

Evaluation Design Report

On-Grid Renewable Energy

MCA INDONESIA GREEN PROSPERITY PROJECT

January 28, 2018



EVALUATION DESIGN REPORT
Evaluation of On-grid Renewable Energy

MCA Indonesia Green Prosperity Project
January 28, 2019

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The views and opinions expressed herein are those of the author(s) and do not necessarily
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TABLE OF CONTENTS

| | |
|--|----|
| TABLE OF CONTENTS | 3 |
| TABLES AND FIGURES | 4 |
| 1. INTRODUCTION AND BACKGROUND | 7 |
| 1.1 COUNTRY CONTEXT | 7 |
| 1.2 OVERVIEW OF THE COMPACT AND THE GP PROJECT | 8 |
| 1.3 OBJECTIVES OF THE REPORT | 10 |
| 2. OVERVIEW OF THE GREEN PROSPERITY FUND AND THE INTERVENTIONS EVALUATED | 11 |
| 2.1 OVERVIEW OF THE GPF | 11 |
| 2.2 THEORY OF CHANGE | 12 |
| 2.4 COST BENEFIT ANALYSIS (CBA) AND BENEFICIARY ANALYSIS | 22 |
| 2.5 LITERATURE REVIEW | 23 |
| 2.5.1 Existing Literature | 23 |
| 2.5.2 Gaps in Literature | 32 |
| 2.6 POLICY RELEVANCE OF THE EVALUATION | 32 |
| 3. EVALUATION DESIGN | 32 |
| 3.1 EVALUATION QUESTIONS | 32 |
| 3.2 EVALUATION DESIGN OVERVIEW | 33 |
| 3.2.1 Implementation Fidelity Assessment | 33 |
| 3.2.2 Performance Evaluation | 34 |
| 3.3 QUANTITATIVE APPROACH | 38 |
| 3.3.1 Desk Review | 38 |
| 3.3.2 Key Informant Interviews | 38 |
| 3.3.3 Analysis Plan | 38 |
| 3.3.4 Cost Benefit Analysis | 38 |
| 3.4 QUALITATIVE APPROACH | 44 |
| 3.4.1 Desk Review | 44 |
| 3.4.2 Key Informant Interviews | 45 |
| 3.4.3 Focus Group Discussions | 47 |
| 3.4.4 Analysis Plan | 48 |
| 3.5 SAMPLING APPROACH | 48 |
| 3.6 CHALLENGES AND LIMITATIONS | 48 |
| 4. ADMINISTRATIVE | 49 |
| 4.1 SUMMARY OF IRB REQUIREMENTS AND CLEARANCES | 49 |
| 4.2 DATA PROTECTION | 50 |
| 4.3 PREPARING DATA FILES FOR ACCESS, PRIVACY, AND DOCUMENTATION | 50 |
| 4.4 DISSEMINATION PLAN | 50 |
| 4.5 EVALUATION TEAM ROLES AND RESPONSIBILITIES | 50 |
| 4.6 EVALUATION TIMELINE AND REPORTING SCHEDULE | 52 |
| 5. REFERENCES | 53 |
| 6. ANNEXES | 55 |
| 6.1 STAKEHOLDER COMMENTS AND EVALUATOR RESPONSES | 55 |
| 6.2 EVALUATION BUDGET | 56 |
| 6.3 DESCRIPTION OF DONOR ENERGY PROGRAMS | 57 |
| 6.3.1 IFC's Sustainable Energy Finance Program | 57 |
| 6.3.2 World Bank SME Finance | 58 |
| 6.3.3 GIZ General Energy Description | 60 |
| 6.3.4 ADB's Work in the Energy Sector | 62 |
| 6.3.5 JICA's Energy Programs | 63 |
| 6.4 INSTRUMENTS | 66 |
| 6.5 MCC COMMENTS ON THE DRAFT EDR | 80 |

Tables and Figures

| | |
|--|----|
| TABLE 1. SUMMARY OF ALL ON-GRID RE GRANTS | 18 |
| TABLE 2. INCENTIVES TO PROMOTE RE PRIOR TO ENTRY INTO FORCE | 22 |
| TABLE 3. PLN'S HISTORICAL FINANCIAL STATISTICS | 25 |
| TABLE 4. TYPICAL TERMS FOR SMALL HYDRO | 28 |
| TABLE 5. EVALUATION QUESTIONS | 31 |
| TABLE 6. SUMMARY OF EVALUATION APPROACHES..... | 36 |
| TABLE 7. BENEFITS, COSTS, AND STAKEHOLDERS: EVALUATION-BASED CBAs | 40 |
| TABLE 8. ASSUMPTIONS TO BE VERIFIED FOR EVALUATION-BASED CBA | 42 |
| TABLE 9. SUMMARY OF QUALITATIVE DATA COLLECTION RESPONDENTS..... | 43 |
| TABLE 10. KEY INFORMANTS | 45 |
| TABLE 11. FOCUS GROUP PARTICIPANTS | 47 |
| TABLE 12. TEAM ROLES AND RESPONSIBILITIES | 50 |
| TABLE 13. DATA COLLECTION TRIPS..... | 51 |
| FIGURE 1. PLANNED GPF GRANT SPENDING | 11 |
| FIGURE 2. GREEN PROSPERITY PROJECT STRUCTURE | 12 |
| FIGURE 3. GREEN PROSPERITY LOGICAL FRAMEWORK | 13 |
| FIGURE 4. RE GRANT CYCLE..... | 15 |
| FIGURE 5. PT SINAR AGRO RAYA METHANE CAPTURE..... | 16 |
| FIGURE 6. LUBUK GADANG POWERHOUSE | 17 |
| FIGURE 7: ELECTRICITY GENERATION BY SOURCE..... | 24 |
| FIGURE 8. BARRIERS TO RENEWABLE ENERGY | 29 |
| FIGURE 9. EXPANSION OF COST-SAVING FOR PLN | 38 |
| FIGURE 10. INTRODUCTION OF GRANTS AS A TRANSFER INTO THE CBA MODEL | 39 |
| FIGURE 11. LOGICAL STRUCTURE OF THE CBA MODEL | 39 |

Acronyms

| | |
|--------|--|
| BOO | Build-own-operate |
| BOOT | Build-own-operate-transfer |
| CBA | Cost Benefit Analysis |
| CBS | Community Benefit Sharing |
| CFP | Call for Proposals |
| COD | Commercial Operational Date |
| COP21 | Conference of the Parties – United Nations Climate Change Conference |
| DRA | District Readiness Assessment |
| ERR | Economic Rate of Return |
| FGD | Focus Group Discussion |
| FIT | Feed-in tariff |
| GHG | Greenhouse Gas |
| GK | Green Knowledge |
| GoI | Government of Indonesia |
| GP | Green Prosperity |
| GPF | Green Prosperity Facility |
| GW | Gigawatts |
| IC | Investment Committee |
| ICED | Indonesia Clean Energy Development |
| IFC | International Finance Corporation |
| IPP | Independent Power Producer |
| IRB | Institutional Review Board |
| LULUCF | Land Use, Land-use Change and Forestry |
| KII | Key Informant Interview |
| M&E | Monitoring and Evaluation |
| MCA-I | Millennium Challenge Account Indonesia |
| MCC | Millennium Challenge Corporation |
| MEMR | Ministry of Energy and Mineral Resources |

| | |
|-------|---|
| MW | Megawatt |
| NRM | Natural Resources Management |
| O&M | Operations and Maintenance |
| PDU | Project Development Unit |
| PE | Performance Evaluation |
| PFAN | Private Financial Advisory Network |
| PLN | Perusahaan Listrik Negara (State Electricity Company) |
| PLUP | Participatory Land Use Planning |
| PMC | Project Management Consultant |
| POME | Palm Oil Mill Effluent |
| PPA | Power Purchase Agreement |
| RE | Renewable Energy |
| TAO | Technical Assistance and Oversight Activity |
| TAPP | Technical Assistance Project Preparation |
| USAID | United States Agency for International Development |
| USG | United States Government |

1. INTRODUCTION AND BACKGROUND

1.1 Country Context

Indonesia has made important strides in political and economic development, entering the ranks of middle-income countries as the tenth largest economy in the world in terms of purchasing power¹. It is also the fourth most populous country. GDP has outgrown population; per capita GDP rose from close to \$850 in 1990 to almost \$3,850 in 2017.

Despite this growth, challenges still remain. Sustained growth relies on efficient, clean energy as an important part of the electricity supply, the protection of natural capital, and the reduction of greenhouse gas emissions. Equally important for the Green Prosperity Project is the ease of doing business. Indonesia ranked 73rd in the ease of doing business², 34th in starting a business and 112th in ease of obtaining construction related permits in 2018².

At the time that the GPF was conceived, Indonesia was suffering from power shortages that were dampening economic growth. According to the World Bank, “generation capacity growth in Indonesia has been lower than growth in electricity demand, leading to power shortages and a low electrification ratio”³. Over the period 2008-2013, Indonesia ranked 55th out of 71 countries based on the energy supply index⁴. Against the backdrop of worsening supply, the Government of Indonesia (GoI) estimated that national electricity demand would increase six times over the next two decades. At the same time, the GoI was also making a concerted effort to reduce greenhouse gas (GHG) emissions, including by embracing renewable energy.

Indonesia has a wealth of renewable energy (RE) resources, including hydro, solar, wind, biomass, and geothermal power. Accordingly, the GoI has had an ambitious target of adding 35 GW by 2019, and a goal of RE supplying 23 percent of the on-grid electricity by 2025 to aggressively expand generation. However, as of February 2018, only 11 percent of Indonesia’s installed generation was from renewables up from 6% in 2016. In accordance with the 2014 National Energy Policy (Kebijakan Energi Nasional, or KEN), Indonesia aims to have 23 percent of its energy demand supplied by new and renewable sources by 2025. The country also aims to increase energy access from 85 percent to 100 percent by 2020; and in line with its Nationally Determined Contributions (NDC) reaffirmed at the 2015 United Nations Climate Change Conference of Parties (COP 21), aims to reduce its GHG emissions by 29 percent by 2030 (when compared to a business as usual scenario). Indonesia has stated that this reduction could be as high as 41 percent with international donor support⁵. Near the end of the Green Prosperity (GP) Project in 2017, demand

¹ <https://www.worldbank.org/en/country/indonesia/overview>

² <http://www.doingbusiness.org/en/rankings>

³ US Energy Information Administration, Indonesia International Energy Data and Analysis, 2015.

⁴ Erahman, Q.F.; Purwanto, W.W.; Sudibandriyo, M.; Hidayatno, A. An assessment of Indonesia’s energy security index and comparison with seventy countries. *Energy* 2016, 111, 364–376.

⁵ International Institute for Sustainable Development: Missing the 23 percent Target: Roadblocks to the Development of Renewable Energy in Indonesia, 2018.

for electricity still outstripped supply; generating capacity stood at about 60 Gigawatts (GW), and blackouts and brownouts were increasing. Yet, the experience on the ground so far is that electricity generated by RE has remained relatively stable.

Although increased penetration of RE, both on and off the grid, makes strong economic sense with certain technologies and in specific locations, it is failing to happen for a variety of reasons that include:

- The lack of a favorable enabling environment⁶;
- Project developers and consultants that are ill-trained⁷;
- Financial market imperfections are reducing effective access⁸; and
- A vertically integrated utility that has financial incentives to increase access to large scale thermal and renewable plants even when economic conditions dictate otherwise.

The result is a growing gap between what the GoI publicly states it wants in RE and what is actually happening.

1.2 Overview of the Compact and the GP Project

The MCC entered into a five-year, USD \$600M Compact agreement with the GoI in 2011, and the agreement came into force in April 2013. The first grant agreement was signed in March 2015, almost two years after the entry into force, and with only three years left to fulfill the grant terms. As part of this agreement, the Millennium Challenge Account Indonesia (MCA-I) was established and three multi-million-dollar projects were implemented to support the government's priority of sustainable economic growth for the country, focused on green prosperity, community-based health and nutrition to reduce stunting, and procurement modernization. The Indonesia Compact aimed to achieve the results below by April 2018⁹:

- Increase productivity, reduce reliance on fossil fuels and reduce land-based greenhouse gas emissions by expanding renewable energy, improving land use practices, and better management of natural resources (*Green Prosperity*);

⁶ See for example, World Bank, Financing renewable energy Options for Developing Financing Instruments Using Public Funds, 2013. Or, UNESCAP, Indonesia National Sustainable Energy Strategy Report on Enabling Environment and Technology Innovation Ecosystem for Affordable Sustainable Energy Options, 2014.

⁷ USAID. Performance Evaluation Final Report: Climate Technology Initiative Private Financing Advisory Network, 2015.

⁸ This is the basis for several recently completed and ongoing donor projects. Included in this are: (1) The Clean Technology Initiative's Private Financing Advisory Network (PFAN), (2) USAID's Indonesia Clean Energy Develop Projects (I and II), and (3) the Scaling Up Renewable Energy program.

⁹ Millennium Challenge Compact, United States and Indonesia, entry into force April 2013

- Increase household income through cost savings, productivity growth and higher lifetime by reducing low birth weight, childhood stunting and malnourishment of children in project areas (*Community-based Health and Nutrition to Reduce Stunting*); and
- Achieve significant government savings and higher quality on procured goods and services to achieve the delivery of public services as planned (*Procurement Modernization*).

The largest component and flagship project for the Compact was the \$332.5M GP Project¹⁰, designed to promote a less carbon-intensive future by investing in renewable energy (RE) and sustainable natural resources management (NRM), aimed at increasing productivity while reducing GHG emissions. The GP Project consisted of four activities¹¹:

1. **Participatory Land Use Planning (PLUP) Activity:** The PLUP Activity focused on investment in administrative boundary setting, the updating and integration of land use inventories, and enhancing spatial plans at district and provincial-levels.
2. **Technical Assistance and Oversight (TAO) Activity:** The TAO Activity provided technical assistance and project oversight for grants issued under the Compact. Eligible districts, project sponsors, and community groups were identified and offered assistance in their development of potential investments in sustainable and low-carbon economic growth. Technical assistance in the form of application preparation for submission to the GPF was also offered.
3. **Green Prosperity Facility (GPF) Activity:** As the grant funding facility for the Compact, the GPF was responsible for the financing of low-carbon development projects and is the entity under which funding windows and later thematic portfolios was supported. The funding windows were:
 - Window 1: Partnership Grants that leveraged external funding as a means to promote increased investment in sustainable natural resources management and improved land-use practices.
 - Window 2: Community Based Natural Resource Management (NRM) Projects that supported smaller projects designed to NRM, Sustainable Agriculture and improved livelihoods and could include a small RE component.
 - Window 3A: Community Based Renewable Energy projects.
 - Window 3B: Commercial, grid connected energy projects that required external financing.
4. **Green Knowledge (GK) Activity:** Designed to support knowledge management and capacity building, the GK Activity provided technical assistance and support for strengthening local, provincial, and national capacity to drive forward Indonesia's nation-wide low-carbon development strategy within the context of the GP Project.

¹⁰ Only \$280 million was disbursed.

¹¹ MCA-I, M&E Plan, July 2017, v4.

1.3 Objectives of the Report

This design report presents Integra's approach to evaluating the GPF's On-Grid RE portfolio selection of projects, the value of Technical Assistance Project Preparation (TAPP) work in terminated projects, and the results of completed projects. It is guided by a desk review of project documents, a literature review, and discussions with key stakeholders in Indonesia. The report outlines the design for the evaluation and Integra's approach to answering each of the evaluation questions.

The performance evaluation of GPF is integrated with its *ex-post* CBA. The team has therefore taken steps to expand the methodological scope of the performance evaluation instruments to better inform the *ex-post* CBA. These efforts can help in identifying sources of benefits and costs, constructing counterfactual scenarios, and refining the value of assumptions related to the GPF's attributable economic impact.

This report is organized as follows:

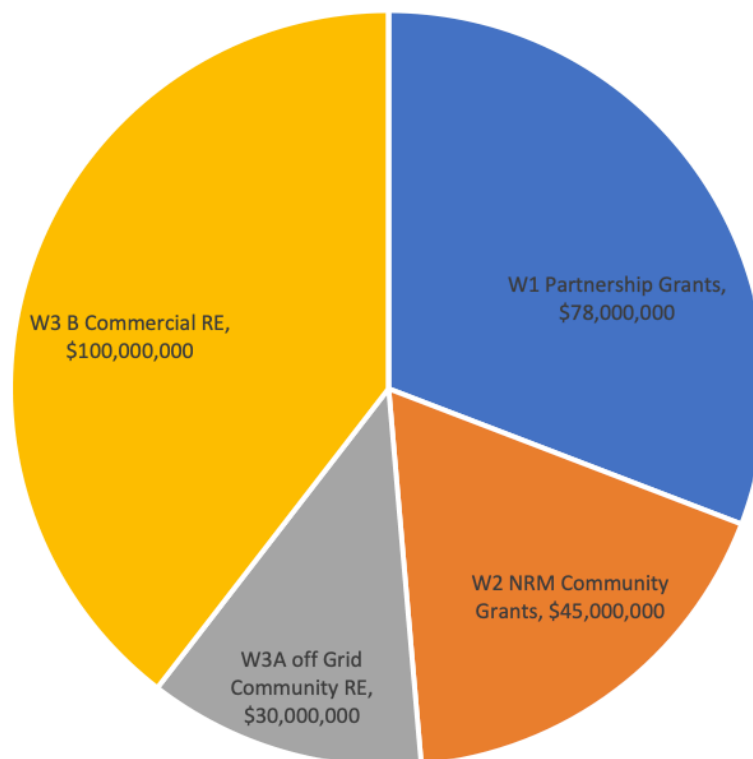
- **Section 1** presents an introduction to on-grid renewable energy and country context.
- **Section 2** presents an overview of the On-Grid Renewable Energy Portfolio, with brief summaries of intended beneficiaries and geographic coverage, a literature review, and the theory of change;
- **Section 3** presents the evaluation design, including Integra's methodological approach and data collection strategies for assessing implementation fidelity and the other questions related to effectiveness, sustainability, successes, and lessons learned; and
- **Section 4** summarizes the administrative steps that Integra will take to ensure that the evaluation meets ethical and quality standards and describes the Evaluation Team and the timeline for the evaluation.

2. OVERVIEW OF THE GREEN PROSPERITY FUND AND THE INTERVENTIONS EVALUATED

2.1 Overview of the GPF

The GPF is the grant-making and administrative body responsible for funding RE and NRM (sustainable agriculture, peatland, social forestry) activities. It was planned for the GPF to allocate \$253 million among four grant areas as shown below in Figure 1.

Figure 1. Planned GPF Grant Spending¹²



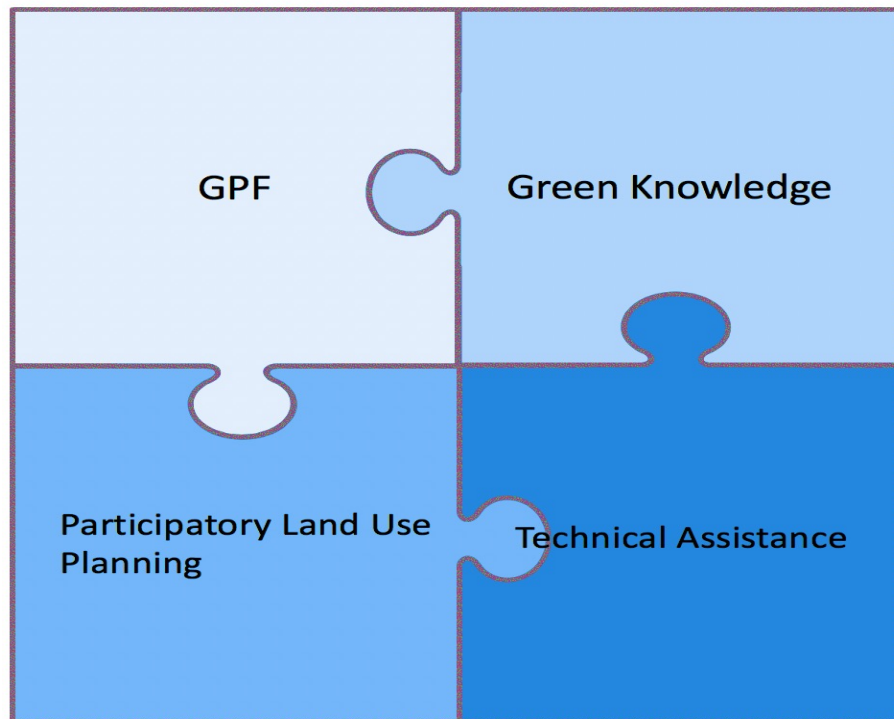
The bulk of the grant funds were originally intended to be allocated to on-grid RE and partnership grants. In reality, final disbursements among the four areas were significantly different. For example, on-grid RE, rather than being the largest grant area, ended up having the smallest amount of funding disbursed.

The original design called for the PLUP and GK to provide a foundation for GPF grants, and the TAO was designed to support grantees during the application process. Together these initiatives

¹² GPF Presentation, "Green Prosperity: Grant Windows for Renewable Energy. AHK Bioenergy Conference, and MCC, 11/17/2014. Does not include TAPP Grants.

were intended to foster smarter, greener, and more sustainable low-carbon growth for Indonesia while informing policy and documenting knowledge gained. The TAO Activity also supported the facility by assisting eligible grantees in the identification, development, and submission of applications for funding to the GPF through Technical Assistance Project Preparation (TAPP) grants which applied to partnership and RE (off-grid and on-grid) grant. The GPF provided grants to mobilize private sector investment and community participation in RE and sustainable land use practices. Figure 2 presents the structure of the GP Project.

