

Terminal Evaluation Review form, GEF Independent Evaluation Office, APR 2015

1. Project Data

Summary project data			
GEF project ID		2935	
GEF Agency project ID		3471	
GEF Replenishment Phase		GEF-4	
Lead GEF Agency (include all for joint projects)		UNDP	
Project name		Micro-turbine Cogeneration Technology Application Project (MCTAP)	
Country/Countries		Indonesia	
Region		Asia	
Focal area		Climate Change	
Operational Program or Strategic Priorities/Objectives		OP7-Reducing the Long-Term Costs of Low Greenhouse Gas-Emitting Energy Technology CC-3-Promoting market approaches for renewable energy	
Executing agencies involved		Agency on Assessment and Application of Technology (BPPT) [Badan Pengkajian dan Penerapan Teknologi]	
NGOs/CBOs involvement		None given	
Private sector involvement		Investors and partners in Demonstration projects	
CEO Endorsement (FSP) /Approval date (MSP)		December 15 th , 2008	
Effectiveness date / project start		December 2008	
Expected date of project completion (at start)		December 2013	
Actual date of project completion		June 2014	
Project Financing			
		At Endorsement (US \$M)	At Completion (US \$M)
Project Preparation Grant	GEF funding	.14	.14
	Co-financing		
GEF Project Grant		2.59	2.59
Co-financing	IA own	.425	
	Government	2.74	4.53
	Other multi- /bi-laterals		
	Private sector	12.59	1.28
	NGOs/CSOs		
Total GEF funding		2.73	2,73
Total Co-financing		15.76	5.81
Total project funding (GEF grant(s) + co-financing)		18.49	8.54
Terminal evaluation/review information			
TE completion date		May-July 2014	
Author of TE		Rogelio Z. Aldover & Budi Prasetyo	
TER completion date		2/25/2016	
TER prepared by		Molly Watts	
TER peer review by (if GEF IEO review)		Caroline Laroche	

2. Summary of Project Ratings

Criteria	Final PIR	IA Terminal Evaluation	IA Evaluation Office Review	GEF IEO Review
Project Outcomes	MU	MU ¹	NR	MU
Sustainability of Outcomes		MU	NR	U
M&E Design		NR	NR	S
M&E Implementation		NR	NR	S
Quality of Implementation		NR	NR	MS
Quality of Execution		NR	NR	MS
Quality of the Terminal Evaluation Report		-	-	MS

3. Project Objectives

3.1 Global Environmental Objectives of the project:

The project's Global Environmental Objective was "the reduction of the growth of GHG emissions from the [Micro-turbine Cogeneration Technology] MCT deployment in the industrial, commercial and energy (ICE) sectors in Indonesia." (Project Document p.20) Microturbine Cogeneration Technology is an alternative power source which produces less GHG than standard reciprocating or internal combustion engines. In Indonesia there are multiple barriers hindering the development and application of MCT. This project aimed to remove those barriers, with a particular focus on reducing the initial cost of the technology. (Project Document p.1)

3.2 Development Objectives of the project:

The project's development objective was "the reduction of the long-term cost of [Micro-turbine Cogeneration Technology] MCT in order to accelerate the entry and increased the share of MCT in the Indonesian market." (Project Document p.20)

The project planned to achieve this objective through six project components:

Component 1: Technology Assessment and MCT Application Development

Component 2: MCT Demonstration and Market Development

Component 3: Technical Support to MCT Financing

Component 4: MCT Policy and Institutional Support

Component 5: MCT Promotion Activities

Component 6: Technical Support for Local MCT Industry (Project Document p.20)

3.3 Were there any **changes** in the Global Environmental Objectives, Development Objectives, or other activities during implementation?

There were no changes in the Global Environmental Objectives, Development Objectives, or other activities during implementation.

¹ This is overall project rating TE p.3

4. GEF IEO assessment of Outcomes and Sustainability

Please refer to the GEF Terminal Evaluation Review Guidelines for detail on the criteria for ratings.

