Final Evaluation of the Philippine Sustainable Energy Finance (Phils SEF II)

Final Report

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Abbreviations and Acronyms

| ADB | Asian Development Bank |
|-----------------|---|
| ADFIAP | Association of Development Financing Institutions in Asia and the Pacific |
| AS | Advisory Services |
| BAU | Business as usual |
| BDO | BDO Unibank, Inc. |
| BPI | Bank of the Philippine Islands |
| BanKO | BPI Globe BanKO |
| BPS | Bureau of Product Standards |
| CA | Cooperation agreement |
| CAFI | Climate Assessment for FI Investment |
| CAS | Country Assistance Strategy |
| CCAP | Climate Change Action Plan |
| Chinabank | China Banking Corporation |
| CO ₂ | Carbon dioxide |
| COC | Certificates of Compliance |
| CTF | Clean Technology Fund |
| DAC | Development Assistance Committee (of OECD) |
| DBP | Development Bank of the Philippines |
| DOE | Department of Energy |
| DTI | Department of Trade and Industry |
| EAP | East Asia and the Pacific |
| ECCP | European Chamber of Commerce of the Philippines |
| EE | Energy efficiency |
| EPRD | Office for Economic Policy and Regional Development |
| EQ | Evaluation question |
| ERA | Energy Reform Agenda |
| ERC | Energy Regulatory Commission |
| ESCO | Energy Service Company |
| ESTP | End users, service and technology providers |
| FI | Financial Institution |
| FiT | Feed-in-Tariff |
| FGD | Focus group discussion |
| GEF | Global Environment Facility |
| GHG | Greenhouse gas |
| HEM | High Efficiency Motors |
| ICA | International Copper Association |
| IFC | International Finance Corporation |
| IIEE | Institute of Integrated Electrical Engineers |
| INDC | Intended Nationally Determined Contribution |
| LEDS | Low Emission Development Strategies |
| LGU | Local Government Units |
| LGUGC | Local Government Unit Guarantee Corporation |
| LPG | Loan Portfolio Guarantee |
| LULUCF | Land use, land use change and forestry |
| Μ | Million |

| MEPS | Minimum Energy Performance Standards |
|--------------------|--|
| M&E | Monitoring and Evaluation |
| M&V | Measurement and Verification |
| MFI | Microfinance Institution |
| MOU | Memorandum of Understanding |
| MTR | Mid Term Review |
| MW | Mega Watt |
| MWh | Mega Watt hour |
| NGCP | National Grid Corporation of the Philippines |
| NEDA | National Economic and Development Authority |
| OECD | Organization for Economic Cooperation and Development |
| PCR | Project Completion Report |
| PDP | Philippine Development Plan |
| PSR | Project Supervision Report |
| RE | Renewable Energy |
| RSA | Risk Sharing Agreement |
| RPP | Rural Power Project (World Bank) |
| RSF | Risk Sharing Facility |
| SE | Sustainable Energy |
| SEF | Sustainable Energy Finance |
| SEF Team | Phils SEF II Core Team |
| SME | Small and Medium Enterprise |
| STC | Short Term Consultants (provided through Phils SEF II) |
| STP | Service and Technology Providers |
| ТА | Technical Assistance |
| ToR | Terms of Reference |
| tCO ₂ e | Tons of Carbon Dioxide Equivalent |
| UNIDO | United Nations Industrial Development Organization |
| USAID | United States Agency for International Cooperation |
| WBG | World Bank Group |
| WWF | World Wildlife Fund |

All dollar amounts are U.S. dollars unless otherwise indicated

Executive Summary

Background and context

The IFC established the Sustainable Energy Finance (SEF) program with the aim of developing and catalyzing local financing markets for sustainable energy projects. The program provided for an advisory service (AS) and a risk sharing facility (RSF) to local private banks, where the AS included working with various stakeholders to increase awareness and knowledge. The focus of the current evaluation is the AS. SEF has so far been implemented in two phases. Phase II, which is the subject of this evaluation, was executed over seven years from 2009 to 2015. It built upon the gains of SEF I, which focused on providing support to two major banks, successfully demonstrating the business case for sustainable energy (SE) and creating a pipeline of sustainable energy projects in the Philippines.

The overarching goal of the Philippines SEF II (Phils SEF II) is to increase access to local sources of financing for SE projects in order to stimulate private sector investment and reduce greenhouse gas (GHG) emissions. Its main objective is to strengthen the capacity of partner Financial Institutions (FI) in developing and managing a sustainable energy portfolio and assist end-users as well as service and technology providers (ESTPs) in implementing sustainable energy projects.

Specifically, Phils SEF II aimed to: (i) strengthen its partnership with existing partner FIs, develop new partnerships and provide these FIs with the necessary support to develop their own SE portfolio; (ii) establish relationships with ESTPs in order to increase the number of projects and proponents requiring access to local financing; and (iii) take on a convening role for regulatory improvement, and participate or lead market awareness raising activities to create conditions for greater private sector participation.

Methodology

The methodology of this evaluation aimed to determine the quantitative and qualitative outcomes (see Annex D for evaluation matrix), and impacts of the program. Quantitative information was essential to determine financial commitments, enterprises involved, and environmental impacts. The Phils SEF II Core Team (SEF Team) made available 'ex post' monitoring data on finance but not on energy generation or GHG savings by projects, which were 'ex ante', i.e., based on predicted values. It was pointed out to the evaluation team that it was an institutionally mandated IFC procedure to only record 'ex ante values' in the monitoring of energy generation and emissions. In addition, the collected qualitative information related mainly to procedure, practice, behavior changes, lessons learned, and future prospects. These two aspects combined provided an overview of the successes and challenges of the program.

Data gathering was primarily undertaken through a detailed desk review and face-to-face interviews. The detailed desk review incorporated donor documents, implementation plans, supervision reports, mid-term evaluation report, among others. Interviews were conducted with as many stakeholders as was feasible in the time given. These included: selected former and current IFC staff, donors, partner FIs, ESTPs, government entities and other bodies (see Annex F for a complete list). Evaluation questions (EQ) were formulated to address the five principal OECD/DAC evaluation criteria as well as the issue of Additionality, as per the Terms of Reference.

Limitations

Though the evaluation proposal included an online survey of 193 borrowers, this was not conducted. The Bank of the Philippine Islands (BPI), the major lender, indicated that this survey would infringe on client confidentiality based on existing agreements. Without BPI's client's participation, the proposed survey would have little representative value as it could only be administered to the sample of 11 BDO Unibank, Inc. (BDO) clients.

The findings of this evaluation are also constrained by the absence of a substantial body of 'ex post' data on energy and environmental indicators. Therefore, greater emphasis has had to be placed on the data gathered during the interviews, necessitating some changes to the interview guidelines.

Summary of main findings

Relevance

The Phils SEF II program is consistent and well-aligned with government policy of inclusive growth, energy independence, and environmental protection. The Philippines energy sector has been highly dependent on imported fossil fuel for its power generation needs, despite the vast RE resources potentially available.

Prior to the launching of its SEF Program, the IFC had recognized the vast opportunity in the SE market in the Philippines. A combination of capacity gaps, a dearth of affordable financing mechanisms, and the weak financial and commercial standing of project developers to meet the financial, technical and management requirements of the FIs contributed to the stunted growth of the sustainable energy sector. The provision of AS and RSF to FIs and the capacity building of clients and STPs under Phils SEF II addressed some, if not all, of the barriers to accessing to finance for viable, sustainable energy projects.

By focusing on the top-tier banks, Phils SEF II was able to get early client buy-in, as these were the banks that had the capacity to launch new products. One of the largest banks, BPI, is committed to mitigating climate change. Thus, according to a BPI official, the partnership with IFC was a logical next step to putting that commitment into practice.

Phils SEF II addressed the specific needs of FIs in terms of understanding the opportunities in financing of both the renewable energy (RE) and energy efficiency (EE) projects, supporting the development of new products, and having the capacity to assess the inherent risks of each loan application. Phil SEF II conducted various capacity development activities, as well as supported the FIs in improving internal procedures to better suit the new products and markets within the participating banks. By providing updated industry and market information, Phils SEF II enabled FIs to effectively market sustainable energy financing to would-be borrowers, as well as improve investment decisions. The resulting projects that were funded and implemented by client banks unlocked substantial private sector investments in EE and RE, which contributed significantly to the government's drive towards sustained economic growth, energy independence, and climate change mitigation.

In addition, the Philippines has deposited its Instrument of Accession [equates to ratification] for the Paris Agreement last March 2017. The agreement will come into force in April 2017. Last October 2015, the Intended Nationally Determined Contribution (INDC) specifies the Philippines' intention "to undertake a GHG (CO₂e) emissions reduction of about 70% by 2030 relative to its BAU scenario of 2000-2030, contingent on international support. The reduction of CO₂e emissions will come from the energy, transport, waste, forestry and industry sectors"¹. The new policy direction and commitment enacted after the SEF II program ended underlines the increasing relevance of Phils SEF II in the coming years as the nation strives for low-emissions development through the implementation of multiple approaches, most notably the implementation of EE and RE projects.

Phils SEF II program supports the WBG's goals of ending extreme poverty and boosting shared prosperity, on the basis that climate change impacts are a significant risk to the poor. The introduction of new RE and EE schemes contributes to job creation. The Phils SEF II objective of increasing investments in sustainable energy supports the Joint Philippines-IFC Country Assistance Strategy (CAS), which is directed at achieving inclusive growth by pursuing macroeconomic stability, increasing investment in climate change mitigation, delivering better public services for the poor, reducing vulnerabilities to income shocks and natural disasters, and better governance. It is also aligned with IFCs increased focus on climate finance.

The choice of program components was aimed to address the barriers to a vibrant sustainable energy market: they incorporated the institutional, regulatory and financial framework required to promote market development. However, mid-way through the implementation, Phils SEF II concentrated efforts on providing assistance to FIs. In so doing, the program was not able to fully optimize its potential synergies with government and other development agencies.

It is important to note that the successful implementation of energy policies that promote investments and financing in RE and EE are important ingredients to facilitate the achievement of the government's climate change objectives. The Philippines has already put in place a number of policies and measures to support its energy sector reform initiative². Most of these policies cover privatization of government assets and opening up of the energy market to private sector participation. The influence of Phils SEF II specifically its objective to take on "a convening role for regulatory improvement and participate or lead market awareness" could have helped expedite the formulation of further policy measures, such as the introduction of tighter EE regulations and RE certificates.

Efficiency

The SEF outputs were of good quality in terms of the identification of appropriate projects, financial processing, and performance of supported projects. The AS facilitated the identification of appropriate projects that could be allocated loans. Furthermore, the technical short-term consultants (STC) provided support throughout the project implementation, seeking to ensure project performance. The structure of the RSF allowed for straightforward financial processing using a portfolio approach, which did not necessitate individual loan approval from IFC if loans met a set of eligibility criteria.

¹ Republic of the Philippines. (2015). *Intended Nationally Determined Contribution*. Available at: <u>http://www4.unfccc.int/submissions/INDC/Published%20Documents/Philippines/1/Philippines%20-</u> <u>%20Final%20INDC%20submission.pdf</u> [Accessed 23 January 2017].

² Chang, Y., Fang, Z., Li, Y. (2016). "Renewable energy policies in promoting financing and investment among the East Asia Summit countries: Quantitative assessment and policy implications." *Energy Policy, 95,* pp. 427–436. The policies put in place are within the following fields: renewable portfolio standards, net metering, feed-in tariff, tax incentives, renewable energy target, renewable energy act, capital subsidy/rebate, public investment and loans.

Program resources were managed efficiently despite the reduction in SEF staff resources. The emphasis placed on Component 1 made certain that FIs were provided with the necessary AS, leading to an increasing number and magnitude of loans provided. On the other hand, the results for some outputs on Components 2 and 3 were not met; the results related to the provision of in-depth AS to service/ technology providers, the partnerships brokered between service/ technology providers and FIs, and the procedures/policies/standards recommended for improvement or elimination, were lower than expected. Table E1 below shows the level of achievement of some selected outputs.

| Component | Target | Achievement 2015 | Achievement as a percent of target |
|--|--------|---------------------|---------------------------------------|
| 1 - Advisory Services to FI Partners | | | |
| No. of entities receiving AS | 250 | 470 | 188% |
| No. of entities receiving in-depth AS | 4 | 4 | 100% |
| No. of Trainings modules and new products | 20 | 29 | 145% |
| No. of workshops, training events, seminars, conferences, etc. | 40 | 94 | 235% |
| No. of new financial products designed | 10 | 10 | 100% |
| 2 – Support to Service/Technology providers and Clients | | | |
| No. of entities receiving in-depth AS | 12 | 3 | 25% |
| No. of partnerships brokered between ESTP and FIs | 15 | 10 | 67% |
| 3 – Market Awareness and Regulatory Advocacy | | | |
| No. of workshops, training events, seminars, conferences, etc. | 20 | 28 | 140% |
| No. of procedures/firm-level policies/ practices/ standards recommended for improvement or elimination | 2 | 1 | 50% |

Table E 1 - Phils SEF II Selected Outputs by Component

In considering the costs relative to the results achieved, the Phils SEF II has provided value for money. The ratios of the total Phils SEF II cost relative to the outcomes achieved are much lower than anticipated. The actual project investment as a function of the energy use and GHG emissions avoided is about a third of the projected cost/outcome ratio, as shown in Table E2 below.

Table E 2 - Phils SEF II Selected Outcomes

| Outcome Indicators | Target | Total budget US\$/unit | Achievement | Total expenditure US\$/unit |
|---|---------|---------------------------|-------------|--------------------------------|
| Projects funded (number of) | 80 | 40,413.96 | 193 | 15,048.51 |
| Outcome of projects funded – ton equiv. GHG reduction/ year | 600,000 | 5.39 | 2,083,710 | 1.39 |
| Outcome of RE projects funded – MWh /year | 350,000 | 9.24 | 3,831,939 | 0.07 |
| Energy use avoided (MWh/year) | 77,536 | 41.70 | 188,292 | 15.42 |

The lessons learned from previous SEF projects in other countries enabled the SEF Team design an appropriate advisory service (AS). Given the program's dependence on the partner buy-in, commitment, efficiency, and IFC's cost structure, there were no obvious and significant cost savings that could have been

identified. The expected scope of Component 3, on the regulatory and institutional framework, was reduced due to the greater focus of the leaner SEF Team on FIs³. Despite the rate and quality of the implementation, the allocation of sufficient human resources may have ensured that activities under all components of the Phils SEF II program were implemented.

The monitoring of the internal output targets seems to be appropriate and well-managed, and the verification of data over time is consistent. The M&E of the outcome targets seems to have been more difficult to manage, revealed by inconsistencies in the data. Although partner FIs are required to report preagreed parameters to IFC, on a semi-annual basis, the figures on the outcome targets that are used are ex ante figures, and are not updated or verified after project implementation.

Effectiveness

The intended outcome, to increase the portfolio of RE and EE projects supported by participating FIs, has been largely achieved both in number and value. This contributes to project developers implementing sustainable energy projects. Although a significant number of EE projects have been financed, on average, the value of the loans issued is lower. 66% of the total loan amount has been committed to RE projects. The potential of EE investments could be further explored.

Through the design of Phils SEF II, the two FIs that participated in and made use of the SEF II program have been able to contribute significantly to the increase in market lending to RE and EE projects. Due to the lesser focus to Component 3, addressing regulation and the non-participation of other important FIs, the extent to which the market has been developed autonomously is however limited.

Although four banks have been involved in Phils SEF II, only two, BPI and BDO, have used the Phils SEF II to provide sustainable energy lending to proponents. Chinabank reported improved capacity and although the bank has not been able to deliver services to project developers through Phils SEF II, they are indeed providing lending to clients doing SE related projects but on a very selective basis. Nevertheless, there was evidence from interviewees that banks other than the Phils SEF II client FIs are now beginning providing SE financing, and in some cases offering more competitive financing than the Phils SEF II client banks. For example, a developer of a 5MW RE project, which was supposed to be financed by BDO, chose to select a more competitive loan from Metrobank.

With regard to Component 3, 'Participate in regulatory improvement and market awareness activities to create conditions for greater private sector participation,' activities have been undertaken to involve government officials with financiers and developers, and the Phils SEF II Team provided input to the draft Energy Efficiency and Conservation Bill. It is acknowledged that it is not unusual that progress is slow in implementing policy reform for various reasons.

The figures in Table E3 below underline that the expected outcomes of Component 1 and 3 of Phils SEF II has been achieved and even largely surpassed. The target for Component 2 has not been achieved.

³ Working with the government for regulatory improvement/reforms normally takes time and thus was de-prioritized.

Table E 3 - Phils SEF II Selected Outcomes by Component

| Component | Target | Achievement | Achievement as a percent of target |
|--|--------|-------------|---------------------------------------|
| 1 - Advisory Services to FI Partners | | | |
| No. of projects identified that received financing | 80 | 193 | 241% |
| No. of SEF loans disbursed | 80 | 193 | 241% |
| Value of SEF loans disbursed (million US\$) | 120 | 880 | 733% |
| 2 - Support to Service/Technology Providers and Clients | | | |
| No. of clients that received audit/ training/ consultancy from | 100 | 10 | 10% |
| service providers | | | |
| 3 - Market Awareness and Regulatory Advocacy | | | |
| No. of entities that implemented recommended changes | 3 | 3 | 100% |
| No. of recommended procedures/ firm level policies/ practices/ | 2 | 2 | 100% |
| standards that were improved or eliminated | | | |

Impact

As shown in Table E4, Phils SEF II has had considerable impact measured by the increase in investments in sustainable energy in the Philippines; the reported energy generation and savings exceeded the targets, as did the resulting reduction in GHG emissions. Furthermore, there is an increase in interest in SEF due to the demonstration effect of successful projects, showing that RE and EE initiatives can be based on a sound business case.

| Impact | Indicator | Target | Achievement | Achievement as a percent of target | |
|--|---|-------------------------------|-------------|---------------------------------------|--|
| Increase in energy efficiency and use of renewable energy | ease in energy Value of aggregate private ciency and use of sector savings from ewable energy recommended changes (million US\$) | | 486.2 | 1169% | |
| | Energy saved (MWh/year) directly | 66,833 revised to 77,526 | 188,292 | 243% | |
| | Renewable energy produced (MWh/year) (direct) | 259,106 revised to 350,000 | 3,831,939 | 1095% | |
| Reduction in CO ₂ emissions achieved by implemented transactions | GHG emissions reduced (metric tons/year) directly | 310,993 revised to 600,000 | 2,083,710 | 347% | |
| Increase in investments in sustainable energy in the Philippines | Value of financing facilitated by advisory services (million US\$) | 75 revised to 200 | 3,016.7 | 1,508% | |
| Increase interest in SEF due to the demonstration effect | No. of FI clients stating intention to continue SEF lending beyond the project | 3 | 3 | 100% | |
| of the project | No. of non-client FIs who will provide SEF lending beyond the project | 2 | No data | No data | |
| | No. of energy service providers stating their intention to continue services to the industries beyond the life of the project | 3 | No data | No data | |

Table E 4 - Phils SEF II Impact compared to targets

Much of the RE generation can be verified from government Feed-in-Tariff (FiT) figures (except small-scale solar and own consumption). Furthermore, the increase in RE generation capacity since 2009 is fully accounted for by the RE generation of the Phils SEF II projects, which at the end of 2015 accounted for 18% of electricity production in the Philippines.

There is no direct means of verification of the actual EE savings after the completion of projects, which account for just over 4% of the projected energy savings, but represent the majority of the projects supported in terms of number⁴. Project proponents interviewed did not offer a quantification of gains. Several of the projects involved multiple users, for example residential developments, and the energy using behavior of those users had not been tracked, so overall benefits are uncertain.

However, the lending behavior of the participating financial institutions has been influenced. They have built up internal expertise and so reduced the need for support from Phils SEF II. Financial targets for saving and lending have been exceeded by a reported 1,000%. Other financial institutions are entering the market, although this could not be quantified. The goal of Phils SEF II in influencing the behavior of financial institutions has been achieved. Nevertheless, the numbers of financial institutions involved remains small and the full impact on the sector is yet to be realized.

Sustainability

The SEF products offered during the program period are likely to be continued, as there is an established market and returns on investment compare to other standard product portfolios. A substantial body of staff now has competencies in market and risk assessment and projected returns. There are also indications that other banks are entering the market.

However, there remain weaknesses on the demand side; the level of expertise in RE and EE within the private sector has not been sufficiently developed. The main risks that are likely to affect the continuation of program outcomes and impacts after project completion include the lack of incentives for EE, the unpredictability of changes to the relevant policy framework, the lack of energy management expertise, the absence of regulations on ESCOs, and the recognition of environmental risks, especially climate change.

A common concern among stakeholders is that current regulations are more of a barrier to the development of RE than enabling the environment for accessible financing. Although there are cash incentives to RE in off-grid areas and FiTs issued to four types of RE (solar, wind, hydro, and biomass), the policy environment is unstable and there are delays in obtaining permits and payments. This environment discourages investment as it heightens risk.

RE generation is growing at a lower rate than overall demand, thus leading to increased reliance on fossil fuel sources and imports. The new National Green Building Code for larger buildings is a spur to activities in the area of EE, and should provide a stable basis for future developments. Minimum Energy Performance Standards have also promoted EE measures, although the pace of their introduction has not been as efficient.

⁴ Please refer to Table 11 – Energy benefits of Phils SEF II in Section 2.4.

An IEA analysis has shown that over a third of all emissions reductions needed to reach climate goals by 2040 must come from EE policies⁵. The growth in lending to EE projects is a promising trend however the impact of projects is limited due to their scale; thus, this area will require a broader base of expertise among financial institutions and developers, which is not currently in place.

Additionality

There is clear evidence of additionality in the implementation of Phils SEF II. Prior to the program period (2009-2015), the local financing sector was neither confident in nor engaged with RE and EE projects. While only two (2) of four (4) participating banks developed a functioning SE program within their respective banks, 193 project loans were financed and over 400 projects are in the pipeline. These numbers are much higher than the program's revised target set in 2011 of 80 and 200 projects, respectively. Without Phils SEF II providing AS and RSF, the FIs would not have been able to establish a sizeable portfolio of RE and EE loans as quickly, and they would not have the capacity and know-how to build an RE and EE portfolio and monitor the performance of these projects. Other donors could have entered this space as well, but the fact that IFC did it first showed that it had the appreciation of the gaps that needed to be filled and viewed them as opportunities that could be pursued.

