Indonesia: INTEGRATED MICROHYDRO DEVELOPMENT AND APPLICATION PROGRAM (IMIDAP)

FINAL REVIEW

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List of Acronyms and Abbreviations

	Association of Randung (Hydro Association of Randung)
	Assistast Hydro Bandanatan dan Palania Dearah (Dravingial/District Development
	Anggaran Pendapatan dan Belanja Daeran (Provincial/District Development
	Anggeren Dendensten den Polonie Negere (Netional Development Budget)
	Angyaran Penuapatan dan Belanja Negara (National Development Budget)
APR/PIR	Annual Project Report/Project Implementation Review
Bappenas	National Planning Development Agency
BNSP	Badan Nasional Sertifikasi Profesi (National Bureau of Certification)
ВЪЪ	Biaya Pokok Produksi (Production Cost)
	Badan Pengawasan Keuangan dan Pembangunan (Board of Finance and
BPKP	Development Control)
	Badan Pengkajian dan Penerapan Teknologi – Agency for the Assessment
BPPT	and Application of Technology
CMS	Content Management System
СТА	Chief Technical Advisor
DGEEU	Directorate General for Electricity and Energy Utilization
DJLPE	Direktorat Jenderal Listrik dan Pemanfaatan Energi
	or DGEEU: Directorate General Electricity and Energy Utilization
EOP	End of Project
GEF	Global Environmental Facility
GHG	greenhouse gases
Gol	Government of Indonesia
GWh	Giga Watt hour
	Integrated Microhydro Development and Application Program
Kementerian PDT	Kementerian Negara Pembangunan Daerah Tertinggal / State Ministry of
Remementari i Di	Remote Area Development
K/W	Kilo Watt – 1 000 Watt
	Lembaga Ilmu Pengetahuan Indonesia (The Indonesian Institute of
	Sciences)
MEMR	Ministry of Energy and Mineral Resources
MMCH	Ministry of Energy and Mineral Resources
МН	MinishicleHydro
MOA	Memorandum of Agreement
MSE	Microbydro Support Fund
	Mid Torm Poview
	Maga Wott 1 000 Kilo Wott
	Menitering and Evolution
M&E	Monitoring and Evaluation
NGO	Non-governmental organization
	National Project Director
	Operation and Management
PLN	Perusanaan Listrik Negara (State-Owned Electric Company)
PMU	Project Management Unit
Polban	Politeknik Negeri Bandung (Bandung Polytechnic)
ProDoc	Project Document
PSK TERSEBAR	Pembangkit Skala Kecil Tersebar (Small Distributed Generation)
P3T KEBT	Pusat Penelitian dan Pengembangan Teknologi Ketenagalistrikan dan
	Energi Baru Terbarukan / Research and Development Center for Electricity
	and New Renewable Energy
RE	Renewable Energy
R&D	Research and Development
tC, mtC	Ton Carbon, million ton Carbon
tCO ₂ , mt CO ₂	Ton carbon dioxide, million ton CO ₂
UNDP	United Nation Development Programme
TOR	Terms of Reference

INDONESIA: INTEGRATED MICROHYDRO DEVELOPMENT AND APPLICATION PROGRAM (IMIDAP)

Draft FINAL REVIEW REPORT

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Indonesia: INTEGRATED MICROHYDRO DEVELOPMENT AND APPLICATION PROGRAM (IMIDAP)

Official Project Title	3102 Applic	- Integrated Microhydro I ation Program (IMIDAP)	Development and	
Project Summary				
Microhydro resources in Indonesia are abundant and remained largely untapped. Presently, there are multiple barriers to the development and application of renewable energy, in general, and microhydro, in particular, in the country. This Programme is designed to remove key market, policy, technical and financial barriers to microhydro development and utilization, and is complementary to ongoing and planned renewable energy and rural electrification initiatives of the Government of Indonesia and the country's private sector.				
The overall goal of this Programme is the reduction of GHG emission from fossil-based power generation in Indonesia. This will be achieved with the objective of accelerating the development of microhydro resources and optimization of their utilization by removing barriers. The four main outcomes of the Programme are: (a) Enhanced private sector interest and involvement in the microhydro power business; (b) Increased number of community-based microhydro Programmes as a result of effective institutional capacity building; (c) Improved availability, and local knowledge, of microhydro technology applications in potential areas of microhydro development; and, (d) Private 				
Atlas Project Number (s): 51240				
GEE Focal Area: Climate Change Mitigation				
GEF-4 Focal Area Strategic Program:	Clima energ	te Change, Strategic Ob y.	jective 1: Renewable	
Project Milestones and Timef	rame			
Pipeline entry OR PIF approval :		08-Feb-2006		
GEF CEO endorsement/approval date:		18-Sep-2006		
Project Document Signature date:		02-Aug-2007		
Date of First Disbursement[1]:		21-Aug-2007		
Original Planned Closing Date:		30-Jun-2010		
Revised Planned Closing Date:		31-Dec-2010		
Date project manager hired:		07-Nov-2007		
Actual date of operational closure in ATLAS (if applicable)		27-Dec-2010		
Planned date of operation closure in Atlas		30-Jun-2010		
Planned date of financial closure in Atlas		03-Jan-2011		

Project Identification

INDONESIA: INTEGRATED MICROHYDRO DEVELOPMENT AND APPLICATION PROGRAM (IMIDAP)

Final Review

Draft Report

1. EXECUTIVE SUMMARY

Introduction

IMIDAP was planned to be operationally closed in December 2010 and therefore, a Final Review or otherwise known also as a Terminal Evaluation in GEF Monitoring System, has been undertaken in September 2010.

Subject to the decisions and completion acceptance of the current phase of the ten-year IMIDAP government initiative, the GoI is planning to formulate the second phase of the program based on the experience and directions established by the First phase.

The Gol proposes for new funding from GEF for IMIDAP Phase 2, which will focus more in sustaining Phase I achievements and expansion of development areas through replication of demonstration experience towards commercialization of microhydro technology in the country.

The UNDP Indonesia is initiating this evaluation to determine to what extent the project has achieved its objectives and has removed barriers to microhydro development and utilization in Indonesia. It is intended to analyze and assess the relevance, sustainability, impact and effectiveness of the strategies, project design, implementation methodologies and resource allocations that have been adopted for the purpose of achieving the objectives stated in the project document.

The Evaluation Team used the IMIDAP Project Document and related project implementation reports and information generated by IMIDAP, including baseline data at the start of the project, and information generated by the IMIDAP Monitoring and Evaluation (M&E) system.

The assessment of project results seeks to determine the extent to which the project objectives were achieved, or are expected to be achieved, and determine if the project has led to any other short- or long-term and positive or negative consequences. Each of the outputs and outcomes were rated according to the three criteria of relevance, efficiency and effectiveness.

Key Findings

1. Project Formulation. The ten-year IMIDAP logical framework and design is still relevant in the light of the project Phase I experience and achievements. With the completion of Phase I activities resulting to the abovementioned outputs and outcomes, the targets and description of activities under each component and sets of indicators for the remaining phases of the program may have to be updated. A logical framework review and analysis to align Phase II with new government thrusts and priorities is necessary as basis for target setting and budgeting. The IMIDAP's purpose and objectives remain valid and relevant. However, there are items or components in the project design need to be reviewed and updated.

2. Implementation

- a. The Gol, through the DGEEU was fully prepared and ready to implement the IMIDAP as approved. At the beginning, the Project's objectives and components were the result of extensive consultation during the Logical Framework Analysis at the PDF A and PDF B stages. In order to ensure that project outputs and outcomes will be realized within the ten-year timeframe, the project was decided to be divided into three phases.
- b. The project implementation and achievement of results proceeded Satisfactorily and according to plan. There are no outstanding issues, obstacles, bottlenecks, etc. on the consumer, government or private sector involved in the microhydro industry as a whole that affected the successful implementation and achievement of IMIDAP results. it became the center-piece of Indonesia's rural electrification and economic development under a decentralization policy which gave provincial and district governments the autonomy and responsibility to implement their own projects, including community-based programs using microhydro generated power.
- c. Stakeholder participation in both project implementation and decision-making has been highly satisfactory. The establishments of partnerships and collaborative relationships developed by IMIDAP on the national, provincial, and district level have been vital and relevant in achieving the main objectives of the project.
- d. The project was originally planned to be completed on June 2010 or 3 years as designed for Phase I of the ten-year program of the Gol. The project is expected to be completed by December 31, 2010.
- e. The project management arrangements are found adequate and appropriate for the needs of IMIDAP Phase I. The results-based and risk-based project management system using the ATLAS can be continued to be used. The project has been managed very effectively at all levels. The regular UNDP/GEF Annual Project Report/Project Implementation Review (APR/PIR), Annual Work and Financial Plans, quarterly reporting and financial reviews effectively aid management, implementation and administrative requirements.
- f. The major IMIDAP project partners and their other similar engagements in their regular functions in the microhydro program (and related areas) implementation are strategically and optimally positioned and effectively leveraged to achieve maximum effect of the microhydro program (within the context of national RE program) objectives for the country. The partnership is described as follows illustrating the leveraging of their inputs to IMIDAP into a bigger plane of responsibility.
- g. All planned sub-contracts and professional consultancy services were completed and their outputs were presented to the Steering Committee. Quality assurance checks with the respective TORs were carried out. Payment of the fees was completed for contracts that were accepted with satisfactory performance.
- 3. Results and Performance Ratings
 - a. IMIDAP achieved all of its outputs in the final year of implementation despite the prevailing internal and external challenges and difficulties experienced in the first 2 to 3 years. Project management has greatly improved since the mid-term evaluation wherein the gaps and unaccomplished results were identified with reference to expected results and outputs. The most important challenges are mentioned in the MTR, which included sustaining commitment among project

participants in the microhydro demo sites, changes in project organization, establishing and operating the monitoring and evaluation system, and completion of co-financing commitments. The Evaluation Team believes that the Project Management has responded adequately to these challenges, although some of these challenges have delayed or made some degree of complication to the project implementation somehow. Nevertheless, none of these has caused any major disruption to the project.

- b. There are many accomplishments per output indicator that were rated *Highly Satisfactory*. Considering overall performance and using the GEF Performance Rating Scheme, the IMIDAP implementation and achievement of results is *Satisfactory* in the overall.
- c. In terms of outcomes, the cumulative amount of GHG reduced in CO2 equivalent is 621.8 kilotons or 2 times the target value of 303.9 kilotons. It is noted that the actual figure consists of direct and indirect components using the updated GEF methodology. The annual growth of installed microhydro capacity has improved very significantly exceeding targeted values in off-grid at 37.2 % in off-grid sites compared to 20 % target. The annual production and sales of microhydro electricity increased significantly at 182.6 GWh Produced: and 169 GWh sold. The projected figures were 80 GWh and 70 GWh, respectively. Overall rating for the achievement of outcomes is *Highly Satisfactory*.
- d. In terms of sustainability of outputs and outcomes, the assessment was done across the financial, socio-political, institutional framework and governance and environmental dimensions of risks. These are risk factors because they are beyond the direct control of project management. These can be mitigated if the project activities and outputs are migrated and institutionalized within the regular government system at the national and local levels. Those factors that are rated *Moderately Likely* and *Moderately Unlikely* present sustainability risks that need to be addressed by follow-through activities in order that the outcomes and benefits that were initially derived from the IMIDAP Phase I will be sustained. The likelihood that some financial and other resources to sustain the project outcome and benefits after Phase I is Likely. Already during the course of project implementation, additional funds were raised. More resources are needed to be mobilized to increase further the benefits derived from the microhydro program.
- e. The financial arrangements for the project turned out to be very successful. This shows the highly committed and country-driven program. Gol and all the partners have a Highly Satisfactory performance and very remarkable achievement in mobilizing support and in leveraging the GEF/UNDP inputs.
- f. The actual co-financing inputs surpassed the promised funding levels in the ProDoc which were leveraged from initial inputs. This is a clear manifestation of sincerity in complying with commitments and great interest in the project. This highly satisfactory realization of co-financing has very positively encouraged achievement of project outcomes and ensured sustainability. At the same time, the co-financing scheme and partnership strategy have established vital linkages and working relationships at the national, provincial and district levels thereby ensuring sustainability of the program.
- g. The overall design of the M&E system aims to monitor results and track progress to achieve project objectives. Based on the indicators of the power plant operations and overall program outputs and outcomes of the IMIDAP program, the following data elements were designed to be monitored and the data are stored in corresponding databases as <u>www.monev.mikrohidro.net</u>.

- h. The database is very useful in generating reports. Profiles of power plants continuously are being inputted and updated. Data on actual generation is 90% complete. MWhrs are derived from the data on installed capacity of reported microhydro plants in the <u>datapotensi.mikrohidro.net</u> . Estimations are based on assumed number/capacity of microhydro actually operating, number of operating hours per year, availability factor, load factor and efficiency factor.
- i. The IMIDAP M&E activities is sufficiently budgeted for at the project planning and implementation stage. DGEEU/MMCH is prepared to sustain the operation and maintenance of the M&E system. Quality of design is Highly Satisfactory and implementation is *Satisfactory*.

4. Conclusions

- a. The IMIDAP Phase I has fully completed most of activities within the three-year timeframe from January 2008 up to the Final Review schedule for September 2010. Further completion of the remaining administrative and closure activities are likely to be completed by the planned project termination on December 31, 2010 with an overall *Satisfactory* compliance of commitments defined in the ProDoc. The project followed adaptive management considering some activities have to catch up with completion dates. The third year focused on the completion of implementation of activities leading to the project's three critical outputs, particularly, the Microhydro Integrated Development and Application Plan, the MSF and the operation of the six (6) demonstration sites.
- b. The necessary and relevant government microhydro policy framework and goals have been effectively and clearly articulated at the national and local levels with sufficient guidelines and overall directions in terms of the Microhydro Roadmap (2010-2025). Plans are underway to further involve the stakeholders to provide more planning details to the roadmap to constitute the strategic Integrated Microhydro Development and Application Implementation Plan as expected from the project with definitive targets and timeframe to ensure achievement of long-term goals at the national and local levels.
- c. The overall government institutional strengthening in renewable energy under a new directorate for renewable energy, where microhydro forms a big part, is definitely a clear manifestation by GoI in providing the institutional capacity and platform necessary in carrying out an expanded RE program more effectively and efficiently.
- d. The financial assistance system for microhydro power projects and associated community-based productive applications in small-scale entrepreneurship relies on the existing banking system and its usual project profitability policies. With this, the banks need to accept the general bankability and technology reliability of microhydro and application projects so as to lower the risk rating that they still place in comparison with other project portfolios. Loan incentives built in microhydro-specific financial packages such as project preparation fund, loan guarantee fund and microfinance are still felt necessary to match the original intentions of the MSF.
- e. The capacity building, training courses and the manuals in various aspects of the microhydro program have been developed and implemented with Highly Satisfactory performance. They are seen by target beneficiaries to be useful from national planners up to the village operator level. They have been received with very active support and budgetary inputs by the local government units. Sustainability needs to be assured as the different courses are put together into a relevant microhydro training program and implementing plan at the different levels for improved administration and evaluation.
- f. The Internet-based project monitoring and evaluation system (mikrohidro.net) employing up-to-date data gathering networks is well-designed and IMIDAP has started to

populated it with operational data to make it more useful with timely information to aid in the strategic IMIDAP implementation plan and for tracking results up to the district level.

- g. The technology support program for microhydro and its applications has reached appreciable levels in the manufacturing, technical design, engineering, installation, operation and maintenance aspects. The system of classification and registration of operators, service providers and manufacturers is found satisfactory and needs further institutional back up to meet standards for the commercialization in the coming years.
- h. The demo sites have started to operate while the formal documentation is being completed as to ownership and organizational designations. Formation and capacity building of cooperatives to manage the community-based microhydro-supported small businesses are very important and need local government guidance and monitoring to ensure success while in view of other business-management/organizational options that could be taken as appropriate in certain situations.
- i. The next steps to further achieve the goals and objectives for IMIDAP will need urther support and definitive action plans to sustain the initial outputs and outcomes of the project in an expanded and integrated approach that focuses more in commercialization of microhydro technology as originally planned in the ten-year ProDoc.

5. Recommendations

- a. Stakeholders should continue to act together in fine-tuning the directions of the Microhydro Road Map in optimizing the program resources towards the common objectives and conduct strategic planning with detailed targets and timeline to come up with the desired integrated microhydro development and application plan in fiveyear segments consistent with the road map to be disseminated to all when approved.
- b. Gol should align the next phase of IMIDAP according to the mandates of the new directorate general for renewable energy and the organizational/institutional support the program needs for higher levels of relevance, effectiveness and efficiency as a project.
- c. Stakeholders should review the status of the existing banking system (in which microhydro is now riding) along the lines seen in the MSF concept that are relevant to the current needs of projects in microhydro and its community-based applications that are distinct for on-grid and off-grid cases and attendant opportunities to come up with microhydro-specific financial packages within the existing bank portfolios.
- d. Gol, through Ministry of Energy, to provide needed direction and organizational linkages in institutionalizing the microhydro-related training courses under a programmed-approach specially in microhydro-endowed districts. This will be under an integrated training and education and capacity building program to be supported by local government units using the updated modules of IMIDAP in coordination with the Ministry of Energy's Training and Education Division for supervision and monitoring.
- e. Gol, through the Ministry of Energy, should adopt a policy and budgetary support for the sustainability of the internet-based monitoring and evaluation system, exchange system and database management developed by the project and designate a regular unit under the Ministry to operate and manage the system to derive relevant and timely information to manage the Integrated Microhydro Development and Application Plan to be adopted by the government.
- f. Gol, through the Ministry of Energy in coordination with the Ministry of Industry, to

look into a systematic, goal-based microhydro technology development and commercialization support program following international standards and practices in similar technologies.

- g. IMIDAP should review the stakeholder and partnership strategy to involve relevant ministries and government agencies that could provide the needed support to the effective implementation of the directions defined in the Microhydro Road Map and the strategic Integrated Microhydro Development and Application Plan. For instance, the Ministry of Cooperatives, the Ministry of Disadvantaged Regions, Ministry of Industry, Ministry of Home Affairs and other relevant organizations or designated agencies are needed as stakeholders and partners to comprehensively address the microhydro program needs and priorities. This will also help in harmonization of policies and permitting procedures that still need streamlining and time-bound commitment.
- h. IMIDAP should involve new relevant partners and stakeholders in the Logical Framework Analysis Workshop for Phase II to validate needs and problems and provide suggestions in addressing prevailing problems and challenges that are still affecting the microhydro program.
- 6. Lessons Learned
 - a. The direct participation and guidance of local government units in the organization of cooperatives and designation of authority in the community-based microhydro villages is very important consistent with the decentralization policy of government.
 - b. Effective and relevant co-financing and partnership strategy with well defined roles and inputs during the planning stage of the project is a key to lasting working relationship and synergy.
 - c. Determination of the next steps and designing the next phase of the project involving relevant stakeholders and beneficiaries and considering real situation problems and concerns in the local level are very important for microhydro programs due to its multi-disciplinary and multi-sectoral coverage.
 - d. The banking sector has a different set of parameters and perception in assessing viability of a project similar to a microhydro community-based, small-scale business because the tendency is to place high risk ratings on still unfamiliar technology and benefits.
 - e. The cooperative as a management and operating entity for microhydro-supported business still needs further study and capacity building of the team, and when adopted, requires intensive caretaker oversight from the local government in order to ensure success and sustainability.

2. INTRODUCTION

This report is made in connection with the Final Review of the Integrated Microhydro Development and Application Program (IMIDAP).

The Final Review Work Plan and guidelines in the conduct of the IMIDAP Final Review from September 7 to October 25, 2010 were presented and finalized with the DGEEU, IMIDAP PMU and the UNDP Indonesia. The Final Review (FR) process as part of the monitoring and evaluation system for UNDP/GEF projects was conducted by the FR Team composed of Mr. Rogelio Z, Aldover, the International Consultant and Mr. Heri Tabadepu, the National Consultant, in accordance with the SSA and Terms of Reference and in close coordination with PMU, selected stakeholders and the UNDP Indonesia in terms of schedules and inputs.

The Gol, through the DGEEU/IMIDAP Project Management Unit (PMU), has further enhanced the implementation activities in its third year of implementation to address these gaps, namely to: (1) conclude the implementation of Demo sites, (2) set up the monitoring system, (3) enhance the productive use of electricity generated from microhydro, and (4) categorize capacity of local technical workshops and manufacturers in production and maintenance of microhydro components.

IMIDAP was planned to be operationally closed in December 2010 and therefore, a Final Review or otherwise known also as a Terminal Evaluation in GEF Monitoring System, has been undertaken in September 2010.

Subject to the decisions and completion acceptance of the current phase of the ten-year IMIDAP government initiative, the GoI is planning to formulate the second phase of the program based on the experience and directions established by the first phase.

2.1. Purpose of the Evaluation

The Monitoring and Evaluation (M&E) policy at the project level in UNDP/GEF has four objectives: i) to monitor and evaluate results and impacts; ii) to provide a basis for decision making on necessary amendments and improvements; iii) to promote accountability for resource use; and iv) to document, provide feedback on, and disseminate lessons learned. A mix of tools is used to ensure effective project M&E. These might be applied continuously throughout the lifetime of the project – e.g. periodic monitoring of indicators, or as specific time-bound exercises such as mid-term reviews, audit reports and final evaluations.

In accordance with UNDP/GEF M&E policies and procedures, all regular and medium-sized projects supported by the GEF should undergo a final evaluation upon completion of implementation. A final evaluation of a GEF-funded project (or previous phase) is required before a concept proposal for additional funding (or subsequent phases of the same project) can be considered for inclusion in a GEF work program. However, a final evaluation is not an appraisal or justifications of the follow-up phase.

Final evaluations are intended to assess the relevance, performance and success of the project. It looks at early signs of potential impact and sustainability of results, including the contribution to capacity development and the achievement of global environmental goals. It will also identify/document lessons learned and make recommendations that might improve design and implementation of other UNDP/GEF projects.

The UNDP Indonesia is initiating this evaluation to determine to what extent the project has achieved its objectives and has removed barriers to microhydro development and utilization in Indonesia. It is intended to analyze and assess the relevance, sustainability, impact and effectiveness of the strategies, project design, implementation methodologies and resource allocations that have been adopted for the purpose of achieving the objectives stated in the

project document.

2.2. Key Questions and Scope of the Evaluation

Following the Terms of Reference (TOR) for the task engagement as attached in **Annex A**, the evaluation involved analysis at two levels: component level and project level. On the component level, the following were key questions assessed:

- Whether there is effective relationship and communication between/among components so that data, information, lessons learned, best practices and outputs are shared efficiently, including cross-cutting issues.
- Whether the performance measurement indicators and targets used in the project monitoring system are specific, measurable, achievable, reasonable and time-bounded to achieve desired project outcomes.
- Whether the use of consultants has been successful in achieving component outputs.

On the project level, the project performance was assessed in terms of: (a.) Progress towards achievement of results, (b.) Factors affecting successful implementation and achievement of results, (c.) Project Management framework, and (d.) Strategic partnerships.