Relevance can receive either a Satisfactory or Unsatisfactory rating. For Effectiveness and Cost efficiency, a six point rating scale is used (Highly Satisfactory to Highly Unsatisfactory), or Unable to Assess. Sustainability ratings are assessed on a four-point scale: Likely=no or negligible risk; Moderately Likely=low risk; Moderately Unlikely=substantial risks; Unlikely=high risk. In assessing a Sustainability rating please note if, and to what degree, sustainability of project outcomes is threatened by financial, sociopolitical, institutional/governance, or environmental factors.

Please justify ratings in the space below each box.

4.1 Relevance	Rating: Satisfactory
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The TE rates relevance as Satisfactory, and this TER also rates relevance as Satisfactory. This project was developed based on Indonesia's needs and opportunities, including a forecast increase in energy demand in the industrial and commercial sectors, as well as natural gas reserves in Indonesia which would have made the country an attractive location for development of Micro-turbine Cogeneration Technology. (TE p.32)

The project is also relevant to GEF's Climate change focal area, specifically CC-3 Promoting market approaches for renewable energy. It is also relevant under Operational Program 7- Reducing the Long-Term Costs of Low Greenhouse Gas-Emitting Energy Technology.

4.2 Effectiveness	Rating: Moderately Unsatisfactory
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The TE does not provide an overall rating for effectiveness but instead provided ratings by component, and a combined rating for effectiveness and efficiency of marginally satisfactory. This TER rates project effectiveness as Moderately Unsatisfactory. Ultimately the project fell far short of most of its targets for all components but component 5: MCT Promotion Activities. The achievement of project outcomes and objectives was hampered by a drastic change in the market, specifically regarding natural gas prices which rose dramatically during project implementation. However, the project did have significant achievements in terms of introducing and promoting MCT in Indonesia as a new technology option for energy efficiency and reduction of CO₂.

Achievements under the projects originally planned outcomes are listed below:

Component 1: Technology Assessment and MCT Application Development

The TE rated this component as moderately unsatisfactory. The main expected outputs of this component were "the documented techno-economic feasibility assessments of local production of MCT components, and potential MCT application projects." (PD p.21) The project exceeded its first target under this component, with 15 application areas of MCT identified and assessed for the techno-economic and market feasibility, compared to a target of 10. However, it fell far short of its second target, of a total capacity of 200 MW of installed MCT planned to be developed and

implemented in the Industrial and Commercial Establishments sectors, as by project end only 6.9 MW of was planned to be developed, or 3.5% of the target.

Component 2: MCT Demonstration and Market Development

The TE rated this component as moderately unsatisfactory. The project delivered on two of its three outputs under this component, namely, the project installed 5 MCT demo units with corresponding applications and operational data, documented the results of the implemented demonstrations, but did not identify and design replication MCT projects. (TE p.16-18) The project's targets under this component fell short, as only 8.25% of the target of 8MW for total capacity of MCT demonstration projects implemented and operational was reached, less than 1% of the target for total capacity of installed MCT by enterprises was reached, and no data was collected on the improvement in the overall specific energy consumption in the industrial and commercial establishments sector. 7 technical and economic feasibility evaluations were completed, or 70% of the project's target. The TE notes that the execution of these demo projects was hampered by several problems relating to installation, problems caused by voltage drops, determining locations, and lack of local technical support from the MCT distributor (Capstone). (TE p.18)

Component 3: Technical Support to MCT Financing

The TE rated this component, which was meant "to facilitate immediate and future financing for MCT installations" (PD p.24) as highly unsatisfactory. The project delivered capacity building activities for banking and financial institutions, including a seminar and workshop on "Energy Efficiency through Cogeneration-an Opportunity for Financial Institutions." (TE p.19) The project also organized several meetings with banks and stakeholders to discuss the possibility of MCT project financing. Some outcomes arose from these efforts as BKF allocated USD 50 million to support EE programs in Indonesia, and the project entered into a strategic cooperation agreement with ICED_USAID. However, no targets under this component were met, as by the end of the project no banks/financial institutions were offering loan/credit facilities for EC, EE and MCT projects, against an original target of 12. Related targets, such as total capacity of EC & EE and MCT projects assisted through bank financing, and total capacity of project financing agreed by MCT implementers and the bank/financial institutions were also not met. (TE p.25)

Component 4: Policy & Institutional Support

The TE rated this component as moderately unsatisfactory. The main expected outcome from this project component was the approval and implementation of policies supportive of MCT projects. (PD p.26) Although no new policies or regulations favorable to EC & EE initiatives in the Industrial and Commercial establishments (ICE) Sector were passed, at the end of the project there was one draft policy to provide financial support to EE projects in Indonesia.

