real terms, the payment of this PPA will be adjusted to a level required for the IRR will not exceed 10% for the next FIVE YEARS period. By the end of the PPA, the IRR must not exceed 10% in real terms.

2.6 SUPPLIER’s Facilities Availability. If the SUPPLIER is not available to deliver the Supply of Power and Energy from its facility for any reason; the energy and capacity to be supplied can be alternative supplied by the ZECO Electricity Network, furthermore the proper power and energy imbalance of the power purchase agreement or Agreement binding the PARTIES will be administrated by ZECO.

2.7 Transportation and Losses Expenses. The SUPPLIER is exclusive responsible for paying its associated transmission charges and energy losses to carry out the delivered Supply of Power and Energy from its generation unit to the committed in item “2.3 Delivery Point”. Otherwise, the power purchase agreement or Agreement will distinguish another delivery point agreed by both PARTIES.

2.8 Fees and Taxes. The PARTIES will pay the any Municipal, State and Federal Fees and Taxes associated to this power purchase agreement or Agreement.

Remark: Any additional agreement related to the exception made by the Revolutionary Government of Zanzibar to the SUPPLIER related to payment obligations concerning Fees and Taxes, cost of land, duties and so, should be indicated in separate document.

**3. TERM**

3.1 Initial Term. The initial term of this Agreement shall commence on the date of this Agreement and shall end *FIFTEEN YEARS* from the Starting Date, unless this Agreement is terminated earlier pursuant to the provisions of this Agreement allowing for termination in the event of a breach or default by either of the PARTIES ("Early Termination"). Any Early Termination of this Agreement shall be without prejudice to all rights and obligations of the PARTIES accrued under this Agreement prior to such termination.

3.2 Renewal Term. This Agreement may be extended by either PARTY for a single additional period of *TEN YEARS*, and for a new single additional period of *FIVE YEARS* on the terms defined by this Agreement, provided that:

 (a) The PARTY seeking an extension has made a prior written request to extend the agreement to the other PARTY, such request to be made not less than 6 months before the end of the initial term of this Agreement;

 (b) The PARTY receiving a request to extend the agreement has not rejected the request in a written response to the PARTY seeking an extension, given not more than 2 weeks following receipt of the request for extension; and

 (c) There is not an event of default of either PARTY, as defined in Sections 8.2 (SUPPLIER Defaults) and 8.3 (OFF-TAKER Defaults), on the date the extension begins.

**4. CURRENCY, PAYMENTS AND BILLING**

4.1 Currency. All payments required pursuant to any provision of this Agreement (including provisions applicable in the event of any breach, default, or other failure of performance) shall be calculated and paid in *US$; United States Dollar Currency.*

4.2 Billing and Payment.

 4.2.1 *Monthly Invoices.* Within 25 days after the end of each month, each PARTY shall prepare and deliver to the other PARTY an invoice reflecting amounts payable by the other PARTY pursuant to this Agreement. SUPPLIER's invoice to OFF-TAKER shall include calculations, in reasonable detail, of the amounts due pursuant to Schedule

 4.2.2 Special *Invoices.* If there is an event of default, breach, or other failure to perform for which this Agreement specifies payment of amounts as liquidated damages or otherwise, the PARTY to be compensated shall prepare and deliver to the other PARTY a special invoice that shows the calculation of any amounts due pursuant to this Agreement, specifies the provisions applied, and details the periods of delay or other factors on which the claim is based.

 4.2.3 Electronic *Funds Transfer.* Each PARTY shall pay the sums owed by wire transfer in immediately available funds within 21 days of receipt of each monthly invoice from the other PARTY. Payments for electrical energy provided by either PARTY to the other PARTY shall not be subject to any set-off. Each PARTY shall make payment by electronic transfer of funds to an account that is held and specified by the other PARTY. If electronic transfer of funds is not practicable or is not desired by the receiving PARTY, the PARTIES shall agree on specific alternative payment procedures.

 4.2.4 Late *Payments.* Payments not made by the due date shall accrue daily interest at the greater of *[specific daily interest rate or identified daily interest rate proxy]* or the maximum lawful rate. Any such charges for interest shall be calculated by the paying PARTY and included with payment of the invoice without the need for an additional invoice for those amounts.

4.3 Disputed Invoices. If either PARTY, on reasonable grounds, disputes any portion of a monthly invoice or the correctness of the amount received in payment of an invoice, then that PARTY shall, within 5 business days of the receipt of such invoice or payment, serve a notice on the other PARTY indicating the amount and basis of the dispute. Neither PARTY shall be required to pay a disputed amount pending resolution of the dispute. The dispute shall be settled by mutual discussion and, if necessary, resolved pursuant to Section 11 (Resolution of Disputes). If it is determined that either PARTY owes the other an amount of money, the owing PARTY shall, within 7 days after its receipt of such determination, pay such sum together with interest at a rate equal to *[specific interest rate or identified interest rate proxy]* to the other PARTY in the manner specified for payment of the disputed invoice.

**5. POWER AND ENERGY SCHEDULE**

The SUPPLIER will deliver at the delivery point the following Power and Energy schedule to the OFF-TAKER:

 **POWER (MW) ENERGY (MWh)**

Month 1: 5 600

Month 2: 5 600

Month 3: 5 600

Month 4: 5 600

Month 5: 5 600

Month 6: 5 600

Month 7: 5 600

Month 8: 5 600

Month 9: 5 600

Month 10: 5 600

Month 11: 5 600

Month 12: 5 600

**Total: 5 7,200**

**6. METERING**

6.1 Testing and Inspection of Metering Equipment. Testing, inspection, repair, recalibration and replacement of the Metering System and of the backup metering equipment shall be performed by the PARTIES in accordance with ZECO Metering Department specifications and the Metering Rules/Code.

6.2 Measurement of Power and Energy at the PARTIES’ Trading Points.

 6.2.1 *Notice of Reading from the ZECO Metering Department. The ZECO Metering Department and the OFF-TAKER* shall read the Metering System for the purpose of measuring the Supply of Power and Energy. At its option, SUPPLIER may be present when the meter is read. SUPPLIER may request a test of the accuracy of the Metering System, at OFF-TAKER’s expense, *up to ONE* time per year. SUPPLIER may have the Metering System tested at its own expense at any time; in any case, Maintenance of the metering system is responsibility of the PARTIES and the *ZECO Metering Department* will review the correct implementation in compliance with the ZECO operations rules.

 6.2.2 *Inaccurate Meters.* In the event that the *ZECO Metering Department* found that the Metering System is inaccurate or functioning improperly, the correct amount of Supply of Power and Energy delivered to OFF-TAKER during the period for which inaccurate measurements were made shall be determined using in the Backup Metering System, as appropriate.

 6.2.3 Payment *Adjustments. ZECO Metering Department* shall make a supplemental payment or issue a special invoice in the amount of the difference between the previous payments by OFF-TAKER for the period of the Metering System’s inaccuracy. *ZECO Metering Department*’s payment or special invoice shall be delivered within 10 days of the determination of proper readings. Any such special invoice to PARTIES shall be paid within 10 days of receipt.

**7. MUTUAL WARRANTIES AND COVENANTS OF THE PARTIES**

7.1 Warranties. Each PARTY warrants to the other that:

 7.1.1 It is duly formed, validly existing and in good standing under the laws of Zanzibar and is qualified to do business in Zanzibar and has complied with all applicable laws in the Revolutionary Government of Zanzibar;

 7.1.2 It has full power to carry on business and to enter into, legally bind itself by, and perform its obligations under this Agreement;

 7.1.3 The signatories to this Agreement on its behalf are duly authorized and competent to execute and deliver this Agreement as being valid and legally binding on it [Power of Attorney must be attached to the Agreement];

 7.1.4 The execution, and delivery of this Agreement, subject to the granting of the Relevant Consents, does not, and will not, constitute a violation of any legal or contractual constraint validly applied to the SUPPLIER.