Now that the two partner FIs are successful providers of green financing, a new phase of innovation is needed to further expand the activities across the financing sector and Phils SEF coverage. For BPI and BDO, Phils SEF could continue to view them as leaders, and new products and innovation may be developed based on international experience and best practice. The two banks could set the trend that other smaller or second tier banks may learn from.

Phils SEF II may also consider taking on more risk by looking at smaller banks and other project types, such as, RE hybrids, mini-grids and projects that could serve the more rural populations. The challenge in Philippine rural electrification lies in delivering services to off-grid populations that are either receiving limited services or are not served at all. Research demonstrates a huge economic and environmental potential of replacing diesel-powered mini/micro grids in off-grid areas with solar PV-battery-diesel hybrid energy systems⁶. Such projects require innovative financing. Government is giving incentives for RE development in these areas, which is expected to make the projects sustainable. With Phils SEF II providing AS for banks and players in this space, sustainable projects that otherwise could not be advanced due to lack of financing may be pursued. Further catalyzing private sector investments to also cover off-grid areas would be consistent with the WBG's goal of supporting the Philippines in attaining poverty reduction and inclusive growth.

⁵ International Energy Agency. (2016). *Energy Efficiency Market Report 2016*, p. 33. Available at:

http://www.iea.org/publications/freepublications/publication/mediumtermenergyefficiency2016.pdf [Accessed 23 January 2017].

⁶ Ocon, J. (2017). *Techno-Economic Potential of Hybridization in Philippine Island Grids*. Available at: <u>https://www.linkedin.com/pulse/techno-economic-potential-hybridization-philippine-island-ocon</u>. [Accessed 16 January 2017].

He states: "Considering the 215 NPC-SPUG off-grid areas surveyed there is techno-economic potential of around 220 MW of solar PV and 250 MWh of lithium-ion battery storage. The results mean also that it's possible to supply electricity 24/7 in these areas, which is a huge step considering that less than a quarter has 24/7 energy access now".

Conclusions

Important achievements of Phils SEF II

The Phils SEF II program, which aimed at developing and catalyzing local financing markets for sustainable energy projects, has more than met its targets in terms of quantity of loans disbursed and number of projects supported. Although fewer FIs than expected participated actively, far more projects have been assessed, with assistance from the SEF Team and its associated technical STCs, than foreseen. Phils SEF II has catalyzed a high level of investment in both RE and EE and exceeded its targets by significant margins.

Whereas the number of loans provided to EE projects increased throughout the period and was higher than the number of loans provided to RE projects; the latter led to the main impact in financial and energy terms, and largely contributed to the increase in electricity generation from RE sources nationwide, with almost 4 million MWh being produced from the Phils SEF II RE projects.

The value in million US dollars of energy savings and production has been exceeded more than ten-fold, and the ex ante calculated GHG emission reductions from the projects financed amounts to a reduction of 2 million tons CO_2 /year over the next 15 years. Some key achievements are summarized in Table E5 below.

| Indicator | Targets 2009-2015 | Accomplishments | Achievement as a percent of target |
|--|-----------------------------|-----------------|---------------------------------------|
| Number of SE Projects financed | 80 | 193 | 241% |
| Loans disbursed (million US\$) | 120 | 880 | 733% |
| Financing facilitated (million US\$) | 200 | 3,016.7 | 1,508% |
| Number of SE projects developed in pipeline | 200 | 446 | 223% |
| Energy saved through EE projects (MWh) | 77,526 | 188,292 | 243% |
| Energy produced through RE projects (MWh) | 350,000 | 3,831,939 | 1,095% |
| Value of energy savings and production (million US\$) | 41.6 | 486 | 1,168% |
| Tons of CO ₂ reduction/ year | 600,000/yr. for 15 years | 2,083,710 | 347% |

Table E 5 - Key achievements of the Phils SEF II program

A qualitative measure of the achievement of Phils SEF II lies in the two main participating FIs; BDI and BPO indication that they are now well aware of the potential of providing lending to SE projects and that few SEF loans have defaulted. The FIs are ready to continue working with the SEF but not necessarily in the present form.

Areas which could be further improved

The achievements of Phils SEF II targets are notable, but potential RE and EE development is even higher. A limitation is the policy environment, as exemplified by the protracted process of obtaining permits for RE and the uncertainties in the FiT income stream. These add risk to financing and may result in less favorable terms than would otherwise be available in a stable policy environment. It is recognized that policies take time to be implemented, but they have a very important role in determining investment behavior, which includes the propensity to develop RE and EE ventures. A continued high Phils SEF II engagement in the

enabling policy framework would have helped targeting some of the key barriers continuing to hinder autonomous investments in the SE sector.

Despite the growing number of loans for EE interventions, the limited scale of EE projects is indicative of three factors: the level of ambition of EE projects is limited, regulatory environment is inhibiting, and in the case of buildings, owners lack appreciation of the benefits of EE⁷. Almost a third of the Phils SEF II enabled EE investments in buildings are focused on HVAC and lighting in new buildings or as retrofit of existing buildings. SEF could have the programmatic ambition to facilitate FIs consideration of EE projects with a longer pay-back period, such as deep renovations of buildings that will significantly reduce energy consumption in the long term.

Engagement with project developers has not been as strong as it could have been, which is a reflection of the redefinition of priorities during Phils SEF II. Project developers need to have the expertise to make presentations for finance and also often need their own expertise in EE and RE to be enhanced.

IFC's M&E procedures, as viewed in Phils SEF II, do not provide for 'ex post' monitoring of energy generation or savings or GHG reductions. Phils SEF II measurement and verification (M&V) is based on IFC's CAFI tool, which has been disseminated and rolled out to the FIs, but due to FIs internal security policy, there are restrictions to their use of it, not allowing for ex post M&V. Monitoring is a process, which takes place during and after project completion, not prior to it. The Phils SEF II M&V of actually achieved project results regarding energy saved or generated and for GHG emission reductions is weak and need to be followed up through contact with the project developers.

Recommendations

The implementation of Phils SEF II has proven successful as a means to reaching the quantitative targets set for the program. A number of recommendations arise from the evaluation that point out some new areas for future SEF activities, as well as the need for 'ex post' monitoring of energy generation or savings or GHG reductions to quantify on a verifiable basis the climate benefits of programs such as SEF. The recommendations are shortly described below, in order of importance, and in more detail in Section 5.

- **1. Emphasis on EE projects.** EE is a critical "fuel" in the transition to a low-carbon economy. A larger SEF priority on EE could entail creation of new financial products:
 - a. **Differentiated RSF pricing.** FIs presently consider large EE projects, such as deep building renovation with a long pay-back period to be too risky. There are many potential developments in this area, but the project developers do not fit into the main categories for lending or venture capital. If the RSF policy allows it, a preferential RSF pricing for large EE loans, would help FI perception of the project.
 - b. **Equity funding instrument.** Consider the development of an instrument to provide funding for small/ medium project developers that need to raise equity. These could include ESCOs who need a fund for the development that fall between venture capital requirements and normal bank loans. These could be in the form of quasi equity (convertible into loan) or guarantee.

⁷ 84% of the EE projects financed through BPI loans concern building construction or renovation, with lighting and HVAC as the focus of 28% of these investments.

- 2. Regain emphasis on market awareness and regulatory improvement. The Phils SEF II communications and promotional activities have developed awareness of EE and RE and their benefits. However, there is a need for more intensified communications and promotional campaign. A crucial element to developing greater awareness is regulation.
 - a. Regain emphasis on the Phils SEF II activity on *assistance in regulatory improvement to facilitate implementation of sustainable energy projects*. A future SEF should reinforce the initial emphasis on taking "a convening role for regulatory improvement and participate or lead market awareness" since this would help expedite completion of the necessary policy measures to address persisting barriers.
 - a. Networking and collaboration with other donors and stakeholders can facilitate the work of SEF towards achieving not only market awareness but also regulatory improvement. Relationships can be reinforced through events like the regular EE forum organized with ECCP which can introduce donor panels on SE financing, and help promoting discussions on the needs and challenges in the SE sector.
 - b. The Phils SEF II expected outputs and outcomes were generally well achieved, despite the decrease in available SEF team resources that were well used to administer the program and ensure the collaboration with the FIs. A new SEF program would need internal or external human resources for networking, awareness building, and communication with STPs, as well as for efforts in regulatory improvements.
- **3.** Further develop local financing markets by including second-tier banks. The inclusion of smaller FIs to the target market of Phils SEF II may indeed help in developing and catalyzing local financing markets for SE projects, which was the objective of Phils SEF II. However, their overall contribution in terms of SE loan volume may not be that significant.
 - a. Help increase expertise through provision of AS. A future SEF may examine ways of reducing the smaller banks' transaction costs by increasing their level of expertise through the advisory services. The SEF Team should promote the benefits of signing a 'normal' AS agreement through the substantial additional business that existing FI clients have reached. A 'SEF Light' agreement can be envisaged to allow smaller banks ensure the costs of the AS, but this 'SEF Light' should reflect the lessons learnt during Phils SEF II: the FI core team needs to devote a substantial amount of time to the SEF work, and the SEF Team or sustainable energy consultants should have a role in developing the FIs pipeline.
 - b. **The portfolio approach** has already proved successful and may make the processing of the RSF when needed, easier to face for the smaller FIs, as it has for the large existing SEF clients. Taking a portfolio approach to risk would enable a few high-risk projects to be supported by smaller banks.
- **4. Expand coverage to smaller project developers.** The smaller developers are often those serving the poorer communities and those presenting innovative ideas. Because of the collateral requirements and the inevitably higher transaction costs, these developers have not received attention under Phils SEF II.
 - a. Partnership agreements with project developers. Smaller RE projects may most directly

benefit poorer communities, which would be in line with the WBG's goal of supporting the Philippines in attaining poverty reduction and inclusive growth. Whereas SEF is not in a position to provide grants to small community based projects, SEF can establish partnership agreements with private sector project developers extending assistance to develop a portfolio of RE projects.

- b. **Extend field of RE projects.** Develop new FI products in collaboration with the FIs to serve new types of RE projects, such as RE hybrids and mini-grids projects, which could be developed to service the more rural population.
- 5. Monitoring and verification of ex-post project achievements should be reinforced. There is a lack of ex post verification of energy savings and reduced GHG emission reduction. Ex-post verification is important especially so if impact results are among the key target indicators of Phils SEF II. Monitoring as well as M&V should be an integral part of future project design. A process must be introduced, allowing quantifying on a verifiable basis the climate benefits of programs such as SEF.

M&V should happen at four levels:

- a. Clear **business plans** with milestones for energy and GHG savings, and means of monitoring them;
- b. Synergies with **DOE data returns** on project approvals and Feed in Tariffs;
- c. Monitoring or on-site inspection of a sample of EE schemes; and
- d. Emphasis on **obligatory metering** for EE installations, helping to monitor user behavior.
- 6. The GEF Tracking Tool Requirements specifies 'Results at Terminal Evaluation', an 'ex post' requirement. The Tool requires information on energy capacity and production, lifetime direct post-project GHG emissions avoided and lifetime indirect GHG emissions avoided. To fulfill these requirements, it is recommended to:
 - a. Carry out a **telephone or email survey of all projects** asking for the basic information of generating capacity, energy generated and saved⁸.
 - b. Carry out a **structured 10% on site survey of projects**, i.e., 20 projects, structured to be representative by technology and size. In future, such sample monitoring should be standard practice and require access by the monitors to the clients to get this information.

⁸ This was part of DEMs methodology proposed for this evaluation, but could not be carried out due to BPI's refusal to provide access to the 184 projects that received SEF loans through the said bank (due to confidentiality agreement).

1. Introduction

1.1 Background and Context

Sustainable Energy Finance (SEF) is a program developed by the International Financing Corporation (IFC) in a number of markets across Eastern Europe, Russia and China. Generally, it aims to improve and catalyze local markets for development and financing of sustainable energy (SE) projects. This has been done through the provision of an advisory services (AS) and/or a risk sharing facility (RSF) to local banks, as well as working with various stakeholders to increase awareness of and knowledge about RE and EE investments. In adapting the SEF approach to South East Asia, the Philippines was found to be the most appropriate to develop the concept in the region due to several factors, including the high cost of electricity, well-run but conservative Financial Institutions (FIs), and historically, a strong reliance on imported energy.

SEF II is the second phase of the SEF implementation in the Philippines and covered a period of seven years from 2009 to 2015. It built on the gains of SEF I, which focused on providing support to two major banks, and successfully demonstrated the business case for SE, establishing a pipeline of SE projects in the Philippines.

The overarching goal of the Philippines SEF II (Phils SEF II) was to increase access to local sources of financing for SE projects in order to stimulate private sector investment and reduce greenhouse gas (GHG) emissions. Its main objective was to strengthen the capacity of partner FIs in developing and managing a sustainable energy portfolio and assist end-users, as well as service and technology providers, in implementing sustainable energy projects.

Specifically, Phils SEF II aimed to strengthen its partnership with existing partner FIs, develop new partnerships and provide these FIs with the necessary support to develop their own sustainable energy portfolio. To this overall objective, Components 2 and 3 were added to contribute to the objective: Component 2: Establish relationships with end-users, as well as service and technology providers, in order to increase the number of projects and developers requiring access to local financing; and Component 3: Take on a convening role for regulatory improvement and participate or lead market awareness raising activities to create conditions for greater private sector participation.

1.2 Purpose and Scope of the Evaluation

The purpose of the evaluation is to review the effectiveness and impact of the Phils SEF II program as an AS facility with a view to identifying lessons learned that may help to improve the selection, design, and implementation of future GEF activities. The focus of the review is on the AS component, although the Phils SEF II program includes the RSF.

The review covers the implementation of the program managed by the SEF Team in support of the four partner banks, namely: BDO Unibank Inc. (BDO), Bank of the Philippine Islands (BPI), China Banking Corporation (Chinabank), and BPI Globe BanKO (BanKO). It also includes feedback from partner banks, bank clients and other stakeholders on the quality of the implementation and the extent to which the program had an impact both on the lending operations of the bank and the sustainable energy market in general.

1.3 Methodology

The methodology of this evaluation aimed to determine the quantitative and qualitative outcomes (see Annex D for evaluation matrix), and impacts of the program. Quantitative information was essential to determine financial commitments, enterprises involved, and environmental impacts. The Phils SEF II Core Team (SEF Team) made available 'ex post' monitoring data on finance but not on energy generation or GHG savings by projects, which were 'ex ante', i.e., based on predicted values. It was pointed out to the evaluation team that it was an institutionally mandated IFC procedure to only record 'ex ante values' in the monitoring of energy generation and emissions. In addition, the collected qualitative information related mainly to procedure, practice, behavior changes, lessons learned, and future prospects. These two aspects combined provided an overview of the successes and challenges of the program.

Data gathering was primarily undertaken through a detailed desk review and face-to-face interviews. The detailed desk review incorporated donor documents, implementation plans, supervision reports, mid-term evaluation report, among others. Interviews were conducted with as many stakeholders as was feasible in the time given. These included: selected former and current IFC staff, donors, partner FIs, ESTPs, government entities and other bodies (see Annex F for a complete list). Evaluation questions (EQ) were formulated to address the five principal OECD/DAC evaluation criteria as well as the issue of Additionality, as per the Terms of Reference. Because of the lack of 'ex post' energy generation and GHG emission reduction data and the inability to carry out a survey of all borrowers, the evaluation faced considerable limitations, which are set out below.

1.4 Limitations to the Evaluation

This study is subject to two main limitations: those arising from the data collection process and interpretation by the Evaluation Team during the evaluation period; and limitations of monitoring data and verified post implementation data collected by Phils SEF II itself.

1.4.1 The data gathering process

Although the basis for the assessment of program performance is diverse, the analysis had been constrained by the inability to obtain a broader base of data through the survey. This therefore places greater significance on the interview findings than intended.

The representation of project proponents and developers was weak during the interview process, with only six participating. BPI, which dominated the loan portfolio, arranged interviews on their premises in their presence. BPI expressed concern regarding the nature of the questions posed by the Evaluation Team to BPI clients at the initial interviews. Thus, the Evaluation Team was instructed to omit questions explicitly asking about the clients' knowledge of RSF going forward.

These interviews could in no way be regarded as a representative sample and there was implicit pressure through the presence of a bank representative throughout the process. It is the opinion of the consultants that the enterprises involved did not succumb to this pressure, but their selection as successful projects is likely to have biased the information obtained from this part of the exercise.

It was not possible to determine the nature of this bias by carrying out the proposed survey of all the bank clients as a means of triangulating the data. Thus, the analysis based on the responses of the project

developers must be interpreted cautiously.

The Evaluation Matrix (see Annex D) that was developed during the inception period notes the proposed or idealized way of measurement for this evaluation especially on the quantitative aspect. The actual report uses a mix of indicators proposed.

1.4.2 The monitoring data provided

In comparison with Phils SEF I, monitoring of the much larger loans under Phils SEF II was facilitated by detailed records that included attributed energy savings and energy generation figures in MWh/year for each loan. The corresponding reductions in CO₂ emissions in tons of CO₂ per year have been calculated based on the CAFI (Climate Assessment for FI Investment) standard methodology. An inspection of the figures indicates that these are sound and in line with internationally accepted calculation processes.

Ex post financial figures have been provided for all projects and these were updated during the project period. This provides a good basis on which to evaluate Phils SEF II with regards to the characteristics of the project and the nature of the involvement of the banks, and the financing provided and leveraged.

However, it is understood that the post project implementation monitoring of energy savings and/or renewable energy generation is not part of the SEF Team mandate. This poses a fundamental problem for the Evaluation Team in fulfilling its Terms of Reference. It is logically inconsistent for an ex post evaluation to rely on ex ante information on energy savings and GHG reduction in order to establish the project impact on climate change mitigation.

Energy efficiency savings are difficult to measure because of the multitude of factors that affect the consumption of energy per unit output, namely structural, activity, behavioral, and autonomous factors⁹. Project developers who were interviewed were unable to identify the causes of the changes in overall consumption in buildings, as user behavior in particular was not monitored. This leads to doubts about the reliability of estimates provided ex ante being applicable in the ex post situation.

To illustrate the challenges of using the exante data, it was noted that the projected energy savings and GHG emissions avoided by the renovation of buildings and RE installations were calculated on the basis that the savings accrued from the date the loan was issued. This did not allow for the time necessary to implement activities. This has significant implications, specifically for RE projects for which the estimated time taken to complete a project can vary between 6 months and 5 years¹⁰.

With regard to RE, there is an on-site inspection done jointly with representatives of the bank asset management group, the SEF Team and DOE to monitor the project. With the exception of small solar (and occasionally biogas for own use), all the supported RE projects are grid connected. A government permit is needed before sales to the grid can be made. However, this is sometimes delayed considerably. Actual own consumption and delays to gaining connection permissions represent additional sources of error in the use

⁹ Build up. (2013). *Data shortfall for assessment of building energy efficiency programs*. Available at: <u>http://www.buildup.eu/en/learn/notes/data-shortfall-assessment-building-energy-efficiency-programmes</u> [Accessed 24 November 2016].

¹⁰ Based on the interviews, on average, it takes six to nine months for a solar PV project, about 12 months for a wind or biomass project and three to five years for a hydropower project to be completed. Only thereafter the plant will start earning energy savings and reduce GHG emissions, provided it replaces energy production based on conventional fuels.

of ex ante data. In addition, there are the uncertainties on the functioning of the equipment and the climate variables of biomass feedstock, solar radiation, and wind and water flows. Nevertheless, RE will be replacing fossil fuel use and avoiding GHG emissions. This is verified by the energy exported from the RE plant monitored by the grid operator (NGCP). The bank's SEF team can monitor and verify these data. The GHG emission reductions would then be based on the actual energy exported rather than projections. However, this has not been made available ex post on a systematic basis. It was explained to the Evaluation Team that the mandatory provision of data related to electricity sold to the utility would place a burden on the clients of the participating banks and may be considered to be confidential information. However, more broadly, the provision of this data is commonly a requirement of the financial support provided. Without this data, it is not possible to verify the impacts of Phils SEF II on energy saving and GHG emissions reduction.

Responses on monitoring the energy savings were inconsistent among those interviewed. One respondent stated that there is no regular reporting of clients to BPI on GHG, kWh generated or consumed, and energy savings. Another responded that BPI monitors actual savings, but not GHG emission reductions, which is done by IFC. However, the monitoring by the BPI SEF team was reportedly rarely done. One RE project developer, a BDO client, stated that it had not submitted a single report to the bank. However, it submits production reports to DOE, NGCP and the Energy Regulatory Commission (ERC). It also provides updates to the bank SEF team and Full Advantage, a project developer. The monitoring of RE and EE projects is done mainly by the clients essentially focused on the monetary equivalent of the energy savings. The Evaluation Team was unable to verify consistent monitoring of energy savings for BPI or BDO.

While entering energy savings projections for successful EE projects makes little difference in terms of the GEF tool, as this looks at lifetime savings, the projections are based on a number of design assumptions, which usually require some modification on testing in practice, and therefore the verification of actual savings on project completion should have been built in. Changes in activity can skew the realized savings if it is not effectively monitored.

Thus, it does appear that there is no systematic monitoring of either RE or EE benefits following project completion, which places great limitations on the interpretation of the energy savings and GHG data, especially as it was stated that SEF priorities revolve around climate change. There is 'ex ante' or proposal data for each project, which encompass budget and expected energy and GHG benefits. While the former is completed with outturn data, the latter two are not. 'Ex ante' monitoring is a contradiction in terms. Monitoring takes place during and after project development. 'Ex ante' figures provide a baseline or target. The Evaluation Team recommends that this should be remedied by both post project reporting and an onsite inspection in a sample of cases.

