Climate Investment Funds

SREP/SC.20/3
December 19, 2018

Meeting of the SREP Sub-Committee
Ouarzazate, Morocco
February 1, 2019

Agenda 3

SREP OPERATIONAL AND RESULTS REPORT

PROPOSED DECISION:

The SREP Sub-Committee reviewed document SREP/SC.20/3, *SREP Operational and Results Report*, and welcomes the progress that has been made in advancing the work of the SREP in the pilot countries.

The Sub-Committee appreciates the analysis conducted by the CIF Administrative Unit, in collaboration with the MDBs, on achievements and results, resource availability, pipeline review, and portfolio updates.

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1 Introduction

1. The Program for Scaling up Renewable Energy in Low Income Countries (SREP) aims to demonstrate the economic, social and environmental viability of low-carbon development pathways in the energy sector by creating new economic opportunities and increasing energy access through the use of renewable energy.

2. Following guidance by the Sub-Committee of the SREP, this Operational and Results Report (ORR) is the third of its kind combining the previously separate Semi-Annual Operational Report and Annual Results Report. From an operational perspective, this report covers the period from January 1 to June 30, 2018.[1] For results reporting, it covers a one-year period (RY2018).[2]

3. This report identifies key strategic issues for SREP; provides a status update on the portfolio of SREP-funded programs and projects under the endorsed investment plans, the SREP Private Sector Set-Aside (PSSA), and related activities; and reports on results from all SREP investments eligible to participate in results reporting (those approved by MDBs as of December 31, 2017). More detailed information on resource availability, pipeline, portfolio, and results are provided in the annexes. Country-level information and updates will be provided in a separate information document, *SREP Country Portfolios*.

2 Strategic issues

2.1 Overview of SREP implementation

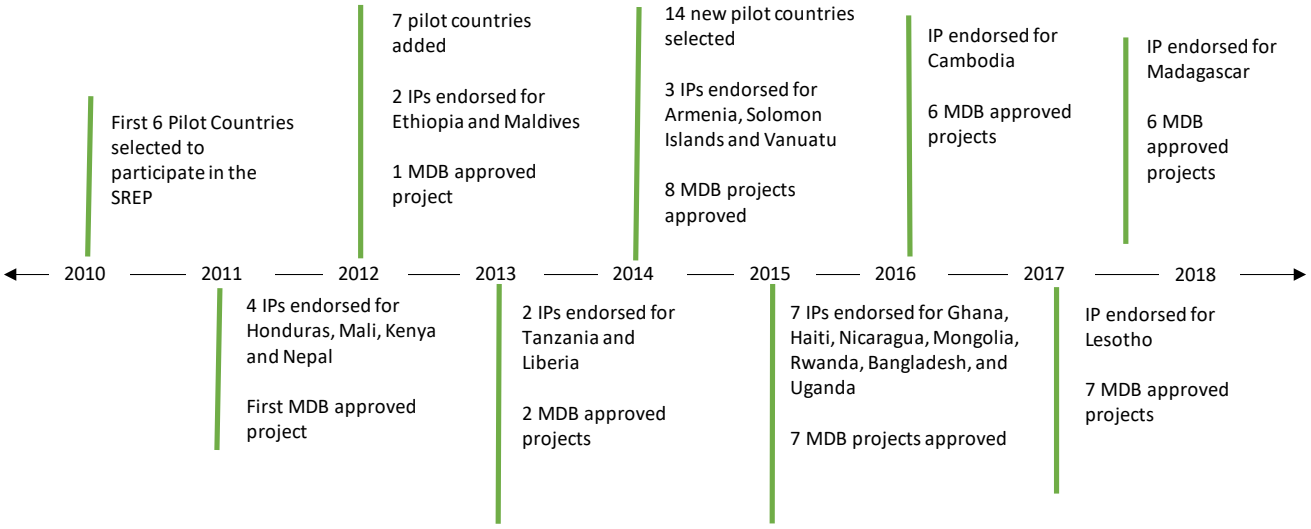
4. SREP was launched in 2010 as a pilot program in a group of six countries[3] with approximately USD 300 million in pledges and contributions. Over time, the number of countries has increased with the availability of additional resources. In 2012, six new pilots (seven countries) were added,[4] and in 2014, the SREP Sub-Committee agreed to select another 14 countries[5]. SREP now consists of 27 pilot countries, while the total amount of SREP resources has increased to approximately USD 750 million.

5. The initial six countries, with the support of the MDBs, developed and submitted their investment plans for endorsement between 2011 and 2012. Subsequently, an additional seven countries, with the exception of Yemen, also completed their investment plans. Among the 14 new countries selected in 2014, ten investment plans were endorsed between 2015 and 2017. As of June 30, 2018, the Sub-Committee had endorsed

[1] Some updates beyond the reporting period, such as funding approvals by the Sub-Committee, are also provided.
[2] Depending on the MDB, the report covers the period from January 1, 2017 to December 31, 2017 or July 1 2017 to June 30, 2018. Since the reporting is done on an annual basis, the abbreviation RY, or Reporting Year, is used to capture this annual period.
[3] The initial six pilot countries are: Ethiopia, Honduras, Kenya, Maldives, Mali, and Nepal
[4] These countries were previously on a reserve list: Armenia, Liberia, Mongolia, Pacific region (Solomon Islands and Vanuatu), Tanzania, and Yemen.
[5] The 14 new countries are: Bangladesh, Benin, Cambodia, Ghana, Haiti, Kiribati, Lesotho, Madagascar, Malawi, Nicaragua, Rwanda, Sierra Leone, Uganda, and Zambia.

investment plans for 21 pilot countries with a total indicative allocation of USD 784.1 million and seven project concepts under the PSSA with a total indicative allocation of USD 92.4 million. Figure 1 below provides a timeline of key milestones.

Figure 1: SREP timeline with key milestones



6. The expected results from projects approved by the Sub-Committee and projects in the sealed pipeline include an estimated 6,400-gigawatt hours (GWh) of renewable energy electricity to be generated annually (equivalent to the annual electricity production of Honduras), new or improved energy access for 17 million people (approximately the population of Zambia), and total estimated GHG emissions to be avoided of 5.3 million tons CO_2e/yr.

7. Although SREP programs are at various stages of design and implementation, tangible results on the ground are emerging. Seven investment projects have reported actual results on electricity output and people benefited with improved energy access, while others have demonstrated other considerable progress. In addition, projects with a primary focus on capacity building have reported significant achievements. See Section 5 for more on SREP results.

8. Progress of implementation varies among the pilot countries. Overall, about 78 percent of the indicative pipeline has been approved by the Sub-Committee, with countries that joined SREP earlier reaching a higher approval rate than those that joined later. Figures 2 and 3 show trends in SREP funding approvals by the Sub-Committee and implementing MDBs over time. (Table 3 in Section 3 contains country-specific approval rates).

Figure 2: SREP funding approvals by the Sub-Committee by fiscal year (with projections for FY19-FY20)

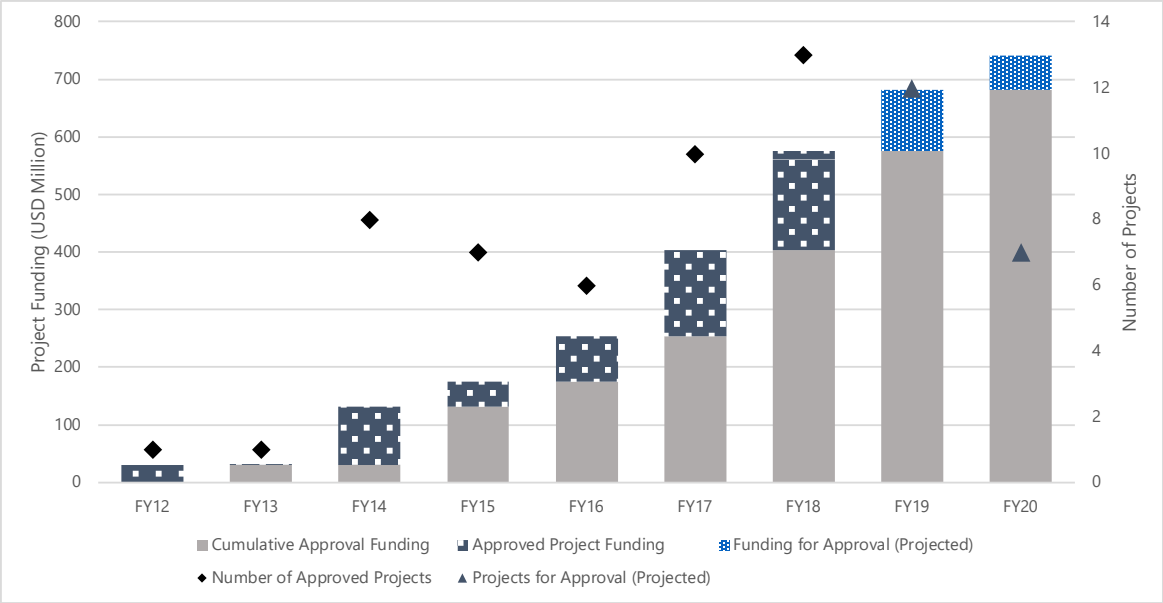
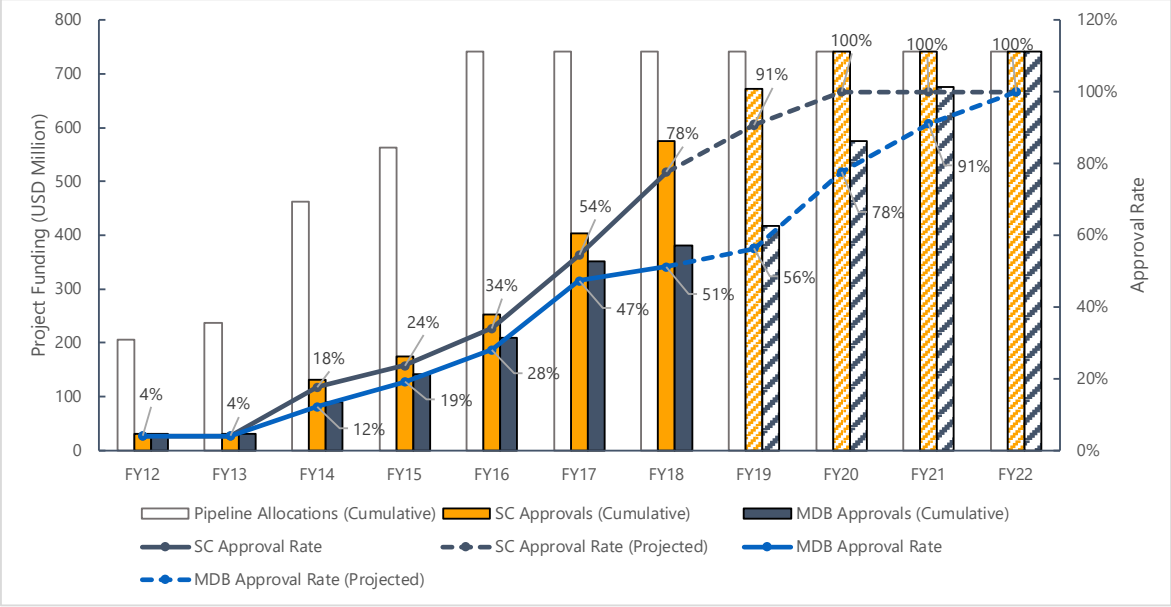


Figure 3: SREP funding approval rate by fiscal year (with projections for FY19-FY22)



2.2 Resource availability

9. Based on the decisions of the Trust Fund Committee of the Strategic Climate Fund (SCF), the Trustee and CIF Administrative Unit have updated the resource availability for each SCF program. As of September 30, 2018, SREP had an unrestricted fund balance after reserves of USD 77.6 million (USD 17.6 million grant and USD 60.0 million non-grant). Total anticipated commitments were USD 175.9 million, including projects and programs (and MPIS) in the sealed and reserve pipeline (see Table 1 and Annex 1).

Table 1. SREP resource availability schedule summary for combined sealed and reserve pipeline
(USD million, as of September 30, 2018)

		Total	Grant	Non-Grant
Unrestricted Fund Balance		**109.2**	**49.2**	**60.0**
Admin Expenses-Reserve (includes Country programing budget/Learning and Knowledge exchange reserve) and for FY 19-28 (net of estimated investment income and reflows as of SCF Committee Decision March 8, 2018)	(1)	(31.6)	(31.6)	-
Unrestricted Fund Balance after reserves (A)		**77.6**	**17.6**	**60.0**
Anticipated Commitments (FY18-FY21)				
Program/Project Funding and MPIS Costs		175.9	75.5	100.4
Total Anticipated Commitments (B)	(2)	**175.9**	**75.5**	**100.4**
Available Resources (A - B)		**(98.3)**	**(57.9)**	**(40.4)**
Potential Future Resources (FY18-FY21)				
Release of Currency Risk Reserves	(3)	30.8	3.9	26.9
Total Potential Future Resources (C)		**30.8**	**3.9**	**26.9**
Potential Available Resources (A - B + C)		**(67.5)**	**(54.0)**	**(13.5)**

Note:
(1) The amount of this reserve is estimated by the CIF Administrative Unit and Trustee using the 10-year forecast of the Admin Budget less the 10-year estimate of Investment Income and reflows. Pro-rata estimates across three SCF programs are based on the 22% fixed pro rata share of the SREP's cash balance as at December 31, 2017 approved by the SCF TFC on March 8, 2018. The decision reads as "allocate USD 31.6 million from the available grant resources in the SREP Program Sub-Account to finance estimated Administrative Costs from FY19 to FY28, such that the projected, indicative amount of approximately USD 59.6 million in SREP grant resources remains available for allocation to SREP projects"
(2) Includes both sealed and reserve pipeline.
(3) Amounts withheld to mitigate over-commitment risk resulting from the effects of currency exchange rate fluctuations on the value of outstanding non-USD denominated promissory notes.

10. Assuming the release of currency risk reserves totaling USD 30.8 million, the MDB Committee has agreed to propose an updated sealed pipeline of projects that matches the current available SREP resources as of September 2018. Refer to Annex 2, which also includes a reserve pipeline and a list of projects that are not under active development. The sealed pipeline will be kept under review and will be presented to the SREP Sub-

Committee periodically.

11. Table 2 offers a scenario considering only the sealed pipeline.

Table 2. SREP resource availability schedule summary for sealed pipeline (USD million, as of September 30, 2018)

		Total	Grant	Non-Grant
Unrestricted Fund Balance after reserves (A)		**77.6**	**17.6**	**60.0**
Anticipated Commitments (FY18-FY21)				
Program/Project Funding and MPIS Costs		100.3	16.9	83.4
Total Anticipated Commitments (B)	(1)	**100.3**	**16.9**	**83.4**
Available Resources (A - B)		**(22.7)**	**0.7**	**(23.4)**
Potential Future Resources (FY18-FY21)				
Release of Currency Risk Reserves	(2)	30.8	3.9	26.9
Total Potential Future Resources (C)		**30.8**	**3.9**	**26.9**
Potential Available Resources (A - B + C)		**8.1**	**4.6**	**3.5**

Note:
(1) Includes both sealed and reserve pipeline
(2) Amounts withheld to mitigate over-commitment risk resulting from the effects of currency exchange rate fluctuations on the value of outstanding non-USD denominated promissory notes

3 Status of the SREP portfolio

3.1 Portfolio overview and updates

12. As of June 30, 2018, total funding approved by the Sub-Committee reached USD 585 million[6] for 46 projects and programs, including three projects under PSSA (see Table 3 for overview and Annex 4 for breakdown by country). This amount accounts for 78 percent of the indicative pipeline. These projects are expected to leverage a total of USD 2.95 billion in co-financing (with a 1 to 5 co-financing ratio) from recipient governments, MDBs, private sector, and bilateral agencies. Detailed information on co-financing breakdown by project is included in the information document, *SREP Country Portfolios*. Figure 4 breaks down the SREP portfolio by MDB, region, sector, and technology.