As also required by the TOR, the scope of the Final Review covered the entire UNDP/GEFfunded project and its components as well as the co-financed components of the project. The Final Review assessed the Project implementation taking into account the status of the project activities and outputs and the resource disbursements made up to September 30, 2010.

The detailed questions to guide the evaluation were provided in the Inception Report and Work Plan which was submitted beforehand as also listed in the TOR. These questions were all addressed in this Report.

2.3. Approach and Methodology

Considering the above-,mentioned requirements, the Final Review Inception Report and Work Plan were submitted on September 7, 2010 as partial compliance with the Terms of Reference of the Special Services Agreement (SSA) No. UNDP – 174/2010 dated August 4, 2020.

In summary, the following served as the plan of activities and expected outputs for the FR process:

- Start of Final Review (September 7)
- Data gathering on Project Accomplishment of Output and Outcomes and Financial Performance (September 7 to 28)
- Coordination and Work Plan Meeting (September 21)
- Interviews with Relevant Stakeholders (September 14 28)
- Project Site Visit to Province 1: West Java (September 16-18) and Province 2: Central Java (September 23-24)
- Presentation of Initial FR findings and recommendations and comments from PMU and UNDP (October 1)
- Submission of Draft FR Report incorporating comments during the presentation (October 10)
- Review and submission of comments by PMU and UNDP Indonesia (October 12 16)
- Finalization and Submission of Final Review Report (October 18 22)
- Contract Closure (October 25)

Interviews and focused group discussions were conducted with people concerned including the following:

- Coordination and Work Plan Meeting (September 21, pm) with DGEEU, PMU, UNDP Indonesia, other main stakeholders and FR Team for relevant information and data on accomplishments and implementation experience
- Interviews with Relevant Stakeholders (September 14 28) through schedules of meetings with selected participants and beneficiaries of IMIDAP and the FR Team as coordinated by PMU:
 - o DINAS ESDM, Bandung
 - Pusat Pengembangan dan Pemberdayaan Pendidik
 - Bidang Tenaga Pendidikan
 - o Bidang Mesin dan Teknik Industri
 - Technical Education and Development Center (TEDC)
 - ASEAN Hydropower Competence Center, Bandung
 - Master of Science in Technology for Microhydro Department, Gajah Mada University, Yogyakarta
 - DINAS ESDM, Klaten
 - BAPPENAS (National Development Planning Agency)
 - Ministry of Cooperative and Small and Medium Enterprises
 - Kementerian Pembangunan Daerah Tertinggal (Ministry for Disadvantaged Regions)
 - o Bank BRI
 - o BPPT
- Project Site Visits to (1) Gunung Halu Demo Site in West Bandung, West Java (September 16-18) and (2) Cokrotulung Demo Site, Klaten, Central Java (September 23-24) with the selected provincial governments to assess at the local level the project accomplishments and installation of systems developed by the project through data gathering and interviews with local implementors and beneficiaries.

The List of Attendees in all the meetings held is seen in Annex B.

The Evaluation Team used the IMIDAP Project Document and related project implementation reports and information generated by IMIDAP, including baseline data at the start of the project, and information generated by the IMIDAP Monitoring and Evaluation (M&E) system.

In assessing achievement of outputs and outcomes and the rating scheme used, the Evaluation Team used as reference *The GEF Monitoring and Evaluation Policy* Minimum Requirement 3 published in 2008. This policy, with relevant excerpts shown in **Annex C**, specifies that terminal evaluations will, at the minimum, assess the achievement of out puts and outcomes and provide ratings for targeted objectives and outcomes. The assessment of project results seeks to determine the extent to which the project objectives were achieved, or are expected to be achieved, and determine if the project has led to any other short- or long-term and positive or negative consequences. Each of the outputs and outcomes were rated according to the three criteria of relevance, efficiency and effectiveness.

The rating of performance in delivering the outputs and outcomes is done through a six-point rating scheme from Highly Satisfactory to Highly Unsatisfactory

3. THE IMIDAP AND ITS DEVELOPMENT CONTEXT

The Integrated Microhydro Development and Application Programme (IMIDAP) is a nationallyexecuted project funded by the Global Environmental Facility (GEF) with co-financing support from the Government of Indonesia (GoI) through the Directorate General Electricity and Energy Utilization (DGEEU), the United Nations Development Programme (UNDP) and the private sector in Indonesia. It aims to assist the GoI to accelerate microhydro development, and at the same time alleviate poverty in the areas endowed with microhydro resources and at the same time contribute to the reduction of greenhouse gases (GHG) emission. It also aims to expand Indonesia's energy options in its electrification program and bring economic development under a decentralized local development approach through the increased application of microhydro technology. IMIDAP hopes to further contribute to poverty alleviation by ensuring higher productivity for rural communities through more reliable and ready energy sources. IMIDAP will thus facilitate business opportunities for small and medium enterprises in the electricity supply industry and productive application of electricity.

IMIDAP integrates the different aspects of the microhydro development and application and is complementary to ongoing and planned renewable energy and rural electrification initiatives of GoI as indicated in its four (4) project components:

- a) Component 1 Microhydro Policy and Financing Program
- b) Component 2 Community-based Microhydro Development and Institutional Capacity Building Program
- c) Microhydro Technology Support Program
- d) Microhydro Application Program.

The overall goal of IMIDAP is the reduction of GHG emission from fossil-based power generation for the country's contribution to the global issue. This will be achieved by accelerating the development of microhydro resources and optimization of their utilization by removing the identified barriers during project formulation in 2003.

The overal objetives of the IMIDAP are :

- 1) to enhance interest among the Indonesian private sector in the microhydro power business
- 2) to increase the number of community-based microhydro projects as a result of effective institutional capacity building
- 3) to improve the availability, and local knowledge, of microhydro technology applications in the potential locations of microhydro development, and
- 4) to increase private sector and rural community joint implementation of microhydro projects.

In line with the above project conceptual framework which is discussed in full detail in the IMIDAP ProDoc, the Project Management structure is illustrated diagrammatically in **Annex D** within the context of a nationally-executed project.

IMIDAP Management structure is headed by the National Project Manager who reports to a National Project Director and a Deputy National Project Director. The project policy making and decision making is done by the Project Board composed of the DJLPE, BAPPENAS and UNDP which meets quarterly. The Board is assisted by the Steering Committee which recommends actions and matters for decision. It acts also as the venue for harmonizing inter-ministry or inter-department policies and directions and resolving issues and barriers affecting the project and its delivery of outputs and outcomes. The Project Manager from the UNDP Indonesia and the UNDP GEF Regional Coordinator in Bangkok provides the technical support and adaptive management to comply with UNDP and GEF project implementation and monitoring standards.

4. FINDINGS AND CONCLUSIONS

4.1. Project Formulation

The ten-year IMIDAP logical framework and design is still relevant in the light of the project Phase I experience and achievements. With the completion of Phase I activities resulting to the abovementioned outputs and outcomes, the targets and description of activities under each component and sets of indicators for the remaining phases of the program may have to be updated. A logical framework review and analysis to align Phase II with new government thrusts and priorities is necessary as basis for target setting and budgeting.

There was no very significant change in the ProDoc project logical framework and strategies since the project was signed in August 2007 except for the financial schemes to support the program. The IMIDAP Project Board decided that the project would not establish the Microhydro Support Fund because some lending window facilities have started since 2007 in various government financing institutions and commercial banks. The project decided to coordinate with these Banks and strengthen existing mechanisms and other existing bank lending facilities and microfinance schemes. IMIDAP also focuses on providing support to rural communities in increasing their capacities to apply and utilize the existing funding windows.

The IMIDAP is well placed and integrated within the national government development strategies, such as community development, poverty reduction, etc., and related global development programs to which the project implementation should align.

The IMIDAP's purpose and objectives remain valid and relevant. However, there are items or components in the project design need to be reviewed and updated.

4.2. Implementation

4.2.1. Assessment of Processes Affecting Attainment of Project Results

- a. Preparation and readiness
 - 1. The GoI, through the DGEEU was fully prepared and ready to implement the IMIDAP as approved. At the beginning, the Project's objectives and components were the result of extensive consultation during the Logical Framework Analysis at the PDF A and PDF B stages. In order to ensure that project outputs and outcomes will be realized within the ten-year timeframe, the project was decided to be divided into three phases. The first phase was designated to be more of a capacity building, barrier removal and preparation for demonstration of typical cases of microhydro applications for three years. Depending on the progress of Phase I, the focus of the second phase would be commercialization and replication of successful results of the microhydro technology development and putting in place the required monitoring and evaluation system to keep track of the progress of the integrated microhydro program in achieving the desired economic impact in the local areas endowed with microhydro resources. This plan was clear with the initial Project implementing team who were also involved in the project definition and inception after approval which took around two years after PIMS entry.
 - 2. Similarly, the Partnership Strategy formulation considered the capacities of the executing institution that is the DGEEU and its co-financing counterparts in which the roles and responsibilities were negotiated beforehand.
 - 3. The co-financing counterpart resources were identified as required and commitment letters were solicited to affirm the project support and management arrangements during project entry.

- b. Country ownership/drivenness
 - 1. The project implementation and achievement of results proceeded Satisfactorily and according to plan. There are no outstanding issues, obstacles, bottlenecks, etc. on the consumer, government or private sector involved in the microhydro industry as a whole that affected the successful implementation and achievement of IMIDAP results.
 - 2. The IMIDAP project coverage was considered a priority development area by the government during the proposal stage. In the actual implementation, it became the center-piece of Indonesia's rural electrification and economic development under a decentralization policy which gave provincial and district governments the autonomy and responsibility to implement their own projects, including community-based programs using microhydro generated power.
 - 3. The project outcomes have started to contribute to national development priorities and plans in terms of energy generation for electrification and livelihood opportunities. However, the untapped potential contribution is still huge to serve as motivation to realize higher levels of microhydro power generation capacity in the years to come.
 - 4. There is sufficient reason to believe that participating relevant country representatives from government, private and civil society have been actively involved in the project and are significantly motivated to carry on initiatives which were started in the present phase of the project through the coming years along the directions initiated by DGEEU through IMIDAP.
 - 5. The Government of Indonesia (as shown by the national, provincial and district government units and agencies currently involved in IMIDAP) and the private sector have progressively complied with their co-financing commitment to the project in levels that surpassed ProDoc commitments.
 - The Government of Indonesia has approved the following policies, rules and regulations (details in Annex E) in line with the project's objectives and the Government's Five Year Plans:
 - a. Undang-undang/Law No. 30/2007
 - b. Undang-undang/Law No. 30/2009
 - c. Peraturan Menteri/Ministry Order No. 31/2009
 - d. Peraturan Daerah/District Regulation of Banjarnegara No. 10/2008
 - e. Peraturan Desa/Village Regulation No.7/2008
 - 7. IMIDAP has endorsed to the Gol a Microhydro Roadmap that presents the desired directions and goals (for the 2010 2025). Once approved, these policy thrusts will become the basis for developing the local governments' detailed implementing plans that can be integrated into the National Integrated Microhydro Development and Application Plan as envisioned in IMIDAP Phase I.
 - 8. Gol, through BAPPENAS, has endorsed and allocation of around Ten Trillion Rupiahs (equivalent to around USD 1.0 billion for the next five years for renewable energy projects of which a major portion could be intended for microhydro-based community development. Implementation of this will be under the responsibility of the provincial and district governments to use under the Gol local decentralization policy. Following the significant progress and commitment on the IMIDAP as Gol's centerpiece program on microhydro applications, the government now looks at the sustainability of the Phase I initiatives into the commercialization and rapid application of microhydro in improving access to energy and uplifting the economic situation in the rural areas. Gol plans to fine tune the next steps and develop the Phase II of the IMIDAP which has been a national program.

- 9. Gol, through different Ministries and agencies, have been involved in socio-economic development activities using microhydro power generation as the major tool in the process. This only illustrate that the microhydro has been accepted fully by the parties involved. For example, the Ministry for Development of Disadvantaged Regions has been allocating regular national budget for providing microhydros in the disadvantaged districts as part of economic support. Starting 2006, the Ministry has installed 53 units and an additional of 14 units scheduled in 2010-2011. However, there is need to have a means of coordinating activities and harmonizing policies and guidelines so as not to confuse the villages and pursue more effectively an integrated development approach.
- c. Stakeholder involvement
 - 1. Stakeholder participation in both project implementation and decision-making has been highly satisfactory. The establishments of partnerships and collaborative relationships developed by IMIDAP on the national, provincial, and district level have been vital and relevant in achieving the main objectives of the project.
 - 2. Most of the stakeholders who were identified during the Prodoc formulation are actually involved in the project during the implementation. Other new players were included as additional relevant stakeholders who became additional co-financing sources and active partners in information sharing and consultation. Altogether, the stakeholders were involved in the different aspects of the project implementation and promoting the objectives and activities of the project. IMIDAP has a very impressive record in leveraging additional resources that exceeded ProDoc 'expectations.
 - IMIDAP was able to employ a matrix of stakeholders and participants composed of appropriate government entities, nongovernmental organizations, community groups, private sector entities, local governments, and academic institutions versus the skills, experience, and knowledge of each in the design, implementation, and evaluation of project activities. (details in Annex F).
 - 4. Through the Project Board membership among the major stakeholders, IMIDAP has been effective in rendering project decisions, harmonization of policies and barrier removal which favorably resulted to the desired outcomes at the same time contributing valuable information and other resources towards the project success.
- d. Timeliness of project outcomes and sustainability
 - 1. The project was originally planned to be completed on June 2010 or 3 years as designed for Phase I of the ten-year program of the Gol. The project is expected to be completed by December 31, 2010. It should be noted that while the project was formally approved on August 2007 and initial fund release was made on August 2007, the actual official start of the project implementation was on November 2007. This means that the start was delayed by at least 3 months.
 - 2. The delay, however did not materially affect project outcomes and sustainability albeit strengthened the capacity building of different players involved. The installation of new systems and coordinating mechanisms in the provincial and district levels in line with the decision by the national government to decentralize decision making and implementation of localized programs and projects needed more time for adaptation to new rules and procedures. The change process nevertheless brought about highly positive effects because the local governments believed that more relevant progress and economic development vis-à-vis their needs are now in their hands and therefore the renewed responsibility and authority affirmed their critical role in decision making, implementation and monitoring towards more committed and sustainable arrangements.

- e. UNDP/GEF supervision and backstopping
 - The UNDP/GEF Coordinator from the Regional Office in Bangkok and the UNDP Indonesia Program Manager have been very actively involved and highly effective in providing assistance and backstopping to IMIDAP PMU, DGEEU and the Project Board which contributed greatly to the success of the project. This has involved prompt discussion and identification of problems and continuous pro-active/adaptive management of the identified project risks and occasional administrative concerns to guide this nationally-executed project.
 - Necessary intervention and quality assistance and advice to the PMO have ensured the project compliance with UNDP/GEF policies, directions and monitoring and evaluation of progress.
- f. Project management (adaptive management framework)
 - The project management arrangements are found adequate and appropriate for the needs of IMIDAP Phase I. The results-based and risk-based project management system using the ATLAS can be continued to be used. The project has been managed very effectively at all levels. The regular UNDP/GEF Annual Project Report/Project Implementation Review (APR/PIR), Annual Work and Financial Plans, quarterly reporting and financial reviews effectively aid management, implementation and administrative requirements.
 - 2. At present, six of the 26 provinces have active project activities since they are directly included in IMIDAP's work program and are designed to be the launching pad and technology demonstration entry points particularly in productive use application of microhydro generated power. For these six provinces, technical assistance and support from project partners and stakeholders are considered appropriate, adequate and timely. The rest of the microhydro-endowed provinces will learn from the experiences of these six provinces and could be the subject of the succeeding phases of IMIDAP.
 - 3. The use of the project logical framework with its indicators and targets from which the work plans are derived are effective as management tools and in meeting with UNDP-GEF requirements in planning and reporting. This project log frame and indicators need to be updated and new targets placed considering Gol priorities and goals.
 - 4. The use of electronic information and communication technologies is considered very vital and has served effectively in the implementation and management of the project. The internet-based monitoring and reporting of microhydro power installation capacities and profiles of the project sites in all provinces and districts in Indonesia is a major accomplishment of the IMIDAP in its <u>www.microhydro.net</u>. It provides a platform for presenting the IMIDAP program geographically and for laying out the data gathering and reporting in the various aspects of the IMIDAP as an integrated government program. The system will become more relevant and effective for project management purposes as more data are placed in the databases and actual power generation of each microhydro plant is reported on-line from the DINAS level At the input level, the DINAS is suggested to collect data from the different micro-hydro-supported villages. Actual operational data is fed regularly to the DINAS, which is officially designated to monitor the power plants under its jurisdiction.
 - 5. The APR/PIR process has helped very effectively in monitoring and evaluating the project implementation and achievement of results. Its preparation and review/approval have basically involved the PMO, the DGEEU and UNDP Indonesia as part of the

process. The importance of consciously reviewing accuracy of data and rendering comments in the APR/PIR by the management team and major stakeholders within the preparation timetable will continue to be realized as part of an active adaptive management approach.

- g. Strategic partnerships (project positioning and leveraging)
 - The major IMIDAP project partners and their other similar engagements in their regular functions in the microhydro program (and related areas) implementation are strategically and optimally positioned and effectively leveraged to achieve maximum effect of the microhydro program (within the context of national RE program) objectives for the country. The partnership is described as follows illustrating the leveraging of their inputs to IMIDAP into a bigger plane of responsibility. Annex F presents an update of the present partnership arrangement and the possible participation in the next stages of IMIDAP.
 - 2. The partnership scheme is made more pronounced as major project partners, stakeholders and co-financing institutions compose the IMIDAP Project Board and the working committees. Direct participation in the decision making and policy formulation process under the leadership of DGEEU has been very effective and efficient. Project information and progress of activities are adequately disseminated to current project partners and stakeholders.
 - 3. There are opportunities for stronger collaboration and substantive partnerships to enhance the project's achievement of results and outcomes in Phase II:
 - Ministry of Cooperatives cooperative development and capacity building
 - Ministry of Industry & BPPT microhydro facilities manufacturing program development, commercialization and quality assurance
 - Ministry for Disadvantaged Regions integration with socio/economic development
 - State Universities microhydro and related field human resources needs analysis and strategic planning; and training program development, implementation, evaluation and sustainability at all levels
 - Accreditation and Certifying Agency certification and professionalization of microhydro professionals, technical resource persons, consultants, operators and other fields of expertise.
 - Relevant Bank Association financial packages (loan guarantee funds, Micro finance, etc. for manufacturing of microhydro and affiliated equipment and business for productive uses.
- h. Project sub-contractors and delivery of outputs

All planned sub-contracts and professional consultancy services were completed and their outputs were presented to the Steering Committee. Quality assurance checks with the respective TORs were carried out. Payment of the fees was completed for contracts that were accepted with satisfactory performance. **Annex G** presents a summary of status of delivery of outputs.

4.3. Results and Performance Ratings

4.3.1. Progress towards achievement of results (internal and within project's control)

IMIDAP achieved all of its outputs in the final year of implementation despite the prevailing internal and external challenges and difficulties experienced in the first 2 to 3 years. Project management has greatly improved since the mid-term evaluation wherein the gaps and unaccomplished results were identified with reference to expected results and outputs. The most important challenges are mentioned in the MTR, which included sustaining commitment among project participants in the microhydro demo sites, changes in project organization, establishing and operating the monitoring and evaluation system, and completion of co-financing commitments. The Evaluation Team believes that the Project Management has responded adequately to these challenges, although some of these challenges have delayed or made some degree of complication to the project implementation somehow. Nevertheless, none of these has caused any major disruption to the project.

The regular APR/PIRs have greatly helped as a management tool in defining and tracking the progress alongside the risks identified in the design and in the course of implementation.

The DGEEU/PMU in close coordination with the Project Board has taken strong leadership and directing role in the project and had very effectively undertaken the implementation of the project produce all the outputs to complete the IMIDAP Phase I commitments.

Coordination among the National Project Director, National Project Manager, the PMU Manager, CTA, local government units involved and the Project Board have been highly satisfactory. Requirements for monitoring and evaluation for project management and UNDP/GEF reporting have been fully met. The UNDP Country Office had been very effective and efficient in its support to the project management in terms of regular meetings and follow-through to discuss project progress and delivery rate and assistance in related decision making in this nationally-executed project. The UNDP GEF Regional Coordinator has provided excellent guidance and technical assistance to ensure that the project will achieve its goals and objectives through adaptive management and sharing of international experience in similar projects consistent with UNDP and GEF standards.

□ IMIDAP End-of-Project Achievement of Outputs versus Targets

The following will summarize the key accomplishments in implementation of the project activities and plans.

Major Accomplishments

Component 1 - Microhydro Policy and Financing Program

- 1. The government has passed pertinent policies and guidelines in the development of microhydro at the national and local levels. These government policies are significant improvement over existing legislations and directives. They have been approved and disseminated for implementation up to the local levels as they are incorporated in local area socio-economic development plans. The Microhydro Development Road Map covering ten (10) areas was completed and endorsed for ratification by the Ministry of Energy which will provide the basis for the development of an integrated microhydro development and application plan. The number of project proposals for power generation and productive uses of microhydro increased significantly as a manifestation of interest in microhydro.
- 2. IMIDAP supported the passage of the Ministry Law No 31/2009 about energy pricing

(2009). Guidelines of regulations had been made and disseminated. Present price policy provides for a higher fixed minimum which is favorable to microhydro developers.

- 3. Instead of the original plan to establish a Microhydro Support Fund, the IMIDAP made use of existing banking windows for financing microhydro projects as applied to similar technology projects. The funding scheme and guidelines developed by the project was disseminated to all the banks interested in microhydro development using prevailing bank practices and policies. There are 6 banks involved in microhydro power plant investment and 41 are involved in microfinance of small and medium scale projects including microhydro-based productive applications.
- 4. Resulting from improved policy and financing support, the monitoring of microhydro projects reports that there were 395 off-grid applicants and 68 on-grid applications for financing that were evaluated. There were 224 off-grid and 10 on-grid microhydro projects which availed of bank and government financing.
- 5. Production and sale of microhydro electricity resulted to cumulative 904 GWh and 740 GWh, respectively, over the three-year period. The share of microhydro in the power for electrification supply mix of the country increased from nil to 0.4 %.

Component 2 - Community-based Microhydro Development and Institutional Capacity Building Program

- 1. The institutional framework and support systems for microhydro application in electrification and community-based application have been strengthened at the national and district levels. The DGEEU and the Mini/Microhydro Clearing House (MMCH) have been very important institutional support in coordination with various government agencies, local government units and the private sector.
- 2. The village level organizations were also provided training and educational support to increase awareness and enhance capacity in developing, implementing and operating projects in combination with productive uses.
- 3. The microhydro training program consisting of various training courses and modules have started to generate informed and skilled manpower to man the program at all levels, including local engineering consultants, policy makers, operators, developers, private and government financial institutions, cooperatives and district officials, private entrepreneurs, certifiers, and general staff.
- 4. The microhydro service providers and manufacturers have been classified and registered and entered in the database for easy access and deployment. Developed the guidelines for registration of service providers for 3 categories in cooperation with TEDC (Training Education and Development Center for MH, West Java. Approved June 2010 by the Project Board. 28 in various categories were registered as of Sept 2010. 41 other candidates are still being assessed:
 - Category A- Well Established with experience to produce equipment, manpower and tools for maintenance, can provide training to the new service providers
 - Category B Operational but has a potential to develop toward a Category A in at least 5 years
 - Category C Provider has basic knowledge to produce equipment but is not yet rated on efficiency, potential fto ve developed for Category B in 5 years
- 5. An integrated microhydro database and information exchange system through a website: <u>www.mikrohidro.net</u> is now fully functioning and was started to be filled up with relevant data and monitoring tools and linked for wider and easy access. The users of these databases have found the usefulness of these information repository and access systems to help them in increasing awareness and in their project preparation and

evaluation.

