

Sustainability Strategy:

Market Transformation through Design and Implementation of Appropriate Mitigation Actions in the Energy Sector (MTRE3) Project

21 July 2021

1. BACKGROUND

The MTRE3 Project is planned to run for 5 years, starting from 2017. The strategy for implementing the MTRE3 Project is through best practices principles and development of cost-effective Renewable Energy facilities and Energy Conservation measures.

The targets are the construction of Renewable Energy -based power plant with a total capacity of 15 MW (7 MW mini-hydro, 6 MW biomass and 2 MW solar PV), as well as the implementation of the Nationally Appropriate Mitigation Action (NAMA) at the provincial level. The MTRE3 project targets 4 provinces as its pilot area, namely Jambi, Riau, East Nusa Tenggara and West Sulawesi. In addition, it will also involve 4 major cities for energy efficiency activities in few big cities, e.g. DKI Jakarta, Medan, Surabaya and Bandung.

End of Project Target (EoP)

It has been projected that at the end of its implementation period, the MTRE3 Project aims to contribute to:

- Reduction of CO₂ emissions by 27,019 tons,
- Facilitate electricity generation of 79.190 MWh from renewable energy
- Ensuring energy conservation measures to be in place in the commercial building sector and save energy as much as 8,550 MWh.

In addition, the MTRE3 Project will also focus on formulating the concept of sustainable financing for new renewable energy and energy efficiency projects, in this project it is called the Sustainable Energy Fund (SEF) and mobilizing investment, both public and private resources as much as USD 25 million

To achieve these targets, it is necessary to carry out activities based on consultation and coordination with stakeholders such as government institutions (including its entities and State-owned Enterprise) at the national and regional levels, as well as non-state actors, such as private sectors, universities, civil society organizations, and the public itself.

MTRE3's Progress: Partially Exceeding the Targets, but Some Remain On-hold

In general, it can be reported that until mid-2021, the project activities have achieved some of the expected targets. Some activities have been successfully exceeded the end of project (EOP) target, but some remain on hold due to various challenges, especially

during the Covid-19 pandemic. As consequences, the rate of investment for accelerating the development of Renewable Energy Power Plants tends to decline and has an impact on work performance. Moreover, the delay of meeting some targets has been caused by the dynamics of PLN's policy. For example, PLN has announced that the electricity capacity has a surplus in supply side in the Sumatera area, therefore placing potential RE projects on hold.

Further Insights for Considering Project Extension due to Forced Majeure

Given the progress of MTRE3 project, it is very important to get insights, directions, and advice from the Project Board on the project target (until March 2022). Though the project has 9 months towards its end, it has been estimated that project targets cannot be met entirely due to *forced majeure* or externalities that are beyond the project's intervention (pandemic and its impacts to policy dynamics in PLN, travel restriction that slows down some coordination at subnational level and site visit at pilot area, etc.),

Owing to existing forced majeure the MTRE3 project seeks for insights and advice from the 'Project Board' in considering an extension to enable the project to meet or even exceed the remaining targets, given some of project targets have been met, or additional project implementation time without a request for additional funding until December 2022.

At the same time, a sustainability strategy will be finalized with expectation that the project work will receive support from the central and local governments, in addition to other parties and be sustainable.

2. Project Achievement as of June 2021

The Annual Work Plan (AWP) of Project MTRE3 2021 was approved by the project Board in December 2021. This AWP will focus on some critical targets such as mainstreaming MTRE3 achievements on enabling conditions for developing strong policies on emission reduction, and mainstreaming those into the RPJMD, accelerating Renewable Energy (RE) and efficiency Energy (EE) development, leveraging Investment on RE and EE, and supporting government in developing methodology on calculation emission reduction from RE and its MRV as well.