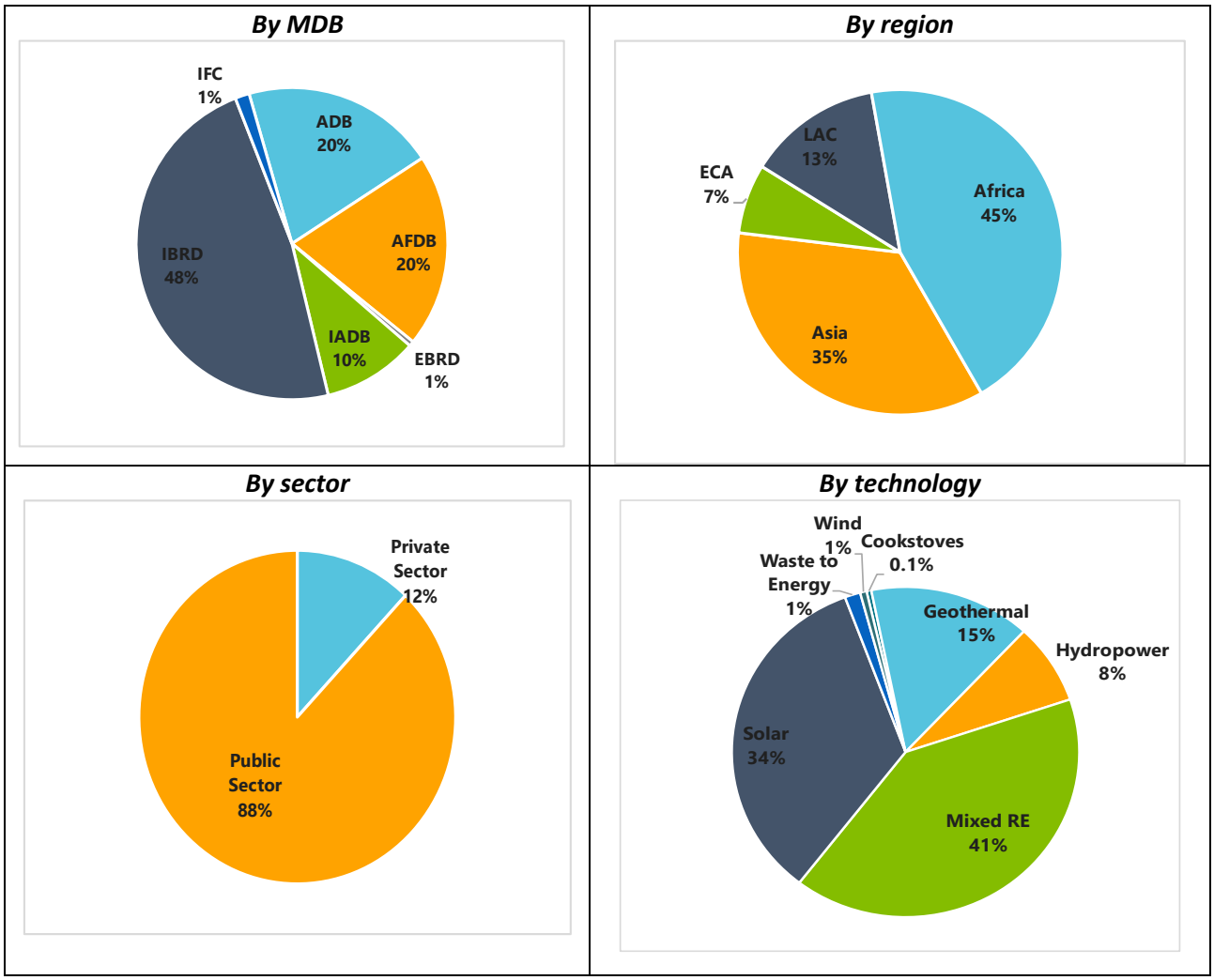
[6] Total approved project funding=project funding+ IPPGs + PPGs

Table 3. Overview of SREP portfolio (as of June 30, 2018)[7]

	Indicative pipeline allocation				Approved funding		Disbursement
	TOTAL	IP	PSSA	IPPG	Sub-Committee	MDB	
SREP funding (USD million)*	751.0*	661.2	85.2	4.6	585.4	408	82
Number of projects	61	55	6		46	33	24

Note: * Includes Project Preparation Grants (PPGs)

Figure 4. SREP Sub-Committee-approved funding by MDB, region, sector, and technology
(As of June 30, 2018)



Note: Mixed RE refers to projects considering multiple renewable energy technologies

[7] Not including projects cancelled or dropped.

13. Table 4 presents the status by country of the 21 endorsed investment plans and PSSA concepts along with the rates of funding approvals. It should be noted that eight of the 21 countries received endorsement of their investment plans since May 2015.

Table 4: Endorsement of investment plans and PSSA concepts (USD million, as of June 30, 2018)

	Country/Region	Endorsement date	Indicative allocation	Indicative pipeline funding	Approved funding	% Approval[1]
First group of countries	Ethiopia	Mar-12	50.0	33.3	31.3	94%
	Honduras	Nov-11[2]	30.0	29.1	29.1	100%
	Kenya	Sep-11	50.0	32.9	32.9	100%
	Maldives	Oct-12	30.0	25.9	25.9	100%
	Mali	Nov-11	40.0	29.6	28.6	100%
	Nepal	Nov-11[3]	40.0	39.8	39.8	100%
Second group of countries	Armenia	Jun-14	40.0	40.0	40.0	100%
	Liberia	Oct-13	50.0	50.0	50.0	100%
	Mongolia	Nov-15	30.0	29.9	29.9	100%
	Pacific Region	May-15	2.0	2.0	2.0	100%
	Solomon Islands	Jun-14	14.0	13.4	13.4	100%
	Tanzania	Sep-13	50.0	37.2	37.2	100%
	Vanuatu	Nov-14	14.0	14.0	14.0	100%
Third group of countries	Bangladesh	Nov-15	75.0	69.1	53.6	78%
	Cambodia	Jun-16	30.0	31.6	17.6	56%
	Ghana	May-15	40.0	40.0	1.5	4%
	Haiti	May-15	30.0	27.1	19.6	72%
	Nicaragua	May-15	30.0	15.0	7.5	50%
	Uganda	Nov-15	50.0	16.2	4.2	26%
	Rwanda	Nov-15	50.0	50.0	50.00	100%
	Lesotho	Dec-17	18.8	18.8	1.8	10%
	Madagascar	Jun-18	20.3	20.3	0.3	1.5%
	Sub-total for IPs		**784.1**	**665.8**	**531.1**	**80%**
	Sub-total for PSSA		**92.4**	**85.2**	**53.1**	**62%**
	TOTAL (IPs +PSSA)		**855.9**	**751.0**	**584.2[4]**	**78%**

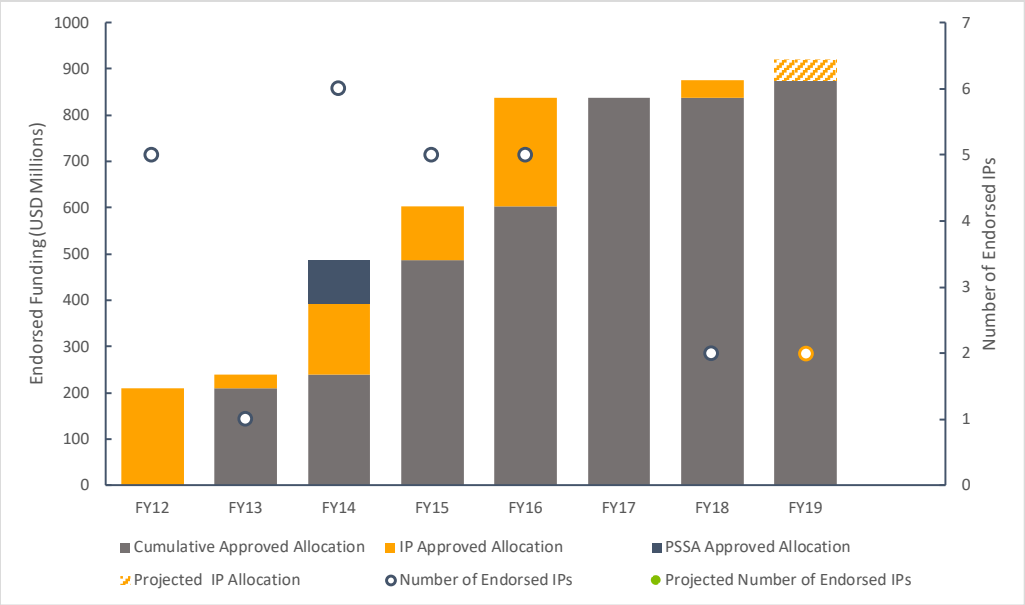
Note:
1. Approval amounts mentioned are against the indicative pipeline funding
2. Revised endorsement date is April 2017
3. Revised endorsement date if May 2015
4. Not inclusive of IPPGs received by Kiribati, Malawi, Republic of Yemen and Zambia which were allocated $300,000 each

3.1.1 Investment Plans

14. The SREP Sub-Committee endorsed one new investment plan at its meeting in June 2108, the Investment Plan of Madagascar, for an indicative allocation of USD 20.3 million in SREP funding (see Box 1).

15. For the remaining six SREP pilot countries that have not presented investment plans for endorsement, Kiribati and Zambia are expected to do so at the SREP Sub-Committee meeting on February 1, 2019. The investment plan submission dates for Benin, Malawi and Sierra Leone are yet to be determined. As for Yemen, due to continued security issues, no progress has been made to further the preparation of its SREP investment plan. See Figure 5 for trends in SREP investment plan endorsement.

Figure 5. Trends in endorsement of SREP investment plans by fiscal year



Box 1: Rural electrification and hybridization of isolated centers in Madagascar

Madagascar's SREP investment plan, was designed under the guidance of the Ministry for Energy, to contribute to the Government's energy goals according to the 2015-2030 New Energy Policy, including:

- Targeting 70 percent of households to have access to electricity or a modern source of lighting by 2030, compared to 15 percent currently
- Targeting 80 percent of the energy mix to be renewables by 2030, compared to 1 percent at present

The Madagascan electrical system, run by the national utility JIRAMA, has three high voltage interconnected grids, as well as 115 isolated centers in operation, 100 of which are powered exclusively by diesel-driven generating sets (gas oil or heavy fuel oil). It is not economically viable to interconnect all isolated centers. Rural electrification by mini-grids and an increased share of renewable energy in isolated centers have emerged as two strategic priorities for developing renewable energy in the country.

Madagascar's SREP investment plan specifies nine sub-projects to develop small hydroelectric plants and mini-grids for a potential installed capacity of 15 MW and to shift 59 isolated centers to photovoltaic solar or wind turbine power for a potential installed capacity of 38 MW. The total capacity of the two projects, 53 MW, represents about 10 percent of the country's current total installed capacity.

3.1.2 Sub-Committee approvals

16. During the current reporting period, the following projects were approved by the SREP Sub-Committee for a total of USD 76 million in SREP funding (see Table 5), bringing the total approved SREP funding to USD 585 million. Approvals included three projects considering energy storage technologies in Cambodia, Mongolia, and Solomon Islands (see Box 2).

Table 5: SREP Sub-Committee-approved projects and programs
(January 1 to June 30, 2018)

Country	IP/PSSA	Project title	MDB	SREP funding (USD million)
Solomon Islands	IP	Electricity Access and Renewable Expansion Project – 2	IBRD	6.55
Honduras	IP	Strengthening the RE Policy and Regulatory Framework Program (FOMPIER), Phase II	IADB	0.83
Mali	IP	Mini Hydropower Plants and Related Distribution Networks Development Project	AfDB	8.7
Cambodia	IP	National Solar Parks Program	ADB	14.0
Mongolia	IP	Upscaling Renewable Energy Sector	ADB	14.6
Armenia	IP	Private Sector Utility Scale Solar Power Support Project	IBRD	26.0
Honduras	IP	Grid-Connected RE Development Support (ADERC) - Transmission Phase II	IADB	5.0
TOTAL APPROVAL				**75.7**

Box 2: Energy storage featured in Cambodia, Mongolia, and Solomon Islands

The National Solar Park Project, the first of its kind in **Cambodia**, will support the construction of 100 MW solar photovoltaic (PV) power plants, and address the country's need to expand low-cost power generation, increase the percentage of clean energy in its generation mix, and expand the use of competitive tenders and other global best practices in the sector. The project will have two outputs: 1) solar park, transmission facilities, and supporting infrastructure constructed; and 2) strengthening the capacity of Electricité du Cambodge (EDC) to integrate renewable energy, including advanced technologies such as energy storage, into the national grid.

In **Mongolia**, the ADB Upscaling Renewable Energy Sector Project will support the development of the distributed renewable energy systems, with sub-projects comprising a total of 40.5 MW of solar PV and wind power in the Western and Altai-Uliastai regions. Advanced energy storage will be installed in selected sub-projects for grid stability and time-shifting. The system will supply power to more than a quarter of a million people across scattered local towns in the remote and less-developed western region of Mongolia, where communities rely on expensive, fossil fuel-based electricity imports from neighboring countries.

SREP will also finance new renewable hybrid mini-grids throughout **Solomon Islands**, as part of the Electricity Access and Renewable Energy Expansion Project (Phase II). Each mini-grid established would potentially require solar panels of 150 kW, battery storage of 300kWh and a diesel generator as a back-up of 140kW to connect 100 percent of the houses.