6. IMIDAP published knowledge products such as Best Practices Manual, project profiles, newsletters, information packages and abstracts of microhydro documents and materials.

Component 3 - Microhydro Technology Support Program

- To provide adequate and effective microhydro technology support system, the Mini-Microhydro Clearing House (MMCH) was strengthened and operated as "One-Stop Shop" for assisting applicants in coordination with financial outlet institutions. It consists of modules including services, content (knowledge sharing, certification, demosite, market activity, etc., data on potential of microhydro, manufacture, productive uses and M & E application. There were 3,071 satisfied customers according to the Internet Protocol with authentication by MMCH compare to what was targeted at 200. There were 78 applications received and 12 approved by authorities.
- 2. Financial assistance arrangements were made for 6 demonstration projects ot of possible 10 sites. MMCH also monitored and evaluated operational and financial performance of existing microhydro power plants and stored data in the database and organized for profiling of each site.
- 3. IMIDAP developed and established system for standardization and improvement of performance for microhydro power plant equipment and components and published compendium of best practices and lessons learned in different microhydro systems manufacturing and product performance in Indonesia and other countries.
- 4. The feasibility study on the standardization of microhydro was completed February 2010. Results of the study showed that the manufacturers are not very receptive to full pledged standardization because of cost implication of elevated levels of standards in production which may not be acceptable and absorbed by the market. A standardization guideline on microhydro was made instead.
- 5. IMIDAP initiated integrating the formulation of an R&D program on microhydro. There are other sources of R&D resources relevant to microhydro technology. For the country, it was estimated on the overall that around IDR 1.2 billion (USD 120,000) was allocated for R&D in microhydro. This represents 18% share out of the total IDR 5.3 billion (USD 530,000) R&D budget for RE. Around IDR 800 million has been released for use this year.
- 6. The methodology for microhydro energy resource assessment was completed and used for confirming the resource potentials in different sites. The Manual was completed and published in datapotensi.mikrohidro.net. The Manual on data submission, formats and reports have been issued. 652 MW were confirmed out of initial potential of 1,000 MW. ON the other hand, 935 MW potential was identified to be the indicative figure for planning purposes as a result of IMIDAP/MMCH microhydro data confirmation.
- 7. The data map in the database system using Google map which presents microhydro potential resources and existing capacity in the different provinces, regions, districts and villages was completed and updated on-line.
- 8. A microhydro resource database was completed and made accessible by the public and stakeholders via Internet. A user-guide manual has been published and disseminated in training, provinces through their Distributed Content Agent (DCA) and other activities of IMIDAP and DGEEU. IMIDAP completed for three (3) DGEEU staff who were directly involved in microhydro resource assessment and provided manuals and guidelines on how to assess, operate and manage the microhydro resources database system.

Component 4 – Microhydro Application Program

- The design and implementation plans for the microhydro demonstration projects were completed. Diagrams of the six (6) demonstrations sites are seen in Annex H. Power plant facilities for 6 sites already existed prior to IMIDAP demonstration activities. These were chosen to showcase new innovations and initiatives of the project by demonstrating new facilities such as productive uses, on-grid connections and community-based programs. Productive use equipments for six (6) sites have been purchased, installed and operating. IMIDAP also provided technical assistance in the operation and maintenance of the microhydro as well as the productive use facilities.
- 2. Favorable purchase price for microhydro electricity and special pricing arrangement with national utility was confirmed and endorsed as policy initially for demo projects. For on-grid: Ministry Order NO. 31/2009. In one site, in Salido Kecil is already selling power and has requested for availment of the new pricing policy based on the Ministry Order NO. 31/2009.For formula for payment arrangement in off-grid sites, agreement through consultation among microhydro plant management and households. For on-grid, Ministry Order NO. 31/2009, Salido Kecil is already selling power and has requested for availment of the new pricing policy based on the Ministry Order NO. 31/2009. For formula for payment and households. For on-grid, Ministry Order NO. 31/2009, Salido Kecil is already selling power and has requested for availment of the new pricing policy based on the Ministry Order NO. 31/2009. For formula for payment arrangement in off-grid sites, agreement through consultation among microhydro plant management through consultation among microhydro plant management through consultation among microhydro plant management and households.
- 3. The Gol approved the written agreement with local governments as the 6 sites are in various stages of formalization of official documents. Activities, nevertheless, proceeded as planned. Four MOAs were approved, while the two others wait for further documentation.
- 4. Baseline data and demand assessment of microhydro demonstration projects were started to be gathered and inputted in mikrohidro.net database for demosites.
- 5. The project has ongoing data gathering for performance of other microhydro projects for comparison with demo sites. Depending on the results of evaluation in Activity 4.6.1 and 4.6.2 to be used as basis for the updating of policy and guidelines.
- 6. Actual microhydro capacity added to the power mix is 365.9 MW. This is more than the 53 MW additional that was projected in end of Phase II n the ProDoc.
- The total amount of investment for microhydro projects is estimated to reach USD 110.2 million in 2008-2009. This is composed of funds from the National Government (USD 13.06 million, Local Government (USD 13.80 million) and Private Sector (USD 64.32 million.

Summary of Assessment and Ratings in Major Accomplishments in Project Outputs

Table 1 presents the summary of project results with the detailed assessment of the project's outputs vis-à-vis the targets and rating on relevance, efficiency and effectiveness. Details are seen in **Annex I**.

Component/Activity/Performance Indicator	Rating of Performance			
component/activity/Performance indicator	Relevance	Efficiency	Effectiveness	
Component 1- Microhydro Policy and Financing Program				
Activity 1.1.Comprehensive Policy on Microhydro Development and Application	HS	S	MS (An Integrated Plan still to be formulated and	

Table 1. IMIDAP Achievement of Outputs and Performance Ratings

Component/Activity/Devformence Indicator	Rating of Performance			
Component/Activity/Performance Indicator	Relevance	Efficiency	Effectiveness	
			approved)	
Activity 1.2. Development of localized microhydro policy and implementing guidelines	HS	S	S	
Activity 1.3. Microhydro Energy Pricing Study		0	0	
Activity 1.4. Establishment of Microhydro Support Fund (MSF)	5	5	5	
Activity 1.5. Establishment of MSF Financing and Fund Management Schemes	S	S	MS (Used existing bank financing windows)	
Activity 1.6. Monitoring and Evaluation of MSF Project Financing Assistance Program	HS	S	S	
Activity 1.7. Monitoring and Evaluation of Microhydro Policy Implementation	HS	S	HS	
Component 2 - Community-based Microhydro Development and Institutional Capacity Building Program				
Activity 2.1. Creation of Institutional Structure for Microhydro Development	S	S	S	
Activity 2.2.Capacity building for community- based microhydro development	S	S	S	
2.2.1 Training Program on Community-Based Microhydro Project Identification and Implementation	S	S	S	
2.2.2.Training Program on Project Development and Financing of Microhydro-Based Development	HS	S	HS	
2.2.3. Technical Capacity Building for Microhydro Operators	HS	S	HS	
2.2.4 Sustainable microhydro training program	S	S	S	
2.2.5Training program on the design, feasibility evaluation, operation and maintenance management of microhydro power plants implemented	S	S	S	
2.2.6 Sustainability plan for training programs approved	S	S	S	
Activity 2.3. Assessment of Capabilities of Existing Microhydro Service Providers	HS	S	HS	
Activity 2.4 Integrated microhydro information exchange service	HS	S	HS	
Component 2				
Component 3 - Microhydro Technology Support Program				
Activity 3.1.Strengthening of the Mini-Micro Hydro Clearing House	HS	S	HS	
Activity 3.2. Assessment of Potential Productive Uses of the Microhydro Resource	S	S	S	
Activity 3.3. Financial Assistance Arrangements for Demonstration Projects	S	S	S	
Activity 3.4. Evaluation of the Operating and Financial Performance and Identification of Potential Improvements in Existing Microhydro Power Plants	HS	S	HS	
Activity 3.5 Assessment of Technical Reliability and Viability of Local Manufacturers of Microhydro Power Generation Equipment/Components	S	S	S	
Activity 3.6. Program for Standardization and Improvement of Microhydro Power Plant Equipment and Component	S	S	S	
Activity 3.7. Sustainable Microhydro Research and Development Program	S	S	S	
Activity 3.8. Microhydro Resources and Potentials Assessment and Database Development	HS	S	HS	
Activity 3.9. Designs/Plans for Installation and Implementation of the Microhydro Demonstration Projects	S	S	S	
Activity 3.10. Technical Support for Hardware Installation and Operation for microhydro facilities	S	S	S	

Component/Activity/Performance Indicator	Rating of Performance		
component/activity/Performance indicator	Relevance	Efficiency	Effectiveness
Component 3	S	S	S
Component 4 – Microhydro Application Program			
Activity 4.1. Promotion of Microhydro Delivery Mechanism in Demonstration Schemes	HS	S	HS
Activity 4.2 Microhydro-supported productive activities development	S	S	S
Activity 4.3. Barrier Removal Activities for Demonstration Scheme Implementation	HS	S	S
Activity 4.4. Demonstration of productive use applications	S	S	S
Activity 4.5. Baseline data establishment for the demonstration project sites	HS	S	S
Activity 4.6 Monitoring and Evaluation of Performance of each Microhydro Demonstration Project	S	S	S
Activity 4.7. Sustainable Follow-Up Program for Microhydro Development	S	S	S
Component 4	S	S	S
Overall Project			S

Note: Please refer to **Annex C** on rating scheme.

□ IMIDAP End-of-Project Outcome Metrics versus Targets

Major Accomplishments

- 1. The cumulative amount of GHG reduced in CO2 equivalent is 621.8 kilotons or 2 times the target value of 303.9 kilotons. It is noted that the actual figure consists of direct and indirect components using the updated GEF methodology.
- 2. The annual growth of installed microhydro capacity has improved very significantly exceeding targeted values in off-grid at 37.2 % in off-grid sites compared to 20 % target. The growth of 7.1 % annually for on-grid sites, however, is lower than expected rate at 10%. This was affected by the tariff policy which was viewed by developers as not yet very favorable for on-grid cases.
- 3. The number of projects for off-grid microhydro at 97 sites exceeded significantly the target values of 79. However, for on-grid, the number will still be verified for comparison.
- 4. The rate of increase in demand for microhydro electricity is estimated at 18 % compared to projected 16 % which manifests increased interest in accessing less expensive microhydro power.
- 5. The projected cumulative micro-hydro electricity used by small-medium enterprises at 52 GWh was not met by the current estimated usage at 29.2 GWh. This means that there is still a vast potential that can be tapped for small and medium-scale applications of microhydro.
- 6. The number of households electrified using microhydro increased at an estimated 0.8 million household compared to the projected level of 0.4 million households.
- 7. The annual production and sales of microhydro electricity increased significantly at 182.6 GWh Produced: and 169 GWh sold. The projected figures were 80 GWh and 70 GWh, respectively.

Summary of Assessment and Ratings in Accomplishment of Project Outcomes

Table 2 presents assessment of projects outcomes and details are presented in Annex J. Theoutcome metrics are those used in the ProDoc.

	Baseline	Target as of End of Project (EOP) - Phase I	Actual Achievement for Jan 2008 - Sept 2010	Relevance	Efficiency	Effective ness
Goal: Reduction of GHG	emissions from fos	sil fuel-based powe	er generation			
Cumulative amount of GHG reduced in kilotons of CO ₂	15	303.9 (reviewed using updated methodology)	621.8	HS	S	HS
and optimization of their	utilization of the de	evelopment of micro	ohydro resources			
 Ave. % annual growth of installed micro hydro power generation capacity in the country for on-grid and off-grid applications 	 On-grid: 5% (1994-2004) Off-grid: 7% (1994-2004) 	 On-grid: 10% avg. Off-grid: 20% avg 	 On-grid: 7.1% Off-grid: 37.27%* 	HS	S	HS
 Ave. % annual growth of installed microhydro power generation capacity in the country for electricity and non- electricity applications 	Ave. annual growth rate = 5.2% (1994- 2004)	 For power applications: average 16%; For non- power applications: average 16%. 	 Power: 37.5% Non-power: 37.5% 	HS	S	HS
Number of projects off-grid and on-grid (cumulative)	No data	off-grid: 79on-grid: 80	 Off Grid: 97 On Grid: 10 	S	S	S
 Ave. percent increase in electricity demand in the areas served by microhydro power 	No monitoring)	16% growth	18%	S	S	S
Cumulative micro- hydro electricity used by small- medium enterprises	No data	52 GWh	29.2 GWh	MS	MS	MS
Cumulative number of community- based microhydro projects	No data	50 by Year 3	133	HS	HS	HS
 Number of households electrified using microhydro 	No data	0.4 million HH by Year 3	0.869 million HH	HS	HS	HS
Annual production and sales of microhydro electricity	20 GWh (2006)	Produced: 80 MWh/year Sold: 70 MWh/year	Produced: 182.6 GWh Sold: 169 GWh	S	S	S
Overall Rating				I HS	HS	HS

Table 2. Project Outcome Metrics and Ratings

4.3.2. Factors affecting successful implementation and achievement of results (beyond the Project's immediate control or project-design factors that influence outcomes and results)

The project implementation and achievement of results is proceeding Highly Satisfactorily and according to plan. There are no outstanding issues, obstacles, bottlenecks, etc. on the consumer, government or private sector involved in the microhydro industry as a whole that could affect the successful implementation and achievement of IMIDAP results.

The broader renewable energy policy environment, of which the microhydro energy is a big part, was brought about by new government laws, regulations, policy guidelines and government priorities as influenced directly and indirectly by the IMIDAP acitivites. Among the government issuances (details in **Annex E**) are the following:

- 1. Undang-undang/Law No. 30/2007 Energy management by considering rationality, justice, sustainable, poverty elevation, environment, which self independent
- 2. Undang-undang/Law No. 30/2009 Ensuring the availability of electricity in sufficient quantity, quality, and reasonable price in order to improve the welfare and prosperity of the people fairly and equitably and to realize sustainable development
- 3. Peraturan Menteri/Ministry Order No. 31/2009 Electricity Pricing by PLN from power unit with new renewable energy sources
- 4. Peraturan Daerah/District Regulation of Banjarnegara No. 10/2008 Local Electricity Business Management
- 5. Peraturan Desa/Village Regulation No.7/2008 Micro Hydro Management in Detubela Village

These Gol initiatives do not only make it conducive to achieving expected IMIDAP results but they also manifest the government's serious commitment and drivenness to ppursue an integrated microhydro development and application program for the country.

Local government participation and initiatives in selected provinces with direct participation in IMIDAP are Highly Satisfactory. The provincial and district governments have manifested very keen interest in promoting and applying microhydro technology in their local development plans. Their local actions consist of alignment to national directives and priorities. For instance, Item 4 and 5 are local policies and regulations issued as localized implementation guidelines to facilitate faster employment of microhydro technology in their areas. The local governments also invested in the equipment and infrastructures as part of the co-financing commitments more than the expected participation conceived in the ProDoc.

4.4. Project Sustainability

The Final Review shows that IMIDAP has been relevant and important to Indonesia. Project ownership and country drivenness in all components and accomplishments is appreciably strong. Sustainability of the project has likewise been assured by the issuances of policies and guidelines at the national and local levels. The institutional support to the program has also been emphasized by the recent establishment of a new directorate for renewable energy that provides new impetus to the acceleration of renewable energy resources of the country, including microhydro.

The response and active participation of the local government units have been very encouraging considering that the microhydro resources provide a new economic resource in providing access to low cost energy and opportunities for livelihood development in the local areas.

The enhanced capacity to carry out the program in the technical, financial, economic and political aspects will help the program as it increase its coverage and impact in the coming years.

The private sector has demonstrated very positive response to the program not only in their interest but also in terms of putting resources that will benefit the program in the long term.

The training and education program, however, need to be strengthened in the aspect of programmatic-approach and institutionalization of the administrative and M&E to render long-drawn impacts and outcomes.

Ratings on Sustainability of Project Outcomes

The assessment of the sustainability of project outcomes is shown in **Table 3** following the *GEF Monitoring and Evaluation Policy* as described in **Annex C**, as the likelihood of sustainability of outcomes at project termination. Sustainability is understood as the likelihood of continued benefits after the current phase of the GEF project ends. The assessment is done across the financial, socio-political, institutional framework and governance and environmental dimensions of risks. These are risk factors because they are beyond the direct control of project management.

Sustainability Dimension	Outcomes	Rating
Financial Resources	Enhance stakeholder awareness and willingness to support in co-financing	Likely
	Higher quality of feasibility studies to generate support by stakeholders and banking institutions	Moderately likely
	Demonstration of technical and operational viability to enhance risk ratings to acceptable levels	Moderately unlikely
	Increased knowledge of the long-term benefits of microhydro and its application	Likely
	Increased synergism at the community level to optimize resources and benefits	Moderately likely
	Enhanced networking of key industry players to support further technology development and commercialization	Likely
Socio-political	Enhanced stakeholder awareness and willingness to support promotion and policy implementation at the local level	Likely
	Relevant policy issuances at the national and local levels	Likely
	Improved articulation of microhydro policy thrusts in a road map	Moderately Likely
	Stronger information networking and institutional linkages	Moderately likely
	Increased awareness on community-based socio-political aspects of microhydro applications	Likely
Institutional Framework and Governance	Enhance stakeholder awareness and willingness to support microhydro applications in local area development plans	Likely
	Demonstration of technical and operational viability to develop community capacity to manage and operate small microhydro businesses	Moderately unlikely
	Stronger information networking and institutional linkages	Likely
	Increased institutional and human resource capacities	Moderately likely
	Relevant localized guidelines and implementing plans	Moderately likely
	Establishment and enhanced appreciation of M&E systems for microhydro resources development, exploitation and impact monitoring/evaluation	Moderately likely

Table 3. Assessment Ratings on Sustainability of Project Outcomes

Sustainability Dimension	Outcomes	Rating
Environmental	Enhanced stakeholder and public awareness of global and local environmental benefits microhydro and its applications	Likely
	Enhanced appreciation of integrated community-based development	Likely
	Demonstration of technical and operational requirements to enhance environmental benefits of microhydro	Moderately unlikely
	Improved formulation of local development plans to incorporate environmental requirements and benefits of microhydro	Moderately likely

As can be deduced from the above table, those factors that are rated *Moderately Likely* and *Moderately Unlikely* present sustainability risks that need to be addressed by follow-through activities in order that the outcomes and benefits that were initially derived from the IMIDAP Phase I will be sustained. The likelihood that some financial and other resources to sustain the project outcome and benefits after Phase I is Likely. Already during the course of project implementation, additional funds were raised. More resources are needed to be mobilized to increase further the benefits derived from the microhydro program.

4.5. Financial Assessment

The financial arrangements for the project turned out to be very successful. This shows the highly committed and country-driven program. Gol and all the partners have a Highly Satisfactory performance and very remarkable achievement in mobilizing support and in leveraging the GEF/UNDP inputs.

The Gol including the local governments provided USD 110.26 million in cash inputs and an estimated USD 0.282 million of in-kind support (salaries of government personnel, office space, transportation, and other inputs. The total co-financing mobilized is almost 6 times the original promised co-financing of USD 18.529 million or more than 55 times the UNDP/GEF seed money for the IMIDAP. Details are seen in **Annex K**),

4.5.1. GEF Financial planning and assessment

- 2. In line with financial policies of DGEEU and UNDP/GEF, the project have instituted appropriate financial controls, including regular reporting, feedback and planning which effectively allowed appropriate management and timely utilization of the budget and co-financing inputs. The experience of IMIDAP served as a model for internationally-funded projects which adhered to both government and UNDP financial accounting principles. The total commitment by the UNDP/GEF in the amount of USD 2.0 million for the three-year implementation is expected to be fully utilized and was efficiently and timely executed. As of June 2010, about USD 1.806 million was disbursed. (Annex L)
- 3. The project was subjected to regular and very diligent financial monitoring and a monthly/quarterly reporting system in addition to the annual review under the UNDP/GEF Annual Performance Report and Project Implementation Review (APR/PIR). The government budgetary inputs were subjected to government financial audits by BPKP (Badan Pengawasan Keuangan dan Pembangunan Board of Finance and Development Control) including those that were committed as co-financing for the infrastructures and physical project equipment. Regular government financial and project management audits were conducted and results disseminated.

4.5.2. Co-financing and project outcomes and sustainability

- 1. The actual co-financing inputs surpassed the promised funding levels in the ProDoc which were leveraged from initial inputs. This is a clear manifestation of sincerity in complying with commitments and great interest in the project. (Annex M)
- 2. This highly satisfactory realization of co-financing has very positively encouraged achievement of project outcomes and ensured sustainability. At the same time, the co-financing scheme and partnership strategy have established vital linkages and working relationships at the national, provincial and district levels thereby ensuring sustainability of the program.

4.6. Assessment of IMIDAP M&E System

4.6.1. UNDP/GEF M&E System

The project management arrangements are found adequate and appropriate for the needs of IMIDAP Phase I. The results-based and risk-based project management system using the ATLAS can be continued to be used. The project has been managed very effectively at all levels. The regular UNDP/GEF Annual Project Report/Project Implementation Review (APR/PIR), Annual Work and Financial Plans, quarterly reporting and financial reviews effectively aid management, implementation and administrative requirements.

4.6.2. Project Implementation M&E System

The overall design of the M&E system aims to monitor results and track progress to achieve project objectives. Based on the indicators of the power plant operations and overall program outputs and outcomes of the IMIDAP program, the following data elements were designed to be monitored and the data are stored in corresponding databases as <u>www.monev.mikrohidro.net</u>. Details are seen in **Annex N**. The system includes the following data elements:

- a. Power plant and Productive uses
- b. Manufacturing
- c. Services
- d. Microhydro resources Potential
- e. System for data gathering and report preparation
- f. Fact sheet reports
- g. Communication system via internet on input and dissemination of results Online analysis processing (OLAP) system

Thus, the following became the baseline for the IMIDAP M&E System: a.) data on whatever are available from DGEEU as of 2006; b.) description of initial activities being done during the start of the project in 2006; c.) decision on data sources and frequency of reporting; and d.) level of aggregation being done at baseline conditions.

The methodology used by the system includes the following: a.) using the logical framework for the indicators that will be monitored and determine how the data will be gathered and inputted in the database system; b.) determining the reporting and dissemination procedures; and determining the responsible parties at every stage of data gathering, analysis and reporting

The time frame for various M&E activities and standards for outputs follow the following schedule: a.) Collection input of data every week, b.) Report outputs every end of month; c.) Power plant operational data on real time basis (once the remote system instruments are installed in every power plant location through data satellite and GPRS system.