Component 5: MCT Promotion Activities

The TE rated this component as satisfactory. As part of this component, the project operationalized an MCT Information Center, a functioning database and information exchange service program operated by BPPT, and implemented an MCT energy performance rating scheme. The project reported that 90% of clients in Industrial and Commercial Establishments sectors served by the MCT Information Centre stated they were satisfied with the service. All targets under this component were met.

Component 6: Technical Support for Local MCT Industry

The TE rated this component, which aimed to achieve availability of locally made MCT components, and enhanced local manufacturing capability of MCT system components (PD p.30), as moderately satisfactory. As part of this component, a set of manufacturing standards for systems and components of MCT were adopted by the industry. The project met its targets of 2 trained local equipment manufacturers producing equipment and/or components for the MCT, and 2 trained local engineering firms registered and engaged in the MCT industry providing technical support services. However, there were no certified developers by the end of the project, while the target had been 8, and total capacity of MCT installed was 33% of the original target of 200 MW. (TE p.27)

4.3 Efficiency	Rating: Unsatisfactory
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As stated above, the project rated efficiency and effectiveness together as marginally satisfactory. This TE will rate efficiency as unsatisfactory due to delays in installation of MCT demonstration projects, failure to realize the co-financing which had a significant effect on outcomes, and excessively high project management costs.

The section on project efficiency in the TE presents limited analysis, except to note that “the project has met to some extent the international and national norms on efficient implementation of projects because it is fully supported by the involved stakeholders and partnership arrangements.” (TE p.33) The TE does note delays and difficulties in installing and operating MCT demonstration units. (TE p.32) The project was extended by six months to June 2014, and was completed on budget, as at project closing US \$2.49 of the allocated 2.58 had been used, or 96%. However, it is alarming to note that final spending on project management was 215% of what was originally allocated in the budget, funds which appear to have been taken from the budget for Component 6- Technical Support for Local MCT Industry- of which only 53% of the planned budget was spent. Only 33% of expected co-financing was realized. The bulk of unrealized co-financing was in the planned private sector’s demonstration and replication installations, which did not occur. However, the project was successful in mobilizing 165% of planned government co-financing.

4.4 Sustainability	Rating: Unlikely
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The TE rates project sustainability as Moderately Unlikely, noting that there are significant risks, but not providing a detailed discussion examining the four dimensions of financial resources, sociopolitical, institutional framework and governance, and environmental sustainability. This TER rates sustainability as unlikely, mainly due to risks to financial resources.

Financial Resources Sustainability: Unlikely Risks to financial resources to continue activities are somewhat high, because these risks impacted the project even during project implementation when private sector co-financing failed to materialize. These risks come from potential price hikes in natural gas, which would deter investors in MCT. Additionally, the technical issues which surfaced during the installation of MCT systems could create a financial resource risk, as they required additional equipment and parts, adding to the cost of MCT. The TE notes that “the high initial and maintenance cost of the MCT seems to be another factor hampering MCT acceptance, not only in the demonstration stage but most especially in the replication activities. As mentioned in the section on effectiveness, the project was not successful in encouraging banks/financial institutions to offer loan/credit facilities for EC, EE and MCT projects.