3.1.3 MDB approvals

17. During the reporting period, the MDBs approved the following project for USD 0.83 million in SREP funding, bringing the total MDB approved SREP financing to USD 408million:

    - Honduras (IP), Strengthening the RE Policy and Institutional Framework (FOMPIER), Phase II, USD 0.83 million (IADB)

18. After the reporting period, five projects were approved by the MDBs (see Table 6)

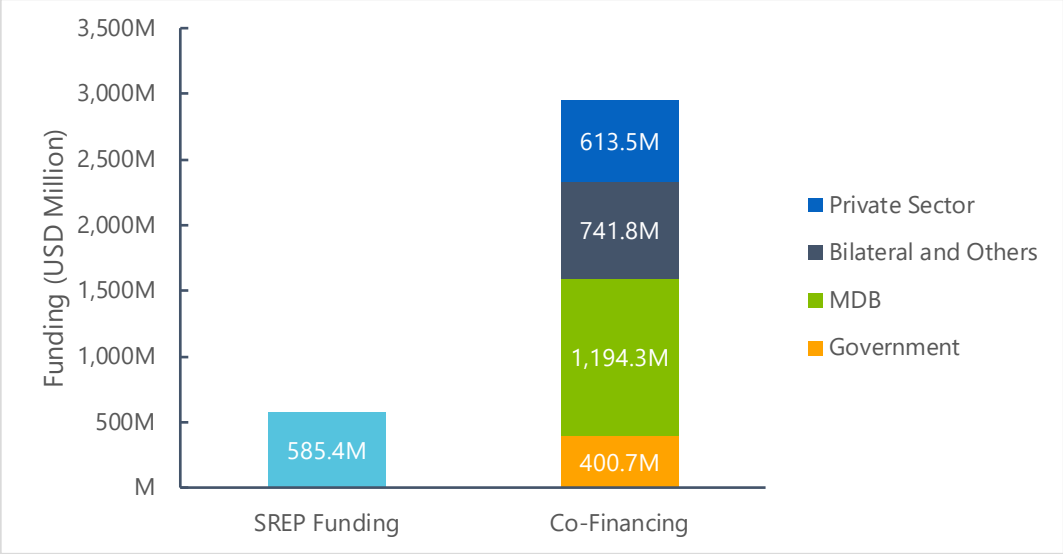
Table 6: SREP MDB-approved projects and programs
(July 1 to September 30, 2018)

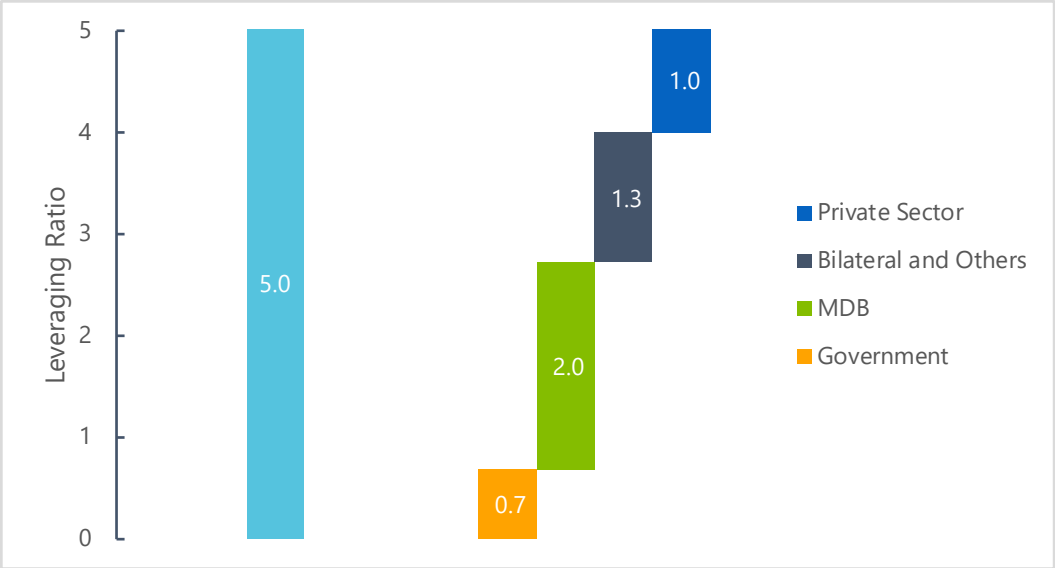
Country	IP/PSSA	Project title	MDB	SREP funding (USD million)
Bangladesh	IP	Off-grid Solar PV – Solar irrigation	ADB	22.2
Mongolia	IP	Upscaling Renewable Energy Sector	ADB	14.6
Honduras	IP	Grid-Connected RE Development Support (ADERC) - Transmission Phase I	IDB	7.0
Honduras	IP	Grid-Connected RE Development Support (ADERC) - Transmission Phase II	IDB	5.0
Solomon Islands	IP	Electricity Access and Renewable Expansion Project – 2	IBRD	6.6
TOTAL APPROVAL				**55.4**

3.2 Co-financing

19. The 46 projects approved by the Sub-Committee (USD 585 million) as of June 30, 2018 are expected to mobilize over USD 2.95 billion in co-financing from governments, MDBs, bilateral, and other sources. This represents a leverage ratio of 1 to 5, meaning for every USD 1 invested by SREP, another USD 5 will be co-invested by other financiers. As shown in Figure 6, MDBs represent the largest source of co-financing.

Figure 6: Co-financing on Sub-Committee-approved SREP funding by source and ratio
(as of June 30, 2018)

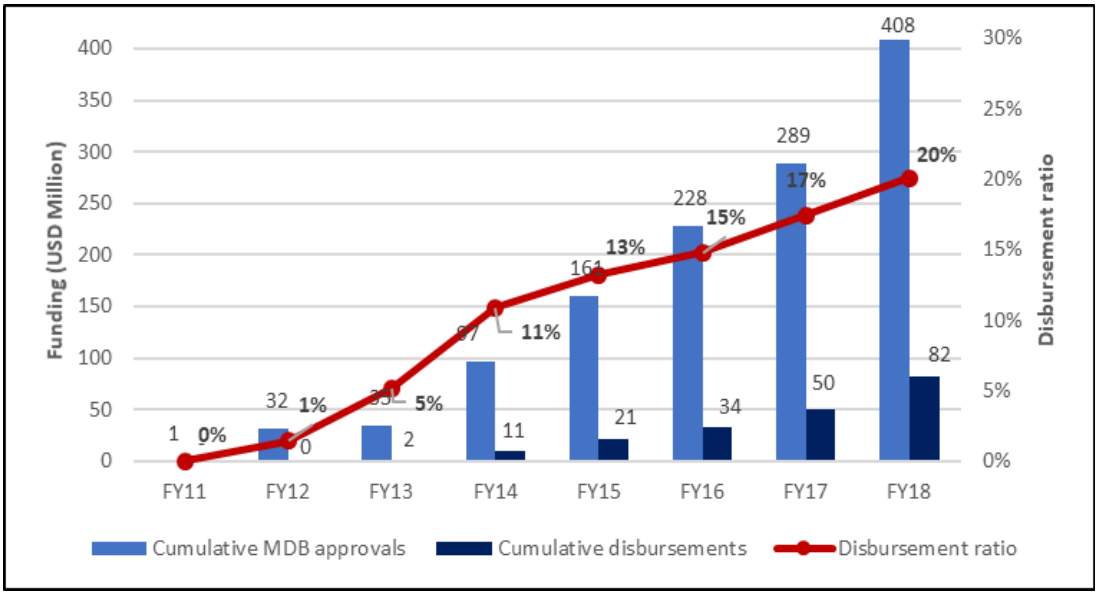




3.3 Disbursement

20. SREP disbursements were USD 16 million during the reporting period, reaching USD 82 million in total. Figure 7 shows the disbursement trend over time. Out of the 33 MDB-approved projects, 24 are disbursing. Annex 5 provides detailed information on disbursements at the project level (for public sector projects, which mirrors table D2 in the disbursement report).

Figure 7. SREP disbursement trend by fiscal year



4 Cross-cutting themes

4.1 Gender

21. The portfolio of investment plans and projects approved by the SREP Sub-Committee from January 1 to June 30, 2018 was reviewed regarding gender quality at entry. The three scorecard indicators on sector-specific gender analysis, women-specific activities, and sex-disaggregated indicators were reviewed for each investment plan and project. Figures were compared to baseline performance of the SREP portfolio as on June 30, 2014.

22. SREP endorsed one investment plan (for Madagascar) during this period. Of the three scorecard indicators, it hosted only sex-disaggregated indicators. SREP project performance on gender was stronger. Seven projects were approved during the period under review. Among these, sector-specific gender analysis was conducted in 57 percent of projects approved (compared to the baseline of 47 percent). Designing for women-specific activities was undertaken in 86 percent of projects approved (compared to the baseline of 40 percent), while 71 percent of projects approved featured sex-disaggregated indicators (compared to the baseline of 80 percent). Box 3 illustrates how gender is being considered in the Electricity Access and Renewable Energy Expansion Project in Solomon Islands.

Box 3: Expanding women's access to energy services and formal sector energy employment in Solomon Islands

The Electricity Access and Renewable Energy Expansion Project in Solomon Islands, implemented by the World Bank and supported by SREP financing of USD 7.1 million, supports provision of renewable energy hybrid mini-grids and grid-connected solar power, along with subsidy support for electricity connections in low-income areas, to increase access and availability of reliable energy supply. To improve gender outcomes, the project is designed to ensure that women's opportunities for energy sector employment are expanded, and that female-headed households in the low-income areas are not thwarted by high electricity connection fees.

Women are grossly under-represented in energy sector employment in Solomon Islands, with clustering in administrative and financial, rather than technical roles. The main electricity supplier, Solomon Power, employs women as just 6 percent of its technical staff, with the number rising to 21 percent when non-technical roles are also considered.

To promote women's energy employment, , the project will: 1) offer an employment program for rural women in solar panel maintenance and mini-grid site support, implemented through a local NGO, 2) identify the main challenges for women to access sector technical and managerial positions and develop measures to address these, and 3) address sexual harassment and gender-based violence (GBV) in the energy sector workplace, including development of a GBV policy and staff training.

A gender assessment conducted during project preparation revealed that female-headed households found acceptable the connection fees proposed under the project (although tariffs were considered high). Thus, the project does not provide subsidized connection fees for female-headed households; however, as they tend to be poorer than those headed by men, the project will monitor household connectivity to the mini-grids, disaggregated by sex of the household head, to ensure that gender-based access gaps do not arise during implementation.

4.2 Risk management

23. Implementation risk is the risk that a project, once effective, is not implemented in a timely manner. The CIF Administrative Unit flags a project for implementation risk if the project meets at least one of the following two criteria:

- The project has been effective for 36 months but has disbursed less than 20 percent of approved funds.
- The project is within 15 months of the date by which all SREP funds are to be disbursed but has disbursed less than 50 percent of approved funds.

24. At the *program level*, SREP's risk score for implementation risk is low. However, one project, representing USD 8 million of approved funding, has exceeded SREP's tolerance for this risk, flagged under the first criterion. This project is the Biogas Extended Program – Nepal (World Bank).. More details are provided in the SREP Risk Report.

4.3 Knowledge management

4.3.1 CIF Evaluation and Learning (E&L) Initiative

25. Many E&L activities are providing findings and lessons learned related to SREP. This includes the independent evaluation, evidence synthesis and learning workshops on transformational change in the CIF context, analyzing the role of the CIF programmatic approach in catalyzing sector-wide results, and other thematic studies.

26. The Evaluation of the CIF Programmatic Approach has been completed, published and disseminated widely[8]. It finds that in SREP the CIF Programmatic Approach provided countries and MDBs an opportunity to address energy sector-wide challenges and to link resources to strategic planning in SREP countries, which helped bring government and other actors to the table for high-level dialogue. Strategic dialogue and resource predictability in the investment planning process helped identify potentially transformative investments, especially when government leadership was strong. The focus of the programmatic approach in combining technical assistance with investment to support first-mover projects also led governments to include policy or capacity building components in their investment plans. Findings and lessons from this evaluation were shared and discussed extensively with participants at the SREP Pilot Country Meeting in September 2018.

27. Emerging findings from an independent evaluation and evidence synthesis on Transformational Change in the CIF are also demonstrating the value of the CIF business model in taking a systems approach and laying the foundations for transformative change. It finds that SREP is delivering early and interim signals of systemic change primarily through the delivery of demonstration or first-of-its-kind projects, supported by strengthening of the enabling environment (e.g., policies, institutions, knowledge). This is found to be a critical factor in helping countries to further develop their renewable energy-based initiatives and expand energy access. SREP also is creating business models and demonstration projects that can serve as the basis for future scaling (e.g. mini-grids program). Early findings and lessons for future programming were presented and discussed with a range of CIF and external stakeholders at a Transformational Change Learning Partnership workshop in October 2018, as well as at the CIF@10 event in January 2019. The final reports will be launched in January 2019.
28. Other E&L activities implemented through the E&L Call for Proposals are also yielding findings and lessons. For example, an E&L study implemented by the World Bank

[8] *Independent Evaluation of the CIF Programmatic Approach*, ICF 2018. See the full report including CIF management response, and a summary brief, on the CIF Website.

CTF/SREP Focal Point Team reviews the effectiveness of various financing instruments (including grants, concessional loans, and contingent financing, and where applicable, equity) in facilitating the mobilization of private capital for the scale-up of grid connected solar power, is also currently being finalized and expected to be released in the coming months. Other activities include a study on opportunities and mechanisms for financing the scale-up of rooftop solar for the SME sector in India, and country-level lessons learned and experiences regarding complementarity and synergies amongst international climate funds. These will be finalized and released in early 2019.

4.3.2 SREP Pilot Countries Meeting

29. The CIF Administrative Unit, working with the Government of Rwanda and the MDBs, organized an SREP Pilot Countries Meeting in Kigali from September 18-20, 2018. The meeting was attended by more than 80 people from 24 SREP pilot countries, MDBs, and experts from other countries and organizations.

30. The event focused on major themes, such as successes and challenges of SREP implementation, renewable energy and energy access, financing renewable energy projects and the role of the private sector, Multi-Tier Framework (MTF) on energy access, gender, results, and evaluation and learning.

31. The pilot countries meeting provided a platform for the SREP countries to exchange experiences in the planning and implementation processes related to investments under SREP, and more broadly under the renewable energy and energy access initiatives undertaken by their respective governments. This allowed participants to discuss how best to draw out the results that are starting to emerge from project implementation, as well as early impressions and lessons learned from country representatives, and how this body of knowledge can best be shared for future use.

4.3.3 Other knowledge-sharing partnerships

32. GDI partnership: CIF has entered into a learning partnership with the Global Delivery Initiative (GDI) as part of an effort to showcase CIF project-level results and lessons learned. The GDI is a collaborative effort to create an evidence base of delivery know-how that can be used to inform development practice and improve implementation. The GDI and its partners support practitioners on the ground to adapt to dynamic contexts and solve persistent delivery challenges. In October 2017, CIF officially joined the GDI partnership as its 40th member. CIF has conducted six case studies in collaboration with the MDBs using the GDI methodology in 2018, two of which are based on SREP projects.

33. The GDI case study for Kenya, *Geothermal Field Development through Public-Private Partnerships in Menengai*, examines the three main delivery challenges encountered in the Menengai Geothermal Development Project. The first delivery challenge was to mitigate resource, credit, and financial risks to attract investment in geothermal energy

development. This challenge was solved by the Government of Kenya seeking support to access both concessional finance and technical capacity building from CIF and the AfDB.

34. The second delivery challenge for the Menengai Geothermal Development project was to provide a reward-risk ratio sufficient to attract private developers to invest in the project due to perceived credit-worthiness risks posed by the two government entities involved in the project. This challenge was addressed by the negotiation of a Partial Risk Guarantee between the Government of Kenya and the private developers, supported by the AfDB. The third delivery challenge was to reach a return on investment that made private developers' power plant projects bankable enough to attract private loan financing. This challenge was eased by creating a concessional lending program of USD 30 million supported by the Dedicated Private Sector Program of the Clean Technology Fund, channeled through the AfDB for two private developers.

35. The GDI case study for Honduras highlights three main delivery challenges encountered in the SREP project, Promoting Sustainable Business Models for Clean Cookstoves (PROFOGONES). The first challenge focused on the volatility of the cookstove market due to competing donation-based programs. This challenge was addressed by re-focusing the project on market segments with the purchasing power to acquire a quality cookstove. The second delivery challenge arose from undue focus on quantitative targets, namely implementing 50,000 cookstoves, which hampered efforts to strengthen a private sustainable clean cookstove market. This challenge was eased by re-focusing attention on creating strategic changes that would facilitate transformation from a donor-driven market to a demand-driven market.

36. The third challenge was the lack of coordination between stakeholders in the cookstove market, which impeded the achievement of project objectives. To address this challenge, the project created the National Coordination Platform, which, for the first time, brought together manufacturers, implementers, donors, and government organizations.