 7.1.5 There are, to the best of its knowledge, no existing or threatened legal, contractual, or financial matters of any kind that could reasonably be expected to affect materially either its ability to perform its obligations under this Agreement or the enforceability of this Agreement; and

 7.1.6 No information given by it in relation to this Agreement contains any material misstatement of fact or omits to state a fact that would be materially adverse to the enforcement of the rights and remedies of the other PARTY.

7.2 OFF-TAKER Covenants.

OFF-TAKER covenants [if required it must be agreed by the PARTIES] to make the payments for the Supply of Power and Energy as required by this Agreement as they become due without setoff against the amounts pursuant to section 5 “POWER AND ENERGY SCHEDULE” for delivered electrical power and energy.

**8. DEFAULTS AND TERMINATION**

8.1 Time. Where the PARTIES or a PARTY is required to perform any act or to fulfill an obligation under this Agreement within a specified time, and for any reason that PARTY cannot perform within the time stated, then that PARTY may request an extension of the time for performance. The non-requesting PARTY shall give such requests for extensions of time due and reasonable consideration and shall not unreasonably deny a request, but the non-requesting PARTY may grant such a request on terms and conditions as to future performance.

8.2 SUPPLIER Defaults. OFF-TAKER may give a notice of default under this Agreement (an "OFF-TAKER Notice of Default") upon the occurrence of any of the following events, unless caused by a breach by OFF-TAKER of this Agreement (each a "SUPPLIER Event of Default").

 8.2.1 Failure of SUPPLIER to achieve the requirements for the Starting Date of the Agreement commencement date within 1 calendar month after the Required Commercial Starting Date. Unless, prior to the expiration of such 1-month period, OFF-TAKER and SUPPLIER agree on the length, and terms and conditions of an extension of the Required Commercial Starting Date, at the expiration of the initial 1 month period OFF-TAKER shall either declare a default or waive its right to declare a default pursuant to this Section. Any changes in the Agreement binding the PARTIES must be informed to ZECO and ZURA as soon as it agrees. OFF-TAKER at its own discretion may waive its right to demand payment of the liquidated damages determined in accordance with the liquidated damages provisions.

 8.2.2 Any material breach by SUPPLIER of any representation, warranty or covenant in this Agreement.

8.3 OFF-TAKER Defaults. SUPPLIER may give a notice of default under this Agreement (a "SUPPLIER Notice of Default") upon the occurrence of any of the following events, unless caused by a breach by SUPPLIER of this Agreement (each an "OFF-TAKER Event of Default").

 8.3.1 The occurrence of any of the following events, except where done for the purpose of merger or reorganization that does not affect the ability of the merged or reorganized entity, as the case may be, to perform its obligations under this Agreement:

 (a) admission in writing by OFF-TAKER of its inability generally to pay its debts as they become due;

 (b) appointment of a Liquidator (Bankruptcy) in a proceeding for the winding up of OFF-TAKER, after notice to OFF-TAKER and due hearing; or

 (c) a court order winding up OFF-TAKER;

 8.3.2 Any material breach by OFF-TAKER of any representation, warranty or covenant in this Agreement.

8.4 Notice and Cure. Any Notice of Default from a PARTY shall specify in reasonable detail the Event of Default, giving rise to the Notice of Default. In the case of a default set forth in Sections indicated above, the defaulting PARTY shall have 15 business working days within which to cure the default.

8.5 Rights and Remedies upon an Event of Default.

 8.5.1 *SUPPLIER Default.* If a SUPPLIER Event of Default has occurred and the SUPPLIER Event of Default has not been cured within the period specified in Section 8.4, OFF-TAKER, in its sole discretion, may take any or all of the following actions:

 (a) terminate this Agreement by delivering written notice to the SUPPLIER (OFF-TAKER Termination Notice) or

 (b) proceed in accordance with Section 11 (Resolution of Disputes) to protect and enforce its rights and to recover any damages to which it may be entitled, including all costs and expenses reasonably incurred in the exercise of its remedy, or

 (c) at its election, take such steps as are reasonably necessary to cure the default before so proceeding.

 8.5.2 *OFF-TAKER Default.* If an OFF-TAKER Event of Default has occurred and the OFF-TAKER Event of Default has not been cured within the period specified in Section 8.4, SUPPLIER, in its sole discretion, may take any or all of the following actions:

(a) terminate this Agreement by delivering written notice to OFF-TAKER (SUPPLIER Termination Notice) or

(b) proceed in accordance with Section 11 (Resolution of Disputes) to protect and enforce its rights and to recover any damages to which it may be entitled, including all costs and expenses reasonably incurred in the exercise of its remedy, or

(c) at its election, take such steps as are reasonably necessary to cure the default before so proceeding.

 8.5.3 *Nature of Rights on Default.*  These rights and remedies shall not be exclusive but, to the extent permitted by law, shall be cumulative and in addition to all other rights and remedies existing at law, in equity or otherwise. The PARTIES may seek to exercise such rights and remedies only in accordance with the procedures set forth in Section 11 (Resolution of Disputes). The PARTIES may exercise each right and remedy afforded by this Agreement or by law from time to time and as often as reasonably deemed expedient by the PARTY exercising this right. No delay by, or omission of, SUPPLIER or OFF-TAKER to exercise any right or remedy arising upon any event of default of the other PARTY shall impair any such right or remedy or constitute a waiver of such event or an acquiescence thereto.

 8.5.4 Notwithstanding the above, the total amount of damages that SUPPLIER shall be entitled to for any breach of this Agreement by OFF-TAKER shall not exceed, in the aggregate, the greater of the actual value of the remaining term of this Agreement and the fair market value of the payments for the Supply of Power and Energy required over the remaining term of this Agreement, which would be indicated by ZURA.

8.6 Survival. Notwithstanding anything to the contrary contained in this Agreement, where applicable the rights and obligations set forth in this Section 8 shall survive the termination of this Agreement.

**9.** **FORCE MAJEURE**

9.1 Meaning of Force Majeure. In this Agreement, "Force Majeure" means any event, circumstances, or combination of events or circumstances beyond the reasonable control of a PARTY that materially and adversely affects the performance by that PARTY of its obligations or the enjoyment by that PARTY of its rights under or pursuant to this Agreement, provided that such material and adverse effect has not occurred due to the failure of SUPPLIER or OFF-TAKER to provide the Supply service or Payments as required by this Agreement. Without limiting the generality of the foregoing, and conditioned on performance of the requirements of Section 9.1.3, "Force Majeure" shall expressly include the following categories of events and circumstances, to the extent that the events or circumstances satisfy the definitional requirements.

 9.1.1 *Natural Events.*  "Force Majeure - Natural" includes, but is not limited to:

 a) Acts of Nature;

 b) Epidemic or plague;

 9.1.2 *Other Events* *of Force Majeure.*  "Force Majeure - Political" includes, but is not limited to:

a) Act of war, invasion, armed conflict or act of foreign enemy, blockade, embargo, revolution, riot, insurrection, civil commotion, act of terrorism, or sabotage;

 b) Strikes, work to rule, or go slows; and

c) Except where Section 9.2 applies, (1) any of the Relevant Consents not being granted or renewed (unless previously revoked for cause) upon application having been duly made, (2) any of the Relevant Consents, having been granted, ceasing to remain in full force and effect (unless revoked for cause), or (3) the attachment to any Relevant Consents, subsequent to its grant, of any terms or conditions preventing performance,

d) Changes in the Energy Policy, ZECO and/or ZURA Acts and/or any complementary electricity regulatory rule which have implications on this Agreement.