As of mid-June (2021), the Project has achieved key targets in development of Provincial Energy Plan (RUED) and its integration to the RPJMD in 4 pilot provinces; implementing the Energy Management System (EnMS) for 3 holding companies (Angkasa Pura 1 and AP 2) within the ISO 50001 framework. Improvement of the investment information systems has occurred. This was aimed to facilitate investment in the EBTKE sector, which is the basis for encouraging Integrated Market Service Centers (IMSCs) through the improvement of Cross-EBTKE as a Central (ESDM, BKPM) and Regional (DPMPTSP) hub

platform. The last is the development of a methodology to calculate Green House Gas (GHG) emission reductions in the EE and RE sectors, which will be useful for preparing ICER (Indonesia Certified Emission Reduction). Additionally, the implementation of the global consultation forum activity 'energy transition to cleaner energy' with gender balanced panelists was aimed at supporting the government's efforts in making energy transition efforts, as well as supporting the activities of the Directorate General of EBTKE in carrying out Co-firing policies.

Challenges

Even though some indicators have been met, some targets still need to be fulfilled, especially activities for accelerating investment on Renewable Energy based plants that have used Sustainability Energy Funds (SEF). In 2020 SEF Batch 1 was implemented in which MTRE3-UNDP collaborated with PT.SMI in providing technical support to 7 EBT IPP projects to improve project bankability to increase the likeliness of achieving a financial closing. The results of this technical support have been submitted to the IPP, but the 7 projects have not succeeded in obtaining funding from relevant institutions due to several factors. These include some projects not receiving a PPA, the IPP's financial readiness, the strict requirements of the Bank, and a high sense of risk that results to implications for the IPP. The high interest rates of the Bank are also applicable to these projects. Currently the SEF batch 2 is under design with MEMR. The MTRE3 team with support of financial technical expert is formulating the concept of Performance Based Payment (PBP) as a form of SEF phase 2 support scheme, especially for the Rooftop PV mini-grid project.

During Covid-19 pandemic, MTRE3 Project faces various challenges that limits the agility of project logistic and project management. It can be seen in two perspectives, first is from the RE investment perspective and the government (PLN) regulation. The rate of investment mainly for accelerating the development of Renewable Energy Power Plants tends to decline and has an impact on MTRE3 work achievements, especially for activities related to support for accelerated investment in renewable energy and energy efficiency by using SEF funds. Moreover, it has been affected by PLN's policy as well, for example, PLN has announced that the electricity capacity has a surplus in supply in the Sumatera area, therefore placing potential RE projects on hold. In addition, pandemic-related travel restrictions pandemic slowed down the process of increasing the ownership of several studies, e.g., MACC, GHG Inventory, RAD GRK review on Energy sector in Province.

3. Strategy and activity to achieve the project Targets Until December 2022

Considering the current achievements of MTRE3 which is slightly far from fulfilling the overall project, which will end in December 2022. Therefore, the project has prepared several activities that has projected to meet the target, as follows:

1. Implementation of RE/EE projects with total target capacity 15MW through supporting those projects that close to financial close (i.e. Padang Guci) and targeting PV Rooftop projects 15MW through the Sustainable Energy Fund (SEF) facility.
2. Operationalized Integrated Market Service Centers (IMSCs) through completing the RE/EE information system enhancement and connection to provincial level, and training on the RE/EE investment guideline.
3. Accelerating activities related to conserved energy by selecting SOEs for implementing No Cost or Low Cost Investment on Energy Efficiency on Energy Management System (EnMS) in 2 Airports - Soetta, Terminal 3 and I Gusti Ngurah Rai.
4. Supporting to complete and sign the RUED in the Riau Province, and mainstreaming to the RPJMD.
5. Intensive engagement of the private sector to develop MRV reports, collaboration with MTRE3; which will provide TA for capacity building to calculate, report & register.
6. Continuing to develop project design documents and registering to National Registry System (SRN)
7. Developing MRV reports submitted to MoEF following a nationally agreed standard method and guideline.
8. Capacity building for operators and managers of Micro Hydro through training and monitoring of infrastructure conditions, operation, maintenance, and management capacity. It its likely be done through Collaboration with the "Patriot Energy" program
9. Developing a sustainability strategy with partners

4. Sustainability Strategy (Graduation strategy and Phasing Out)

Some activities and approaches are planned to achieve the remaining project target on-time until (March 2022). However, considering the above-mentioned challenges due to the impact of COVID-19 including regulatory changes in RE/EE investment policy of PLN, there are project targets and sustainability actions that will be difficult to reach its optimum result by end of project in March 2022, namely:

1. Project Target: Leveraging the amount of RE/EE investment supported by the SEF.
2. Project Target: Emission reduction from RE/EE investment and the number of additional households which could access the generated electricity.
3. Agreed institutional arrangements among stakeholders to sustain the Project's outcome.