37. During the onsite visit for the GDI case study, CIF collected video footage over two days in the villages of San Juancito, Mateo, and Lepaterique to document different types of conventional and clean cookstoves and illustrate the multiple benefits of the latter. The footage was done with a 360 camera and a virtual reality video was produced[9].

38. Art of Knowledge Exchange: During the first half of FY19, the CIF embarked on an initiative to capture and share the rich experiences and good practice examples of knowledge exchange activities among CIF countries/projects, MDBs, and stakeholders. These activities include south to south knowledge exchanges, regional dialogues, thematic focused learning events, pilot countries meetings, knowledge fairs, workshops, and other

[9] https://youtu.be/MEYxIplvmQA

various knowledge exchange and learning instruments which have been used strategically and effectively to enhance the development impact of CIF projects and investments.

39. A new publication titled "The Art of Knowledge Exchange: A Results-Focused Planning Guide for Climate Change Practitioners" will be launched at the CIF@10 capstone. It builds on an earlier publication by the World Bank Group, and serves as both a guidebook and a toolkit for enhancing knowledge exchange at the national, regional, and global levels. It was produced to meet demand from CIF recipient countries for capacity building on knowledge exchange and learning, as well as in-country knowledge exchange activities.

40. The guide provides tools to help knowledge brokers play a more effective role in facilitating knowledge exchange and learning when designing and implementing CIF projects. It reflects the experiences of various CIF partners, MDBs, government officials, and other practitioners who have successfully integrated knowledge exchange into larger change processes. It also features the free augmented reality mobile app Blippar, a tool that enables CIF partners and others to access the guide online from around the world using their smart phones.

41. The guidebook includes a SREP case story of the CIF and ESMAP action learning events "Upscaling mini-grids for low-cost and timely access to electricity services". The case story reflects on how, given that a very similar group of countries attended the events seeking to develop mini-grids at scale, listening to more experienced colleagues gave them the opportunity to follow the best route for their country. For example, some wanted to learn about establishing policies/regulations, others about selecting business models, technology approaches, and more. The action learning events helped accelerate their understanding of issues and solutions for their country's specific needs and action plans.

42. Special initiative on Multi-Tier Access Framework: The MTF Energy Access Country Diagnostic Reports for Cambodia, Ethiopia and Rwanda were published in June 2018 and disseminated at the Vienna Energy Forum. Some policy highlights include:

    - **Cambodia:** Most households are served by the grid. But the grid supply is not performing up to its potential. Targeted measures to reduce outages and provide stable voltage would move 42.7% of households in Tier 3 to Tier 4 and 6.2% of households in Tier 4 to Tier 5. Most households without basic electricity access (Tier 0 households) already have an off-grid solution (solar device or rechargeable batteries). Upgrading performance of these devices would allow an additional 9.4% of households to enjoy the benefits of basic electricity access (Tier 1), increasing the percentage of households in Tiers 1–5 from 87.6% to 97%.
    - **Ethiopia:** Ethiopia's greatest challenge is to enable at least basic electricity supply (Tier 1 and above) to the 55.7% of households that have no or insufficient access to electricity (Tier 0). Given that the majority of unelectrified households are located within 10 kilometers of the national grid on average, grid densification could connect many unelectrified households. The approach to expand off-grid

solar solutions should prioritize larger Tier 1 and Tier 2 systems, given the high willingness to pay for such systems.

- **Rwanda**: Similar to Ethiopia, Rwanda's greatest challenge is to provide access to at least basic electricity supply (Tier 1 or above) to households without any access (Tier 0). The Rwandan government aims to achieve universal access by 2024 (52% through grid connections and 48% through off-grid solutions), according to the National Strategy for Transformation, which was approved in 2017. While the ultimate goal may be for all households to be in Tier 5, this goal is likely to take time. In the interim, a combination of grid and off-grid solutions should be promoted. The key to upgrading off-grid solar solutions (and thus moving households with an off-grid solar solution to a higher tier) will be to ensure that households can pay for them, including spreading the payments over time, and that the devices perform well.

43. Status update on other SREP countries under the MTF is as follows:

- **Bangladesh**: This nationally representative and government-implemented survey has been supported by MTF-ESMAP since late 2016. Data collection and analysis has been completed. Findings have been formally presented to the government in a seminar on September 26, 2018. A draft report is anticipated to be delivered by November 2018.
- **Haiti**: The energy access survey is being implemented by the Government with MTF team support. In addition to the household survey, the initiative will include an expansive enterprise survey. The Government has shortlisted firms to execute the MTF survey and a selection is expected soon.
- **Honduras**: In September 2016, MTF launched its initiative in Honduras. Data has been collected, cleaned, and analyzed. The final country diagnostic report for Honduras is expected to be delivered by November 2018.
- **Kenya**: Data collection is completed and is currently going through analysis. The core MTF and oversampled data will support the World Bank-backed Kenya Off-Grid Solar Access Project and the Kenya Energy Management Program, as well as the national utility's slum electrification efforts supported by the World Bank and GPOBA. In collaboration with the Rockefeller Foundation, MTF Kenya's enterprise survey is ongoing, as is the pilot for remote data gathering. MTF analysis was presented to the Government on October 22, 2018 and final reporting on Kenya MTF findings is expected to be completed by December 2018.
- **Liberia**: MTF Liberia discussion with the government began in December 2016 and the national data collection was launched in March 2017. Collected data has been cleaned and is currently being analyzed. Results on MTF Liberia findings will be completed and disseminated by November 2018.
- **Madagascar**: Implemented by the World Bank, MTF's household survey will also include a mini-grid operator survey and an oversampling of approximately 500 households using mini-grids as source of electricity. Negotiations for the final

selection of the firm are underway and the contract is expected to be finalized by the end of October 2018.

- **Nepal**: An MTF workshop with the Nepalese government and international development stakeholders took place in November 2016. Household survey data collection began in July 2017 and is now complete. Both mini-grid and enterprise survey activities began in October 2017; data has been cleaned and final reporting is expected to be delivered by November 2018.
- **Uganda**: MTF began its dialog with the Ugandan government early 2016. MTF survey instrument and sampling method have been used to establish the baseline of the World Bank's Electricity for Rural Transformation (ERT) - III project, which will enable measuring the impact of energy intervention. The Ugandan Bureau of Statistical Office will be responsible for executing both the household and enterprise surveys using MTF's questionnaire. Data collection is ongoing. The MTF report is expected to be completed by June 2019.
- **Zambia**: MTF Zambia activities began in September 2017. Data has been cleaned and analysis of these results was completed in July 2018. Findings have been shared with the government, and they will also be shared during a workshop in Lusaka slated to take place in November 2018. Full diagnostic reporting on MTF Zambia is expected to be delivered by November 2018.

5 Results

5.1 Background

44. The revised SREP results framework and monitoring and reporting (M&R) toolkit reflect recommended changes presented in the SREP M&R System Stocktaking Review (2018) and approved by the SREP Sub-Committee in June 2018, with the understanding that the results framework must be flexible to allow for adjustments based on actual SREP program implementation experience.

45. The changes to the results framework and M&R toolkit further strengthen the relevance and effectiveness and utility of the SREP M&R system and include the following revised set of SREP core indicators. The SREP M&R Toolkit has also been updated to provide guidance on implementing data collection and reporting on these revised indicators:

- Core indicator 1: Annual electricity output (MWh/yr) from renewable energy as a result of SREP interventions.
- Core indicator 2: Number of people, businesses, and community services benefiting from improved access to electricity and other modern energy services fuels as a result of SREP interventions.
- Core Indicator 3: Increased public and private investments in targeted subsectors as a result of SREP interventions
- Core indicator 4**:** Direct/indirect capacity (MW) from renewable energy as a result of SREP interventions

46. There are also projects whose primary objective is to strengthen the enabling environment for investments in clean energy and energy access. These projects will contribute indirectly to the achievement of the core indicators. A co-benefit indicator is measuring the progress made to improve the regulatory, institutional, and policy frameworks for renewable energy.

47. In addition, all projects and programs report on other co-benefit indicators that reflect the broader impact of SREP-funded interventions in each country. Reporting on co-benefit indicators is not conducted annually. Rather, MDBs report on co-benefits once the information becomes formally available following supervision missions, at mid-term, or upon completion of the project.

48. The following should be noted while reviewing the results:

- Reporting Year (RY): The report covers RY2018. Depending on MDB, this means the period from January 1, 2017 to December 31, 2017 or July 1, 2017 to June 30, 2018. The abbreviation RY, or Reporting Year, is used to capture this annual period.
- Actuals: Actual (RY17) refers to the actual results reported by a project for the latest 12-month reporting period. Actual cumulative refers to total actual results since the project started reporting results.
- Targets: Target (Annual), in case of electricity output and GHG emissions reduced, refers to targets expected to be achieved on an annual basis. For other indicators, such as improved energy access, co-financing, and installed capacity, target refers to absolute cumulative results expected to be achieved during the course of the project. The words “target results” and “expected results” are used interchangeably. They refer to a mix of targets derived from MDB Board approval documents (for public sector projects) or from SREP Sub-Committee approved documents (for private sector programs).
- Activities as a result of SREP interventions are defined as those funded by SREP funds together with those funded by the leveraged co-financing reported in Core Indicator 3.
- Co-financing: Different MDBs take different approaches to reporting on actual co-financing. This includes establishing milestones when MDBs recognize co-financing and identifying the relevant co-financing amounts. While some MDBs report the full amount once a project is approved by the respective board, others do not report until reaching financial close. Others report based on annual disbursements by the respective co-financiers or only report the full amount once the project starts operating. In addition, some co-financing figures may not be reported for confidentiality reasons.
- GHG reduction: In 2012, the SREP Sub-Committee decided that SREP projects should measure the co-benefit of avoided GHG emissions. In the absence of country or project-specific baselines, SREP projects can estimate GHG emissions

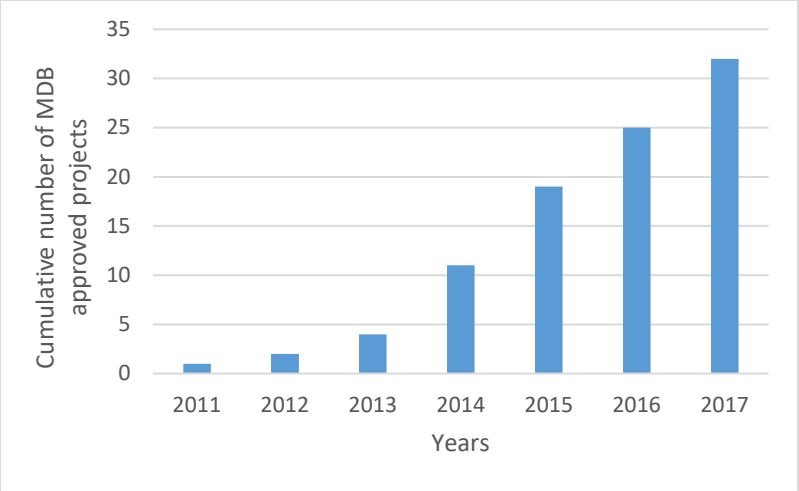
avoided using a simple, common, and transparent proxy-based method (emission equivalent based on diesel-generated electricity, as adopted by the ADB: 793.7 tons CO2eq per GWh).

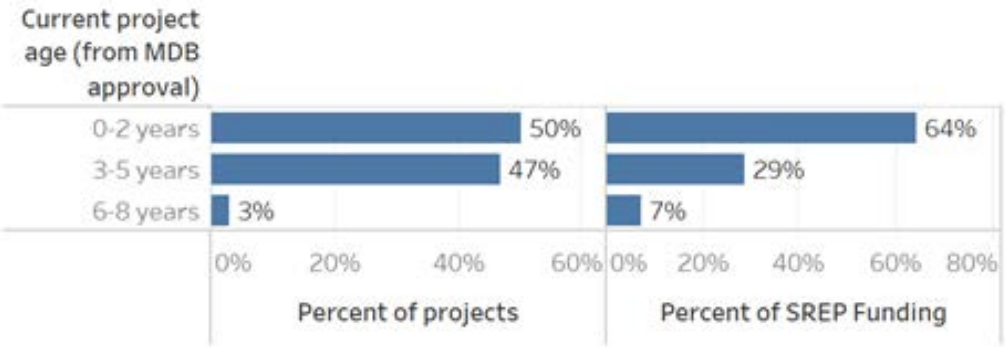
5.2 Overview

49. This section on SREP results is based on the expected and actual results data reported by 32 MDB-approved projects and programs totaling USD 366 million in SREP funding as of December 31, 2017. To follow is an overview, more details on progress toward results, and an update on enabling environment projects and programs, which do not report directly on core indicators.

50. MDBs began approving SREP projects in 2011, but the bulk of the projects included in this result reporting (65 percent) were approved between 2015 and 2017 (see Figure 8).

Figure 8: MDB-approved SREP projects





51. Ten projects are already generating results on the ground, including seven investment projects and three enabling environment projects. Another 16 projects are reporting progress, including in procurement activities.

52. Table 7 offers an overview of SREP expected and actual results (cumulative and for RY2018). Figure 9 breaks down the expected results by grid connection and technology.

Table 7: SREP results overview

(MDB-approved SREP funding USD 366 million as of December 31, 2017)

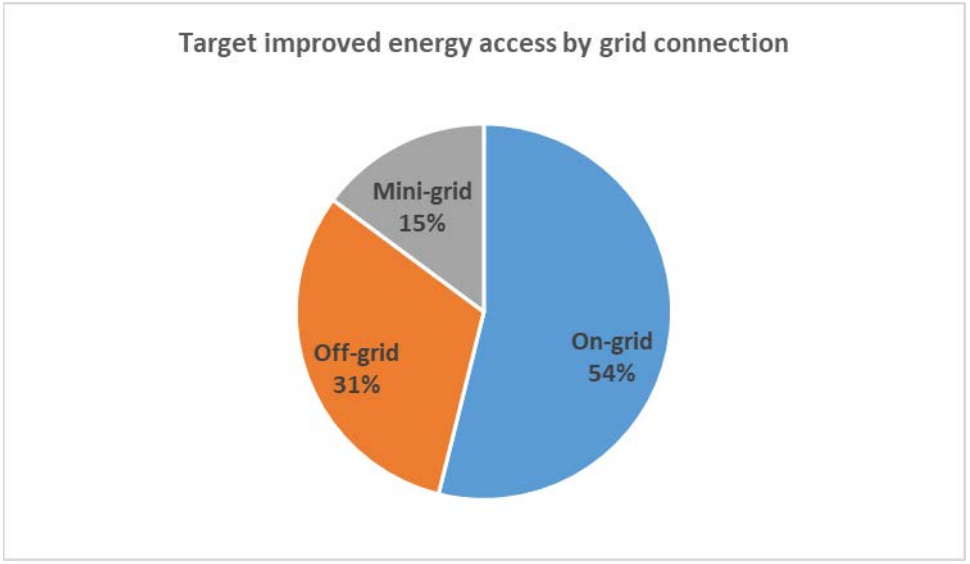
	Actual (RY2016)	Actual (RY2017)	Actual (RY2018)	Target
Electricity output (MWh/yr)	276	1,186	20,987	3,256,387
Improved energy access (people)	7,395	10,600	185,068	8,415,812
Improved energy access (businesses)	-	-	462	142,782
GHG emissions reduced/avoided (tons CO2 eq/yr)	251.3	8,537	24,827	2,414,318
Installed capacity (MW)	0.9	2.9	154.78*	615
Co-financing (USD million)	410	476	485	2,002