Sociopolitical Sustainability: Sociopolitical sustainability is rated as **Moderately Likely**. The MCT information center produced as part of the project’s fifth component is being maintained and updated regularly. According to the TE “The stakeholders and public are continuously informed on the results of the status and performance of the application of MCT demo units. MCTAP website has been receiving good response. During July 2013 – June 2014 period, it was visited by 1,873 users in 2,479 sessions based on Google Analytics.” (TE p.27) However, the TE notes that a limited number of micro turbine technology providers does create a moderate risk to continuation of project benefits. At project end only three brands, Capstone, FlexEnergy, and Turbec, remain active in Indonesia. (TE p.29)

Institutional Framework and Governance Sustainability: Moderately Likely A risk to continuation of project benefits comes from government encouragement for gas supply conversion to CNG fuel for the transportation sector, which limits the supply of gas to the power generation sector, limiting allocation quotas for industrial needs. (TE p.29) The TE notes however that “the great potential of MCT remains valid and can be considered as an opportunity in developing a new program from MCT under the national energy efficiency program.” (TE p.38) Additionally, “Cogeneration technology as an EE option has been included in the BPPT and MEMR national energy efficiency program for 2015-2019 as well as in the overall UNDP Country Program Action Plan (CPAP) for Indonesia.” (TE p.34)

Environmental: The TE does not note any environmental risks to continuation of project benefits, and no other information on environmental sustainability is available.

5. Processes and factors affecting attainment of project outcomes

5.1 Co-financing. To what extent was the reported co-financing essential to the achievement of GEF objectives? If there was a difference in the level of expected co-financing and actual co-financing, then what were the reasons for it? Did the extent of materialization of co-financing affect project’s outcomes and/or sustainability? If so, in what ways and through what causal linkages?

As noted in the efficiency section, only 33% of expected co-financing was realized. This did have a significant impact on program outcomes, because the bulk of unrealized co-financing was from private sector, which would have contributed co-financing through demonstration and replication installations, which did not occur. However, the project was successful in mobilizing 165% of planned government co-financing.

5.2 Project extensions and/or delays. If there were delays in project implementation and completion, then what were the reasons for it? Did the delay affect the project’s outcomes and/or sustainability? If so, in what ways and through what causal linkages?

The project was extended by six months, until June 2014. The project experienced unexpected delays in installing and operating the MCT demo units. (TE p.33) The TE does not note that these delays affected project outcomes or sustainability.

5.3 Country ownership. Assess the extent to which country ownership has affected project outcomes and sustainability? Describe the ways in which it affected outcomes and sustainability, highlighting the causal links:

The TE reports that country ownership levels are high. The project was executed by a national agency, and the TE notes that “the project has significantly aided the government in accelerating and integrating ongoing and planned EE program development and application of selected project partners.”(TE p.33)

6. Assessment of project’s Monitoring and Evaluation system

Ratings are assessed on a six point scale: Highly Satisfactory=no shortcomings in this M&E component; Satisfactory=minor shortcomings in this M&E component; Moderately Satisfactory=moderate shortcomings in this M&E component; Moderately Unsatisfactory=significant shortcomings in this M&E component; Unsatisfactory=major shortcomings in this M&E component; Highly Unsatisfactory=there were no project M&E systems.

Please justify ratings in the space below each box.

6.1 M&E Design at entry	Rating: Satisfactory
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The TE rates M&E Design and Implementation jointly as satisfactory. This TER rates M&E Design as Satisfactory, due to its overall completeness. The log frame is complete and contains indicators and targets along with assumptions. The project M&E plan is complete, and designates responsible parties and budgets for all M&E activities. The project document includes plans for three independent evaluations, the first in the third quarter of Year 2, the second in the second quarter of year 4 and the final evaluation at the completion of the project. (PD p.38) The total M&E budget was \$48,000.

The TE notes that the project design “appeared to have over-estimated the targets on demonstration capacities and replication projection. However, upon review of the project development history, the targets were considered to be realistic and achievable on the basis of prevailing price, private sector’s interest on the potential energy savings and GHG reduction benefits.”(TE p.36) In retrospect the project design failed to properly consider risks.