 9.1.3 Upon the occurrence of a Force Majeure event or circumstances, the non‑performing PARTY shall, within forty-eight (48) hours, give the other PARTY written notice describing the particulars of the occurrence. The non‑performing PARTY shall use its best efforts to remedy its inability to perform; and when the non-performing PARTY is able to resume performance of its obligations under this Agreement, that PARTY shall promptly give the other PARTY written notice to that effect. The PARTIES will communicate as soon as possible their decision to ZECO and ZURA to introduce the required changes to manage any existing imbalance of the PARTIES.

9.2 Exclusion from Force Majeure. Force Majeure shall expressly not include the following conditions, except to the extent they result from an event or circumstances of Force Majeure:

 9.2.1 unavailability, late delivery or changes in cost of plant, machinery, equipment, materials, spare parts, or consumables in the SUPPLIER Facilities;

 9.2.2 a delay in the performance of any Contractor of the PARTIES;

 9.2.3 non-performance resulting from normal wear and tear typically experienced in power generation materials and equipment of the SUPPLIER Facilities; and

 9.2.4 non-performance caused by, or connected with, the non-performing PARTY's (a) negligent or intentional acts, errors or omissions, (b) failure to comply with applicable laws, or (c) breach of, or default under, this Agreement.

9.3 Consequences of Force Majeure.

 9.3.1 Neither PARTY shall be deemed in breach of this Agreement because of any failure or delay in complying with its obligations pursuant to this Agreement due solely to Force Majeure. The periods allowed for performance by the PARTIES of their obligations (other than that specified in Section 8.4 (Notice and Cure) shall be extended on a day-for-day basis, provided that (1) no relief shall be granted to the PARTY claiming Force Majeure pursuant to this Section 9 to the extent that such failure or delay would have occurred even had such Force Majeure not occurred, and (2) the PARTY not claiming Force Majeure may immediately terminate this Agreement without further obligation, if Force Majeure delays a PARTY's performance for a period greater than one (1) month. Other than for breaches of this Agreement by the PARTY not claiming Force Majeure, and without prejudice to the right of the PARTY claiming Force Majeure to indemnification pursuant to Section 10, the PARTY not claiming shall not bear any liability for any loss or expense suffered by the PARTY claiming Force Majeure as a result of a Force Majeure.

 9.3.2 During the pendency of an event of Force Majeure SUPPLIER shall not be entitled to receive Power and Energy Payment from OFF-TAKER except for power and energy already received by OFF-TAKER prior to the Event. If Force Majeure affects only part of the SUPPLIER Facility, then SUPPLIER shall be entitled to receive Power and Energy Payment for electrical power and energy actually delivered to OFF-TAKER from the SUPPLIER’s Facilities or from the ZECO Network. The ZECO will administrate the imbalance of the PARTIES, in similar way to the procedure indicated in item 2.5 SUPPLIER’s Facilities Availability.

**10. INDEMNIFICATION AND LIABILITY**

10.1 Indemnity by SUPPLIER. In addition to SUPPLIER's obligations and OFF-TAKER's remedies provided elsewhere in this Agreement, SUPPLIER shall indemnify OFF-TAKER for any loss of or any other liabilities, losses and reasonable costs and expenses, including, but not limited to, legal fees and expert witness fees or any claim against OFF-TAKER in respect thereof (collectively, “Damages”) suffered by OFF-TAKER as a direct and foreseeable consequence of SUPPLIER's conduct, where OFF-TAKER suffered Damages in connection with, arising out of, or resulting from, any breach of warranty, material misrepresentation by SUPPLIER, or non-performance of any term, condition, covenant or obligation to be performed by Suppler under this Agreement; and SUPPLIER's indemnities, however, shall not extend to any loss, damage, death, injury, liability, costs or expenses (or any claim in respect thereof) to the extent that they were caused by any act or omission of OFF-TAKER, its servants or agents, or the failure of OFF-TAKER, its servants or agents, to take reasonable steps in mitigation thereof.

10.2 Indemnity by OFF-TAKER. In addition to OFF-TAKER' obligations and SUPPLIER's remedies provided elsewhere in this Agreement, OFF-TAKER indemnify SUPPLIER for Damages suffered by SUPPLIER, where SUPPLIER suffered Damages in connection with, arising out of, or resulting from, any breach of warranty, any material misrepresentation by OFF-TAKER or non-performance of any term, condition, covenant or obligation to be performed by OFF-TAKER under this Agreement.

OFF-TAKER' indemnities, however, shall not extend to any loss, damage, death, injury, liability, cost or expense (or any claim in respect thereof) to the extent that it was caused by any act or omission of the SUPPLIER or the failure of the SUPPLIER to take reasonable steps in mitigation thereof.

10.3 Notice of Proceedings. Each PARTY shall promptly notify the other PARTY as soon as reasonably practicable after the relevant PARTY becomes aware of any claim or proceeding with respect to which, but for the provisions of Section 10.4, it is entitled to be indemnified under this Section.

12.4 Basket Limitation. Neither PARTY shall be entitled to make any claim under this Section until such time as all such claims by the PARTY exceed  *[agreed amount, e.g two equivalent months of supply of power and energy of this Agreement]*  in the aggregate, or until such claim, if not made, would be barred by the statute of limitation, at which time all such claims of that PARTY may be made. When aggregated claims in excess of  *[agreed amount, e.g two equivalent months of supply of power and energy of this Agreement]*  have been made, the same rule shall apply with respect to future claims.

10.5 Obligation to Defend. Each PARTY on reasonable grounds shall have the right, but not the obligation, to contest, defend and litigate (and to retain legal advisers of its choice for that purpose) any claim, action, suit or proceeding by any third PARTY brought against it, with respect to which the PARTY is entitled to be indemnified pursuant to this Section 10, with the PARTY’s reasonable costs and expenses of such action subject to said indemnity. The indemnifying PARTY shall be entitled, at its option, to assume and control the defense of such claim, action, suit or proceeding at its expense and through legal advisers of its choice, if it (a) gives notice of its intention to do so to the PARTY entitled to indemnification, b) acknowledges in writing its obligation to indemnify that PARTY to the full extent provided by this Section 12, and (c) reimburses that PARTY for the reasonable costs and expenses previously incurred by it prior to the assumption of such defense by the indemnifying PARTY. Neither PARTY shall settle or compromise any claim, action, suit or proceeding in respect of which it is entitled to be indemnified by the other PARTY without the prior written consent of the indemnifying PARTY, which consent shall not be unreasonably withheld.

10.6 Notice to ZECO and ZURA. The PARTIES will get the responsibility to communicate to ZECO and ZURA, as soon as any change in their power purchase agreement or Agreement will agree.

**11. RESOLUTION OF DISPUTES**

11.1 Mutual Discussions. If any dispute or difference of any kind whatsoever (a "Dispute") arises between the PARTIES in connection with, or arising out of, this Agreement, the PARTIES within 30 days shall attempt to settle such Dispute in the first instance by mutual discussions between SUPPLIER and OFF-TAKER.

11.2 Arbitration

11.2.1 If the Dispute cannot be settled within 15 business days by mutual discussions, then the Dispute shall be finally settled under the provisions of this Section 11.2.

11.2.2 Subject as hereinafter provided, any Dispute arising out of or in connection with, this Agreement and not settled by Section 11.1 may (regardless of the nature of the Dispute) be submitted by either PARTY to arbitration and finally settled in accordance with UNCITRAL Rules of International Arbitration.