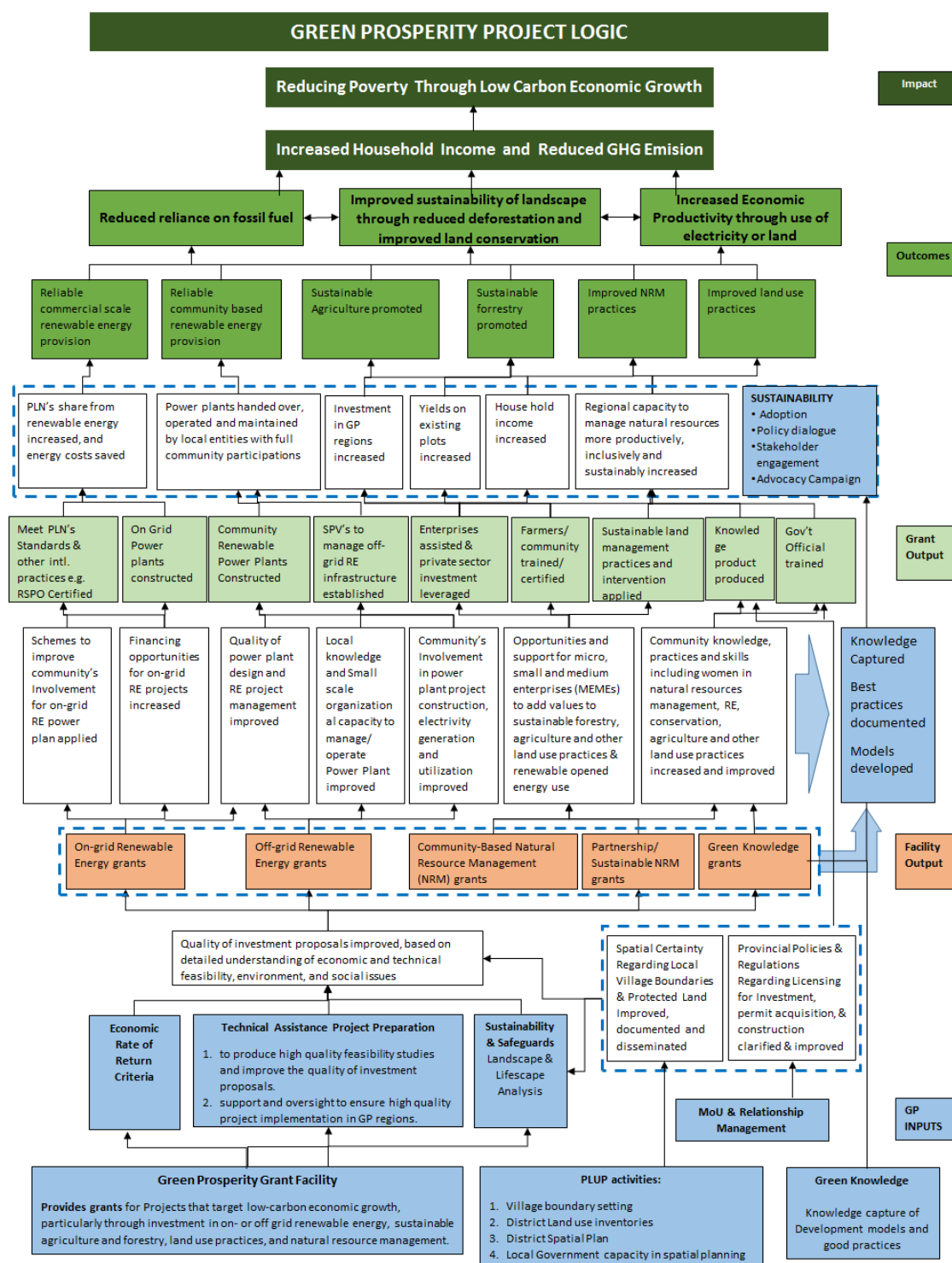
Figure 2. Green Prosperity Project Structure



2.2 Theory of Change

There is not an individual theory of change for each GPF window; the overall theory of change from the logic diagram (Figure 3) incorporates the on-grid RE and descriptions of RE activities. In as much as the general elements of GP supported change in one window, they supported change in others. Overall, the GP project combined technical assistance and grants to help communities protect critical ecosystem services and enhance livelihoods by supporting investments in RE, natural resource management and sustainable agriculture. GP also aimed to guide foreign investments in Indonesia by improving land-use decisions and creating incentives for increased deployment of cleaner technologies.

Figure 3. Green Prosperity Logical Framework



Source: MCA Monitoring and Evaluation Plan, July 2017, Version 4

The GPF on-grid RE objectives appear to be consistent with, and built upon, GoI priorities. The GPF was designed to partially fund (a major share) of commercial scale, on-grid RE that was less than 10MW. Proposals accepted into the GPF had to reach a minimum of 10% Economic Rate of Return (ERR). The GPF was designed to “reduce poverty through low carbon economic growth” by (1) providing technical assistance to complete grant requirements such as the International Finance Corporation (IFC) safeguards and project preparation through a grant¹³; (2) through the Compact, the GP also provided policy solutions to deal with barriers to RE; and, (3) directly funding RE projects.

Technical Assistance: The TAPP grant paid for the preparation of project documents such as engineering design and feasibility studies. While the Program Management Consultant did not provide technical assistance directly, they did so indirectly through the process of reviewing deliverables and pointing out problems such as inadequate design measures or insufficient hydrological evidence.

Policy: The Compact required the GoI to undertake certain policy and operating measures. They were to adopt a feed-in tariff (FiT) for non-hydro RE that “shall provide a reasonable incentive for independent power producers to develop and sell power to...” Perusahaan Listrik Negara (the State Electricity Company, or PLN. And, “PLN shall issue the following (i) standard, transparent procedures for structuring and executing transactions involving independent power producers, (ii) a standard bankable power purchase agreement (PPA) for small-scale renewable power producers by technology type; and (iii) standardized application procedures for renewable energy project developers¹⁴.”

Funding: Finally, the GPF assumed that the final barrier was either the absence of funds or the cost of funds that keeps on-grid investment levels for RE plants (at or below 10 MW) from reaching optimal levels. In other words, a major impediment to increased investment was the cost or availability of funds. That was, after all, what the GPF was providing for on-grid RE. It provided direct funding (Full Grant or grants that fund an accepted project) or TAPP funding for technical preparation.

“Selected projects will receive TAPP Grants that will strengthen project preparation and feasibility studies, high quality DED, and identification of risks and its mitigation. This support will also improve trust from finance institution to finance the projects, to ensure the projects can be implemented up to the construction phase.”¹⁵

Specifically, RE grant projects meet the GP objective of reducing reliance on fossil fuels by increasing the share of grid electricity provided by a renewable source, thereby displacing the use of GHG emitting power plants. These grants would achieve the objective of increasing

¹³ Only Window 1 and Window 3 grant applicants were eligible for Technical Assistance and Project Preparation (TAPP) grants. Direct technical assistance was not supplied by the GPF contractor for Window 3. Moreover, not all grant applicants received a TAPP grant.

¹⁴ Millennium Challenge Compact Between the United States of America Acting Through the Millennium Challenge Corporation and The Republic of Indonesia

¹⁵ MCA-I http://www.mca-indonesia.go.id/assets/uploads/pubs/GPport-RE_ENG.pdf

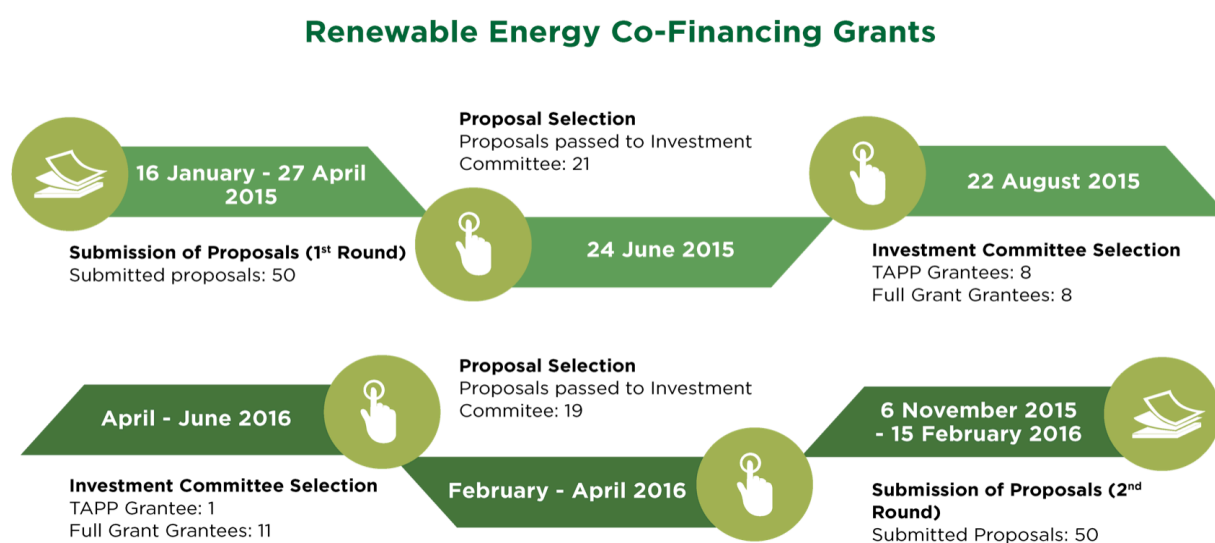
productivity by: (1) reducing costs to the utility (PLN) compared to the grid average cost generation and (2) by providing long term, sustainable benefits to the community from the project's revenues (the CBS component).

The basic hypothesis behind the GP approach to on-grid RE is that a “multipronged approach” will catalyze clean energy investment. The three prongs are technical assistance, finance (grants), and policy. While most projects attempt to address one barrier, GPF sought to address all three.

2.3 GP On-grid Renewable Energy Grants Description and Implementation Status

It was anticipated that the on-grid RE projects would be the largest single component of the GPF with approximately USD \$100 million committed to this area. Grantees would have to find co-financing and contribute a portion of their revenues to the community in the form of the community benefit-sharing (CBS) program. There were two rounds of proposals. During the first round of call for proposals (CFP), there were 50 submissions, and in April 2015 and 21 of these were presented to the Investment Committee (IC). By August, the IC awarded eight full grants and eight TAPP grants. The second round CFPs were completed in February 2016 with 50 proposals being submitted, out of which 11 full grants and one TAPP grant were awarded between April and June of 2016. This process is illustrated in Figure 4. It is important to note that the first of these grants was awarded almost two and a half years after the Compact entered into force, leaving about two years for grant implementation to fulfill the grant agreements terms.

Figure 4. RE Grant Cycle



Source: <http://www.mca-indonesia.go.id/en/project/green-prosperity/grant/renewable-energy-co-financing-grant>

To be eligible for consideration, grant applicants were required to be between 1 and 10MW and have a Purchase Power Agreement (PPA). Moreover, once awarded, construction must be at least 60% completed before April 1st, 2018, but the Commercial Operational Date (COD) can be set beyond that date. Of the 100 proposals submitted, 19 full grants and 9 TAPP grants were awarded by the investment committee, and only four full grants are successful. These four were awarded in the first round. All other full grants were either terminated or withdrawn. Three of the successful

grants are palm oil mill effluent (POME) plants, involving anaerobic bio-digestors producing methane to generate power. All are owned by the same company. The fourth is a hydro-power plant. The section below briefly describes these four grants.

Musim Mas has three POME Plants in Riau Province: (1) PT Sinar Agro Raya, (2) PT. Indomakmur Sawit Berjaya, and (3) PT. Bahana Nusa Interindo. – Musim Mas is an international company that operates palm oil mills throughout the world. POME is a by-product of the milling of palm kernels into palm oil. The POME projects are as much about environmental compliance as they are about energy. POME is a highly polluting substance due to its biological oxygen demanding content and low pH. The treatment aim is to use the POME to generate methane gas released by the open ponds wastewater treatment system. The projects constructed a covered bio-digester (Figure 5). Methane captured by the bio-digester is combusted in biogas engines (each with a capacity of 1 MW) to generate electricity to be sold to national grid (PLN). The three plants are connected to the grid, are generating electricity, and will sell excess power to the grid.

Figure 5. PT Sinar Agro Raya Methane Capture



Lubuk Gadang Mini Hydro Power Plant Project - The Lubuk Gadang mini hydro project (PT Selo Kencana Energy (SKE)) is an eight MW hydro plant located in South Solok, West Sumatra Province. It was operating at suboptimal conditions below the Power Purchase Agreement requirements. The GPF grant was designed to address technical issues to increase availability and capacity of the generating plant. The plant is connected and is generating electricity. The powerhouse before the grant is shown in Figure 6.

Figure 6. Lubuk Gadang Powerhouse



Seven other projects began as full grants but did not reach completion. Nine TAPP-only grants were awarded. All these are summarized in Table 1 below

Table 1. Summary of All On-Grid RE Grants (figures yet to be confirmed by MCC are highlighted)

| Grant # | Grantee | Project Name | Location | RE Tech | Effective date | Leveraged funds disbursed in USD | MCA I Project financing disbursed in USD | Total project value in USD | TAPP Grant Disbursed in USD |
|----------------------------------|--|--|----------------------------------|--------------------------------------|----------------|----------------------------------|--|----------------------------|-----------------------------|
| 2015/Grant/011 or W3B1-05 | PT. Sinar Agro Raya / SAR Biogas (Musim Mas) | Methane Capture and Utilization for Power Generation | Riau | Palm Oil Mill Effluent (POME) Biogas | 11-Dec-15 | 1,932,750 | 2,186,594 | 4,119,344 | 70,000 |
| 2015/Grant/012 or W3B106 | PT. Indomakmur Sawit Berjaya / ISB POME Biogas (Musim Mas) | Methane Capture and Utilization for Power Generation | Riau | POME Biogas | 11-Dec-15 | 1,762,190 | 2,305,211 | 4,067,401 | 70,000 |
| 2015/Grant/013 or W3B107 | PT. Bahana Nusa Interindo / BANI POME Biogas (Musim Mas) | Methane Capture and Utilization for Power Generation | Riau | POME Biogas | 11-Dec-15 | 1,677,379 | 2,271,603 | 3,948,982 | 70,000 |
| 2015/Grant/015 or W3B1-17 | PT. Selo Kencana Energi / Lubuk Gadang MHPP | LUBUK GADANG MINI HYDRO POWER PLANT | West Sumatra | Hydro | 11-Dec-15 | 3,102,492 ¹⁶ | 1,050,509 | 4,153,001 ¹⁷ | 153,000 |
| 2015/Grant/019 | PT. Sumber Daya Investasi (SDI) | PLTM KUMBI SEDAU-LEMBAH SEMPAGA (1.3MW); PT. Sumber Daya Investasi | West Nusa Tenggara, Lombok Barat | Hydro | 17-Dec-15 | 0 | 50,583 | 50,583 | 125,000 |

¹⁶ The \$20,867,274 in leveraged grant is not being accounted for as in leverage funds disbursed because \$17,764,782 was spent prior to the GP Grant. The grantee had already spent those funds so MCC cannot say that these funds were leveraged because of the MCC project.

¹⁷ The total project value is \$23,592,274, however the number reflected in the table accounts for the leveraged and MCA-I funds disbursed during the grant agreement.

| | | | | | | | | | |
|----------------------------------|--|---|--|-------------|-----------|---------|---------|---------|---------|
| 2015/Grant/020 | PT. Sumber Daya Investasi (SDI) | PLTM KOKO BABAK ATAS-AIK BERIK (0.9 MW); PT Sumber Daya Investasi | West Nusa Tenggara, Lombok Tengah | Hydro | 17-Dec-15 | 0 | 50,789 | 50,789 | 124,000 |
| 2015/Grant/021 | PT. Citra Metro Bicon Energi & PT. Bicon Agro Makmur | Citra Metro Bicon Energi Biogas Power Plant (1MW); PT Bicon Agri Makmur | Jambi, Muaro Jambi, | POME Biogas | 18-Dec-15 | 200,000 | 358,853 | 558,853 | 146,000 |
| 2016/Grant/023 | PT. Tombolo Energi | Tombolo Pao Mini Hydro Power Plant (2.4 MW); PT Tombolo Energy | Sulawesi Selatan, Gowa | Hydro | 1-Mar-16 | 0 | 10,746 | 10,746 | 107,457 |
| 2016/Grant/077 | PT. Bangka Biogas Synergy | Sungai Terlunng Biogas Power Plant (2 MW); PT. Bangka Biogas Synergy | | Biogas | 11-Nov-16 | 0 | 244,958 | 244,958 | 128,766 |
| 2017/Grant/078 | PT. Tirtadaya Rinjani | Cakranegara Mini Hydro Power Plant (2 x 0.3 MW), Sesaot Mini Hydro Power Plant (2 x 0.5 MW), Batubedil Mini Hydro Power Plant (2 x 0.275 MW); PT. Tirtadaya Rinjani | 3 locations in Cakranegar and West Lombok in | Hydro | 20-Jan-17 | 00 | 134,780 | 134,780 | 105,607 |
| 2017/Grant/079 or W3B2-06 | PT. Sumber Energi Lestari / Taluda 2 | Taludaa 2 Mini Hydro Power (2 x 1.15 MW); PT. Sumber Energi Lestari | Gorontalo, Bone Bolango District | Hydro | 2-Feb-17 | 0 | 36,490 | 36,490 | 96,908 |
| 2015/Grant-TAPP/028 | PT Haji La Tunrung dan Konstruksi | 10 MW Bungin-II MHPP | | Hydro | | | | | 58,000 |
| 2015/Grant-TAPP/029 | PT Galenium Aksata Energi | 3.7 MW Lawang Agung MHPP | | Hydro | | | | | 62,000 |

| | | | | | | | | | |
|----------------------------|--------------------------------|--|--|---------|--|--|--|--|---------|
| 2015/Grant-TAPP/030 | PT Pembangkit Listrik Induring | 2.4 MW Induring MHPP | | Hydro | | | | | 13,000 |
| 2015/Grant-TAPP/032 | PT Optima Tirta Energi | 6 MW Tongar MHPP | | Hydro | | | | | 149,000 |
| 2015/Grant-TAPP/033 | PT Nusantara Indah Energindo | 2.23 MW Gilas MHPP | | Hydro | | | | | 66,000 |
| 2015/Grant-TAPP/034 | PT Tirtadaya Rinjani Lingsar | 2.85 MW Lingsar MHPP | | Hydro | | | | | 103,000 |
| 2015/Grant-TAPP/035 | PT Mitra Malinau Energi | 10 MW Malinau Biomass Power Plant | | Biomass | | | | | 149,000 |
| 2015/Grant-TAPP/036 | PT SANGSAKA HIDRO KASMAR | 3x3 MW MHPP | | Hydro | | | | | 91,000 |
| 2016-Grant-TAPP-037 | PT. Global Karai Energi | Karai 7 Mini Hydro Power Plant (2 x 3.85 MW) | | Hydro | | | | | 71,500 |

Source: MCC Indicator Tracking Table (ITT) and ITT input.

2.4 Cost Benefit Analysis (CBA) and Beneficiary Analysis

Given the nature of GPF, CBAs were only conducted at the grant level. A CBA model (Microsoft Excel Spreadsheet) has been provided to the team for each of the four completed RE grants. These grants included three similar biogas plants attached to palm oil productions (W3B1-05, 06, and 07) and a mini hydro plant (W3B1-17).

- W3B1-05 - PT. Sinar Agro Raya / SAR Biogas (Musim Mas)
- W3B1-06 - PT. Indomakmur Sawit Berjaya / ISB POME Biogas (Musim Mas)
- W3B1-07 - PT. Bahana Nusa Interindo / BANI POME Biogas (Musim Mas)
- W3B1-17 - PT. Selo Kencana Energi / Lubuk Gadang MHPP

The CBA models constructed for the *ex-ante* analysis of these grants followed an identical methodology. In these models, the energy generated by the project is valued at the average unit cost of generation for PLN (as the cost to PLN in the absence of the project: without scenario). In the calculation of the average unit cost for PLN, the energy generation mix in the region is factored for. This logic assumes that the energy generated by these plants replaces existing or planned generation by PLN. The average unit cost of generation for IPP is then calculated using onsite operations and maintenance (O&M). The average unit cost of IPP is considered to become the cost-reflective tariff paid by PLN to the IPP (the cost to PLN in the presence of the project: with scenario). These two costs under with and without scenario are then deducted from each other to calculate the cost saving for PLN with the project.

The cost saving for PLN is considered the only source of benefit in the *ex-ante* CBA models. On the cost side, these models include the investment cost and the MCA-I overhead cost. Two notable differences in the structure of these models were:

- 1 The CBA model for W2B1-17 (mini hydro) did not include the MCA-I overhead as a cost.
- 2 Since the hydro project (W2B1-17) is expected to increase the capacity utilization of an existing dam, the relevant volume of energy that enters the model is the marginal increase in generation rather than the total generation of the dam.

This evaluation explores the extent to which benefits and costs modeled in the *ex-ante* CBA for each grant were appropriate, realistic, and comprehensive; and will further explore the possibility of conducting a cost benefit analysis of the GPF as a whole. The approach is outlined in Section 3.3.4 below. While the *ex-ante* analyses are based on the theory of change and expected impacts, the evaluation-based CBA (*ex-post*) will be built on observed changes to date and modified expectations for the future based on current evidence.

2.5 Literature Review

2.5.1 Existing Literature

Based on the underlying logic for the GPF in on-grid RE¹⁸, there are three major areas in the literature that apply to on-grid RE through the GPF and they pertain to the perceived obstacles that the GP would address: (1) the enabling framework for renewable energy, (2) financing for renewable energy, and (3) technical assistance to project developers. Each of these can be a major barrier. We also consider the ease of doing business in Indonesia.

Enabling Environment

There is a great deal of literature that examines the historical contribution of renewable energy and the obstacles to expanded RE penetration. Increased penetration of renewables on the grid is and has been critical to closing the gap between demand and supply and it is important for both environmental and economic reasons. Many of Indonesia's islands and communities have been traditionally served by subsidized diesel generation. Recognizing the need for improved enabling frameworks, the GoI began a series of regulations designed to improve the playing field for RE. Table 2 presents some of the key enabling framework measures that were enacted shortly before the Compact entered into force.

Table 2. Incentives to Promote RE Prior to Entry into Force

| Regulation | Description |
|---|--|
| Law No. 30/2007 on Energy | Government and local government should increase their use of renewable. Allowance for some incentive until production reaches economic levels. |
| Law No. 30/2009 on Electricity | Priority to be given for locally available energy resources in electricity generation with direct selection (without tendering). |
| Law No.27/2003 on Geothermal MEMR Regulation | To regulate the management and development of geothermal energy resources. Set the highest benchmark price for electricity from geothermal at US\$ 0.097 per kWh. |
| MEMR No.31/2009 on Small and Medium Scale Power Generation using Renewable Energy | Requires PLN to purchase electricity from small-medium RE (Capacity: ≤ 10 MW). Set uniform price: Rp 656/kWh (medium voltage); Rp 1,004/kWh (low voltage) |
| Minister of Finance Regulation No. 21/PMK.011/2010 | Import duty exemption on machinery and capital for development of power plants. Exemption from VAT on importation of taxable goods |
| Minister of Finance Regulation No 24/PMK.011/2010 | Reduction and various facilities for income tax on energy development projects, including net income reduction, |

¹⁸ In the GPF case, on-grid RE means operable capacity not greater than 10MW.

| | |
|--------------------------------|---|
| | accelerated depreciation, dividends reduced for foreign investors and compensation for losses |
| MEMR Regulation No. 22 of 2012 | Geothermal FIT: US\$ 0.01 - 0.19/kWh depending upon connection voltage |
| MEMR Regulation No. 4 of 2012 | Sets FITs by technology less than 10 MW: Mini and Micro hydro, Biomass, Municipal solid waste (no-biogas) and Municipal solid waste (landfill gas) |

Prior to entry into force, the GoI had been pursuing a number of incentives to increase the penetration of RE as shown above. Each of these was a progressive movement that was designed to make renewable energy more attractive to investors.