In terms of M&E plan implementation, the M&E system is fully operational as <u>www.mikrohidro.net</u>. The system of timely tracking of progress toward project objectives is also in place in <u>monev.mikrohidro.net</u>. The system of collecting and authentication of information on chosen indicators regularly is enforced through Ministry of Energy directives to DINAS/ESDM. The system of providing information on various services and human resources are also in place. 100% Percent of actual data from DGEEU and other relevant government agencies are inputted in the databases. Estimated 60% percent of data from outside sources (e.g NGO funded by international funding sources). The system adequately provides data for IMIDAP compliance with annual project reports.

The database is very useful in generating reports. Profiles of power plants continuously are being inputted and updated. Data on actual generation is 90% complete. MWhrs are derived from the data on installed capacity of reported microhydro plants in the <u>datapotensi.mikrohidro.net</u>. Estimations are based on assumed number/capacity of microhydro actually operating, number of operating hours per year, availability factor, load factor and efficiency factor.

Information provided by the M&E system is being used during the project to improve performance and to adapt to changing needs. Proper training for parties responsible for M&E activities were conducted to ensure that data are continued to be collected and used. Data on training and certification are stored in <u>certification.mikrohidro.net</u>.

The IMIDAP M&E activities was sufficiently budgeted for at the project planning and implementation stage. However, should there be no more project support, DGEEU/MMCH is prepared to sustain the operation and maintenance of the M&E system.

Ratings on IMIDAP M&E:

- Quality of design: *Highly Satisfactory*
- Quality of implementation: Satisfactory

4.7. Conclusions

- a. The IMIDAP Phase I has fully completed most of activities within the three-year timeframe from January 2008 up to the Final Review schedule for September 2010. Further completion of the remaining administrative and closure activities are likely to be completed by the planned project termination on December 31, 2010 with an overall *Satisfactory* compliance of commitments defined in the ProDoc. The project followed adaptive management considering some activities have to catch up with completion dates. The third year focused on the completion of implementation of activities leading to the project's three critical outputs, particularly, the Microhydro Integrated Development and Application Plan, the MSF and the operation of the six (6) demonstration sites.
- b. The necessary and relevant government microhydro policy framework and goals have been effectively and clearly articulated at the national and local levels with sufficient guidelines and overall directions in terms of the Microhydro Roadmap (2010-2025). Plans are underway to further involve the stakeholders to provide more planning details to the roadmap to constitute the strategic Integrated Microhydro Development and Application Implementation Plan as expected from the project with definitive targets and timeframe to ensure achievement of long-term goals at the national and local levels.
- c. The overall government institutional strengthening in renewable energy under a new directorate for renewable energy, where microhydro forms a big part, is definitely a clear manifestation by Gol in providing the institutional capacity and platform necessary in carrying out an expanded RE program more effectively and efficiently.
- d. The financial assistance system for microhydro power projects and associated community-based productive applications in small-scale entrepreneurship relies on the existing banking system and its usual project profitability policies. With this, the banks need to accept the general bankability and technology reliability of microhydro and application projects so as to lower the risk rating that they still place in comparison with other project portfolios. Loan incentives built in microhydro-specific financial packages such as project preparation fund, loan guarantee fund and microfinance are still felt necessary to match the original intentions of the MSF.
- e. The capacity building, training courses and the manuals in various aspects of the microhydro program have been developed and implemented with Highly Satisfactory performance. They are seen by target beneficiaries to be useful from national planners up to the village operator level. They have been received with very active support and budgetary inputs by the local government units. Sustainability needs to be assured as the different courses are put together into a relevant microhydro training program and implementing plan at the different levels for improved administration and evaluation.
- f. The Internet-based project monitoring and evaluation system (mikrohidro.net) employing up-to-date data gathering networks is well-designed and IMIDAP has started to populated it with operational data to make it more useful with timely information to aid in the strategic IMIDAP implementation plan and for tracking results up to the district level.
- g. The technology support program for microhydro and its applications has reached appreciable levels in the manufacturing, technical design, engineering, installation, operation and maintenance aspects. The system of classification and registration of

operators, service providers and manufacturers is found satisfactory and needs further institutional back up to meet standards for the commercialization in the coming years.

- h. The demo sites have started to operate while the formal documentation is being completed as to ownership and organizational designations. Formation and capacity building of cooperatives to manage the community-based microhydro-supported small businesses are very important and need local government guidance and monitoring to ensure success while in view of other business-management/organizational options that could be taken as appropriate in certain situations.
- i. The next steps to further achieve the goals and objectives for IMIDAP will need urther support and definitive action plans to sustain the initial outputs and outcomes of the project in an expanded and integrated approach that focuses more in commercialization of microhydro technology as originally planned in the ten-year ProDoc.

5. **RECOMMENDATIONS**

- i. Stakeholders should continue to act together in fine-tuning the directions of the Microhydro Road Map in optimizing the program resources towards the common objectives and conduct strategic planning with detailed targets and timeline to come up with the desired integrated microhydro development and application plan in five-year segments consistent with the road map to be disseminated to all when approved.
- j. Gol should align the next phase of IMIDAP according to the mandates of the new directorate general for renewable energy and the organizational/institutional support the program needs for higher levels of relevance, effectiveness and efficiency as a project.
- k. Stakeholders should review the status of the existing banking system (in which microhydro is now riding) along the lines seen in the MSF concept that are relevant to the current needs of projects in microhydro and its community-based applications that are distinct for on-grid and off-grid cases and attendant opportunities to come up with microhydro-specific financial packages within the existing bank portfolios.
- I. Gol, through Ministry of Energy, to provide needed direction and organizational linkages in institutionalizing the microhydro-related training courses under a programmed-approach specially in microhydro-endowed districts. This will be under an integrated training and education and capacity building program to be supported by local government units using the updated modules of IMIDAP in coordination with the Ministry of Energy's Training and Education Division for supervision and monitoring.
- m. Gol, through the Ministry of Energy, should adopt a policy and budgetary support for the sustainability of the internet-based monitoring and evaluation system, exchange system and database management developed by the project and designate a regular unit under the Ministry to operate and manage the system to derive relevant and timely information to manage the Integrated Microhydro Development and Application Plan to be adopted by the government.
- n. Gol, through the Ministry of Energy in coordination with the Ministry of Industry, to look into a systematic, goal-based microhydro technology development and commercialization support program following international standards and practices in similar technologies.
- o. IMIDAP should review the stakeholder and partnership strategy to involve relevant ministries and government agencies that could provide the needed support to the effective implementation of the directions defined in the Microhydro Road Map and the strategic Integrated Microhydro Development and Application Plan. For instance, the Ministry of Cooperatives, the Ministry of Disadvantaged Regions, Ministry of Industry, Ministry of Home Affairs and other relevant organizations or designated agencies are needed as stakeholders and partners to comprehensively address the microhydro program needs and priorities. This will also help in harmonization of policies and permitting procedures that still need streamlining and time-bound commitment.
- p. IMIDAP should involve new relevant partners and stakeholders in the Logical Framework Analysis Workshop for Phase II to validate needs and problems and provide suggestions in addressing prevailing problems and challenges that are still affecting the microhydro program.

6. LESSONS LEARNED

- a. The direct participation and guidance of local government units in the organization of cooperatives and designation of authority in the community-based microhydro villages is very important consistent with the decentralization policy of government.
- b. Effective and relevant co-financing and partnership strategy with well defined roles and inputs during the planning stage of the project is a key to lasting working relationship and synergy.
- c. Determination of the next steps and designing the next phase of the project involving relevant stakeholders and beneficiaries and considering real situation problems and concerns in the local level are very important for microhydro programs due to its multi-disciplinary and multi-sectoral coverage.
- d. The banking sector has a different set of parameters and perception in assessing viability of a project similar to a microhydro community-based, small-scale business because the tendency is to place high risk ratings on still unfamiliar technology and benefits.
- e. The cooperative as a management and operating entity for microhydro-supported business still needs further study and capacity building of the team, and when adopted, requires intensive caretaker oversight from the local government in order to ensure success and sustainability
Annexes

- Annex A Terms of Reference
- Annex B List of Attendees in Meetings and Focus Group Discussions
- Annex C Excerpts from Guidelines for GEF Agencies in Conducting Terminal Evaluations
- Annex D IMIDAP Organization Structure
- Annex E List of Gol Policies and Issuances Related to Microhydro Development and Application
- Annex F Strategic Partners of IMIDAP
- Annex G List of IMIDAP Sub-Contractors and Status of Delivery of Outputs
- Annex H Diagrams of the Six (6) IMIDAP Demonstration Sites
- Annex I IMIDAP Achievement of Outputs and Performance Ratings
- Annex J IMIDAP Outcomes and Impacts and Ratings
- Annex K Summary of Total Project Financing, in Million USD
- Annex L GEF Fund and Disbursements up to September 30. 2010
- Annex M IMIDAP CO-FINANCING AND COMPLIANCE ON DELIVERABLES
- Annex N IMIDAP Project Implementation M&E System

Annex A – Terms of Reference



UNITED NATIONS DEVELOPMENT PROGRAMME TERMS OF REFERENCE

I. Position Information

Title: INTERNATIONAL CONSULTANT FOR THE FINAL REVIEW OF THE INTEGRATED MICROHYDRO DEVELOPMENT AND APPLICATION PROGRAM (IMIDAP)

Department/Unit: ENVIRONMENT UNIT

Reports to: HEAD OF ENVIRONMENT UNIT UNDP & NATIONAL PROJECT DIRECTOR IMIDAP

Duty Station: JAKARTA

Expected Places of Travel (if applicable): NATIONAL

Duration of Assignment: From: **1st July 2010** To: 15th August 2010

□ partial (explain) : OUTPUT BASED ON THE KEY EXPECTED RESULTS

□ intermittent (explain)

□ full time/office based (needs justification from the Requesting Unit)

COA:

	Acc	Ор	Fund	Dept	Project/Act.	Impl.	Donor
		Unit				Aget	
Fee	71200	IDN10	62000	40805	ID00051240 IMIDAP	001395	10003
					(ACTIVITY 3)		
DSA in	71600	IDN10			ID00051240 IMIDAP	001395	10003
duty			62000	40805	(ACTIVITY 3)		
station							
Travel	71600	IDN10	04000	10905	ID00051240 IMIDAP	001395	10003
			04000	40805	(ACTIVITY 5)		

Available Budget: USD 17,000

PROVISION OF SUPPORT SERVICES:

Office space	Yes 🗆	No D NO (provided at Project's office)
Equipment (laptop etc)	Yes 🗆	No 🗆 NO
Secretarial Services	Yes 🗆	No 🗆 NO

Signature of the Budget Owner:

II. Background Information

(on the context of the engagement)

Began in 2008, Integrated Microhydro Development and Application Programme (IMIDAP) is a collaboration project between Directorate General Electricity and Energy Utilization (DGEEU) and United Nations Development Programme (UNDP) that assists the Government of Indonesia to accelerate microhydro development, and at the same time alleviates poverty and reduces GHG emission. It aims to expand Indonesia's energy options through the promotion of microhydro technology. IMIDAP will further contribute to poverty eradication by ensuring higher productivity for rural communities through more reliable and ready energy sources. IMIDAP will thus facilitate business opportunities for small and medium enterprises in the electricity supply industry.

IMIDAP is complementary to ongoing and planned renewable energy and rural electrification initiatives of the Government of Indonesia and the country's private sector. The overall goal of IMIDAP is the reduction of GHG emission from fossil-based power generation in Indonesia. This will be achieved by accelerating the development of microhydro resources and optimization of their utilization by removing the abovementioned barriers. IMIDAP is comprised of four component activities: (a) Microhydro Policy and Financing Program; (b) Community-based Microhydro Development and Institutional Capacity Building Program; (c) Microhydro Technology Support Program; and, (d) Microhydro Application Program.

The overal objetives of the IMIDAP are :

- 5) to enhance interest among the Indonesian private sector in the microhydro power business;
- 6) to increase the number of community-based microhydro projects as a result of effective institutional capacity building;
- 7) to improve the availability, and local knowledge, of microhydro technology applications in the potential locations of microhydro development; and
- 8) to increase private sector and rural community joint implementation of microhydro projects.

During the course of project implementation, no adjustments to the Project Document mentioned activities were made. Based on the findings of the mid-term review conducted in August 2009, several gaps in activities implementation have been identified and the IMIDAP Project Management Unit has been further enhancing the implementation activities to address these gaps, namely to: (1) conclude the implementation of Demo sites, (2) set up the monitoring system, (3) enhance the productive use of electricity-generated from microhydro, and (4) categorize capacity of local technical workshops and manufacturers in production and reparation of microhydro components.

IMIDAP will now be operationally closed in December 2010 with the required Final Evaluation undertaken in June-July 2010. Finally, the commencement design of IMIDAP and further demonstrated achievements of the project have raised importance in Government of Indonesia to propose for new funding from GEF for IMIDAP Phase 2, which will focus more in commercialization of microhydro sector. The recommendations from the Final Evaluation will be taken into account in designing of IMIDAP Phase 2.

III. Objectives of Assignment

The Monitoring and Evaluation (M&E) policy at the project level in UNDP/GEF has four objectives: i) to monitor and evaluate results and impacts; ii) to provide a basis for decision making on necessary amendments and improvements; iii) to promote accountability for resource use; and iv) to document, provide feedback on, and disseminate lessons learned. A mix of tools is used to ensure effective project M&E. These might be applied continuously throughout the lifetime of the project – e.g. periodic monitoring of indicators, or as specific time-bound exercises such as mid-term reviews, audit reports and final evaluations.

In accordance with UNDP/GEF M&E policies and procedures, all regular and medium-sized projects supported by the GEF should undergo a final evaluation upon completion of implementation. A final evaluation of a GEFfunded project (or previous phase) is required before a concept proposal for additional funding (or subsequent phases of the same project) can be considered for inclusion in a GEF work program. However, a final evaluation is not an appraisal of the follow-up phase.

Final evaluations are intended to assess the relevance, performance and success of the project. It looks at early signs of potential impact and sustainability of results, including the contribution to capacity development and the achievement of global environmental goals. It will also identify/document lessons learned and make recommendations that might improve design and implementation of other UNDP/GEF projects.

Objectives of the evaluation

The UNDP Indonesia is initiating this evaluation to determine to what extent the project has achieved its objectives and has removed barriers to microhydro development and utilization in Indonesia. It is intended to analyze and assess the relevance, sustainability, impact and effectiveness of the strategies, project design, implementation methodologies and resource allocations that have been adopted for the purpose of achieving the objectives stated in the project document.

IV. Scope of work, Expected Results/Deliverables/Final Products Expected

The scope of the Final Review covers the entire UNDP/GEF-funded project and its components as well as the co-financed components of the project. The Final Review will assess the Project implementation taking into account the status of the project activities and outputs and the resource disbursements made up to June 30, 2010.

The evaluation will involve analysis at two levels: component level and project level. On the component level, the following shall be assessed:

- Whether there is effective relationship and communication between/among components so that data, information, lessons learned, best practices and outputs are shared efficiently, including cross-cutting issues.
- Whether the performance measurement indicators and targets used in the project monitoring system are specific, measurable, achievable, reasonable and time-bounded to achieve desired project outcomes.
- Whether the use of consultants has been successful in achieving component outputs.

The evaluation will include such aspects as appropriateness and relevance of work plan, compliance with the work and financial plan with budget allocation, timeliness of disbursements, procurement, coordination among project team members and committees, and the UNDP country office support. Any issue or factor that has impeded or accelerated the implementation of the project or any of its components, including actions taken and resolutions made should be highlighted.

On the project level, it will assess the project performance in terms of: (a.) Progress towards achievement of results, (b.) Factors affecting successful implementation and achievement of results, (c.) Project Management framework, and (d.) Strategic partnerships.

4.1 *Progress towards achievement of results* (internal and within project's control)

- Is the Project making satisfactory progress in achieving project outputs vis-à-vis the targets and related delivery of inputs and activities?
- Are the direct partners and project consultants able to provide necessary inputs or achieve results?
- Given the level of achievement of outputs and related inputs and activities to date, is the Project likely to achieve its Immediate Purpose and Development Objectives?
- Are there critical issues relating to achievement of project results that have been pending and need immediate attention in the next period of implementation?

- 4.2 *Factors affecting successful implementation and achievement of results* (beyond the Project's immediate control or project-design factors that influence outcomes and results)
 - Is the project implementation and achievement of results proceeding well and according to plan, or are there any outstanding issues, obstacles, bottlenecks, etc. on the consumer, government or private sector or the microhydro industry as a whole that are affecting the successful implementation and achievement of project results?
 - To what extent does the broader policy environment remain conducive to achieving expected project results, including existing and planned legislations, rules, regulations, policy guidelines and government priorities?
 - Is the project logical framework and design still relevant in the light of the project experience to date?
 - Is the project well-placed and integrated within the national government development strategies, such as community development, poverty reduction, etc., and related global development programs to which the project implementation should align?
 - Do the Project's purpose and objectives remain valid and relevant, or are there items or components in the project design that need to be reviewed and updated?
- 4.3 *Project management* (adaptive management framework)
 - Are the project management arrangements adequate and appropriate?
 - How effectively is the project managed at all levels? Is it results-based and innovative?
 - Do the project management systems, including progress reporting, administrative and financial systems and monitoring and evaluation system, operate as effective management tools, aid in effective implementation and provide sufficient basis for evaluating performance and decision making?
 - Is technical assistance and support from project partners and stakeholders appropriate, adequate and timely?
 - Validate whether the risks originally identified in the project document and, currently in the APR/PIRs, are the most critical and the assessments and risk ratings placed are reasonable.
 - Describe additional risks identified during the evaluation, if any, and suggest risk ratings and possible risk management strategies to be adopted.
 - Assess the use of the project logical framework and work plans as management tools and in meeting with UNDP-GEF requirements in planning and reporting.
 - Assess the use of electronic information and communication technologies in the implementation and management of the project.
 - How have the APR/PIR process helped in monitoring and evaluating the project implementation and achievement of results?

4.4 *Strategic partnerships* (project positioning and leveraging)

- Are the project partners and their other similar engagements in the implementation, strategically and optimally positioned and effectively leveraged to achieve maximum effect of the RE program objectives for the country?
- Asses how project partners, stakeholders and co-financing institutions are involved in the Project's adaptive management framework.
- Identify opportunities for stronger collaboration and substantive partnerships to enhance the project's achievement of results and outcomes.
- Are the project information and progress of activities disseminated to project partners and stakeholders? Are there areas to improve in the collaboration and partnership mechanisms?

1. Evaluation Team

The Final Review Team will be composed of one International Lead Consultant and one National Consultant (as assistant). The Team is expected to combine international standards of evaluation expertise, excellent knowledge of the RE and Climate Change projects and national context of RE project and program

implementation in Indonesia. The team should review the provided project documents and publications. The main sources of information will be provided by IMIDAP Project Management Unit. Interviews with various stakeholders and field visits will add important information to the evaluation.

International Expert

The International shall be responsible for completing and delegating tasks as appropriate for the terminal evaluation to the National counterpart. He/she will ensure the timely submission of the first draft and the final version of the terminal evaluation with incorporated comments from UNDP and others.

National Counterpart

The National counterpart will, jointly with, and under the supervision of the International consultant, support the evaluation. He/she will be responsible to review documents, translate necessary documents and interpret interviews, meetings and other relevant events for the International consultant. He/she will work as a liaison for stakeholders of the project and ensures all stakeholders of the project are aware of the purposes and methods of the evaluation and ensures all meetings and interviews take place in a timely and effective manner.

2. Evaluation Methodology

The Final Review Team is expected to become well versed as to the project objectives, historical developments, institutional and management mechanisms, activities and status of accomplishments. Information will be gathered through document review, group and individual interviews and site visits. Review relevant project documents and reports will be based on the following sources of information: review of documents related to the Project and structured interviews with knowledgeable parties

The Evaluation Team will conduct an opening meeting with the National Project Director (NPD), Deputy NPD-I, Deputy NPD-II, National Project Manager, Team Leaders and, experts to be followed by an "exit" interview to discuss the findings of the assessment prior to the submission of the draft Final Report.

Prior to engagement and visiting the Project Management Office, the Final Review Team shall receive all the relevant documents including at least:

- IMIDAP Project Document and Project Brief
- Inception Report
- Annual Work and Financial Plans
- Annual Project Report/Project Implementation Review (API/PIR) for 2007, 2008, 2009 and Quarterly Reports

To provide more details, as may be needed, the following will be made available for access by the Final Review Team:

- Executive summary of all quarterly reports
- Internal monitoring results
- Terms of Reference for past consultants' assignments and summary of the results
- Past audit reports

The Final Review Team should at least interview the following people:

- National Project Director
- Deputy NPD-I, and Deputy NPD-II
- National Project Manager
- Team Leaders
- Expertise
- Project Administrative Officer
- Project Financial Officer
- PSC Members
- Board Members

• UNDP Country Office in Indonesia in-charge of the IMIDAP Project

With the aim of having an objective and independent evaluation, the Final Review Team is expected to conduct the project review according to international criteria and professional norms and standards as adopted by the UN Evaluation Group.

3. Evaluation Schedule and Deliverables

The evaluation mission shall be undertaken in the time period from July 1st – August 15th 2010 (i.e. a total of 25 working days). The evaluators are expected to be both familiar with this project and have experience and expertise in related fields such as sustainable renewable energy development, rural electrification, in particular, including experience in the design and implementation of RE projects. Therefore the suggested limited timeframe is considered to be sufficient.

There will three outputs from the evaluation in sequential order accordingly -

- 1. A draft evaluation report;
- **2.** The final Evaluation Report; the final report is to be cleared and accepted by UNDP CO in Jakarta before final payment. The final report (including executive summary, but excluding annexes) should not exceed 50 pages.
- **3.** A power-point presentation of the findings of the evaluation. Depending upon the complexity of the evaluation findings, UNDP CO in Jakarata may consider organizing a half-day stakeholders meeting at which to make a presentation to the partners and stakeholders.

The evaluation report outline should be structured along the following lines:

- 1. Executive summary
- 2. Introduction
 - 2.1. Purpose of the Evaluation
 - 2.2. Key Questions and scope of the evaluation
 - 2.3. Approach and methodology
- 3. The project(s) and its development context
- 4. Findings and Conclusions
 - 4.1. Project formulation
 - 4.2. Implementation
 - 4.3. Results
- 5. Recommendations
- 6. Lessons learned
- 7. Annexes

The report will be initially shared with the National Project Director and National Project Manager to solicit comments or clarifications and will be presented to the UNDP Country Office (CO) in Jakarta for further deliberations.

Payment (Professional Fee & DSA in duty station)	Date (indicative)	No.of days	Deliverables
1. 30% (USD 4,500)	7 th July 2010	7.5 days	Upon presentation and acceptance of inception report (proposed MTR work plan)
2. 70% (USD 10,465)	5t ^h August 2010	17.5 days	Upon acceptance of Final Review evaluation report by UNDP.

V. Requirements

Describe the required degree of expertise and qualifications, including specialized knowledge, language needs, experience, selection criteria, qualifications and performance or other standards the Contractor must fulfill.