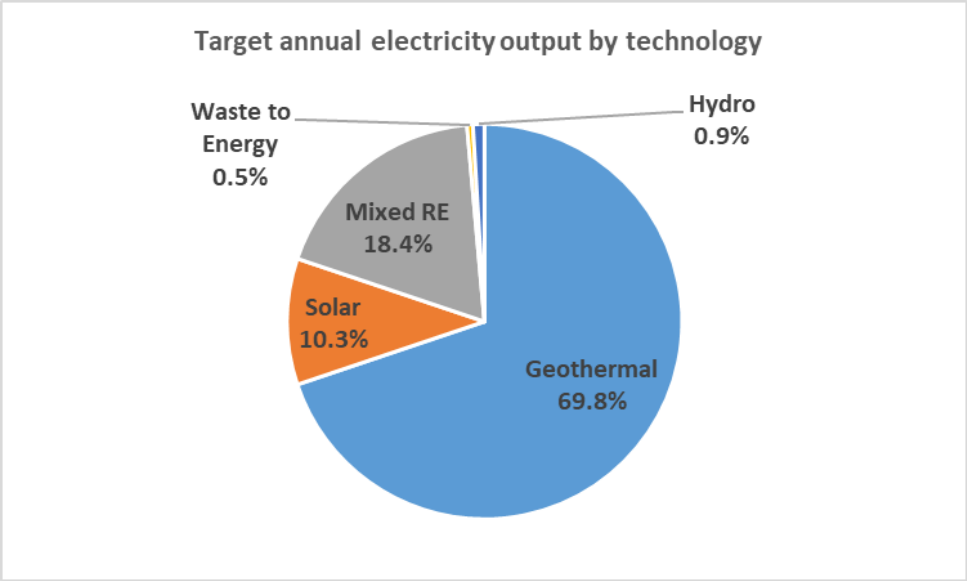
Note: GHG reductions and Electricity output: Figures are ANNUAL

Co-financing, installed capacity, Improved energy access: Figures are CUMULATIVE

*Including the 150 MW indirect MW from Kenya Geothermal

Figure 9: SREP expected results by grid connection and technology





53. Compared to RY2017, RY2018 marks a significant increase in actual results, with about 17 times more electricity produced and more people benefitting from improved energy access (see Figures 10 and 11). The Extended Biogas project in Nepal drives about 70 percent of the increase in electricity output. More than 50 percent of the increase in people benefitting from improved energy access comes from the Mali Rural Electrification Hybrid Systems Project, followed by the cookstoves project in Honduras, and the POISED project in Maldives. Results from these projects are described in more detail in Sections 5.3 and 5.4.

Figure 10: Electricity output reported by SREP projects over time (MWh)

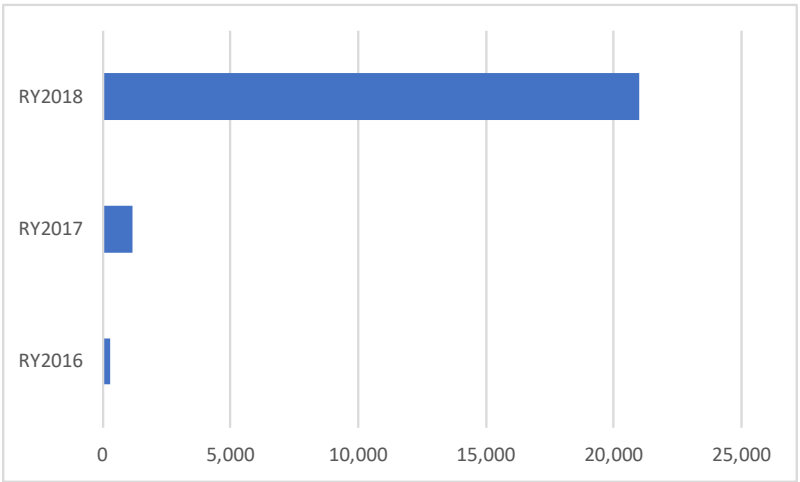
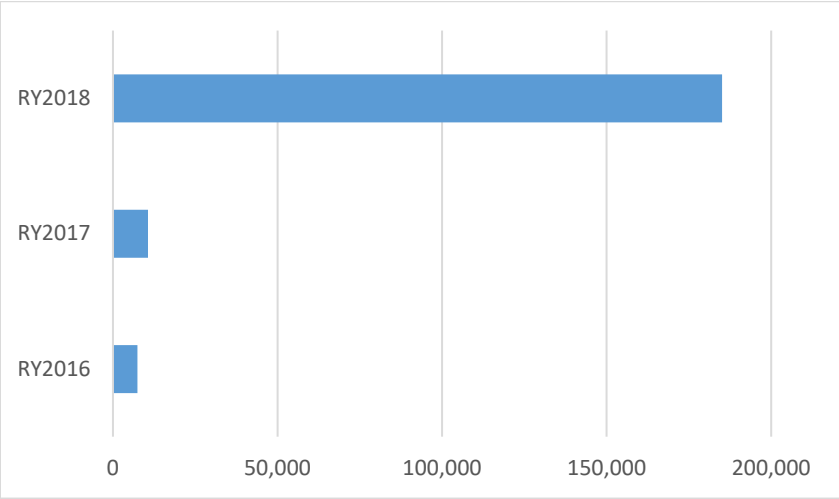


Figure 11: New or improved access reported by SREP projects over time (people)



5.3 Review of Core Indicator 1 and Core Indicator 4

54. Core indicator 1 measures actual total annual electricity production during a 12-month period from renewable energy and core indicator 4 measures the direct / indirect capacity (MW) from renewable energy, both indicators as a result of SREP interventions. There are six projects reporting on actual electricity produced, as shown in Table 8 and further described herein. See Annex 3 for detailed information about all project targets and actual results related to Core Indicators 1 and 4.

Table 8: SREP projects reporting on Core Indicator 1 and Core Indicator 4 in RY2018

Country	**Project title**	**MDB**	**Technology**	**Installed Capacity**			**Annual Electricity Production (MWh/yr)**		
				Actual 2017	Actual 2018	Target	Actual 2017	Actual 2018	Target
Honduras	Self-Supply RE Guarantee Program	IDB	Solar	0.9	0.9	20	1,186	1,338	45,000
Maldives	Accelerating Sustainable Private Investments in RE Program (ASPIRE)	IBRD	Solar	0	1.5	20	0	2,190	32,610
Maldives	Preparing Outer Islands for Sustainable Energy Development Program (POISED)	ADB	Solar	2	2.3	21	0	3,376	27,600
Mali	Rural Electrification Hybrid Systems	IBRD	Solar	0	0.18	4.8	0	1.72	8,653
Nepal	South Asia Subregional Economic Cooperation Power System Expansion Project	ADB	Mixed (wind/solar)	0	0.1	4.8	0	65	25,228
Nepal	Extended Biogas Program	IBRD	Biogas	n.a.	n.a.	n.a.	0	14,016	15,900
						Total	1,186	20,987	154,991

55. **Honduras:** The Self-Supply RE Guarantee Program (IDB), has been in operation since October 2015 and was the first SREP project to deliver actual results on annual electricity output. Small-scale self-supply renewable energy systems are widely regarded as low-cost opportunities to mitigate climate change but are "still hard to reach." Risk mitigation and technical cooperation resources are needed to support first movers. This program provides risk-sharing instruments (first-loss guarantees and co-financing resources, in certain cases) for loans from the IDB Group and other financial institutions. It improves the credit profile of the projects and allows their implementation through access to appropriate finance.

56. The IDB Group expects to support approximately USD 40 million of investment in self-supply renewable energy projects. These will help establish local engineering capacity, catalyze the development of supply chains for equipment procurement, and demonstrate the market potential (biogas, small-scale biomass, and solar PV) to local financial institutions. It may also support new business models such as third-party finance of projects within companies' facilities. The program will directly support at least 10 companies to supply their own renewable energy. Four clients were supported with renewable energy feasibility studies in Honduras. One knowledge product was developed to showcase the impact of IDB group and donors in fostering renewable energy in the country.

57. **Maldives:** The Preparing Outer Islands for Sustainable Energy Development Program (POISED) (ADB) is described in Section 5.4. The Accelerating Sustainable Private Investments in RE Program (ASPIRE) (World Bank) aims to transform the solar PV sector in Maldives by improving the risk perception of the private sector, standardizing the deployment of these technologies, and providing critical mass to ensure subsequent private sector engagement in the sector. The program's contribution to the identification of pipeline of subprojects, standard contracts and technical guidelines, capacity building, and institutional mechanisms will guide the sector towards maturity. The Government of Maldives and off-taker utilities will gain significant experience in developing and integrating solar PV into the grid.

58. The Maldives ASPIRE project led to the competitive procurement of 1,5 MW solar IPP project in Hulhumalé. The project became operational in March 2018 and is delivering solar power into the grid. All contracts for first sub-project are effective, including the IDA guarantee. The World Bank has approved a disbursement of US$ 239,400 of the SREP Grant for the escrow account that covers delays in payment for the power generated by the sub-project. The government is now preparing two new bids under the ASPIRE program to procure: (i) around 5MW in Hululmale'/Hulhule'/Male' (Greater Male'), and (ii) between 1-2 MW on Addu island. Decrease in equipment cost since the first bid in 2015, a larger scale deployment, and incorporation of lessons learned from the first bid are expected to result in a lower tariff. The implementation of the cost buydown mechanism for this bidding window will help lower the tariff further.

59. **Nepal:** The South Asia Subregional Economic Cooperation Power System - Rural Electrification through Renewable Energy (ADB), is highlighted in Box 4. The Extended Biogas Program (World Bank) promotes large off-grid biogas generation in Nepal, measured by two result indicators: (a) Off-grid bio gas generated for thermal application from the large-scale projects (>12m2) and (b) off-grid bio-gas based electricity generated. Due to reduced load shedding in Nepal, the interest from sub-project developers to invest in bio-gas based electricity generation system has now diminished. The developers are now more focused and interested on generating bio-gas for thermal application. The Project has already exceeded its current target value for off-grid bio-gas generated. Based on the strong pipeline of sub projects, the gas generation volume for thermal application is expected to increase further.

60. The bulk of SREP funds ($6.9 million out of $7.9m) is used to partially reimburse the Government of Nepal (GoN) for the subsidies (capital cost buy-down) that it has paid for completed and commissioned sub-projects. The funds are only drawn once the projects are commissioned and operational. On the commercial side, despite the healthy sub-project pipeline (application of 392 projects have already been approved, out of 429 applications received), only 124 sub-projects have been commissioned (out of 138 completed). These include two largest bio-gas plants in Nepal, located in Syangja and Bhairawa districts, with the gas generation capacity of 3750 m3 and 3500 m3 per day.

61. The SREP funds have been applied to buy-down the capital subsidy provided for these two projects. Currently four large sized projects in Bhairawa, Pokhara, Chitwan, and Sunsari districts are under construction with the expected construction completion by the end of 2018. On the municipal side, one project is under construction phase, while detailed design report of one more project in is the process of being approved by AEPC's Technical Review Committee (TRC) and expected to move into the construction phase soon.

62. Overall, the World Bank and the implementing agency are putting in place specific actions to increase the number of projects reaching the construction and commissioning stage. These include: (i) technical assistance for design and cost benchmarks to guide the decision-making process and enhance the capacity of the stakeholders to assess and development projects; and (ii) project restructuring to streamline the project approval and approval processes.

63. **Kenya:** The Menengai Geothermal Development Project (AfDB) is the only project reporting on Core Indicator 4 for indirect capacity achieved via a SREP intervention. The drilling process is ongoing, but delivery is progressing well. Both government support for the project and fuel supply for drilling rigs have improved. Project implementer, GDC, is introducing directional drilling to advance the drilling progress. AfDB is assisting in procurement of directional drilling services. Total wells drilled at end of October 2017 provided 165 MW at the wellhead. Installation of additional drilling rigs is ongoing.

Box 4: Nepal's largest wind-solar hybrid power system switched on

On December 2017, Nepal inaugurated its largest wind-solar hybrid power system in Chisapani, Hariharpugadhi, some 200 kilometer from the capital Kathmandu. The system is the first of its kind in Nepal and will connect this remote Nepalese community to rest of the world.

This is one of the sub-projects developed under the South Asia Subregional Economic Cooperation Power System Expansion Project (ADB). It finances directly the infrastructure needed to expand productive use of energy in sectors like agriculture, rural enterprise, health, and education to enhance the income and welfare of rural communities.

SREP funds support mini-grid renewable energy systems in off-grid, rural communities, including installation of up to 4.3 MW of aggregated mini hydro-electric power plants and up to 0.5 MW of aggregated mini-grid based solar or solar/wind hybrid systems. The physical investments are reinforced and supplemented by capacity building support to the Alternative Energy Promotion Center (AEPC), including project management support, institutional capacity enhancement, and parallel livelihood development activities in the project area.

Progress to date includes awarding contracts for five mini hydro sub-projects for a total of 1,400 kW. Procurement is ongoing for another two sub-projects with a cumulative size of 1,200 kW. Three wind-solar mini-grid projects for a total of 90kWp have been completed, and construction continues on another three totaling 245 kWp. Overall, the project aims to develop 500kW via wind-solar mini-grid sub-projects.

5.4 Review of Core Indicator 2

64. Core Indicator 2 measures improved access to electricity and/or other modern energy services in people's homes and in businesses and community services as a result of SREP interventions. Modern energy services may include fuels produced from renewable sources, such as biogas, improved cookstoves, and others. There are five projects reporting on actual improved energy access as shown in Table 9 and further described.

See Annex 3.2 for detailed information on all project targets and actual results, with a gender breakdown. No targets on community services have been identified.

Table 9: SREP projects reporting on Core Indicator 2 in RY2018

Country	Project title	MDB	Technology	Improved energy access					
				People			Businesses		
				Actual 2017	Actual 2018	Target	Actual 2017	Actual 2018	Target
Honduras	Sustainable Rural Energization(ERUS)-Part I & III: Promoting Sustainable Business Models for Clean Cookstoves Dissemination	IDB	Improved cookstoves	4,000	40, 716	375,000	0	0	300
Maldives	Preparing Outer Islands for Sustainable Energy Development Program (POISED)	ADB	Solar	0	32,461	30,820*	0	267	n.a.**
Mali	Rural Electrification Hybrid Systems	IBRD	Solar	0	103,914	681,000	0	n.a.	n.a.
Nepal	South Asia Subregional Economic Cooperation Power System Expansion Project	ADB	Mixed (wind/solar)	6,600	7,977	143,350	0	n.a.	n.a.
Nepal	Extended Biogas Program	IBRD	Biogas	n.a.	n.a.	n.a.	0	195	400
			Total	**10,600**	**185,068**	**1,230,170**	**0**	**462**	**700**

* The target of 30,820 people is based on the population of project's Phase 1 with 5 sample island subprojects presented during the SC approval. The project will cover a total of 167 islands with an estimated population of 251,500

** Target to be established by ADB

65. **Honduras:** The Sustainable Rural Energization Program (ERUS) Part I & III: Promoting Sustainable Business Models for Clean Cookstoves Dissemination (IDB) is implemented by Fundacion Hondureña de Ambiente y Desarrollo (Fundación Vida). It seeks to create a transformative impact on the clean cookstove market, by enabling market conditions for new business models and by strengthening the existing private sector capacity in Honduras. The project established a National Clean Cookstove Quality Standard, created a solid coordination unit between a diversity of value chain stakeholders, reinvigorated local cookstove manufacturing and implementation, created various knowledge products (market, gender, and legal framework), and delivered over 10,000 cookstoves to beneficiaries between January 2014 and December 2017.