1.5 Overview and Summary of Progress of the Phils SEF II Program

The SEF program is a pioneering initiative promoted by IFC. The program aimed to develop and catalyze local markets for the financing of sustainable energy deals through the provision of AS and/or RSF to local banks, and working with various stakeholders to increase awareness and knowledge sharing. At the time of its inception, several factors existed that were considered favorable to increasing investments in SE in the Philippines. These factors include: (i) the high prices of electricity and imminent power shortages, (ii) the

increasing interest in renewable energy, (iii) the as yet unexploited and cost-effective opportunities, (iv) the sophisticated and competitive banking sector seeking new areas for growth, (v) the emerging local energy service industry and active promotion of policies to achieve energy self-reliance by increasing the use of indigenous and renewable sources of power, and (vi) the increasing use of alternative fuels and enhancing energy efficiency and conservation programs.

In early 2008, IFC partnered with two of the Philippines largest banks, Metrobank and BPI, to open an avenue for local banks to invest in sustainable energy. Under SEF I, the business case for sustainable energy was demonstrated and resulted in the disbursement of US\$ 35.6 million in funds to nine loans. The projects were estimated to generate yearly savings of some US\$ 5 million and avoid energy use of about 33 MWh/year, contributing to the reduction of GHG emissions equivalent to 43,161 tCO₂/year.

The success of SEF I encouraged the continuation of the program and its extension covering 2009 – 2012. Phils SEF II was officially launched on September 29, 2009, although preliminary work, such as design of the AS and attendant marketing and communications program, scoping studies, etc., were initiated in early July, 2009. The core strategy was to build on the interest that was created through SEF I and to focus resources on the removal of existing barriers that deter growth in the market. These were carried out under three program components:

- Component 1: Advisory Services to FIs
- Component 2: Assistance to Service/Technology Providers (STPs) and clients
- Component 3: Market awareness and regulatory advocacy

Figure 1 shows the Theory of Change for Phils SEF II describing the expected outcomes, short and long term impact of the AS and the RSF. The project is expected to contribute to the development and diversification of the financial sector (Impact) by assisting in the development of new markets and product lines in sustainable energy finance with significant growth potential (Outcome). This in turn will continue to have a positive demonstration effect on the commercial mainstreaming of RE and EE finance among other commercial banks. Lastly, the project will contribute to pollution reduction by increasing the use of more RE and EE technologies (Long-term Impact).

The participating FIs recognize that they need to address their skills sets and build in-house expertise in order to develop their loan books in these sectors. Without IFC, the FIs would have difficulties in establishing a sizeable portfolio of RE and EE loans as quickly. They would also not have the capacity and know-how to continue to build an RE and EE pipeline and monitor the performance of these projects.

Figure 1 - Theory of Change of the Phils SEF II



Convinced of the good business opportunity it experienced in Phil SEF I, BPI signed off on its engagement for Phils SEF II AS on November 5, 2009. This was later expanded to include the RSF in December 2009. By March of the following year, the SEF Team also partnered with BDO to sign a cooperation agreement (CA) for AS. Additional support activities with other organizations were initiated. Among these were Memoranda of Understanding (MOUs) signed with the Institute of Integrated Electrical Engineers (IIEE) of the Philippines for the establishment of an RE and EE Training Center of the Philippines. An MOU was also signed with the Department of Energy (DOE) to support a joint information, education, and communication program on RE and EE activities for the legislation of the Energy Efficiency and Conservation Bill and promotion of the use of Energy Service Companies (ESCOs) by Local Government Units (LGUs). Phils SEF II also continued to support the European Chamber of Commerce of the Philippines (ECCP) for the implementation of the Energy Smart Program and other related EE and conservation activities.

In October 2011, the targets of the program were revised and Phils SEF II was extended for three years to 2015. The total project budget for Phils SEF II is US\$ 6,313,117 co-funded by IFC, Global Environment Facility (GEF), and Clean Technology Fund (CTF).

When the CA with BDO ended in 2011, two (2) more banks, Chinabank and BanKO, a BPI affiliate, joined the

program for AS in 2012. The entry of BanKO would have been a good opportunity for Phils SEF II to focus on micro, small, and medium scale enterprises (MSMEs). However, after a year, the CA for Chinabank was not extended due to a lack of management commitment, and after two years that for BanKO was not extended because of a change in BanKO's priorities. BPI remained committed and in 2012 extended its CA for a 3rd time.

Besides building capacity and providing support and guidance to the client banks, the SEF Team (including the technical STCs) carried out other support activities such as marketing, communications, and scoping studies, and also provided recommendations to improve procedures, standards, and practices. Workshops, training events, seminars, and conferences were also held among FIs, STPs, bank clients and other end-users. Studies on specific technologies, such as High Efficiency Motors (HEMs), were commissioned, and study tours and other knowledge sharing activities were conducted. All these outputs combined to generate the desired outcome of the program. As shown in Table 1, the program exceeded its targets significantly. Even by the mid-term, most of the targets were already met. The value of the loans disbursed was over seven times higher than the revised target, and more than double the anticipated number of loans were issued.

| Indicator | Targets | | Cumulative Accomplishments | | | |
|------------------------------------|--------------|--------------|----------------------------|---------|---------|-----------|
| Year | 2009-2012 | 2009-2015 | 2012* | 2013* | 2014* | 2015** |
| | | Revised | | | | |
| | | 2011 | | | | |
| Number of SE Projects | 80 | 80 | 50 | 87 | 126 | 193 |
| financed | | | | | | |
| Loans disbursed (M US\$) | 60 | 120 | 73.8 | 378 | 463.8 | 880 |
| Financing facilitated (M | 75 | 200 | 145 | 596.5 | 826.8 | 3,016.7 |
| US\$) | | | | | | |
| Number SE projects | 200 | 200 | 117 | 269 | 373 | 466 |
| developed in pipeline | | | | | | |
| Energy saved through EE | 66,833 | 77,526 | 55,605 | 96,056 | 131,919 | 188,292 |
| projects (MWh) | | | | | | |
| Energy produced through | 259,106 | 350,000 | 261,444 | 843,613 | 982,166 | 3,831,939 |
| RE projects (MWh) | | | | | | |
| Value of energy savings | 41.6 | 41.6 | 40.6 | 114 | 145 | 486 |
| and production (M US\$) | | | | | | |
| Tons of CO ₂ reduction/ | 310,993/yr. | 600,000/yr. | 639,217 | 967,448 | 1.0 M | 2.0 M |
| year | for 10 years | for 15 years | | | | |

Table 1 - Phils SEF II Targets and cumulative Outputs and Outcomes

Source: * Advisory Services Q4 Supervision Report

** Completion Report (Draft for Review).

Of the 193 SE projects financed by the partner banks (Table 1), 91% were identified through Phils SEF II. Aside from traditional RE/EE projects, special climate¹¹ projects were also funded. Moreover, some of the recommended procedures, policies, practices and standards have been adopted. New products have also been launched as a result of Phils SEF II as described in Section 2.2. Market support addressed standards covering, for example, green buildings and the efficiency of motors, as well as other policies to promote EE

¹¹ Special Climate are activities that contribute to mitigation, but for which GHG reduction calculation are not available (Source: IFC's Definitions and Metrics for Climate-Related Activities).

and conservation.

In financing 193 projects, Phils SEF II was able to contribute significantly in terms of energy savings, energy production, and CO_2 reductions. The significance of the program was duly recognized in 2012 when BPI, SEF's premier partner, received a G-20 Finance Challenge Award. The prize included a US\$1.2 million grant that BPI could use to enhance the bank's capacity to deliver financing and technical services.

Box 1 - Recognition of the BPI innovative energy financing scheme through the SEF II

BPI, IFC to team up on SME agribusiness lending

MANILA, Philippines – Ayala-led Bank of the Philippine Islands plans to get into small and medium enterprise agribusiness lending "in a big way" using as its springboard a risk-sharing facility with the International Finance Corp. that has worked well in funding sustainable energy projects.

BPI was named one of 14 global awardees of the IFC-administered G-20 Finance Challenge Award for its innovative financing scheme focused on energy projects implemented by SMEs. The bank is the only institution from East Asia to win this prestigious award, where 200 entries competed across the globe.

Under this Sustainable Energy Finance (SEF) program, BPI's clients have been able to slash energy use by 142,000 megawatt-hours (MWh) and generate renewable energy of 208,200 MWh each year. The investments have also resulted in reducing greenhouse emissions by 527,900 tons CO₂ annually.

Source: Doris C. Dumlao, Philippine Daily Inquirer, May 21, 2012 / https://business.inquirer.net

The grant was used to increase market awareness for SEF. The early entry of BPI into the SEF program, gave it a head start over other banks. However, due to the change in management direction of BanKO, the efforts initiated, such as business models for micro-SEF for member MFIs and selected SME clients, were not implemented. With the exit of Chinabank and BanKO, the Phils SEF II pursued other banks, namely East West Bank, One Network Bank, PR Bank, RCBC, Robinsons Bank, and Security Bank, looking at both traditional SE business and retail/access to energy.

By the official end of the program in December 2015, 466 projects had been developed in the participating FIs' pipelines.

2. Major Findings and Analysis

2.1. Relevance

Relevance concerns the extent to which the aid activity is suited to the priorities and policies of the target group, recipient and donor. In evaluating the relevance of Phils SEF II, several questions will be answered.

To what extent were the design and implementation of Phils SEF II relevant to the priorities, policies/ strategies of IFC and the World Bank in the Philippines?

Phils SEF II is highly relevant and well aligned with the Philippine government policy of inclusive growth, energy independence and environmental protection. It is consistent with the World Bank Group's (WBG) policies and climate change action agenda for increased focus on climate finance.

The WBG, of which IFC is a member, has two ambitious goals: "to end extreme poverty within a generation and boost shared prosperity". This core mission is being threatened by climate change. Ending poverty is already difficult in itself. With the impact of extreme changes in climate, 100 million people more would suffer extreme poverty if these environmental disorders go unchecked.

For this reason, climate change mitigation has always been a key strategic pillar of the WBG, including the IFC. This commitment was recently reinforced at the Conference of Parties (COP21) in Paris, when 196 countries came to an agreement and pledged to keep global warming to 2 degrees Celsius or less. Global financial institutions, like the WBG, pledged to support such a move through hundreds of billions of investments in clean energy and EE over the next 15 years.

In 2016 the WBG adopted the Climate Change Action Plan (CCAP) that is designed to help developing countries address this climate challenge and meet their COP21 climate commitments. It reaffirms the WBG's commitment to increase its climate-related investment portfolio from 21 to 28 percent by 2020, even as it mobilizes at least US\$13 billion per year in external private sector investments through its operations. This would involve the "greening" of the financial sector through direct investments, advisory services and the shaping of new and innovative solutions. Among the strategies would be multiple investments to de-risk RE and EE investments¹².

The IFC's Climate Implementation Plan reflects the WBG's CCAP. The Plan¹³ rests on four objectives:

- Scale climate investments to reach 28 percent of IFC's annual financing by 2020
- Catalyze US\$ 13 billion in private sector capital annually by 2020 to climate sectors through mobilization, aggregation, and de-risking products;
- Maximize impact through GHG emissions reduction and resilience; and
- Account for climate risk—both the physical risk of climate impacts and the carbon asset risk in IFC's investment selection.

¹² World Bank. (2016). *World Bank Climate Change Action Plan*. Available at: <u>http://www.worldbank.org/en/news/infographic/2016/04/07/the-world-bank-group-climate-change-action-plan</u> [Accessed 23 January 2017].

 ¹³ IFC. (2016). *IFC Climate Implementation Plan*, p. I. Available at: <u>https://www.ifc.org/wps/wcm/connect/5f5402804c60b510b6bbbeaccf53f33d/IFC_Climate_Implementation_Plan_03</u>
<u>152016 WBG v2.pdf?MOD=AJPERES</u> [Accessed 23 January 2017].

To reach the goal of 28 percent, IFC will need to move into new climate markets, create new investment vehicles, and increase internal tools and support. It needs to make greater use of programmatic and/or wholesale interventions for opening the market to a new tier of institutional and large-scale investors.

In the Philippines, the IFC implements a Joint Philippines-IFC Country Assistance Strategy (CAS)¹⁴. As shown in Figure 2, under this CAS, the WBG will support the Philippines in achieving inclusive growth by pursuing macroeconomic stability, improving its investment climate, delivering better public services for the poor, reducing vulnerabilities to income shocks and natural disasters, and better governance. It will also address emerging global challenges of climate change, disaster risk management, and the financial crisis. It will likewise emphasize a knowledge agenda in support of the country's efforts in dealing with its developmental challenges.

Figure 2 - The Country Assistance Strategy Results Framework



Source: The World Bank Group in the Philippines: Country Assistance Strategy.

The CAS also includes support to private sector especially in initiatives to increase access to financing in RE, to catalyze investments in infrastructure, and to improve investment climate for private institutions. More directly, Phils SEF II is aligned to Objectives 2 and 4 of the Joint Philippines-IFC CAS. Objective 2 refers to

¹⁴ World Bank Group. (2009). Country Assistance Strategy for the Philippines, 2010-2012. Available at: <u>http://siteresources.worldbank.org/INTPHILIPPINES/Resources/PhilippinesCASFY20102012Booklet.pdf</u> [Accessed 23 January 2017].

improving the investment climate, i.e., support to enable the business environment to promote competitiveness, increase and improve the delivery of infrastructure, enhance regulatory policy and increase investments, and access to financial services. On the other hand, Objective 4 focuses on reducing vulnerability, including disaster risk management and climate change, i.e., reduced GHG emissions.

Phils SEF II program is deemed consistent with the WBG's goals of ending extreme poverty and boosting shared prosperity through its objective of increasing SE investments. This also supports the Joint Philippines-IFC CAS, which aims to achieve inclusive growth by pursuing macroeconomic stability, improving its investment climate, delivering better public service for the poor, reducing vulnerabilities to income shocks and natural disasters, and supporting better governance.

Phils SEF II has successfully met the needs of partner FIs and clients who have recognized the benefits of the program's advisory services. To FIs, as well as their clients, service providers and government entities and regulators, the AS have provided new knowledge and a better understanding of RE and EE technologies, improved the perception of the financial feasibility of these projects, de-risked projects, and facilitated investments. The RSF, on the other hand, has been utilized by BPI to boost its climate finance portfolio, which is also supportive of IFC's increased focus on climate finance.

To what extent were the interventions undertaken under Phils SEF II relevant to country context (now and at the time the project was developed)?

Phils SEF II is consistent with the goals set forth by the Philippine Development Plan and supports the Philippine Energy Sector's Reform Agenda.

The updated Philippine Development Plan (2011-2016) prepared by the National Economic and Development Authority (NEDA) focuses on reducing poverty, and setting targets for the improvement of the overall wellbeing of the Filipino. The Plan defines poverty as "A state of deprivation in multiple dimensions…" including energy access¹⁵.

The Energy Reform Agenda (ERA) of the DOE sets its vision of "Energy Access for More," that provides access to reliable and affordable energy services to the larger population to fuel local productivity and rural development. Three major pillars serve as guides in achieving this vision: (i) ensure energy security, (ii) achieve optimal energy pricing, and (iii) develop a sustainable energy plan¹⁶.

The EPIRA Law 2011 (R.A. 9136) instituted reforms in the energy sector focusing on a more competitive, market-based regulatory framework and a strategy for greater private sector participation. The program, which was implemented during the period 2009-2015, came on the heels of the Renewable Energy Act 2008 (R.A. 9513), which aimed to stimulate RE development in order to enhance energy security and environmental protection. The RE Act provides both fiscal and non-fiscal incentives to support RE project development. This included a Feed-in-Tariff (FiT) system and RE portfolio standards as well as policies and

¹⁵ National Economic and Development Authority. (2014). *Philippine Development Plan 2011-2016, Midterm Update with Revalidated Results Matrices*, p. 9. Available at: <u>http://www.neda.gov.ph/wp-content/uploads/2014/08/NEDA-PDP-2011-2016-Midterm-Update+Errata2.pdf</u> [Accessed 9 March 2017].

¹⁶ Department of Energy (DOE). (2015). *Philippine Power Situation - January-December 2015*. Available at: <u>https://www.doe.gov.ph/electric-power/2015-philippine-power-situation</u> [Accessed 23 January 2017].

plans for net metering, green energy options, priority dispatch, cash incentives for off-grid RE generation and an RE trust fund, among others. These incentives are aimed at enhancing the market for RE, making it less risky.

According to the DOE, wind and solar capacity grew at 50.9% (144 MW increase) and 616% (142 MW increase), respectively between 2014 and 2015. This is attributed to the race to the FiT, which was implemented on a "first come, first served" basis. This policy has both positive and negative effects on the uptake of RE, especially among the small players in the industry. Smaller players with less capacity to fund projects upfront would have a lesser chance of accessing the FiT as, according to DOE rules, it will only issue its Certificate of Endorsement for FiT eligibility to ERC upon confirmation of the successful commissioning of the project. Without an off-take contract (i.e., power purchase agreement) or FiT eligibility, banks are hesitant to finance RE projects.

To implement the RE Act, the National Renewable Energy Program was launched on 14th June 2011. This served as "the framework for the accelerated development and advancement of renewable energy resources." It aims to triple the RE-based capacity (from geothermal, hydro, biomass, wind and solar generation) to an estimated 15,304 MW by the year 2030¹⁷.

As of 2015, installed capacity from RE is reported at 6,329 MW, of which 3,622 MW is expected to be available. Overall, there was an increase of 7.34% from the installed capacity of 5,896 MW the previous year (Table 2).

| Fuel | Installed Capacity | | | Depe | Available Capacity | | |
|------------|--------------------|-------|------------|-------|-----------------------|------------|-------|
| | 2015 | 2014 | Difference | 2015 | 2014 | Difference | 2015 |
| Geothermal | 1,917 | 1,917 | 0 | 1,602 | 1,607 | -5 | 1,340 |
| Hydro | 3,600 | 3,543 | 57 | 3,072 | 2,982 | 90 | 2,062 |
| Wind | 427 | 283 | 144 | 379 | 103 | 276 | 96 |
| Biomass | 220 | 130 | 90 | 147 | 81 | 66 | 70 |
| Solar | 165 | 23 | 142 | 125 | 17 | 108 | 54 |
| Total RE | 6,329 | 5,896 | 433 | 5,325 | 3,183 | 535 | 3,622 |

Table 2 - Installed, Dependable and Available Capacity 2014-2015

Source: DOE list of existing power plants as of December 2015, released March 2016.

A number of these new RE capacity additions were a product of financing from Phils SEF II. The RE projects financed by client banks (BDO and BPI since 2010) accounted for 43% of the 348 MW national RE capacity implemented under the RE Act as of April 2014. As a result of the important increase in national capacity this share dropped to 25% (281.2 MW of 1,120 MW) by December 2015. The AS that Phils SEF II provided to BPI and BDO resulted in the opening up of financing of RE and EE projects by these banks. The capacity

¹⁷ Chang, Y., Fang, Z. & Li, Y. (2016). "Renewable energy policies in promoting financing and investment among the East Asia Summit countries: Quantitative assessment and policy implications." *Energy Policy, 95,* pp. 427–436, and Marquardt, J., Steinbacher, K., & Schreurs, M. (2016). "Driving force or forced transition? The role of development cooperation in promoting energy transitions in the Philippines and Morocco", *Journal of Cleaner Production, 128,* pp. 22-33.

additions contributed to the country's goal of energy self-sufficiency and avoidance of the consumption of fossil fuels.

To what extent did the interventions cater to the needs of EE/RE borrowers?

The extension of advisory services and risk-sharing facility to FIs under Phils SEF II and corresponding capacity building and knowledge sharing with clients and service technology providers addressed some of the access to financing gaps.

While the Philippines is blessed with abundant RE resources, RE development is not easy nor is it cheap. High up-front costs and the lack of knowledge and experience among interested project developers and local FIs on these types of projects were barriers to development. While the banks have more than sufficient cash to finance sustainable energy projects, access to financing has been a problem due to these concerns. Moreover, there was also a dearth in the market for EE technology providers, which prevented the adoption of EE programs. The bankers interviewed, as well as clients and STPs, were consistent in identifying these weaknesses as deterrents for project development and the growth of the RE and EE markets.

Phils SEF II provided in-depth AS, albeit that the interventions were focused mainly on the FIs. It engaged specific technical experts on EE and RE and assigned them to partner FIs. Capacity building for clients, users and STPs were largely done through workshops and conferences. Encouraged by the newly acquired knowledge, partner banks hired their own technical consultants who deliver assistance to bank clients in order to facilitate project approvals. On the regulatory side, efforts were directed toward getting the banks and the clients to gain an understanding of government regulations, including officials of DOE, ERC, and other government agencies as resource speakers in conferences and SEF Talks. For one, Phils SEF II supported the implementation of and compliance to the National Green Building Code and other voluntary standards. For another, the Phils SEF II team was involved in the review and supported the Department of Energy's national consultation of the proposed revised Energy Efficiency and Conservation Bill. However, removal of barriers on the regulatory aspects was considered a long-term exercise that was beyond the scope of the activities of Phils SEF II. Midway in the implementation of Phils SEF II (2012), the SEF Team concentrated on Component 1, i.e., advisory services to FIs instead of Components 2 and 3. Thus, Phils SEF II was not able to deliver some of the target outputs and outcomes for end-users and STPs, or the regulatory component. To compensate, partnerships with other organizations were forged in order to maintain efforts to increase awareness of sustainable energy and regulatory policies.

To what extent has Phils SEF II fostered client buy-in and contributions?

By focusing on the top-tier banks, Phils SEF II was able to get early client buy-in.

For banks to buy-in, the SEF had to prove that what it was offering was needed and that the cost of the AS and the RSF was commensurate with the value of the services being offered. In implementing the program, IFC adopted the strategy of engaging the top-ranking banks, as these banks were likely to be willing to introduce new and innovative product offerings.

The program managed to get the buy-in of two of the largest banks, BPI and BDO Unibank, with BPI buying in on both the AS and RSF, while BDO decided to take the AS only. The buy-in from these two banks gave

Phils SEF II the high profile and branding it needed to market the program with other banks. The strong commitment of BPI showed that the bank considered Phils SEF II as highly relevant, such that they were willing to contribute additional investment to its activities. In fact, BPI extended its AS agreement with IFC three times. According to BPI officers interviewed, BPI's internal strategy incorporates environmental sustainability, so the partnership with Phils SEF II provided the opportunity to put this into practice. Phils SEF II has supported BPI in structuring environmentally-friendly projects, and open up new opportunities in their portfolio, including EE projects with ESCOs. BPI received the G-20 Award for their SE program, which boosted the bank's credibility as the leading sustainable energy financing institution and provided it with an additional \$1.2 Million to pursue this work.