This sustainable strategy is intended to deliver and continue project achievements and its value to partners in National, Sub National, Private Sectors and the community,

encouraging commitment in beneficiaries to commit to this program's sustainability. In addition, the sustainability strategy can:

- a) Help resolve tensions that may arise between the withdrawal of assistance and commitment to achieve program outcomes.
- b) Help clarify and define a sponsor's role partners as being time limited, reducing the potential for misunderstandings and future dependency.
- c) Encourage commitment in beneficiaries toward program sustainability.

The sustainable strategy will be discussed with and agreed by national and sub-national partners, involving government, private, and community sectors.

With consideration that the MTRE3 Project has been implemented by 3 components, the proposed **Sustainability Actions** will be focused on the following:

- **Sustainability Action for Component 1:** Sustaining strategic project output of Component 1 – use inventory of GHGs, MACC, RUED, Integrated Market Center, and mapping of potential Renewable Resources as enabling factors to trigger investment and prioritizing provincial policy on mitigation to climate change in energy sector. Mainstreaming the clean energy policy into the RPJMD to set basis for provincial planning and budget allocation for clean energy. All studies and policies that were completed through Technical Assistance (TA) of MTRE3 have been compiled by current activity and mainstreamed to Strategic Environmental Studies (KLHS) draft in energy sector at Subnational level. KLHS in energy sector is a technical reference to revise the current RPJMD document or potential reference to formulate the next period of Provincial Mid-term Development Planning (RPJMD). Although KLHS in energy sector is more focusing on technical guidance, the opportunity for MTRE3's studies to be adopted in RPJMD technocratic is high because RPJMD will refer its activity based on official KLHS. Once the TA of MTRE3 project in Energy KLHS is officiated, the KLHS Energy has high potential to move forward to become prioritized activities in RPJMD and being included in Subnational budgetary system (APBD). KLHS Energy is a strategic entry point for MTRE3 project to include its studies on RUED, MACC, and Subnational Climate Mitigation Action (RAD-GRK) review into RPJMD. The involvement of MTRE3 in KLHS development increases the opportunities for MTRE3 studies to be allocated in Subnational Budgetary System (APBD) for further implementation beyond the project period (beyond 2022).
- KLHS Energy drafts in 2 provinces (Jambi and Riau) have potential to become the actual KLHS (a technical reference for the upcoming RPJMD Technocratic in near future 2021 or 2022). As for East Nusa Tenggara (NTT) and West Sulawesi, the KLHS Energy and RPJMD have been done, however MTRE3 project is aiming at revising, updating and verifying data validity in current KLHS Energy to be in line with energy planning at local (municipal and regency) level.

- **Sustainability Action for Component 2:** Sustaining strategic project output of Component 2 - focus on institutional arrangement to replicate/scale-up the SEF using the performance-based payment (PBP) mechanism to accelerate the implementation of PV Rooftop program and other possible RE/EE investments. Together with DJEBTKE, the project is currently designing an incentive scheme to boost the massive implementation of solar PV rooftop as one of the key-action in order to support the target of 23% RE portion in the national energy mix. A strong coordination with EBTKE to promote the program, including development of scheme, determining the performance criteria and incentive value.
- **Sustainability Action for Component 3:** Sustaining strategic project output of Component 3 - the activities will be focused to further advocate policy for issuance of Indonesia Certificate for Emission Reduction (ICER), and to develop a competency standard of individual third-party GHGs emission reduction verifier, training, and certification. Both interventions are intended to provide incentive for investment in RE/EE and to reduce transaction fee of project owner to report and conduct GHGs emission reduction verification.

Moreover, PMU's activities and output would focus on supporting, managing, and building intensive communication to partners at national and subnational levels, policy advocacy and dissemination of project achievements.

5. Timeframe for Sustainability Actions

January 2022 – Dec 2022 **COMPONENT I**

- **Gap and Opportunity analysis (June – Dec 2021)**

Most of End of Project Target (EoP) in Component I according to Project Document (ProDoc) have been met in 2021, the remaining budget can be used to focus more on supporting Component II and Component III in Knowledge Management activities. Given the remaining budget is only **USD 56.649**.