66. The project made progress as well assigning funds to 4 winners to develop technology innovations to improve stoves performance. It is also strengthening the sustainability of the cookstoves market through microcredit and increased commercialization of portable stoves. The project also works on a strategic initiative to secure and sustain firewood supply for seven clusters of brick and lime producers. This strategy includes the commitment of an association of businesses' owners to work toward energy security and strengthen their business operation.

67. **Maldives:** The Preparing Outer Islands for Sustainable Energy Development Program (POISED) (ADB) is helping Maldives to achieve a more reliable, sustainable energy sector by replacing inefficient, diesel-based power generation with solar-diesel hybrid mini-grid systems in 160 targeted medium and small islands. By reducing the need for diesel, fuel imports and electricity costs will decline. In parallel, SREP is helping the government to develop key regulations and capacity building for utilities and regulators to create an effective regulatory environment for the delivery of affordable, reliable, and clean energy. The project will directly benefit island communities (5,000 households under Phase 1), improving electricity supply at homes and for other productive uses. It is also creating opportunities for women to participate in public consultations, micro-enterprise.

68. **Mali:** The Rural Electrification Hybrid Systems (World Bank) is highlighted in Box 5.

69. **Ethiopia:** Lighting Ethiopia (IFC) is the only project reporting on Core Indicator 2 for indirect people benefitted via a SREP intervention. A total of 8,134,590 people are receiving access to improved services (1,626,918 households). More details on this project are provided on Box 6.

Box 5: Transformative impact of hybrid mini-grid schemes in isolated off-grid areas in Mali

Following the completion of the feasibility studies and procurement of the supply, installation and commissioning services for the mini-grids, the project has significantly advanced.

Six contracts were signed for 23 sites and the World Bank has given its no objection for the Engineering, Procurement and Construction (EPC) contracts covering 22 additional sites. The implementation of the resettlement action plans for the selected localities is being completed.

The Rural Electrification Hybrid Systems (World Bank) aims to strengthen and further scale up rural electrification in Mali through the introduction of hybrid solar PV-diesel generation in rural mini-grids and the installation of solar home systems (SHS) when the cost of mini-grid expansion is not economically justifiable. SREP and World Bank IDA funds will support the procurement and installation of an additional 4.8MWp of generation capacity in hybrid systems (including photovoltaic panels, inverters, batteries, and control electronics).

The project is offering an alternative to the current model based solely on diesel gen-set by demonstrating that electricity supply costs to customers in rural areas in Mali can be reduced by transforming diesel-based mini-grids into hybrid mini-grids using solar PV and, in some cases, biodiesel. SREP financing will help reduce initial investment costs and improve the operators' capacity to operate and maintain the hybrid mini-grid generation facilities. While the technology is more capital intensive, the project supports a more systematic approach to rural electrification through the standardization of hybrid mini-grids in rural areas, transforming them into the least cost off-grid electrification option in Mali.

Scaling up of the scope and effectiveness of hybrid mini-grid schemes in isolated, off-grid areas in Mali will allow transformative impacts on a country-wide scale and strengthen the Government of Mali's rural energy access and clean energy agenda. Neighboring countries and rural energy agencies can learn from Mali's example.

5.5 Review of Core Indicator 3

70. This core indicator measures direct finance investments leveraged through SREP funding from both public and private sources, as realized co-financing. The level of leveraged financing has a prominent function for understanding the success of SREP and features as an integral part of all SREP projects

71. The target is the total leveraged finance in the project proposal at the time of MDB approval (for public sector projects) or SREP Sub-Committee approval (for private sector programs). Investment data are disaggregated by MDB, government, private sector, bilateral and other investment types (debt and public funding).

72. Data reporting follows the methodology set by the MDB and, whenever possible, builds on the joint MDB framework to harmonize reporting on climate finance[10]. The joint framework developed by MDBs is followed to the extent possible. It refers to a set of definitions and methodologies to measure, for example, the total amount of 'private co-financing mobilized' in MDB operations, and its component parts of 'private direct mobilization' and 'private indirect mobilization.

73. As shown in the overview (table 7), total co-financing is at USD 485 million, or around 25% of the target (USD 2,002 million), with more than 80% driven by the Menengai Geothermal Development Project (AfDB). Details on co-financing from various sources are provided on Annex 3.3.

5.6 Working towards results: Update on investment projects

74. The following investment projects have yet to provide actual results on core indicators, but work is in progress.

75. **Ethiopia:** For the Geothermal Sector Development Project (World Bank), bidding for Aluto site drilling rigs supply and operation contact concluded in May 2018 and is under evaluation. The results of the procurement packages have not been analyzed. The project restructuring is expected to be decided following the analysis after the contract award. The draft bidding documents for Alalobad site contracts and training plan were prepared. A consultative workshop on the institutional structure of geothermal in Ethiopia was held in September 2018.

76. **Honduras:** Under the Grid-Connected RE Development Support Project (ADERC)—Generation/ Honduras Renewable Energy Finance Facility (H-REFF), as of June 2018, four investments for a total of USD 6.9 million had been approved by the Investment Committee (and two more were approved in the fourth quarter of 2018). Technologies include solar PV (off and on-grid), a distributed generation hybrid system company, and biomass. Projects are in Honduras and other Central American countries (H-REFF allows

[10] Refer to Mobilization of Private Finance by Multilateral Development Banks: 2016 Joint Report and Mobilization of Private Finance by Multilateral Development Banks and Development Finance Institutions 2017

some resources to be invested outside Honduras). Total capitalization is currently USD 33 million, and the General Partner is fundraising to take it to USD 50 million. In January 2018, HREFF entered a co-investment agreement with CABEF, the Caribbean basin Energy Efficiency and Renewable Energy Fund to reach a combined capitalization of USD 63 million, of which USD 27.2 million will be invested in Honduras. The General Partner is fundraising to add additional USD 37 million to the existing capitalization of USD 63 million, for a total target combined capitalization of USD 100 million by the third quarter of 2019.

77. **Haiti:** The Renewable Energy and Access for All and Renewable Energy for the Metropolitan Area (World Bank) reached effectiveness in July 2018 and the Project Implementation Unit is fully staffed. The procurement process was launched for the selection of the technical advisors who will conduct pre-feasibility studies and prepare bidding document for the recruitment of an EPC contractor that will build the on-grid solar plant. The selection process is expected to be completed by February 2019.

78. **Kenya:** The Electricity Modernization Project (World Bank) is progressing moderately satisfactorily under its four components: electrification, improvement in service delivery and reliability, revenue protection program, and technical assistance/capacity building. Preparation of the complex bidding document caused delays but is moving steadily forward. On the SREP funded electrification component, the delivery of electrification materials, like poles, meters, transformers, cables and conductors, is ongoing. Design of electrification schemes is completed, and 253,919 potential beneficiaries have been identified, compared to the initial 125,000. Thus, the scope of work and cost of design contracts have increased.

79. **Nepal**: The South Asia Subregional Economic Cooperation Power System Expansion Project - Additional Cofinancing (ADB) is finalizing its financial bid evaluation

80. **Nicaragua:** The Geothermal Exploration and Transmission Improvement Program under the PINIC (IDB) was approved by the IDB Board on September 7, 2016, and eligibility was achieved on August 15, 2017. A preparatory technical cooperation activity (with USD 0.456M of IDB resources) is being executed. The executing agency continues to work on the technical strategy and subsequent activities associated with geothermal exploration.

81. **Armenia:** The Geothermal Exploratory Drilling Project (World Bank) has been implemented as planned at the project approval stage. However, the results from the slim wells show that the nature of the geothermal resource is not suitable to build a flash power plant or a binary plant. The Government has decided to close the project without proceeding to the Phase II of exploration.

82. **Mongolia:** The Upscaling Rural Renewable Energy - Solar PV Project (World Bank) secured 45 hectares of land to develop the solar power plant. The area is partly covered by solid waste, which presents an opportunity to clean up and dispose of the waste in an

environmentally sound manner in a nearby dump. Safe removal of the waste to a select dump site has begun.

83. **Tanzania**: In the Renewable Energy Expansion Project (World Bank), the implementing agency (IA) continues to make progress in implementing the on-grid component and achieving the development objective. The IA has successfully completed the withdrawal of the project advance, completed on-grid connections (which are yet to be verified), and signed 27 out of 29 contracts for electrification works. Detailed design studies are being finalized, with construction works expected to start soon in some areas.

84. In the Tanzania Mini-grids project (IFC), the development of the technical standards and specifications in close collaboration with the Government Advisory working group and the Independent Power Project developers has culminated in a series of standards that have been promulgated by the Tanzania Bureau of Standards that are to be published (gazetted) in October 2018. The standards are expected to facilitate mini-grid project development that meets supply quality and reliability standards.

85. The project is also supporting groups of companies and individual project developers, with a view of addressing the barriers that limit private sector participation in the sector and unlock commercial resources necessary to create a sustainable mini-grid market based on business fundamentals.

86. A Mini-grid Information Portal was developed and launched, with training conducted for the Rural Energy Agency and the Energy and Water Regulatory Authority.

87. A mini-grid developers database that includes more than 80 projects was developed. The project was able to provide trainings to project developers on areas including financing instruments and capital raising, technical standards and specifications for mini-grid projects and licensing and compliance issues. Some of the projects in the database were also provided with light touch and heavy touch advisory services.

88. A benchmarking of mini-grid developers across different markets was carried out and the results were disseminated. An update of this benchmarking was undertaken and shared as well. This benchmarking has helped to capture the key challenges as well as trends across the mini-grid segment and provides points that should be considered to unlock opportunities for mini-grids in Tanzania.

89. The project has completed Phase I, which, by design, was a preparatory phase to increase awareness, facilitate development of standards and regulations, and improve access to information on mini-grid opportunities, component suppliers, and financing available. As such, the project has not yet generated tangible results along the SREP core indicators/benefits. These are expected to come during the Phase II of implementation and over the next couple of years.

90. One important aspect to consider is that the business environment in Tanzania is creating challenges in attracting private investment, resulting in decreased appetite by the private sector to engage in the mini-grid space (along with other sectors as well).

91. **Vanuatu:** The Rural Electrification Project (World Bank) finalized the Project Operations Manual, Subsidy Implementation Manual, and terms of reference for Owner's Engineer (OE) to support procurement of mini-grids. The Program Manager is in place, five vendors have registered, 40 products have been submitted for evaluation, and five were approved. A request for proposals for the OE was advertised and proposals from six firms are under evaluation, with selection expected in December 2018.

92. The Vanuatu Energy Access Project (Small Hydropower Project) estimates 10 percent progress completion and 0.3 percent disbursement as of end July 2018. The Government has completed recruitment of two consultant engagements.

93. **Solomon Islands**: For the Solar Power Development Project (ADB), the Main Engineering Procurement Contract (EPC) was signed in September 2018.

94. **Rwanda**: The Renewable Energy Fund Project (World Bank) was approved by the World Bank Board approval of the Renewable Energy Fund on June 20, 2017. The legal agreements for REF were signed on July 7, 2017 and the project became effective on November 3, 2017. Four banks and eight savings and credit cooperatives have signed subsidiary agreements with the Development Bank of Rwanda to open credit lines for solar system financing.

95. **Liberia**: The SREP grant for the Renewable Energy for Electrification in North and Center Liberia Project – Mini-grids (RREA) (World Bank) became effective on May 18, 2016 and is disbursing. There have been delays in launching the procurement of the mini-hydro plant in Lofa County. Once further geotechnical studies are conducted to inform the design of the mini-hydro plant, procurement is expected to proceed.

5.7 Enabling environment projects

96. There are six MDB-approved SREP projects whose primary objective is to strengthen the enabling environment for investments in clean energy and energy access. These projects contribute indirectly to the achievement of the SREP core indicators. Implementation is in various stages across these projects and progress is emerging.

97. **Ethiopia:** The Lighting Ethiopia Project (IFC) has helped improve market conditions and standards for off-grid solar power products (see Box 6). The Geothermal Sector Strategy and Regulations Project (IFC) has helped the Ethiopian government create a geothermal strategy that has subsequently been used to guide various actions and activities to develop the market for geothermal energy in the country. More specifically, the IFC team transformed the geothermal strategy into a road map that was shared with the authorities and development partners, including USAID, the EU, and JICA, who later

provided support for activities identified in the strategy and road map.

98. In addition, the project supported the development of licensing regulations, resulting in a draft that is ready to be promulgated by the authorities. The first-ever power purchase agreement with an independent power producer in Ethiopia's energy sector was signed during the project, although not directly attributable. It is anticipated that most of project's direct and indirect impacts will be observed near or after project completion (estimated for 2019).

Box 6: Lighting Ethiopia

- A large majority of Ethiopia's population live in rural areas, yet the national grid covers only about 25 percent of households, 90 percent of which are in urban areas. Off-grid households predominantly rely on kerosene for lighting, a dangerous and expensive fuel that accounts for 5 percent of household expenditure. The lack of clean and affordable lighting options also hinders development of small and medium sized enterprises and delivery of public services including health, security, and education.
- The overall project goal of the IFC's Lightning Ethiopia program, funded by SREP with USD 1.6 million, along with funding from other donors, is to increase access to better, cleaner, and safer off-grid lighting for four million people in Ethiopia.
- By the end of 2016, nearly a million of households have purchased units of quality assured solar products. The project continues undertaking an extensive outreach and awareness campaign, and to date, the Above the Line campaigns (ATL: TV and Radio) reached over three million people and the Below the Line campaigns (BTL: exhibition, market /roadshows and development group meetings) reached several hundreds of thousands of people. Feedback from consumers about the awareness campaign has been positive. It was determined that product demonstrations and roadshows are the most effective mechanism in educating last mile end-users.
- The project continues to focus on market regulatory issues. A mandatory quality standard (based on the Lighting Global Quality Framework) for imported off-grid solar lanterns was developed and adopted. Standards for solar home systems are also being developed. These standards are a vital foundation for many other regulatory measures.
- Beyond the major market barriers, the program is undertaking a number of activities to support the efforts of private sector players in the market more broadly. Four hundred SMEs, including solar importers and distributors are trained on basic business management skills. Over a hundred solar products retailers and distribution partners are involved in the development of the consumer education campaign and are fully engaged in the implementation of the campaign. Dozens of technicians have been trained to provide after sale services. Several business partnerships have been created

99. **Pacific Region:** The Sustainable Energy Industry Development Project is progressing well despite delays in procurement. The project development objectives are still on track to be achieved by the current closing date. It is expected that once procurement for Phase 2 resource mapping is completed over the next six to 12 months, the project disbursement rate will substantially improve.

100. **Mongolia:** The Capacity Building and Regulatory Support Technical Assistance (World Bank) aims to encourage private sector investment in utility-scale renewable energy by improving aspects of the governing regulations in force. Training sessions have been delivered on commercial and financial aspects of power purchase agreements and on licensing for renewable energy generation by independent power producers. The Mongolian grid code has been reviewed and recommendations were provided. In addition, a high-level study tour to Egypt on solar power development was organized and training on renewable energy incentives and auctioning was delivered.

101. **Mali:** The Promoting the Scaling Up of Renewable Energy Project (PAPERM) (AfDB) aims to improve the policy, legal, regulatory, and institutional framework to scale up renewable energy investments in Mali. It does this by strengthen the capacities of stakeholders; promoting knowledge management, communication, and advocacy for renewable energy development; and improving the sub-sector's monitoring and evaluation system.