Similarly, for BDO, the capacity building activities of Phils SEF II made management more comfortable with providing loans to SE projects. According to the BDO officers interviewed, the assistance of SEF technical STCs, made it easier for the bank to identify SE projects and for management to understand the EE concept in particular. With the walk-through audits, the economics of energy savings became clearer when presented to the Board. The training of senior accounts officers on risk management and updates on RE technologies heightened BDO's interest in mini-hydro and biomass projects. One of the projects BDO financed is a 20MW biomass power plant that is now on its 2nd year of operation. For smaller projects though, BDO found the RSF to be unnecessary, especially when the objective is to keep interest rates down.

Two other banks, Chinabank and BanKO accessed AS from Phils SEF II as well. However, the effort to expand the coverage of the program to MSMEs through the BanKO failed to gain ground due to the reorganization within the bank. This reduced the importance of SEF and resulted in the loss of champions within the bank. The introduction of the sustainable energy financing in BanKO, which is a telecommunications based microfinance institution (MFI), could have expanded the coverage of the SEF to include MFIs and other micro-enterprises, and enabled the program to reach the lower-income strata of the population served by MFIs.

The efforts with Chinabank also did not prosper because the bank could not commit resources, including manpower, to pursue the program. Second-tier banks that are members of the Association of Development Financing Institutions in Asia and the Pacific (ADFIAP) found the SEF II interesting. According to one interviewee, the AS would be helpful in securing management approvals. *"The IFC branding would facilitate approval by their Credit Committee, especially when management sees that proposed projects have undergone IFC scrutiny"*.

Moving forward, the challenge would be how to expand coverage of the Phils SEF II to second-tier banks, how to utilize best practices worldwide and how to develop new products, such as financing mini-grids and hybrid projects for off-grid electrification, as well as RE and EE technology applications in other sectors, such as the agriculture sector. Phils SEF II should continue its provision of AS to second-tier banks and expand this to include assistance to project developers, including, on a portfolio basis, those that are developing smaller-scale projects. Coordination with other donor agencies is important to enhance synergies and avoid overlaps and competition with each other, as well as to pool resources towards greater effectiveness.

Aside from just focusing on the technical and financial trainings with FIs, it is also very important to include engagement with other stakeholders in Phils SEF II activities, including STPs to enhance technical services

capabilities and regulatory bodies to bridge and facilitate permitting processes. As pointed out by some bank clients, regulatory compliance is more difficult compared to meeting bank fiduciary requirements. Hence, engaging government in looking at ways to improve policies and facilitate procedural processes is essential to getting the projects implemented in a more cost-effective manner.

How was the project concept generated?

The project concept for SEF in the Philippines is a replication of the program that has been successfully implemented by IFC in Eastern Europe, particularly Russia and China.

Phils SEF was implemented because the market conditions in the Philippines suited the introduction of the program. Among the conditions met were the high electricity prices and imminent power shortages, increasing interest in RE, cost-effective opportunities given the high electricity prices, a competitive banking sector seeking new areas for growth, emerging local energy service industry, and the government's policy on achieving energy self-reliance through use of RE, alternative fuels and enhancing EE and conservation programs.

Amidst the prevailing market conditions, the complexity of RE and EE project development processes, the intricacies of government rules and permitting, and a relatively limited number of banks supporting projects were driving factors in the adoption and continued implementation of Phils SEF into its second phase, Phils SEF II. This is why, aside from providing the capacity building needs of FIs in understanding RE and EE projects, Components 2 and 3 were included in the program to precisely address the need to build capacity for users, service and technology providers, as well as market awareness and regulatory advocacy.

To what extent did Phils SEF II build on from experience of SEF I?

IFC's experience in implementing Phils SEF I gave it better perspective in addressing prevailing conditions and allowed it to gain expertise to support its regional and business line strategy.

The implementation of Phils SEF II was encouraged by the relative success of Phils SEF I. The high level of interest of BPI and its continuing commitment essentially made SEF II possible. The activities that were started under Phils SEF I and carried on further under Phils SEF II enabled the program to progress and exceed its targets. Lessons from Phils SEF I showed that it was necessary to engage stakeholders more broadly in order to more effectively drive the SE market. The inclusion of Components 2 (establishing relationships with end-users and STPs) and 3 (regulatory and market awareness) in Phils SEF II were therefore designed to address earlier weaknesses, to increase projects that would require financing and to create a more conducive environment for private sector investments.

The expansion of the program under Phils SEF II enabled IFC to further build upon its regional experience and expertise to play a catalytic role in promoting EE in developing economies and RE to displace fossil fuel in energy production. It provided an opportunity for IFC to further improve on its SE lending market development model, which it has successfully implemented in Russia and China, and to test new ideas and innovations based on lessons from SEF I.

Have potential synergies between Phils SEF II and other related programs/projects been optimized?

IFC partnered with other donor agencies, DOE and local development/business organizations to promote Phils SEF II and to optimize synergies toward the advancement of sustainable energy development.

Other programs are currently being implemented in support of energy sector development in parallel with the Phils SEF II. Some of these are shown in Table 3 below.

| Name | Financed by | Purpose | | | | |
|---|---|---|--|--|--|--|
| Philippine Renewable Energy Development (PHRED) | Clean Technology Fund (CTF) | A US\$ 44million guarantee facility aiming to expand investments in EE and RE in the rural electrification sector that are less likely to obtain commercial financing | | | | |
| EU-SWITCH Philippines | EU | Promote Sustainable Consumption and Production (SCP) in 19 countries across Asia, working with both producers and consumers on the ground as well as at policy-makers in formulating and implementing of SCP-related policies. | | | | |
| Building Low Emission Alternatives to Develop Economic Resilience and Sustainability (B-LEADERS) | USAID | Strengthen the capability of the Philippine government to plan, design and implement Low Emission Development Strategies (LEDS) in order to increase climate change resilience | | | | |
| "Renewables Made in Germany" | GIZ | technical assistance to the energy sector that provides support to the Philippine Climate Change Commission in the implementation of the National Framework Strategy on Climate Change. | | | | |
| Energy For All (E4All) Initiative | Asian Development Bank | Bring together civil society, private sector, governments and other institutions to a platform of collaboration for solutions to increase energy access in the region particularly for the poor. Part of this initiative is to organize annual events, such as the Asia Clean Energy Forum, where relevant issues, new innovations and experiences in RE and EE are discussed. | | | | |
| Support to the Philippines Industrial Energy Efficient Project | United Nations Industrial Development Organization (UNIDO) | Introduce ISO 50001 energy management standards along with a system optimization approach for improvement of industrial EE. | | | | |

| Table | 3 - | Some | programs | in support | of energy | sector o | development ir | Philippines |
|-------|-----|------|----------|------------|-------------|----------|----------------|--------------------|
| | • | 00 | programs | | or cricing, | | | |

As indicated in its CCAP, the WBG will be working with others to meet its goals. Accordingly, Phils SEF II was able to achieve synergy in its efforts by working with other donor agencies and support some activities coordinated by local organizations, which eventually led to new initiatives funded by other donor organizations.

Some examples of these partnerships are:

- Partnership with WB IBRD for the promotion of its Philippine Chiller Efficiency Project as a result of this partnership, an ESCO client of BPI that was undertaking a chiller replacement project was able to also access a 15% subsidy on cost given by IBRD's Philippine Chiller EE Project.
- Cooperation with GIZ "Renewable Energy Made in Germany" on the preparation of the Net Metering Reference Guide – the Guide served to promote and facilitate the implementation of the net metering program of government through distribution utilities, such as Manila Electric

Company (MERALCO). Owners of commercial buildings and residences were encouraged to install solar facilities on their rooftops to take advantage of generating power during the daytime and selling their excess electricity to the grid.

- Participation in events organized by the ADB, such as the Asia Clean Energy Forum and Asia LEDS Workshop, where IFC promoted Phils SEF II and made presentations on "Raising Funds and Matching Financing with Projects" and "Preparing for Scaled-up Climate Financing: New Business Opportunities for Green Growth".
- Cooperation with UNIDO to promote financing to Energy Managers.

Since 2010, Phils SEF II has also worked with the European Chamber of Commerce of the Philippines (ECCP) for the annual Energy Smart programs, which promoted both EE and RE among its members and other stakeholders. It also led to a scoping study on Opportunities for High Efficiency Motors (HEMs) in Philippine Industries, which became the basis for a more in-depth program funded by EU Switch. This initiative, according to the International Copper Association (ICA), led them to the implementation of the Market Transformation Project funded by the EU also as a follow-on activity. Phils SEF II also cooperated with the Philippine Green Buildings Council (PhilGBC) to promote financing of green buildings to its members and other advocates.

Moreover, Phils SEF II actively contributed to DOE events, workshops, conferences, and stakeholder discussions. Specifically, on a periodic basis, the SEF Team organized the "SEF Talks" (topics included RE, among others) and invited either or all concerned officials of the DOE, ERC, PEMC, and others as expert resources to make presentations in these discussions about the government's plans and programs, as well as the gaps in, and opportunities for financing in the energy sector. In addition, officers and staff of IFC-SEF also made presentations about the program in various fora and events both in the Philippines and abroad. For its initiatives, Phils SEF II, together with 5 other climate-friendly investment projects around the world, was given a Momentum for Change Lighthouse Activity award by the UNFCCC in 2013¹⁸.

Have potential synergies between IFC and other development agencies/ governments/ local agencies as implementing partners been developed or being expanded?

The third objective of the Phils SEF II is to take on a convening role for regulatory improvement, and participate or lead market awareness-raising activities to create conditions for greater private sector participation. In keeping with this, it is expected that Phils SEF II worked closely and develop its relationship with other agencies as implementing partners of the program.

The opportunities to create synergies were taken up with some of the programs operating in the same RE/ EE space. Phils SEF II undertook programs to create synergies with development/government agencies, though these initiatives were not formalized. Its joint activity with the DOE did not prosper in part because

¹⁸ The Momentum for Change initiative is spearheaded by the UN Framework Convention on Climate Change secretariat to shine a light on some of the most innovative, scalable and replicable examples of what people are doing to address climate change. The Momentum for Change Awards are part of wider efforts to mobilize action and ambition as national governments work toward implementing the Paris Climate Change Agreement and the Sustainable Development Goals. More information at the UNFCCC website, available at: <u>http://unfccc.int/secretariat/momentum_for_change/items/6214.php</u> [Accessed 23 January 2017].

of IFC management advice midway through the implementation of the program to concentrate Phils SEF II activities on providing assistance to FIs.

As mentioned above, the HEMs initiative gained more ground when ICA was provided EU funding to do a follow-on Market Transformation Project. This was as a result of the HEMs Study that was supported by Phils SEF II. Today, this program is continuing and making headway in capacitating developers and service providers in undertaking EE projects. In 2011, Phils SEF II also signed an MOU with the DOE to undertake joint activities to promote RE and EE, particularly EE in government offices and LGUs. However, since attention to Component 3 was discontinued in late 2012, this collaboration was not fully maximized. The agreement was designed to implement EE projects under ESCO contracts in government buildings, especially the LGUs. An EE audit of government units was prepared for this purpose. However, the program did not materialize, due to policy issues that were not addressed, and in part due to delays or indecisions on the part of government implementers¹⁹. In particular, one policy issue concerned the use of savings for repayments of EE loans. According to government accounting rules, all savings of government agencies are to be remitted back to the government Treasury and cannot be used for loan repayment purposes. Possible solutions to this policy barrier could have been addressed had Phils SEF II not ceased to implement the Component 3 objective of "Taking on a convening role for regulatory improvement".

With respect to Phils SEF II Component 1, there are two guarantee programs by other donor agencies that are either similar or may also be tapped into to expand sustainable energy financing in the country. First, is the guarantee facility of the USAID under its Development Credit Authority Loan Portfolio Guarantee (LPG), mentioned earlier and secondly, the Local Government Unit Guarantee Corporation (LGUGC) guarantee program funded under WB's Philippine Renewable Energy Development (PHRED) Program.

Looking at the USAID-LPG facility, it is noted that this facility is not only directed to sustainable energy and environment-related projects but also covers various economic activities, such as manufacturing, health care, construction, agribusiness and tourism. The program is also partnering with local banks including Phils SEF II client-bank BPI, BPI Savings Bank, Security Bank Corporation, Philippine Business Bank, Philippine Savings Bank, and BPI Leasing to encourage funding of projects by SMEs in second-tier cities outside of Metro Manila. Considering that the USAID program is focused on SMEs, there appears to be an opportunity for more synergy between the two programs. However, for Phils SEF II partner banks, it means the cost of RSF is high compared to the cheaper guarantee facility provided by the USAID program²⁰.

There is also a synergy between the LGUGC guarantee funded under WB PHRED and Phils SEF II. The LGUGC guarantee specifically covers LGUs and electricity cooperatives that otherwise could not get financing from FIs while Phils SEF II has been designed for private sector financing. Coordination with these other agencies would be necessary.

2.2. Efficiency

Efficiency measures the qualitative and quantitative outputs in relation to the inputs, and examines whether resources have been used in the least costly way to in order to achieve the desired outputs. Table

¹⁹ This refers to the case of the Malacanang project, which encountered delays due to initial project structuring issues and later to the desire to make the project fail-proof. In the process, the people who initiated the projects lost track of project progress.

²⁰ USAID guarantee fee amounted to 0.75% as per information gathered from interviews with some clients.

4 below shows a selected list of outputs achieved by the program per component at mid-term and at the end of the program.

| Component | Targets | | Accomplishments | | Achievement | | |
|--|-------------|---------------------------|------------------|-------|--------------------|--|--|
| Year | 2009 - 2012 | 2009 - 2015 Revised | Mid-term 2012 | 2105 | Actual / target | | |
| 1 - Advisory Services to FI Partners | | | | | | | |
| No. of entities receiving AS | 160 | 250 | 188 | 470 | 188% | | |
| No. of entities receiving in-depth AS | 4 | 4 | 4 | 4 | 100% | | |
| No. of procedures/policies/practices/standards proposed for improvement or eliminations | 8 | 10 | 5 | 24 | 240% | | |
| No. of Trainings modules and new products | | 20 | 14 | 29 | 145% | | |
| No. of workshops, training events, seminars, conferences, etc. | 24 | 40 | | 94 | 235% | | |
| No. of participants in workshops, training events seminars, conferences, etc. | 480 | 900 | | 2,378 | 264% | | |
| No. of women participants in workshops, training events, seminars, conferences, etc. | 192 | 360 | | 962 | 267% | | |
| No. of new financial products designed | 10 | 10 | 5 | 10 | 100% | | |
| 2 - Support to Service/Technology Providers and Clients | | | | | | | |
| No. of entities receiving in-depth AS | 12 | 12 | 12 | 3 | 25% | | |
| No. of training modules and new products developed | 20 | 20 | | 21 | 105% | | |
| No. of workshops, trainings events, seminars, conferences, etc. | 6 | 18 | | 21 | 117% | | |
| No. of participants in workshops, training events seminars, conferences, etc. | 120 | 500 | | 1359 | 272% | | |
| No. of partnerships brokered between ESTP and Fls | 8 | 15 | | 10 | 67% | | |
| 3 - Market Awareness and Regulatory Advocacy | | | | | | | |
| No. of training modules and new products developed | 20 | 21 | 13 | 41 | 195% | | |
| No. of workshops, training events, seminars, conferences, etc. | 6 | 20 | | 28 | 140% | | |
| No. of participants in workshops, training events seminars, conferences, etc. | 360 | 800 | | 2,956 | 370% | | |
| No. of media appearances | 15 | 120 | 115 | 207 | 173% | | |
| No. of procedures/firm-level policies/ practices/ standards recommended for improvement or elimination | 2 | 2 | | 1 | 50% | | |

Source: Phils SEF II Advisory Services Completion Report (Draft for Review).

The 2011 revised targets aimed to improve participation in workshops and training events. Looking at the 2015 data, market awareness workshops, conferences, etc. supported by Phils SEF II reached on average 25
participants per session delivered to FIs, 46 per session provided to STPs and over 100 per session on general market awareness and regulatory advocacy. SEF Talks were also initiated as part of the capacity and awareness building activities concerning government policies and rules, covering FiTs, updates on the services of technology providers, and relevant topics, including sustainability and climate change finance, green building regulations and climate risk mitigation.

The Evaluation Questions are discussed below.

What was the quality of the outputs?

The quality of outputs has improved since Phils SEF I in terms of the identification of appropriate projects, financial processing, and the performance of supported projects.

Financing of RE and EE projects in the private sector in the Philippines was relatively new when Phils SEF II started. The AS and the awareness activities that Phils SEF II provided clearly led to the *identification of appropriate projects that partner FIs would support*, based on the technical feasibility of these projects that the account officers were unable to assess. During interviews, BPI confirmed that they felt more comfortable issuing loans to these types of projects when making use of the AS.

During the collaboration between the SEF Team and the FIs, ten financial products were launched as shown in Table 5, helping to improve the quality and processing speed of loan agreements. However, three of these products were developed for BanKO, and therefore not used.

| Period | Financial product |
|--------------------|---|
| July - Dec 2009 | BPI: EE Leasing (rarely used due to few leasing transactions) |
| | BPI: EE Term Loan |
| | BPI: RE Term Loan |
| Jan - June 2010 | BDO: EE Financing |
| | BDO: RE Financing |
| July- Dec 2012 | BanKO: Greening the Partners |
| | BanKO: Institutional Loan |
| | BanKO: BanKO Retail |
| | BPI: EPC lending model for further refining moving forward (rarely used due |
| | to very few EPC transactions) |
| Jan 2015-June 2015 | BPI: Solar Financing Models |

Table 5 - The 10 financial products developed through Phils SEF II AS

Source: SEF Team information.

With the support of the AS, risky loans were filtered out and the quality of applications being accepted was improved. The RSF provided an additional layer of security for FIs to lend to the emerging RE/ EE projects. Using the RSF, an individual loan did not require explicit prior approval from the Investment Service Team handling the (SEF II) RSF; as long as the eligibility criteria were respected, the loan could be processed and the FI would report on the loan to the SEF Team. The RSF was only used by BPI, and based on the sample of accounts and account officers interviewed, the RSF did not lead to any changes in BPI's lending practice and requirements. The loan tenor remained relatively short based on the type of projects (e.g., 5 years plus 2 years grace period) as opposed to the ideal 10-year repayment period preferred by the client. Even using the RSF, the collateral requirements remained the same, thus passing on the RSF cost to the end user.

However, the application of the risk sharing mechanism requires that the FI first exhaust all means for recovering the loss, before the guarantee is called. By applying the criteria for the provision of loans prescribed under the Phils SEF II Risk Sharing Agreement (RSA), the FI mitigates the risk of default. By the time of the Final Evaluation there were only 5 accounts that had defaulted out of the 193 loans provided.

With respect to the performance of supported projects, the technical STCs who were introduced under Phils SEF II have helped assess the feasibility of the proposed investment projects. In principle, this screening would improve the selection of projects to include those that are technically well performing. However, due to the few sustainable energy projects that were financed under SEF I, it is difficult to assess the effect of this technical input between SEF I and SEF II. Interviews with the technical STCs providing the AS confirmed that clients of the FIs have realized the advantage of SEF's presence before, during, and after the project implementation. The SEF technical STCs' observations have, for example, provided the client with the basis on which to negotiate with a developer, e.g., negotiating an energy performance contract in terms of pricing, scope of works, things to consider during construction, and after sales support.

To what extent have resources been well used in achieving outputs and outcomes?

In terms of what has been achieved, the resources have been well used in achieving outputs and outcomes.

It is important to examine the relationship between costs and the results achieved, thus the costeffectiveness or value for money of the SEF program. The mid-term evaluation found that the value for money of Phils SEF II had definitely improved with the inclusion of two additional banks and "the start of the in-depth advisory relationship with these banks, and the efficiency (relation between input and output) can further move into positive territory". As shown in Table 6 below the number of staff supporting the program has been reduced over the years, while the number of loans and the loan amount has risen in that same period, despite the later withdrawal of the two banks that had been included.

| Staff type / number* | 2009 | 2010 | 2011 (1 st half) | 2011 (2 nd half) | 2012 | 2013 | 2014 | 2015 |
|---------------------------------|--------------|--------------|--------------------------------|-----------------------------------|--------------|--------------|--------------|--------------|
| Program Manager | 1 | 1 | | | | | | |
| Regional Specialist | | | | | 1 | 1 | | |
| Operations Officer | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 |
| Communications Associate/ | 1 | | | | | | | |
| STT | | | | | | | | |
| Operations Analyst | | | | 1 | 1 | 1 | 1 | 1 |
| Program Assistant | | 1 | 1 | | | | | |
| Team Assistant | 1 | | | | | | | |
| Use of temporary Staff Admin. | | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| Support | | | | | | | | |
| Use of EE/RE STCs | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| Total number of full time staff | 5 | 4 | 3 | 3 | 3 | 3 | 2 | 2 |

Table 6 - Development of Phils SEF II staff resources in relation to outputs

| | 2009 | 2010 | 2011 (1 st half) | 2011 (2 nd half) | 2012 | 2013 | 2014 | 2015 |
|---|------|-------|--------------------------------|-----------------------------------|-------|-------|-------|-------|
| Number of loans*** | | 13 | 5 | 10 | 20 | 39 | 45 | 46 |
| Loan size (million US\$)** | | 23.3 | 4.4 | 61.1 | 101.0 | 184.7 | 85.1 | 386.8 |
| No. of AS provided to FIs** | | 57 | 39 | 29 | 63 | 92 | 104 | 86 |
| Consultant services expenditure (1.000 US\$)** | | 162.2 | 28.9 | 98.4 | 95.9 | 228.7 | 136.1 | 110.9 |

expenditure (1)000 00;

Data sources: * End of project power point presentation by SEF Team.