The suggested **sustainability action I - Sustaining strategic project** output such as inventory of GHGs, MACC, RUED are expected to trigger investment and prioritize clean energy in provincial policy **under clean energy policy in RPJMD**. KLHS Energy in 4 provinces is a strategic entry point and give higher chance for MTRE3's Technical Assistance to be locked into Provincial Budget System (APBD) in 4 provinces (which will ensure the sustainability of MTRE3's output to be carried on by provincial budget after the MTRE3 project ends). The suggested

sustainability action I is almost finalized in Q2 for Jambi, West Sulawesi and East Nusa Tenggara, and it becomes the upcoming activity in Q3 for Riau.

Given most of activities in component I are expected to be achieved in 2021, Knowledge Management becomes very essential because the **project needs to ensure that all important publication** (e.g. GHG Inventory, RAD-GRK review, MACC, KLHS Energy draft) **can still be accessed by public and relevant stakeholder after the project and the website of the project end.**

In order to ensure an effective Knowledge Management system that will last beyond the project period, the project needs to coordinate with Implementing Partner (IP) and Communication unit of UNDP to embed all technical reports produced by MTRE3 project in a link to permanent digital archives within IP’s website and UNDP’s project profile website.

- **Sustainability action, Detail activities, Estimated Budget, and Timeline**

Sustainability Action 1		Timeline in 2022 (Jan – Dec)			
Detail Activities	Estimated Budget (USD)	Q1	Q2	Q3	Q4
1. Copy editing, summarizing, disseminating all technical reports (Component I, II, and III) produced by MTRE3 project to all Project Board, relevant stakeholders and beneficiaries (both public at national and sub-national level, public entities, and private sectors and relevant international development partners that might replicate of scale up the activity of MTRE3 a. Copy Editor b. Graphic Designer c. Printed Publication	40,000				

Sustainability Action 1		Timeline in 2022 (Jan – Dec)			
Detail Activities	Estimated Budget (USD)	Q1	Q2	Q3	Q4
d. Digital Knowledge Management Officer e. Ceremonial Launching of MTRE3 publication					
2. Series of Coordinating meeting with IT & website management of DG-NREEC and UNDP Indonesia to create a link and include all publication (online meeting, combination online - offline, etc.) a. Multimedia, IT and Web Management specialist	16,500				
GRAND TOTAL	56,500				56.649

COMPONENT II

- **Gap and Opportunity analysis (June – Dec 2021)**

Under the outcome 2, the project has several key-indicators target that has to met. Some of the target indicators have been met, such as the climate action proposal in relevant with NAMAs proposal, and the total area of building that has been made efficient. However, some key-indicators with major contribution to the outcome level are still in progress especially the SEF program. Together with DJEBTKE, currently the project is designing the SEF batch 2 facility to support the solar PV rooftop program. In consideration to the huge potential and relatively easy to install, solar PV rooftop is seen to be one of the key-activities that can boost the national RE target. However, for some customer category, installing pv rooftop is not financially attractive due to the still relatively high investment cost and the electricity tariff subsidy. The SEF budget is seen as an opportunity to accelerate the solar PV roof top program by providing incentive to the end user (customer) through the PBPs mechanism of the solar PV developer/provider/EPC.

The initial calculation estimated that from the remaining USD 1.9 millions of SEF budget can be utilized to boost 18MW solar PV roof top installation in the residential, commercial, social and industry sector with the following delivery plan of the SEF budget: USD 991,000 in 2020 and USD 978,622 in 2021.

The incentive through PBPs mechanism is a new scheme being proposed which can be a model for replication in boosting the RE/EE investment in the country. Thus, evaluation and recommendation for future improvement need to be conducted after the SEF batch-2 implemented.