Profile International Consultant (Team Leader for Final Review)

- Post-Graduate in Engineering, Management or Business
- Minimum of ten years accumulated and recognized experience in renewable energy and climate change projects
- Minimum of five years of project evaluation and/or implementation experience in the result-based management framework, adaptive management and UNDP or GEF Monitoring and Evaluation Policy
- Familiarity in similar country or regional situations relevant to that of Indonesia
- Experience with multilateral and bilateral supported EE/RE and climate change projects
- Comprehensive knowledge of international EE/RE industry best practices
- Very good report writing skills in English

Responsibilities

- Documentation of the review
- Leading the MTR Evaluation Team in planning, conducting and reporting on the evaluation.
- Deciding on division of labor within the Team and ensuring timeliness of reports
- Use of best practice evaluation methodologies in conducting the evaluation
- Leading presentation of the draft evaluation findings and recommendations in-country
- Conducting the debriefing for the UNDP Country Office in Jakarta and IMIDAP Project Management
- Leading the drafting and finalization of the Final Evaluation Report

Education: (Indicate minimum education requirements, University degree in)	 Post-Graduate in Engineering, Management or Business Fluency in English. Must be computer literate.
Experience: (Indicate the extent (in years), type and level of experience)	 Minimum of ten years accumulated and recognized experience in renewable energy and climate change projects Minimum of five years of project evaluation and/or implementation experience in the result-based management framework, adaptive management and UNDP or GEF Monitoring and Evaluation Policy Familiarity in similar country or regional situations relevant to that of Indonesia Experience with multilateral and bilateral supported EE/RE and climate change projects Comprehensive knowledge of international EE/RE industry best practices

VI. Recruitment Qualifications

Language Requirements:	(Proficient in English language, spoken and written. Ability to write reports, make presentation, provide training etc.)
	Very good report writing skills in English

VII. OTHER SELECTION CRITERIA

Specialised knowledge (explain) Other standards the contractor must fulfill (explain, if any) Other Selection Criteria (explain, if any) Annex B. List of Attendees in Meetings and Focus Group Discussions

No	Name	Institution
1	Dadan M. R	LPE, Dinas ESDM Jawa Barat
2	Yusuf Setiawan	ΙΑΤΚΙ
3	Yopi S.	Dinas ESDM Jawa Barat
4	Maman	Dinas ESDM Jawa Barat
5	Evo R	UPT III Bandung
6	Kurnia P	UPT III Bandung
7	Herri	Pabum
8	Giat S	Dinas BMP Bandung Barat
9	Parwanto	Dinas BMP Bandung Barat
10	Sumarwan	Dinas ESDM Jawa Barat
11	Herman Johan M	PLN Jawa BArat
12	Dja'far S	Polban
13	Chres	TEDC
14	Aan N	MGAT
15	Faisal Rahadian	Asosiasi Hidro Bandung
16	Dedin	LPE Dinas ESDM
17	Ravaldi W	EBT – ESDM – Jawa Barat
18	Yudi	WPU
19	Rogelio Aldover	UNDP Consultant

1. Focus Group Discussion with Stakeholders in West Java Bandung, Thursday, September 16, 2010

2. Inception of Final Review Meeting IMIDAP 2010 Jakarta, Tuesday, September 21, 2010

No	Name	Institution
1	Maryam Ayumi	DJEBTKE
2	Verania Andria	UNDP
3	Rogelio Aldover	UNDP Consultant
4	Asep Suwarna	IMIDAP
5	Upik Jamil	Pusdiklat KEBT
6	Sarodjo	Kementrian KUKM
7	Eko Adi Priyono	Kementrian KUKM
8	Yuendra Effendi	KPDT
9	Syafrius	IMIDAP
10	Dadan Kusdiana	DJLPE
11	Syaiful N	P3TKEBT
12	Syanne Brillianty P	IMIDAP
13	M Anggraeni	IMIDAP

3. Focus Group Discussion with Stakeholders in Central Java Klaten, Thursday, September 23, 2010

No	Name	Institution
1	T. Lukito	Dinas ESDM Provinsi Jateng
2	Kusno Wibowo	Dinas PUP-ESDM DIY
3	Wahyu Adhy	Bappeda Klaten
4	Kome	Dinas PUP ESDM DIY
5	Adhy K	UGM
6	Handoko	Disbudparpora
7	Roger Aldover	UNDP/IMIDAP

8	Darmadi	Pengelola OMAC
9	Priyono	PLTMH Cokro
10	Tri Haryanto	PLTMH Cokro
11	Irawan Wisnu	Pengelola OMAC
12	Lugtyastyono	Disbudparpora
13	Purwanto	Disbudparpora
14	Raharjo	Disbudparpora
15	Sumarsono	Dinas Pariwisata
16	Sri Widaryanti	Dinas Pariwisata
17	B. Hari R	Dinas Pariwisata
18	Bibit Supardi	Alumni MST UGM
19	Hari Suroso	Disbudparpora
20	Warno	Disbudparpora
21	Syafrius	IMIDAP
22	Asep Suwarna	IMIDAP

4. Focus Group Discussions with IMIDAP Stakeholders in Yogyakarta MST UGM, Friday, September 24, 2010

No	Name	Institution
1	Asep Suwarna	IMIDAP
2	Roger Aldover	UNDP/IMIDAP
3	Adhy Kurniawan	MST - UGM
4	Ismun	Kincir Ismun
5	Syafrius	IMIDAP
6	Agus Maryono	MST - UGM
7	Kusnanto	MST - UGM

5. Meeting with Bappenas Office, Monday, September 27th 2010 Bappenas Office, Monday, September 27, 2010

No	Name	Institution
1	Yahya	Bappenas
2	Syafrius	IMIDAP
3	Asep Suwarna	IMIDAP
4	Rogelio Aldover	UNDP Consultant

6. Meeting with Ministry of Cooperative and Small Business Wednesday, September 29, 2010

No	Name	Institution
1	Sarodjo	Kementrian KUKM
2	Eko Adi Priyono	Kementrian KUKM
3	A. Kadir D	Kementrian KUKM
4	Syafrius	IMIDAP
5	Rogelio Aldover	UNDP Consultant

7. Meeting with Ministry for Development of Disadvantaged Region Wednesday, September 29, 2010

No	Name	Institution
1	Himawan Seno	Asdep Energy
2	Yuedra Effendi	Kabid Migas & Energi alternatif
3	Asep Suwarna	IMIDAP
4	Roger Z. Aldover	Consultant

5	Syafrius	IMIDAP
6	Galih S. Putro	Staf Asdep Infrastruktur Energy

8. Ministry of Internal Affair Thursday, September 30, 2010

No	Name	Institution			
1	Asep Suwarna	IMIDAP			
2					
3	Syafrius	IMIDAP			
4	Adi Suseno	Ditjen PMD			
5	Anna Gusning	Ditjen PMD			
6	Ivan Rangkuti	Ditjen PMD			

9. Bank Rakyat Indonesia Thursday, September 30, 2010

No	Name	Institution
1	Peter Eko Budi	BRI Cabang Khusus
2	Ananto Skartinigron	BRI Cabang Khusus
3	Ivi A	IMIDAP
4	Syafrius	IMIDAP
5	Asep S	IMIDAP

10. Badan Pengkajian dan Penerapan Teknologi (BPPT) – Agency for The Assessment and Application of Technology, Friday, October 1, 2010

No	Name	Institution
1	Rogerlio Z. Aldover	Konsultan UNDP
2	Asep S	IMIDAP
3	Syafrius	IMIDAP
4	Andhika	BPPT
5	Nur Aryanto	BPPT

Annex C - Excerpts from Guidelines for GEF Agencies in Conducting Terminal Evaluations (Evaluation Document No. 3.)

Assessment of Project Results

The GEF Monitoring and Evaluation Policy Minimum Requirement 3 published in 2008 specifies that terminal evaluations will, at the minimum, assess the achievement of out puts and outcomes and provide ratings for targeted objectives and outcomes. The assessment of project results seeks to determine the extent to which the project objectives were achieved, or are expected to be achieved, and determine if the project has led to any other short- or long-term and positive or negative consequences.

Criteria Definition

Three criteria will be used in terminal evaluations in assessing level of achievement of project outcomes and objectives:

- a. **Relevance.** Were the project's outcomes consistent with the focal areas/operational program strategies and country priorities?
- b. **Effectiveness.** Are the actual project outcomes commensurate with the original or modified project objectives? If the original or modified expected results are merely outputs/inputs, the evaluators should assess if there were any real outcomes of the project and, if there were, determine whether these are commensurate with realistic expectations from such projects.
- c. Efficiency. Was the project cost effective? Was the project the least cost option? Was project implementation delayed, and, if it was, did that affect cost effectiveness? Wherever possible, the evaluator should also compare the costs incurred and the time taken to achieve outcomes with that for similar projects.

Rating Definition

The evaluation of relevancy, effectiveness, and efficiency will be as objective as possible and will include sufficient and convincing empirical evidence. Ideally, the project monitoring system should deliver quantifiable information that can lead to a robust assessment of project effectiveness and efficiency. Since projects have different objectives, assessed results are not comparable and cannot be aggregated. Outcomes will be rated as follows for relevance, effectiveness, and efficiency:

- a. Highly satisfactory (HS). The project had no shortcomings in the achievement of its objectives
- b. Satisfactory (S). The project had minor shortcomings in the achievement of its objectives.
- c. **Moderately satisfactory (MS).** The project had moderate shortcomings in the achievement of its objectives.
- d. **Moderately unsatisfactory (MU).** The project had significant shortcomings in the achievement of its objectives.
- e. Unsatisfactory (U). The project had major shortcomings in the achievement of its objectives.
- f. **Highly unsatisfactory (HU).** The project had severe shortcomings in the achievement of its objectives.

When rating the project's outcomes, relevance and effectiveness will be considered to be critical criteria. Criticality in this context implies that satisfactory performance on a specific criterion is essential to satisfactory performance overall. Thus, lack of performance on such criteria is not compensated by better performance on other criteria. If Agencies provide separate ratings on relevance, effectiveness, and efficiency, the overall outcomes rating of the project may not be higher than the lowest rating on relevance and effectiveness. Thus, to have an overall satisfactory rating for outcomes, the project must have at least satisfactory ratings on both relevance and effectiveness.

Assessment of Risks to Sustainability of Project Outcomes

The GEF Monitoring and Evaluation Policy, minimum requirement 3, specifies that a terminal evaluation will assess, at minimum, the "likelihood of sustainability of outcomes at project termination, and provide a rating for this. Sustainability is understood as the likelihood of continued benefits after

the GEF project ends. Given the uncertainties involved, it may be difficult to have a realistic a priori assessment of sustainability of outcomes.

- a. **Financial risks.** Are there any financial risks that may jeopardize sustainability of project outcomes? What is the likelihood of financial and economic resources not being available once GEF assistance ends? (Such resources can be from multiple sources, such as the public and private sectors or income-generating activities; these can also include trends that indicate the likelihood that, in future, there will be adequate financial resources for sustaining project outcomes.)
- b. Sociopolitical risks. Are there any social or political risks that may jeopardize sustainability of project outcomes? What is the risk that the level of stakeholder ownership (including ownership by governments and other key stakeholders) will be insufficient to allow for the project outcomes/benefits to be sustained? Do the various key stakeholders see that it is in their interest that project benefits continue to flow? Is there sufficient public/stakeholder awareness in support of the project's long-term objectives?
- c. **Institutional framework and governance risks.** Do the legal frameworks, policies, and governance structures and processes within which the project operates pose risks that may jeopardize sustainability of project benefits? Are requisite systems for accountability and transparency, and required technical know-how, in place?
- d. **Environmental risks.** Are there any environmental risks that may jeopardize sustainability of project outcomes? The terminal evaluation should assess whether certain activities will pose a threat to the sustainability of the project outcomes. For example, construction of a dam in a protected area could inundate a sizable area and thereby neutralize the biodiversity-related gains made by the project.

Each of the above dimensions of risks to sustainability of project outcomes will be rated based on an overall assessment of the likelihood and magnitude of the potential effect of the risks considered within that dimension. The following ratings will be provided:

- a. Likely (L). There are no or negligible risks that affect this dimension of sustainability.
- b. Moderately likely (ML). There are moderate risks that affect this dimension of sustainability.
- c. Moderately unlikely (MU). There are significant risks that affect this dimension of sustainability.
- d. Unlikely (U). There are severe risks that affect this dimension of sustainability.

Annex D



Annex E – List of Gol Policies and Issuances Related to Microhydro Development and Application

Title of Policy Issuances	Summary of provisions	Issued by	Date issued
1.Undang-undang/Law No. 30/2007	Energy management by considering rationality, justice, sustainable, poverty elevation, environment, which self independent	Ministry of Law	August 2007
2. Undang-undang/Law No. 30/2009	Electricity development aiming to ensure the availability of electricity in sufficient quantity, quality, and reasonable price in order to improve the welfare and prosperity of the people fairly and equitably and to realize sustainable development	Ministry of Law	September 2009
3.Peraturan Menteri/Ministry Order No. 31/2009	Electricity Pricing by PLN from power unit with new renewable energy sources	Ministry of Energy and Mineral Resources	November 2009
4. Peraturan Daerah/District Regulation of Banjarnegara No. 10/2008	Local Electricity Business Management	District Government of Banjarnegara	2008
5. Peraturan Desa/Village Regulation No.7/2008	Micro Hydro Management in Detubela Village,	Detubela Village, Sub district Wewaria, District Ende, East Nusa Tenggara	June 2008

Institutions/Agencies Identified in ProDoc as Possible partners	Actual Participation in IMIDAP during Phase I Implementation	Possible Interest in Next IMIDAP Stage	
. Government			
National Government			
Directorate General of Electricity and Energy Utilization (DGEEU)	Executing Agency of IMIDAP Chairman of the Project Board Administrator of all microhydro- related Programs Co-financing institution	Yes	
Directorate of New Renewable Energy and Energy Conservation (New Institution)	New Directorate for RE and will administratively be in- charge of microhydro	Yes	
BAPPENAS (National Planning Development Agency).	Preparation of the national development plan; Overseeing energy development for national scale, including microhydro through its Bureau for Electricity, Energy Development and Mining; Allocation plan for government resources; and Determination of partnerships by government in different Programmes including. Renewable energy, special rural electrification and other Programmes	Yes Member of Steering Committee	
Perusahaan Listrik Negara (PLN)	National electricity supply system as the Government corporation Build MH off grid power unit Buy electricity from on grid MH power unit	YES Member of Steering Committee	
State Ministry of Cooperatives and Small and Medium Enterprises (SMOC&SME)	Enhancing the role of cooperatives in rural electrification	YES Member of Steering Committee IMIDAP Co-financing institution	
Agency for Assessment and Application of Technology (BPPT)	Assessment and application of new technology; Technology research and development, demonstration, testing, etc.; Programme development in the pilot and Pre-commercial phase, including microhydro technology; and Assessment of the application of new and renewable energy technologies and their viability in the Indonesian context.	Yes Member of Steering Committee	
Ministry of Public Work	Hydro resource surveys; Operation of some hydro plants for multiple objectives including irrigation systems	NO, cause not specific Member of Steering Committee	
Ministry of Finance	Budgeting and finance of all government Programmes including all microhydro Programmes planned by the MEMR/DGEEU Member of the MAC and MIAC	YES Member of Steering Committee Could be very helpful if this ministry can provide tax incentive for private company that have business on MH	
Ministry of Forestry	Management of forests and exploitation; Watershed management in relation to microhydro Programmes	Yes Member of Steering Committee	
Directorate General of Regional Development, Ministry of Home Affairs	Regional Development, Ministry of Home Affairs Formulating and implementation of policies and standards on regional development based on ministry policies and government regulations; Regional and local development services; Harmonization of development at regional and local level, regional and local efforts, environment, spatial planning and regional	Yes Member of Steering Committee	

Annex F – Strategic Partners of IMIDAP

Institutions/Agencies Identified in ProDoc as Possible partners	Actual Participation in IMIDAP during Phase I Implementation	Possible Interest in Next IMIDAP Stage
·	and local potential resources development, including microhydro resources.	
Center for Research and Development of Energy Technology and Electricity (P3TEK) under MEMR	Research and development on energy and electricity technology; Research services related to energy and electricity laboratory, consultancy on energy and electricity and application, including microhydro R&D	Member of Steering Committee IMIDAP Co-financing institution
(Pusdiklat KEBT) Center for Education & Training of Electricity and New Renewable Energy (New Institution)	Training center for electricity and new renewable energy	Yes
Provincial Governments	1. West java	Member of Steering Committee; IMIDAP Co-financing institution, demosite
	2. Central Java	FGD, demosite
	3. East Java	Demosite
	4. Yogyakarta	
	5. South Sumatera	
	6. West Sumatera	demosite
	7. Jambi	
	8. Lampung	
	9. North Sumatera	
	10. West Sulawesi	Co-sharing training, demosite
	11. South Sulawesi	
	12. West Nusa Tenggara	demosite
	13. East Nusa Tenggara	
District Governments	1. Banjar Negara (Central Java)	Co-sharing training, Co- financing institution
	2. Majene (West Sulawesi)	Co-financing institution
	3. Merangin (Jambi)	Co-financing institution
	4.	
International Organizatio	ns	
UNDP-Indonesia	Implementing Agency Member, Project Board Co-financing institution Provision of TA grants for GOI's various energy and environmental Programmes, including minihydro and microhydro Programmes, as capacity building program for different initiatives	
JICA-Indonesia		
USAID (The United States Agency for International Development),		
ASEAN Centre of Energy (ACE)	Capacity building	
GTZ under the BMZ (German Ministry for Economic Cooperation and Development	Collaboration training	Potential microhydro Programme financing institution
The World Bank		Potential microhydro Programme financing institution
Asian Development Bank		Potential microhydro Programme financing institution
Japan Bank for International Cooperation (JBIC)		Potential microhydro Programme financing institution

Institutions/Agencies Identified in ProDoc as Possible partners	Actual Participation in IMIDAP during Phase I Implementation	Possible Interest in Next IMIDAP Stage
Triodos Bank		Potential microhydro Programme financing institution
UN-ESCAP		Potential microhydro Programme financing institution
NGOs/CBOs		
Yayasan Bina Usaha Lingkungan (YBUL)	Non-governmental organization involved in energy, environment and community-based Programmes	Member of Steering Committee Program local partner YES, YBUL still consist on energy, environment and community-based Programs
Institut Bisnis dan Ekonomi Kerakyatan (IBEKA- People Centered Economic and Business Institute)	Active on FGD	Member of Steering Committee Program local partner
Yayasan Turbin Desa		Member of Steering Committee Program local partner
SECO		Program local partner
Lembaga Pengkajian dan Manajemen Sumberdaya		Program local partner
Alam (LPM-SDA) EDEN	Active on gender and community based	Program local partner
Paguyuban Seloliman	Non-governmental organization involved in energy, environment and community-based Programmes	Program local partner
Koperasi Peduli Energi Indonesia (KOPENIDO)		Program local partner
Cooperatives under the SMO&SMEs program	Pendampingan usaha produktif	Member of Steering Committee
Private Sector		1
ENTEC	and employment such as in decentralized energy supply and on Small hydropower.	Member of Steering Committee
Tokyo Electric Power Services Co., Ltd. (TEPSCO)	Private company providing consulting services for electric power industry	Member of Steering Committee
Nusantara Indo Energi (new institution)	Private company providing consulting services for electric power industry (Developer)	Program local partner
Naluri Energi Utama (new institution)	Private company providing consulting services for electric power industry	Program local partner
Istana Niaga (new institution)	Private company providing consulting services for electric power industry	Program local partner
Sewa Utama (new institution)	Private company providing consulting services for electric power industry	Program local partner
Bayu Buana Energi (new institution)	Private company providing consulting services for electric power industry	Program local partner
Academic and Professio	nal Associations	
Microhydro Equipment Suppliers Association		Member of Steering Committee
Academic Institutions/Training Centers		Committee
Professional Renewable Energy Associations and Societies		Member of Steering Committee

Annex G. List of IMIDAP Sub-contracts and Status of Delivery of Outputs as of September 30, 2010

Componente Taska			Period of	Remarka en Compliance es	Status as of Final Review (Sept 2010)		
and Names of Experts and Contractors	Cost	Deliverables	and Deadline of Final Output	of after MTR (Sept 30, 2009 to September 2010)	Date of Acceptance of Contract Completion Report	Assessment of Quality and Timeliness of output	Summary of Significant recommendations and findings
Component 1							
1. Dr. Rislima Febriani Sitompol <i>(Expert)</i>	IDR 18,000,000/mo 5 man-months	 Comprehensive national policy study concerning the provision of incentives vis-a- vis other electricity options Design and establishment of M&E on the achievement of policy objectives and impact of the enforcement of policy, pricing and regulatory measures. 	July 17, 2008 – December 17, 2008	Submitted draft report. Review and acceptance of recommendations not yet taken up.	Accepted December 2008	M&E design is not specific in terms of indicators of performance and data gathering and dissemination system.	Details of the M&E system and implementation plan were completed by a team of 6 programmers and analysts under the supervision of Pak Ainul (MMCH Expert) that resulted to the internet- based monitoring and evaluation system in MMCH <u>www.mikrohidro.net</u> on February 2010.
2. Development of MH Road Map (Act. 1.2)- Pt. Puser Bumi (Sub- Contractor)	IDR 501,000,000	 Development of Road map Development of local regulation on microhydro Development of financial Model on the local application 	Aug 14, 2009 – November 11, 2009	Finalized by FGD with 50 participants from Microhydro Stakeholders. Topic: Finalization of Road Map for Microhydro Development 2010 to 2025, and guideline for microhydro on grid	February 15, 2010 Final Payment March 2010	 Quality passed Project board review and FGD Delay of 5 months up to acceptance of report 	3. Road map on National Integrated Microhydro Development Plan as approved by Project Board headed by Directorate General for Electricity and Energy Utilization (DGEEU). Pending Minister's ratification.