11.3 Continued Performance. During the pendency of any arbitration (a) SUPPLIER shall continue to perform its obligations under this Agreement to, among other things, provide Power and Energy according to Section 5; (b) OFF-TAKER shall continue to pay all amounts when due, in accordance with Section 4 (Currency, Payments and Billing); and (c) neither PARTY shall exercise any other remedies hereunder arising by virtue of the matters in dispute.

11.4 Notice to ZECO and ZURA. The PARTIES will get the responsibility to communicate to ZECO and ZURA as soon as any change in their power purchase agreement or Agreement will agree.

**12. NOTICES**

12.1 Procedure for Giving Notice. All notices or other communications (together "notices") to be given or made hereunder (including, but not limited to, account information for payments) shall be in writing, shall be addressed for the attention of the person indicated in Section 12.2 below and shall either be delivered personally or sent by courier (with receipt acknowledgment required) or by fax. Notices given by fax shall be confirmed by a written copy of the notice delivered or sent as prescribed in this Section. The failure to so confirm shall not vitiate actual notice.

12.2 Addresses for Notices. The addresses for service of PARTIES and their respective telex and fax number shall be:

1. **For OFF-TAKER:**

 Attention:

 Address:

 Fax No.:

 Copied to:

1. **For SUPPLIER:**

 Attention:

 Address:

 Fax No.:

 Copied to:

A PARTY may modify its address information by notice provided as prescribed in this Section. The information shown above shall be deemed correct unless and until modified as provided herein.

12.3 Effectiveness of Notice. Notices under this Agreement shall be effective only upon actual delivery or receipt thereof.[[5]](#endnote-1)

13 **GOVERNING LAW**

The rights and obligations of the PARTIES under or pursuant to this Agreement shall be governed by and construed according to the laws of the Revolutionary Government of Zanzibar.

**IN WITNESS WHEREOF**, the undersigned have executed this Agreement as of the day, month and year first mentioned above.

Witness )

Signed for and on behalf of )

 **)**

[*Insert Legal Name of SUPPLIER*]

Witness )

Signed for and on behalf of )

 **)**

[Insert Legal Name of OFF-TAKER]

**Appendix A – Power and Energy Prices**

##### Annex D: Draft Training and learning progress report for the period of January to June, 2017

**Draft Training and learning progress report for the period of January to June, 2017**

1. **Introduction**

This is the report informing the activities that have been realized in the implementation of the component of the training and learning of the project Zanzibar Renewable Energy and Energy Efficiency for the period of January to June, 2017.

**2.0 Activities implemented in the period of January-June, 2017**

**2.1 Conduct training need assessment in Pemba**

Training need assessment was conducted in Pemba. The team that visited Pemba consisted of the Local Training Expert Eng. Matthew Matimbwi and Deputy Project Leader Eng. Sayyidomar A. Idarous.

The institutions visited were:

1. Ministry of Lands, Water, Energy and Environment (MLWEE-Pemba)
2. Zanzibar Water Authority (ZAWA-Pemba)
3. Micheweni District Council
4. Zanzibar Environmental Management Authority (ZEMA-Pemba)
5. Kitongoji Vocational Training Centre and
6. Mkoani District Council

**2.1.1 Findings from MLWEE-Pemba**

The training needs found from Ministry of Land, Water, Energy and Environment-Pemba were:

1. Study tour to another country that has developed renewable energy and energy efficiency but having the resembling conditions to Zanzibar
2. Energy efficient use of cooking sources of energy especially firewood and charcoal
3. Technicians for servicing and maintenance of the rural solar installations
4. Capacity for grid integration and development of renewable energy hybrid systems
5. Design and management of Feed in Tariff
6. Negotiation skills
7. Energy efficiency management end user side
8. Project management including capacity to evaluate renewable energy and energy efficiency proposals
9. Development of strategy
10. Training on energy related regulations

**2.1.2 Findings from ZAWA-Pemba**

Underneath were the training needs found from Zanzibar Water Authority- Pemba office

1. Alternative energy to the electricity for pumping water
2. Efficient use of water
3. Operation and maintenance of solar and wind systems for water pumping
4. Study tour to successful projects using solar/wind for water pumping

**2.1.3 Findings from Micheweni District Council**

Underneath were the training needs collected from Micheweni District Council:

1. Alternative energy for electricity and water pumping.
2. Negotiation skills for the coming investors
3. Operation and maintenance of solar systems
4. Study tour to the successful council

Further, officers of Micheweni District Council made the underneath remarks:

1. Energy efficient bulbs (CFL) in the market last shorter than incandescent bulbs. It discourages households.
2. People have poor knowledge on purchasing quality CFL
3. Need of raising awareness of suppliers on energy efficiency
4. Government has to work out the strategy that will enable households switching from charcoal/firewood to LPG
5. The water supply for small agriculture like gardens of water melons in the dry season is the challenge. They see solar and wind for water pumping as positive opportunities.
6. They recognize that electricity costs are high from connection to the purchase of kWh.

**2.1.4 Findings from ZEMA-Pemba**

The training needs collected from Zanzibar Environment Management Authority-Pemba were:

1. ESIA
2. Energy efficient on cooking energy
3. Study tour to learn environment challenges and success on renewable energy development

**2.1.5 Findings from Kitongoji VTC-Pemba**

The training needs that were collected from Kitongoji Vocational Training Centre in Pemba were:

1. Training of the trainers on the wind power technology
2. Training of the trainers on the solar photovoltaic technology

**2.1.6 Findings from Mkoani District Council**

The training needs that were collected from Mkoani District Council were:

1. Negotiation skills
2. Solar photovoltaic technology – technicians
3. Basic knowledge on renewable energy technologies
4. Community awareness on the efficient energy for cooking

**2.2 Conduct need training assessment at Mkokotoni VTC**

The training needs that were collected from Mkokotoni Vocational Training Centre in Zanzibar were:

1. Training of the trainers on the wind power technology
2. Training of the trainers on the solar photovoltaic technology

**3.0 Draft training modules**

The draft training modules subject to the need assessment were prepared as listed below:

1. Training on the basics of solar PV and wind technologies to the planners and decision makers
2. Training on solar PV including grid integration
3. Training on wind power technology including dispatch centre and its impacts
4. Training of vocational trainers on solar photovoltaic technology
5. Training of vocational trainers on wind technology
6. Training of public solar technicians on the solar photovoltaic technology including street light maintenance
7. Training on renewable energy regulations, tariff modals and management of PPA
8. Training on assessing developer proposals of wind and solar photovoltaic technologies
9. Training on the renewable energy agreements negotiation skills and contracting
10. Training on demand side management of energy efficiency in use of electricity, vehicles and cooking technologies
11. Training on preparation of Environmental and Social Impact Assessment (wind and solar photovoltaic projects) guidelines
12. Economic benefits of employing renewable energy technologies in businesses
13. Study tour and mentor to the developing country that has resembling environment to Zanzibar but it is developed in the use of renewable energy, and developed country to learn scaling up opportunities

**4.0 Conduct RE stakeholders’ assessment**

The stakeholders’ assessment was conducted on renewable energy (RE) only as the component of Energy Efficiency was moved to under support by Sida in March, 2017.