The detail outcome, key-indicators, target level and gap of component 2 can be seen as follow:

Outcome 2 Enhanced and sustainable market diffusion of renewable energy and energy efficiency technologies.				
Description of Indicator	Target by EoP	Level at 30 June 2021	Gap and planned activities	Timeline
Total number of provinces with operational "Integrated Market Service Center" (IMSC) to support sustainable RE & EE investments.	4	4 pilot provinces have been strengthened on their capacity of RE/EE projects through training for the following agencies: DPMPTSP (local investment and permitting agency), ESDM (local energy agency) and BAPPEDA (local planning agency).	To be fully operated as IMSC fo support he RE/EE investment, some following activities are still on-going: 1. RE/EE Investment guideline development and training 2. RE/EE Investment information system (LINTAS) enhancement. Connection between LINTAS (in central cq. DJEBTKE) and local information system in provincial level will be developed to support the full operationalize of IMSC in each province. 3. Institutional arrangement of RE/EE investment PIC in each of the pilot province's DPMPTSP	Aug 2021 Sep 2021 Nov 2021
No. of small-to-medium scale RE/EE projects that were financially supported by the	10	A total of 9 RE projects are being supported by the project with detail as follow : Through SEF facility:	Currently, together with DJEBTKE the project is designing the SEF batch 2 facility as an incentive which will be provided through the	

Sustainable Energy Fund		<ol style="list-style-type: none"> 1. PLTBm Kundur – 2,4MW 2. PLTBm Ujung Batu – 5MW 3. PLTA Luteung – 16 MW 4. PLTA Sangir – 19 MW 5. PLTM Pareang – 2,8 MW 6. PLTM Cisomang – 4MW 7. PLTM Cimandiri 4.4 MW <p>Total: 53.6 MW</p> <p>Through non-SEF facility:</p> <ol style="list-style-type: none"> 1. PLTBg Ujung Batu – 3 MW 2. PLTM Padang Guci 2 – 7 MW <p>Total: 10 MW</p>	<p>performance-based payment (PBP) mechanism to accelerate the implementation of PV Rooftop program and other possible RE/EE investments</p> <p>The following activity will be carried out under the SEF batch 2 facility:</p> <ol style="list-style-type: none"> 1. Designing the financial model and identification of the required incentive program 2. Designing the PBPs mechanism 3. Launching of the SEF batch 2 4. Implementation of the SEF batch 2 5. Evaluation and follow up 	<p>Aug 2021</p> <p>Sep 2021</p> <p>Oct 2021</p> <p>Oct 2021 – Sept 2022</p> <p>Oct 2022</p>
Cumulative amount of funds from the SEF used in financially supporting small-to-medium scale RE/EE projects , US\$ million	25	A total of USD 710,378 has been delivered out of the SEF budget USD 2,680,000. In addition, a total of financing USD 20,232,683 has been mobilized as an equity and financing investment from the RE/EE projects assisted.	The gap target of USD 1,969,622 of SEF budget and USD 4,767,317 of financing/investment mobilized in RE/EE projects are expected to be achieved through the assisted projects under the SEF batch 2 facility. From the initial rough calculation, the SEF batch 2 is designed to provide incentive for 18MW solar PV roof top. The estimated total investment mobilized is USD 20 mil	Oct 2022
Cumulative number of NAMAs proposals developed for RE and EE projects in pilot provinces, based on the identified and prioritized RE/EE projects.	4 (2 RE and 2 EE)	7 Climate Mitigation Proposals (3 RE and 4 EE) have been developed and registered to Sistem Registri Nasional/National Registry System (SRN) which serve as the 'Nationally Accredited' Mitigation Action that	-	

		can contribute to Nationally Determined Contribution (NDC) target of Indonesia.		
Cumulative capacity of RE investment projects implemented, MW	15	0.22 MW of RE investment project implemented through the development of 5 micro hydro in Jambi Province in collaboration with Baznas and Bank Jambi. In addition, from the SEF facility and technical assistance which are being provided to the RE projects, a total potential capacity of 55,02 MW RE power generations is currently under the project's pipeline. Furthermore, 18MW of solar PV rooftop is expected to be developed under the SEF batch 2 facility.	The following projects is expected to contribute in meeting the 14.78 MW gap: <ol style="list-style-type: none"> 1. PLTBg Ujung Batu – 3 MW 2. PLTM Padang Guci 2 – 7 MW 3. Solar PV Rooftop – 18MW 	COD target: Dec 2021 Sep 2021 Sep 2022
Cumulative floor area of buildings that were made energy efficient, m2.	50,000	A total of 52,886.68 m2 floor area has been made energy efficient thus far (105 % of end of project target).	-	