Government regulation 79/2014 provided a target of 45GW of renewable energy capacity out of 135 GW of total capacity by 2025¹⁹. At the Conference of the Parties (COP 21), the President of Indonesia said, “The target is to achieve 23 percent of new renewable energy utilization by 2025 and 100 percent of electrification in rural areas by 2019²⁰.” The Government moved to make feed-in tariffs (FITs) more attractive in 2013 and 2014. As a result, a large number of PPAs were signed²¹. Yet, despite the Presidential edicts and Ministerial regulations promoting renewables, their contribution to electricity supply has remained relatively constant²². This is vividly portrayed in Figure 7.

During the period that the GPF was being designed and through late 2016, the enabling environment was improving for all sized renewables. Yet, generation from RE remained relatively static. Many PPA’s were being signed but many small RE projects could not make it to financial closure. For example, USAID ICED II project saw projects it worked with rise from 19 in 2012 to over 100 by 2014. These were renewable energy projects with signed PPAs seeking commercial finance.

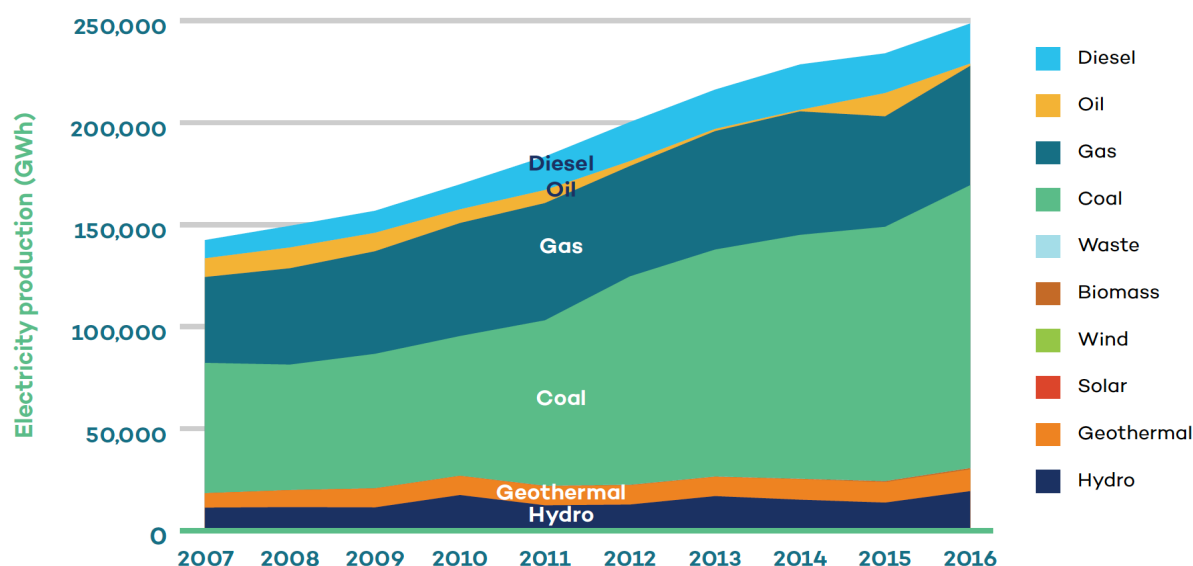
¹⁹ President of the Republic of Indonesia. Government regulation of the republic of Indonesia number 79 of 2014 on National Energy Policy (2015). Retrieved from <http://ditjenpp.kemenkumham.go.id/arsip/terjemahan/2.pdf>

²⁰<https://en.tempo.co/read/news/2015/12/02/074724074/COP21-Indonesia-to-Commit-to-Renewable-Energy>

²¹The USAID ICED II project reported that over the period 2012 to 2014, the number of RE projects it accepted into its project pipeline rose from 19 to over 100. All of these had signed PPAs with PLN. The project rejected many with signed PPAs either because they were in a geographic area not covered by the project or an ineligible technology.

²² Global Subsidies Institute. Missing 23 Target: Roadblocks to the development of renewable energy in Indonesia, 2018. International Institute for Sustainable Development.

Figure 7: Electricity Generation by Source



While the enabling environment was improving, the financial position of PLN was worsening, as shown in Table 3 below. A number of factors contributed to this including a reduction in subsidy payments to cover the cost of serving uneconomic customers, increased payments to IPPs, and tariffs which have not kept pace with fuel and maintenance costs.

PLN's reaction was to push "major" planned capacity additions into 2020 and 2021 and putting various projects on hold²³ and to delay signing PPAs for more expensive plants. Renewables are more expensive to PLN in some ways compared to large hydro and coal plants. In a recent study by the Global Subsidies Initiative determined that the cost to PLN for coal was the same as that of renewables. According to this study the cost of generating from coal in central Java is \$65.2 MWh, the same as the cost of RE generation on Java. It then goes on to point out that there are subsidies provided to coal that need to be included, and when that happens that the price of coal rises to \$70.1 MWh. The cost of \$65.2 MWh for RE also includes subsidies.²⁴

What the study fails to account for is that putting a large amount of renewables on the grid in central Java also has costs that are not reflected in the cost of generation, such as reinforcing the grid and costs of accommodating large amounts of intermittent renewables. PLN has to pay both of these costs. Moreover, it fails to see that the price PLN would have paid in 2016 is not the cost of RE. PLN would have to pay the FiT, not the cost of RE. This means that coal costs to PLN are

²³ Institute for Energy Economics and Financial Analysis, "A Power Company Out of Step with Global Trends", page 7, (2018).

²⁴ Coal subsidies amounted to \$644 million in 2015 compared to \$133 million for RE in 2015.

below what it would pay for RE, when the additional costs to the grid are considered; this is why PLN often sees RE as more expensive²⁵.

Table 3. PLN's Historical Financial Statistics ²⁶

| PLN Summary Income Statement | 2014 | 2015 | 2016 | 2017 |
|----------------------------------|-------------|-------|-------|-------|
| | USD Billion | | | |
| Operating Revenues | 14.06 | 15.8 | 16.19 | 18.55 |
| Total Operating Expenses | 18.01 | 16.39 | 18.49 | 20.02 |
| Purchased Electricity | 0.25 | 0.32 | 4.34 | 5.26 |
| Operating Income/Loss | -3.95 | -0.6 | -2.3 | -1.47 |
| Government's Electricity Subsidy | 7.22 | 4.11 | 4.22 | 3.32 |
| Operating Income After Subsidy | 3.26 | 3.51 | 1.92 | 1.86 |
| Income for the Year | 0.8 | 0.44 | 0.59 | 0.32 |

In 2017 the environment for RE changed; A new Minister of the Ministry of Mines and Energy (MEMR) took a much more favorable stance towards PLN with regard to RE policy and targets and IPPs in general. There is evidence that the situation for RE actually became worse in 2017 when MEMR promulgated two key regulations.

1. Regulation 10/2017 to address Power Purchase Agreements (PPAs)²⁷

2. Regulation 12/2017 addressing Feed-in Tariffs which was replaced by 50/2017

Regulation 10/2017 does not apply to solar or wind, hydro below 10MW or biogas and waste to energy power plants. Nor does it apply to existing PPAs or projects with a letter of intent to purchase from PLN. It changes the economics of IPPs in ways that are so far detrimental²⁸. Earlier, the PPA for dispatchable projects was based on availability with a two-part tariff: a capacity charge

²⁵ PLN makes decisions based on financial not economic

²⁶ Ibid, page 9.

²⁷ The discussion of these regulation is based largely upon legal reviews by international law firms such as Nabarro LLP, Hogan Lovells and Norton Rose Fullbright and international energy consulting companies such as Price Waterhouse Coopers.

²⁸ The regulation introduces vague terms, which PLN has thus far defined in ways that reduce the return or increase the risk to IPPs.

design to service debt equity and fixed operations and maintenance (O&M) costs²⁹ and an energy charge to cover variable O&M costs based on actual dispatch. Thus, debt coverage was not dependent on PLN's dispatch of power.

Regulation 10 changes this so that PLN is required to take and pay for electricity for a "period of time" which is undefined and should be agreed between the parties. It also mentions considering the period of repayment to the IPP's lenders. This last aspect can be interpreted two ways. First, it could mean that the period of time is that period consistent with a take-or-pay mechanism to allow recovery of debt and return on equity in the earlier, normal fashion. Second, it could mean that PLN is not required to make take-or-pay payments after the project's debt is repaid. PLN has thus far assumed this latter meaning. It is interpreted by PLN in such a way that repayment is dependent entirely on PLN's dispatch instructions. This alone would significantly change the risk for future IPPs.³⁰

The changes at PLN and the new regulations in 2017 made it more difficult on average for many small renewable projects, particularly hydro power. However, GPF originally required grantees to have power purchase agreements and these were not abrogated. Grantees with signed PPAs would have been immune to these changes.

Finally, Regulation 10 seems to suggest that PLN will be excused from Force Majeure issues and further shifts risk to developers and sponsors and it stipulates that the project sponsor can't transfer share before commercial operations date³¹.

Regulation 12/2017 applies to: Solar PV, Wind, Hydropower, Biomass, Biogas, Municipal Waste, Geothermal.

Regulation 12/2017 regulates:

- The price at which electricity generated from these renewable energy sources is to be sold to the Indonesian State-owned power utility, PLN.
- The manner in which PLN is entitled to procure electricity supply from a number of these renewable sources.

Regulation 12/2017 in essence shifts the FIT to be based on an avoidable cost. The tariffs on the above projects³² are capped at 85 percent of the local production cost where the local production

²⁹ Earlier PLN had taken or paid provisions and was obligated to pay and provide debt coverage even if it did not take the power.

³⁰ CMS Law Now. Indonesian Power Purchase Agreements – regulation no. 10/2017 on principles of Power Purchase Agreements, (2017).

³¹ <http://www.nortonrosefulbright.com/knowledge/publications/155531/indonesian-energy-regulation-update-august-2017>

³² Except those projects where procurement is made using the direct selection method and geothermal projects. Geothermal will receive 100% of the avoided cost of power (ACP) in areas where the ACP is higher than the national average and determined by negotiation between PLN and the IPP.

cost is higher than the national average production cost. If the local production cost is the same or lower than the national average production cost, then the reference price will be 100 percent of the local production cost. This introduces geographic specific tariffs and favors the use of RE over conventional power in those areas that are not served by large thermal or large hydro plants. However, outside of Java-Bali the grids and infrastructure are often not sufficiently developed to allow for a large expansion of small renewables.

Regulation 50/2017 revokes 12/2017 and replaces it³³. The major changes are in the way in which PLN procures power, the tariff, and extension of build-own-operate-transfer (BOOT) to other IPPs. Solar PV and wind IPPs went from open tender to direct selection and from build-own-operate (BOO) to BOOT as did biomass and biogas. It changes the tariff for projects where the local cost of production is less than the national cost of production that were limited to 100 percent of the local production cost to direct negotiation with PLN³⁴. This policy of basing the price for RE on the local (regional grid) avoided cost of power favors some renewables, compared to the previous policy, on grids that were not heavily skewed with coal plants or very large hydro plants.

Renewable Energy Finance

While the Government was developing incentives, they alone are insufficient to overcome the barrier of access to finance. This is still an important issue for GPF-sized commercial renewables. Commercial banks are willing to provide finance but only at terms that make it difficult for all but well-established companies to participate³⁵. Typical terms are presented in Table 4. Commercial banks in Indonesia rarely offer non-recourse financing and require collateral over 100%. Moreover, the tenure is between 5 to 7 years while the economic lifespan of the RE asset is often over 20 years. Together with the equity requirements and interest rate, these terms are often enough to kill the project.

³³ Nah'R Murdono Law Key Points of Differences Between the Regulation of Minister of Energy and Mineral Resources Number 50 of 2017 and Number 12 of 2017. (2017).

³⁴ PWC. Power in Indonesia: Investment and Taxation Guide. (2017)

³⁵ See, for example, annual reports of the USAID Indonesia Clean Energy Project which was designed to work with local banks to improve commercial financing terms and conditions.

Table 4. Typical Terms for Small Hydro ³⁶

| Name | Reported values |
|------------------------------|---------------------|
| Interest rate | 12 - 13% (variable) |
| Loan term | 5 - 7 years |
| Grace period | 1 - 2 years |
| Maximum loan to equity ratio | 70 : 30 |
| Cash sweep | Not common |

Additionally, there are other important financial barriers, besides access to finance, that present real obstacles to small RE projects, such as³⁷:

- Loan tenures that do not match the economic life of assets³⁸
- The risk perceived by financial entities is greater than the actual risk³⁹
- Rules of capital repatriation
- Lack of access to credit for consumers
- High transactions costs
- Financial entities unfamiliar with clean energy
- Small deal size
- Balance sheet financing when most SME developers have no balance sheet
- Collateral requirements in excess of the project cost⁴⁰

Technical Assistance

In the early 2000's, researchers and practitioners noticed that even when there was access to finance under reasonable terms and a favorable enabling environment, many small-scale RE projects did not find finance. It was determined that RE developers needed technical assistance in business management. The Private Financial Advisory Network (PFAN) was born and along with it came numerous donor funded projects that aimed at addressing this gap. Figure 8 illustrates the barriers to increased RE investment and the PFAN approach.

³⁶ Migration Momentum. Barriers to Medium Scale Renewable Energy Generation in Indonesia. (2016)

³⁷ These market imperfections or barriers have targeted by numerous donors and IFIs including the IFC through its Sustainable Energy Finance Initiatives, Clean Energy for All, CTI' and USAID through the Private Financing Advisory Network and USAID Indonesia's work with Indonesian commercial banks and the Indonesian Bank Regulator, Otoritas Jasa Keuangan or OJK.

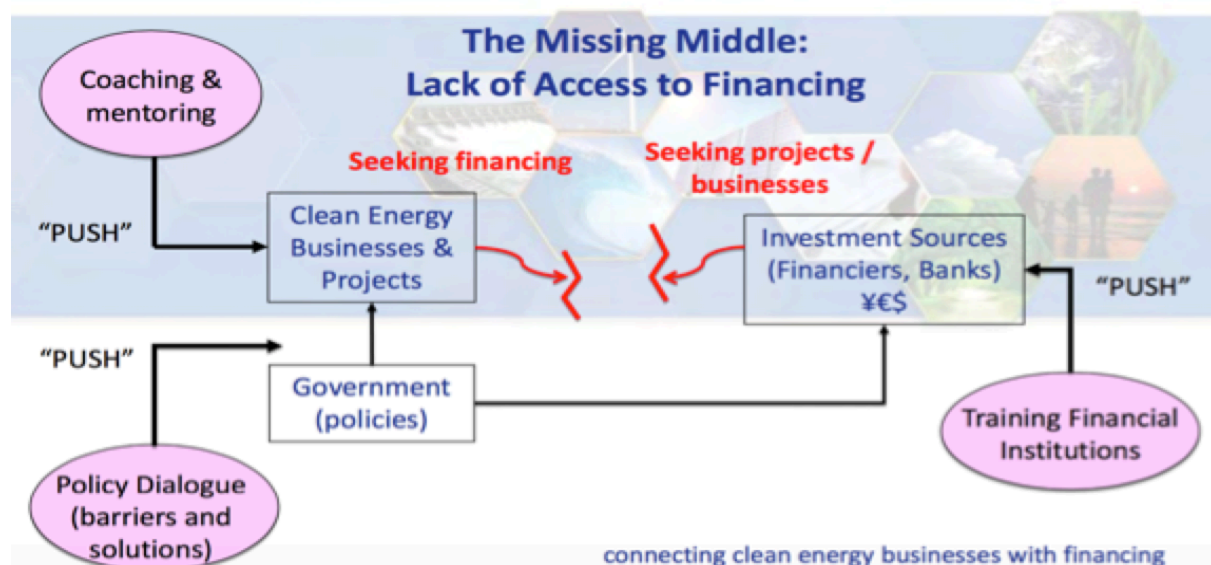
³⁸ Migration Momentum op. cit.

³⁹ For example, see International Renewable Energy Agency. Unlocking Renewable Energy Investment: The Role of Risk Mitigation and Structured Finance, (2016).

⁴⁰ International Finance Corporation. Serving the Needs of Indonesian SMEs, (2017).

Figure 8. Barriers to Renewable Energy

How a multi-pronged approach can scale up clean energy deployment



Source: Asian Development Bank (ADB)'s Energy for All Project Development Facility

PFAN and PFAN-like projects took aim at the “missing middle” to catalyze clean energy investment. The missing middle is defined as, “a term used to describe the gap between financiers looking for bankable investments and bankable companies that are looking for funding.”⁴¹ In other words, the premise behind PFAN and PFAN-like projects is that most donor/IFI projects do not address all three barrier areas where assistance is critical.

In essence, PFAN helps the developer bridge this gap by providing technical assistance and introducing investors. PFAN was not the only program in this area. The IFC, ADB and others working in SME finance have all sought to address this area, but few projects address all three areas simultaneously. This is often due to the legal nature of the donor. For example, the World Bank works with Governments or Governmental bodies. IFC provides financing to private sector projects but technical assistance but does provide TA to commercial banks as part of a lending program but not the project developer. Similarly, bilateral donors tend to work with Governments more than the private sector. Annex 6.3 provides a description of major energy donor/IFI programs or representative projects to illustrate the point of limited coverage of barriers at the developer level.

USAID Indonesia's ICED II provides assistance to the GoI in policy, regulatory and incentive frameworks for low-emission growth. At the same time, ICED II works with banks, regional government entities, project developers and other stakeholders to enhance the environment for low emission energy investments and attract public and private sector investment in clean energy development. ICED II's programmatic activities fall into three interrelated technical components (but it does not provide funding): (i) Improve the enabling environment for rapid co-investment in

⁴¹ Asian Development Bank (ADB)'s Energy for All, Project Development Facility.

clean energy; (ii) Accelerate the mobilization of private and public sector co-investment in clean energy; and (iii) Outreach on USAID and US Government (USG) inter-agency activities in Indonesia's energy sector.

Doing Business in Indonesia

Although improving, Indonesia is still a difficult place to do business, as evidenced by the World Bank's Ease of Doing Business Report, which ranked Indonesia 72nd in 2018. For companies seeking to construct energy facilities, this is even more onerous. "One of the major obstacles of doing business in Indonesia concerns obtaining the necessary permits and licenses; this can become a time-consuming and expensive affair." For example, just for construction permits there were 17 procedures that required on average 200 days⁴². Indonesia was ranked at 112th whereas Singapore ranked 9th and Malaysia ranked 62nd.

The main permits that a power project developer is required to obtain are:

- Registration with the Investment Coordinating Board (BKPM) for the establishment of the project company and Investment Principle License
- Business License, which is issued by the BKPM when or immediately before the project reaches commercial operation
- Environmental Permits, which includes, among others, approval of environmental impact assessments (*Analisis Mengenai Dampak Lingkungan*, or AMDAL), Environmental Management Plan/Environmental Monitoring Plan (Provincial Level)
- Location Permit which allows the company to procure the land required for the project from a third party (by way of sale and purchase or relinquishment) or from the state, and to develop the project on the land
- Electricity Business License
- Certificate of Operational Worthiness
- Water Usage permit
- Forest Permit if the project impinges on forest lands

The application process for a forest Borrow permit is complicated, requiring (among others) a letter of recommendation to be issued by the provincial governor. We are aware of numerous instances where the issue of a forest Borrow permit has been delayed, or blocked, due to the reluctance (or refusal) of an authority to issue a letter of recommendation and that there is currently a significant backlog of forest Borrow permit applications at the Ministry of forestry. (Norton Rose)

In addition to these general permits, they may be required by multiple jurisdictions if the project or river crosses multiple jurisdictional boundaries. One small hydro project in North Sumatra that was assisted by USAID required 40 permits⁴³. Thus, in addition to the challenges faced in finance or policy, the administrative permitting process is both time consuming and expensive for small scale renewable energy.

⁴² <http://www.doingbusiness.org/en/data/exploretopics/dealing-with-construction-permits>

⁴³ Based on the author's experience and KILs leading the evaluation of USAID's ICED-II project.

2.5.2 Gaps in Literature

While there are numerous papers, projects and studies in each of the identified barrier areas, there is little that looks at the success and challenges of addressing all barriers simultaneously. Integra has not been able to find any reports or evaluations of projects that have attempted to do this. The typical donor model is to address one or maybe two but not all three areas. That is both a risk reduction strategy and one that seeks to promote the development of the market and not force “crowding out” of private investment.

2.6 Policy Relevance of the Evaluation

This evaluation can serve two primary purposes. It can:

1. Inform the design of future MCC/MCA on-grid RE activities.
2. Test the efficacy of the logic.

The grant facility model is in current use by MCC, and there is interest in the expansion of grant facilities. A better understanding of the results and process will help inform whether and how to implement this type of (three-pronged approach) model within other MCC/MCA RE contexts. Similarly, the result may provide additional material for others, including the Indonesian government, to consider when attempting to address market imperfections and expanded RE penetration.

3. EVALUATION DESIGN

MCC has contracted Integra to conduct a performance evaluation (PE) of the On-grid RE grants, both successful and unsuccessful. A mixed-methods approach to determine implementation efficacy through quantitative and qualitative data collection and analysis will be used. This section of the EDR will outline the design, approach, and methodology for the PE. The primary purpose of the PE will be to identify project results (outputs and outcomes) and assess project implementation as of the end of the activity and Compact (June 2018) and future sustainability. This EDR will enable MCC and the GoI to capture lessons learned and inform future work.

As a part of this PE, the team is asked to conduct an independent *ex-post* CBA/ERR (evaluation-based CBA). MCC is exploring the range of possible gains in quality, accuracy, and efficiency for the CBA effort if combined with evaluation. Such integration between the economic analysis and M&E is unique among the development finance institutions.