102. The Project Implementation Unit recruited missing experts and is advancing on scaling up capacity-building trainings, ramping up public awareness communications activities, and implementing the national M&E system stemming from the harmonized renewable energy results framework that has now been completed.

103. Progress is notable: the project has been able to improve the country's RISE profile, 22 renewable energy projects have been approved since 2015. Monitoring on indicators has evolved and the number of new approved projects in renewable energy is growing. The recent SREP and MDB approval of the Segou Solar Park and the PDM-Hydro, as well as interest by the Sustainable Energy Fund for Africa (SEFA) in supporting the preparation of a second major solar investment is a signal of sector growth.

Annex 1: Resource availability

SREP TRUST FUND - RESOURCES AVAILABLE for COMMITMENTS *Inception through September 30, 2018* *(USD millions)*		Total	Capital	Grant
		Total		
Donor Pledges and Contributions				
Contributions		744.5	273.2	471.3
Pledges		-		-
Allocation of Capital to Grants	a/		(25.9)	25.9
Total Pledges and Contributions		**744.5**	**247.3**	**497.2**
Cumulative Funding Received				
Contributions Received				
Cash Contributions		539.2	67.9	471.3
Unencashed Promissory Notes	b/	205.4	205.4	-
Allocation of Capital to Grants from Unencashed Promissory Notes	a/		(25.9)	25.9
Total Contributions Received		744.5	247.3	497.2
Other Resources				
Investment Income earned -up to Feb 1, 2016	c/	9.9		9.9
Other Income		-		
Total Other Resources		9.9		9.9
Total Cumulative Funding Received (A)		754.5	**247.3**	**507.1**
Cumulative Funding Commitments				
Projects/Programs		622.7	190.9	431.8
MDB Project Implementation and Supervision services (MPIS) Costs		20.6	-	20.6
Administrative Expenses-Cumulative to 1st Feb 2016	c/	14.2	-	14.2
Country Programming Budget expense from 1st Jan 2018	c/	0.2		0.2
Total Cumulative Funding Commitments		657.7	190.9	466.8
Project/Program, MPIS and Admin Budget Cancellations	d/	(43.2)	(30.5)	(12.7)
Net Cumulative Funding Commitments (B)		**614.5**	**160.4**	**454.1**
Fund Balance (A - B)		**140.0**	**87.0**	**53.0**
Currency Risk Reserves	e/	**(30.8)**	**(26.9)**	**(3.9)**
Unrestricted Fund Balance		**109.2**	**60.0**	**49.2**
Future Programming Reserves:				
Admin Expenses-Reserve (includes Country Programing budget/Learning and Knowledge exchange reserve) and for FY 19-28 (net of estimated investment income and reflows).Breakup of various components are provided below. (Model Updated as of December 31,2017)	f/	(31.6)		(31.6)
Subtract				
Administration Expense reserve for CIFAU, MDB & Trustee	USD 37.9 Million			
Country Programming Budget Reserve	USD 2.2 Million			
Learning and Knowledge Exchange Reserve	USD 1.1 Million			
Add				
Estimated Investment Income Share for SREP	USD 9.0 Million			
Projected Reflows	USD 0.6 Million			
Unrestricted Fund Balance (C) after reserves		**77.6**	**60.0**	**17.6**
Anticipated Commitments (FY19-FY21)				
Program/Project Funding and MPIS Costs	g/	175.9	100.4	75.5
Total Anticipated Commitments (D)		**175.9**	**100.4**	**75.5**
Available Resources (C - D)		**(98.3)**	**(40.4)**	**(57.9)**
Potential Future Resources (FY19-FY21)				
Release of Currency Risk Reserves	e/	30.8	26.9	3.9
Total Potential Future Resources (D)		**30.8**	**26.9**	**3.9**
Potential Available Resources (C - D + E)		**(67.5)**	**(13.4)**	**(54.0)**

a/ This amount includes USD equivalent of GBP 177.3 million from the UK.

b/ From Feb 1, 2016, Investment income across all SCF programs has been posted to a notional Admin "account", from which approved Administrative Budget expenses for the Trustee, Secretariat and MDBs are committed. In accordance with the terms of the Contribution Agreements, if amounts in the notional Admin account are not sufficient to cover Administrative Budgets, the shortfall is pro-rated across programs, based on fund balances. The Country Programming budgets are recorded under individual programs.

c/ This refers to cancellation of program and project commitments approved by the committee.

d/ Amounts withheld to mitigate over-commitment risk resulting from the effects of currency exchange rate fluctuations on the value of outstanding non-USD denominated promissory notes.

e/ Effective from the September 2017 reporting period, the Trustee has added a reserve to provide for country programming budget for five years. The amount of this reserve is estimated by the CIFAU.

f/ Effective from the September 2017 reporting period, the Trustee has added a reserve to cover Admin Expenses as Admin expenses are expected to exceed investment income significantly going forward. The amount of this reserve is estimated by the CIFAU and Trustee using the 5-year forecast of the Admin Budget less the 5-year estimate of Investment Income. Pro-rata estimates across three SCF programs are based on projected fund balances, per the terms of the Contribution Agreements.

g/ Includes both sealed and Reserve pipeline

Annex 2: SREP pipelines

IP/ PSSA	COUNTRY	PROJECT TITLE	MDB	Public/ Private	Grant (USD million)	Non-Grant (USD million)	MPIS Balance	SUBMISSION DATE
SEALED PIPELINE								
		PPGs for remaining SREP countries that have not submitted their IPs			7.1			Mar-19
PSSA	Kenya	Kopere Solar Park	AfDB	Private	-	11.60	0.18	Nov-18
IP	Haiti	Off-Grid Electricity	IFC	Private	0.50	-		Nov-18
IP	Haiti	Off-Grid Electricity Services for productive, Social and Household Uses Project	IFC	Private	0.20	6.80	0.44	Nov-18
IP	Lesotho	Distributed RE solutions	IBRD	Public	4.00	8.00	0.40	Jan-19
IP	Cambodia	Private Sector Solar Development - Utility Scale/Parks	ADB	Private		5.00	0.14	Feb-19
IP	Bangladesh	Grid Connected Renewables: Investment in Utility-scale solar, wind and rooftop solar (including technical assistance)	IFC	Private	0.50	15.00		Mar-19
IP	Ethiopia	Clean Energy SMEs Capacity Building and Investment Facility	IFC	Private	-	2.00		Jun-19
IP	Ghana	Utility-scale Solar PV/Wind Power Generation	IFC	Private	-	10.00	0.45	Jun-19
PSSA	Kenya	Olkaria IV Geothermal Power Plant	AfDB	Private		20.00		Jun-19
IP	Cambodia	Policy Support and Public Awareness	ADB	Public	3.00	-		Sep-19
IP	Lesotho	On-Grid RE Technologies	AfDB	Public		5.00		Sep-19
					15.3	**83.40**	**1.60**	
RESERVE PIPELINE								
IP	Madagascar	Funding scheme for rural electrification by renewable energy plants and mini-grids	IBRD	Public	2.00	10.00	0.43	Sep-19
IP	Madagascar	Funding scheme for hybridization of the JIRAMA priority isolated centers	AfDB	Public	2.00	6.00	0.43	Dec-19
IP	Cambodia	Private Sector Solar Development - Rooftop Solar	ADB	Private	5.00	1.00	0.14	Dec-19
IP	Ghana	RE Mini-Grids and Stand Alone Solar PV Systems	AFDB	Public	16.60	-	0.20	Jun-20
IP	Ghana	Solar PV Based Net Metering with Battery Storage	AFDB	Public	11.89	-	0.20	Jun-20
IP	Uganda	Decentralized Renewables Development Program: Mini-Grids & Urban Small Scale Solar PV Net Metering	AFDB	Public	7.10	-	0.08	Jun-20
IP	Uganda	Wind Resource Map and Pilot Wind Power Development Program	AFDB	Public	4.93	-	0.08	Jun-20
IP	Nicaragua	Integral Development of Rural Areas Project	IDB	Private	7.50	-		Jun-20
					57.01	**17.00**	**1.55**	
		TOTAL			**72.31**	**100.4**	**3.15**	

NOT UNDER ACTIVE DEVELOPMENT								
IP	Maldives	Waste-to-Energy Thilafushi	IFC	Private	4.00	-		n/a
IP	Kenya	Menengai Geothermal Project	AFDB	Public	10.50	4.50	-	n/a
IP	Uganda	130MW Geothermal Development Program	IFC	Private	2.00	-		n/a
IP	Uganda	130MW Geothermal Development Program	AFDB	Public	4.30	27.50	0.21	n/a
IP	Mali	Solar PV IPP	AFDB	Private	-	11.05	0.20	n/a
IP	Ethiopia	Assela Wind Farm Project	AfDB	Public	18.30	-	0.28	n/a
IP	Bangladesh	Off-Grid Solar PV-Mini Grids	ADB	Public	5.00	-	0.21	n/a
IP	Nicaragua	Geothermal Development Project	IBRD	Public	7.71	7.29	0.30	n/a
IP	Kenya	Climate Venture Facility (KCVF) Project	IBRD	Public	0.80	6.80		n/a

Annex 3.1 SREP summary of results on electricity production and GHG emissions

Country	Project title	SREP funding (USD million)	MDB	Annual Electricity Production (MWh/yr)		Annual GHG emissions reduced/avoided (tons of CO2 equivalent)	
				Actual	Target	Actual	Target
Armenia	Geothermal Exploratory Drilling Project	8.85	IBRD	0	224,694	0	166,000
Ethiopia	Geothermal Sector Development Project	24.5	IBRD	0	552,000	0	438,122
Ethiopia	Geothermal Sector Strategy and Regulations*	1.5	IFC	n.a.	n.a.	n.a.	n.a.
Ethiopia	Lighting Ethiopia*	2.0	IFC	n.a.	n.a.	n.a.	n.a.
Haiti	Renewable Energy and Access for All	8.6	IBRD	0	12,000	0	32,000
Haiti	Renewable Energy for Metropolitan Area	11.0	IBRD	0	8,250	0	10,300
Honduras	Strengthening the RE Policy and Regulatory Framework(FOMPIER)*	0.85	IDB	n.a.	n.a.	n.a.	n.a.
Honduras	Sustainable Rural Energization(ERUS)-Part I & III: Promoting Sustainable Business Models for Clean Cookstoves Dissemination	2.95	IDB	n.a.	n.a.	14,997	74,532
Honduras	Self-Supply RE Guarantee Program	5.5	IDB	1,338	45,000	844	40,000
Honduras	Honduras Renewable Energy Financing Facility	21.3	IDB	0	427,000	0	285,000
Kenya	Menengai Geothermal Project	25	AfDB	0	1,182,000	0	734,650
Kenya	Electricity Modernization Project	7.5	IBRD	0	1,242	0	986
Liberia	Renewable Energy for Electrification in North and Center Liberia Project – Mini-grids	25.0	IBRD	0	4,000	0	3,174
Maldives	Accelerating Sustainable Private Investments in RE Program (ASPIRE)	12.6	IBRD	2,190	32,610	589	25,833
Maldives	Preparing Outer Islands for Sustainable Energy Development Program (POISED)	12.7	ADB	3,376	27,600	5,341	40,000
Mali	Rural Electrification Hybrid Systems	15.4	IBRD	1.72	8,653	502.2	6,868
Mali	Promoting the Scaling Up of Renewable Energy in Mali*	1.5	AfDB	n.a.	n.a.	n.a.	n.a.
Mali	Mini Hydropower Plants and Related Distribution Networks Development Project (PDM-Hydro)	8.7	AfDB	0	23,680	0	15,800
Mali	Segou Solar Park	25.0	AfDB	0	52,700	0	55,000
Mongolia	TA-Strengthening Renewable Energy Regulations*	1.2	IBRD	n.a.	n.a.	n.a.	n.a.
Mongolia	Upscaling Rural Renewable Energy - Solar PV	12.4	IBRD	0	14,020	0	6,200
Nepal	South Asia Subregional Economic Cooperation Power System Expansion Project	11.8	ADB	65	25,228	64	18,000

Nepal	South Asia Subregional Economic Cooperation Power System Expansion Project- Additional Co-financing	20.0	ADB	0	32,850	0	26,280
Nepal	Extended Biogas Program	7.9	IBRD	14,016	15,900	2491.6	16,970
Nicaragua	Nicaragua Geothermal Exploration and Transmission Improvement under the PINIC	7.5	IDB	0	315,360	0	87,139
Pacific Region	Sustainable Energy Industry Development Project*	1.9	IBRD	n.a.	n.a.	n.a.	n.a.
Rwanda	Renewable Energy Fund	48.94	IBRD	0	13,000	0	10,314
Solomon Islands	Solar Power Development Project	6.6	ADB	0	3,100	0	840
Tanzania	Tanzania Mini-grids project	4.95	IFC	0	88,000	0	200,000
Tanzania	Rural Electrification Expansion Project	9.0	IBRD	0	142,000	0	112,000
Vanuatu	Rural Electrification Project	6.77	IBRD	0	2,700	0	5,300
Vanuatu	Energy Access Project	7	ADB	0	2,800	0	2,900
Total				**20,987**	**3,256,387**	**24,827**	**2,414,318**

*Capacity-building projects; n.a: not applicable

Annex 3.2 SREP summary of results on energy access

Country	Project title	SREP funding (USD million)	MDB	New or improved energy access				
				Women		Men		Target Businesses
				Actual	Target	Actual	Target	
Armenia	Geothermal Exploratory Drilling Project	8.85	IBRD	n.a.	n.a.	n.a.	n.a.	n.a.
Ethiopia	Geothermal Sector Development Project	24.5	IBRD	0	550,000	0	550,000	n.a.
Ethiopia	Geothermal Sector Strategy and Regulations*	1.5	IFC	n.a.	n.a.	n.a.	n.a.	n.a.
Ethiopia	Lighting Ethiopia*	2.0	IFC	n.a.	n.a.	n.a.	n.a.	n.a.
Haiti	Renewable Energy and Access for All	8.6	IBRD	0	157,000	0	158,000	3,500
Haiti	Renewable Energy for Metropolitan Area	11.0	IBRD	0	50,000	0	50,000	1,000
Honduras	Strengthening the RE Policy and Regulatory Framework (FOMPIER)*	0.85	IDB	n.a.	n.a.	n.a.	n.a.	n.a.
Honduras	Sustainable Rural Energization(ERUS)-Part I & III: Promoting Sustainable Business Models for Clean Cookstoves Dissemination	2.95	IDB	20,531	187,500	20,185	187,500	300
Honduras	Self-Supply RE Guarantee Program	5.5	IDB	n.a.	n.a.	n.a.	n.a.	n.a.
Honduras	Honduras Renewable Energy Financing Facility	21.3	IDB	n.a.	n.a.	n.a.	n.a.	22
Kenya	Menengai Geothermal Project	25	AfDB	0	1,250,000	0	1,250,000	110,000
Kenya	Electricity Modernization Project	7.5	IBRD	0	10,125	0	10,125	n.a.
Liberia	Renewable Energy for Electrification in North and Center Liberia Project – Mini-grids	25.0	IBRD	0	74,400	0	75,600	n.a.
Maldives	Accelerating Sustainable Private Investments in RE Program (ASPIRE)	12.6	IBRD	0	19,303	0	19,303	n.a.
Maldives	Preparing Outer Islands for Sustainable Energy Development Program (POISED)	12.7	ADB	15,905	15,410	16,556	15,410	n.a.
Mali	Rural Electrification Hybrid Systems	15.4	IBRD	52,373	343,224	51,541	337,776	n.a.
Mali	Promoting the Scaling Up of Renewable Energy in Mali*	1.5	AfDB	n.a.	n.a.	n.a.	n.a.	n.a.
Mali	Mini Hydropower Plants and Related Distribution Networks Development Project (PDM-Hydro)	8.7	AfDB	0	35,104	0	32,917	n.a.
Mali	Segou Solar Park	25.0	AfDB	0	168,500	0	158,000	n.a.
Mongolia	TA-Strengthening Renewable Energy Regulations*	1.2	IBRD	n.a.	n.a.	n.a.	n.a.	n.a.
Mongolia	Upscaling Rural Renewable Energy - Solar PV	12.4	IBRD	0	12,500	0	12,500	n.a.
Nepal	South Asia Subregional Economic Cooperation Power System Expansion Project	11.8	ADB	3,067	75,689	4,910	67,661	n.a.
Nepal	South Asia Subregional Economic Cooperation Power System Expansion	20.0	ADB	0	137,505	0	129,495	n.a.