Components, Tasks and Names of Experts and Contractors	Cost	Deliverables	Period of Engagement and Deadline of Final Output	Remarks on Compliance as	Status as of Final Review (Sept 2010)		
				of after MTR (Sept 30, 2009 to September 2010)	Date of Acceptance of Contract Completion Report	Assessment of Quality and Timeliness of output	Summary of Significant recommendations and findings
							 Local guidelines on microhydro approved April 2010 Financial scheme on local application of microhydro completed April 2010.
Component 2							
1. Development of Completion functionality content and Services of MMCH (Act. 2.4) – PT Smarthub Technologies(Sub- Contractor)	IDR 232,500,000	 Development of application systems Development of other systems application modules Integration of systems developed with other data exchange systems, such as knowledge application system, CMS, and other parallel systems developed in 2009. Server installation Simulat<i>ion</i> of unit, features, modules and systems and capacity of IMIDAP and MMCH staff Capacity building for systems administrator Training on the operation of the MMCH and guarantee to fix error within 1 month of ending of contract 	Sept 3, 2009 – Dec 3 2009	Ongoing. 27%	December 2009	Passed the review of Project Board	Final report on all the deliverables including Functionality Completion Content and Service MMCH completed.
2. Development of	IDR	1. Framework for hydropower	August 14,	25%. The contract covers the	December 2009	Passed the review	Final Report of

Components Tasks		Deliverables	Period of Engagement and Deadline of Final Output	Remarks on Compliance as of after MTR (Sept 30, 2009 to September 2010)	Status as of Final Review (Sept 2010)		
and Names of Experts and Contractors	Cost				Date of Acceptance of Contract Completion Report	Assessment of Quality and Timeliness of output	Summary of Significant recommendations and findings
Database Management Application Systems on Microhydro Potential (Act 3.8) – PT. DAP Consultants(Sub- Contractor)	301,000,000	development 2. Updated Microhydro resources map 3. Design and development of MH	2009 – November 11, 2009 (December 3, 2009)	development of database application system for Microhydro resource potentials only and not the coverage described in the ProDoc because of an existing database MMCH. Not specific deliverables and their timetable and corresponding payment schedule		of Project Board in January 2010. Point 1-3 has been fully completed and finalized on December 2009 No delay	Potential Database on Microhydro and Manual Guide for Manage Application Database on Microhydro
Component 3							
1. Development of program or barrier removal on productive uses of Microhydro (Act, 3.2 and 4.2) – PT Cipta Ekapurna Engineering Consultant (Sub- Contractor)	IDR 251,500,000	 Workshop on finalization of Feasibility studies and business plan for demo sites on development of productive uses Survey on potential issues on stakeholder demo sites and strategy to solve them Demand survey and energy utilization of MH and data analysis on economic and social aspects on demo site location Determination of performance targets on each MH demo site Development of 	August 14, 2009 – November 11, 2009	Ongoing, draft report is expected Within Nov. 2009. Identified 3 out of 6 demo sites for the contractor to gather data and information in drafting the program. IMIDAP is monitoring the conduct of the study. 1.	December 2009	Data has been completed and identified. Removal barriers has been identified and continuing of the	 Final Report of Removal Barrier has been completed. 1. Workshops on 6 location business plan for demosite by IMIDAP have been held at February-March 2010 with 30-35 participants. 2. Report of Potential Issue Survey has been achieved,

Components. Tasks			Period of	Remarks on Compliance as	Status as of Final Review (Sept 2010)				
and Names of Experts and Contractors	Cost	Deliverables	and Deadline of Final Output	of after MTR (Sept 30, 2009 to September 2010)	Date of Acceptance of Contract Completion Report	Assessment of Quality and Timeliness of output	Summary of Significant recommendations and findings		
		implementing plan for market-based projects by private sector and local community 6. Draft the MOU between IMIDAP and the stakeholder on the demo site.				program.	 Strategic plan has been done and continuously implemented. 3. All programs have been finalized which resulted Business Plan Document. Performance targets on each MH demo site have been defined. Development of implementing plan for market- based projects by private sector and local community has been continuously implemented. MOU between Local/Districs Government and the stakeholder on the demo site has been finalized but in varying stages of signing. 		

Components Tasks			Period of	Remarks on Compliance as	Status a	as of Final Review (Se	ept 2010)
and Names of Experts and Contractors	Cost	Deliverables	and Deadline of Final Output	of after MTR (Sept 30, 2009 to September 2010)	Date of Acceptance of Contract Completion Report	Assessment of Quality and Timeliness of output	Summary of Significant recommendations and findings
Component 4							
1. Selection and development of Microhydro demo site management (Act. 4.4) – PT. Wahana Pengembangan Usaha (Sub- Contractor)	IDR 305,500,000	 Inventory of model, formulation and sustainable criteria of MH that are existing and used by different groups Model formulation and criteria for selection to compare with indicator that were already prepared for small scale projects for bundling under the CDM Model formulation and criteria for selection to compare with indicator for renewable energy alternatives for rural and national electrification Model formulation and criteria for selection to compare with indicator for small scale enterpy alternatives for rural and national electrification Model formulation and criteria for selection to compare with indicator for small scale enterprises to improve income by using productive uses of MH Formulation of criteria for IMIDAP model for sustainable operation Survey of microhydro existing as of 2009 which are already in operation that have potential for adopting to the IMIDAP criteria of sustainability Selection of the final sites for 	August 14, 2009 – November 11, 2009	Ongoing	December 2009	Passed the review of Project Board January 2010	 Finalization Report of Selection and development of Demosite location accepted December 2009, including: Model formulation and sustainability criteria completed and approved. Selection and comparison with other projects on CDM completed Selection and comparison with other RE alternatives completed. Election and comparison with small scale enterprises. Comparison with IMIDAP model for sustainability completed. Survey also completed.

Components, Tasks and Names of Experts and Contractors	Cost	Deliverables	Period of Engagement and Deadline of Final Output	Remarks on Compliance as of after MTR (Sept 30, 2009 to September 2010)	Status as of Final Review (Sept 2010)				
					Date of Acceptance of Contract Completion Report	Assessment of Quality and Timeliness of output	Summary of Significant recommendations and findings		
		demonstration.							

Annex H - Diagrams of the Six (6) IMIDAP Demonstration Sites











Annex I – IMIDAP Achievement of Outputs and Performance Ratings

Component/Activity/Performance	ProDoc	Activity/ Output Indicator	Final Review	Final Review Assessment		Rating of Performance	
Indicator	Baseline	EOP Target	Actual Achievement as of September 30, 2010	Means of verification	Relevance	Efficiency	Effective ness
Component 1- Microhydro Policy an	nd Financing P	rogram					
Activity 1.1.Comprehensive Policy of	on Microhydro	Development and Application			HS	S	MS
1.1.1. A clear government policy on the promotion, development and application of community-based microhydro enforced	3 existing related policies	Government policy enforced by Q4, Year 1 Approved improved implementing rules and guidelines on 3 existing policies, procedures and their dissemination by Q4, Year 1	Completed 3 major national policy issuances and 31 provincial local policies issues in line with national policy	Related policies and issuances in Annex E.	HS	S	HS
1.1.2. Improved implementing rules and guidelines on 3 existing policies, procedures approved and disseminated	None	Approved improved implementing rules and guidelines on 3 existing policies, procedures and their dissemination by Q4, Year 1	Completed	(Same as above)	S	S	S
1.1.3. Government policy on microhydro at the local level enunciated in official mandates or decrees enacted	None	Enacted laws relevant to microhydro power and application at the local level, solely or in combination with other renewable energy sources by Q4, Year 3	Completed	(Same as above)	S	S	S
1.1.4. National Integrated Microhydro Development and Application Plan approved	None	National Integrated Microhydro Development and Application Plan approved in Q4, Year 2.	Not Completed A Microhydro Roadmap was endorsed by the DGEEU and Project Board February 2010 for ratification of the Minister. This will be the basis for a more comprehensive and integrated plan on microhydro.	Copy of the Microhydro Roadmap	S	MS (An Integrated Plan still to be formulated and approved)	MS (An Integrated Plan still to be formulated and approved)
Activity 1.2. Development of localize	ed microhydro	policy and implementing guidel	ines	1	HS	S	S

Component/Activity/Performance	ProDoc Activity/ Output Indicator		Final Review A	Rating of Performance			
Indicator	Baseline	EOP Target	Actual Achievement as of September 30, 2010	Means of verification	Relevance	Efficiency	Effective ness
1.2.1. Microhydro program at the local government level approved and disseminated	None	Approved and disseminated by Q4 Year 2	Completed	Copy of local issuances	S	S	S
1.2.2. Number of community-based microhydro project proposals	0	At least 50 community-based microhydro project proposals each year, starting Year2	100	Mikrohidro.net database	HS (Achieved More than target)	S	S
1.2.3. Number of community-based microhydro projects for productive uses	0	40	56 DME Program implemented as approved 2009 and started to be implemented in 2010. Database of productive use had been integrated in MMCH program. Number of productive uses are	Database listed 56 projects in 14 provinces and identified various productive uses in the report.	HS	S	S
1.2.4 Guidelines on integration of microhydro development in local development plans issued	None	by Q4, Year 1	Completed Guidelines of Feasibility Study of Environment, Comprehensive, Report of Feasibility Study, Moduls Training Development Microhydro Community Based and Training Feasibility Study, Good and Bad Mini/Microhydro.	Provincial government visited is using the guidelines as verified during site visit.	S	S	S
1.2.5. Number of local government development plans incorporating microhydro development and application	0	<i>15</i> by Q4, Year 3	31 at the provincial level	Mikrohidro.net database	HS	S	S
Activity 1.3.Microhydro Energy Pricing Study							
1.3.1. Favorable power tariff policy for microhydro energy approved and enforced by the government	PSK TERSEBAR	by Q3, Year 3	Completed IMIDAP supported the procedures of Ministry Law No 31/2009 about energy pricing (2009). Guidelines of regulations had been made and	Copy of Ministry Law No 31/2009 and guidelines PT Nusantara Indo Energy in West Nusa Tenggara made a contract with PT	HS	S	S

Component/Activity/Performance	ProDoc Activity/ Output Indicator		Final Review	Rating of Performance			
Indicator	Baseline	EOP Target	Actual Achievement as of September 30, 2010	Means of verification	Relevance	Efficiency	Effective ness
			disseminated. Present price policy provides for a fixed minimum which is favorable to MH developers.	PLN at the new price in line with Decree 31/09. This company will get funding assistance from BNI for 3.8 MW			
Activity 1.4. Establishment of Micro	hydro Support	Fund (MSF)	-		S	S	S
1.4.1. MSF established and operational	None	by Q4, Year 1	Completed. Project Board decided and was approved by DGEEU that there will be no MSF created. Existing bank funding windows will be used.	Project Board Minutes	S	MS	S
1.4.2. Support fund for improvement of local microhydro equipment manufacturing launched	None	by Q4, Year 2	Completed. Disseminated funding scheme in Bank Rakyat Indonesia (BRI), Bank Syariah Mandiri (BSM), Bank Bukopin, Bank Muamalat and Bank Danamon. Guidelines of Funding Scheme of Microhydro had been made and disseminated.	Copy of the funding scheme as disseminated in the banks provided. Interview with Bank BRI indicated that the bank is already processing loan application from a microhydro developer (PT NEU) using the guidelines and shared their experience in using them. Bank Rakyat Indonesia lent 1.5 billion IDR (USD 150,000) at 18% to PT Tepat Guna Teknik for investment in manufacturing MH equipment	S	MS	S
1.4.3. Support fund for the financing of livelihood/productive use projects using microhydro energy	None	by Q4, Year 2.	<i>Completed,</i> Banks are open to fund any small and medium scale business projects which are viable by bank standards.	Bank interview	S	MS	MS
Activity 1.5. Establishment of MSF F	Financing and F	und Management Schemes			S	S	MS
1.5.1. Completed MSF financing	None	by Q4, Year 1	Completed.	Bank interview	S	S	MS

Component/Activity/Performance	ProDoc	Activity/ Output Indicator	Final Review Assessment		Rating of Performance		
Indicator	Baseline	EOP Target	Actual Achievement as of September 30, 2010	Means of verification	Relevance	Efficiency	Effective ness
mechanisms and fund management scheme			Existing fund mechanisms and fund management schemes of banks are being used.				
1.5.2. MSF Manager designated	none	by Q4, Year 3	Completed Existing fund managers of banks are expected to include microhydro in their portfolio	Bank interview	S	S	MS
1.5.3 Number of financial institutions designated		At least 3 financial institutions designated by Q4, Year 3	<i>Completed</i> 6 banks involved in microhydro power plant investment and 41 are involved in microfinance of small and medium scale projects including microhydro- based productive applications	Mikrohidro database and bank interview	S	S	MS
Activity 1.6. Monitoring and Evaluat	ion of MSF Pro	ject Financing Assistance Prog	ram		HS	S	S
1.6.1.Number of private entrepreneurs, and rural cooperatives evaluated for MSF financing	0	30 projects evaluated by Q4, Year 3	Completed Off-grid:395 On-grid: 68	Mikrohidro database and bank interview	HS	S	S
1.6.2.Number of private entrepreneurs and rural cooperatives which availed of the MSF financing	0	10 private entities and 5 rural coops availed of MSF financing by Q4, Year 3	<i>Completed</i> Off grid: 224 (cumulative) and On grid: 10 (cumulative)	Mikrohidro database	HS	S	S
1.6.3. % of projects meeting target payback periods indicating favorable economic and financial performance of microhydro projects and promotions.	0	50% by Q4, Year 4	NA Banks are in-charge of this.	NA	NA	NA	NA
Activity 1.7. Monitoring and Evaluat	ion of Microhy	dro Policy Implementation			HS	S	HS

Component/Activity/Performance	ProDoc	Activity/ Output Indicator	Final Review	Assessment	Rating of Performance		
Indicator	Baseline	EOP Target	Actual Achievement as of September 30, 2010	Means of verification	Relevance	Efficiency	Effective ness
1.7.1. Annual production and sales of microhydro electricity	20 GWh	 Production: 255 GWh cumulative by Year 5 Sales: 222 GWh cumulative by Year 5 	Production: 904 GWh • Sales: 740 GWh.	Online information <u>www.</u> <u>monev.mikrohidro.net</u> . Need to check computation of the actual figures. Get basis or assumptions. Get print out of report tabulation	HS	S	HS
1.7.2. Annual share of microhydro energy in the power generation mix	nil % share	0.5 % share by Q4, Year 5	0.42% share	(Table I.1 for details)	S	S	S
Component 2 - Community-based M	licrohydro Deve	elopment and Institutional Capa	city Building Program				
Activity 2.1. Creation of Institutional	Structure for M	licrohydro Development					
2.1.1. Microhydro Advisory Council and Microhydro Inter-Agency Committee at national level and advisory groups at the district and village levels are established.	None	Completed by Q2, Year 1	Completed	Minutes of meetings	S	S	S
2.1.2 National Microhydro Network established under DGEEU/MMCH.	None	Completed by Q2, Year 1	Completed	Minutes of meetings	S	S	S
Activity 2.2.Capacity building for co	mmunity- base	d microhydro development		1	S	S	S
2.2.1 Training Program on Community-Based Microhydro Project Identification and Implementation							
2.2.1.1. Training courses on community-based microhydro project for the regions/provinces with abundant microhydro resources	None	At least 1 TC per year for each region/province with microhydro resources starting Q2, Year 1	Completed	Training reports	S	S	S
2.2.1.2. Number of trained community people operating microhydro power generation installations	0	30 trained community people operating microhydro power generation installations by Q4, Year 3	Completed	Training reports	S	S	S
2.2.1.3. Number of local engineering consultants providing technical services on community-based	0	15 each year starting by Q4, Year 3	22 Consultants trained who are already providing services in other areas.	Training report on no. of participants who are consultants. Were the	HS	S	HS

Component/Activity/Performance	ProDoc Activity/ Output Indicator		Final Review A	Rating of Performance			
Indicator	Baseline	EOP Target	Actual Achievement as of September 30, 2010	Means of verification	Relevance	Efficiency	Effective ness
microhydro power generation	colonmont and E	inancing of Microbydro-Basod Do	Training course had been conducted in West Java (twice) and East Java. Total Number of participants 22 people.	graduates already providing services? Each province has their registry of consultants as qualified by the local government.			
2.2.2.1 Training Program on	Nono	Training Drogram on		Copy of training program	<u> </u>	\$	\$
microhydro project development and financing approved and started by DGEEU	None	microhydro project development and financing approved and started by DGEEU by Q1, Year 2	Training course had been conducted in Central Java and South Sulawesi. Number of participants 33 people. Guidelines of Microhydro Financial Scheme had been made and disseminated	approved by the Board June 2010. Program is implemented in coordination with Centre for Training and Education for Renewable Energy under the Ministry. (Pusdiklat KEBT) Report on Training Program Evaluation	3	9	3
 2.2.2.2 Conduct of planned training courses (TC) completed (no. of participants) TCs for private and GOI financial institutions completed and for commercial banks completed TCs for coops and local districts completed TCs for private entrepreneurs completed 	None	 18 (Q1, Y3); 18 (Q3, Y3); 9 (Q4, Y3) 	 Financial TC -Semarang (19) -Makassar (14) Cooperatives TC -Bogor (22) -Bandung (30) Private Entrepreneurs TC -Cikarang (14) -Cikarang (16) 	Training Reports Financial TC -Semarang – Sept 15-18, 2008) -Makassar – March 30-Apr 2, 2009 Cooperatives TC -Bogor – October 22-31, 2008 -Bandung – June 2-5, 209 Private Entrepreneurs TC -Cikarang- May 27, 2009 -Cikarang – November 17, 2009 	HS	S	HS
2.2.3. Technical Capacity Building							

Component/Activity/Performance	ProDoc Activity/ Output Indicator		Final Review A	Rating of Performance			
Indicator	Baseline	EOP Target	Actual Achievement as of September 30, 2010	Means of verification	Relevance	Efficiency	Effective ness
for Microhydro Operators							
2.2.3.1. Number of training courses for microhydro power plant operators		3 (1 TC per year starting Q2, Year 1)	7	Training Reports	HS	S	HS
2.2.3.2 Established system for certifying microhydro operators.		By Year 2	<i>Completed</i> Certification system for microhydro operators had been conducted in West Sumatera South Sulawesi, South Sumatera, Central Java and West Sulawesi with total amount 64 operators	Report of Ikatan Ahli Teknik Ketenagalistrikan Indonesia (IATKI), which was authorized by Minister of Energy to provide training and issues Competency Certificate for operators.	HS	S	HS
2.2.3.3. Number of training courses conducted for certifiers in certifying microhydro operators		3	5	Training Reports	HS	S	HS
2.2.3.4. Number of certified microhydro operators	0	100	Completed (with additional up to Dec 2010). 63 Total certified operators by IATK out of 165 graduates from training for operators by IMIDAP in cooperation with Training Center and the local Government Facilitators coming from Training Center.	Training reports	S	S	S
2.2.4 Sustainable microhydro							
2.2.4.1. Completed 'good practices' manual	None	Manual completed by Q4, Year 2	Completed	Training reports	S	S	S
2.2.4.2 Technical training program approved on microhydro development for productive uses and implementation	None	Approved in Q3, Year 2 and started implementation in Q4, Year 2.	Completed	Training reports	S	S	S
2.2.5.1Training program on the design, feasibility evaluation,	None	Approved in Q3, Year 2 and started implementation in Q4,	Completed	Training reports	S	S	S

Component/Activity/Performance Indicator	ProDoc Activity/ Output Indicator		Final Review A	Rating of Performance			
Indicator	Baseline	EOP Target	Actual Achievement as of September 30, 2010	Means of verification	Relevance	Efficiency	Effective ness
operation and maintenance management of microhydro power plants implemented		Year 2.					
2.2.6.1. Sustainability plan for training programs approved	None	By Q4, Year 3	Completed June 2010	Training Sustainability Plan report	S	S	S
Activity 2.3. Assessment of Capabil	ities of Existing	Microhydro Service Providers	•		HS	S	HS
2.3.1.Assessment of existing microhydro service providers completed	None	By Q4, Year 2	Completed January 2010	Assessment Report and mikrohidro.net database	S	S	S
2.3.2. Accreditation systems established (<i>Proposed to be changed to</i> – Registration system established)	None	By Q4, Year 2	Completed July 2010 Developed the guidelines for registration of service providers for 3 categories in cooperation with TEDC (Training Education and Development Center for MH, West Java. Approved June 2010 by the Project Board. 28 in various categories were registered as of Sept 2010. 41 ther candidates are still being assessed Cat A- Well Established with experience to produce equipment, manpower and tools for maintenance, can provide training to the new service providers Cat B – Operational but has a potential to develop toward a Cat A in at least 5 years Cat C – Provider has basic knowledge to produce equipment but is not yet rated on efficiency, potential fto ve	Published guidelines	HS	S	HS
Component/Activity/Performance	ProDoc Activity/ Output Indicator		Final Review A	Rating of Performance			
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Indicator	Indicator Baseline EOP Target Actual Achievement as of September 30, 2010 Means of verific		Means of verification	Relevance	Efficiency	Effective ness	
			developed for Cat B in 5 years.				
2.3.3. Number of accredited microhydro service providers (<i>Proposed to be changed to</i> – Number of registered microhydro service providers – for Phase 1)	0	<i>10</i> each year starting Q1, Year 3	71 service providers registered in Training & Education Development Center (TEDC)	TEDC registry report and mikrohidro.net database	HS	HS	HS
Activity 2.4 Integrated microhydro in	nformation excl	nange service			HS	S	HS
2.4.1. A fully functioning information exchange services program operated by the MMCH	None	By Q2, Year 2	Information exchange established and operational at limited scale while ongoing filling up of data in the databases created. Done services for proposal submitted, MTS and MSF, e-knowledge sharing, e-market place, monitoring and evaluation application and demosite.	mikrohidro.net	HS	S	HS
2.4.2 Number of information requests received each year	No data	50 starting Q2 Year 2	562 requests for information on module in FS microhydro	Website of MMCH in knowledge and market application	HS	HS	HS
2.4.3 Number of satisfied clients per year	No data	40 starting Q2, Year 2	555 Based on MMCH members of the national microhydro network	Mailing list of national microhydro network (JMI group in website)	HS	HS	HS
2.4.4. Number of profiles of monitored microhydro facilities in the country prepared annually	Very limited	150 starting Q4, Year 2	97 complete d	Profiles prepared and inputted to mikrohidro.net	S	S	S
2.4.5. Number of profiles of monitored microhydro facilities in the country updated annually	0	160 starting Q4, Year 2 97 updated. Remaining of 838 profiles have incomplete data sets and are still to be completed mikrohidro.net		mikrohidro.net	S	S	Ś
2.4.6. Regular DGEEU microhydro newsletter containing information circulated through the information exchange service	Only project specific	Regular quarterly publications starting Q4, Year 2	12 newsletters (cumulative from 2008 – 2010)	Newsletter "Info IMIDAP"	S	S	S

Component/Activity/Performance	ProDoc	Activity/ Output Indicator	Final Review A	Assessment	Rating of Performance			
Indicator	Baseline	EOP Target	Actual Achievement as of September 30, 2010	Means of verification	Relevance	Efficiency	Effective ness	
2.4.7. Number of abstracts of articles on microhydro technology prepared and printed in the newsletter	Limited	At least <i>20</i> per year starting Q4, Year 2	48 abstracts of articles on microhydro technology in " Info IMIDAP"	Newsletter "Info IMIDAP"	S	S	S	
2.4.8. Volume of information materials on microhydro technology incorporated in the MMCH database as number of data entries encoded	Limited	<i>200</i> per quarter starting Q4, Year 2	80 material entries encoded in MMCH database		S	S	S	
2.4.9. MMCH Website developed and installed	None.	By Q2,Y2	MMCH fully operational www.mikrohidro.net		HS	S	HS	
2.4.10 Number of hits per year	No data	500 starting Q4, Y2	Recorded 115.961 Visitors in the website as of 30 September 2010.	Recorded 115.961 Visitors in Imidap.mikrohidro.net he website as of 30 September		S	HS	
Component 3 - Microhydro Technolo	ogy Support Pro	ogram						
Activity 3.1.Strengthening of the Mir	ni-Micro Hydro	Clearing House			HS	S	HS	
3.1.1. Mini-Microhydro Clearing House (MMCH) operated as "One- Stop Shop" for assisting applicants in coordination with financial outlet institutions	ohydro Clearing operated as "One- assisting applicants in h financial outletMMCH is not optimally operatedBy Q4, Year 2System is operational as a "one-stop-shop". 1. service 2. content (knowledge sharing, certification, demosite, market activity)www.mikrohidro.net with subdirectory 1. service 2. content (knowledge sharing, certification, demosite, market activity)MMCH is not optimally operatedBy Q4, Year 2System is operational as a "one-stop-shop". 1. service 2. content (knowledge sharing, certification, demosite, market activity)www.mikrohidro.net 2. market.mikrohidro.net 3. data potential (microhydro, manufacture, productive uses)		www.mikrohidro.net with subdirectory 1. services.mikrohidro.net 2. market.mikrohidro.net 3.knowledge.mikrohidro.net 4. datapotensi.mikrohidro.net 5.monev.mikrohidro.net	HS	HS	HS		
3.1.2. MMCH optimally operated meeting new mandate and directions		By Q4, Year 2	User authentication can be input and operate the application	Manual guide for MMCH	HS	S	HS	
3.1.3. Number of satisfied customers serviced by the MMCH annually	Non-optimally operated	200	3,071 satisfied customers according to the Internet Protocol with authentication by MMCH	www.mikrohidro.net	HS	HS	HS	
3.1.4. Number of local microhydro manufacturers availing of the product improvement program	0	3	71 data gathering by MMCH .net/index.php/potensi/listbe ngkel		HS	S	S	
3 .1.5. Number of clients provided services to support their financial	None	30	78 NIE was provided services by	services.mikrohidro.net	S	S	S	