The assessment was done on the education, skills and experience. The tool used was questionnaire. The questionnaires were distributed to the stakeholders in Unguja and Pemba. The stakeholders that received questionnaires were:

1. Micheweni District Council-Pemba
2. Mkoani District Council-Pemba
3. Zanzibar Environmental Management Authority (ZEMA) - Pemba/Unguja
4. Zanzibar Bureau of Standards (ZBS)-Unguja
5. Karume Institute of Technology (KIST)-Unguja
6. Zanzibar Association of Tourism Investors (ZATI)-Unguja
7. Department of Energy and Minerals (DoEM)-Pemba/Unguja
8. Ministry of Agriculture, Natural Resources, Livestock and Fisheries (MoNLF)-Unguja
9. Zanzibar Environmental Management Authority (ZEMA)-Pemba/Unguja
10. Zanzibar National Chamber of Commerce Industry and Agriculture (ZNCCIA)-Unguja
11. Zanzibar Electrification Company (ZECO)-Unguja
12. Zanzibar Utility Regulatory Authority (ZURA)-Unguja
13. Zanzibar Town Municipal-Unguja
14. Zanzibar West A Municipal Council-Unguja
15. Zanzibar West B Municipal Council-Unguja
16. Ministry of Finance and Planning (MoFP)-Unguja
17. Zanzibar Water Authority (ZAWA)-Pemba
18. Kitongoji Vocational Training Centre
19. Mkokotoni Vocational Training Centre
20. Ministry of Health - Pemba
	1. **Questionnaires distributed and responses**

The details of the questionnaires that were distributed and collected are summarized below.

* + - 1. The number of questionnaires that were distributed to the stakeholders was 136. The number of questionnaires distributed in Pemba and Unguja were 35 and 101, respectively.
			2. Questionnaires returned were 112 of which from Pemba were 35 and 77 from Unguja.
			3. Questionnaires received from Pemba by sex were 7 and 28 from females and males, respectively.
			4. Questionnaires received from Unguja by sex were 24 and 53 from females and males, respectively.
			5. Percentage of responses from Pemba and Unguja were 31.25% and 68.75%, respectively.
			6. Percentages of responses by sex from Pemba: females 20% and males 80%, while from Unguja: females were 31.17% and males 68.83%.
			7. 10 questionnaires were delivered to Zanzibar Association of Tourism Investors and only 2 were returned.
			8. 10 questionnaires were delivered to Zanzibar National Chamber of Commerce Industry and Agriculture. No questionnaire was returned.
			9. 10 questionnaires were delivered to the Ministry of *Agriculture*, Natural Resources, Livestock and Fisheries. 4 questionnaires were returned.

**4.2 Findings from RE stakeholders’ analysis**

Most of the respondents were university graduates (73) followed by college graduates (37).

Most of the respondents were of the field of engineering (53) followed by administration and environment (each 9).

Most of respondents have working experience of 1-5 years (52) followed by the working experience of 6-10 years (20).

Respondents with experience in energy sector were 70 while those without experience in the energy sector were 42.

Some respondents showed interest of being trained in more than one subject. The subject with high frequency was solar energy (61) followed by wind power (36).

The responses of the potential business communities, Zanzibar Association of Tourism Investors and Zanzibar National Chamber of Commerce, Industry and Agriculture (ZNCCIA), through questionnaire were poor. It is important to involve private sector in training them on the potentials of renewable energy technologies and energy efficiency. It is recommended that Request of Expression of Interest to the training is sent to businesses detailing the program and how it will benefit them.

The results of this interview should be used in inviting the training participants avoiding getting inappropriate trainees.

**5.0 Review of training programs of EE**

In the month of May, 2017 after the meeting of the consultants, donors and the Government of the Revolutionary of Zanzibar, it was decided that MWH continues with the implementation of the component of the Energy Efficiency. The component had to be implemented by Intec. Before mainstreaming the training modules, the review was done. It was noted that GOPA has a plan to conduct a training of power integration and Intec did not do stakeholders’ training need assessment. It was then proposed that the module is left to the GOPA.

**6.0 The way forward**

The stakeholders’ training need assessment will be conducted on the Energy Efficiency and final training programs be developed.

##### Annex E: C&V 6-month and planned actions Report

**Progress Report—January to June 2017** Activity 7 - C&V

**A: Activities done so far are detailed in the Table 1 below.**

1. **Table 1 – Activities done so far**

|  |  |  |  |
| --- | --- | --- | --- |
| **#** | **Name of Activity**  | **Date implemented Description** |  **Description** |
| **From** |  **to**  |
| **1** | **Project Visibility**  |  |  |  |
|  | 1. **Design of RE & EE logo**
2. **Produced visibility materials**
 | **January 2017****February 2017** | **January 2017****May 2017** | 1. Designed the project logo –Green Energy for Zanzibar, which is also a project slogan. Various project documents and materials like t-shirts have the logo on them. The Green Energy for Zanzibar slogan has started to be popular in various places of Zanzibar.
2. Printed T-shirts (polo 500 pieces, round neck 900 pieces and caps 500 pieces). About 207 t-shirts have been distributed to various stakeholders as of June 2017. At least all key stakeholders have been provided with t-shirts as well as persons in other institutions. We provide when they visit the office and when we visit them.
3. Designed and printed posters, brochures, banners, flyers and bumper stickers (in both Kiswahili and English languages). So far at least 400 print-out publications have been disseminated as of June to various stakeholders, institutions and individuals.
 |
| **2** | **Platforms in the Mass Media**  | **March 2017** | **March 2017** | 1. Facilitated onsite training on RE and EE and site visits for journalists both in Pemba and Unguja with about 20 journalists from each Island. News about the event was aired in the TVs mainly ZBC, Star TV as articles were published in local newspapers like Nipashe, Zanzibar Leo and Mwananchi.
 |
| **3** | **E-bulletin /Facebook** | **January 2017** | **June 2017** | The Green Energy for Zanzibar Facebook [page](https://www.facebook.com/greenenergyZanzibar/) has been developed and is operational with over 2700 visitors/viewers. An e- bulletin has been designed and is being disseminated through an online mailing list to stakeholders and subscribers. Stakeholders comprise participants in our meetings and key institutions on RE & EE. News and photos on our activities are regularly uploaded.  |
| **4** | **Best Practical Study Tour**  | **June 2017** | **June 2017** | Organized a study tour for key stakeholders mainly from ZECO, MOF, Planning Commission, DOEM, Department of Forestry and Municipal Councilors. Representatives from the Renewable Energy Association of Zanzibar (REZA) also participated. 5 RE projects/investments were visited that provided lessons for Zanzibar: There are Merry water of Dar Es Salaam, TaTEDO also of Dar Es Salaam, Streetlight Project of Dar and Bagamoyo, Biogas Electricity Plant at Hale Katani Limited in Tanga and Hybrid Solar and Wind Energy projects in Babati, Manyara.  |
| **5** | **Website and forums**  | **January 2017** | **June 2017** | Set up Capacity for Dev EU project [page](https://europa.eu/capacity4dev/renewable_energy_and_energy_efficiency_zanzibar/documents) to give public access to official Project documents. |
| **6** | **Advocacy and Visibility Events**  | **March 2017**  | **June 2017?** | Visited to various institutions and held discussions on RE and EE programs in Pemba and Unguja. They include ZBS, ZEMA, Department of Forestry, REZA, Zanzibar Chamber of Commerce, Industrial and Agriculture and State University Of Zanzibar, Karume Institute of Technology, among others.  |
| **7.** | **RE and EE Stakeholders Event**  | **January 2017** | **March 2017** | Organized stakeholders Forum in Unguja in January and in March in Pemba on RE & EE Enabling Environment with presentations on Policy, Legal, Project details and private sector perspectives on renewable energies on Zanzibar. In both events media were invited to make coverage of the events. Each forum had about 40 participants.  |