- **Sustainability action, Detail activities, Estimated Budget, and Timeline**

Sustainability Action 2			Timeline in 2022 (Jan – Dec)			
Detail Activities		Estimated Budget (USD)	Q1	Q2	Q3	Q4
A. Integrated Service Center (IMSC)	Market Center	100,000				

Sustainability Action 2		Timeline in 2022 (Jan – Dec)			
Detail Activities	Estimated Budget (USD)	Q1	Q2	Q3	Q4
To be fully operated as IMSC to support the RE/EE investment, some following activities are still on-going: <ol style="list-style-type: none"> 1. RE/EE Investment guideline development and training 2. Completing and updating the required information/content for the RE/EE investment information system 					
B. Sustainable Energy Fund (SEF) SEF batch 2 facility: <ol style="list-style-type: none"> 1. Designing the financial model and identification of the required incentive program 2. Designing the PBPs mechanism 3. Launching of the SEF batch 2 4. Implementation of the SEF batch 2 5. Evaluation and follow up 	978,622				
GRAND TOTAL	1,078,622				1.394.248

COMPONENT III

- **Gap and Opportunity analysis (June – Dec 2021)**

Component III support Government of Indonesia at central level to development and improve MRV (Measurement/Monitoring, Reporting, and Verification) system of mitigation action.

Regarding Measurement and Reporting of successfully mitigation action at project level, quantification of CO2 equivalent (CO2e) often used as a standard indicator. The gap is low-capacity building of mitigation action proponent/manager to conduct measurement and monitor of CO2 emission reduction at their project. All this time, there is no nationally recognized methodological system to calculate CO2 ER and the

proponent's knowledge improvement program. There is an opportunity since UNDP – MTRE3 provided technical assistance to Ministry of Energy and Mineral Resources (ESDM) and Ministry of Environment and Forestry (KLHK) to develop nationally standard on calculation emission reduction in renewable energy powerplant and efficiency energy at commercial building. Capacity building program for mitigation action proponent/manager will be conducted to used methodology which has been issued by the government.

While related to Verification, the existing condition, the verification process is conducted by Government of Indonesia, represented by MoEF and is referred to as second party verification. This verification is a second-party verification because the proponent submits a report to the government as the institution that receives the report and there is no other party other than the government conducting the verification. In Indonesia, there is a third-party verifier that has been accredited by the National Accreditation Committee (KAN). The verification process carried out requires high costs which causes only a few proponents to carry out third party verification. This is a gap for the implementation of independent third-party verification of mitigation actions in Indonesia.

- **Sustainability action, Detail activities, Estimated Budget, and Timeline**

Sustainability Action 3		Timeline in 2022 (Jan – Dec)			
Detail Activities	Estimated Budget (USD)	Q1	Q2	Q3	Q4
1. Verification of pilot project UNDP-MTRE3 on RE powerplant and EE at commercial building	25,000				
2. Advocate policy for issuance of Indonesia Certificate for Emission Reduction (ICER)	15,000				
3. Develop competency standard of individual third-party GHGs emission reduction verifier, training, and certification	26,000				
4. Training and certification of potential individual third party verifier	40,000				
GRAND TOTAL	106,000				179.660

Assumption, Payroll would be paid by component 3 around USD 73,xxx

6. Monitoring & Evaluation Indicators

- Investment mobilized for RE/EE
- GHGs emission reduction from mobilized investment
- Institutional arrangement for replication of SEF
- Policy and institutional mainstreamed at provincial, national and non-state level to stimulate RE/EE investment.
- Issuance of ICER Pilot by GOI
- Knowledge management system of MTRE3 will be integrated in to IP website

7. Recommendations for Outcome sustainability

1. To ensure structured and sustainable implementation of the project outcomes, it is recommended that coordination of Investment issues in the Renewable and energy efficiency sector should be led by the Ministry Energy and Mineral Resources through a coordination mechanism which involves sub national level.
2. Secondly, all related Ministries should review the project outcomes and further incorporate them into the policies under their custody.
3. The project outcomes together with the results of progressive implementation should be shared with other stakeholders.

Based on the above strategy, it is expected that the results of the project will be sustainable.