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The inverse relationship between the number of SEF staff and loans issued may signify increased engagement from BDO and BPI, increasingly having the confidence to lend without requiring additional input from the SEF Team. It may also reflect the focus of the AS to the FIs. The number of AS provided actually increases steadily over the years, with a maximum in 2014, as shown in Figure 3 below. The expenditure on consultancy services, which includes the technical STCs, reaches a maximum in 2013, after which it decreases, whereas loan size increased substantially in 2015 due to three quite large projects - one geothermal and two large solar PV projects. The huge increase in loan sizes in 2014-15 also reflects the approval of the FiT rates in 2014. This explains the major increase in the financing of RE projects despite the pronouncement of the 'first come, first served' policy. Regardless of the size of the loan, the extent of the AS provided to assess the project does not alter significantly.

Figure 3 - Development in resources and outputs



Source: See Table 6.

Table 7 and Table 8 below include the financial status at mid-term, as well as towards the end of the project, and looks at the cumulative expenditure at that time. The most important targets have been overachieved and cumulative spending remained lower than budgeted.

Table 7 - SEF expenditure per cost category

| Program Cost in US\$ | Budget December 2015 | Cumulative expenditure June 2012 | Cumulative expenditure December 2015 | Cumulative expenditure / Budget in % |
|-------------------------|-------------------------|--|--|--|
| Staff Cost | 1,271,082 | 436,361 | 1,236,201 | 97% |
| Consultants | 1,138,456 | 342,572 | 861,125 | 76% |
| Travel | 278,847 | 104,819 | 274,298 | 98% |
| Contractual / Others | 544,732 | 157,076 | 532,838 | 98% |
| Total | 3,233,117 | 1,040,838 | 2,904,362 | 90% |

Table 8 - Outcome in relation to budget

| Outcome Indicators | Target | Total budget US\$/unit | Achievement | Total expenditure US\$/unit |
|---|---------|---------------------------|-------------|--------------------------------|
| Projects funded (number of) | 80 | 40,413.96 | 193 | 15,048.51 |
| Outcome of projects funded – ton equiv. GHG reduction/ year | 600,000 | 5.39 | 2,083,710 | 1.39 |
| Outcome of RE projects funded – MWh /year | 350,000 | 9.24 | 3,831,939 | 0.07 |
| Energy use avoided (MWh/year) | 77,536 | 41.70 | 188,292 | 15.42 |

As shown in Table 8 - above, the SEF costs per unit achieved are clearly below budgeted costs. Despite an estimated SEF cost (AS) of over US\$ 5 per ton of GHG emission reductions, the actual result was US\$ 1.39, given that the GHG emission reductions were three times higher than expected. The final evaluation of the similar IFC program in Central and Easter Europe, CEEF, assessed that the cost of administration and technical assistance was US\$ 2.5 per ton of CO₂ reduction²¹.

Only three quarters of the budget for Consultants was spent. In view of the limited SEF team resources, consultants could have been used to provide more services within Component 2 and 3, in order to establish relationships with STPs and to encourage regulatory improvement and awareness.

Have links with SEF global resources been leveraged?

Links with SEF global resources have only been leveraged to some extent.

Phils SEF was designed on the basis of experience from similar IFC programs in other countries, but adapted to the local context. There is clearly an exchange of knowledge between the different SEF teams or individual SEF staff members in the market. According to the SEF Project Supervision Report (PSR) #3, learning from the Phils SEF experience, assistance has been provided by the SEF Team in the development of SEF programs in Indonesia and Vietnam, as well as the Climate Change Investment Program in Africa. The SEF Team has also been invited to speak about SEF at various international conferences and meetings. Furthermore, one IFC officer commented on the micro-SEF model for BanKO, which could be applied in countries such as Cambodia where energy costs are high and the microfinance sector strong.

²¹ Danish Energy Management. (2010). *Final Process and Impact Evaluation - Commercializing Energy Efficiency Finance (CEEF) and Hungary Energy Efficiency Co-Financing Program (HEECP).*

Similarly, former Phils SEF team members transferred to Vietnam and Indonesia. However, in view of the staff constraints in Manila, although the local team has engaged global and regional experts, the ability to draw on regional or global SEF resources was lower than expected²².

Tools have been developed by the SEF Team or at a global level that are being put to use. An example is the CAFI tool, which was developed the IFC in Washington and rolled out to the regions. The CAFI tool is used to report the targets and indicators on kWh generated and saved, as well as GHG emissions avoided or reduced. Another global resource being used locally is the EDGE Green Buildings Tool and Standards.

Considering the costs and results, to what extent has Phils SEF II provided value for money?

Considering the costs and results, the Phils SEF II has provided value for money.

Considering the costs of the AS, the AS has contributed to the provision of 193 loans, of an average amount of US\$ 4.8 million. The partner FIs contributed US\$ 538,498 to the AS, in the form of cash, in-kind contributions and parallel contributions. Their cash contribution amounted to US\$ 168,348, thus on average less than US\$ 900 per loan towards assessing the risk and feasibility, providing the FI with a degree of assurance about the technical feasibility of the proposed project²³. Currently, both BPI and BDO would like the AS to continue, but in another form²⁴. BPI has expressed that they have now reached the level of maturity needed to be able to assess potential investment projects and provide the loans without the support of the AS.

The AS provided to the partner banks have in some cases benefited project proponents that have been approached by competing banks and offered a loan on better terms based on the fact that the SEF technical STCs have evaluated the project proposals under the SEF program. This still achieves the objectives of the SEF, namely RE energy production, energy savings, and GHG emission reductions, although it cannot be counted for within the Phils SEF II outcome target indicators.

Although the SEF Team has tried to involve other banks by engaging them on the potential benefits of joining the SEF program, only very few major banks engaged the SEF Advisory Services. Of the four FIs participating, BDO and Chinabank belong to the same group as do BPI and BanKO.

Chinabank had negotiated a "SEF Light" agreement, a modified version of the full AS with much lower fees, and limited training for the bank's core team who would then convey the knowledge on sustainable energy finance to other bank staff. A lesson learned noted in the PSR is that this SEF Light agreement clearly did not work. The interaction was limited to the bank's core team who did not work full time on the SEF; this limited the time they spent on teaching their colleagues about SEF; the low financial commitment may have

²² Under SEF II, Global and regional experts have been engaged by the local team, namely: (1) Prashant Kapoor and Autif Sayyed, the Global and Regional Green Building Specialists, respectively; (2) Guido Agostinelli, the Senior Industry Specialist (Global Solar Specialist); Quyen Thuc Nguyen and Gursimran Rooprai of the Global SEF; (4) William Beloe, the Asia Climate Finance Hub Lead.

²³ Information provided by the SEF team.

²⁴ BPI states that they would now be able to hire in their own technical consultants when needed. They have appreciated being able to use the IFC brand, which is why they may wish to continue. BPI furthermore expresses that they would like to include more than EE and RE. This may not be within the framework of sustainable energy financing, though.

reduced the level of motivation within the bank to get value for the money; and finally the way potential clients were examined. The bank's core team had made a list of pre-selected clients who, when the SEF Team did the screening, were liquid and did not need financing. Therefore, it seems important that the SEF Team or sustainable energy consultants have a role in developing the FIs pipeline.

Could the results have been achieved with fewer resources without reducing the quality and quantity?

Some of the results that were expected as measured by the indicators were not achieved. With respect to Component 2 – Engagement with End-users and Technology Providers, the first two targets on the in-depth AS to ESTP, as well as the participants' partnership were not fully achieved.

Regarding Component 3 – Market Awareness and Regulatory Environment, one of the important targets on the regulatory environment, namely the number of procedures/ policies/ practices/standards proposed for improvement or elimination, was not fully achieved, also because the decision was taken to put less effort into this component.

The SEF Talks targeted a smaller audience than a large forum but the SEF Team found that the results were better and it provided greater insights for the participants who were more active during the discussions. However, this does require a greater commitment of resources if the same number of participants is to be reached.

As already mentioned, the procedures are efficient with respect to the RSF using a portfolio approach, which does not necessitate individual IFC approval of each loan at headquarter level, but can be done at partner bank level. This has been a significant improvement in the procedures used since the first IFC EE and RE financing mechanisms were launched, such as the CEEF in Central and Eastern Europe, where the portfolio approach was only introduced with a few of the 14 participating FIs.

From a bank's perspective, the "SEF Light" agreement demonstrated that an agreement requiring a lower financial expenditure on the AS, as well as less input in human resources from the FI, lowered the FI involvement, commitment, and ability to spread the knowledge acquired in the FI to the colleagues, thus spending fewer resources did not lead to the expected outputs. BDO and BPI on the other hand faced increasing expenditures on the AS in their re-signed agreements with Phils SEF II, but continued to show willingness to pay for the AS, in light of the outputs they achieved.

The conclusion is therefore in line with the MTR finding: "given the program's dependency on decisions and actions by its partners and in view of IFC's cost structure, it would have been difficult to achieve the outputs at a substantially lower cost".

What could have been done to improve efficiency?

Sufficient human resources may have ensured that activities within all Phils SEF II components were implemented.

When SEF AS was aligned with the Financial Institutions Group, Phils SEF II staff focused on Component 1 during the remaining period, although it is clear that the three components were designed to complement one another to ensure maximum effectiveness and impact. A mitigation measure was to try to enhance the use of regional IFC resources. This was, however, done to a very limited extent in practice. The AS provided

by the technical STCs continued to be carried out, financed through a separate budget line. However, the partner FIs were worried that confidential information would be shared with competitors if technical STCs were participating in internal meetings, or had access to information regarding the bank's clients or the bank's portfolio. Therefore, there were some limits to the use of the technical consultants, which reduced the value they could add. The SEF Team managed to reassure partner FIs that the technical consultants would not share any information, and that they were bound to observe and abide by the confidentiality agreement laid out in the contract that the technical STC has signed with Phils SEF II.

To what extent has risk been well managed?

Risks were properly assessed, but seemed to remain on a list of identified issues and mitigation measures, without active follow up and assessment of the effectiveness of the mitigation measures taken.

The SEF Team has continually identified key risks/issues and assessed the measures to mitigate those risks. Each PSR contained a section on issues as well as the corrective actions identified. They included some of the risk areas mentioned in Table 9:

| Risk area | Risk | Mitigation measure identified | Assessment of risk management (1: Risk was managed – 5: Risk was not managed) ²⁵ |
|---|--|--|---|
| Policy risks | A complex energy sector structure | Working with DOE officials to ensure continuity | [5]: Component 3 was reduced, so the outcome was limited |
| | Unclear rules and regulations for the RE law | Seeking to help DOE with a simplification of RE registration, licensing and permitting | [5]: Component 3 was reduced, so the outcome was limited |
| Economic risks | Slow economic growth | SEF Team engages with ESTPs to demonstrate the business case of SE | [2]: There have been continued awareness creation events to demonstrate the business case |
| Credit risks and Financial Institution partners | Fls continue to be risk averse | Engagement to show the benefits of a risk sharing product | [4]: Little outcome, given that only BPI had used it |
| SE Project Deal-flow | Sufficient number of projects to meet targets | Engaging with ESTPs and provide AS to ensure sufficient deal flow to FIs | [3]: It seems that the FIs have been able to create their own pipeline |
| Lack of EE and RE experts | Growing number of partners, needing more experts | Continuous work on identification of experienced consultants and work on capacitating consultants | [3]: The training work to capacitate consultants was discontinued in 2013 with the change in focus to only FIs. SEF Team assessed that other entities were able to |

| Table 9 - SEF Team identification of pr | imary risks and risk mitigation me | easures, and how it was managed. |
|---|------------------------------------|----------------------------------|
|---|------------------------------------|----------------------------------|

²⁵ Assessment made by the Final Evaluation Team.

| Risk area | Risk | Mitigation measure identified | Assessment of risk management (1: Risk was managed – 5: Risk was not managed) ²⁵ |
|----------------------------------|--|--|---|
| | | | more effectively provide this training ²⁶ |
| IFC Staff Policies and Hiring | Lack of staff to implement SEF activities | Looking for regional and global IFC personnel to help | [5]: Regional and global IFC personnel have been able to help to a limited extent. Therefore, a management decision was taken to reduce efforts on two of the three components |
| AS to new FIs | Perception in market that BPI and BDO already dominates the market leaving no more room for other FIs to build SE portfolio | Discussions with other FIs to convince them that there is sufficient room for more FIs in the SE market | [5]: It is continually stated that discussions are taking place with other FIs, but no other FIs are effectively involved as partners. The main reason being the cost of the AS |
| Shareholder risk | IFC as shareholder of BDO could not provide guarantee to BDO | Requesting Philippine Central Bank to change its policy | [3]: This was effected after over a year, but finally BDO decided not to use the RSF |

Source: Project Supervision Reports.

Complementing the emphasis on the need to invest in EE and RE in the Climate Change Law, the Renewable Energy Law has provided incentives and certainty for the private sector to invest in EE and RE. However, the implementing rules and regulations for the RE Law were not very clear on the details of each of the provisions, particularly those pertaining to the Renewable Portfolio Standards, FiTs, and net metering. This led most of the RE investors to wait for these provisions to be elucidated before proceeding with their investments. The SEF Team has discussed a Cooperation Agreement with the DOE covering the simplification of RE registration, licensing and permitting, development of an EE policy note, an information, education and communication campaign for sustainable energy, and development of contract templates. The ability of the SEF Team to support the government in the policy concerns was limited by their greater focus on FIs.

The risk 'Lack of EE and RE experts', which arose due to the growing number of projects that required support, could have been dealt with by setting up standard tools to reduce the workload, such as the CAFI tool introduced in 2014 to assess projects. Some Excel[®] sheets were developed early on to assess RE and EE projects. To mitigate the risk on "Delivery of AS to new FIs" (the fear of market saturation as perceived by the other non-SEF client FIs) the SEF Team sought to engage other FIs in discussions. This was described in a number of PSRs, but it did not lead to any more FIs joining; the main reason for this being that the new FIs were not able or willing to cover the cost of the AS.

²⁶ This includes training of energy managers for ISO 50001 (Energy Management) through the ASEAN Energy Management Scheme (AEMAS) funded under the European Union (EU)-Switch Asia Program through the ASEAN Centre for Energy (ACE) and in collaboration with the Energy Efficiency Practitioners Association of the Philippines (ENPAP). Furthermore, the HEMs project offered technical training to efficiency motors applications.

Was the M&E system appropriate and well managed?

The M&E of the internal output targets seems to be appropriate and well managed, and the data series is consistent. The use of the CAFI tool allows developing consistent and reliable data. The M&E of the outcome targets is more difficult to manage revealed by inconsistencies in the data.

The M&E system incorporates the internal output targets on AS, awareness events, etc., as well as the outcome targets on loan amounts, energy savings, energy production and GHG-emission reductions. The provision of data for outcome monitoring is largely dependent on external partners. Monitoring is performed by the SEF Team every 6 months and involves client surveys of the partner banks, and includes measures of satisfaction with the services provided by the SEF Team and suggestions for improvement. Training involved basic EE/RE training, how to use the tools, and how GHG emission reductions could be achieved by reducing overall energy consumption and/or RE generated.

Initially, the entire loan amount was recorded. As part of the introduction of the CAFI tool in mid-2014, the M&E system recorded only the EE/RE component of the loan. This facilitated the interpretation of the data to contrast the GHG emission reductions to the RE/EE component of the loan amount. In 2010, the SEF management team highlighted the need to look into why GHG savings were lower than expected while lending was higher than expected²⁷. However, the decision only to count the EE / RE component of the loan was not taken until 2014.

Furthermore, in 2015, a new type of projects named Special Climate projects was introduced as part of the Phils SEF II. Although they are recognized to have a climate-related impact, there is no methodology to compute the GHG emission reductions. Consequently, a larger volume of loans was recorded without reporting the related GHG emission reductions.

The monitoring of outcomes is not performed on an ongoing basis. The figures that are reported are ex ante figures that are calculated based on the CAFI tool, which ensures quality data. However, these figures are not updated during project implementation, and there is no requirement to verify ex ante figures for energy savings and related GHG emissions once the project has been implemented. The GHG emissions reductions that are calculated are based on scenarios and projections, and include assumptions that are never tested. An example is a green building project developed by Italpinas Eurasian Design and Eco-development Corp where an underlying assumption was apartment owners would install equipment, such as air conditioners, of a specified efficiency. Using the EDGE tool, the reductions in energy and water consumptions as well as the embodied energy in building materials are computed based on the base building design and improved case (which incorporates EE, water efficiency, and building material features), assuming a typical occupancy and utility use patterns. There is no certainty that equipment with the expected efficiency will actually be installed by the apartment owners. Actual electricity savings and GHG emissions reductions are based on the testimony of the owners and are not verified through more in-depth studies or simple measurements.

Most of the data needed for M&E are collected from partner FIs, therefore it is important that they understand the value of data collection and that IFC and the partner FIs share a common understanding of

²⁷ IFC. (2010). *Project Supervision Report No. 3*.

the indicators and the terminologies used. It was mentioned in the PSR #6 that significant effort was invested in ironing out data discrepancies due to the lack of clarity of indicator definitions (e.g., classifying "energy saved/energy use avoided" and "energy produced", loans disbursed vs. approved, etc.). There is also a lack of clarity between the bank and the SEF Team as to what energy-related data must be accounted for. It was noted in PSR #7 that the IFC needs to formulate clear guidance and standards to define what project data must be tracked. According to the SEF Team, under Phils SEF II, data gathered from the banks (from the M&E exercise) have undergone stricter quality assurance.

How well did Phils SEF II communicate with and involve donors and other stakeholders?

The extent of communication and involvement with donors and other stakeholders was limited and considerably reduced due to the decision to decrease efforts on Component 3.

The extent of relations with other donors seems to have been limited. As stated in the section on relevance, two other programs with guarantee facilities have been put in place in the Philippines: the USAID Loan Portfolio Guarantee for SMEs, and the LGUGC guarantee program, funded under the World Banks PHRED program. There appears to be some complementarity with the former, which is directed at SMEs, and some synergies with the latter, directed at government units and non-profit cooperatives. The extent of communication and involvement between the three programs seems to have been limited.

The collaboration with the ECCP allowed the SEF Team to engage with potential clients and partner banks at the regular fora, but to a lesser extent other donors and stakeholders.

To the extent that the Philippine stakeholders, such as the DOE, would find it useful to coordinate efforts and encourage knowledge sharing among donors, they may initiate joint workshops, e.g., at a threemonthly basis. This could be very useful and create possible synergies within SE project financing. The SEF could possibly facilitate some of these workshops. However, it would be appropriate that the initiative is made by DOE in order to encourage ownership.

2.3. Effectiveness

Effectiveness measures the extent to which the program attains its objectives.

What were the intended outcomes of Phils SEF II and to what extent have intended outcomes been achieved?

The intended outcome in terms of an increase in the lending portfolio for RE and EE projects, both in number and value, has been largely exceeded. Almost 200 projects have been identified to receive loans, against a target of 80, and the value of lending is over seven times higher than the US\$ 120 million target. This achievement contributes to project developers implementing SE projects. Although a large number of EE projects have been financed, they tend to be smaller in magnitude, although this would be expected due to the capital investment required to establish RE generation capacity.

The Theory of Change for Phils SEF II presented in Section 1.5 describes the expected outcomes and the short- and long-term impact of the AS and the RSF. Briefly, Phils SEF II is expected to contribute to the development and diversification of the financial sector (Impact) by assisting in the development of new

markets and product lines in sustainable energy finance with significant growth potential (Outcome). This in turn will continue to have a positive demonstration effect on the commercial mainstreaming of RE/EE finance among other commercial banks.

The Theory of Change therefore points to the following two outcomes which are detailed below:

- FIs' RE and EE portfolio increased (measured in value and projects).
- End-users and STPs implement sustainable energy projects (measured in value and projects).

The outcome indicators for Phils SEF II are spread over the three components. The outcome indicators for AS to Partner FIs have been overachieved as shown in Table 10. The most significant achievements are the number of loans disbursed, the loan volume, the number of procedures that were improved, and the number of participants that report to use project tools and materials in their work, which exceeded expectations significantly. 193 projects were financed by BPI and BDO, totaling US\$ 3.016 Billion.

| Component | I | argets | Acc | omplishments | Achievement |
|--|-----------------|----------------------|-----------------------|--------------|---------------|
| Year | 2009-2012 | 2009-2015 Revised | Mid- term* 2012 | 2015** | Actual/target |
| 1 - Advisory Services to FI P | artners | | | | |
| No. of projects identified that received financing | 80 | 80 | 50 | 193 | 241% |
| No. of SEF loans disbursed | | 80 | 48 | 193 | 241% |
| Value of SEF loans disbursed (million US\$) | 60 | 120 | 178 | 880 | 733% |
| No. of entities that implemented recommended changes | | 6 | 3 | 11 | 183% |
| No. of procedures/ policies/ practices/ standards that were improved/eliminated | | 10 | 5 | 18 | 180% |
| No. of new financial products launched | 3-4 | 10 | 5 | 10 | 100% |
| No. of participants reported to use project tools and materials in their work | | 400 | | 978 | 245% |
| 2 - Support to Service/Tech | nology Provider | s and Clients | | | |
| No. of clients that received audit/training/consultancy from service providers | 100 | 100 | 4 | 10 | 10% |
| 3 - Market Awareness and | Regulatory Advo | сасу | | | |
| No. of entities that implemented recommended changes | 2 | 3 | | 3 | 100% |

Table 10 - Phils SEF II Selected Outcomes by Component

| Component | 1 | Targets | Acco | omplishments | Achievement |
|--|-----------|----------------------|-----------------------|--------------|---------------|
| Year | 2009-2012 | 2009-2015 Revised | Mid- term* 2012 | 2015** | Actual/target |
| No. of recommended procedures/ firm level policies/practices/ standards that were improved or eliminated | 2 | 2 | | 2 | 100% |

Source: * Advisory Services Q4 Supervision Report. ** Completion Report (Draft for Review).

With respect to engagement with end-users and STPs, the number of clients that received audit training / consultancy services by service providers was only a fraction of what had been expected, namely 10%. Finally, on Market Awareness and Regulatory Engagement, outcomes have been reached, as shown by the entities that implemented recommended changes, as well as the number of recommended procedures/ policies/ practices/ standards that were improved or eliminated.