1. **Source: MWH Team research**

**B: Next Activities from the Strategic work plan will include the following:**

1. **Project visibility**
* identity and visibility guidelines formalized into document
1. **Platforms in the Mass Media**
* Six. TV/radio discussion programs/segments
* Prepare and run a 30 to 45 minutes film on RE and EE
* Commission 12 feature articles on RE & EE programs
1. E-bulletin / Facebook
* weekly updating of Facebook page
* 3 e-bulletins written and disseminated
* subscriber database updated bi-monthly and expanded
1. Best Practice Regional Study Tour
* support development of 3 opinion pieces from study tour participants
1. Website and Forums
* RGoZ/ZECO website linked to the Project Face book page and content provided to RGoZ webmasters
* EU community of learning site promoted
1. **Advocacy and Visibility Events**
* Implementation of special visibility events in selected villages/schools
* Awareness creation & information dissemination through training programs of the training component
* Develop calendar of Zanzibar public events with potential for RE and EE presence
1. RE and EE Stakeholders events
* Partner with REZA to hold a forum for:-a) Dealers in solar equipments b) Producers of energy saver cooking stoves
1. Review C&V Plan and re-strategise
* Strategic plan updated by C&V experts with TL support
1. ZECO Billing Messaging
* explore potential for RE and EE messaging through consumer billing with ZECO
1. Build impact for CSOs and Businesses
* Compile inventory of CSOs and businesses with RE and EE interest
* Formulate marketing support plan

##### Annex F: Draft Training Plans and schedule under discussion

**Draft planned activities of training and learning July to December, 2017**

1.0 Conducting training need assessment to the potential beneficiaries of training on the efficient energy use

 July, 2017

 Activity output: Need assessment has been conducted and training participating public and private sectors have been identified

1. Training on the basics of solar PV, wind technologies and energy efficiency to the local authorities planners and decision makers

August, 2017

Activity output: 22 civil servants have been trained on the basics of solar PV, wind technologies and energy efficiency

3.0 Training of the public and private solar technicians on the solar photovoltaic technology including street light maintenance

 September, 2017

 Activity output: 24 public and private solar installers trained on the solar photovoltaic technology including street light maintenance

4.0 Project management

 October, 2017

 Activity output: 20 civil servants trained on the project management

5.0 Study tour and mentor to the developing country that has resembling environment to Zanzibar

 November, 2017

 Activity output: 11 civil servants have attended in the study tour to the developing country that has resembling environment to Zanzibar

6.0 Economic benefits of employing renewable energy technologies in businesses

 December, 2017

Activity output: 40 private businesses trained on the economic benefits of employing renewable energy technologies in businesses

##### Annex G: Draft Barriers Assessment Report

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List of Acronyms

|  |  |
| --- | --- |
| **DoEM** | Department of Energy and Minerals |
| **EE** | Energy Efficiency |
| **ESCO** | Energy Savings Company |
| **MKUZA** | Economic Growth and Poverty Reduction Strategy, Zanzibar |
| **MoLWEE** | Ministry of Lands, Water, Energy, and Environment |
| **NIMBY** | Not in my back yard |
| **NORAD** | Norwegian Agency for Development Cooperation |
| **PPA** | Power Purchase Agreement |
| **PV** | Photo Voltaic |
| **RE** | Renewable Energy |
| **RGoZ** | Revolutionary Government of Zanzibar |
| **SIDA** | The Swedish International Development Cooperation Agency |
| **ToR** | EU RE & EE Programme Terms of Reference |
| **ZAWA** | Zanzibar Water Authority |
| **ZECO** | Zanzibar Electricity Corporation |
| **ZIPA** | Zanzibar Investment Promotion Authority |
| **ZURA** | Zanzibar Utility Regulation Authority |

# INTRODUCTION

This report assesses the barriers identified and listed in the project Terms of Reference (ToR) as well as additional barriers identified by the project team. A barrier is understood as an obstacle hindering the implementation, not necessary stopping completely, but also slowing down the process.

The ToR mentions the following barriers affecting the implementation of renewable energy and energy efficiency:

* Barriers affecting all kind of RE: lengthy procedures, long and complex authorization process, too many authorities involved, inhomogeneous application of laws, etc.
* Barriers affecting large RE systems: insufficient spatial planning, NIMBY attitude, environmental requirements, attitude of civil servants, etc.
* Barriers related to small RES systems: regulation for power production, integrated technologies, etc.
* Technical: lack of capacity for conception, production, installation, operating and maintenance, etc., absence of efficiency standards, weak or absence of definition of specific standards applied, or key performance indicators.
* Socio-economical: lack of awareness, micro finance, potential productive activities, etc.,
* Financial: comparison between solutions limited to investment costs and not referring to global costs, high interest rates, insufficient incentives, etc.,
* Environmental: lack of land use planning, building regulations, property of land, etc.
* Institutional: lack of national RE plan and of a clear RE strategy, etc.

Since the start of the project, the team has identified additional barriers, namely:

* Energy data and statistics are deficient or do not exist; the draft energy balance dates back to 2010; same for projections of energy demand and forecasts.
* MKUZA III does not include renewable energy and energy efficiency measures, and there is a general lack of funds for investments.
* Despite various recommendations on policy, vision, laws, etc. done by external consultants, these were not finally adopted as official documents by the Government.
* Lack of trust in the ability of RGoZ (ZECO) to honour the payments in a PPA.
* Misperceptions created by a large number of consulting reports.
* Lack of supporting electrical infrastructure and insufficient roads and terrestrial transportation paths.
* New investments are feared to reduce the labour force in state companies (most notably ZECO and the Zanzibar Water Authority ZAWA)[[6]](#footnote-5)
* Fear to share information within the central administration and with external parties.

For the purpose of the assessment, all barriers above have been organized in four clusters, namely: administrative, institutional and organizational; economic and financial; technical and personal.

The administrative and organisational barriers also include the lack of policies, strategies, strategic plans, and action plans that could guide the development in Zanzibar. It is noted that MKUZA is being updated regularly, however MKUZA plans have never been made operational and therefore MKUZA represents overall goals.

Economics and financial barriers could just as well be under 1, but they are seen as independent of the adoption of additional laws or policies.

The technical barriers are the barriers created by the lack of infrastructure.

Finally, the personal barriers refer to change and the way to integrate changes and novelty into everyday life as well as to the communication flow inside the administration.

# ADMINISTRATIVE, INSTITUTIONAL AND ORGANISATIONAL BARRIERS

## Barriers affecting all kind of RE (identified in the ToR)

Such barriers include lengthy procedures, long and complex authorization process, too many authorities involved, inhomogeneous application of laws, etc. (as mentioned in the ToR).

Our assessment is that the process is clear and all investors interested in projects in Zanzibar have a one point of entry to the system, namely the Zanzibar Investment Promotion Authority (ZIPA). Letters of interest should be channelled via ZIPA for any kind of investment. ZIPA will then address the relevant authorities for further processing. For potential investors in renewable energy, ZIPA will inform the Ministry of Land, Water, Energy & Environment (MoLWEE) and the institutions to be involved namely ZECO, Department of Minerals and Energy (DoEM), and Zanzibar Utility Regulation Authority (ZURA). Only when ZIPA is involved investors can enjoy the benefits of tax and VAT reductions and other services provided by ZIPA.

However, no government entity has taken the full responsibility as a one-stop-entry for potential investors in renewable energy.

## Barriers affecting large RE Systems (identified in the ToR)

Such barriers include insufficient spatial planning, NIMBY attitude, environmental requirements, attitude of civil servants, etc. (as mentioned in the ToR).

Spatial planning covers areas on Unguja and Pemba reserved for wind and solar farms. The areas have limited or no potential use for farming and tourist purposes. The areas are very sparsely populated and mainly used for subsistence farming and grassing. The activities are not in conflicts with wind farms, and solar farms can be arranged around it.