Component/Activity/Performance	ProDoc Activity/ Output Indicator		Final Review	Rating of Performance			
Indicator	Baseline	EOP Target	Actual Achievement as of September 30, 2010	Means of verification	Relevance	Efficiency	Effective ness
assistance applications to become eligible entrepreneurs and cooperatives per year based on the MSF financing assistance package			MMCH in their application for loan in BNI NEU was provided services by MMCH in their application for loan in BRI. Disseminated guidelines for clients on financial scheme available				
3.1.6. Number of applications received annually for MMCH services to support applications for financing assistance by other banks/financial institutions	None	70	East Java (40), West Java (26) Central Sulawesi (4), NTB (3) Central Java (2), West Sulawesi (3) Total - 78	services.mikrohidro.net	HS	S	HS
3.1.7. Number of applications approved by other banks/financing institutions	0	30	78 Applications 12 Approved	Data proposal and input data proposal to services.mikrohidro.net	HS	S	HS
Activity 3.2.Assessment of Potentia	Activity 3.2.Assessment of Potential Productive Uses of the Microhydro Resource				S	S	S
3.2.1. Number of villages that can potentially carry out income generating activities supported by microhydro technology		30	31 locations demosite projects established and 4 locations demosite managed according to MoA	MoA for demosite	S	S	S
3.2.2. Number of potential productive uses (SMEs) that can be supported by microhydro technology in typical rural areas		400		Study Report			
Activity 3.3. Financial Assistance A	rangements for	r Demonstration Projects			S	S	S
3.3.1. MSF financial assistance approved for livelihood support or productive use applications in demo areas	None	<i>10</i> by Q4, Year 2	Evaluated 8 Off grid operational and financial data; No evaluation made yet for on-grid because they are under the PLN.	Report of selection and development of microhydro demosite	S	S	S
3.3.2. Number of MSF financial assistance application for microhydro power plant approved	0	10 by Q4, Year 2	6 for financing by the banks (Bukopin, BNI, Syariah Mandiri, Muamalat, Danamon and BRI)	Datapotensi.mikrohidro.net	S	S	S
Activity 3.4. Evaluation of the Opera Plants	ting and Finance	cial Performance and Identificat	ion of Potential Improvements ir	Existing Microhydro Power	HS	S	HS

Component/Activity/Performance	ProDoc	Activity/ Output Indicator	Final Review	Rating of Performance			
Indicator	Baseline	EOP Target	Actual Achievement as of September 30, 2010	Means of verification	Relevance	Efficiency	Effective ness
3.4.1. Evaluation of operating & financial performance of existing Microhydro Power Plants completed	No baseline data	3 on-grid and 3 off-grid by Q4, Year 1	6 locations demosite projects established and 4 locations demosite managed according to MoA		HS	S	HS
3.4.2. Database of operating performance of existing microhydro power plants established with system of updating in place	No baseline data	By Q4, Year 2	B36 data coordination with MoA for demosite provincial government Image: state		HS	S	HS
3.4.3. Verification of potential improvements of existing microhydro power plants completed	None	By Q4, Year 2	336 data coordination with provincial government	Datapotensi.mikrohidro.net	HS	S	S
3.4.4 No. of assessment reports on potential improvements completed	None	5 by Q4, Year 2	36 assessed	assessment report	HS	S	HS
Activity 3.5 Assessment of Technica	al Reliability an	d Viability of Local Manufacture	ers of Microhydro Power Genera	tion Equipment/Components	S	S	S
3.5.1.Assessment of technical reliability and viability of local microhydro equipment manufacturing completed	Limited	1 each year starting Q3, Year 1	Assessment of all microhydro manufacturers capability under the 3 categories.	monev.mikrohidro.net	S	S	S
3.5.2. Assessment of results disseminated in training/ workshops at the national and regional levels	Limited	By Q2, Year 2	Assessment and feedback system is established in the monev.mikrohidro.net as a feedback mechanism through internet by the provincial, district and individual levels. However, there are no responses received yet at the MMCH to determine whether the dissemination of training results are working properly. Based on the feedback, appropriate adjustments can be effected in the training courses.	monev.mikrohidro.net	S	S	S
Activity 3.6. Program for Standardiz	ation and Impro	ovement of Microhydro Power P	Plant Equipment and Component	t	S	S	S
3.6.1.Compendium of best practices and lessons learned in different microhydro systems manufacturing	Limited	By Q4, Year 1	Draft of Compendium was prepared July 2010 and finalized in August 2010 for	Publication	S	S	S

Component/Activity/Performance	ProDoc Activity/ Output Indicator		Final Review Assessment		Rating of Performance			
Indicator	Indicator Baseline EOP Target Actual Achievement as of September 30, 2010 Means of verification				Relevance	Efficiency	Effective ness	
and product performance in Indonesia and other countries completed			publication and dissemination					
3.6.2. Feasibility Study on the standardization of microhydro power plant equipment and components completed	 Feasibility Study on the dardization of microhydro power equipment and components oleted Limited By Q4, Year 1 By Q4, Year 1 Feasibility study was completed February 2010. Feasibility Study reparts and components oleted Establishment of national Limited Revised official standards by Results of the study showed Feasibility study 		Feasibility Study report	S	S	S		
3.6.3.Establishment of national microhydro technology standards	Limited	Revised official standards by Q4, Year 2Results of the study showed that the manufacturers are not very receptive to full pledged standards initiated by Q1, Year 3Results of the study showed that the manufacturers are not very receptive to full pledged standardization because of cost implication of elevated levels of 		S	S	S		
Activity 3.7. Sustainable Microhydro	Research and	Development Program		•	S	S	S	
3.7.1. Approved sustainable microhydro R&D program with Government, Microhydro manufacturers, owners, and private entrepreneurs in rural areas commitment to sustain microhydro R&D program	None	By Q4, Year 3	Sustainable microhydro R&D program developed.	Study Report	S	S	S	
3.7.2. % of the annual tax revenues from micro hydro operations committed by government to MH R&D – <i>Proposed to be changed to</i> – % of the GOI's RE R&D budget that is allocated for sustainable microhydro R&D program	None	15%	18% IDR 1.2 billion (USD 120,000) was allocated for R&D in Microhydro out of the total IDR 5.3 billion (USD 530,000) R&D budget for RE. Around IDR 800 million has been released for use.	BPPT Report	S	S	S	
3.7.3. % of gross revenues of microhydro owners. manufacturers	None	5%	6%	Interview with manufacturers	HS	S	S	

Component/Activity/Performance	ProDoc Activity/ Output Indicator		Final Review A	Rating of Performance			
Indicator	Indicator Baseline EOP Target Actual Achievement as of September 30, 2010 Means of verification		Relevance	Efficiency	Effective ness		
and private entrepreneurs committed each year for supporting microhydro technology development							
3.7.4. Annual Report on R&D accomplishment and next year's program published	None	NA Q4 of Year 4 and Year 5	NA NA		NA	NA	NA
Activity 3.8. Microhydro Resources and Potentials Assessment and Database Development						S	HS
3.8.1. Methodology for microhydro energy resource assessment completed	None	By Q4, Year 1	Completed and published in datapotensi.mikrohidro.net last May 2010. Manual on data submission, formats and reports have been issued.	potensi.mikrphidro.net	HS	S	S
3.8.2. % Microhydro resource potentials assessed/confirmed	None	80% by Q4, Year 2.	 652 MW were confirmed out of initial potential of 1,000 MW. 935 MW potential was identified to be the indicative figure for planning purposes as a result of IMIDAP/MMCH microhydro data confirmation. 	potensi.mikrphidro.net	HS	S	S
3.8.3. Updated microhydro resources map of the country	None	Annually starting Q1, Year 2	Completed data map in the database system using Google map which presents microhydro potential resources and existing capacity in the different provinces, regions, districts and villages updated on-line.	potensi.mikrphidro.net	HS	HS	HS
3.8.4. Microhydro Resource Database completed	None	By Q4, Year 2	Completed May 2010 and accessible by the public and stakeholders via Internet. A user-guide manual has been published and disseminated in training, provinces through their Distributed Content Agent (DCA) and other activities of IMIDAP and DGEEU.	Datapotensi.mikdrohidro.net	HS	HS	HS

Component/Activity/Performance	Component/Activity/Performance ProDoc Activity/ Output Indicator Final Review Assessment					Rating of Performance			
Indicator	Baseline	EOP Target	Actual Achievement as of September 30, 2010	Means of verification	Relevance	Efficiency	Effective ness		
3.8.5 In-house training for DGEEU personnel on microhydro resource assessment and database management completed	None	By Q1, Year 3	Completed in July 2010 for three (3) DGEEU staff directly involved in microhydro resource assessment and provided manuals and guidelines on how to assess, operate and manage the microhydro resources database system.Training ReportS		S	S	S		
Activity 3.9. Designs/Plans for Insta	llation and Imp	lementation of the Microhydro I	Demonstration Projects		S	S	S		
3.9.1. Detailed and approved installation plans and hardware specifications completed and approved	None	By Q2, Year 2.	Completed	Schematic diagrams of productive use applications. Microhydro power plant were already existing.	S	S	S		
3.9.2. Equipment procurement and delivery at site completed for each demonstration project	ient procurement and e completed for each n projectNoneBy Q3, Year 3CompletedPower plant facilities for 6 sites already existed prior to IMIDAP demonstration activities. These were chosen to showcase new innovations and initiatives of the project by demonstrating new facilities such as productive uses, on-grid connections and community-		S	S	S				
Activity 3.10. Technical Support for	Hardware Insta	llation and Operation for microl	hydro facilities		S	S	S		
3.10.1. Civil engineering, electromechanical equipment and support facilities construction completed	None	By Q4, Year 3	Existing power plants	Installed facility	S	S	S		
3.10.2. Installation and commissioning of microhydro power plants completed	None	By Q2, Year 4	Existing power plants	Installed facility	S	S	S		
3.10.3. Technical assistance to microhydro power sites during start- up of the facilities provided.	None	15 by Q3, Year 4.	Provided technical assistance in the operation and maintenance of the microhydro as well as the productive use	Field report	S	S	S		

Component/Activity/Performance	ProDoc	Activity/ Output Indicator	Final Review Assessment		Rating of Performance		
Indicator	Baseline	EOP Target	Actual Achievement as of September 30, 2010	Means of Verification		Efficiency	Effective ness
			facilities				
Component 4 – Microhydro Application Program							
Activity 4.1. Promotion of Microhyd	ro Delivery Mec	hanism in Demonstration Sche	mes	·	HS	S	HS
4.1.1. Number of interested private entrepreneurs and rural cooperatives as host for demonstrations.	Very limited number	At least 20 private entrepreneurs and 10 rural cooperatives by Q4, Year 1.	18 sites were considered and evaluated using the project demo site criteria	Report on Selection and Development to Manage Microhydro Demosites	HS	S	HS
4.1.2. Number of demonstration project sites identified for new and existing capacities employing a combination of delivery mechanisms	None	6 demo sites (3 for existing and 3 for new capacities selected by Q4, Year 2.	6 sites in various locations and typical case situations. Delivery mechanisms is through provincial government (3 sites) and through private sector (3 sites)	Report on Selection and Development to Manage Microhydro Demosites	Hs	S	HS
4.1.3. Commitment to host the microhydro demonstration plant by all selected entities confirmed.	Very limited only on specific projects.	By Q4, Year 2.	Commitment for the 6 sites were given in February-March 2010 as basis for MOA preparation	FGD Report dated March 2010.	7. HS	S	S
Activity 4.2 Microhydro-supported p	productive activ	ities development		•	S	S	S
4.2.1. Number of suitable market packages for productive applications developed	None	15 marketing packages by Q2, Year 2 and 10 packages each year thereafter	7 Lantan has 2 packages for productive uses	Report on Business Plans for Microhydro Demosites	S	S	MS
4.2.2 Number of projects funded by co-funding institutions involving productive application	None	8 marketing package s funded by Q4, Year 2 and 6 each year thereafter	6	Report on Selection and Development to Mange Microhydro Demosites	S	S	S
Activity 4.3. Barrier Removal Activit	ies for Demons	tration Scheme Implementation	I		HS	S	S
4.3.1. Favorable purchase price for microhydro electricity and special pricing arrangement with national utility confirmed and endorsed as policy initially for demo projects.	None	• By Q2, Year 3	For on-grid: Ministry Order NO. 31/2009 Salido Kecil is already selling power and has requested for availment of the new pricing policy based on the Ministry	PMU Reports	HS	S	HS

Component/Activity/Performance	ProDoc	Activity/ Output Indicator	Final Review A	Assessment	Rating of Performance			
Indicator	Baseline	aseline EOP Target Actual Achievement as of September 30, 2010 Means of verification				Efficiency	Effective ness	
			Order NO. 31/2009. For formula for payment arrangement in off-grid sites, agreement through consultation among microhydro plant management and households.					
4.3.2. Electricity consumption and demand assessment in demo sites completed	None	By Q2, Year 2	Completed for 6 sites	PMU Reports	HS	S	S	
4.3.3. Operating performance targets for microhydro power demonstration plants defined	None	By Q4, Year 2	Completed for 6 sites	Report on Barrier Removal for Demosites dated December 2009.	S	S	S	
Activity 4.4. Demonstration of produ	ictive use appli	cations	•	•	S	S	S	
4.4.1. Microhydro plant basic design and implementation plan for demonstration of productive uses of microhydro energy completed.	None	By Q1,Year 3	Completed for 6 sites and for 7 productive use packages. Report on Business Plans for Microhydro Demosites dated July 2010. Report on Selection and Development to Mange Microhydro Demosites dated		HS	S	S	
4.4.2. Comprehensive technical and economic feasibility evaluations and procurement plan for microhydro facilities completed.	None	By Q1, Year 3	Completed for 6 sites	Report on Barrier Removal for Demosites dated December 2009.	S	S	S	
4.4.3 MOA finalized and implementation of the demonstration projects started	None	MOA signed by Q2, Year 3 and start of implementation by Q3, Year 3	Approved Written agreement with local governments for the 6 sites are in various stages of formalization into official documents. Activities, however, proceeded as planned.	Copy of MOA approved for four (4) sites: 1.Gunung Sawur –April 7, 2010 2. Salido Kecil – April 15, 2010 3. Lantan – April 14, 2010 4. Cokrotulung – April 23, 2010	S	S	S	

Component/Activity/Performance	ProDoc	Activity/ Output Indicator	Final Review A	Assessment	Rating of Performance			
Indicator	Baseline	EOP Target	Actual Achievement as of September 30, 2010 Means of verification		Relevance	Efficiency	Effective ness	
				For the 2 other sites, the MOAs are in process of getting approval: Gunung Halu (pending ownership transfers) and Batanguru (remote and under new district).				
Activity 4.5. Baseline data establish	ment for the de	monstration project sites			HS	S	S	
4.5.1. Baseline data of microhydro demonstration projects established	None	By Q4, Year 2.	Completed and inputted in mikrohidro.net database for demosites on September 2010	www.mikrohidro.net	HS	S	S	
Activity 4.6 Monitoring and Evaluati	on of Performa	nce of each Microhydro Demon	stration Project		S	S	S	
4.6.1. Favorable economic and financial performance of microhydro demonstration projects	None	Average of at least 95% system efficiency each year starting Q4, Year 4	System for performance monitoring and evaluation in the economic and financial aspects for demosites has been completed.	Note: IMIDAP PMU has to issue data format and instructions as soon as possible in data gathering for the economic and financial performance evaluation of the demo sites. After evaluation, the results should be disseminated to attract interest in pursuing microhydro projects.	S	S	S	
4.6.2. Operating and economic performance of other microhydro projects	None	Average of about 90% system efficiency each year Average 10% IRR	Ongoing data gathering for performance of other microhydro projects for comparison with demo sites.	M&E Reports	S	S	S	
Activity 4.7. Sustainable Follow-Up	Program for Mi	crohydro Development			S	S	S	
4.7.1. Updated policy and implementing guidelines on off- and on-grid microhydro, and productive use applications of microhydro	No policy and implementing guidelines are enforced.	By end of Part I	Depending on the results of evaluation in Activity 4.6.1 and 4.6.2 to be used as basis for the updating of policy and guidelines.	Ongoing activity	S	S	MS	
4.7.2. Capacity of microhydro power systems added relative to the	<0.04 % share, at 4	0.5 % share, by end year 5	0.42% share Actual microhydro capacity	Master Plan for Development of Renewable	S	S	S	

Component/Activity/Performance	ProDoc Activity/ Output Indicator		Final Review A	Final Review Assessment			ance
Indicator	Baseline	EOP Target	Actual Achievement as of September 30, 2010	Means of verification	Relevance	Efficiency	Effective ness
country power mix	MW		added to the power mix is 365.9 MW. This is more than the 53 MW additional that was projected in end of Phase II n the ProDoc	Energy by DGEEU dated January 2010 DGEEU Data for 2006 and 2009 For 2010, from database of mikirohidro.net Summary table below in Table L1.			
4.7.3. Minimum amount of loan availed each year for financing microhydro projects (Proposed Change to: Amount invested for microhydro projects)	None	Minimum of US\$ 10.7 million Ioan each year by end Part I	USD 110.2 million in 2008-2009 National Gov: 13.06 Local gov:13.80 Private Sector: 64.32	Reports from Provincial and District Governments and the companies to PMU ending July 2010.	HS	S	HS

Note: Please notes on Ratings and definitions.

Table I.1 – Calculation of Electrification Share of Microhydro

Data	from RIPEBAT (Rer Data from Maste	icana Induk Pengemk r Plan of Developing	bangan Energi Ba New Renewable e	ru terbarukan) energy					
Year	Electrification Ratio	National Energy Consumption (TWh)	Power Generated (TWh)		Power Generated by Microhydro (MWh)		Cum. Power Generation MH (MWh)	Cum. Power Generation MH (TWh)	Electrification Share
				increase	on grid	off grid			
2007				22,172.44	22,172.44	234,657.44	256,829.87	0.26	
2008	62%	140	86.8	19,859.65	42,032.09	253,992.51	296,024.60	0.30	0.34%

2009	62%	155.4	96.348	18,841.30	60,873.39	254,597.65	315,471.04	0.32	0.33%
2010	62%	170.8	105.896	20,297.65	81,171.04	363,339.42	444,510.45	0.44	0.42%

Source: MMCH

Table I.2 Summary of Investments in Microhydro, in million USD

	2008	2009	2010	Total
National	9.714	11.112	11.238	32.064
Provincial/District	1.268	7.392	5.148	13.808
Private Sector	10.499	23.891	29.935	64.325
	21.481	42.395	46.321	110.197

Annex J - IMIDAP Outcomes and Impacts and Ratings

	ProDoc Values			Actual	Achievement			Rating on Performance			
Outcome Indicators	Baseline	Target as of End of Project (EOP) - Phase I	Year 1 (Jan - Dec 2008)	Year 2 (Jan - Dec 2009)	Year 3 (Jan - Sept 2010)	Total for Jan 2008 - Sept 2010	Means of Verification	Relevance	Efficiency	Effectiveness	
Goal: Reduction of GHG	emissions from	fossil fuel-based power §	generation								
Cumulative amount of GHG reduced in kilotons of CO ₂	15	303.9 (reviewed using updated methodology)	<mark>7.3</mark>	<mark>520.6</mark>	<mark>596.5</mark>	621.8	Table G.1 below	HS	S	HS	
Purpose/Outcomes:	Acceleration of t	he development of micro	hydro resources a	nd optimization of t	heir utilization by r	emoving barriers.					
• Ave. % annual growth of installed micro hydro power generation capacity in the country for on-grid and off-grid applications	 On-grid: 5% (1994- 2004) Off-grid: 7% (1994- 2004) 	 On-grid: 10% avg. Off-grid: 20% avg 	 On-grid: 14.34% Off-grid: 75.26% 	 On-grid: (4.93%+36.9%) = 41.83% Off-grid: 39.93%* 	 On-grid: 5.34% Off-grid: 28.02% 	 On-grid: 7.1% Off-grid: 37.27%* 	Sites of data base mikrohidro in monev.mikrohidro.net Table J.1 below	HS	S	HS	
• Ave. % annual growth of installed microhydro power generation capacity in the country for electricity and non- electricity applications	Ave. annual growth rate = 5.2% (1994- 2004)	 For power applications: average 16%; For non-power applications: average 16%. 	n.a.	 Power: 32% Non-power: 32% 	 Power: 36% Non-power: 36% 	 Power: 37.5% Non-power: 37.5% 	Table J.1 below	HS	S	HS	
Number of projects off-grid and on-grid	No data	 off-grid: 79 (cumulative) on-grid: 80 (cumulative) 	 Off grid: 86 On grid: 2 	 Off grid: 43 On grid: 4 	 Off Grid : 87 data On Grid : 4 data 	 Off Grid (Dec 2010): 97 226 data Cummulative On Grid (Dec 2010): 4 data Cummulative 10 data 	Database in datapotensi.mikrohidro.net	S	S	S	