3.1 Evaluation Questions

Table 5. Evaluation Questions

| Evaluation Question | Areas of Inquiry |
|--|---|
| Relevance / Design of Grants [Implementation Fidelity] | <ul style="list-style-type: none">• Were the on-grid RE grants implemented as designed? |
| Grant Implementation [Lessons Learned] | <ul style="list-style-type: none">• 2.a. Why did so few grants advance to completion?• 2.b. What can be learned about the selection of commercial-scale RE investments and/or about assessing their feasibility? |

| | |
|--------------------------------|---|
| Effectiveness / Results | <ul style="list-style-type: none"> • 3.a.1. Did GP support (TAPP and full grant) provide any value to the grants that did not advance to completion? • 3.a.2. Have those investments been subsequently completed? • 3.a.3. What did the funding that went to terminated grantees pay for? • 3.a.4. Have the feasibility studies funded by the TAPP-only grants been taken up by other investors/donors? • 3.b.1. For the grants that were completed, is the infrastructure still operational? • 4.a.1. For the grants that were completed, are the IPPs still selling power to PLN through a standard PPA? • 4.b.1. For the grants that were completed, please assess the effectiveness of the community benefit sharing activities. • 4.b.2. Have they been implemented per the CBS Plans? • 4.b.3. Do community members perceive benefits from the CBS activities? If so, what? • 4.c.1. Have there been cost savings for the participating utilities? • 4.c.2. If so, what are the utilities doing in the project areas with their cost savings? • 4.c.3. How does the power purchased from the projects compare to the local cost of production? • 4.c.4. Has the utility entered into other PPAs with Renewable Energy IPPs in the area? • 4.c.5. What is the ex post ERR for the portfolio? |
| Sustainability | <ul style="list-style-type: none"> • 3.a.5. Are the CBS activities likely to be sustained? • 3.b.2. Is the operation likely to be maintained and sustained? |

3.2 Evaluation Design Overview

Data collection will take place at three distinct points in time. From July 9 until July 21, 2018 the team met with MCA-I and local stakeholders to help inform the evaluation design and to collect electronic and written documents that will address the evaluation questions. This will continue until analysis begins. Then, in April and May of 2019, the team will travel to Indonesia to hold key information interviews (KIIs), focus group discussions (FGDs) for men and women separately, and site visits to focus on qualitative data focusing on GoI stakeholders and the four successful grants. The final data collection is expected to take place in April with entities that entered the grant process but did not successfully complete it.

3.2.1 Implementation Fidelity Assessment

Integra has determined that the most appropriate definition of implementation fidelity for this evaluation is that of the National Institutes of Health, put forward in Implementation in community-based interventions. “Implementation fidelity is the degree to which an intervention is delivered as intended and is critical to successful translation of evidence-based interventions into practice.”⁴⁴

⁴⁴ Breitenstein SM, Gross D, Garvey CA, Hill C, Fogg L, Resnick B. Implementation fidelity in community-based interventions. *Res Nurs Health*. 2010;33(2):164-73. <https://www.ncbi.nlm.nih.gov/pubmed/20198637>

Integra will assess implementation fidelity by assessing how changes to the original design of the GPF and on-grid RE have impacted the grant process. The starting point will be a review of compact and GPF documents to see what, if any, changes have taken place since inception. The team will endeavor to understand the reasons why changes occurred and the impact of each change. Finally, we will ask key informants to discuss how changes during their grant process may have impacted their success.

3.2.2 Performance Evaluation

This is an ex post performance evaluation with the three POME projects having been completed in March of 2017 and Selo Kencana hydro having been completed in the first quarter of 2018. Integra employs a performance evaluation approach to answer the evaluation questions employing both qualitative and quantitative methods. Document and literature review, KIIs, site visits and FGDs are the primary tools. The response to each evaluation question may involve a combination of these methods depending on the nature of the question. Integra's approach to each evaluation question is summarized below. A detailed description of the methodology is presented in Sections 3.3 and 3.4 of this report.

Evaluation Question 1: Selection of Projects

- (a) Why did so few grants advance to completion?
- (b) What can be learned about the selection of commercial-scale RE investments and/or about assessing their feasibility?

There are two aspects to this question: first, of the 100 proposals submitted (50 in the first round and 50 in the second round), why were so few (19 full and 9 TAPP grants) accepted and second, of the proposals that were accepted into the GPF, why did only four make it to completion? Integra will conduct a thorough document review to identify how the process of project review and response proceeded and where in the project cycle the grant applicant was when the grant application was made. We will also seek information about the average time spent in different stages of the project cycle by typical RE projects that fit GPF requirements. The literature review will also seek to gather information about "success" rates for different types of renewables to serve as a basis to assess GPF's performance.

The literature review will be followed with KIIs with each successful applicant and a sample of the unsuccessful applicants. Their impressions of the grant process are key to interpreting the flow of events in the grant evaluation process. We are unaware of any similar grant facilities in Indonesia but will conduct a literature review to determine if they exist or if other mechanisms were designed to bring on-grid RE projects to closure and operation.

Evaluation Question 2: Value of TAPP work and Terminated Projects

- (a) Did GP support (TAPP and full grant) provide any value to the grants that did not advance to completion? (Have those investments been subsequently completed?)
- (b) What did funding that went to terminated grantees pay for?
- (c) Have the feasibility studies funded by the TAPP-only grants been taken up by other investors/donors?
- (d) For the grants that were completed, is the infrastructure still operational? Is the operation likely to be maintained and sustained?

Integra will begin this document search of the MCA-I grant documents and then verify with former grantees. Detailed KIIs will be conducted at planet partnerships, which helped former grantees seek alternate funding, and with the former grantees. The questions will track activities from application at GPF through the current status of the project. Site visits are contemplated to the completed grants to verify that the infrastructure is operating, maintained and likely to be sustained.

Evaluation Question 3: Results of Completed Projects

- (a) For the grants that were completed, are the IPPs still selling power to PLN through a standard PPA?
- (b1) For the grants that were completed, please assess the effectiveness of the community benefit sharing activities. Have they been implemented per the CBS Plans?
- (b2) Do community members perceive benefits from the CBS activities? If so, what? Are the CBS activities likely to be sustained?

The team will review the CBS agreement, the CBS plan and the reviews of the CBS to determine how it was developed, the extent of community involvement, and the details of the benefits and planned implementation. Through KIIs and FGDs as well as the site visits, the team will confirm these details and probe deeper into the community's views of the CBS plan.

- (c1) Have there been cost savings for the participating utilities? If so, what are the utilities doing in the project areas with their cost savings?

For the purposes of the evaluation-based CBAs, the Evaluation Team will ask the participating utilities about the impact of these projects on the balance of the system. More specifically, the Evaluation Team will ask if the operation of the grantees has resulted in any reliability improvement or expansion of the system. This can be summarized in the following question.

- (c2) How does the power purchased from the projects compare to the local cost of production? Has the utility entered into other PPAs with Renewable Energy IPPs in the area?

For the purposes of the evaluation-based CBAs, the Evaluation Team will seek evidence on any improvements with regards to the promotion of private participation in the generation of electricity. The team will also ask the IPPs if the assumptions about the operation and maintenance costs in the *ex-ante* feasibility studies accurate? If no, what are the sources of variation?"

- (d) What is the ex post ERR for the portfolio?

Based on the insights obtained about the assumptions and parameter values during the literature review, field visits, KIIs, and FGDs, the Evaluation Team will develop a series of evaluation-based CBA models to estimate the ERR for the following grants:

- W3B1-05 - PT. Sinar Agro Raya / SAR Biogas (Musim Mas)
- W3B1-06 - PT. Indomakmur Sawit Berjaya / ISB POME Biogas (Musim Mas)
- W3B1-07 - PT. Bahana Nusa Interindo / BANI POME Biogas (Musim Mas)
- W3B1-17 - PT. Selo Kencana Energi / Lubuk Gadang MHPP

The activities conducted under the RE portfolio are relatively homogeneous, the team will therefore explore the possibility of estimating an *ex-post* CBA for the RE portfolio. This step goes beyond adding up of the estimated net economic impacts of these four grants and requires the

inclusion of additional sources of costs and benefits for the suspended, rejected, and TAPP-only grants, as well as the possible benefits linked to capacity building for local institutions. The team will only explore this possibility and cannot verify at this point if portfolio-level analysis will be possible. More on the methodology and likely measures are included under 3.3.4.

Table 6. Summary of Evaluation Approaches

| EQ | Key Outcomes | Data Source/Location | Data Type |
|-----|--|---|---------------------------|
| 1a | Grants completed characteristics and process compared to unsuccessful applicants | Desk review: Feasibility studies, deliverables, PMC review documents, final reports. DC and Jakarta. Literature Review: Industry studies, Gol policies, regulations, PLN. DC and Jakarta. KII. Jakarta, Riau and Padang | Qualitative, Quantitative |
| 1b | Lessons learned for grant process | Desk review: Feasibility studies, deliverables, PMC review documents, final reports. DC and Jakarta. KIIs with grantees. Jakarta, Medan, Riau and Padang | Qualitative, Quantitative |
| 2a | Value added to RE projects that did not complete the GPF | KIIs with grantees and Planet Partnerships: Jakarta Possible site visits | Qualitative, Quantitative |
| 2b | Items & services paid for by GPF Funds | Desk Review: Project Deliverables. KIIs with grantees: Jakarta Possible site visits | Qualitative, Quantitative |
| 2c | Success of projects assisted by GPF | KIIs with grantees: Jakarta Possible site visits | Qualitative, Quantitative |
| 2d | Verification of operations and sustainability of O&M | Desk Review: Final Report and Deliverables KII and Site visits. Jakarta, Riau and Padang | Qualitative, |
| 3a | Confirmation of Power Sales | KII and Site visits. Jakarta, Riau and Padang Review of PLN sales documents, receipts. | Qualitative, Quantitative |
| 3b1 | Effectiveness of the CBS programs | FGDs with communities: Riau and Padang KIIs with grantees and village leaders | Qualitative, Quantitative |
| 3b2 | Benefits of CBS, sustainability of CBS | FGDs with communities: Riau and Padang KIIs with grantees and village leaders | Qualitative |
| 3c1 | Electricity cost savings | KIIs: PLN Regional Offices Desk Review: Financial Studies | Qualitative, Quantitative |
| 3c2 | Relative cost of GPF supported projects and PPAs | KIIs: PLN Regional Offices Literature Review: PLN documents and other projects documents where available. | Qualitative, Quantitative |
| 3d | ERR | Desk review: PLN operational and financial statistics, RE project report, PPAs, grantee financial reports Literature review: Social cost of carbon, energy access and coping cost in Indonesia KIIs: PLN regional offices, grantees, village leaders, MCC/MCA-I staff, Possible site visits | Qualitative, Quantitative |
| 4 | N/A – implementation fidelity | Desk review: logic models; operational guidance for On-grid RE; memos/documents related to changes in design; board presentations; strategic plans; Gol planning documents. | Qualitative |

| EQ | Key Outcomes | Data Source/Location | Data Type |
|----|--------------|---|-----------|
| | | KII with MCA-I, contractors, MCC staff, and other relevant stakeholders with historical knowledge | |

3.3 Quantitative Approach

The quantitative data will be obtained through review of GPF documents, literature review of policies, regulations, procedures and other projects and KIIs with communities, PLN, and the grantees.

3.3.1 Desk Review

The quantitative data available through desk review will consist largely of the feasibility studies, TAPP deliverables and the PMC review of these deliverables as well as cost and tariff data that the project used for financial analysis and the cost of production. Quantitative data obtained from literature review will consist of average generation costs, PPA templates, RE project costs and CBS information. Analysis of this information will be used to answer a majority of the evaluation questions.

3.3.2 Key Informant Interviews

Some of the information required to answer question 3 is not publicly available and so the team will have to depend on the KIIs to address these areas. They include the tariff negotiated with the utility and the local cost of production. Other data the KIIs will address are in areas such as investment from other entities, operating costs, and CBS operations.

3.3.3 Analysis Plan

The quantitative analysis is primarily descriptive and comparative in nature (costs and investment). It will be triangulated with findings collected through qualitative methods.

3.3.4 Cost Benefit Analysis

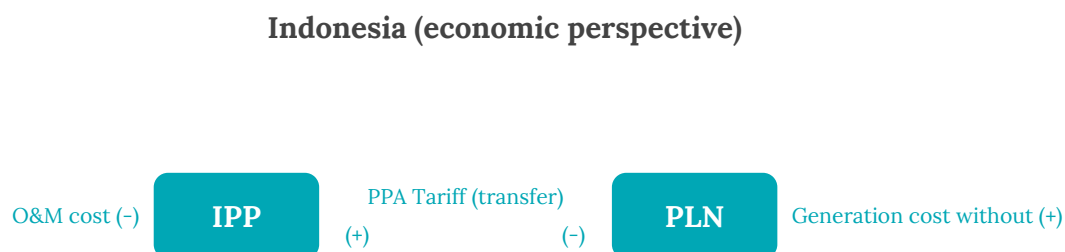
For the independent evaluation-based CBA, the Evaluation team recommends starting with the *ex-ante* CBA and performing the following changes to their structure.

- Add the reduction in GHG emissions as a benefit for Indonesia. New research has provided a framework to measure the social cost of carbon from the perspective of a country based on their socio-economic context, carbon concentration paths, and damage functions. (see discussion and reference on this under “Potential deviations from MCC methodology”). Given the sensitivities around valuation approach for GHG emissions, the team will report the CBA results with and without this benefit. Furthermore, when reporting the results with this benefit, the team will use alternative valuation scenarios with confidence intervals.
- If possible, add benefits to the community associated with CBS. If the team finds evidence on the realization of CBS and defensible methods for their valuation, they can be added as an additional benefit. Please note that, from the economic perspective, CBS benefits do not include any transfer of cash to the community. Instead, the team will be looking for potential gains for the community related to the use of such funds (marginal return on investment, scholarship, health infrastructure, etc.). The team will be in a position to comment on the such methods once the shape of these CBS agreements is known.

- If relevant, add environmental benefits (or costs) associated with the change in the way waste water is treated by the mills.
- Verify and, if needed, change the valuation approach used for the generated electricity. The electricity generated is valued based on cost savings on the supply side. The team will not only analyze the accuracy of the supply-side estimate but also assess other forms of valuation if relevant. For instance, if the grant results in improved coverage or reliability, the team will introduce demand-side approaches such as reduction in coping cost when the grid replaces the need for the use of backup generation or alternative sources of energy.
- Adjust the structure of the model to allow for beneficiary analysis - adding the independent power producer (IPP) as a stakeholder. Since the *ex-post* CBA can obtain realized values for the IPP tariff and its O&M costs, the CBA model can estimate the financial feasibility of the operation from the IPP's point of view. To do so, the cost saving for PLN from the *ex-ante* CBA will be expanded between two perspectives:
 1. IPP: O&M cost for IPP (maintenance cost with) and the IPP tariff paid by PLN (revenue with).
 2. PLN: value of electricity generated (cost without), and the IPP tariff paid by PLN (cost to PLN with).

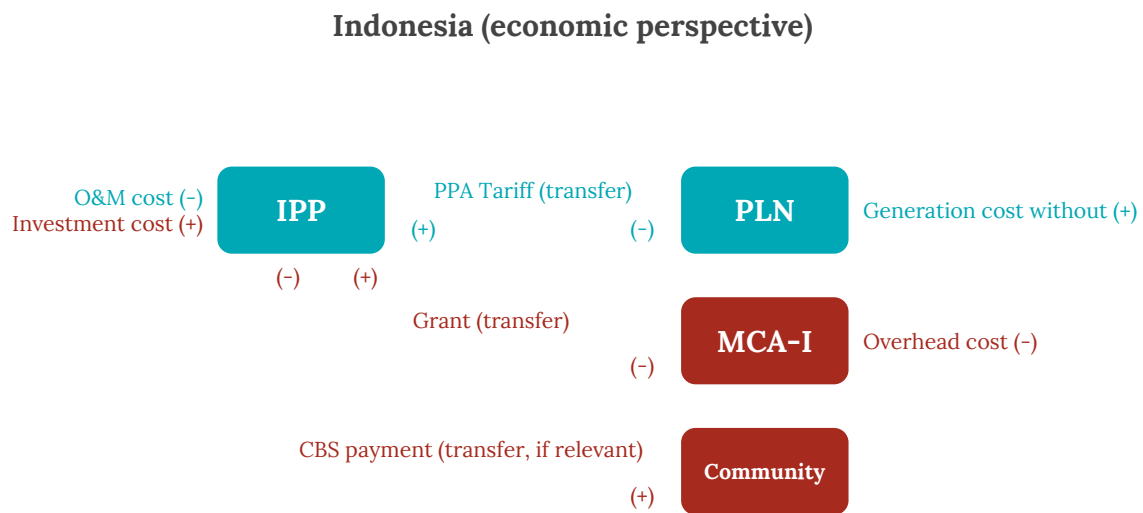
The tariff is a transfer from an economic point of view while the O&M cost and avoided generation cost are economic costs and benefits, respectively. This step will also align the analysis with the “integrated approach to CBA”. This relationship is illustrated in Figure 9.

Figure 9. Expansion of Cost-Saving for PLN



To make the logical structure of the model fully compatible with the integrated approach, the grant and CBS payment (if relevant) are also introduced to the model as transfers. The grant offsets the investment cost of IPP. The addition of these transfers is shown in Figure 10.

Figure 10. Introduction of Grants as a Transfer into the CBA Model



The complete logical structure of the model is illustrated in Figure 8.

Figure 11. Logical Structure of the CBA Model



Please note that the team may exclude some of these benefits and costs if we do not find any reliable evidence for their existence or basis for monetizing them. In the latter case, the team will qualitatively discuss their presence and elaborate on the barriers for monetizing them in a defensible manner. The new structure for the evaluation-based CBAs is summarized in Table 7.

Table 7. Benefits, Costs, and Stakeholders: Evaluation-Based CBAs

| Impacts | IPP | PLN | Community | MCA-I | Indonesia |
|--|-----|-----|-----------|-------|-----------|
| Benefits | | | | | |
| Value of electricity generated ⁴⁵ | | ✓ | | | ✓ |
| Reduction in GHG emissions | | | | | ✓ |
| Additional CBS Benefits ⁴⁶ | | | ✓ | | |
| Costs | | | | | |
| Investment cost ⁴⁷ | ✓ | | | | ✓ |
| O&M cost | ✓ | | | | ✓ |
| MCA-I overhead cost | | | | ✓ | ✓ |
| Transfers | | | | | |
| Grants (covering investment cost) | ✓+ | | | ✓- | |
| CBS Payment (transfer, if applicable) | ✓- | | ✓+ | | |
| IPP tariff paid by PLN with project | ✓+ | ✓- | | | |
| | | | | | |

Additionally, many key assumptions behind the benefits and costs included in the *ex-ante* CBA will be examined directly by the Evaluation Team. Important findings from the evaluation will be fed directly into the model, allowing new evidence to change the assumptions or parameters, and hence the results of CBA before the final report.

A key assumption used in the estimation of the project's benefits is the impact of the project on the balance of the system. The balance of the system is defined as the rest of operational elements in an electricity grid other than the project being analyzed. Such elements include the generation, transmission, and distribution assets among others. In the CBA of grid-connected electricity generation projects, it is critical to understand the impact of the project on the balance of the system. Since a grid functions as whole to supply a homogeneous output, the operation of each element can leave an impact on other parts of it. A local analysis is therefore unable to cover all the costs and benefits.

The *ex-ante* CBA assumes that the energy generated by these grants can be, and will be, produced by PLN in the absence of the grant. This assumption enables the analyst to use PLN's current

⁴⁵ Can be based on supply side measures (avoided cost on the margin) or the demand-side measures (reduction in coping cost).

⁴⁶ The way this benefit affects the structure of the model may change depending on the nature of the agreement and the way it is implemented in practice.

⁴⁷ The investment cost is covered by the grant, the grant is included under "Transfers" and will offset this cost for the IPP.

average unit cost as a benefit - defining it as a cost that is avoided when the IPP starts operation. However, this assumption comes with two implications: first it ignores a scenario in which a capacity-constraint system utilizes the additional generation capacity to reach more customers or improve the reliability of its current supply, and second, it assumes that the marginal cost and average cost to PLN are the same. Benefits from improved coverage or reliability can be valued using alternative demand-side measures, such as the savings for consumers as they spend fewer resources to cope with a lack of access, blackouts, or brownouts. If the cost-saving (a supply-side approach) remains the relevant method of valuation of this benefit, the team will replace the average unit cost with marginal unit cost as the measure of value for generated electricity.

Please note that the value of the electricity generated, as a benefit in Table 6, captures whichever methodology the team finds relevant for the valuation of energy: supply-side or demand-side. Furthermore, the team is interested in exploring the possibility of developing an aggregate CBA of the on-grid renewables window. To do this, the team will need to incorporate the:

- Costs (and benefits) associated with suspended, terminated, and technical-assistance-only grants;
- An approximation of the benefits associated with the technical-assistance-only grants; and
- Potential values associated with institutional capacity building in Indonesia, if relevant.
- The team would like to highlight that the ability to conduct a portfolio-level CBA is highly dependent on finding the required evidence to attribute a change and place a dollar value on it. It is therefore considered an exploratory effort and the team cannot provide much of methodological inputs here beyond the avenues it will explore. The institutional benefits, for example, is a weak hypothesis as MCC did not aim for an institutional change and PLN already had procedures in place for enabling private participation in the generation of electricity.

For TAPP-only grants, if they are comparable with the four included CBAs, their net impact will be considered attributable to TAPP efforts of GP after adjustment with the proportion of costs funded by GP. This method will help in acknowledging the private costs and adjusting the benefits or net impact similarly. For suspended or rejected grants, with enough evidence and when rejection is due to economic feasibility concerns, one can argue that the procurement process resulted in denying a lousy project and estimate the benefit that way. When suspension or rejections is due to operational constraints (e.g., timing), there may still be benefits if the projects have been funded and implemented by others. As discussed earlier, these costs and benefits will all fall under the umbrella of a portfolio-level CBA, which the team may find to be infeasible to conduct in the first place.

Lastly, the team has identified that the PLN operates at a relatively high economic cost. The *ex-ante* CBA models developed by the MCA-I economic include the calculation of the economic cost of generation for PLN. This shadow economic cost is higher than the electricity tariffs charged by PLN in most parts of Indonesia due to uniform pricing policies and political influence. While an analysis of sources of technical inefficiencies at PLN or pricing policy is beyond the scope of this evaluation, the Evaluation Team believes that this shadow cost may not be the best benchmark for the economic cost of electricity generation in Indonesia. To address this problem, the team will try to examine the per unit cost of electricity for a number of alternative technologies in the same context using secondary sources of information. Such an analysis will be used to illustrate

the cost-effectiveness of these grants in comparison with the other viable RE or non-RE technologies, making a stronger case for, or against, the economic feasibility of these grants.

The team will look for the values for a range of assumptions used in the calculation of benefits and costs to estimate the evaluation-based CBA. These assumptions are listed in Table 8.