No information has been obtained regarding any issue related to the NIMBY attitude. Prior to the erection of the measuring masts, information meetings were held in the relevant areas. Only few protests have been recorded. To avoid protests when farms are build, a comprehensive information campaign must be made.

Environmental Impact Assessments must be made, as for other investments of large size.

## Barriers related to small RES systems (identified in the ToR)

Such barriers include regulation for power production, integrated technologies, etc. (as mentioned in the ToR).

One of the major problems related to small RE systems is that though ZECO oversees connection of small systems there is no record of systems connected. According to the ZECO Act and the ZURA Act all production of electricity requires a licence, and by simply facilitating connections and not registering, ZECO is violating the ZECO Act and ZURA Act.

The problem for ZECO is that these PV’s are producing during the day, and the owners are drawing during evening and night, thus, using ZECO as an electricity bank without payment for that service. ZECO is left to pay the full cost of keeping the full capacity operating, but out of a smaller revenue.

## Energy data and statists

The measuring masts are under evaluation to establish the costs of bringing the masts to the original planned level, meaning completing the masts. Hopefully the evaluation of the masts will also bring some clarity about the validity of the data already captured.

The energy maps for Zanzibar and the feasibility studies of solar and wind, were not ready by end of February 2017 as expected in the revised plan for deliveries of Lot 1. It is uncertain when these studies will be finally available.

The absence of statistics makes it impossible to prepare analysis based on present situation. The issue is addressed by the SIDA project and statists are expected to be available in the near future.

For now, the implication of the lack of statistical data is that it will be difficult to prioritise efforts and target the most urgent areas as no analysis can be made. Eventually it will be difficult to prove the effect and performance of EE initiatives.

## Policy recommendations

Countless reports from consultants have addressed the policy and planning in the energy sector, however these documents have no official status as they were not adopted by the government or the parliament. As these documents are often used by investors, this creates a barrier as they are not official documents and therefore they are not valid at any level of the administration.

## MKUZA III

The absence of renewable energy and energy efficiency as a priority in MKUZA III, covering the years 2016 to 2020, can be seen as a barrier, as it could indicate that the government does not intend to allocate funds for investments in RE&EE. The wider implication is that the RE&EE development will be financed either by donor funding or private developers.

The lack of funds of the government for investments is a barrier for RE&EE as sources of funding need to be identified elsewhere and in particular by approaching the donors. From the discussions with government officials in the energy sector, there is a perception that it might be easier to enter into contracts with companies in the oil & gas sector than with RE&EE project developers.

## Environmental (identified in the ToR)

Such barriers include lack of land use planning, building regulations, property of land, etc. (as mentioned in the ToR).

For RE, land has been allocated as mentioned under 1.2 above. The land reserved for wind and solar farm development has no value for tourist or agriculture development, the land is accessible. Minor clusters of land are occupied by scattered subsistence farming and grassing, but the legal status for these inhabitants is not known.

Building regulation and codes are under preparation by the Department of Urban and Rural Planning. The urban planning includes also initiatives for building codes.

## Institutional (identified in the ToR)

Such barriers include the lack of national RE & EE plan and of a clear RE & EE strategy, goals, etc. (as mentioned in the ToR).

There is no official RE or EE plan, strategy, or strategic plan, which is also linked to the barrier 1.5 above. The absence of a coordinated strategy and strategic plan determines also a lack of guidance regarding the expected development of the energy sector. Without directions for development, all investments in the sector have to invent their own path.

The absence of strategic planning has some devastating effects on the way the energy sector is managed and developed. Absence of a strategic plan means that there is no call from the government level for activities to develop the sector. In other words, the ministries have no “drive” to implement activities as there is no agenda to follow.

# ECONOMIC AND FINANCIAL BARRIERS

## Socio-economical (identified in the ToR)

Such barriers include the lack of awareness, micro finance, potential productive activities, etc. (as mentioned in the ToR).

Awareness is raising and solar PV panels are available on the market up to approximately 250Wp. They are generally sold without batteries to be used for connection to the grid. This creates a need for controlling the quality of panels connected to the grid which for now is done only if the panels are imported via the mainland. The Zanzibar Bureau of Standards is preparing a Quality Assurance System, similar to the system implemented in Tanzania mainland.

Financing to the population is generally done by micro-financing organised by the banks. If a person owns a piece of land/space to install a PV system, a loan might be granted. Considering the type of business in Zanzibar, a loan for a PV installation would not be the first priority of a bank, firstly due to the scale of the business and secondly due to the limited possibilities for obtaining collateral for loans.

## Financial (identified in the ToR)

Such barriers include the comparison between solutions limited to investment costs and not referring to global costs, high interest rates, insufficient incentives, etc. (as mentioned in the ToR).

The feasibility studies made available to the team are mainly technical with some figures showing the investment costs and unit prices of production. No thorough financial analysis has been presented to the team, though often called for.

The incentive structure is not clear. If foreign companies are approaching ZIPA for permission to invest, the company is entitled to a VAT exemption. A preliminary financial analysis feasibility study on PV, based on quotations from companies in Dar es Salaam show that PV from 500kWp and up are competitive with the tariff paid by ZECO to TANESCO. This implies that no financial support for RE is needed. However, there is no supporting structure for investments as any investor would need a permission and also enter into a PPA with ZECO. As ZECO holds a legally protected monopoly on transmission and distribution of electricity, no investor can establish facilities connected to the grid that is producing more than its own need. As PV is producing electricity to a price lower than the ZECO tariff, electricity consuming entities are installing PV, however if those entities are connected to the ZECO grid , they must comply with the ZECO and ZURA Acts, and obtain a valid licence from ZURA and a PPA with ZECO.

In some cases, PV installations are producing electricity for the owner at a way lower cost, this also becomes a barrier to EE measures, as EE measures could bring the entity in a situation with excess electricity taken by the grid (reverse flow). In other cases, the decision of designing PV solar is rational and EE measures are considered before the design of the PV system.

No thorough feasibility study has been made for wind turbines, though a number of private entities has presented possible figures. A wind study based on Unguja airport data (not including the Pemba airport) has no description of the measuring mast (see below).

## Lack of trust in the ability of RGoZ (ZECO) to honour the payments in a PPA

This is a major barrier for implementation of RE and also for establishing ESCOs, or performance contract agreements, namely that some government institutions are not paying their dues. Recently the SIDA project provided ZECO with pre-paid meters and these have been installed. However, around 20% of the ZECO supply is for Zanzibar Water Authority (ZAWA), and ZAWA refuses to pay the electricity bill or even to have pre-paid meters. Other consumers which rejected the pre-paid meters are the military, schools, and hospitals which deliver essential services and therefore cannot be disconnected.

For any private investor entering a PPA or a contract this is considered as a major risk. An ESCO contract or a PPA requires regular payments over a long period of time (10 to 20 years or even more), and if the expectation is that the payment is not made, any investor will have to deal with the risk and that will make the demanded price in the PPA very high and most likely uncompetitive.

In addition, the financial statements of ZECO are not providing any signal of company financial health, donors like SIDA and NORAD, have been providing financial support to ZECO for more than 20 years. ZECO has not paid their dues to TANESCO and have over the years accumulated a debt to TANESCO of some 55 million USD. According to the news[[7]](#footnote-6), the forgiving behaviour of TANESCO, or the Government of the Republic, seems to be running out. This will put ZECO under even more financial pressure and not improve their financial trustworthiness.