6.2 M&E Implementation	Rating: Satisfactory
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The TE rates M&E Design and Implementation jointly as satisfactory. The TE notes that the project followed the monitoring and evaluation scheme as designed in the project document and was able to use relevant information in the management of the project towards completion by end of Year 5. (TE p.11) The project appears to have been well monitored. The mid-term review was conducted in year 3,

and PIRs following the mid-term report progress towards meeting mid-term recommendations, or reasons for not incorporating recommendations. The final PIR notes that most of the project budget had been exhausted before the midterm, making it impossible to incorporate recommendations. (PIR 2014 p.21) This seems to be a flaw in project management more than M&E implementation however. The TE notes that “the standard UNDP-GEF M&E process was adopted by the project during the design stage...The system has strongly supported project monitoring and detecting problem areas and concerns that need to be addressed and to provide action plans.”(TE p.15)

7. Assessment of project implementation and execution

Quality of Implementation includes the quality of project design, as well as the quality of supervision and assistance provided by implementing agency(s) to execution agencies throughout project implementation. Quality of Execution covers the effectiveness of the executing agency(s) in performing its roles and responsibilities. In both instances, the focus is upon factors that are largely within the control of the respective implementing and executing agency(s). A six point rating scale is used (Highly Satisfactory to Highly Unsatisfactory), or Unable to Assess.

Please justify ratings in the space below each box.

7.1 Quality of Project Implementation	Rating: Moderately Satisfactory
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The project’s implementing agency was UNDP. The TE does not provide an individual rating for project execution, but provides a rating of Satisfactory for UNDP and Implementing Partner implementation/execution coordination and operational issues.

The TE notes that “the UNDP Regional Technical Advisory (RTA) for Climate Change in the Asia-Pacific Region and UNDP Indonesia CO Program Manager have very effectively provided periodic oversight in implementation and check-ups on efficiency for inputs, work schedules and other required actions vis-à-vis the expected outputs by seeing to it that the implementation has been progressing according to plan. They have provided ample guidance to the PMO regarding ... implementation issues. (TE p.15) However, the project design was flawed in its failure to sufficiently account for risks related to changes in market such as the price of natural gas, making the project’s targets overly ambitious. Considering this along with the sound M&E implementation and this evidence from the TE regarding sound supervision on the part of UNDP, quality of project implementation is rated as Moderately Satisfactory.

7.2 Quality of Project Execution	Rating: Moderately Satisfactory
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The project executing agency was the Agency for Assessment and Application of Technology (BPPT), through its Energy Technology Center (BBTE). The TE does not provide an individual rating for project execution, but provides a rating of Satisfactory for UNDP and Implementing Partner implementation/execution coordination and operational issues. The TE notes that “The BPPT and UNDP Indonesia Country Office in close coordination with the UNDP RTA have implemented the project in active consultation with all project stakeholders keeping watch on the mitigation of the identified risks mentioned above as well as the overall market situation and government priorities.” (TE P.15) The final PIR notes that “the effectiveness of activities to achieve the expected outputs was quite low due to lack

of leadership within project management unit” and notes that there was major restructuring in the project management unit in the project’s third year. (PIR 2014 p.22) Based on this evidence, as well as the fact that the project was executed on budget and with only a six month extension, quality of project execution is rated as Moderately Satisfactory.

8. Assessment of Project Impacts

Note - In instances where information on any impact related topic is not provided in the terminal evaluations, the reviewer should indicate in the relevant sections below that this is indeed the case and identify the information gaps. When providing information on topics related to impact, please cite the page number of the terminal evaluation from where the information is sourced.

8.1 Environmental Change. Describe the changes in environmental stress and environmental status that occurred by the end of the project. Include both quantitative and qualitative changes documented, sources of information for these changes, and how project activities contributed to or hindered these changes. Also include how contextual factors have contributed to or hindered these changes.

This project did not lead to market change which would have had a significant environmental impact by project end. The TE notes that by the end of the project, 584.86 tons CO₂ of GHG emission were reduced by MCT (compared to a target of 1.53 million tons.) Cumulative energy savings from the Industrial and Commercial Establishments sectors were estimated to be 773 barrel of oil equivalent (BOE) (compared to an original target 3.2 million BOE). (TE p.23)

8.2 Socioeconomic change. Describe any changes in human well-being (income, education, health, community relationships, etc.) that occurred by the end of the project. Include both quantitative and qualitative changes documented, sources of information for these changes, and how project activities contributed to or hindered these changes. Also include how contextual factors have contributed to or hindered these changes.