Table 8. Assumptions to be Verified for Evaluation-Based CBA

| Assumption | Used in calculation of | Likely source |
|--|--------------------------------|--|
| Investment cost and schedule | Grant CBA | KII: grantees Desk review: IPP financial records |
| Operating and maintenance cost structure | Grant CBA | KII: grantees Desk review: IPP financial records |
| Local environmental impacts | Grant CBA | KII: grantees KII: Community or Village Leader |
| Total generation by IPP (sold to PLN, sold to others, and auxiliary consumption) | Grant CBA | KII: grantees KII: PLN regional offices |
| Energy mix and generation cost of PLN | Grant CBA | KII: PLN regional offices Desk review: PLN operational report |
| Impact on balance on system | Grant CBA | KII: PLN regional offices |
| Coping cost for interrupted, or lack of, access to network (if applicable) | Grant CBA | Literature review: coping cost in Indonesia |
| IPP tariff | Grant CBA | KII: grantees KII: PLN regional offices Desk review: PPA |
| MCA-I overhead | Grant CBA, Portfolio-level CBA | KII: MCC/MCA-I |
| Fate of suspended, rejected, and TAPP-only grants | Portfolio-level CBA | KII: MCA-I Economic Analysis team KII: PLN regional offices |
| Improved institutional capacity | Portfolio-level CBA | KII: PLN regional offices |
| Benefits from CBS | Grant CBA | KII: Community or Village Leader KII: grantees |
| Cost of other benchmarks for per unit cost of electricity in Indonesia | Cost-effectiveness analysis | KII: World Bank, Asian Development Bank, USAID Literature review: Project reports |

Potential Deviations from MCC Methodology

The most significant deviation from MCC's methodology is the introduction of reduction in GHG emissions. The social cost of carbon has conventionally been estimated from a global perspective, making it difficult for it to enter CBA models from a single country's perspective. MCC has generally excluded the social cost of carbon from its CBA models on the basis that the scope of its analysis is limited to the estimation of ERR from the country's point of view.

New research has resulted in models that can generate the social cost of carbon from a single country's perspective. These studies move beyond weighing the cost by population or area of the country and estimate the actual impacts of climate change on the economic well-being of the country based a wide range of socio-economic, industrial, and geospatial parameters. A recent study allows for the estimate the social cost of carbon for Indonesia.⁴⁸

The other way in which the methodology used for this analysis may deviate from MCC's approach is the likely introduction of the coping cost. MCC's existing draft guidelines from 2013 on the CBA of electricity projects does not explicitly rule against the estimation or use of coping cost. However, the document does not mention coping cost as a possible approach for valuation of improving the reliability of access to electricity. This argument will only be relevant if the Evaluation Team finds evidence that the operation of the project has improved the capacity of the local institutions in procuring private participation in the generation of RE.

3.4 Qualitative Approach

Integra will collect qualitative data through document and literature review, key informant interviews, focus group discussions and site visits. A summary of the desired respondent types and data collection methods can be found in Table 9 below:

3.4.1 Desk Review

Integra will review all relevant GPF documents including grantee documents (such as operational guidance documents; call for proposals, M&E plans; grant agreements and amendments; technical proposals; the Social and Gender Integration Plan; Annual and quarterly reports; PMC review documents; CBS documents; and TAPP Deliverables) prior to arrival in Jakarta for data collection in April. Additionally, the team will conduct a literature review of other on-grid RE Facility-type mechanisms, GoI and PLN policies and guidance documents related to on-grid RE and independent assessments of the on-grid RE environment and investments in Indonesia. The review of project documents is the first and most important step to answering the evaluation questions. This will result in a preliminary set of findings to be triangulated through other methods.

Table 9. Summary of Qualitative Data Collection Respondents

⁴⁸ Ricke, Katharine, Laurent Drouet, Ken Caldeira, and Massimo Tavoni. (2018). Country-level social cost of carbon. *Nature Climate Change*, Volume 8, pages 895–900. Indonesia specific information on website located here: https://country-level-scc.github.io/cscweb-2018/#/cscweb?ssp=SSP2&rcp=rcp60&dmg=bhm_sr&discounting=growth%20adjusted&iso3=IDN

| Respondent Type | Total ⁴⁹ | KII | FGD | Site Visit ⁵⁰ |
|--|---------------------|-----------|----------|--------------------------|
| Successful Grantee | 4 | 4 | | 4 |
| Village Leader | 4 | 4 | | |
| Beneficiary Community | 4 | | 8 | |
| Unsuccessful Grantee | 16 | 8 | | |
| MCA-I Staff ⁵¹ | 4 | 4 | | |
| MCC Staff ⁵² | 5 | 5 | | |
| On-grid RE Contractors | 3 | 3 | | |
| Government of Indonesia (national and local) | 7 | 7 | | |
| Donor | 3 | 3 | | |
| Total | 50 | 42 | 8 | 4 |

3.4.2 Key Informant Interviews

Integra will conduct KIIs with a range of stakeholders that includes: BAPPENAS, MEMR, PLN, district and local government officials, and grantees. Given the diverse interest of these stakeholders and their participation in the GPF, KIIs will be quite diverse. The KIIs will be semi-structured allowing the team to “dig deeper” depending on the response while ensuring that the team is able to gather the most pertinent data for each the evaluation question. The KIIs will be designed to last no longer than 90 minutes (including translation) but given the respondent’s interest may be less or more. Integra intends to hold as many KIIs as possible in-person with MCC in Washington, and the Indonesian stakeholders in Jakarta, Padang and Riau. All four awarded grantees will be interviewed. Table 10 describes intended KIIs for this evaluation.

⁴⁹ The final numbers are likely to change based on scheduling, availability, and opportunities as they arise in the field.

⁵⁰ Site visits will occur in Padang and Riau.

⁵¹ MCA-I staff available and pertinent to RE.

⁵² MCC staff relevant to RE.

Table 10. Key Informants

| Key Informant | Location | Role/Function | Timing |
|---|-----------------------------------|---|-------------------------|
| MCA-Indonesia | | | |
| Window 3b Lead Any Sirapurna | Jakarta | Knowledge of Window 3b grants, GPF design evolution, changes to design, effectiveness of GPF and portfolios under Window 3b, successes and challenges within Window 3b, prospects for sustainability, Window 3b costs | July 2018 April 2019 |
| MCA-I Economic Analysis team | Jakarta | Provide input on CBAs | April 2019 |
| MCA-I Contractors/Grantees | | | |
| Grantees | Sumatra, Jakarta and other cities | Provide findings related to each of the evaluation questions | April 2019 |
| Selo Kencana Eddy Sutedjo | Jakarta and West Sumatra Province | President and is facilitating the meetings with all project stakeholders including community beneficiaries. | April 2019 |
| Musim Mas Elisabeth Gozali | Medan and Riau Province Sites | Strategy & Planning Department and is facilitating the meetings with all project stakeholders including community beneficiaries. | April 2019 |
| Project Management Consultant (PMC) | Jakarta | PMC provides technical support for grant proposals and deliverables for Windows 1, 3, and GK | July 2018 April 2019 |
| Tetra Tech (MCC Contractor) | TBD | Provided technical support to MCC for Window 3B | April 2019 |
| Government of Indonesia and External Stakeholders | | | |
| BAPPENAS representatives | Working unit for MCC - Jakarta | Coordinate the administration of MCC within the GoI | April 2019 |
| PLN Regional Offices Bob Saril (PLN Jakarta) Grantee Contacts listed above | Riau, Pedang, Jakarta | Power off taker (Utility): Grantees will furnish contact information from their PPA and Bob Saril will help facilitate the meetings. | April 2019 |
| Local government officials in each site visit location | Site visit locations | Integra team to describe data collection efforts and discuss grant activities at that site; understand Government role on the committee for community benefits | April 2019 |
| Community or Village Leader | Site visit locations | Grantees are facilitating the meetings with all project stakeholders including community beneficiaries. | April 2019 |
| PT Sinar Agro Raya Herman, Marsudi or Padriyanto | Kiyap Jaya, Riau | Signatories to CBD | April 2019 |

| Key Informant | Location | Role/Function | Timing |
|---|---|---|------------|
| PT Indomakmur Sawit Berjaya Burhan, Dasril or Herman Hadi | Surau Tinggi Barat Kota, Rokan Hulu | Signatories to CBD | April 2019 |
| PT Bahana Nusa Interindo Paino, Rahmat Syahputra, or Sariyem | Jl. Lintas Riau-sumut Km. 21 Balam, Rokan Hilir, Riau | Signatories to CBD | April 2019 |
| PT Selo Kencana Syahril, Mondra Yandi, Ihkwanul Fikri | Nagari Lubuk Gadang Tenggara | Signatories to CBD | April 2019 |
| Government of Indonesia Ministry of Energy and Mineral Resources | Jakarta | Develops/manages the energy and mineral resource regulations | April 2019 |
| World Bank, Asian Development Bank, USAID | Jakarta | Comparison for RE programs | April 2019 |
| MCC | | | |
| GP Project Lead | Washington, DC | Knowledge of evolution of GPF design, impacts of changes to design, how GP fits into wider Compact and Gol objectives, operational successes/challenges | TBD |
| Energy Lead | Washington, DC | Provide input on RE portfolio PDU | TBD |
| Environmental and Social Performance Leads | Washington, DC | Familiar with ESP analyses undertaken by GPF, ESP activities undertaken by grantees | TBD |

3.4.3 Focus Group Discussions

Integra will use FGDs to help address question 3b, with discussion focusing on all aspects of the community benefit sharing by the grantee. Integra will facilitate targeted FGDs with project beneficiaries from each of the four successful RE grants. These FGDs will take place in communities that were to directly benefit from the CBS.

The Evaluation Team will conduct gender disaggregated FGDs to respect comfort levels and encourage openness of communication for all participants in order to obtain specific insights from female beneficiaries and to determine the efficacy of the grants' gender and social inclusion strategies (SGIPs). Discussions will concentrate on community members and stakeholders' experiences on the project (e.g., what they learned, the challenges they faced, how they see the project outcomes benefits and sustainability).

Integra will have two trained facilitators for all FGDs that will work under the direction of the Peatland Portfolio Team Leader – (1) an experienced participatory engagement expert that can provide community entrée and structure the discussions to be culturally appropriate while providing language translation support as needed, and (2) another expert with a background in

environmental sustainability that can record detailed notes for later analysis. Each FGD will last approximately two hours. The proposed focus group participants are presented in Table 11.

Table 11. Focus Group Participants

| Respondent Type | Location | Role/Function | Timing |
|-------------------------------|---|--|------------|
| Community | Kiyap Jaya, Bandar Seikijang, Pelalawan Regency, Riau | Participants in and beneficiaries of the CBS | April 2019 |
| Community | Pasir Pangaraian, Riau | Participants in and beneficiaries of the CBS | April 2019 |
| Community | Rokan Hilir, Riau | Participants in and beneficiaries of the CBS | April 2019 |
| Community/ Selo Kencana | Lubuk Gadang South Solok Regency, West Sumatra | Participants in and beneficiaries of the CBS | April 2019 |

3.4.4 Analysis Plan

Integra will use a quantitative platform for coding and analysis. Detailed notes will be taken with consent of both KIIs and FGDs and Integra will record all interviews and FGDs. The notes will then be input into the platform allowing quantification of qualitative responses.

Each question in KII and FGD protocols will have a direct link to an evaluation question (or component of an evaluation question) and will be categorized according to those linkages during data analysis. The findings generated through these methods will be interpreted in the context of findings generated through other qualitative and quantitative methods described above and triangulated accordingly.

Integra will develop a standard codebook for the evaluation questions to analyze themes across respondents.

3.5 Sampling Approach

Of the 20 projects accepted into the grant process, four were full grants, successful in reaching completion, seven were full grants that were either terminated or suspended, and nine were TAPP grants. We will attempt to interview all 20 and we will conduct FGDs with all communities benefited through the four full grants. Thus, we do not have a sampling approach, as our intent is to interview all 20 entrants. However, some of the unsuccessful grant applicants may not be available. This is discussed in greater detail in the Section 3.6 below.

3.6 Challenges and Limitations

There are several challenges in conducting the evaluation. First, MCA-I is now closed, and this has implications for information gathering. While the team was able to speak with some MCA-I staff in July, the lack of continued access during the evaluation poses some restriction. Also, access to GPF files is now with GoI. This may pose some issues in scheduling and data access depending on the familiarity of GoI with the system. Second, because the grants have only been implemented in little over a year, it will not be possible for the team to measure long-term outcomes. We will only be able to infer what is likely to happen. Third, unsuccessful applicants may be reluctant to

be interviewed or be disgruntled and report biased information. In the latter case, we will verify their statements by reference to the detailed review notes of the PMC.

Updating the benefits and costs that were already included in the *ex-ante* CBAs is not expected to face significant challenges. Most of the parameters for these calculations are documented in operational reports of the grantees (IPPs) and the off-taker (PLN), or reflected in the off-take agreement (PPA). Challenges can arise when introducing new sources of benefits and costs. For example, PLN may not be able to quantitatively report on the attributable enhancement to the quality of their service even if qualitative evidence exists for this. Similar challenges can limit the ability of the Evaluation Team to assign a value to any form of capacity building that resulted from the operation of these grants. Lastly, the Evaluation Team's ability in quantifying the benefits and costs associated with suspended, rejected, and TAPP-only grants will largely depend on the similarities with the completed MCA-I grants.

4. ADMINISTRATIVE

In this section we summarize our plans for carrying out required administrative tasks to implement the evaluation.

4.1 Summary of IRB Requirements and Clearances

Integra will use external Institutional Review Board (IRB). To this end, Integra's evaluation team met with Dr. Michael Dua, the representative from the Centre for Ethics at University of Atmajaya, Jakarta to discuss the IRB process. Based on that meeting, Integra is preparing the documentation required for the University of Atmajaya in Jakarta's IRB process. The requirements, listed in the proposal, include:

- A description of the research team.
- A description of the research question and the aims of the research.
- Background documentation of the proposed process for conducting the evaluation.
- The informed consent statement.
- The survey instruments.

When documenting the evaluation process, Integra will need to declare if the interviewees will receive any compensation for their time, and if so, what they will receive. Integra also needs to state the start date and the length of the research. The IRB proposal concludes with a series of questions Integra must answer, covering the topics of: the evaluation team, the subject of the research, the project intervention, the sampling strategy, the informed consent statement, and privacy procedures.

Integra will submit the proposal package to the IRB before pre-testing and piloting the instrument. Upon completion of the first stage testing of the survey, Integra will resubmit the revised survey instrument to the IRB for their review and approval before conducting the evaluation.

4.2 Data Protection

All Integra staff and subcontractors working on the evaluation and with the ability to access the data will sign evaluation specific non-disclosure agreements. All electronic information used, developed, or in any way related to a Program is stored on a separate, secure cloud application.

This will prevent any unauthorized access or transfer of information. Program personnel are assigned individual protected access the secure data.

Information generated by stakeholders or through KIIs and FGDs will be stripped of personal identifiers and stored on a secure folder accessible only by Integra evaluation team members and handwritten notes will be destroyed.

4.3 Preparing Data Files for Access, Privacy, and Documentation

Integra will comply with MCC's policy for transparency and open data to the greatest extent possible. Individual identifiers will be removed from the data prior to handover to MCC and upload to MCC's data platform for public access. Additionally, indirect identifiers will be removed from the data. For instance, even the mention of technology can make the response identifiable. This will then limit the ability of the team to share the full results of KIIs. We do not expect this to be the case when the evaluation question addresses grantees (full or TAPP) that did not make it to grant completion.

4.4 Dissemination Plan

Once MCC has approved Integra's evaluation report and local language executive summary, Integra will develop a final dissemination presentation. Upon MCC approval of the presentation, Integra will meet with GoI officials in Jakarta to share the results of the evaluation. External stakeholders can be included at MCC's request. We will also make a final presentation and answer any questions with MCC in Washington, DC.

4.5 Evaluation Team Roles and Responsibilities

Integra's team responsibilities are detailed in Table 12 below.

Table 12. Team Roles and Responsibilities

| Role/Name | Responsibilities |
|---|---|
| Key Personnel | |
| Evaluations Program Manager /Team Leader, On-Grid Renewable Energy Portfolio Matt Addison | <ul style="list-style-type: none"> Directly oversee the team, delegate responsibilities to the team members, and conduct quality assurance on their inputs. Coordinate communication with stakeholders and data collection in Jakarta. Advise on the local context during the evaluability assessment, evaluation design report, and design of data collection tools. |
| Qualitative Research Methods Expert Dr. Henri Sitorus | <ul style="list-style-type: none"> Under the guidance of the team leader, assist in developing the Evaluation Design Report and data collection tools Travel to the field to conduct data collection and oversee FGDs in the field. Lead qualitative data analysis and corresponding report writing. |
| Evaluation Specialist Farhat Rahman | <ul style="list-style-type: none"> Travel to the field to conduct data collection particularly at BAPPENAS where critical MCA-I data is resident. Work with the gender and social inclusion specialist in developing and delivering the FGDs for women. Gather and analyze cost and tariff data from PLN and possible other sources. Contribute to data analysis and report writing, as assigned. |
| Gender and Social Development Specialist Intan Sari | <ul style="list-style-type: none"> Focus on gender and social development concerns with grantees. Lead women focus groups at the community level Contribute to data analysis and report writing, as assigned. |
| CBA Analyst Bahman Kashi | <ul style="list-style-type: none"> Lead economist and technical expert in energy examining the CBA of the project Travel to the field to conduct data collection |
| CBA Analyst Kristen Schubert | <ul style="list-style-type: none"> Supporting the evaluation-based CBA of the project and providing internal support and feedback Provide support for data collection |
| Non-Key Personnel | |
| Local Logistics Specialist Nadya Sofina | <ul style="list-style-type: none"> Assist with logistics during fieldwork, such as arranging meetings, venues, transportation, and lodging. Serve on a sub-team during data collection. Assist with quantitative data analysis, as assigned. |
| Jr. Evaluation Specialist Brenna Casey (replacing Charles Tarpey) | <ul style="list-style-type: none"> Provide administrative and logistical support throughout the evaluation, such as processing visas, arranging international travel, and onboarding and paying consultants. Contribute to background research and qualitative data coding. Conduct copy-editing, formatting, and other QA on deliverables. |

4.6 Evaluation Timeline and Reporting Schedule

Integra's proposal called for combined implementation in the field for on-grid RE, Social Forestry, and the evaluability assessment. This reduced management and travel costs. However, given the availability of consultants and the need to wait until April, a full year after implementation, on the Peatlands, data collection will take place in two trips.

Table 13. Data Collection Trips

| Trips | Data Collection | Data Cleaning and Analysis | Trip Report | Evaluation Report |
|--|-------------------------|-----------------------------------|--------------------|---|
| Trip 1, Jakarta, 4 awarded grants, and unsuccessful grantees | April 14 – May 10, 2019 | May 13-17, 2019 | May 31, 2019 | <i>Draft Evaluation Report: June 21, 2019</i> |
| | | | | <i>Draft Final Evaluation Report: August 9, 2019</i> |
| | | | | <i>Final Evaluation Report: September 6, 2019</i> |

5. REFERENCES

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6.ANNEXES

6.1 Stakeholder Comments and Evaluator Responses

To be completed after review

| Reviewer Name/ Institution | Page Number | Comment | Evaluator Responses |
|-------------------------------|----------------|---------|---------------------|
| | | | |

6.2 Evaluation Budget

Task Estimates (Budget), Billed to Date and Projections - On Grid Renewable Energy

| Task No. | Task | Total Estimate | Actual Cost through 10/31/18 | Projections | | Total Est. |
|----------|---|----------------|------------------------------|-------------|---------------------|------------|
| | | | | CLIN 0001 | CLINs 1001 and 1003 | |
| 1 | Work Plan | 2,754.86 | 2,749.28 | - | - | 2,749.28 |
| 1.1 | On Grid Renewable Energy Task 1: Develop Evaluation Design Report | 44,488.22 | 34,890.89 | 6,120.27 | 3,477.06 | 44,488.22 |
| 2.1 | On Grid Renewable Energy Task 2: Develop Evaluation Materials | 11,510.98 | - | 11,510.98 | - | 11,510.98 |
| 3.1 | On Grid Renewable Energy Task 3: Undertake data collection | 162,671.54 | - | 143,241.53 | 19,430.00 | 162,671.53 |
| 4.1 | On Grid Renewable Energy Task 4: Develop Final Report | 27,926.03 | - | 19,406.22 | 8,519.81 | 27,926.03 |
| 5.1 | On Grid Renewable Energy Task 5: Disseminate Final Report | 4,224.08 | - | 4,224.08 | - | 4,224.08 |
| TOTAL | | 253,575.71 | 37,640.17 | 184,503.08 | 31,426.87 | 253,570.12 |

6.3 Description of Donor Energy Programs

6.3.1 IFC's Sustainable Energy Finance Program



FINANCING SUSTAINABLE ENERGY INITIATIVES

Sustainable Energy Finance Program

Why Sustainable Energy?

Indonesia has significant oil, coal and natural-gas reserves. Over many decades, the country has become overly dependent upon fossil fuel based energy, particularly for industry and electricity generation. A decline in domestic oil and natural-gas production in recent years has made Indonesia a net importer of oil; forcing the government to rethink the way energy is generated in a more sustainable manner.

Current energy consumption behavior – relying heavily on fossil fuels – is depleting the fossil-fuel based energy reserve and contributing to the increase in greenhouse gas emissions. As demand for energy continues to rise, Indonesia's greenhouse gas emissions due to fossil fuel combustion are expected to increase rapidly. Following current trends in the energy and transport sectors, Indonesia's fossil fuel-based emissions are likely to triple by 2030, which is not sustainable.

What is Sustainable Energy?

Sustainable Energy refers to the smart generation and use of energy to meet our current needs without compromising future energy supply or harming the environment. This includes improving energy efficiency (EE) and harnessing renewable energy (RE).

What is the Sustainable Energy Finance (SEF) Program?

IFC, with support from the government of Australia, Finland, the Kingdom of the Netherlands, New Zealand, and Switzerland works hand-in-hand with leading financial institutions in Indonesia to enable businesses to finance their EE and RE Projects. IFC can help partners determine financially feasible energy projects within their businesses, which subsequently can help the businesses save electricity costs, improve production and operational efficiency, increase profitability, and reduce greenhouse gas emissions. The Program also conducts a series of market education activities in order to increase capacity of financial institutions, industry players, government agencies, and the general public to identify and implement sustainable energy projects.

How can IFC work with you?