## Misperceptions created by a large number of consulting reports

A large number of reports on RE has been produced over the years. Though they are comprehensive and provide a lot of useful information, they also sometimes create misperceptions. The reports on PV include some estimated costs of kWh. However, the costs of PV panels have decreased dramatically over the past few years and so has the fully operational systems. The perception is still that the kWh price is too high. The cost estimates are made in technical studies with the aim of showing the technical application working with the consumption of the investor and connection to the grid.

For wind energy, a report made some years ago based its findings on wind data from the airport. This is usually a very delicate issue as wind data in airports are recorded for their own purposes. In this case, the report did not include a description of the measuring equipment and an interpretation of its suitability for accessing wind energy. The conclusion is that wind is during the day and dies out in the afternoon, which is a consecution that can easily be contradicted. If the measuring equipment in the airport is the same today, the mast is 5 meters high, maybe less (from the seat in a Boing 737, one is looking down on the rotating part). The rotator is a three-bladed propeller. This might be sufficient for the purpose of the airport, but cannot qualify for estimating wind velocity in 70 meters height.

The current measuring masts will provide precise data, however it will take time to change the perception created, that wind is not a feasible option.

# TECHNICAL BARRIERS

## Technical (identified in the ToR)

Such barriers include the lack of capacity for conception, production, installation, operating and maintenance, and the absence of efficiency standards, the weak or absence of definition of specific standards applied (as mentioned in the ToR).

The capacity to conceptualise EE and RE projects might not exist as it was considered unimportant, too complex or too expensive. However, with the increasing demand for electricity and the limited capacity of the sea cable, the perception is changing, namely that the costs of domestic Zanzibar production should also consider the cost of alternatives, including eventually the costs of extending the capacity to the mainland and/or of electricity production from new power plants. Both EE and RE fit perfectly into the extended understanding of the situation.

As only few have been working with EE and RE, the capacity to conceptualise EE and RE is low. However, this is available on the mainland and domestic Zanzibar companies have started to pick up especially for solar. Wind energy is more complex however several foreign companies have presented letters of interest for investing in PV and wind farms. In this way, capacity for installation, operating and maintenance can be made available in Zanzibar.

There is no capacity in production of PV, wind turbines, and EE measures. The production of PV and wind turbines is highly specialised and only few master the technique.

The Zanzibar Bureau of Standards (ZBS) is currently working on introducing standards for PV.

## Lack of supporting electrical infrastructure

The backbone of the high tension transmission is in its very early stages of planning. Though discussions on larger solar and wind farms have been going on for some time, the need for transmission lines from the sites to the point from where it can be distributed has not been considered. The discussion has started and initial contacts with possible donors have been made, and that with promising response.

The RGoZ has recently requested financing from the AfDB to provide support on transmission lines and consumer connection facility.

## Roads and terrestrial transportation paths

This barrier was identified by Lot 1 in their preparation for the feasibility studies on wind, and concerns lager constructions. However, a company has already organised beach landing for larger structures, and has organised beach landing of larger wind turbines to serve a resort north of Matemwe (right next to the measuring mast).

Beach landing could be done to unload larger constructions to sites on both Unguja and Pemba. The barrier is therefore not the paths, but could be possible restrictions on beach landings. As the tide provides up to 4 meters difference, beach landing should be possible at selected sites without scraping the seabed.

# PERSONAL BARRIERS

## Fear of new technologies

New investments are feared to reduce the labour force in state companies (most notable ZECO and ZAWA). This creates resistance towards any investments in new technology. The animosity towards RE and EE is that it is new concepts that require new skills and therefore the present staff has to be replaced.

## Fear of sharing information

This barrier is properly appearing out of incomplete instructions on what can be shared and what cannot. Further, many recommendations are made for the departments and ministries, though these remain recommendations whose formal status is uncertain.

# CONCLUSION

Based on the assessment performed by the team we can conclude that some of the initial barriers listed in the ToR are in fact mirroring other additional issues or barriers, while some other barriers do not concern only RE& EE, but generally investments in any other sector.

There are always ways to overcome barriers, especially the personal ones. The fear that new technology will increase unemployment is to be tackled by ZECO by taking an active role and considering how to utilise its workforce most efficiently and play a role in the development of RE&EE. This, however requires investments in organising, training staff, procurement of tools, and other means.

The most devastating barrier is the absence of a strategy and strategic plans, leaving the ministries without an agenda for what to do to promote RE&EE. Further it is also allowing for a “do nothing culture” as no initiatives are called for, nor expected.

The MKUZA planning provides statements on the direction that the government would like to see the development. However, the MKUZA III is not followed up by preparing RE&EE strategies for how to reach the goals or strategic plans for who is doing what to make progress towards achieving the goals. To prepare a RE&EE strategic plan, specification is needed of the kind of resources allocated for reaching the goals.

The lack of supporting electrical infrastructure is a barrier for developing RE farms producing at large scale. The barrier is already acknowledged and activities to overcome this barrier have started.

The lack of funds for investments and of electrical infrastructure seem to be the two single barriers in the way of progressing with the implementation of RE and EE projects.

A barrier working against involvement of private investors is also the lack of trust in the ability to pay the dues in a PPA. Considerations on this barrier have begun, but for now, there is no solution in sight.

A number of barriers identified will be easier to address as soon as the most devastating barriers are loosening up, other barriers will start dissolving as well. It is a matter of creating clarity for those involved in the sector and clarity of how to approach the goals.

As soon as the resource mapping and the feasibility studies have been completed, the misperceptions of resources will be confirmed or vanish.

The barriers that could be blocking any developments are identified below, ranking 4 and 5 as regards their impact. These are the barriers that will likely prevent any development.

|  |  |
| --- | --- |
| **Barrier** | **Interruption of implementation1 = Little to 5 = Killer barrier** |
| 1.1 Bureaucracy in general for private investments | 2 |
| 1.2 Lack of spatial plan & attitudes | 2 |
| 1.3 Regulation against small scale RETs  | 1 |
| 1.4 Energy data and statistics  | 4 |
| 1.5 Policy recommendations | 1 |
| 1.6 MKUZA III - no public funds for investments | 4 |
| 1.7 Lack of land use plan and building codes | 2 |
| 1.8 Absence of strategy and strategic plans | 4 - 5 |
| 2.1 Socio economical | 1 |
| 2.2 Financial | 4 - 5 |
| 2.3 Lack of trust in PPA payments  | 4 |
| 2.4 Misperceptions of the RE&EE potential | 3 |
| 3.1 Technical | 1 |
| 3.2 Infrastructure for transmission | 1 - 5 |
| 3.3 Transportation paths | 1 |
| 4.1 Fear of new technologies | 3 |
| 4.2 Fear of sharing information | 3 |

1. *The power plant sizes should be part of this assignment allowing for the absorption capacity of the grid and other technical-economic constraints* [↑](#footnote-ref-1)
2. Inspection of Solar and Wind Measurement Stations Zanzibar Final Report KenTec, March 16th, 2017. [↑](#footnote-ref-2)
3. Inspection of Solar and Wind Measurement Stations Zanzibar Final Report KenTec, March 16th, 2017. [↑](#footnote-ref-3)
4. The Highlighted comments are statements that the RGoZ should change at its preference. [↑](#footnote-ref-4)
5. [↑](#endnote-ref-1)
6. ZECO and ZAWA, Government Companies are the largest employers in Zanzibar. [↑](#footnote-ref-5)
7. Cut power to Zanzibar, JPM tells TANESCO, “The Citizen”, news issued on 6 March 2017 - <http://www.thecitizen.co.tz/News/Cut-power-to-Zanzibar--JPM-tells-Tanesco/1840340-3838524-yge0b4/index.html>  [↑](#footnote-ref-6)