	ProDoc Values			Actual	Achievement			Rating on Performance			
Outcome Indicators	Baseline	Target as of End of Project (EOP) - Phase I	Year 1 (Jan - Dec 2008)	Year 2 (Jan - Dec 2009)	Year 3 (Jan - Sept 2010)	Total for Jan 2008 - Sept 2010	Means of Verification	Relevance	Efficiency	Effectiveness	
• Ave. percent increase in electricity demand in the areas served by microhydro power	No monitoring)	16% growth	5%	10%	16%	18%		S	S	S	
Cumulative micro- hydro electricity used by small- medium enterprises	No data	52 GWh	15.1 GWh	24 GWh	28.2 GWh	29.2 GWh	Database in datapotensi.mikrohidro.net	MS	MS	MS	
Cumulative number of community-based microhydro projects	No data	50 by Year 3	55	108	128	133	Datapotensi.mikrohidro.net In fact sheet information	HS	HS	HS	
Number of households electrified using microhydro	No data	0.4 million HH by Year 3	0.0085 million HH (mostly unreported yet)	0.59 million HH	0.695 million HH	0.869 million HH	Computation data from datapotensi.mikrohidro.net and monev.mikrohidro.net Table J.2 below	HS	HS	HS	
 Annual production and sales of microhydro electricity 	20 GWh (2006)	Produced: 80 MWh/year Sold: 70 MWh/year	Produced: 8.4 GWh Sold: 7.3 GWh	Produced: 146 GWh Sold: 127 GWh	Produced: 147 GWh Sold: 127 GWh	Produced: 182.6 GWh Sold: 169 GWh	Computation data from datapotensi.mikrohidro.net and monev.mikrohidro.net Table J.2 below.	S	S	S	

			Actual Implementation				
	Baseline (2006)	Prodoc Target by end of Phase 2	2009	2010			
Annual Installed	200	53	17	348.9			
Capacity, in MW							
Cumulative	200	253	217	565.9			
Installed Capacity,							
in MW							
Indicative	500	NA	769	973			
Microhydro							
Resource Potential							

Table J.1. Summary of Microhydro Capacity Added

Table J.2. Impacts and Outcome Metrics

Voor	Energy Gene	ration (MWh)	CO2 Reducti	on (K.Tons)	Total		
rear	on grid	off grid	Direct	Indirect	Annual	Cumulative	
2007	22,172.44	234,657.44	103,271.72	61,963.03	165,234.76	165,234.76	
2008	22,172.44	253,992.51	110,925.51	66,555.31	177,480.82	342,715.57	
2009	22,172.44	254,597.65	111,165.06	66,699.03	177,864.09	520,579.66	
may, 2010	7,532.55	86,993.41	37,963.57	22,778.14	60,741.72	581,321.38	
Cum. 31							
May	74,049.86	830,241.01	363,325.86	217,995.52		581,321.38	

May-Sept 10	1,883.14	21,748.35	9,490.89	5,694.54	15,185.43	596,506.81
Cum. Sept	75 933 00	851 080 36	372 816 76	222 600 05		596 506 81
2010	73,933.00	031,909.30	3/2,010.70	223,090.03		390,300.01
Jan-Sept						
'10	9,415.69	108,741.77	47,454.47	28,472.68	75,927.15	596,506.81

Table J.3. Calculation of Electricity Generation and Sales

Data in year (from database datapotensi .mikrohidro .net)	Unit	Capacit y (kW)	Complet e Data (kW)	power on	Power prod.	SPP (GWh)	acum.	Sales	0.75	Cumulative	Cum. sale s
		6,026.0	6,066.0		22,140,900						16.7
2007	74	0	0	3650	.00	19.26	19.26	16.76	19.26	19.26	6
		5,361.0	5,441.0		19,859,650						31.7
2008	86	0	0	3650	.00	17.28	36.54	15.03	17.28	36.54	9
		5,042.0	5,162.0		18,841,300						46.0
2009	43	0	0	3650	.00	16.39	52.93	14.26	16.39	52.93	5
			5,561.0		20,297,650				13.2442		61.4
2010	91		0	3650	.00	17.66	70.59	15.36	17	66.18	1
			percent increas e	on- grid	off-grid			by SME			
	0.89696			14.34				8,972,692.		8,972,692.	
2008	67		89.60%	90	75.26%			80	0.00	80	
2009	0.44859		44.86%	4.93%	39.93%			15,104,692	0.00	15,104,692	

Data in year (from database datapotensi .mikrohidro .net)	Unit	Capacit y (kW)	Complet e Data (kW)	power on	Power prod.	SPP (GWh)	acum.	Sales	0.75	Cumulative	Cum. sale s
	65							.80		.80	
2010	0.33361 33		33.36%	5.34%	28.02%	7.10%	37.27 %	4,125,960. 00	1031490	5,157,450. 00	
								28,203,345 .60		29,234,835 .60	
					Year 2008	Watt/H H		нн			
					1.47 MW	200		7,350.00	off grid		
					0.54 MW	450		1,200.00	on grid		
					Year 2009	Watt/H H		нн			
					265565	450		590 , 144.44	off grid		
					29507.2222 2	900		32,785.80	on grid		
					2010 -Sept	Watt/H H		НН			
					625625	900		695 , 138.89	off grid		
					56875	2200		25,852.27	on grid		
					2010, Dec	Watt/H H		нн			
					782031.25	900		868,923.61	off grid		
					71093.75	2200		32,315.34	on grid		

Name of Partner or Contributor (including the Private Sector)	Nature of Contributor[8]	Amount used in Project Preparation (PDF A, B, PPG)	Amount committed in Project Document[9]	Additional amounts committed after Project Document finalization	Estimated Total Disbursement to 30 Jun 2010	Expected Total Disbursement by end of project
GEF Contribution	GEF	\$0.089	\$2.000	\$0.000	\$1.806	\$2.000
Cash Cofinancing – UNDP managed		\$0.022	\$0.165	\$0.041	\$0.165	\$0.206
UNDP (TRAC)	UN Agency		\$0.059	\$0.059	\$0.071	\$0.118
Cash Cofinancing – Partner Managed	National Govt		\$15.638	\$19.404	\$32.217	\$35.042
	Local Govt		\$1.767	\$15.974	\$13.658	\$17.741
	Private Sector		\$0.900	\$65.924	\$64.330	\$66.824
	Total		\$18.305	\$101.302	\$110.205	\$119.607
In-Kind Cofinancing	National Govt			\$0.693	\$0.282	\$0.693
Total Cofinancing		\$0.022	\$18.529	\$102.095	\$110.723	\$120.624
Total for Project 2010		\$0.111	\$20.529	\$102.095	\$112.529	\$122.624

Annex K – Summary of Total Project Financing, in Million USD

ltem	JAN	I – DEC 2007	JAN – DEC 2008			JAN – Dec 2009		– Sep 2010	CUMULATIVE TOTAL Assess expense by Dec 2010	Totals
Budget Description	Rp	USD	Rp	USD	Rp	USD	Rp	USD	USD	
Component 1										
Local Consultant			459,989,496	49,749		48,466		39,708	10,381	
Travel		4,965.62	160,061,130	16,093		46,982		19,021		
Contractual Services			625,330,300	61,286		54,355		21,595		
Equipment			6,549,939	686						
Communication & Audio Visual Equipment			4,679,513	467		768		1,217		
Supplies		2,391.88	7,115,693	766		591		90		
Rental & Maintenance of Other equipment			-	-						
Professional Services		2,285.31	91,680,352	9,785		8,907		3,534		
Audio Visual & Print Prod Costs			-	-		8,806		3,038		
Miscellaneous			8,769,109	958		-231		-394		
Prepaid Project Advances			201,605	13				0		
Total		9,642.81	1,364,377,136	139,802		168,644		87,810	10,381	
Component 2										
Local Consultant			573,420,057	57,984		11,201		47,597	12,819	
Travel		5,044.54				164,296		43,410		

Annex L - GEF Fund and Disbursements up to September 30. 2010

ltem	JAN	– DEC 2007	JAN – DEC 2008		JAN – Dec 2009		Jan – Sep 2010		CUMULATIVE TOTAL Assess expense by Dec 2010	Totals
Budget Description	Rp	USD	Rp	USD	Rp	USD	Rp	USD	USD	
			1,149,749,791	119,793						
Contractual Services						30,851				
Equipment			-	-				5		
Communication & Audio Visual Equipment			4,980,685	479		2,041		2,081		
Supplies		2,391.88	44,349,389	4,619		631		406		
Rental & Maintenance of Other equipment			16,213,099	1,676		286		102		
Professional Services		2,442.82	666,876,404	71,172		35,242		15,099		
Audio Visual & Print Prod Costs			104,019,163	9,628		29,777		14,615	4,679	
Miscellaneous			6,603,721	663		-187				
Prepaid Project Advances			626,897	367						
Total		9,879.24	2,566,839,205	266,381		274,138		123,315	17,498	
Component 3										
International Consultant								4,664	10,881	
Local Consultant			309,340,046	33,575		76,739		31,122	13,773	
Travel		4,594.44	312,173,018	33,770		94,572		26,167		
Contractual Services			393,715,000	38,586		30,099				
Equipment and Furniture		15,430.27	-	-				1,882		

ltem	JAN	I – DEC 2007	JAN – DEC	JA	N – Dec 2009	Jan	– Sep 2010	CUMULATIVE TOTAL Assess expense by Dec 2010	Totals	
Budget Description	Rp USD		Rp	Rp USD		o USD		USD	USD	
Communication & Audio Visual Equipment			200,000	16		1,667		1,979		
Supplies		395.09	14,631,839	1,581		914		86		
Information Technology Equipment			13,824,533	1,374		14,053				
Professional Services		3,520.61	237,163,800	21,529		43,892		5,867	1,930	
Audio Visual & Print Prod Costs			5,949,533	642		5,740		341		
Miscellaneous			5,543,059	505		21				
Prepaid Project Advances			180,004	0						
Total		23,940.41	1,292,720,832	131,580		267,697		72,108	26,584	
Component 4										
Local Consultant			337,984,863	30,681		65,692		28,278		
Contractual Services-Individuals			-	-		57,191				
Travel		5,622.42	72,194,283	7,559		60,146		32,474	4,423	
Equipment and Furniture			-	-		8,835			5,583	
Communication & Audio Visual Equipment						129		335		
Supplies			7,444,975	692		862		218		
Information Technology Equipment			76,800,176	8,127				164		

ltem	JAN	– DEC 2007	JAN – DEC	JA	N – Dec 2009	Jan	– Sep 2010	CUMULATIVE TOTAL Assess expense by Dec 2010	Totals	
Budget Description	Rp	USD	Rp	USD	Rp	USD	Rp	USD	USD	
Maintenance of other equipment								454		
Professional Services		2,565.61	50,558,341	5,395		18,661		6,822		
Audio Visual & Print Prod Costs			-	-		12,746		6,424		
Miscellaneous			9,672,351	1,051		-530				
Total		8,188.03	554,654,989	53,505		223,732		75,169	10,006	
Total Expenditures51,650		591,268		934,212			358,401	64,469(*)	2,000.000	

*) Estimation expenditures for Q4 . Prediction total expenditures 2007-2010 =USD 2,000,000(GEF commitment)

Institutio	Prodoc	Contact	Descripti	2008		Jan-Sept 2009		Cumulati ve 2008	Sept 2009 - June 2010		Cumulati ve 2008	Sept 2009 - Sept 2010		Cumulative 2008 - Sept 2010		Cummulati ve 2008 - Des 2010
n	(US \$)	Person	on or Actual	Plan	Plan Actual	Plan	Actual	- Sept 2009	Plan	Actual	- June 2010	Plan	Actual	Plan	Actual	Actual
				US\$	US\$	US\$	US\$	US\$	US\$	US\$	Actual	US\$	US\$	US\$	US\$	US\$
National Goverment																
DGEEU	12,807,700	Dadan Kusdiana	Infrastru ktur	3,023,61 1	3,023,61 1	4,749,33 8	4,749,33 8	7,772,94 9	7,662,52 9	7,662,52 9	15,435,4 78	7,662,52 9	7,662,52 9	12,411,8 67	15,435,4 78	
P3TEK KEBT	1,590,300	Ris Wahyuti	R&D	58,333	58,333	60,389	60,389	118 , 722	266,667	266,667	385,389	266 , 667	266,667	327 , 056	385,389	
P3 KEBT (Training Centre)		Kansman Hutabarat	Training	39 , 667	39,667	47,222	47,222	86,889	60,000	60,000	146,889	60,000	60,000	146,889	146,889	
MoC & SMEs	1,240,000	Abdul Kadir Damanik	Capacity Building	12,773	12,773	89,538	89,534	102,311	200,000	200,000	302,311	200,000	200,000	302,311	302,311	
Kemneg PDT		Siswa	Infrastru ktur	2,623,84	2,477,35 2	3,148,09 7	3,148,09 7	5,625,11 7	888,889	888,889	6,514,00 6	888,889	888,889	6,660,83 4	6,514,00 6	
Dep. Dalam Negeri/PNP M		Ivan Syahri Rangkuti	Infrastru ktur	4,144,44	4,144,44 4	3,066,66 7	3,066,66 7	7,211,11 1	2,222,22 2	2,222,22 2	9,433,33 3	2,222,22 2	2,222,22 2	9,433,33 3	9,433,33 3	
Fotal National Goverment	15,638,000							20,917,0 99	11,300,3 07	11,300,3 07	32,217,4 06	11,300,3 07	11,300,3 07	29,282,2 90	32,217,4 06	35,042,48 2
Province Goverment																
West Java	1,767,000	H.S .Sumarwan	Infrastru ktur	318,088	318,088	578,984	578,984	897,073	363,160	363,160	1,260,23 3	363,160	363,160	1,260,23 3	1,260,23 3	
Central Java		Dwi Lestari	Infrastru ktur	165,566	165,566	103,889	103,889	269 , 455	-	-	269 , 455	-	-	269 , 455	269 , 455	

Annex M - IMIDAP CO-FINANCING AND COMPLIANCE ON DELIVERABLES

Institutio	Prodoc	Contact	Descripti	2008		Jan-Sept 2009		Cumulati ve 2008	Sept 2009 - June 2010		Cumulati ve 2008	Sept 2009 - Sept 2010		Cumulative 2008 - Sept 2010		Cummulati ve 2008 - Des 2010
n	(US \$)	Person	Actual	Plan	Actual Pla	Plan	Actual	2009	Plan	Actual	- June 2010	Plan	Actual	Plan	Actual	Actual
				US\$	US\$	US\$	US\$	US\$	US\$	US\$	Actual	US\$	US\$	US\$	US\$	US\$
East Java		M.Ikbal	Infrastru ktur	-	0	111,111	111,111	111,111	-	-	111,111	-	-	111,111	111,111	
West Nusa Tenggara		Heriyadi Rahmat	Infrastru ktur	161,111	161,111	194,444	194,444	550,000	222,222	222,222	772,222	2,951,69 5	2,951,69 5	3,307,25 0	3,501,69 5	
West Sumatera		Andawarne ri	Infrastru ktur	12,222	12,222	334 , 222	334 , 222	346 , 444	1,666,66 7	1,666,66 7	2,013,11	1,666,66 7	1,666,66 7	2,013,11 1	2,013,11	
South Sulawesi		Bustanudd in	Infrastru kur	412,222	412,222	338,889	338,889	751 , 111			751,111	-	-	751,111	751,111	
DI Yogyakarta		Edi	Infrastru ktur	-	-	802,667	802,667	802,667			802 , 667	56 , 667	56 , 667	856,334	856,334	
West Sulawesi		Maswedi	Infrastru ktur			138,778	138,778	138,778			138,778	12,222	12,222	151,000	151,000	
Gorontalo			Infrastru ktur			77,778	77,778	77,778			77,778			77,778	77,778	
Total Province Goverment	1,767,000							3,944,41 7	2,252,04 9	2,252,04 9	6,196,46 6	5,050,41 0	5,050,41 0	8,797,38 3	8,991,82 8	10,254,43 0
District Goverment																
Banjarneg ara		Supriyo	Infrastru kur	200,000	200,000	106	106	2,750,00 0	100,000	100,000	2,850,00	100,000	100,000	300,106	2,850,00	
Majene		Maswedi	Infrastru kur			13,333	13,333	13,333			13,333			13,333	13,333	

Institutio	Prodoc	Contact	Descripti on of Actual	2008		Jan-Sept 2009		Cumulati ve 2008	Sept 2009 - June 2010		Cumulati ve 2008	Sept 2009 - Sept 2010		Cumulative 2008 - Sept 2010		Cummulati ve 2008 - Des 2010
n	(US \$)	Person		Plan	Actual	Plan	Actual	- Sept 2009	Plan	Actual	- June 2010	Plan	Actual	Plan	Actual	Actual
				US\$	US\$	US\$	US\$	US\$	US\$	US\$	Actual	US\$	US\$	US\$	US\$	US\$
Merangin, Jambi		Tandri	Infrastru kur			4,598,25 1	4,598,25 1	4,598,25 1			4,598,25 1			4,598,25 1	4,598,25 1	
Total Distric Goverment								7,361,58 4	100,000	100,000	7,461,58 4	100,000	100,000	4,911,69 0	7,461,58 4	7,486,583
Total Goverment	#VALUE!							14,257,6 96	13,652,3 56	13,652,3 56	45,875,4 56	16,450,7 17	16,450,7 17	42,991,3 64	48,670,8 18	52,783,49 5
Privat Sector																
Nusantara Indo Energi (NIE)		Tunjung	Infrastru kur	7,177,77	7,166,66 7	12,561,1 11	12,561,1 11	19,727,7 78	10,540,0 00	10,540,0 00	30,267,7 78	10,540,0 00	10,540,0 00	30,278,8 89	30,267,7 78	
Naluri Energi Utama (NEU)		Sumarwoto	Infrastru kur	-	0	4,888,88 9	4,888,88 9	4,888,88 9	2,100,00	2,100,00	6,988,88 9	2,100,00	2,100,00	6,988,88 9	6,988,88 9	
PT Istana Niaga		Eddy Mulyono	Infrastru kur	-	0	777,778	777,778	777,778	10,940,0 00	10,940,0 00	11,717,7 78	10,940,0 00	10,940,0 00	11,717,7 78	11,717,7 78	

Institutio	Prodoc	Contact	Descripti on of Actual	2008		Jan-Sept 2009		Cumulati ve 2008	Sept 2009 - June 2010		Cumulati ve 2008	Sept 2009 - Sept 2010		Cumulative 2008 - Sept 2010		Cummulati ve 2008 - Des 2010
n	(US \$)	Person		Actual	Plan	Actual	Plan	Actual	- Sept 2009	Plan	Actual	- June 2010	Plan	Actual	Plan	Actual
				US\$	US\$	US\$	US\$	US\$	US\$	US\$	Actual	US\$	US\$	US\$	US\$	US\$
PT. PLN		Harlen	Infrastru kur	3,555,55 6	3,333,33 3	777,778	688,889	4,022,22	-	-	4,022,22	-	-	4,333,33	4,022,22 2	
PT Sewa Utama		Dendy Rizki	Infrastru kur	_	0	1,666,66 7	1,666,66 7	1,666,66 7	_	-	1,666,66 7	-	-	1,666,66 7	1,666,66 7	
PT Bayu Buana Energi		Irawan Hari Putranto	Infrastru kur	-	0	3,333,33 3	3,311,11 1	3,311,11 1	6,355,55 6	-	3,311,11 1	6,355,55 6	6,355,55 6	9,688,88 9	9,666,66 7	
Total Private Sector								34,394,4 44	29,935,5 56	23,580,0 00	57,974,4 44	29,935,5 56	29,935,5 56	64,674,4 44	64,330,0 00	71,813,88 8
Total								48,652,1 40	43,587,9 12	37,232,3 56	103,849, 901	46,386,2 73	46,386,2 73	107,665, 808	113,000, 818	124,597,3 83

Note :

Untuk bulan desember estimasi : aktual Sept 2009/12 x 3 + cummulative sept 2009

Annex N - IMIDAP Project Implementation M&E System

a. M&E System Design

The overall design of the M&E system aims to monitor results and track progress to achieve project objectives. Based on the indicators of the power plant operations and overall program outputs and outcomes of the IMIDAP program, the following data elements were designed to be monitored and the data are stored in corresponding databases as <u>www.monev.mikrohidro.net</u>. Availability, indicated as **(a)** in the list below, of information in DGEEU as of 2006 became the starting points for the baseline information.

- h. Power plant and Productive uses
 - 1. Location of power plants (a)
 - 2. Capacity (a)
 - 3. Productive use
 - 4. Hours of operation
 - 5. Cost of equipment and installation (a)
 - 6. Cost of operation and maintenance
 - 7. Type of distribution (on-grid or off-grid)
 - 8. Increase in productive use activities
- i. Manufacturing
 - 1. Location of manufacturing enterprises (a)
 - 2. Capacity
 - 3. Components
 - 4. Hours of operation
 - 5. Technical personnel (a)
 - 6. Market for equipment
- j. Services
 - 1. Proposal Submissions
 - 2. Technical Assistance support for proposal
 - 3. Financial assistance support
 - 4. Data tracking for proposals
 - 5. Training and certification
 - 6. Availability of technical personnel
 - 7. Service providers
 - 8. Maintenance and operation of Power plants
- k. Microhydro resources Potential
 - 1. Location, sites (a)
 - 2. Potential measurement/confirmation (a)
 - 3. Hydrology and Sustainability of water supply (a)
 - 4. Technology that can be used to harness the potential (a)
 - 5. Availability of participants to develop the potential in the area (a)
 - 6. Feasibility study preparation (a)
 - 7. Business planning
- I. System for data gathering and report preparation
- m. Fact sheet reports
- n. Communication system via internet on input and dissemination of results Online analysis processing (OLAP) system

Those without **(a)** indicated are new additions in the monitoring as designed following the Logical Framework of IMIDAP.

b. Baseline

Thus, the following became the baseline for the IMIDAP M&E System:

- a. Data on whatever available indicated as (a) on the above list of monitoring elements from DGEEU as of 2006.
- b. Description of initial activities being done during the start of the project in 2006
- c. Decision on Data sources and frequency of reporting
- d. Level of aggregation being done at baseline conditions

c. Methodology

- a. Use the logical framework for the indicators that will be monitored and determine how the data will be gathered and inputted in the database system.
- b. Determine the reporting and dissemination procedures
- c. Determine the responsible parties at every stage of data gathering, analysis and reporting

d. Time frame for various M&E activities and standards for outputs

- a. Collection input of data every week
- b. Report outputs every end of month
- c. Power plant operational data on real time basis (once the remote system instruments are installed in every power plant location through data satellite and GPRS system

e. M&E plan implementation

- a. M&E system in place as <u>www.mikrohidro.net</u>. System of timely tracking of progress toward project objectives in place in <u>monev.mikrohidro.net</u>. System of collecting and authentication of information on chosen indicators regularly is enforced through Ministry of Energy directives to DINAS/ESDM
- b. System of providing information on various services and human resources in place. 100% Percent of actual data from DGEEU and other relevant government agencies inputted in the databases. Estimated 60% percent of data from outside sources (e.g NGO funded by international funding sources
- a. Compliance with annual project reports. Database is very useful in generating reports. Profiles of power plants continuously being inputted and updated. Data on actual generation is 90% complete. MWhrs are derived from the data on installed capacity of reported microhydro plants in the <u>datapotensi.mikrohidro.net</u>
- c. Estimations are based on assumed number/capacity of microhydro actually operating, number of operating hours per year, availability factor, load factor and efficiency factor. Information provided by the M&E system is being used during the project to improve performance and to adapt to changing needs
- d. Proper training for parties responsible for M&E activities to ensure that data continued to be collected and used. Data on training and certification on <u>certification.mikrohidro.net</u>

f. Budgeting and funding for M&E activities

The IMIDAP M&E system is sufficiently budgeted for at the project planning stage and funded adequately and in a timely manner during implementation. The operation of the system is well-placed in the MMCH program under the DGEEU.