Given the experiences of partnering with BDO and BPI, the outcome has been partially achieved. The development and diversification of the financial sector into RE and EE lending have not manifested across the banking sector and cannot be directly attributed to Phils SEF II. During Phils SEF II, the SEF team has been in discussions with or approached 9 second-tier banks for exploring the possibilities of joining the Phils SEF II but did not push through, primarily due to lack of ability to commit internal resources, and high advisory fees²⁸. It could be considered by the SEF team to renew negotiations with the FIs that found the advisory fees to be too high, by proposing a 'SEF Light' agreement with lower cost, but stronger obligations for the FIs to commit sufficient staff resources, and to consider SEF Team recommendations in the development of the pipeline.

Other FIs, such as Philippine Bank of Commerce said during the interviews that they were not aware of the Phils SEF program, but it seems it would be relevant exploring a possible agreement with a future SEF. Philippine Banking Communications was not aware of the program and is just about to begin considering RE and / or EE projects on their own initiative. Other large banks (e.g., Philippine National Bank) have individually developed their own RE portfolio as a result of the passing of the RE Law; this was done without participating in the awareness activities²⁹. Therefore, for the mid-size to large FIs, there appears to have been an autonomous move towards incorporating RE and EE products, partly driven by the change of legislation. Smaller banks (e.g., Optimum Development Bank) have not given consideration to integrating RE and/or EE in their projects portfolios despite the potential for smaller-scale, low-carbon projects, such as the EE renovations of housing or installation of solar home systems.

²⁸ There were discussions with Metrobank, Union Bank, Security Bank, Plantersbank, RCBC, and CARD Bank up until mid 2012. In 2014 and beginning of 2015 One Network Bank, PR Savings Bank, and RCBC Savings Bank were approached. None of these led to any agreements.

²⁹ Some banks did participate in the SEF-Talks, which were smaller events to initiate awareness.

The outcome of developing new markets and product lines in sustainable finance has also partially been achieved. BPI and BDO have mature RE and/or EE financial products. For BPI, the RSF was not necessary as it did not improve the affordability and accessibility of financing; in fact, it simply added to the layers of additional financing costs and failed to motivate the prolongation of the loan tenor (e.g., from 5 years to 10 years)³⁰. This was confirmed during interviews with bank clients who said that they had not obtained a longer tenor than they otherwise would have.

What unintended outcomes (positive and negative) have occurred?

General awareness about FI participation in climate change mitigation or climate finance seems to have increased.

One unintended outcome is the exclusion of other private sector players from participating in the AS program. Most notable was the omission of one of the top 5 banks in the Philippines (Philippine National Bank) from the Phils SEF II program. Another unintended outcome from the FI being convinced to participate in the SEF program may be the continued dependence on the IFC brand to encourage trust.

Are the achieved project outcomes commensurate with the project objectives?

The significant project achievements that significantly exceed defined targets provide a clear indication that the project objective of strengthening the capacity of FIs in developing and managing a sustainable energy portfolio was reached.

The project objective is "to strengthen the capacity of partner Financial Institutions (FIs) in developing and managing the SE portfolio; and assist end-users, service and technology providers in implementing SE projects." The outcomes are commensurate with the project objectives. Firstly, the US dollar value of loans disbursed is over 7 times the target of US\$ 120 million, strongly indicating that the capacity of partner FIs has increased with respect to their lending activities to SE investments; likewise, the implementers of RE/EE projects who were recipients of such financing also confirmed themselves to be financially worthy borrowers, capable of securing a line of credit from reputable commercial banks like BPI and BDO.

To what extent is the design of the project able to facilitate the development of the market?

The design of Phils SEF II envisaged the development of the market through full participation of at least 4 FIs, established relationship between FIs and 15 ESTPs to increase number of projects, and at least 2 procedures/firm-level policies/practices/standards recommended for improvement or elimination. The two FIs that participated in and made use of the SEF II program have been able to contribute significantly to the increase in market lending to RE and EE projects. Due to the limited contribution to the regulatory engagement component, the non-participation of other important FIs, and the lower number of relationships that were brokered between ESTPs and FIs, the extent to which the market has been developed is however limited.

³⁰ Only one FI used the RSF. The clients interviewed appeared not to have been aware that the RSF had been used by the FI to share the risk. It is clear that the clients had got access to loan financing, which they otherwise may not have had, however they clearly indicated that they had not obtained a lower interest rate, nor a loan of longer tenor than they would otherwise have had.

The AS was designed to provide technical capacity to FIs, technology developers, and suppliers. It was used to support internal decision-making within the banks, especially on the technical aspects of the RE/EE projects. Although the participating FIs did share their positive experiences with other banks during SEF awareness events, the extent to which they would share their specific business strategy and approach was limited, making any knock-on effect in the market almost negligible. However, other FIs noticing the involvement of BPI and BDO being market leaders in SE financing has helped develop their perception of SE financing. The evaluation shows that the AS has a significant effect on the market development of RE/EE but only for the limited client base. Both BPI and BDO are progressively independent of the AS as they gain more experience in developing a SE portfolio.

The two figures below show the distribution between EE, RE and Special Climate SEF loans in number and in loan volume.







Source: Phils SEF II NEW Monitoring Master file.

Despite the significant number of loans to EE projects (115 EE loans compared to 54 RE loans, and only 24 loans to Special Climate projects), the value of lending showed the inverse pattern: US\$ 580 million was committed in RE loans, US\$ 230 million to EE loans, and US\$ 67 million to Special Climate projects.

The RSF reduces the risk borne by the bank so that bankable EE/RE projects that would otherwise not be financed due to the proponent's lack of collateral. BDO has expressed that they had no need for the RSF, as they only consider the financial viability of the project. However, BPI regards the RSF as necessary for lending to new clients. BPI still has the larger share of the market in terms of the number of clients. On the other hand, BDO has few but substantial loan volume, indicating a less risk-averse loan policy.

There is now some autonomous momentum within the SE financing market. The Philippines National Bank has independently established an SE portfolio. Philippine Banking Communication is beginning to explore RE market development; and Optimum Development Bank is just beginning to explore whether SE products can be integrated in their own market niche, in real estate development.

2.4. Impact

Impact measures both intended and unintended results and includes the positive and negative impact of external factors, such as government regulations introduced and financial conditions. The following questions were considered:

What long term changes, intended and unintended, have occurred as a direct result of Phils SEF II?

Substantial changes have occurred as a direct result of Phils SEF II, whereby a well imparted insight into RE and EE project lending and expertise to manage and administer it among banking staff has induced a change in FI lending behavior. According to monitoring figures from Phils SEF II, the following energy benefits have resulted (Table 11).

Table 11 - Energy benefits of Phils SEF II

| | MWh/year | % |
|-----------------------------------|-----------|-------|
| EE - Energy Savings (MWh/year) | 172,987 | 4.3% |
| RE - Energy Generation (MWh/year) | 3,831,941 | 95.7% |
| Total | 4,004,928 | 100% |

Source: Phils SEF II NEW Monitoring Master file.

The greatest impact has been on RE generation, which accounts for almost 96% of the energy savings and GHG avoidance. For 2015, DOE figures indicate 20,963 GWh of electricity generated from RE sources. Thus the RE projects supported by Phils SEF II contributed 18.3% of electricity generation from RE sources in the Philippines in 2015, thereby reducing GHG emissions. If only the 'new' renewable technologies (solar, wind, and biomass) are considered, excluding geothermal and hydro, the proportion supported by Phils SEF II rises to 59% (738,497 MWh out of a national figure of 1,254,000 MWh).

During the seven years of operation of Phils SEF II, overall renewable sources of generation have grown by 19%, almost as much as 21% for non-renewable sources. However, they have been utilized much less. While the total annual electricity production in the Philippines grew from 61,935 GWh to 82,413 GWh, an increase of 20,478 GWh (DOE, 2016³¹), electricity generated from RE sources has grown much less from 20,237 GWh to 20,963 GWh, an increase of 772 GWh or 4%. A more comprehensive analysis of the evolution of electricity generation during the project period is given in Annex G.

Phils SEF II is likely to have been responsible for most of the increase in RE generation capacity nationwide. It is notable that many of the Phils SEF II investments are in the domains of biomass, solar, and wind energy; and the impetus given to these technologies may be crucial in their future development. According to DOE figures, these sources now represent 4.3% of installed generation capacity compared to just 0.4% in 2009.

The reported Phils SEF II annual figure for energy use expected to be avoided is 188 GWh. When added to the RE generation, the contribution of projects supported by Phils SEF II is 4,020 GWh, which is nearly 20% of the increase in annual electricity production in the Philippines over the period. The program can thus be

³¹ DOE. (2016). *Philippine Power Statistics*. Available at: <u>https://www.doe.gov.ph/philippine-power-statistics</u> [Accessed 25 November 2016].

said to have reduced the need to increase energy generation from conventional non-renewable sources by about one sixth between 2009 and 2016.

Whether there are long-term consequences depends on changes in the behavior of the financial institutions, the promoters of RE, EE and carbon neutral projects and policy, as well as the end-users. In this regard, a number of patterns should be noted. The magnitude of bank lending to such projects has become substantial. The National Green Building Code has been signed into law, and SEF is now strongly supporting the GB program.

The program introduced changes within the FIs' marketing and assessment processes to enable client FIs to effectively mine current client lists for sustainable energy lending opportunities, and also to identify opportunities to attract new clients. In-house experts provided technology and risk management recommendations, income projections, and payback periods to help client FI in decision-making.

According to BPI, there has been a change in the appraisal of lending: from collateral-based lending, to cash-flow based financing, which takes into account income from FiT and other sources in the computation of repayments. This change in lending behavior is dependent on the application of government policy.

Nevertheless, SEF banks now offer free energy walkthrough audits of client facilities and use the IFC tools to show prospective clients where and how they can save on electricity costs, which supports the client decision-making process. Over 900 bank staff have been trained by SEF on the use of recommended project tools and materials. Thus, there should be a well distributed insight into such lending and the expertise to use the tools among banking staff.

Impact is expected to increase as three clients, namely BPI, BDO, and Chinabank, have stated their intention to continue sustainable energy lending beyond the SEF project life. Lending to energy related projects is therefore likely to increase as the model has been demonstrated to be sound from the lender's point of view. Similarly, there are some examples of the formation of strategic partnerships between different sectors, e.g., between property development and energy producers, such as Imperial Homes (Real Estate) - Enfinity (Solar).

The Renewable Energy Management Bureau of the DOE was skeptical about the need for RSF as there are other loan guarantee funds available. However, they recognized that there may be considerable need for expert advice in the area of EE, which is not their main area of intervention.

EE was supported in a large number of projects, but amounted to less than 5% of the climate impact. However, it was a growing part of the program throughout its lifetime. EE impacts are more complicated to measure than RE impacts. Ex ante figures for EE can be inaccurate, when compared in terms of actual performance. However, it can have a much larger potential for creating GHG emission reductions and energy savings than the 5% previously calculated.

The program did not have a specific poverty reduction objective. Poorer communities were not specifically targeted to improve access to energy, although they may benefit as customers from the private sector investments in both EE and RE. Its role in combating poverty was seen at the strategic level, following the World Bank position, which states, 'Without rapid, inclusive and climate-smart development, together with

emissions-reductions efforts that protect the poor, there could be more than 100 million additional people in poverty by 2030³².

To what extent has Phils SEF II achieved its intended impact as set in objectives?

The expected impacts of the program are set out below in Table 12. As the Phil SEF II program was revised, both the original and revised targets are shown for comparison.

| Impact | Indicator | Target | Achieved | Achievement as a percent of target |
|---|--|-------------------------------|-----------|---------------------------------------|
| Increase in energy efficiency and use of renewable energy | Value of aggregate private sector savings from recommended changes (million US\$). | 41.6 | 486.2 | 1169% |
| | Energy saved (MWh/year) directly. | 66,833 revised to 77,526 | 188,292 | 243% |
| | Renewable energy produced (MWh/year) (direct). | 259,106 revised to 350,000 | 3,831,939 | 1095% |
| Reduction in CO2 emissions achieved by implemented transactions | GHG emissions reduced (metric tons/year) directly | 310,993 revised to 600,000 | 2,083,710 | 347% |
| Increase in investments in sustainable energy in the Philippines | Value of financing facilitated by advisory services (million US\$) | 75 revised to 200 | 3,016 | 1508% |
| Increase interest in SEF due to the demonstration | Number of FI clients stating intention to continue SEF lending beyond the project. | 3 | 3 | 100% |
| effect of the project | Number of non-client FIs who will provide SEF lending beyond the project. | 2 | No data | No data |
| | Number of energy service providers stating their intention to continue services to the industries beyond the life of the project | 3 | No data | No data |

Table 12 - Program impacts compared to targets

Source: Phils SEF II Project Completion Report, May 2016, draft and Phils SEF II Monitoring Master.

Impact may have been lessened through the lack of involvement with the demand side of the market, the project developers. The banks involved with SEF may have garnered more expertise in assessing loan applications in the energy sector, but the stagnation of RE generation may provide an indication that there is a need to intervene more directly with bodies that could become RE developers, to point out the market opportunities in this direction, and to equip them with skills to maximize these opportunities.

³² World Bank. (2015). Managing the Impacts of Climate Change on Poverty. Available at: <u>http://www.worldbank.org/en/news/infographic/2015/11/08/managing-the-impacts-of-climate-change-on-poverty</u>. [Accessed 23 January 2017].

There has been international recognition of the impact of the program. As mentioned earlier, BPI received a G20 Award for their sustainable energy program, which brought in additional funds (US\$ 1.2million grant) to spend on capacity building, among other activities.

Interviewees suggested that working with government bodies on the policy-making level was outside the mainstream activities of IFC, whose focus is the private sector. However, during the period of Phils SEF II, the National Green Building Code had been enacted and there is reported increased voluntary observance of international standards for high efficiency motors. Standards and regulations are a spur to EE and the reduction of GHG emissions, which may not take place because of they do not become a priority for the businesses involved, as very often businesses are more concerned about improving throughput, despite the business case for EE.

A common theme among those interviewed was that regulations and policy were very important to achieve impacts in SE and carbon neutral technologies. One of SEF's three objectives was to 'take on a convening role for regulatory improvement and participate or lead market awareness raising activities to create conditions for greater private sector participation'. Efforts to convene meetings involving private and public sector bodies should continue and attention should be paid to working with other agencies and organizations, e.g., EU or USAID, to encourage projects the development of standards, which will benefit private sector producers.

It was recognized that momentum is slow in this area, but impacts cannot be optimized without paying full attention to related political, legal, and regulatory frameworks. There were some discussions with the SEF Team as to whether this is a role for IFC or the World Bank (IBRD). As it is understood that the IFC's orientation is the private sector, IBRD might be better placed in this regard as it works directly with governments. Internal arrangements within the World Bank Group have yet to be determined.

As is indicated in Section 1.4, the Evaluation Team was unable to verify the reported data for outcomes and impact, except in very few cases. The figures for impact were essentially the ex ante data created for the purposes of applying for finance and so must be treated with caution. However, in the projects that were reviewed in detail, achievements did follow or even exceeded initial estimates. An example is the Isabella project, a biomass power plant, which received a loan in the second quarter of 2013. It took 2 years to construct the power plant, and the project had just celebrated its 1st anniversary of operations. The project has 20MW capacity, and according to project implementers, is able to achieve 99.1% plant efficiency producing 170,000 MWh annually.

On the figures available, Phils SEF II appears to have been responsible for the bulk of the increase in RE generation nationwide during the program period. This is a considerable achievement. While other interventions in this area have been reported, their quantitative impact remains to be analyzed.

To what extent is the project able to have a catalytic or replication effect?

According to responses from BPI, in 2008 there was little focus on how to handle RE and EE as internal knowledge was insufficient. When the new laws on RE were passed in 2008-09, BPI took the strategic decision to enter the market, and SE lending has increased as an effect of the SEF. Lending has been provided not only to solar and wind but also cogeneration. BPI marketed that savings due to EE investments could pay for the loan and the projected savings could be used to secure the loan.

Nevertheless, it was reported by all interviewees that FIs still insisted on full collateral in order to secure the financing requested.

BPI was looking to develop new products or services targeting green buildings and SMEs. BPI focuses more on end users than STPs, but will also now look for vendors and technology providers. BDO indicated that the EE market was not profitable and would focus on larger RE developments.

BanKO was setup for mobile banking and provides micro finance loans. It entered into a Cooperation Agreement with Phils SEF II for technical support to initiate micro financing for RE and EE. The agreement did not include RSF. Capacity building through workshops, briefings, and discussions were undertaken, and enabled the SEF Team at the bank to develop a financial product design, including the term of the loan and loan eligibility criteria. However, the initiative was not implemented because of a change in top management priorities brought about by the change in senior management. The representative of BanKO indicated that the quality of consultants was excellent but that micro-SEF was conceptually too early because potential project proponents did not have enough expertise to assess projects and make a business case, and the lenders lacked the expertise to assess such proposals. A major challenge was the high cost of infrastructure for after-sales support.

Other second tier FIs were reported as interested in the AS, but followed the same profile as BanKO and did not push through due to the inability to commit internal resources and the high advisory fees. A meeting with five members of the Association of Development Financing Institutions in Asia and the Pacific (ADFIAP) revealed a mixed level of awareness of the SEF among those present. Neither the representatives of the Philippine Bank of Commerce nor the Philippine National Bank were aware of Phils SEF II. The Optimum Bank focuses on housing construction loans and has not given any RE or EE loans yet. The Sustainable Banking Corporation was aware of SEF but not eligible because it is a government corporation. *Alyansa Sa Kaunlaran, Inc.* (ASKI) focuses on small projects in off-grid areas and has given 652 loans to green energy projects, solar lamps, domestic biogas systems, and water sanitation. It also partners with Hybrid Social Solutions (a technology provider from Belgium) and was open to doing SEF loans.

Italpinas, a client of BPI, had secured a loan for a second energy efficient building development from another bank, although they did not specify the bank, and BPI reported that they were now facing competition in this area without naming their competitors.

Government banks such as DBP and Landbank were also reported as lending to SE projects, with low interest rates, but borrowers from BPI reported that loan processing takes a long time and requirements are strict. A number of stakeholders did remark that both potential borrowers and lenders were gaining expertise in presenting cases and assessing risks and as a result the market was changing.

However, in interacting with technology suppliers and developers, Phils SEF II has not achieved its targets. Only 3 out of a target of 12 entities received in-depth advisory services and only 3 out of a target of 15 partnerships were brokered between STPs and FIs.

Phils SEF II ceased to pursue a direct partnership with the government but it worked with regulatory agencies in organizing knowledge and training events. These helped FIs and project developers become more familiar with regulatory requirements on RE.

2.5. Sustainability

Sustainability deals with the continuance of the benefits of Phils SEF II after the end of project completion. Projects need to be environmentally as well as financially sustainable. It involves assessing the changing situation as well the likely behavior of the stakeholders. Three principal and two subsidiary evaluation questions are involved.

What are the main risks that are likely to affect the persistence of program outcomes and impacts after project completion?

Some of the main risks that are likely to affect the persistence of program outcomes and impacts after project completion are the lack of predictability of policy direction, lack of demand for energy management, regulations on ESCOs, and environmental risks, especially climate change.

With regard to RE, a common concern among stakeholders is that regulation was more of a barrier than financing to the development of RE. During the project period, there have been a number of positive steps taken towards clarifying the regulatory position and the introducing measures to encourage RE. There are cash incentives to RE in off-grid areas and the Energy Regulatory Commission (ERC) is currently developing rules on distributed generation.

The ERC is responsible for many of these developments. There are now FiT regulations issued for four types of RE (solar, wind, hydro, and biomass). The ERC maintains a registry of installations and issues Certificates of Compliance (COC) for all power plants. In 2012, a 45-day process was introduced for the award of renewable energy service contracts. This involves a milestone concept, whereby specific activities are to be completed within given periods, and if not, the contract will be breached, which increases risks because the process involves getting permits from local bodies that are not bound by the timetable.

Interviewees with a variety of stakeholders, including public sector employees, stated that the government is slow to react to the need for new rules, such as distributed generation, for example. There is a lengthy permitting process, which exceeds the specified time limits set. Instead of the stipulated two months, delays of up to ten months were quoted by interviewees. Similar delays were also reported in receiving FiT payments. All those interviewed experienced delays related to government procedures. This is of particular importance if the FiT payments are taken into account in the repayment schedule for a loan.

The lack of predictable policy and the 'first come, first served' policy for awarding FiTs were highlighted by respondents as being counterproductive. This encouraged a race to complete installations, with about 40% of developers not achieving the deadline and the right to payments.

High energy costs continue, and RE generation is growing at a lower rate than overall demand, thus leading to increased reliance on fossil fuel sources and imports. Without the commissioning of further RE production, the contribution of RE to the energy mix will continue to decline.

The use of renewable energy sources entails environmental risks. For example, drought arising from climate instability has impacted on the Isabella Biomass project. The implementer, IBEC, thus needs to investigate other fuel sources than rice husks. Climate change also affects hydropower, through changing water levels and flow, wind, and solar power plants.

With regard to EE, there is a continuing lack of awareness of the benefits of EE and technological changes among the business community, despite the high energy costs. ISO 50001 certification on Energy Management has been achieved by only one company, perhaps due to the high cost of maintaining it. Energy management is not a business priority. A lack of demand is thus a risk.

ESCOs have been promoted as a means of overcoming some of the hurdles. However, there are policy and regulation problems for ESCOs. The official time for ESCO approval should be 45 days, but delays of up to eight months were reported. There are also capacity problems in terms of technical and business expertise shared by project promoters and ESCOs.

One major barrier to the development of ESCO agreements with government clients is the regulation on government savings (i.e., savings on electricity bills), which must be returned to the state and cannot be used to compensate ESCOs. The DOE tried to address this by creating a "super ESCO" but still failed over the problems of distributing the benefits of the savings.