The SEF Program seeks to improve the overall climate for private sector investment on sustainable energy projects and can work with the following stakeholders:

FINANCIAL INSTITUTIONS

Advisory and financial instruments to local financial institutions to build a healthy pipeline of sustainable energy projects

MARKET PLAYERS

Raising awareness on energy efficiency and renewable energy and building the capacity of end-users, service and technology providers in project development, financing, and implementation

OTHER STAKEHOLDERS

General market awareness-raising to facilitate smart usage and generation of energy

6.3.2 World Bank SME Finance

The World Bank's SME finance web page summarizes their SMEs⁵³:

A key area of the World Bank Group's work is to improve SMEs' access to finance and find innovative solutions to unlock sources of capital.

Our approach is holistic, combining advisory and lending services to clients to increase the contribution that SMEs can make to the economy.

Advisory Support for Financial Sector Infrastructure:

Credit Reporting Systems are important as better credit information can lead to increased credit for SMEs.

Secured Transaction Registries ensure that SMEs can provide moveable collateral as the basis for more lending.

Modernized Insolvency Regimes can help restructure viable businesses while also promoting the efficient and effective "exit" of those firms that are not economically efficient.

Streamlining of Payments Systems supports the more efficient movement of money throughout the economy, including G2B, B2B, remittances and other payments.

The World Bank can help establish the legal and institutional framework for strong financial infrastructure systems.

Lending Operations and Policy Work:

SME Lines of Credit provide dedicated bank financing – frequently for longer tenors than are generally available in the market – to support SMEs for investment, growth, export and diversification.

Partial Credit Guarantee Schemes (PCGs) – the design of PCGs is crucial to SMEs' success, and support can be provided to design and capitalize such facilities.

Early Stage Innovation Finance provides equity and debt/quasi-debt to start up or high growth firms which may otherwise not be able to access bank financing.

Policy work, analytical work, and other advisory services can also be provided in support of SME finance activities.

Note: Works with financial entities but not directly with project developers.

Examples:

1. Indonesia Infrastructure Finance Facility

The objective of the Project is to strengthen and further develop the institutional framework of the financial sector to facilitate financing of commercially viable infrastructure projects and thereby increase provision of private infrastructure in Indonesia. Key performance indicators to judge PT. IIF's success include the following outcomes: (i) increase in the number of commercially viable infrastructure projects achieving financial closure through long-term debt financing, other financial products, and advisory services from the IIFF over the life of the project; (ii) Increase in the amount of private capital (including long-term debt and equity) available for infrastructure projects over the life of the project; (iii) Increased support to government's policy making in private provision of infrastructure through advisory services from IIFF; and (iv) Increase in privately financed infrastructure in Indonesia.

⁵³ <https://www.worldbank.org/en/topic/smefinance>

Note: Provides financing and financial advisory services to finance facility not developers.

2. First Indonesia Sustainable and Inclusive Energy Development Policy Loan (DPL)

The Development Policy Loan series supports key policy and institutional reforms with the following objectives: a) reducing the fiscal cost of providing electricity; b) improving the investment climate in the energy sector; c) removing constraints to renewable energy expansion; and d) expanding access to modern, reliable energy.

The DPL will be supporting critical policy and institutional reforms that have four key development objectives:

- Pillar A: Reducing the fiscal cost of electricity provision through prior actions to reduce subsidies and move towards cost-reflective tariffs for electricity and to support improvements in the efficiency of PLN through moving to a Performance-Based Regulation Framework. These actions are expected to contribute to a reduction in the allocated budget spending on electricity subsidies;
- Pillar B: Improving the investment climate in the energy sector by supporting gas supply development and licensing reform to facilitate investment in new generation by the private sector.

For gas, the prior action on adoption of a regulation for a systematic and time-bound process for managing expiring production sharing contracts aims to reduce one source of regulatory uncertainty and support investment in the sector. Along with further actions under the second operation, this is expected to contribute to the signing of new long-term agreements for domestic and / or inter-island gas supply by PLN.

Prior actions on licensing reform streamline administrative procedures for setting up Independent Power Producer (IPP) projects and the delegation of licensing authority for such projects to the Indonesia Investment Coordinating Board for inclusion in its national one-stop service for investment. These measures aim to contribute to a reduction in the number of days to process an IPP license;

- Pillar C: Removing constraints to renewable energy expansion including by supporting geothermal power development and putting in place incentives for the development of other renewable energy resources. Prior actions supporting geothermal power development include the adoption of the 2014 Geothermal Law and submission to the Ministry of Law and Human Rights the draft regulation, under the Law, to implement a local benefit-sharing mechanism of a “production bonus” payment by geothermal companies to local governments. These measures are expected to contribute to implementation of new geothermal power projects under the framework of the new Law.
- Pillar D: Expanding access to modern, reliable energy by establishing a credible national approach to expanded electrification. This pillar of the programmatic DPL series supports an indicative trigger in the next operation in support of an improved national approach to electrification, which aims to support increases in the electrification rate.

Note: supports policy but not finance or technical assistance.

6.3.3 GIZ General Energy Description



The connections between poverty, economic development, environmental and climate protection are multifaceted. The energy supply is an issue that affects all areas of societal development – the economy, health, education and security.

Our most urgent task lies in making access to sustainable energy a reality for poor populations in developing countries. Some figures highlight this necessity: 1.6 billion people lack access to electricity altogether; 2.5 billion people cook with wood, coal or agrarian waste, of which 1.5 million die annually from the consequences of polluted air.

Moreover, the energy sector represents a significant source of CO₂ emissions. Fossil fuels such as coal, gas and oil account for sixty per cent of all greenhouse gas emissions. Global energy demand is set to further increase by a factor of fifty per cent by the year 2030 – the primary contributors to this increase will be developing countries and emerging economies.

On behalf of the German government, GIZ is working towards reducing poverty by way of improved energy services. Likewise, GIZ aims to promote sustainable development by expanding the use of renewable energies and increasing energy efficiency.

Renewable Energy

GIZ provides advisory and support services in the area of renewable energy with a focus on governments as well as public and private institutions related to the energy sector.

The following text box describes a typical example.

Renewable Energy & Energy Efficiency Project Description

Title: Renewable Energy and Energy Efficiency (REEE) Project Country: Pakistan

Commissioned by: German Federal Ministry for Economic Cooperation and Development (BMZ)

Lead executing agency: Ministry of Water & Power (MoWP) Overall term: 2005 to 2019

Context: Pakistan currently faces a substantial shortfall in its energy supply. This is causing a deceleration in its economic growth and an outflow of businesses. The Government of Pakistan is increasing its support for renewable energy, in particular the use of solar photovoltaic, small hydro and wind facilities. Renewable energy is promoted as an alternative to imported fossil fuels, which are the biggest contributors to Pakistan's trade deficit. The government is also looking at ways to improve the management of supply and demand in this market.

Objective: Conditions have improved for the wider uptake of permanent and effective solutions for renewable energy and energy efficiency.

Approach: The project is active at national and provincial levels, with a special focus on the province of Punjab. It combines advisory services for the introduction of support mechanisms and the financing of renewable energy and energy efficiency, with efforts to strengthen learning and exchanges within Pakistan. It advises the Alternative Energy Development Board, the State Bank of Pakistan and the provincial energy departments on developing policies and implementing guidelines and instruments for the promotion of renewable energy and energy efficiency. The partners also receive support in improving their organizational and technical capacities. To encourage investment in renewable energy and energy efficiency, the project is assisting the State Bank of Pakistan in the development of green banking policies and financing instruments for related projects. The project partners have established the Pakistan German Renewable Energy Forum to promote cooperation and knowledge transfer related to renewable energy and energy efficiency. The Forum facilitates business-to-business and business-to-government links, while encouraging joint ventures for international projects and promoting exchanges on relevant legislation, policies and guidelines. In various different industrial sectors, the project is introducing and promoting energy management systems with the aim of improving demand-side management. To implement the project measures, GIZ is working together with the German Solar Association and Pakistan Solar Association.

Results: New market incentives and financing instruments have so far resulted in renewable energy projects amounting to over 1,000 MW capacity being newly installed and connected to the national grid. Since 2015, the project has focused attention on sustainable financing by commercial banks. Related to this, with support from the project, the State Bank of Pakistan has developed a set of sustainable Green Banking Guidelines. The State Bank also now provides incentivized liquidity schemes for investors in renewable energy and efficiency measures, with commercial banks carrying the credit risk. So far, 14 applications have been submitted for project financing amounting to PKR 90 billion, while three commercial banks have already provided corresponding lines of credit for solar home systems. Capacity development enabling the banks to carry out due diligence of such projects is ongoing.

The creation of the Pakistan German Renewable Energy Forum has led to increased interactions between the public and private sectors of Pakistan and Germany. Seven Pakistani solar power companies have so far established business contacts with 40 German companies, resulting in positive business transactions. A new legal framework is currently being introduced for net metering, which will allow the owners of solar systems to be credited for their inputs to the grid. Already over 550 net metering licenses have been issued for an installed capacity of more than 12 MW.

6.3.4 ADB's Work in the Energy Sector⁵⁴

ADB has been providing assistance to its developing member countries in the energy sector for more than 40 years. Its support has focused on

- electricity sector expansion programs
- support for the oil and gas sectors

⁵⁴ <https://www.adb.org/sectors/energy/adb-support-energy>

- training and supporting government energy agencies
- power sector reforms, governance, and efficiency improvements

ADB Energy Policy

ADB's 2009 Energy Policy aims to help developing member countries provide reliable, adequate, and affordable energy for economic growth in a socially, economically, and environmentally sustainable way. The policy enables ADB energy operations to be aligned with the organization's overall strategy emphasizing energy security, facilitating a transition to a low-carbon economy, universal access to energy, and for achieving ADB's vision of a region free of poverty.

The 3 Pillars of ADB's Energy Policy

1. Promoting energy efficiency and renewable energy

ADB is working to introduce advanced technologies to increase energy efficiency in the region while also increasing the amount of renewable energy in the region's energy mix. In addition, ADB is seeking to improve access to energy for poor and remote regions.

ADB has integrated clean energy into its project development process and has put in place financing to help decrease the cost of clean energy projects. It has launched initiatives for the rapid deployment of low-carbon technologies in the region.

2. Maximizing access to energy for all

ADB is looking to broaden support for greater energy access, not only financially, but also by identifying innovative solutions, sharing information with partner development institutions, national governments and with the private sector.

The next phase of the fight against energy poverty will tap into the power of the private sector. ADB aims to help entrepreneurs craft business models that are affordable and appropriate for a market of billions looking for reliable, affordable energy.

3. Promoting energy sector reform, capacity building, and governance

In accordance with its energy policy, ADB will focus on reforms, education and training, and good governance. This involves helping developing Asian countries restructure and reform their energy generation and supply systems. Reforms can take a long time, and ADB's continued association is needed to ensure that all sections of society, especially consumers, benefit. Sector reforms, including privatization, will be designed and sequenced carefully on a country-by-country basis in a transparent manner.

Energy for All Initiative⁵⁵

Empowering the poor through access to energy — ADB promotes new approaches for scaling up access to energy for the poor

Access to modern, cleaner energy is essential to human development. Yet the majority of the world's energy poor are living in Asia and the Pacific: more than 700 million people still have no access to electricity and almost 2 billion people still burn wood, dung, and crop waste to cook and to heat their homes.

⁵⁵ <https://www.adb.org/sectors/energy/programs/energy-for-all-initiative>

ADB aims to maximize energy for all, especially the rural poor, and founded The Energy for All Initiative to strengthen its investments and increase its project portfolio in energy access. The initiative develops and mainstreams approaches for scaling up access to affordable, modern and clean energy among the region's poor. This includes household access to electricity from renewable energy technologies such as micro-hydro, solar, biomass, and small wind power, as well as access to clean cooking fuel, such as LPG or biogas from livestock manure. Within the initiative, ADB launched the Energy for All Partnership, a regional platform for cooperation, knowledge and technical exchange and project developing bringing together key stakeholders from private sector, financial institutions, governments, bilateral, multilateral and non-governmental development partners. The partnership aims to provide access to safe, clean, affordable modern energy to an additional 100 million people in the region by 2015. Note that no financing is provided.

6.3.5 JICA's Energy Programs

It is estimated that energy consumption by developing countries will expand substantially. At the same time, it is predicted that a large share of energy consumption will inevitably be taken up by fossil fuel, which could be a cause of climate change. While low electrification rate is still a critical issue in developing countries, improving electric power supply and electricity access takes huge investments. The International Energy Agency (IEA) estimates that non-OECD countries need to invest \$10 trillion in the electric power sector in the period up to 2035. In such a situation, stable securement of low-cost, low-carbon energy is a very important development subject for developing countries to achieve stable social economy and sustainable growth. However, many countries face a lack of necessary techniques, know-how, and funds, and even human resources in charge of policy planning and implementation are limited. Therefore, it is essential for developing countries to obtain sufficient funds and the cooperation from advanced countries with technologies and accumulated experiences and know-hows. Responding to the issues of the energy and power sector in developing countries, JICA is providing the following assistance, with the concept of "3Ls" policy (i.e., simultaneous attainment of Low-cost, Low-carbon, and Low-risk).

(1) Promoting Better Access to Electric Power and More Stable Power Supply by Reinforcing National Grids

For many years, JICA has been committed to achieving better access to electric power and more stable power supply in developing countries by supporting the reinforcement of their national grids. In recent years, JICA has provided assistance for establishing an electricity master plan for Myanmar, which recently has faced rapid democratization and economic growth and required huge assistance in improving electric power supply infrastructure. Tapping into Japan's technical prowess, JICA has been assisting the development of key electric power facilities in partner countries. Such assistance includes (1) support for highly efficient coal-fired power generation in Bangladesh; (2) financial assistance for a gas-fired combined cycle power generation in Uzbekistan; (3) technical cooperation and studies for the introduction of pumped-storage hydropower generation in Sri Lanka and Turkey; and (4) support for the reinforcement of power transmission and distribution networks in Sub-Saharan African countries. Reinforcing and extending national grids will enable stable power supply to a wide range of users, including the poor, thereby contributing to human security.

(2) Promoting of Low-carbon Power Sources

Japan possesses world-class technology in geothermal power generation, which is renewable energy and stable base-load power sources. JICA provides a wide range of support, from resources development to the construction of geothermal plants in Indonesia, African Great Rift Valley countries that include Kenya, and Latin American countries, and will continue to provide and develop comprehensive support for the technical, infrastructural, scientific, and policy aspects of geothermal power generation.

Small island states, especially those of the Pacific region, depend on imported fuel (diesel) for most of their power supply. Constant high electricity tariffs, however, underscore the urgent need to improve energy security by curtailing fuel consumption. To meet this need, JICA is assisting small island states in developing a "hybrid" grid that is designed to support both more efficient diesel power generation and optimal introduction of renewable energy so that stable power supply and lower fuel consumption will be achieved at the same time. Such a grid development will also contribute to a smaller carbon footprint and better resilience to natural disasters.

(3) Pursuing Efficient Use of Energy

JICA has also been providing technical cooperation in promoting energy efficiency on the demand side in the form of energy saving in Viet Nam, Bangladesh, and other countries. In Indonesia and Pakistan, it has been supporting policymaking in this field. Financial assistance for reinforcing power transmission and distribution systems and technical cooperation for strengthening operation and maintenance capacity for the systems in developing countries are also provided, where JICA contributes to energy efficiency by reducing the loss rates of the power supply.

Indonesia Example:

Signing of Private Sector Investment Finance (Corporate Finance) Loan Agreement for “Renewable Energy and Infrastructure Acceleration Facilities” in the Republic of Indonesia



Promoting the mobilization of private funds and contributing to improvements in the business and investment environment

On December 11, the Japan International Cooperation Agency (JICA) signed a loan agreement with PT. Indonesia Infrastructure Finance (hereinafter the “IIF”) of the Republic of Indonesia in Jakarta with the objective of providing financial support for infrastructure projects to be financed by the IIF.

A financial agency specializing in infrastructure projects, the IIF was established in 2010 with public and private equity participation with the objective of promoting the participation of the private sector in infrastructure projects under the leadership of the Government of Indonesia. Equity has been provided by PT. Sarana Multi Infrastruktur (Persero), a government-owned financing company, the International Finance Corporation and the Asian Development Bank, international financing agencies, and Sumitomo Mitsui Banking Corporation, a private financing institution and others. In the seven years since the IIF was founded, financing from the IIF has expanded rapidly as the demand for infrastructure financing has grown.

Although economic growth has become stable in recent years in Indonesia, the infrastructure has not kept pace, and developing infrastructure that is adequate in quantity and quality is essential for achieving sustainable economic growth. The National Development Planning Agency Republic of Indonesia (BAPPENAS) has estimated that 5.519 trillion rupiahs (approximately 50 trillion yen) in funding will be needed over the five-year period from 2015 to 2019, and under the assumption that 30 percent of that amount will come from the mobilization of private funds, there are strong expectations for private investment in infrastructure.

Although JICA has continuously provided assistance through technical cooperation and grant aid to support infrastructure in Indonesia, the present financing will generally promote the mobilization of private funds for infrastructure development including renewable energy in Indonesia. This support is expected to have the effect of improving the business and investment environment while accelerating economic growth through the leadership of the private sector, and it is further expected that this will provide support for Japanese companies and other international players to participate in infrastructure projects in Indonesia.

This loan includes Indonesian rupiah-denominated financing and is the second JICA loan, as private sector investment finance, to be local currency-denominated, following such a loan in the Philippines. Many infrastructure projects have revenue denominated in local currency and local currency-denominated financing is effective as this is a long-term project. In addition to making it possible for the IIF to procure long-term financing in local currency, the project is expected to have the effect of mitigating the risks of foreign exchange.

For example, for small-hydro power plant projects, these efforts will contribute to overcome the challenge on technical issues, such as quality of feasibility study and construction management and on financial matters by providing long-tenor and low-interest project finance type of loan.

JICA will continue to strengthen partnerships with private companies while promoting the formation of projects contributing to socioeconomic development in developing countries and regions.

Note: Financing is provided to commercial finance facilities, but no technical assistance is provided for project development or policy.

6.4 Instruments

Consent Statement

MCC Personnel KII Protocol

MCA-I Economist

Grantee KII Protocol for 1) successful and 2) unsuccessful TAPP grantee

GoI Energy Entity KII Protocol

Community Leader KII Protocol

Community Beneficiary FGD Guide

CONSENT STATEMENT

“Hello, my name is [enumerator name], and I work for Integra LLC, a management consulting firm based in the Washington D.C. area. We are currently conducting an evaluation of the Peatlands portfolio from the Green Prosperity Project (GP Project) of MCC Indonesia, which aims at stopping the environmental degradation and reducing the poverty among rural communities in the country. The Millennium Challenge Corporation (MCC), an institution from the United States (USA) that provides assistance to project developments undertaken by various countries, funds our work.

This GP Project is designed to support commitments of the Government of Indonesia toward the future of sustainable carbon efficiency by promoting an environmentally friendly, low-carbon economic growth. This report will not include anyone’s name or identity, however. Our researchers will remove your name and other personal identifying information from documentation from this interview that will be saved for analysis.

If you agree to participate, I will ask you about your individual interactions with the Project. You were selected for participation in this key informant interview based on your knowledge of the project. These interviews are expected to take around 60-90 minutes to complete.

The information collected will be used for research purposes only, so please answer honestly. Your participation is voluntary, and you may choose not to answer any or all questions for any reason. You may ask questions at any time. This study poses no risk to participants. The final evaluation report will be publicly available after completion.

You may contact Mr. Matthew Addison, the Project Director at maddison@integrallc.com. If you have any questions, concerns or complaints about the study or your rights as a participant, please feel free to contact us at any time.

Do you have any questions?

By saying “yes,” and participating in this study, you are indicating that you have heard this consent script, had an opportunity to ask any questions about your participation and voluntarily consent to participate.

Will you participate in this research study? You may answer yes or no. [Note: consent will be obtained orally]

- ☐ Yes, I am willing to participate
- ☐ No, I am not willing to participate

MCC

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| Date: | |
| Location: | |
| Interviewer: | |
| Respondent Information | |
| Name: | |
| Role/Position/Relation to Project: | |
| Sex: | |
| Contact Information: | |

Interview Tracking Data – To be completed by the data collector prior to the KII

Introduction – Read the consent statement [This is a statement that tells them what we are doing and why and then asks for their consent to conduct the interview], and offer respondents the opportunity to ask questions. Have copies of the statement available in case the respondent prefers to read it. Once they have provided consent, proceed with the interview.

Interview Questions

Ask the interview questions below to probe and follow up as necessary depending on the answer.

| | Question | EQ |
|---|--|--------|
| 1 | <ul style="list-style-type: none"> Please tell me about your role as it relates to the GPF On-grid portfolio. When and how did you start working with the GPF? Did your interactions or involvement with the GPF change over time? (Y/N) If (yes) then how so? | |
| 2 | <ul style="list-style-type: none"> Of the 100 projects that were selected to be considered for the grant, why did only 19 qualify for full grants and only 9 qualify TAPP grants? | 2a |
| 3 | <ul style="list-style-type: none"> Of those selected for the grant, why did only 4 make it to “completion”? | 2a |
| 4 | <ul style="list-style-type: none"> To what extent did the GOI support the on-grid part of GPF during the design phase of the compact? | 2a&b |
| 5 | <ul style="list-style-type: none"> To what extent did PLN support the on-grid part of GPF during the design and implementation of the compact? | 2a&b |
| 6 | <ul style="list-style-type: none"> From the time the project was selected until full award, were there any major changes to requirements for grant completion? If yes, go to #7. Otherwise go to #8. | 1 |
| 7 | <ul style="list-style-type: none"> What were these changes and how did they impact the application and award? Did these changes impact the project timeline? (Y/N) If yes, please explain how it changed the timeline. Did cost as a result of these changes? (Y/N) If yes, please explain. | 1 4 |
| 8 | <ul style="list-style-type: none"> Was the amount of time given to complete all requirements sufficient? If no, please explain. | 1 4 |
| 9 | <ul style="list-style-type: none"> GPF had a review process for the deliverables and the proposal. Please describe how this process worked. What worked well and why? What could be improved? | 2a&b |

| | Question | EQ |
|----|---|------|
| 10 | <ul style="list-style-type: none"> • The Compact contained several enabling framework requirements such as Feed-in tariffs that the Gol agreed to do. Did the Gol uphold those agreements? (Y/N). • If no, please describe? • If no, to what degree do you think the lack of these agreed upon enabling frameworks impacted the number of successful grants? | 2a&b |
| 10 | <ul style="list-style-type: none"> • If MCC did this again, would you advise MCA to have a different contractual structure instead of the PMC? (Y./N) • If yes, please explain and what would you substitute for the PMC? • If no, then how well do you think the PMC performed against its contractual requirements? | 2a&b |
| 11 | <ul style="list-style-type: none"> • How can the overall grant process be improved? | 2a&b |

Conclusion – Before concluding the interview, ask: “Is there anything else you would like to add?” Once the interview is over, thank the respondent for their time.