	Project- Additional Co-financing							
Nepal	Extended Biogas Program	7.9	IBRD	n.a.	n.a.	n.a.	n.a.	400
Nicaragua	Nicaragua Geothermal Exploration and Transmission Improvement under the PINIC	7.5	IDB	n.a.	n.a.	n.a.	n.a.	n.a.
Pacific Region	Sustainable Energy Industry Development Project*	1.9	IBRD	n.a.	n.a.	n.a.	n.a.	n.a.
Rwanda	Renewable Energy Fund	48.94	IBRD	0	936,000	0	864,000	27,500
Solomon Islands	Solar Power Development Project	6.6	ADB	0	2,922	0	3,078	n.a.
Tanzania	Tanzania Mini-grids project	4.95	IFC	0	55,000	0	55,000	n.a.
Tanzania	Rural Electrification Expansion Project	9.0	IBRD	0	155,000	0	155,000	n.a.
Vanuatu	Rural Electrification Project	6.77	IBRD	0	21,927	0	22,823	60
Vanuatu	Energy Access Project	7	ADB	0	2,212	0	2,303	n.a.
Total				**91,876**	**4,259,321**	**93,192**	**4,156,491**	**142,782**

Annex 3.3: SREP summary of results on increased public and private investments

Country	Project title	SREP funding (USD million)	MDB	Increased public and private investments in targeted subsectors as a result of SREP Interventions (USD million)									
				Total		MDBs		Government		Private Sector		Bilaterals and Others	
				Act.	Exp.	Act.	Exp.	Act.	Exp.	Act.	Exp.	Act.	Exp.
Armenia	Geothermal Exploratory Drilling Project	8.85	IBRD	0	109	0	0	0	9	0	100	0	0
Ethiopia	Geothermal Sector Development Project	24.5	IBRD	0.4	194	0.4	179	0	12	0	0	0	3
Ethiopia	Geothermal Sector Strategy and Regulations	1.5	IFC	0.63	0.5	0	0	0.46	0.5	0	0	0.17	0
Ethiopia	Lighting Ethiopia	2.0	IFC	2.4	0.65	0	0	0	0	0.1	0.65	2.3	0
Haiti	Renewable Energy and Access for All	8.6	IBRD	0	60.5	0	20	0	0	0	22	0	18.5
Haiti	Renewable Energy for Metropolitan Area	11.0	IBRD	0	4.5	0	4	0	0	0	0	0	0.5
Honduras	Strengthening the RE Policy and Regulatory Framework (FOMPIER)	0.85	IDB	0.03	0.1	0	0	0.03	0.1	0	0	0	0
Honduras	Sustainable Rural Energization(ERUS)-Part I & III: Promoting Sustainable Business Models for Clean Cookstoves Dissemination	2.95	IDB	3.16	3	2.19	2.2	0.97	0	0	0.8	0	0
Honduras	Self-Supply RE Guarantee Program*	5.5	IDB	-	40	1.5	20	0	0	-	20	0	0
Honduras	Honduras Renewable Energy Financing Facility	21.3	IDB	0	390	0	4	0	0	0	40	0	346
Kenya	Menengai Geothermal Project	25	AfDB	405	480	108	125	297	246	0	0	0	109
Kenya	Electricity Modernization Project	7.5	IBRD	8	13.2	8	2.5		0		10.7		0
Liberia	Renewable Energy for Electrification in North and Center Liberia Project – Mini-grids	25.0	IBRD	0	2	0	2	0	0	0	0	0	0
Maldives	Accelerating Sustainable Private Investments in RE Program (ASPIRE)	12.6	IBRD	3.3	58	0	16	0	0	3.3	42	0	0
Maldives	Preparing Outer Islands for Sustainable Energy Development Program (POISED)	12.7	ADB	44.5	112	33	38	0	14	0	0	11.5	60
Mali	Rural Electrification Hybrid Systems	15.4	IBRD	9.16	40.7	6.61	25	0	8.9	0	1.8	2.55	5

Mali	Promoting the Scaling Up of Renewable Energy in Mali	1.5	AfDB	0.40	1	0.1	0.5	0.3	0.3	0	0.2	0	0
Mali	Mini Hydropower Plants and Related Distribution Networks Development Project (PDM-Hydro)	8.7	AfDB	0	48	0	28.3	0	0.1	0	0	0	19.6
Mali	Segou Solar Park	25.0	AfDB	0	17.9	0	17.9	0	0	0	0	0	0
Mongolia	TA-Strengthening Renewable Energy Regulations	1.2	IBRD	0	0.1	0	0	0	0.1	0	0	0	0
Mongolia	Upscaling Rural Renewable Energy - Solar PV	12.4	IBRD	1.8	12.5	1.8	12	0	0.5	0	0	0	0
Nepal	South Asia Subregional Economic Cooperation Power System Expansion Project	11.8	ADB	0	41.2	0	5	0	27.7	0	0	0	8.5
Nepal	Extended Biogas Program	7.9	IBRD	5.1	28	0	0	0.9	18.2	4.2	9.8	0	0
Nicaragua	Nicaragua Geothermal Exploration and Transmission Improvement under the PINIC	7.5	IDB	0	95.8	0	51.3	0	10	0	0	0	34.5
Pacific Region	Sustainable Energy Industry Development Project	1.9	IBRD	0.3	3.7	0	0	0	0	0	0	0.3	3.7
Rwanda	Renewable Energy Fund	48.94	IBRD	0	51	0	7	0	0	0	41	0	3
Solomon Islands	Solar Power Development Project	6.6	ADB	0	9	0	2.2	0	6.8	0	0	0	0
Tanzania	Tanzania Mini-grids project	4.95	IFC	0.15	0.2	0	0	0	0	0.15	0.2	0	0
Tanzania	Rural Electrification Expansion Project	9.0	IBRD	0	150	0	35	0	0	0	59	0	56
Vanuatu	Rural Electrification Project	6.77	IBRD	0.4	27.9	0.4	4	0	1.5	0	0	0	22.4
Vanuatu	Energy Access Project	7	ADB	0	8.1	0	5	0	3.1	0	0	0	0

* Private sector figures are confidential

Annex 4: Overview of SREP portfolio with a breakdown by country

	Indicative Pipeline Funding	COMMITTEE APPROVALS	% APPROVAL	MDB approvals	% approval (vs Total Funding)	% approval (vs Committee Approvals)	Disbursements
First Set of Countries							
Ethiopia	33.3	31.3	94%	29.7	89%	95%	11.03
Honduras	49.6	49.6	100%	29.9	60%	60%	5.08
Kenya	64.5	32.9	51%	32.9	51%	100%	16.5
Maldives	25.9	25.9	100%	25.7	99%	99%	8.14
Mali	54.6	54.6	100%	45.1	83%	83%	5.90
Nepal	47.4	47.4	100%	47.1	99%	99%	3.06
	275.2	**241.6**	**88%**	**210.4**	**76%**	**87%**	
Second Set of Countries							
Tanzania	37.2	37.2	100%	15.5	42%	42%	8.2
Liberia	50.0	50.0	100%	26.5	53%	53%	4.56
Armenia	40.0	40.0	100%	10.7	27%	27%	7.18
Solomon Islands	13.4	13.4	100%	7.1	53%	53%	0.4
Vanuatu	13.8	13.8	100%	13.8	100%	100%	0.4
Yemen	0.3	0.3	100%	0.3	100%	100%	-
Mongolia	29.9	29.9	100%	15.1	51%	51%	1.48
Pacific Region	2.0	2.0	100%	1.9	95%	95%	0.4
	190.9	**190.9**	**100%**	**90.9**	**48%**	**48%**	
Third Set of Countries							
Bangladesh	69.1	53.6	78%	25	36%	47%	0.14
Cambodia	31.6	17.6	56%	1.7	5%	10%	-
Ghana	40.0	1.5	4%	1.5	4%	100%	-
Haiti	27.1	19.6	72%	19.6	72%	100%	-
Kiribati	0.3	0.3	100%	0.3	100%	100%	-
Lesotho	18.8	1.8	10%	1.8	10%	100%	-
Madagascar	20.3	0.3	1%	0.3	1%	100%	-
Malawi	0.3	0.3	100%	0.3	100%	100%	-
Nicaragua	15.0	7.5	50%	7.5	50%	100%	-
Rwanda	50.0	50.0	100%	49.7	99%	99%	5.6
Sierra Leone*							-
Uganda	12.0	0.0	0%	0.0	35%	0%	-
Zambia	0.3	0.3	100%	0.3	100%	100%	-
	284.8	**152.8**	**54%**	**112.2**	**39%**	**73%**	
TOTAL	**751.0**	**585.4**	**78%**	**408**	**54%**	**70%**	**82**

*IPPG cancelled and funds returned

Annex 5: Disbursements by project (public sector) in USD million

Country	MDB	Project title	MDB approval Date	Funding approved by MDBs	Cumulative disbursement (as of June 30, 2018)	Disbursement ratio (as of June 30, 2018)
Armenia	IBRD	Geothermal Exploratory Drilling Project (GEDP)	Jun-15	8.6	6.9	80%
Armenia	IBRD	Development of Utility-Scale Solar PV	Mar-18	26.00	-	0%
Bangladesh	ADB	Off-Grid Solar PV-Mini Grids	Apr-18	5.00	-	0%
Bangladesh	ADB	Off-Grid Solar PV-Solar Irrigation	Nov-17	24.00	-	0%
Cambodia	ADB	Solar Energy Development (Solar Home Systems and Solar Mini-grids)	Sep-17	5.00	-	0%
Cambodia	ADB	Policy Support and Public Awareness	Dec-17	3.00	-	0%
Cambodia	ADB	Solar Energy Development (Solar Home Systems and Solar Mini-grids)	Sep-17	1.00	-	0%
Ethiopia	IBRD	Geothermal Sector Development Project (GSDP)	May-14	24.5	5.9	24%
Ethiopia	AfDB	Assela Wind Farm Project	Sep-17	18.3	-	0%
Ghana	AfDB	RE Mini-Grids and Stand Alone Solar PV Systems	Aug-18	16.60	-	0%
Ghana	AfDB	Solar PV Based Net Metering with Battery Storage	Aug-18	11.89	-	0%
Haiti	IBRD	Renewable Energy and Access for All	Oct-17	8.6	-	0%
Haiti	IBRD	Renewable Energy for the Metropolitan Area	Dec-17	11.0	-	0%
Honduras	IDB	Strengthening the Renewable Energy Policy and Regulatory Framework Program (FOMPIER), Part I	Dec-12	0.0	0.0	100%
Honduras	IDB	Grid-Connected RE Development Support(ADERC)-Transmission	Aug-17	7.0	0.0	0%
Honduras	IDB	Sustainable Rural Energization(ERUS)	Aug-17	6.6	0.0	0%
Kenya	AfDB	Menengai Geothermal Development Project	Dec-11	25.0	16.5	66%
Kenya	IBRD	Electricity Modernization Project	Mar-15	7.5	-	0%
Kenya	AfDB	Menengai Geothermal Project	Aug-17	4.50	-	0%
Liberia	IBRD	Renewable Energy for Electrification in North and Center Liberia Project-Mini Grids	Jan-16	25.0	3.8	15%
Liberia	AfDB	Renewable energy for Electrification in Eastern Liberia Project-Stand-Alone PV	Sep-17	23.50	-	0%
Maldives	ADB	Preparing Outer Island Sustainable Electricity Development Project / Technical Assistance: Capacity Development of the Maldives Energy Authority	Sep-14	12.0	5.4	45%

Country	MDB	Project title	MDB approval Date	Funding approved by MDBs	Cumulative disbursement (as of June 30, 2018)	Disbursement ratio (as of June 30, 2018)
Maldives	ADB	Technical Assistance: Republic of the Maldives Capacity Development of the Maldives Energy Authority	Mar-15	12.0	0.2	2%
Maldives	IBRD	Accelerating Sustainable Private Investments in Renewable Energy (ASPIRE) Program	Jun-14	11.7	0.9	8%
Mali	AfDB	Project for Scaling Up Renewable Energy in Mali	Oct-14	1.5	0.3	22%
Mali	IBRD	Rural Electrification Hybrid Systems	Dec-13	14.9	3.5	23%
Mali	AfDB	Development of Micro/Mini Hydroelectricity for Rural Electrification in mali(PDM-Hydro)	Sep-17	Sep-17	-	0%
Mongolia	IBRD	Upscaling Rural Renewable Energy - Solar PV	Jun-17	12.4	-	0%
Mongolia	IBRD	Capacity Building and Regulatory Support Technical Assistance	Aug-16	1.2	0.7	58%
Mongolia	ADB	Upscaling Rural Renewable Energy	Mar-18	14.6	-	0%
Nepal	ADB	South Asia Sub-regional Economic Cooperation Power System Expansion Project: Rural Electrification Through Renewable Energy	Nov-16	11.2	1.5	13%
Nepal	ADB	South Asia Subregional Economic Cooperation Power System Expansion Project	Nov-16	20.0	-	0%
Nepal	IBRD	Biogas Extended Program	Aug-14	7.9	1.1	14%
Nepal	IBRD	ABC Business Models for Off-Grid Energy Access Nepal	Jun-17	6.00	-	0%
Nepal	IBRD	ABC Business Models for Off-Grid Energy Access Nepal	Jun-17	2.00	-	0%
Nicaragua	IDB	Nicaragua Geothermal Exploration and Transmission Improvement Program under the PINIC	Sep-16	7.5	-	0%
Nicaragua	IBRD	Geothermal Development Project	Dec-17	15.00	-	0%
Nicaragua	IDB	Integral Development of Rural Areas Project	Aug-17	7.50	-	0%
Pacific Region	IBRD	Sustainable Energy Industry Development Project	Sep-15	1.9	0.4	22%
Rwanda	IBRD	Renewable Energy Fund	Jun-17	48.9	5.3	11%
Solomon Islands	ADB	Solar Power Development Project	Nov-16	6.2	-	0%
Tanzania	IBRD	Renewable Energy for Rural Electrification	Jun-16	9.0	2.3	25%
Tanzania	AfDB	Geothermal Development	Jul-17	24.6	-	0%
Vanuatu	ADB	Energy Access Project (Small Hydropower Project)	Sep-17	7.0	0.0	0%
Vanuatu	IBRD	Rural Electrification Project	May-17	6.8	0.4	6%