Those EE measures, which apply to buildings, are also affected by the higher building specifications necessitated by the high winds and rainfall in the Philippines, and more frequent storms. However, new and greener building regulations are a driver for activity in this area, and the new building codes should provide a stable basis for future developments. The IEA has identified energy efficiency as a critical "fuel" in the transition to a low-carbon economy. Its analysis has shown that over a third of all emissions reductions needed to reach climate goals by 2040 must come from EE policies³³. Future developments should include a strong role for EE projects however these will need to include ex post verification, through e.g., energy management or smart metering.

Currently, the persistence of project outcomes in terms of financing RE and EE developments lies with two banks. Although there are some indications that other banks are entering the market, their loan portfolio has not been quantified. A change of priorities by BPI, the current market leader, would undermine the continuation of program outcomes and impacts.

To what extent are the program results/benefits likely to be resilient to these risks?

Despite uncertain policies and lengthy approval procedures there will be continued financing of RE and EE developments. The balance between funds provided by banks and developer demand for those funds will be key.

Existing project benefits in terms of approved and functioning RE and EE projects should continue for the lifetime of these installations, which could be in excess of 20 years provided the buildings and generation installations are well maintained.

Policies relating to RE are lacking and lengthy bureaucratic processes for RE generation are unlikely to be improved in the short or medium term. However, the introduction of the new building codes that are applicable to larger premises provide a basis for the development of EE measures.

³³ IEA. (2016). *Energy Efficiency Market Report*, p. 33. Available at:

http://www.iea.org/publications/freepublications/publication/mediumtermenergyefficiency2016.pdf [Accessed 18 January 2017].

ESCOs have not formed a large part of the Phils SEF II program so far. On the demand side, private corporations are showing some inclination to seek AS (e.g., energy audits, available EE technology) and implement developments on their own. However, this could be an autonomous change as a result of the energy tariffs and a push to reduce operating costs rather than as a result of the Phils SEF II. There is anecdotal evidence that family-owned corporations run by more technology adept succeeding generation are beginning to implement EE measures, which is likely to be a continuing trend in view of the high price of energy in the Philippines.

The risk of a narrow supply base of financing is dealt with below.

To what extent has the program established/enhanced capacity, processes and systems that are likely to be sustained?

The capacity, processes and systems of the banks that have been involved are likely to be sustained.

The RSF was initially only taken up by BPI which passed its costs on to their customers. BDO did not sign up for the RSF, indicating that the expertise gained through the training and AS was sufficient to enable BDO to gauge risks itself. According to BPI, their involvement has led to a change in the lending mind set: from collateral-based lending, to cash flow based financing, which took into account the investments payback period in the computation of repayments.

The banks reported that the AS helped reduce EE and RE project risks thus enabling the banks to understand the nature of the projects in relation to cash flows (i.e., energy savings, energy generation, nuances of the RE law). This helped them accept the assignment of receivables as security from their client borrowers. The payment for AS fees increased from 50% to 100% of the cost over the period, thus indicating the value placed on it by the banks.

While bank expertise has increased, BPI reported the continuing need to involve IFC consultants for technical advice but there were times when BPI would still decide to lend to the clients following their lending and risk management considerations in granting loans. The technical consultants were considered to be more relevant to their needs than RSF. BPI would thus like to continue using this type of AS.

Over 900 SEF-trained bank staff reported that they use the recommended project tools and materials in their work leading to over US\$ 880 million in loan disbursements. These figures indicate a significant commitment by the banks and a set of ongoing activities that have their own momentum. The banks reported that their staff have been trained to a level that is self-sustaining, except for a small number of special circumstances in which external expertise remains necessary.

The two main partner banks have technical teams that understand the RE and EE markets. However, actual GHG accounting was reported as not mainstreamed in both banks, because actual energy generation or savings was not monitored. If this had been the case the CAFI tool would automatically calculate the result. Without this, one cannot verify the sustainability of climate benefits. It would be a very small burden to add the reporting of actual energy data along with financial returns, which could then be passed on to IFC to enable full post-implementation project monitoring.

The introductory training material produced with regard to both EE and RE is of high quality and clearly oriented well to the target market; bank staff. With respect to respect of RE, it demonstrates a good overview of RE applications and shows the benefits, costs, limitations, and risks of RE projects, thus enhancing the capacity to identify potential RE clients. Solar, wind, hydro, and biomass are dealt with on a national basis. The displacement of fossil fuels and avoidance of GHG emissions is identified as a strength. There is a good portrayal of the expenditure profile of project development up to installation.

The material on EE covers all the main aspects: lighting, motors, chillers, solar cooling, air compressors, transformers, building management, and cogeneration. It covers the use of the CAFI tool, noting GHG savings and indicates how an initial walk through audit is done prior to a decision on the project. It is clear that the market is 'huge.' These established training modules offer the opportunities for relatively low cost replication at both high-end commercial and community levels.

The banks expressed appreciation of the training given to their staff, which has increased their levels of expertise, and also provided the detailed input of the AS on a project-by-project basis. These have been the most effective of the services provided. There was also evidence from project developers of the benefits of the AS. It enabled them to determine the scale of developments, thus allowing for better decisions to be made on the appropriateness of in-house or bank funding.

What is the likelihood that the partner banks will offer SEF products in the long run?

The partner banks are likely to offer SEF products in the long run.

BPI, BDO, and Chinabank, have stated their intention to continue SEF lending beyond the end of the program. BDO signed the third extension of their AS agreement in March 2016. Based on media reports and verbal feedback, Chinabank also continues to apply SEF principles in lending even without an existing SEF AS contract with IFC. The fourth bank, BanKO, did not reach the stage of implementation.

Some interviewees stated that the SE financing market is now established, and there is no further need for IFC to support the banks on RE and EE, although BPI at least expressed the desire for the IFC engagement to continue. If Phils SEF II was responsible for the bulk of the increase in RE generating capacity during the period, it might be premature to terminate the scheme. Offering similar services to other banks over the forthcoming period would be worth considering. This is especially the case for the smaller and more community-based EE and RE schemes.

The case of BanKO may be instructive in terms of what may be needed to expand the market. The bank was set up for mobile banking and provides micro finance loans. These have higher transaction costs per unit amount loaned than more substantial loans. Financial provision at this level may be necessary to transition the market to the next stage and to reach the social strata where energy poverty is prevalent.

Given the resources available, their best use might be in building the capacity of smaller project proponents and a set of smaller banks that serve poorer communities. It might be appropriate to do this in one or two regions, to demonstrate what can be achieved. This would also create a base of skilled people, who might then be available at lower cost to other regional schemes. According to one experienced respondent, what is missing is funding for small/medium project developers who need to raise equity. These could be ESCOs and they need a fund for the development, which falls between venture capital requirements and normal banking loans. There are many potential developments in this area, but the project developers do not fit into the main categories for lending or venture capital. This is a common problem for developers of innovative technologies, who have the technical expertise but lack the collateral. It is met by 'seed' and 'early stage' financing, which commonly needs some kind of risk sharing or guarantee mechanism to enable private sector finance institutions to justify their participation.

2.6. Additionality

In simple terms, *additionality* is described as the process of determining whether a proposed activity is better than a specified baseline.

Was the program really needed?

There is no doubt that both the AS and RSF under Phils SEF II are deemed necessary. The biggest challenge in increasing access to sustainable energy financing in the Philippines was how to match the needs of both the developer and the FIs. The AS and RSF were designed to fill this gap.

Phils SEF II was able to bring a technical competence and understanding of the local market together with the global knowledge and expertise needed to mainstream the financing of EE and RE into the Philippine financial market.

As early as 2005, the Rural Power Project (RPP) funded by the World Bank had noted the lack of capacity among local financing institutions in evaluating and processing renewable energy loan applications. To address this gap, Preferred Energy, Inc. (PEI) was engaged to provide capacity building training on RE lending for the Development Bank of the Philippines (DBP). The DBP therefore was probably the first bank to have established an internal group dedicated to RE and EE lending. As a result, DBP was able to provide loans to RE projects sooner than other banks.

Phils SEF II's partner FIs, BPI and BDO, acknowledged their need for AS. In fact, BDO admitted the need for the AS more than the RSF and has signed up on a 3rd extension of its AS on 4 February 2016. BPI, on the other hand, is negotiating for another renewal of its CA for both AS and continues to implement the RSF. When interviewed, the former BanKO officer in charge of developing the bank's SE portfolio also recognized the need and benefits derived from the AS provided to them by Phils SEF II. She noted how Phils SEF II were able to provide them with assistance in developing new products, although these were not implemented due to changes in the bank's management.

Considering that Phils SEF II partnered with the two biggest banks, most of the loans processed were issued to existing or prime clients. Thus, for BDO, it was deemed unnecessary to access RSF for these projects as it could result in over collateralization. A project needed to meet the established criteria before it can be enrolled under the RSF. On the other hand, for BPI, the RSF reduced the level of risk such that it enabled the bank to extend loans to more project proponents. The cost of the RSF is passed on to the client, and for SMEs, the interest rate is higher. The two cases are described in the boxes below.

Box 2 - The Case of BDO Unibank, Inc. (BDO)

BDO stated that it does not need the RSF. The RSF decreases the competitive strength of BDO on loan pricing. They claimed adding the RSF cost of 1.35% to the prevailing market rate automatically makes their loans more uncompetitive. The RSF is not essential as BDO is highly selective of projects to finance and relies on its strong qualitative project screening, preparation, and due diligence. BDO claims that it does not have any loan defaults or past due loans in RE projects.

A recommendation would be a guarantee mechanism to ensure the sustainability of the project developers' operations. BDO mentioned the risk amongst project developers or proponents being exposed to operational liquidity issues, such as running out cash for expenses (e.g., construction or start up delays) and operational delays (due to energy sales payment deferrals).

Box 3 - The Case of Bank of the Philippine Islands (BPI)

BPI, on the other hand, sees a continuing need for the RSF. The RSF provides another layer of assurance for senior management to approve SE projects. It is essentially another security on top of its standard collateral requirements (e.g., Real Estate Mortgage, Chattel Mortgage, Joint and Several Suretyship (JSS).

The RSF cost of 1.35% is added to the clients' lending rate. In the case of Solutions Using Renewable Energy (SURE), which has an outstanding past due loan to BPI, SURE was aware of the RSF cost. In the case of another borrower, ItalPinas, they were not aware of the addition of the RSF costs. The RSF does not increase the loan term from the usual 5-year (2-year grace period), for example, to the client preferred 10-year loan; thus the issue of loan affordability is not addressed.

In summary, the RSF is used to enhance the lending capacity of BPI to its SE client base.

Moreover, at the time of the program's inception, RE and EE are still very much emerging technologies, such that investors often relied mostly on technology suppliers for technical assistance, resulting in most projects being technology driven. Thus, aside from increasing FIs' ability to lend to RE and EE projects, there was also a need to establish and grow the list of legitimate STPs. Component 2 of the program was designed to address this need, though work in this area was not completed due to the greater focus of the leaner SEF Team on FIs.

What risks did IFC take that other entities were not willing to take? (Risk mitigation)

IFC took the risk of entering an emerging market. However, it was able to dampen the risks by the choice of institutions and market.

The IFC came into the market early and initiated the opening up of SE financing by local banks. The program made a decision to focus on two of the biggest banks in the country due to the readiness of these banks to embark on new products that would set them apart from other banks. These banks were able to successfully implement the program because they lent to large generation projects and normally dealt with prime banking clients. SMEs were welcome but had to pass stringent requirements. In comparison, USAID's loan guarantee facility was more developmental and focused on second-tier FIs and SME projects outside of Metro Manila, but did not have an AS component.

Moreover, Phils SEF II was undertaken partly with donor grant funding. Banks have to agree to pay a counterpart fee to the partially subsidized cost of the AS to participate. The AS was an essential component, as it allowed client banks to identify potential projects, as well as to market their new products. Towards 2015, the banks paid the full cost of the AS. The RSF on the other hand was charged at a specified interest rate that the FIs passed on to their clients.

What other services did IFC provide that others do not? (Investments, knowledge/ innovation, standard setting, policy work)

Phils SEF II provided dedicated technical advisors that provided on-the-job and internal guidance to partner FIs.

Phils SEF II provided both technical and policy advisory services to clients. Aside from technical assessments, the SEF Team and consultants assisted in reviewing bank policies, standards, and procedures. The program introduced changes in the FIs' loan assessment and marketing procedures, which helped them to identify lending opportunities and to attract both old and new clients. As a result, some internal processes were improved and management became more comfortable approving loans to SE projects. New financial products were also developed, such as EE leasing, EE term loans, RE term loans, solar financing models for BPI, and EE/RE financing for BDO. A lending model using an energy performance contract for BPI was also developed. Before the end of the CA with BanKO, three products were developed based on three business models called Greening the Partners, Institutional Loan and BanKO Retail. Unfortunately, these were not implemented due to changes in BanKO's management. These 10 financial products may be streamlined and used as a basis for offering financial products to other FIs which do not avail of the RSF.

What would have happened without IFC involvement? Would the project still have proceeded? If yes, how? How were the expected results better with IFC involved?

The additionality of Phils SEF II lies in the fact that it successfully boosted sustainable energy financing in the Philippines by facilitating local bank financing of a variety of sustainable energy projects, exceeding its original targets.

Phils SEF II played a significant role in boosting private sector investments in sustainable energy in the Philippines. The program managed to move the green finance portfolio of both BPI and BDO at a faster pace. Previously, only Government Financing Institutions, such as DBP and Landbank of the Philippines, were active in this space. Aside from portfolio growth and skills development within FIs, the program also enabled developers to generate significant savings worth US\$ 486 Million, generated additional power supply and contributed to the reduction of GHG emissions estimated at over 2 Million tons of CO₂ per year³⁴.

The following could be a likely scenario if IFC was not involved and Phils SEF II had not been implemented: The enactment of the Renewable Energy Act of 2008 heightened interest in RE development. This would have encouraged SE project development, although most likely at a much slower rate. Projects would have been limited to those that are highly viable and supported by investors with a good financial track record and adequate collateral. LGUs and electric cooperatives would still be eligible for the lower rate guarantee

³⁴ IFC. (2016). Project Completion Report - May 2016, draft.

facility from LGUGC, and SMEs could access guarantees from USAID. With the high prices of electricity and the need for new capacity additions, there was a sufficient business case for the RE and EE projects to proceed. Together with incentives provided by government for RE (i.e., FiT, duty-free importation, tax holidays, etc., private developers, SMEs), some LGUs, and electric cooperatives would probably still have decided to develop SE projects. Some private sector investors would probably hire experienced STPs, while others would rely on the assistance provided by technology suppliers. However, access to financing would be difficult and probably limited through DBP and Landbank only.

In contrast, it is evident from program results that with the IFC-SEF providing AS and RSF, the FIs were able to quickly establish a sizeable portfolio of RE and EE loans. FIs were able to develop the capacity and knowhow to continue to build their RE and EE pipeline, and monitor the performance of these projects. In addition, because of Phils SEF II and the IFC involvement, the participating banks were able to institutionalize SE financing and build in-house staff capacity in identifying, evaluating, and processing SE projects. This capacity was seen to have also affected even non-SEF II participating banks. Banks that are aware of BPI's and BDO's experience have become interested in SE financing as well. A Bank of Commerce employee related having heard of SEF being implemented by BDO and BPI while previously working for Security Bank. Also from an interview, it was mentioned that in the particular case of Security Bank, the transfer of a bank officer from BPI might have encouraged Security Bank to grow its sustainable energy financing portfolio as well³⁵.

If efforts in improving the regulatory framework had not been discontinued towards the end of 2012, the impact of Phils SEF II could have been greater. According to DOE officer interviewed, if some changes in government rules concerning RE and EE development were approved, i.e., use of energy savings for EE transactions, more government agencies could have implemented EE projects. Moreover, Phils SEF II could have provided government feedback and assistance to help streamline and facilitate government approvals and permitting processes, which according to some private investors interviewed stringent regulations were more problematic for them than accessing loan financing.

2.7. Summative analysis

The long-term goal of the Phils SEF II was "to contribute to the development and diversification of the financial sector (Impact) by assisting in the development of new markets and product lines in sustainable finance with significant growth potential (Outcome). The indicator for the long-term goal is the reduction of GHGs (in tCO₂e) in increased electricity generation from RE (in MWh) and the reduction of electricity due to EE (in MWh). The indicator for the short term goal is increase in investments in SE (in US\$ Millions).

Given the two experiences of BDO and BPI, the impact has been partially achieved. The development and diversification of the financial sector into RE and EE lending has not manifested broadly across the banking sector and cannot be clearly attributed to Phils SEF II. Other large banks (e.g., the Philippines National Bank) have developed their own RE portfolio through their own initiatives as a result of the passing of the RE Law; this was done without raising their awareness or access to the RSF. Middle tier banks (e.g., Philippine

³⁵ This interest was also observed during a recent focused group discussions conducted by PEI on development and financing of renewable energy mini-grids, where Security Bank actively participated.

Banking Communications) are also not aware of the RSF and are just about to begin considering SE projects under of own initiative. Smaller banks (e.g., Optimum Development Bank) have not even thought of integrating RE and/or EE in their projects portfolio given the low potential for carbon projects like EE housing or the use of solar power in residential homes.

The development of new markets and product lines in sustainable financing is partially achieved. Attribution is always a fraught issue, however following participation in Phils SEF II, BPI and BDO now have mature SE finance products. BPI is marketing the collaboration with IFC on the SEF, and uses the SEF to enhance its own institutional capacity to lend to the RE/EE projects. However, BPI does not appear to have used the RSF to address affordability and accessibility issues of financing. It may have added to the layers of additional financing costs, without prolonging payback periods.

In relation to the achievement of the indicators for both long and short term goals as per the Theory of Change, the results in Table 13 below show that energy saved is 143% over the target; RE produced is tenfold the expectation and GHG Emission reductions are calculated to be 3½ times larger than expected.

| Indicator | Target 2009-2015 Revised 2011 | Actual 2015 | % achievement |
|---|-------------------------------------|----------------|---------------|
| Value of aggregate private sector savings from recommended changes (US\$) | 41,600,000 | 486,244,748 | 1169% |
| Energy saved through EE projects (MWh) | 77,526 | 188,292 | 243% |
| Energy produced through RE projects (MWh) | 350,000 | 3,831,939 | 1095% |
| GHG emissions reduced (Tons of CO ₂ e / year) | 600,000 | 2,083,710 | 347% |
| GHG emissions reduced over 15 years (Tons of CO ₂ e) | 9,000,000 | 31,255,650 | 347% |

Table 13 - Achievements in relation to the Theory of Change

Source: Phils SEF II Project Completion Report, May 2016, draft.

Considering that the MWh and GHG emission reduction targets are based on ex ante calculations as presented in the project proposal or feasibility study, and the accounting of these metrics begins on the day of the first disbursement of the loan, there are issues relating to the validity of the data and information used to report these results. First among these is the issue of potential overstatement on targets achieved; no regular monitoring reports are available to support the actual MWh generated (for RE) or reductions (for EE and GHGs) attained by the participating FI. Secondly, the projects do not start electricity production or savings and GHG reductions as soon as the first loan disbursement is made; there is delay depending on technology before these RE/EE/GHG benefits are delivered. Another is the potential under-performance or non-performance or failure of the RE/EE projects. The last contentious issue is the absence of baseline data for RE and EE projects, ³⁶ the lack of monitoring of baseline conditions during the course of the project, ³⁷ and the failure to account for potential project leakage (e.g., use of standby generators when RE

³⁶ Baseline is taken as "without any EE/RE intervention", thus as "business as usual" (BAU).

³⁷ As defined by IFC's Definitions and Metrics for Climate Related Activities.

technology fails or stop for maintenance, use of additional appliances due to increase electricity cost savings). There is no ex post verification practice or documentation (other than testimonial evidence) as these are voluntary³⁸. In summary, the actual GHGs calculated are not complete, transparent, accurate, and conservative as required under the GHG Protocol.

2.8. GEF indicators

A task of the evaluation is to complete the GEF tracking tool as far as is possible. The Mid-Term Evaluation stated this was not possible at mid-term because of a lack of and uncertainties discovered in the data. The constraints remain. Below, the current status and means of moving forward to enable completion of the tracking tool is set out.

There are 193 projects. The breakdown of projects in terms of type, energy generated or saved and GHG emissions avoided is shown below (Table 14).

| Туре | Number | Energy MWh / | CO ₂ e emissions |
|-------------------|--------|--------------|-----------------------------|
| | | year | avoided per year |
| Energy efficiency | 113 | 172,987 | 100,483 |
| Renewable energy | 56 | 3,831,941 | 945,138 |
| Special climate | 24 | | |
| Total | 193 | 4,004,928 | 1,045,621 |

Table 14 - Breakdown of SEF projects with respect to GEF indicators

Quantitative outcome indicators

The GEF Tracking tool for Mitigation Projects has 8 quantitative indicators:

- Indicator 1: GHG emissions avoided
 - o Lifetime direct GHG emissions avoided
 - o Lifetime direct post-project emissions avoided
 - o Lifetime indirect GHG emissions avoided
- Indicator 2: Lifetime Energy Saved
- Indicator 3: Increase in RE Capacity and Production
- Indicator 4: Number of users of low GHG systems
- Indicator 5: Number of Hectares under low GHG Management Practices
- Indicator 6: Time saved in adoption of low GHG management practices
- Indicator 7: Volume of investment mobilized and leveraged by GEF for low GHG development
- Indicator 8: Specific GHG reduction target, if any, under national, sectoral, local plans

To complete **Indicator 1: Total Lifetime Direct and Indirect GHG Emissions Avoided** and **Indicator2: Lifetime Energy Saved**, the cumulative lifetime of the projects need to be estimated. Some of the EE

³⁸ As noted by an interview with an IFC Consultant.

projects may last several decades, whereas some of the RE and special climate projects may have a much shorter duration, just a few years.

Projects relying on biomass, especially animal produce for example, may have a very uncertain future, i.e., there is a high degree of risk from market forces, climate change and pestilence, whereas RE from wind, geothermal or solar can be predicted with a higher degree of certainty.