The TE does not describe any socioeconomic changes as a result of the project.

8.3 Capacity and governance changes. Describe notable changes in capacities and governance that can lead to large-scale action (both mass and legislative) bringing about positive environmental change. “Capacities” include awareness, knowledge, skills, infrastructure, and environmental monitoring systems, among others. “Governance” refers to decision-making processes, structures and systems, including access to and use of information, and thus would include laws, administrative bodies, trust-building and conflict resolution processes, information-sharing systems, etc. Indicate how project activities contributed to/ hindered these changes, as well as how contextual factors have influenced these changes.

a) Capacities

Two local equipment manufacturers were trained to produce equipment and/or components for the MCT, and were registered and profitably engaged in the MCT industry by the end of the project. The project also produced a set of manufacturing standards for systems and components of MCT. (TE p.28)

b) Governance

One draft policy was produced to provide financial support to EE projects in Indonesia. Additionally, a regulation concerning energy management incorporates cogeneration systems in Regulation No.14-2012, and the project also led to one recommendation of the Agency for the Assessment and Application of Technology to the National Planning Development Agency to encourage and incorporate cogeneration system in their Medium Term Development Plan. (TE p.26)

8.4 Unintended impacts. Describe any impacts not targeted by the project, whether positive or negative, affecting either ecological or social aspects. Indicate the factors that contributed to these unintended impacts occurring.

No unintended impacts of the project are reported affecting ecological or social aspects.

8.5 Adoption of GEF initiatives at scale. Identify any initiatives (e.g. technologies, approaches, financing instruments, implementing bodies, legal frameworks, information systems) that have been mainstreamed, replicated and/or scaled up by government and other stakeholders by project end. Include the extent to which this broader adoption has taken place, e.g. if plans and resources have been established but no actual adoption has taken place, or if market change and large-scale environmental benefits have begun to occur. Indicate how project activities and other contextual factors contributed to these taking place. If broader adoption has not taken place as expected, indicate which factors (both project-related and contextual) have hindered this from happening.

Replication has not yet occurred, nor has adoption of GEF initiatives at scale. The TE notes that the initiative has been mainstreamed “with other UNDP and Government priorities on energy efficiency as a means to mitigate climate change effects through GHG reduction. Cogeneration technology as an EE option has been included in the BPPT and MEMR national energy efficiency (including cogeneration) program for 2015 – 2019 as well as in the overall UNDP Country Program Action Plan (CPAP) for Indonesia.” (TE p.33)

9. Lessons and recommendations

9.1 Briefly describe the key lessons, good practices, or approaches mentioned in the terminal evaluation report that could have application for other GEF projects.

- Economic considerations for marketing new technology products in any country always relevant and major factor. For Indonesia, even if the microturbine promised to be a highly efficient and of excellent quality, it is still not the top choice for power generators because microturbine unit prices are 2-3 times the price of gas engines for the same size. But potential users have not really been shown an efficient and economically-operated microturbine that is still possible

through a good and optimized size/capacity matching of the power generation side with the heat recovery side.

- While the MCT technology is being introduced, potential users and distributors need ample incentives to justify their participation in the demonstration stage in addition to the assistance in promotion and capacity development due to the risks involved.
- Higher capacities of microturbine could be more attractive to be used under the national program in the field of energy efficiency involving cogeneration systems and therefore provide a much larger contribution.
- The MCT technology could be more flexible and customized regarding local specifications in terms of operating parameters, such as the operating limit voltage should be adjusted to the lowest voltage that the grid can accommodate (e.g. 250V), so that MCTs can be operated in parallel with the PLN system. (TE p.38-39)

9.2 Briefly describe the recommendations given in the terminal evaluation.

A more rigid market projection methodology should be used in similar future projects that will include conservative and ambitious target levels and their corresponding carefully-assessed assumptions and conditions.