MCA-I ECONOMIST

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| Date: | |
| Location: | |
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| Name: | |
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| Sex: | |
| Contact Information: | |

Interview Tracking Data – To be completed by the data collector prior to the KII

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The evaluation team has received 4 spreadsheets containing the CBA and ERR calculation for 4 grants: three biogas (Musim Mas) and one mini hydro. The evaluation effort includes an *ex-post* CBA.

[The enumerator must have the spreadsheet available for reference during the interview.]

Interview Questions

Ask the interview questions below to probe and follow up as necessary depending on the answer.

| | Question | EQ |
|---|---|----|
| 1 | <ul style="list-style-type: none"> The original CBA spreadsheets shared with the evaluation team include an overhead cost for each grant equal to 20% of investment cost. As the MCA-I operation is complete, would you consider that number to be an underestimate or an overestimate? What would be a reasonable overhead cost for the TAPP-only, suspended, and rejected grants? | 3d |
| 2 | <ul style="list-style-type: none"> The original CBA for the only successful hydro grant (W2B1-17) did not include any overhead cost for MCA-I. Was this cost-reduction intentional? | 3d |
| 3 | <ul style="list-style-type: none"> Would you expect that the PLN's ability to sign PPAs or its interest in promoting the participation of IPPs in the RE mix been affected by these grants? If yes, can it be quantified (before/after, or with/without)? | 3d |
| 4 | <ul style="list-style-type: none"> Do you have any knowledge of what happened to each of the suspended, rejected, or TAPP-only grants (list to be provided)? | 3d |
| 5 | <ul style="list-style-type: none"> In the original CBA spreadsheets, the value of the electricity produced by IPPs is equal to PLN's average cost. The more common practice is to use the marginal cost for this value (which is expected to be higher). What is the rationale for using the average cost? | 3d |

| | Question | EQ |
|---|---|----|
| 6 | <ul style="list-style-type: none"> If you had the time and resources to update the CBA prepared for these grants, what changes would you introduce? | 3d |
| 7 | <ul style="list-style-type: none"> The evaluation team is exploring the possibility of calculating an aggregate ERR for the portfolio (including the TAPP-only, rejected, and suspended projects, do you have any recommendations in that regards? | 3d |
| 8 | <ul style="list-style-type: none"> The evaluation team is exploring the possibility of integrating the value of GHG emission reduction, environmental benefits associated with better management of tailings, and benefits related to CBS for each grant. Do you have any recommendations in that regards? | 3d |

Conclusion – Before concluding the interview, ask: “Is there anything else you would like to add?” Once the interview is over, thank the respondent for their time.

SUCCESSFUL GRANTEE

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| Date: | |
| Location: | |
| Interviewer: | |
| Respondent Information | |
| Name: | |
| Role/Position/Relation to Project: | |
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Interview Tracking Data – To be completed by the data collector prior to the KII

Introduction – Read the consent statement [This is a statement that tells them what we are doing and why and then asks for their consent to conduct the interview], and offer respondents the opportunity to ask questions. Have copies of the statement available in case the respondent prefers to read it. Once they have provided consent, proceed with the interview.

Interview Questions

Ask the interview questions below to probe and follow up as necessary depending on the answer

| | Question | EQ |
|---|---|--------|
| 1 | <ul style="list-style-type: none"> Please tell me about your role as it relates to the GPF Grant. When and how did you start working with the GPF Grant? Did your interactions or involvement with the GPF change over time? (Y/N) (If yes) then how so? | |
| 2 | <ul style="list-style-type: none"> Is the project still generating at the grant design capacity? (Y/N) If not, why not and how will this be remedied? | 2b |
| 3 | <ul style="list-style-type: none"> Are you selling power through a PPA? (Y/N) Is this for sale of all power generated? If not PPA, please describe the arrangement. | 3a |
| 4 | <ul style="list-style-type: none"> Was the PPA a standard template that was then filled in for the particulars of your project or was the PPA unique to your project? (Y/N) If not a standard PPA, please describe the process of negotiating the PPA. | |
| 5 | <ul style="list-style-type: none"> Why did you decide to use GPF to finance your project? Did you try another avenue of financing before you approached GPF? (Y/N) If yes, were you turned down and if so why? If no, why then did you choose first to apply to GPF? | 1 |
| 6 | <ul style="list-style-type: none"> From the time you applied for the grant until it was awarded, were there any major changes to requirements for grant completion? If yes, go to #7. Otherwise go to #8. | 4 |
| 7 | <ul style="list-style-type: none"> What were these changes and how did they impact your application and award? Did these changes impact the project timeline? (Y/N) If yes, please explain how it changed the timeline. Did cost as a result of these changes? (Y/N) If yes, please explain. | 1 4 |
| 8 | <ul style="list-style-type: none"> What was the most difficult part of the grant process and why? | 1 |

| | Question | EQ |
|----|--|--------|
| 9 | <ul style="list-style-type: none"> What was the easiest part of the grant process and why? | 1 |
| 10 | <ul style="list-style-type: none"> Could the grant process have been improved? If yes, please explain | 1 |
| 11 | <ul style="list-style-type: none"> Was the amount of time given to complete all requirements sufficient? If no, please explain. | 1 4 |
| 12 | <ul style="list-style-type: none"> GPF had a review process for the deliverables and the proposal. Please describe how this process worked. What worked well and why? What could be improved? | 1 |
| 13 | <ul style="list-style-type: none"> Please describe the Community Benefit Sharing plan process. How easy or difficult was it for your project to complete the CBS plan? | 3b |
| 14 | <ul style="list-style-type: none"> When did the CBS go active, meaning paying benefits to the community? | 3b |
| 15 | <ul style="list-style-type: none"> How active was the community in determining the benefits that in the CBS? | 3b |
| 16 | <ul style="list-style-type: none"> Is power from your plant cheaper than the cost to PLN of other plants in your area, about the same or more expensive? | 3c |
| 17 | <ul style="list-style-type: none"> Are you aware of new RE IPPs in your area since your project started operation? (Y/N) | 3c |
| 18 | <ul style="list-style-type: none"> Did the MCA procurement process help or hinder your project and how? | 1 |
| 19 | <ul style="list-style-type: none"> How can the process be improved? | 1 |

Conclusion – Before concluding the interview, ask: “Is there anything else you would like to add?” Once the interview is over, thank the respondent for their time. Unsuccessful TAPP grantee

UNSUCCESSFUL GRANTEE

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|------------------------------------|--|
| Date: | |
| Location: | |
| Interviewer: | |
| Respondent Information | |
| Name: | |
| Role/Position/Relation to Project: | |
| Sex: | |
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Interview Questions

Ask the interview questions below to probe and follow up as necessary depending on the answer.

| | Question | EQ |
|----|---|--------|
| 1 | <ul style="list-style-type: none"> Please tell me about your role as it related to the GPF Grant. When and how did you start working with the GPF Grant? Did your interactions of involvement change over time? How so? | |
| 2 | <ul style="list-style-type: none"> Why do you think that your project could not successfully complete the TAPP process? | 1 |
| 3 | <ul style="list-style-type: none"> Why did you decide to use GPF to finance your project? Did you try another avenue before you approached GPF? | 1 |
| 4 | <ul style="list-style-type: none"> From the time you applied for the grant and until it was terminated, were there any major changes to requirements for grant completion? If yes, go to #5. If not, go to #6. | 4 |
| 5 | <ul style="list-style-type: none"> What were these changes and how did they impact your application and award? Did these changes impact the project timeline? (Y/N) If yes, please explain how it changed the timeline. Did cost as a result of these changes? (Y/N) If yes, please explain. | 1 4 |
| 6 | <ul style="list-style-type: none"> What was the most difficult part of the TAPP process and why? | 1 |
| 7 | <ul style="list-style-type: none"> What was the easiest part of the TAPP process and why? | 1 |
| 8 | <ul style="list-style-type: none"> Could the grant process have been improved? If yes, please explain. | 1 |
| 9 | <ul style="list-style-type: none"> Was the amount of time given to complete all requirements sufficient? If no, please explain. | 1&4 |
| 10 | <ul style="list-style-type: none"> GPF had a review process for the deliverables and the proposal. Please describe how this process worked. What worked well and why? What could be improved? | 1 |
| 11 | <ul style="list-style-type: none"> What is the status of your project now? | 2a |

| | Question | EQ |
|----|---|----|
| 12 | <ul style="list-style-type: none"> Although you were not successful in moving to the full grant stage, did your participation in the TAPP yield value? (Y/N) If Yes, what of value did your project get out of the process? | 1 |
| 13 | <ul style="list-style-type: none"> If your project is being financed, who is financing it? | 2a |
| 14 | <ul style="list-style-type: none"> Would you be at that stage (financing) now if you had not participated in the GPF? | 2a |
| 15 | <ul style="list-style-type: none"> How can the process be improved? | 1 |

Conclusion – Before concluding the interview, ask: “Is there anything else you would like to add?” Once the interview is over, thank the respondent for their time.

GOI ENERGY ENTITY KII PROTOCOL

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| Date: | |
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Interview Questions

Ask the interview questions below to probe and follow up as necessary depending on the answer.

| | Question | EQ |
|---------------------|--|-------|
| 1 | <ul style="list-style-type: none"> Please tell me about your role as it relates to the GPF Grant. When and how did you start working with the GPF Grant? Did your interactions of involvement change over time? How so? | |
| 2 | <ul style="list-style-type: none"> Was your organization initially interested in the GPF on-grid RE activity? (Y/N) If no, why not? | 1 |
| 3 | <ul style="list-style-type: none"> Did your entity understand and see the value of this activity? (Y/N) If yes, how did it value your organization? | 1 |
| 4 | <ul style="list-style-type: none"> Did your entity actively support projects that were in the GPF pipeline? (Y/N), If yes, what support was provided? | 1 |
| 5 | <ul style="list-style-type: none"> Based on what you know, how effective was the GPF in attracting good project opportunities? | 1 |
| 6 | <ul style="list-style-type: none"> What could have made it more effective? | 1 |
| FOR PLN ONLY | | |
| 1 | <ul style="list-style-type: none"> Is this project still producing per PPA terms? (Y/N) If no, do you know why it is not performing according to the PPA terms? | |
| 2 | <ul style="list-style-type: none"> Was this a standard PPA or a negotiated PPA that was not standard? | 4.a.1 |
| 3 | <ul style="list-style-type: none"> What is the average cost of generation on the grid? What is the cost of this plant's power to PLN? | 4.c.3 |
| 4 | <ul style="list-style-type: none"> Has using this plant resulted in any saving to PLN? If yes, is it more than just the cost of generation? | 4.c.1 |
| 5 | <ul style="list-style-type: none"> Since this project met Commercial Operations (COD), has PLN signed any new PPAs with RE IPPs on the same grid? If yes, | 1 |

| | Question | EQ |
|----|--|------------|
| 6 | <ul style="list-style-type: none"> On average is the cost of these new RE PPA, the same, higher or lower than this GPF funded plant? | 1 4.c.2 |
| 7 | <ul style="list-style-type: none"> GPF had a review process for the deliverables and the proposal. Please describe how this process worked. What worked well and why? What could be improved? | 1 |
| 8 | <ul style="list-style-type: none"> What is the total generation taken from the IPP? | CBA |
| 9 | <ul style="list-style-type: none"> What is the tariff and structure of PPA payments paid to IPPs for the electricity? Is that expected to change over time? | CBA |
| 10 | <ul style="list-style-type: none"> Were there any delays for these plants before coming online? | CBA |
| 11 | <ul style="list-style-type: none"> Are there sources of intermittency with the generation of these plants? | CBA |
| 12 | <ul style="list-style-type: none"> What are the updated generation mix and cost for PLN? | CBA |
| 13 | <ul style="list-style-type: none"> Has the operation of this IPP made a meaningful impact on reliability of service provision for PLN? If yes, is there a quantitative way to report it? | CBA |
| 14 | <ul style="list-style-type: none"> Has the operation of this IPP made it possible for PLN to expand its coverage, add new connections? If yes, is there a quantitative way to report it? | CBA |

Conclusion – Before concluding the interview, ask: “Is there anything else you would like to add?” Once the interview is over, thank the respondent for their time.

COMMUNITY LEADER KII PROTOCOL

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| Date: | |
| Location: | |
| Interviewer: | |
| Respondent Information | |
| Name: | |
| Role/Position/Relation to Project: | |
| Sex: | |
| Contact Information: | |

Interview Tracking Data – To be completed by the data collector prior to the KII

Introduction – Read the consent statement [This is a statement that tells them what we are doing and why and then asks for their consent to conduct the interview] and offer respondents the opportunity to ask questions. Have copies of the statement available in case the respondent prefers to read it. Once they have provided consent, proceed with the interview.

Interview Questions

Ask the interview questions below to probe and follow up as necessary depending on the answer.

| | Question | EQ |
|----|--|----|
| | . | |
| 1 | <ul style="list-style-type: none"> Do you have knowledge about the details of the CBS Plan? (Y/N) If yes, ask to describe the main details of the plan. If no, read the main benefit of the CBS. Did you participate in the design? (Y/N) If yes, go to #2. If no, why not? | |
| 2 | <ul style="list-style-type: none"> Was the plan designed taking into account the input of the community? | 3b |
| 3 | <ul style="list-style-type: none"> How closely does the plan match community concerns? | 3b |
| 4 | <ul style="list-style-type: none"> Do you have knowledge about how plan is being implemented? (Y/N) If yes, then: Is the CBS being implemented? | 3b |
| 5 | <ul style="list-style-type: none"> Is it being implemented according to the plan? | 3b |
| 6 | <ul style="list-style-type: none"> Do you see the benefits of the CBS plan? (Y/N) | 3b |
| 7 | <ul style="list-style-type: none"> What are the benefits? | 3b |
| 8 | <ul style="list-style-type: none"> How active is the community in the CBS? | 3b |
| 9 | <ul style="list-style-type: none"> Do you think that the company will continue to implement the plan over time? | 3b |
| 10 | <ul style="list-style-type: none"> Is there anything that can improve the CBS planning process? | |

Conclusion – Before concluding the interview, ask: “Is there anything else you would like to add?” Once the interview is over, thank the respondent for their time.

COMMUNITY BENEFICIARY FGD GUIDE

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| Date: | |
| Location: | |
| Interviewer: | |
| Respondent Information | |
| Name: | |
| Role/Position/Relation to Project: | |
| Sex: | |
| Contact Information: | |

Interview Tracking Data – This section will be completed by the facilitator prior to the FGD.

Introduction – Read the consent statement [This is a statement that tells them what we are doing and why and then asks for their consent to conduct the interview] and offer respondents the opportunity to ask questions. Have copies of the statement available in case the respondent prefers to read it. Once they have provided consent, proceed with the interview.

Interview Questions

Ask the questions below. Make sure to probe. These are upper level questions to spark conversation down a specific avenue.

| Question | EQ |
|--|----|
| Read the relevant portion of the CBS to the Focus Group. Refer as appropriate in the questions below. | |
| • Was the plan designed taking into account the input of the community? (Y/N) Show of hands and count. | 3b |
| • How closely does the plan match community concerns? Open discussion, finalize with show of hands | 3b |
| • Who represented the family in CBS discussions? • (ask for show of hands for Husband/Wife/Other?) | 3b |
| • Was it a fair process? (By fair process, I mean that you had an opportunity to share your views, those views were considered, and the method for allocating the benefits is transparent.) If not, please tell us more. | 3b |
| • Is the CBS being implemented? (Y/N) Show of hand and count. | 3b |
| • Is it being implemented according to the plan? (Y/N) Show of hands and count. | 3b |
| • Do you see the benefits of the CBS plan even if not for your own family? (Y/N) Show of hands and count. | 3b |
| • What are the benefits? List from the raised points | 3b |
| • How active is the community in the CBS? | 3b |
| • Do you think that the company will continue with the plan over time, that it will be sustainable? (Y/N) Show of hands and count | 3b |
| • Do you see a role for community in helping the CBS plan become sustainable? (Y/N) Show of hands and count. • What would that role be? List from the raised points | |
| • How would you improve on the process so that when it is done in another community, it is better? List from the raised points | |

Conclusion – Before concluding the interview, ask: “Is there anything else you would like to add?” Once the interview is over, thank the respondent for their time.

6.5 MCC Comments on the Draft EDR

| Reviewer Name/ Institution | Page Number | Comment | Evaluator Responses |
|-------------------------------|-------------|--|---|
| Ishani/MCC | 2/cover | The address listed for MCC needs to up dated (we're at 1099 14th st NW) | Done as suggested |
| Ishani/MCC | 7 | Country context and literature review more boardly: we need some citations here, esp. for the 4th paragraph of page 7. Also, it'd be good to be consistent with citation style used. | Integra has added foot notes when concepts in the literature review reflect work that is in the reference section. Section has been slightly expanded to further illustrate energy conditions at time of GPF design and implementation. |
| Ishani/MCC | 7 | Last sentence on page - fix spelling of energy | Thank you. Corrected |
| Ishani/MCC | 9 | 2nd paragraph - "was established and four multi-million dollar activities were implemented to support..." This should be changed to: 'was established and three multi-million dollar projects were implemented to support...". There are 4 activities in GP, but the Indonesia compact had 3 Projects (GP, Community based Health, and Procurement | Changed to reflect this comment. |
| Ishani/MCC | 16 | External resources disbursed should be relabelled to "Leveraged funds disbursed in USD" | Changed to reflect this comment. |
| Ishani/MCC | 16 | Project financing disbursed should be relabelled to "MCA-I Project financing disbursed in USD" | Changed to reflect this comment. |
| Ishani/MCC | 16 | Several of the numbers in the external resources and project financing disbursed column appear to be wrong. It would be good to discuss this and compare with the final ITT that was sent. (Note- I have provided the right numbers in the table in the attached word doc) | Changed to reflect this comment. |
| Ishani/MCC | 21 | Table 2 has a font issue in the last row | Changed to reflect this comment. |

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|-------------|----|---|--|
| Ishani/MCC | 22 | Consistent citations would be good | Consistent throughout the document |
| Ishani/MCC | 23 | Third paragraph - "Is" should not be capital | Changed to reflect this comment. |
| B Epley/MCC | 23 | <p>This section seems to suggest that PLN's financial position is worsened by RE, thereby implying a major flaw in the (GP) program design which does not attempt to address this root cause. This needs to be explored further. E.g. "<i>Regulation 10/2017</i>] changes the economics of IPPs in ways that are so far detrimental". The footnote adds that the "<i>regulation introduces vague terms, which PLN has thus far defined in ways that reduce returns or increase risk</i>", but does not provide any examples explaining how or why this situation has come about. Can you expand on this point? Is PLN actively impeding new RE investment? Or, were the subsidies just designed poorly?</p> | <p>GPF was designed and began implementation during a period where RE treatment was improving. It was only in 2017 that the treatment of RE began to really deteriorate. Important points are that had GPF followed its initial requirement of working only with a project that had a signed PPA, then none of the new regulations would have been binding. The new regulations did not abrogate existing PPAs. POME under 10MW and WTE were not impacted by those regulations. Will draw this out more in the text. Another important point is that what PLN started paying in 2017 was not reflective of the cost of RE. It was the avoided cost of power. So if the grid is coal and large hydro denominated, the avoided cost (assuming coal and large hydro) is quite low. Even if the marginal cost of a new plant on that grid is</p> |

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|-------------|----|--|---|
| | | | higher and even if the RE is below the marginal cost but above the avoided cost, it will not get a PPA. |
| Ishani/MCC | 28 | Why are you separating the data collection? You mentioned Jan/Feb for the 4 successful grants and April for the unsuccessful grants. | Explained on our call due to management and was in our work plan. With Government shutdown this has now been consolidated to one trip. |
| B Epley/MCC | 28 | Part of the relevant context is the extent to which projects may not have been given sufficient time to complete . On the question of why so few (of the 101 proposal) were (a) accepted and (b) completed: it would be helpful for MCC to have a sense for the rate that similar projects are completed in different contexts, or similar contexts through other mechanisms. For example: in the US, what proportion of RE projects at the pre-feasibility stage are subsequently brought to completion after 3-4 years? | We have added some sentences that speak to what we hope to achieve in the literature search in this area. We have also added a section in the literature review about "doing business in Indonesia" that speaks to the time and process involved. |
| Ishani/MCC | 28 | On page 14, I believe you referenced 100 proposals submitted and 19 accepted. In the past paragraph here it says 101 proposals submitted and 20 accepted. | corrected to 100 and then awarded grants on the basis of full and TAPP |
| Ishani/MCC | 29 | Check sentence under Evaluation Question 3: Results of completed projects - "For the purposes of the evaluation-based CBAs, the evaluation team will ask the participating utilities about the impact of the impact..." | Corrected. |
| Ishani/MCC | 37 | Typo/Error in 4th sentence under 3.4.1 (delete will) | Done as suggested |
| B Epley/MCC | 29 | <i>"For the purposes of the evaluation-based CBAs, the Evaluation Team will seek evidence on improved capacity of the public utility as an institution to promote the participation of IPPs"</i> : Will this be limited to RE IPPs, as suggested by the question wording (i.e. "(c2) ...Has the utility entered into other PPAs with Renewable Energy IPPs in the area."), or all IPPs? | All IPPs. |