Some typical expected lifetimes for RE projects are given in Table 15 below.

| Type of RE project | Typical expected lifetime |
|------------------------|---------------------------|
| Off-grid PV | 10 years |
| Building Integrated PV | 20 years |
| Wind | 20 years |
| Small hydro | 20 years |
| Bagasse | 10 years |

Table 15 - Indicative lifetime of energy projects by technology

To fill out this section, ideally each of the projects would be monitored on actual emissions and those in either its supply chain (e.g., suppliers of fuel) or contingent on its operation (e.g., occupants). However, records show projected generation and capacity at the beginning of the project development (Table 16)³⁹.

| Technology | No. | Estimated annual generation MWh/year | Predicted capacity MW | Percent of generation | GHG avoided tons CO ₂ /year | Percent of GHG saving |
|---------------------|-----|--------------------------------------|-----------------------------|-----------------------|---|--------------------------|
| Biomass | 27 | 430,305 | 65 | 11.3% | 365,674 | 18.1% |
| Hydro | 8 | 735,352 | 109 | 19.3% | 336,076 | 16.6% |
| Geothermal | 2 | 2,337,560 | 300 | 61.3% | 1,033,934 | 51.2% |
| Solar | 12 | 96,215 | 71 | 2.5% | 42,863 | 2.1% |
| Wind | 4 | 201,640 | 182 | 5.3% | 90,117 | 4.5% |
| Other & unspecified | 3 | 10,337 | 2 | 0.3% | 152,465 ⁴⁰ | 7.5% |
| Total | 56 | 3,811,409 | 729 | 100% | 2,021,129 | 100% |

Table 16 - Estimated generation capacity by technology of Phils SEF II projects

While almost half the projects are in the relatively short-lived biomass generation category, over 80% of the generation is expected to come from the longstanding geothermal and hydro type of generation. A 15-to 20-year average life is a reasonable expectation. However, there is a high risk factor as one project based on geothermal energy accounts for 2,219,300 of the predicted MWh benefits, over half of the entire energy benefits and almost half GHG benefits of the Phils SEF II.

³⁹ The table shows the sum of the different projects allocated to technologies. It differs slightly (by 0.5%) from the overall figure 3,831,941 recorded in Phils SEF II Project Completion Report, May 2016, draft.

⁴⁰ This figure includes two projects with recorded GHG benefits but no electricity generation. This increases the number of projects covered to 5 for 'Other and unspecified' in this column.

This figure can be applied to the EE projects as well. Some of these are building projects with a longer life expectancy and some involving chiller equipment of much shorter duration. However, the EE projects account for less than 5% of the savings reported.

Furthermore, the relationship between direct emissions avoided and indirect emissions avoided is not specified in the project literature. This is a tenuous relationship in the best of circumstances and may actually be inverted. This has been noted in residential developments, where individual occupants may either economize further or negate the overall building savings by increasing the number of appliances. It has also been shown in RE developments based on biomass, where the transport of the feedstock reduces the generation benefits. However, this downside does not occur with geothermal and hydro generation, although there are other potential negative effects relating to changed land use.

With regard to **Indicator 3: Increase in RE Capacity and Production,** figures are based on 56 RE projects, with specified estimates of generation in Table 16 - above, supported at the end of 2015.

The figures for **Indicator 4: Number of users of low GHG systems**. This is taken as the total number of projects supported, 193. However, the actual number of users is likely to be considerably greater than this. Without a survey of users, it is impossible to verify the number of users and the number of female users among them.

Indicator 5: Number of hectares under low GHG management practices pertains particularly to the special climate projects. There is a relatively small number of such projects and where this involves low GHG management, figures can be aggregated. There may also be some biomass RE projects, which would fall into the same category, where biomass fuel crops or waste from agriculture is the source fuel. Examination of the project documentation should produce the appropriate figures.

Indicator 6: Time saved in adoption of low GHG management practices involves the estimation of baseline time to deployment (without project support), and actual time to deployment with project support. To gain these figures, it is necessary to discuss the indicator with project developers after completion, and obtain their estimates. Such a situation is prone to great unreliability. Without a systematic approach, such as a survey, it is not possible to produce a reliable indicator.

Indicator 7 concerns the volume of investment mobilized and leveraged by GEF for low GHG development beyond the co-financing committed at CEO endorsement. At the time of endorsement, US\$ 27 million co-financing was envisaged. At closure, US\$ 880 million loans had been disbursed and US\$ 3.2 billion financing facilitated. The SEF II target figure in the Monitoring MASTER document is given as US\$ 200 million and the reported loan figure was US\$ 3,016,680,143, i.e., this is presumed to be private sector. The initial logframe gave the figure of US\$ 60 million for loans disbursed. The Phils SEF II GEF logframe indicates that US\$ 75 million would be facilitated by the AS. There have been positive reports of private sector investment following AS intervention, but no standard monitoring of such is available from the documentation. No figures for public, domestic or external investment are available. The review of project documentation should enable figures to be determined.

With regard to **Indicator 8: Specific GHG reduction target, if any, under national, sectoral, local plans**, the Philippines ratified the Paris Agreement last March 2017. The INDC submitted last October 2015 included a conditional GHG reduction target of 70% below business as usual (BAU) levels by 2030. This was five years

after the formulation of Phils SEF II. The INDC states that the target is conditional on "the extent of financial resources, including technology development and transfer, and capacity building, that will be made available to the Philippines." The target covers all emissions from all sectors, including land use, land use change and forestry (LULUCF). If it is fulfilled it will reduce GHG emissions to 1990 levels. However, this is a conditional target and some analysis of existing policies indicates that there will still be growth in GHG emissions, although less than under BAU condition. The Philippines has RE targets for geothermal, hydropower, biomass, biofuel, wind, solar and ocean of 9,931 MW by 2030. This involves an increase of RE based capacity of 200%⁴¹.

Qualitative indicators

There are 3 qualitative indicators:

- Indicator 9: Degree of support for low GHG development in policy, planning and regulations.
- Indicator 10: Quality of MRV Systems.
- Indicator 11: Degree of strength of financial and market mechanisms for low GHG development.

With regard to Indicator 9: Degree of support for low GHG development in policy, planning and regulations, this falls within an area given low priority in Phils SEF II (which is remarked elsewhere in the report). There has been some work to bring the private sector and government together, however, this has not been a priority area, and some IFC staff were doubtful that this should be an area for IFC intervention at all. So the score would rank no more than 3 on a national basis. This statement and score also apply to Renewable Energy Generation, where there are targets, but implementation remains conditional. However, within the RE domain, Phils SEF II has had a major impact on the 'New' areas of RE, biomass, wind, and solar, where its project account for 59% of the increase in national generation. This area has shown remarkable growth and so a score of 5 is warranted. It would be higher if measurement systems were sufficient (see below). With regard to Energy Efficiency, government policy has moved firmly on the Green Building Code, but lags in others of EE. Although Phils SEF II has supported a high number of projects in this area, they amount to only a 4% proportion of GHG saving. EE savings are difficult to measure and there are no systems in place to monitor the actual energy and GHG performance of completed projects and this warrants a score of 2.

Concerning **Indicator 10: Quality of MRV Systems,** although there is good system of collecting and presenting baseline and project target information, there is no effective process of Measuring, Reporting, and Verification of project or project results with regard to climate impacts on an ex post basis. The initial data collection merits a score of 7, but further reporting and verification are lacking and therefore rate scores of 1.

Indicator 11: Degree of strength of financial and market mechanisms for low GHG development is the focus of Phils SEF II, and it has had considerable success; so much so, that some commentators have stated the original focus to have reached market maturity. However, there remains a narrow base of lenders and project developers that are not fully equipped to present their cases. There have also been calls to develop

⁴¹ Climate Action Tracker. (2017). *Philippines*. Available at: <u>http://climateactiontracker.org/countries/philippines.html</u>. [Accessed 17 March 2017].

new products to serve the area, which Phils SEF II has provided. These now need to reach market maturity. Nevertheless, there has been clear progress (from a low base) and a score of 6 would be warranted.

3. Lessons Learned and Best Practices

The uptake of Phils SEF II by two banks and subsequent funding of 193 projects has demonstrated that there is a sufficient market in the Philippines for financial services. Expertise has been gained in two FIs on assessing RE and EE projects. However, this needs to be further disseminated to the banking community, which is already to some extent indirectly happening through the normal mechanisms of job mobility and market development.

Advisory Services

The AS was primarily provided to banks. However, in the course of evaluating projects, the SEF Team inevitably advised the developers also because they had to make sure that the projects presented by developers would meet the bank's requirements. The AS has therefore proved its additional value in advising project developers, who have then made decisions to self-fund some projects and borrow for others.

Chinabank had negotiated a "SEF Light" agreement, which the SEF Team has assessed clearly did not work due to the fact that the light version entailed less financial and HR commitment, thus actually limiting the extent of use of the SEF, given that Chinabank did not present a convincing business case to management.

Having a champion within the organization helps to push projects; Aside from change in senior management direction, the transfer/resignation of trained people resulted in non-implementation of RE/EE lending in BanKO. Furthermore, it can be difficult to put the financial products into practical and widespread use. A major challenge is the high cost of outreach/infrastructure for after-sales support.

Risk Sharing Facility

The RSF was extensively used by one bank, BPI that found it very useful to help mitigate risk. There were comments that the rate charged for it was excessive in comparison to other aid programs (notably USAID). Nevertheless, BPI wished to continue using it, passing on the costs to the borrower. Still, changes to its actual lending practices appeared to be small, with a continued demand for full collateral cover.

It does appear that SEF II has not substantially altered the lending practices of the banks. However, there are some instances of revenues from FiTs being taken into account in making lending decisions. Particularly for smaller project developers, this is important. It is, however, constrained by the "first come, first served" rules of government and delays in payment, which may reach a year.

Climate Impact

There are impressive figures quoted for GHG reductions, which follow logically from the high level of lending. Facilitating lending is a crucial factor in making these impacts. However, there must remain some caution over the use of these figures because of the lack of verification procedures.

Monitoring and evaluation

The lesson to be learned in this area is to have a system that carries out ex post verification of reduced GHG emissions. This did not exist during Phils SEF II. The IFC has a guideline for monitoring GHG emissions of a project upon implementation; this needs to be put into practice.

4. Conclusions

Important achievements of Phils SEF II

The Phils SEF II program, which aimed at developing and catalyzing local financing markets for SE projects has more than met its targets in terms of quantity of loans disbursed and number of projects supported. SEF has supported an increased lending towards SE investments, despite only working intensively with two FIs; far more projects have been assessed, with assistance from the SEF Team and its associated technical STC, than foreseen. Phils SEF II has catalyzed a high level of investment in both RE and EE and exceeded its targets by significant margins.

Whereas the number of loans provided to EE projects increased throughout the period and was higher than the number of loans provided to RE projects, the latter led to the main impact in financial and energy terms, and largely contributed to the increase in electricity generation from RE sources nationwide, with almost 4 million MWh being produced from the Phils SEF II RE projects. This makes evident that the primary outcome of the program in the Philippines has been to increase the investment in RE. The availability of financing and an enabling policy framework are both contributory factors to increasing investments in SE. Schemes such as the FiT provide an income stream for developers that banks can and should take into account in assessing project viability. The step-change in investment in 2014 was largely due to the implementation of the FiTs.

The value in million US dollars of energy savings and production has been exceeded more than ten-fold, and the ex ante calculated GHG emission reductions from the projects financed amounts to a reduction of 2 million tons CO_2 /year over the next 15 years. Some key achievements are summarized in Table 17 below.

| Indicator | Targets 2009-2015 | Accomplishments | Achievement as a percent of target |
|--|--------------------------|-----------------|---------------------------------------|
| Number of SE Projects | 80 | 193 | 241% |
| financed | | | |
| Loans disbursed (million US\$) | 120 | 880 | 733% |
| Financing facilitated (million US\$) | 200 | 3,021.5 | 1,508% |
| Number of SE projects developed in pipeline | 200 | 466 | 223% |
| Energy saved through EE projects (MWh) | 77,526 | 188,292 | 243% |
| Energy produced through RE projects (MWh) | 350,000 | 3,831,939 | 1,095% |
| Value of energy savings and production (million US\$) | 41.6 | 486 | 1,168% |
| Tons of CO ₂ reduction/ year | 600,000/yr. for 15 years | 2,083,710 | 347% |

Table 17 - Key achievements of the Phils SEF II program

A qualitative measure of the achievement of Phils SEF II lies in the two main participating FIs; BPI and BPO indication that they are now well aware of the potential of providing lending to SE projects and that few SEF loans have defaulted. The FIs are ready to continue working with the SEF but not necessarily in the present form.

Areas which could be further improved

The achievements of Phils SEF II targets are notable, but potential RE and EE development is even higher. A limitation is the policy environment, as exemplified by the protracted process of obtaining permits for RE and the uncertainties in the FiT income stream. These add risk to financing and may result in less favorable terms than would otherwise be available in a stable policy environment. Most of the developers interviewed indicated that this was a greater constraint than financing. It is recognized that policies take time to be implemented, but they have a very important role in determining investment behavior, which includes the propensity to develop RE and EE ventures. A continued high Phils SEF II engagement in the enabling policy framework would have helped targeting some of the key barriers continuing to hinder autonomous investments in the RE/ EE sector. Phils SEF might have continued providing support to this component through the budget line for consultancy services, where over 20% of the budget remaining by the end of Phils SEF II.

Despite the growing number of loans for EE interventions, the limited scale of EE projects is indicative of three factors: the level of ambition of EE projects is limited, regulatory environment is inhibiting, and in the case of buildings, owners lack appreciation of the benefits of EE⁴². To some extent, the continued reluctance of FIs to offer deep renovation packages limits the scale of the projects supported, despite the higher impact and potential for greater financial viability. 84% of the 106 EE projects financed through BPI loans concern building construction or renovation, with lighting and HVAC as the focus of 28% of these investments. A future SEF could have the programmatic ambition to facilitate FIs consideration of EE projects with a longer pay-back period, such as deep renovations of buildings that will significantly reduce energy consumption in the long term.

Engagement with project developers has not been as strong as it could have been, which is a reflection of the redefinition of priorities during Phils SEF II. Project developers need to have the expertise to make presentations for finance and also often need their own expertise in EE and RE to be enhanced. An area of continuing weakness in the market is that of the smaller developers, who lack the collateral and credit profile to secure affordable finance. Such organizations include ESCOs or community organizations that can reach the poorer sections of society. Phils SEF II has been justified on the basis of its global mitigation of climate change to help the poor, a valid but still indirect consequence of the program. A catered approach for smaller entities could have improved the attribution effect.

IFC's M&E procedures, as viewed in Phils SEF II, do not provide for 'ex post' monitoring of energy generation or savings or GHG reductions. Phils SEF II's M&V is based on IFC's CAFI tool, which has been disseminated and rolled out to the FIs, but due to FIs internal security policy, there are restrictions to their use of it, not allowing for ex-post M&V. Monitoring is a process, which takes place during and after project completion, not prior to it. The Phils SEF II M&V of actually achieved project results regarding energy saved or generated and for GHG emission reductions is weak and need to be followed up through contact with the project developers.

⁴² 84% of the EE projects financed through BPI loans concern building construction or renovation, with lighting and HVAC as the focus of 28% of these investments.
5. Recommendations

The following recommendations apply to the AS and RSF

- 1. Emphasis on EE projects. Despite the increases in installed capacities, it is important to note that the share of renewables in the electricity mix will progressively decline due to the doubling or tripling of demand brought about by economic growth and major increase in coal–fired power plants. The IEA has emphasized the important role of EE policies in contributing to the emissions reductions needed to reach climate goals by 2040. A larger SEF priority on EE projects to align with this goal could entail creation of new financial products:
 - a. **Differentiated RSF pricing.** FIs presently consider large EE projects, such as deep building renovation with a long pay-back period to be too risky. There are many potential developments in this area, but the project developers do not fit into the main categories for lending or venture capital. If the RSF policy allows it, a preferential RSF pricing for large EE loans, would help FI perception of the project.
- 2. Regain emphasis on market awareness and regulatory improvement. The communications and promotional activities, conferences, SEF Talks, etc. have developed awareness of RE and EE and their benefits. However, this is not yet widespread and needs further promotion, and a crucial element in developing awareness is regulation. The number of EE standards is small and they need to be multiplied to ensure energy efficiency and saving is promoted.
 - a. Regain emphasis on the Phils SEF II component on *assistance in regulatory improvement to facilitate implementation of sustainable energy projects*. A future SEF should reinforce the initial emphasis on taking "a convening role for regulatory improvement and participate or lead market awareness" since this would help expedite completion of the necessary policy measures to address persisting barriers. SEF can provide the necessary technical assistance to policy makers. SEF can furthermore act as an intermediary between FIs and STPs on one side and policy makers on the other side, to highlight areas of work where intervention may be necessary.
 - b. SEF as a program needs engagement with stakeholders other than the FIs to be able to strengthen market presence and drive businesses to the banks. Networking and collaboration with other donors and stakeholders can facilitate the work of SEF towards achieving not only market awareness but also regulatory improvement. Relationships with other donors can be reinforced through events like the regular EE forum organized with ECCP, which can introduce donor panels on SE financing. The EE forum and associated workshops will help promoting discussions on the needs and challenges in the SE sector.
 - c. The Phils SEF II expected outputs and outcomes were generally well achieved, despite the decrease in available SEF team resources that were well used to administer the program and ensure the collaboration with the FIs. As only three quarters of the budget for the Consultants was spent, it could have been used to provide more services within Component 2 and 3, in order to establish relationships with STPs and to encourage regulatory improvement and awareness. A new SEF program would need internal or external human resources for networking, awareness building, and communication with STPs, as well as for efforts in regulatory improvements.

- **3.** Further develop local financing markets by including second-tier banks. The inclusion of smaller FIs may indeed help developing and catalyzing local financing markets for SE projects, which was the objective of Phils SEF II, although it may not contribute considerably in the strive towards achieving targets set in terms of volume of SE loans.
 - a. Help increase expertise through provision of AS. A future SEF may examine ways of reducing the smaller banks' transaction costs by increasing their level of expertise through the advisory services. The SEF Team should promote the benefits of signing a 'normal' AS agreement through the substantial additional business that existing FI clients have reached. A 'SEF Light' agreement can be envisaged to allow smaller banks ensure the costs of the AS, but this 'SEF Light' should reflect the lessons learnt during Phils SEF II: the FI core team needs to devote a substantial amount of time to the SEF work, and the SEF Team or SE consultants should have a role in developing the FIs pipeline.
 - b. **The portfolio approach** has already proved successful and may make the processing of the RSF when needed, easier to face for the smaller FIs, as it has for the large existing SEF clients. Taking a portfolio approach to risk would enable a few high-risk projects to be supported by smaller banks.
 - c. This portfolio approach would enable **products to be developed** through mobile banking and micro-finance loans, which have higher transaction costs per unit lend than larger loans. Financial provision at this level may be necessary to develop the market to the next stage and to reach those sections of the population where energy poverty is prevalent.
- 4. Expand coverage to smaller project developers. The smaller developers are often those serving the poorer communities and those presenting innovative ideas. Because of the collateral requirements and the inevitably higher transaction costs, these developers have not received attention under Phils SEF II.
 - a. **Partnership agreements with project developers.** Smaller RE projects may most directly benefit poorer communities, which would be in line with the WBG's goal of supporting the Philippines in attaining poverty reduction and inclusive growth. Whereas SEF is not in a position to provide grants to small community based projects, SEF can establish partnership agreements with creditworthy private sector project developers extending assistance to develop a portfolio of feasible RE projects.
 - b. The partnership should include a **capacity building element**, whereby people are trained to apply EE and RE principles in their local environment. This would involve some short training courses for stakeholders and potential local experts. Existing training material would provide a good basis for this development.
 - c. **Extend field of RE projects.** Develop new FI products in collaboration with the FIs to serve new types of RE projects, such as RE hybrids, mini-grids and projects, which could be developed to service the more rural population when the business case is sufficiently strong.
 - d. **Equity funding instrument.** Consider the development of an instrument to provide funding for small/ medium project developers that need to raise equity. These could include ESCOs who need a fund for the development that fall between venture capital requirements and

normal bank loans.

The following recommendations apply to monitoring and evaluation

- 5. Monitoring and verification of ex-post project achievements should be reinforced. There is a lack of ex post verification of energy savings and reduced GHG emission. The latter is a major problem when emission reductions were one of the objectives of Phils SEF II. Monitoring as well as M&V should be an integral part of future project design. A process must be introduced, allowing quantifying on a verifiable basis the climate benefits of programs such as SEF. This M&V should happen at four levels:
 - a. Business plans presented for loans should include not just projected energy and GHG savings, but milestones and means of monitoring them.
 - b. All RE generation should be monitored on the basis of Department of Energy data returns on project approvals and Feed in Tariffs. These should also be sent to IFC. This entails a minimal administrative burden for developers, essentially copying the same information to two addresses.
 - c. A sample of EE schemes should actually be monitored. With the number of applications for Phils SEF II, a 10% sample would have been sufficient. This monitoring would verify the direct energy savings and also examine the indirect energy savings. Energy use behavior should be monitored and analysis performed of different user groups, as well as men and women.
 - d. Where financially possible, ensure that metering is a component of all future supported EE projects so they can support the baseline and final data with consumption figures that provide the evidence-base for the savings from the measures implemented.

The following recommendation applies to climate change

- 6. The GEF Tracking Tool Requirements specify 'Results at Terminal Evaluation', an 'ex post' requirement. The Tool requires information on energy capacity and production, lifetime direct post-project GHG emissions avoided and lifetime indirect GHG emissions avoided. To fulfill these requirements it is recommended to:
 - a. All developers are requested to provide 'Results at terminal evaluation' specified by the Tracking Tool. Carry out a **telephone or email survey of all projects** asking for the basic information of generating capacity, energy generated and saved⁴³.
 - b. Carry out a **structured 10% on site survey of projects**, i.e. 20 projects, structured to be representative by technology and size, to capture information on outcomes. In future, such sample monitoring should be standard practice and require access by the monitors to the clients to get this information. Such a survey would enable data to be collected for indicators 4, 5, 6 and 7.

In future projects, such sample monitoring should be standard practice.

⁴³ This was part of DEMs methodology proposed for this evaluation, but could not be carried out due to BPI's refusal to provide access to the 184 projects that received SEF loans through the said bank (due to confidentiality agreement).