- Focus on marketing or development of the MCT market in a more aggressive, stepwise approach, as follows:
- Focus MCT marketing primarily to existing MCT demo users who are still in need of thermal energy and have still excess quantities from its quota of fuel gas supply from PGN by installing one or more MCTs operated in parallel to match load-following schemes in cogeneration to optimize system efficiencies and be good marketing models.
- Target expanded markets for new customers (existing or relocated) in areas with well-developed gas distribution networks with extensive promotion based on success stories of current MCT users.
- Address the existing market situation so that the MCT market will be developed and result to an increased MCT technology replication:
- Conduct further studies on other applications including combined heat and power uses in small and medium enterprises (SMEs) that can be served by MCTs
- Open up new market for MCTs
- Establish technical support particularly in the after-sales services for the local MCT industry
- Encourage local research for MCT development on the power generation side and heat recovery side.
- Promote ESCOs and adopting viable business models
- Adopt applicable business models by providing relevant information
- Capacity building in the banking / financial institutions in developing financial packages, credit schemes and loan guarantee windows to strengthen MCT market.
- Adopt innovative financing schemes, smart subsidies and incentives for ESCOs to invest in MCTs
- Strengthen policy and institutional support in favor of energy efficiency technologies such as cogeneration which includes MCT.

- Adopt necessary policies and regulations to support COGEN market application and development (where MCT is a sub-set) and the necessary incentives for both MCT technology provider and user
- Adopt rationalized policy guidelines on gas supply on making gas more available to efficient industrial applications as part of Five-Year (2015-2020) National Plan
- Strengthen organizational structure and harmonize mandates to support energy efficient gas usage in COGEN in industries.
- Encourage more local product research and development that will introduce to the market some advance, operationally-improved and higher-efficiency MCT systems (in both the power and heat generation sides).
- Encourage more equipment producers to diversify by venturing into MCT production whether they are related or unrelated to present business because they will benefit from good synergy and creativity in combining power generation and heat recovery for higher system energy efficiency in MCT systems.
- Promote more for low-BTU microturbines such as EnerCore products for abundant low calorie gas on landfill sites and mining areas.
- Pursue the successful completion of the MCT demo highlighting the achievement of the energy efficiency improvement learning from best and worst practices resulting to substantial energy savings and GHG reduction benefits and dissemination of the results to encourage a wider MCT market development program under the national energy efficiency program of Indonesia. (p.36-38)

10. Quality of the Terminal Evaluation Report

A six point rating scale is used for each sub-criteria and overall rating of the terminal evaluation report (Highly Satisfactory to Highly Unsatisfactory)

Criteria	GEF IEO comments	Rating
To what extent does the report contain an assessment of relevant outcomes and impacts of the project and the achievement of the objectives?	The assessment of relevant outcomes, impacts, and achievements of objectives is both thorough and consistent with the project design.	S
To what extent is the report internally consistent, the evidence presented complete and convincing, and ratings well substantiated?	The report's ratings are not always well explained, and in several cases ratings are combined (for example for M&E Design and Implementation, and for Project Implementation and Execution.) Generally ratings seemed correct but not fully substantiated, and in some cases inflated.	MS
To what extent does the report properly assess project sustainability and/or project exit strategy?	The TE's assessment of sustainability is incomplete, because rather than providing an assessment of likelihood of sustainability the TE focuses on recommendations to improve sustainability. Rather than providing an assessment of the project's exit strategy, the TE actually develops an exit strategy for the project.	MU
To what extent are the lessons learned supported by the evidence presented and are they comprehensive?	Lessons learned are comprehensive and supported by evidence.	S
Does the report include the actual project costs (total and per activity) and actual co-financing used?	The project includes actual total project costs, as well as costs per activity (component).	S
Assess the quality of the report's evaluation of project M&E systems:	The report's evaluation of project M&E is rather brief and general and could have used more detail.	MS
Overall TE Rating		MS

11. Note any additional sources of information used in the preparation of the terminal evaluation report (excluding PIRs, TEs, and PADs).

No additional sources were used in the preparation of this TER.