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| B Epley/MCC | 29 | <p><i>"For the purposes of the evaluation-based CBAs, the Evaluation Team will seek evidence on improved capacity of the public utility as an institution to promote the participation of IPPs in the system."</i> Is Integra suggesting that increased IPP participation in general can be attributed to the GPF (on-grid) project? If so, how does Integra plan to value an incremental increase in IPP participation?</p> | <p>Yes, but the attribution is not a claim, only a weak hypothesis. The team will explore this by looking for a counterfactual (e.g., finding a control group). For instance, if PLN management is in the form of isolated regional units, a significant increase in IPP participation in regions of GPF (on-grid) projects can be used as evidence to an attributable rise. Valuation of this impact may be possible if the average cost of energy purchased from these IPPs is lower than the generation cost of PLN from its assets. Alternatively, benefits can be estimated using demand-side measures if the private participation has improved coverage or reliability of the system. The team does not have high hopes for its ability to find a defensible measure of value under this category of benefits. However, we will explore it regardless and include qualitative comments for, or against, this category of benefits under either scenario.</p> |
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| B Epley/MCC | 30 | <p><i>"...the team will therefore explore the possibility of estimating an ex-post ERR for the RE portfolio."</i> I am supportive in theory, but there are practical difficulties with this. (NB: these questions do not need answers at this stage) How do you define the counterfactual, i.e. does the counterfactual include GPF ex-RE? How do you determine the RE-pipeline in the absence of GP? What is Integra's plan for valuing suspended, rejected, and TAPP-only grants? How does Integra suggest approaching capacity-building benefits and what is the evidence-base for making these valuations? What about private costs incurred by suspended or rejected projects?</p> | <p>The counterfactual in this case will not be any different as compared to the one considered for the CBA of each grant. Unless there are reasons to assume that a forced alternative path will be in place, the counterfactual will be the business-as-usual scenario of PLN. We agree that there are practical challenges. However, we will not rule these out before conducting the field trips and explore the possibility of including them. For TAPP-only grants, if they are comparable with the four analyzed, their net impact will be considered attributable to TAPP efforts of GP after adjustment with the proportion of costs funded by GP. This method will help in factoring for private costs and adjusting the benefits or net impact similarly. For suspended or rejected grants, with enough evidence and when rejection is due to economic feasibility concerns, one can argue that the procurement</p> |
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| | | | <p>process resulted in denying a lousy project and estimate the benefit that way. When suspension or rejections is due to operational constraints (e.g., timing), there may still be benefits if the projects have been funded and implemented by others. As discussed earlier, these costs and benefits will all fall under the umbrella of a portfolio-level CBA, which the team may find to be infeasible to conduct in the first place.</p> |
| <p>Sarah Lane/MCC Patel, Desai</p> | <p>31</p> | <p>Last bullet: How will this be monetized? Is there the potential for double counting? (In general, let's discuss the CBS benefits on our call and if this should be included)</p> | <p>That is correct, in its most basic form CBS payments are transfers, including them as a benefit would be double-counting. The text now clarifies that the team will be exploring if, depending on the shape of the agreements, the CBS can have benefits beyond the value of the transfer. For instance, if CBS becomes a fund to facilitate local investments, the net interest rate (net of defaults) earned by the fund can be considered a conservative measure of benefit for the community from the existence of CBS.</p> |

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| | | | Similarly, if the CBS translates to scholarship or public health infrastructure, additional benefits for the local community can be considered. To clarify this (1) these benefits are renamed to "additional CBS benefits" and (2) the transfer payment is also added to the model as a separate transaction (transfer). |
| B Epley/MCC | 32 | How is Integra planning to value the " <i>avoided generation</i> " cost? The text seems to imply that avoided generation is valued at PLN's average cost, which would imply that PLN is not doing an economic dispatch. A more typical approach would be to use the marginal cost of the marginal generator; is this what Integra means by avoided generation? Is so, what is the marginal generator in the counterfactual (PLN coal/diesel? Private gensets? Or if not, why not? | The average unit cost of generation is the method used in the ex-ante CBAs. The team confirms that the more appropriate approach is to use the marginal cost. The text has been updated to clarify this point. Also, one of the objectives of the field visits is to obtain an understanding of the impact on the balance of the system, which may come with implications on the choice of approach for the valuation of generated electricity (supply vs. demand-side). |
| B Epley/MCC | 33 | Reduction in GHG emissions is a global benefit for which Indonesia is expected to receive only partial benefits. How does Integra plan to determine the fraction of benefits which accrue | Done, the text is updated. |

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| | | to Indonesia? [This is answered on page 35/36] Can you elaborate more here? | |
| B Epley/MCC | 33 | From Table 6: <i>IPP tariff paid by PLN with project</i> . This row shows a transfer from PLN to the IPP, but payment of the tariff implies that PLN has purchased power. As discussed in the text, PLN has avoided energy production costs compared to the counterfactual, but this is not clear from the table. | The team decided to include a general heading for the first row of the table, "value of electricity generated," this way we can maintain the flexibility to verify if the avoided cost for PLN is the relevant approach or reduction in coping cost for consumers should replace it. The text is considerably modified to clarify this, including the addition of new paragraphs and a footnote. |
| B Epley/MCC | 33 | From Table 6. Are there local and private costs as well (such as project preparation costs for rejected projects, or resettlement), or are these costs rolled into other items (such as MCA-I overhead)? | I had not seen resettlement as a cost associated with any of the four grants included, however, we will add this to the questionnaires to see if any evidence for such costs is there to add to the CBA model. As for the private costs of rejected projects, this is still an exploratory part of the effort under the portfolio-level CBA. The way such impacts would enter the model will depend on the logic of the portfolio-level CBA, and the team is unable to |

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| | | | comment on it before the field trip. |
| Sarah Lane/MCC Patel | 34 | <p>third bullet "Potential values associated with ..." - how will this be monetized? If it is a defensible monetization, this could be a useful example of a PIR benefit stream</p> <p>More generally, what PIR work did we do?</p> | <p>As discussed above in row 19, the team is only exploring this as a weak hypothesis, (1) MCC did not directly aim for an institutional change, and (2) the chance of finding an attributable impact that can be monetized is small. Some potential pathways are provided above as examples, but the team acknowledges that this benefit will like not enter the model in a quantitative form.</p> |
| B Epley/MCC Patel, Sarah Lane | 34 & 36 | <p>Coping cost comment: What is the theory of change for having a benefit stream of consumer coping cost? Are there added data cost/data implications?</p> <p>(Sarah Lane): "the consumer's coping costs must also be introduced in the CBA model as a benefit" - Is the evaluation structured to adequately measure this benefit? How are you going to do this?</p> <p>(B Epley) NB: the use of "coping cost" as an estimate of revealed-WtP in MCC CBAs is standard as long as changes to the quantity supplied are marginal. Inclusion of "coping costs" which are inframarginal (e.g. equipment damage) would be</p> | <p>As discussed under some of the earlier comments, the text is augmented with new paragraphs and a footnote to clarify that irrespective of the valuation approach used (demand-side, or supply-side), the value of the electricity generated will be captured under the first benefit line-item, "Value of</p> |

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| | | <p>non-standard, although MCC would agree that these costs may exist in particular cases.</p> | <p>electricity generated." Concerning "How?" if we find the demand-side analysis relevant, the team will have no choice but to rely on secondary sources of data. At least two studies have tried to model the demand-side value of improved energy access in Indonesia (https://www.adb.org/sites/default/files/publication/182314/achieving-electricity-access-ino.pdf and https://www.ethz.ch/content/dam/ethz/special-interest/gess/energy-politics-group-dam/documents/Journal%20Articles/Blum%20et%20a1_2013_Renewable%20and%20Sustainable%20Energy%20Reviews.pdf). The team will conduct a more in-depth literature review if the field visits and interviews with PLN reveal that the demand-side approach is relevant here. Lastly, the team did not plan to go for inframarginal gains as there is very little chance of finding reliable evidence for such benefits.</p> |
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| Patel | General | Please be sure the report includes the following statement on the first or cover page of the report: “ The views and opinions expressed herein are those of the author(s) and do not necessarily represent those of MCC or any other U.S. Government entity. ” | Done as suggested |
| Patel | 7 | I suggest introducing the Compact and GP Project (and then GPF) in this section, since it references GPF before introducing either the Compact or the Project. I would then leave Section 2.1 to focus entirely on the details of GP (rather than the broad strokes of the Compact) | Done as suggested |
| Patel | 9 | I think the first grant (Swisscontact) was signed in April 2015 and the next one was not signed until many months later. So I would say "the first grant was signed in March 2015...". | Done as suggested |
| Patel | 9 | Include a footnote to say that only \$280M of the original \$332M budget was disbursed | Done as suggested |
| Patel | 10 | It was technically 4 funding windows: 1, 2, 3A, 3B. I suggest listing them here, e.g. partnership grants with 50% private sector co-financing, community-based, NRM, community-based off-grid RE, and commercial-scale on-grid RE. You can find descriptions in the M&E Plan. | Done as suggested: Note M&E Plan specifically states three windows |
| Patel | 10 | This sentence needs to be re-worded so that it's clear W2 (community-based NRM) grants didn't receive TAPP grants: "The TAO Activity also supported the facility ... through Technical Assistance Project Preparation (TAPP) grants, which applied to partnership, community, and commercial RE grant projects (e.g., feasibility studies, landscape and lifescape analysis)." The latter part should read: "which applied to partnership and RE (off-grid and on-grid) grant projects..." | Done as suggested |
| Patel | 11 | who is "the GPF contractor" referring to? Need to be more specific, since readers don't have that background. A simple solution might be to say "GPF staff" | Changed to project management consultant |
| Patel | 11 | Please note the acronym "FIT" after "feed in tariff", since that acronym is used later | Done as suggested |

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| Patel | 11 | Please make the structure of section 2.2. a bit clearer so that the reader understands when you're transitioning from describing the theory of GP overall to the theory of the on-grid RE portfolio. There's a switch to RE specifically in the 3rd paragraph, but the whole section could be organized a bit more clearly. Your focus should be on describing the theory of the on-grid RE portfolio. Perhaps you should highlight the pieces of Figure 2 that relate to the on-grid RE portfolio (you could circle the boxes). I would also make explicit that 'on-grid RE' is referring to investments in generation infrastructure. I don't think that's stated anywhere (it will be obvious to those familiar with energy, but not to novice readers). | This section has been rewritten to show how the overall theory of change and the logic diagram lead to an RE theory of change. GP activities then were to benefit all windows including RE. |
| Patel | 14 | Please define the term 'full grants' in parentheses or a footnote. I suggest something like "grants to fund a project" | Done as suggested |
| Patel | 15 | In the Musim Mas paragraph, please make explicit that these were 3 projects under one umbrella company. I don't think it's clear to the reader the way it's currently presented. Perhaps start with "The THREE POME projects..." | Corrected. |
| Patel | 15 | "then open" should be hyphenated. Also, this sentence could be written a bit more clearly for people who don't know what POME is. Please explain a bit more about the fact that palm oil mills release effluent, which is treated using open ponds. While this effluent is in these open ponds, it releases methane into the atmosphere... The projects covered these ponds to capture the methane and convert it into biogas... | Elaborated to explain POME and clarify past versus present operations. |
| Patel | 15 | Under the Lubuk description: "increase availability and capacity" of what? Please finish the sentence. | Corrected. |
| Patel | 20 | Please define the acronym the first time it's used in the body of the report (e.g. CBA, PLN, IPP) | Done as suggested |
| Patel | 23 | Typo ("I" in "is" shouldn't be capitalized): Second, it could mean that PLN Is not required to make, take, or pay payments once the project's debt is repaid. | Corrected. |
| Patel | 27 | Table 2 - please replace the word "impact" with "results" to avoid any misperception that this is an impact evaluation | Done as suggested |

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| Patel | 28 | Please specify that this is an 'ex-post' performance evaluation. Also note the timing (exposure period), e.g. X years after completion of implementation. It's not necessary 1 year because I believe the Musim Mas construction was completed in 2017 (maybe even 2016), well before the compact ended. | Done as suggested |
| Patel | 39 | This page incorrectly refers to Sanaker, instead of Satker. Given that this is a local name/acronym, I suggest simply saying that the documents now reside with GoI. | Corrected. |
| Patel | 39 | Section 3.6. Note that MCC is not asking you to infer likely long-term benefits. The eval questions were intentionally designed to focus on topics that could be assessed after one year. The only inferences will be made in the CBA. We're also not asking you to quantify benefits associated with suspended/rejected/TAPP-only grants. Consider rewording some of the statements in this section to make clear that these analyses are not required under this contract, given the limitations. | Yes, we used the word outcomes rather than benefits but the focus is primarily on sustainability. Additionally, it is possible that some of the CBS benefits may not have been implemented yet or that the outcomes of those actions are not yet fully realized. The evaluation questions ask: Do community members perceive benefits from the CBS activities? If so, what? Are the CBS activities likely to be sustained? Sustainability is difficult to assess when a project or activity is relatively new. |
| Patel | 48 | When asking about PPAs, be sure to distinguish between a normal PPA and excess PPA. The original intent was for grantees to sign PPAs with PLN to regularly sell a certain amount of power. By the end, this had changed to excess PPAs, which potentially changes the logic of the investment. This is an important implementation issue to capture in the report. | We are aware of a PPA for sales only to the power off-taker and a PPA for sale of excess Power (Musim Mas). The actual wording is not known with certainty but we will confirm this with PLN and |

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| | | | our KIIs. Note that this distinction we already made in the description of the grant projects. |
| Patel | 48 | The last question on CBS is somewhat leading. Suggest rephrasing: Please describe the CBS plan process. Were there any challenges to completing it? | rephrased |
| Patel | 49 | Just a reminder to be sure that your questions about CBS allow you to document exactly what the CBS plan consisted of and what communities were receiving, in concrete terms. | We still do not have the CBS plans. We will review the plans before the visits and then compare the plans with the actual benefits as well as the perceived benefits. So, we have requested the CBS Agreements from the Grantees and we will then contact the signatories from the community's side. Our plan is to triangulate responses from the plan documents and implementation records and actual perceptions. |
| Patel | 49 | What MCA procurement process are you referring to? The grant application process? The grantees procured their own goods. | True, the grantee procures the goods but they must follow the MCC/MCA process. In several discussions including the team hired by MCA to bring projects to closure the procurement process was cited as posing some problems and delays. |

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| Patel | 49 | For the grantee KII, it might be worth asking whether they would have been able to complete these works without the MCA funding? If so, how would they have financed it? The pitch of W3B was to provide viability gap financing, based on the assumption that these projects were too risky for traditional financing options. This assumption needs to be explored. | We do ask this. • Why did you decide to use GPF to finance your project?• Did you try another avenue of financing before you approached GPF? have external (or self) funding. |
| Patel | 50 | This question is somewhat leading: Did your participation in the TAPP yield anything of value. I suggest recasting as something like: By the end of the TAPP grant implementation, what, if any, studies or reports had been completed? Was anything else of potential future use produced using TAPP grant funding? | Again, this is a probing question We add it other questions, for example, were you able to use the TAPP products like the DED or the feasibility study to constructively approach other lenders . We state clearly in the Main EDR "The KIIs are semi-structured allowing the team to “dig deeper” depending on the response while ensuring that the team is able to gather the most pertinent data for each the evaluation question." |
| Patel | 52 | GoI Energy KII: I doubt these respondents will know the term GPF. You might need to substitute MCA-I or just say GP, or both. | Sure we will say MCA-I. However, the people we will be interviewing are those that were listed as counterparts at each entity such as MEMR |
| Patel | 52 | I suggest using this KII to probe on the PPA issue noted previously. | we certainly do and will. Note in the main body of the EDR we state "The KIIs are semi-structured allowing the team to “dig deeper” depending on the |

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| | | | response while ensuring that the team is able to gather the most pertinent data for each the evaluation question." |
| Patel | 54, 55 | Communitly leader KII and community FGD: Please add a question asking the respondent to describe the CBS plan. | Can't practically be done at the FGD level because we would have too many respondents. Rather we are reading a summary of the benefits of the plan at the beginning of the FGD and then asking questions about it. Fro the village leader, the individual will be the person that is on the Community Development Advisory Committee. They participated in the CBS design. But we will add this question. |
| Patel | General | Where are the KII protocols for MCA-I, MCA-I contractors, and MCC? | 1.) only MCA-I personnel being interviewed on this trip are: the economist and a KII is included for him; and, possibly Any, lead for 3B. For her, it is a follow up to the interview we had our first trip and the main questions will result from the questions that arise from the interviews with the grantees and communities. 2.) MCA-I contractor is CDM and this is a follow up to the |

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| | | | <p>detailed interview we had our first trip. Questions will be to complete any unanswered questions that arise from the grantee interviews. 3) MCC KII added but we anticipate that other questions will be added once the KIIs and FGD in Indonesia are completed.</p> |
| MCC/GSI | 20 | <p>EDR states "The cost saving for PLN is considered the only source of benefit". What about community benefit sharing (CBS)? Will the women and men of this CBS be considered as beneficiaries and counted in the CBA and ERRs?</p> | <p>The is planning to explore this in detail. Once the final shape of these agreements is known, and if sufficient evidence is available, the team will add these benefits to the model. Please note that a cash transfer from the project to the community is not, in itself, an economic benefit but a transfer of funds within the economy. The team will look for additional benefits associated with the shape of these agreements or the use of the funds. The text, table, and figures are augmented to explain this in more details.</p> |

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| MCC/GSI | 26 | <p>Is there any literature on global lessons/experience of CBS? CBS has been implemented in many large dams and oil explorations where communities were not compensated only once, rather received a benefit stream over the years.</p> | <p>In Canada, they are called Impact Benefit Agreements. Since the Canadian government regulates a large fleet of domestic and international mineral and oil & gas exploration companies, there are many studies on such agreements in Canada. Some of the long-term sharing of benefits or costs come through regulation, and the remainder are looked after through IBAs that come in many forms and shapes. This area does not fall under my skills, but if needed, I can help the evaluation team in finding more examples from the Canadian context.</p> |
| MCC/GSI | 27 | <p>were all these 4 projects able to develop CBS through a consultative process? Are these being implemented well? What are these CBS? Are these well accepted by communities and village government and elders? Are both women and men are part of benefits? What is the proportion of women participants of CBS?</p> | <p>All KIIs and FGDs are intended to probe and lead to more detailed questions based on the responses we get. To explicitly address these comments, we have added to the text:" The team will review the CBS agreement, the CBS plan and the reviews of the CBS to determine how it was developed, the extent of community involvement, and the details of the</p> |

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| | | | benefits and planned implementation. Through KIIs and FGDs as well as the site visits, the team will confirm these details and probe deeper into the community's views of the CBS plan." The KIIs and FGDs are further elaborated what were notes in our discussions for nested questions. |
| MCC/GSI | 36 | community women, especially those part of CBS should be interviewed and part of FGD. | Yes, as noted there is a separate FGD for women. |
| MCC/GSI | general | how were the SGIP drafted, were women and men consulted for development of SGIP? was SGIP developed and implemented well? Did SGIP help increase women's access to and benefit from projects? | This line of questioning was not included in our SOW evaluation questions |
| MCC/GSI | general | what were the process of developing CBS? Any community consultation for drafting and agreement of CBS? Did communities provided inputs to CBS, agreed with the CBS activities and suporting its implementation? | See line 59 above |
| MCC/GSI | general | did grantees conduct LLA analysis? If yes, how the findings helped project, especially SGIP and CBS development and implementation? | This line of questioning was not included in our SOW evaluation questions |

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| MCC EPG | 34 | <p>Quote: "The Evaluation Team appreciates that a high cost is not difficult to beat. In other words, it is not difficult to find electricity generation projects that cost less than PLN on a per unit basis. The issue introduced by this concept is that any generation project will come out as cost-effective since the benchmark is so high. To address this problem, the team will try to examine the per unit cost of electricity for a number of alternative technologies in the same context using secondary sources of information."</p> <p>there seem to be two problems with this statement/approach: 1, this directly states that almost all projects should beat PLN's cost of service in these areas (which we agree with) yet there is consistent mention throughout the report that PLN is so resistant to these types of projects because of their relatively high cost? this quandary demonstrates MCC's frustration with the perception of these 'expensive' projects, but seems to be counted against us when evaluating potential benefits. second, it makes an assumption that there were competing resource possibilities at all sites as the counterfactual, where this is not only highly unlikely, but not particularly relevant as proponents proposed their sites, technology, ownership structure, finance, etc. in other words, MCC did not select the sites first then compete out alternative technologies.</p> | <p>Integra was not discussing the financial cost of power here but rather the economic cost. We have explicitly introduced economic cost in this section. The argument here focuses on finding a good measure of comparison so that there is better support/evidence behind the conclusion. We agree that the text could be misleading and updated the paragraph to clarify this. From CBA's point of view, we take no position on whether these projects are expensive or not, only wondering if PLN cost is the right benchmark to use for the cost of generation in Indonesia.</p> |
| MCC EPG | 37 | <p>Lists Tetra Tech as an MCA-I contractor. This is incorrect. TT served as a technical consultant to MCC and in fact this contract is now closed. Therefore any discussion with Tetra Tech would have to proceed on a voluntary basis and not under any expectation of compensation for participation.</p> | <p>Corrected. MCA-I introduced us to some team members from TT at their consultant. Noted and corrected.</p> |

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| MCC EPG | CBA | <p>3 of the 4 financed projects used waste and converted it to energy, and the report states that these projects are essentially environmental compliance projects more than anything else. Given that, is there no way to quantify/capture benefits associated with these environmental improvements? depending on the orientation, the system could claim benefits in terms of reduced pollution/BOD (perhaps already counted in GHG but not entirely as that is just one 'pollution' stream) or when viewed from the IPP perspective it should reduce a compliance cost or at least mitigate a potential liability.</p> | <p>We addressed this by introducing a new category of impact to CBA: "the environmental impacts that relate to the local community." This category excludes the change in GHG emissions. The team will assess the possibility of quantifying and monetizing such impacts during the study and will incorporate them into the model.</p> |
| MCC EPG | General | <p>The authors of this report demonstrate an exceptional understanding and awareness of the Energy Sector as well as the policy and regulatory landscape, but there are quite a few statements in this report that seem to believe very strong existing beliefs around the problems and how they should be tackled and I find it hard to believe they were gleaned from a literature review. An early example is the following statement: 'The basic hypothesis behind the GP approach to on-grid RE is that a "multipronged approach" will catalyze clean energy investment. The three prongs are technical assistance, finance, and policy. While most projects attempt to address one barrier, GPF sought to address all three.'</p> <p>it is unclear whether the authors of the reports are stating that projects typically do not try to address multiple barriers (which of course is certainly not the case for MCC) or that literature review was unable to find any examples where all 3 of these barriers were addressed at once, and positing that this may have led to the poor uptake of this window? is it an early finding that we bit off too much? were we wrong to essentially conclude that all 3 legs of this stool need to be reinforced for the project to stand on its own legs?</p> | <p>We are not making any statement or statements in the EDR as to uptake of projects. We are making a statement that the GPF as far as commercial energy projects addresses three major barriers at the developer level simultaneously while other donor projects do not. We have added more explanatory material to confirm this. IFC can only deal with banks on TA for lending to developers but not TA or policy for developers. World Bank's SME Finance group works with lenders or financial entities but not developers. WB can't work with private</p> |

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| | | | sector developers. we have added an annex that describes typical donor energy project. |
| Desai | Questionnaires | General comment (more specifics are comments in the word document): In the actual questionnaires, please number your questions so it's easier to follow, esp. when there are skip patterns to follow (both for documentation purposes and implementing the surveys). Also, I felt that some of the questions were leading the respondent in a certain direction and weren't neutral (i.e. Instead of "Did it slow down the process" maybe "Did it change the timeline"). It would also be good for some of the questions to start out with an introductory question, esp. the community leader/community FGDs. Finally, some questions seem like Y/N questions - it would be good to denote the ones that are and have Y/N and then the respective follow up question. | All questions are meant to probe and the questions. Questions numbered and Y/N followup explicitly mentioned on the forms |