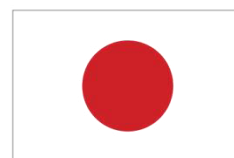


Clean Energy Financing Partnership Facility

Annual Report 2016



From
the People of Japan



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ABBREVIATIONS

ACEF	–	Asian Clean Energy Fund
ACM	–	Annual Consultation Meeting
ADB	–	Asian Development Bank
CCS	–	carbon capture and storage
CCSF	–	Carbon Capture and Storage Fund
CCSC	–	Climate Change Steering Committee
CEF	–	Clean Energy Fund
CEFPF	–	Clean Energy Financing Partnership Facility
CEWG	–	Clean Energy Working Group
CFPS	–	Canadian Climate Fund for the Private Sector in Asia
PRC	–	China, People's Republic of
CO ₂	–	carbon dioxide
DC	–	direct charge
DMC	–	developing member country
DMF	–	design and monitoring framework
GCI	–	grant component of investment
GHG	–	greenhouse gas
REG	–	regional
TA	–	technical assistance
TALL	–	technical assistance linked to loan

WEIGHTS AND MEASURES

MW	–	megawatt
TWh-eq	–	terawatt-hour equivalent
tCO ₂	–	tons of carbon dioxide

NOTE

In this report, "\$" refers to US dollars

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I. HIGHLIGHTS AND KEY ACHIEVEMENTS

1. The Clean Energy Financing Partnership Facility (CEFPF or the Facility) was established by the Asian Development Bank (ADB) in April 2007, to assist developing member countries (DMCs) improve energy security and transit to low-carbon use through cost-effective investments, particularly in technologies that result in greenhouse gas (GHG) mitigation (Appendix 1). CEFPF is composed of the Clean Energy Fund (CEF), the Asian Clean Energy Fund (ACEF), the Carbon Capture and Storage Fund (CCSF) and the Canadian Climate Fund for the Private Sector in Asia (CFPS).¹ The Facility contributes to the energy sector in achieving the scaled up ADB's annual target set in September 2015, ADB pledged to double its annual climate financing to \$6 billion by 2020, with \$4 billion for climate mitigation and \$2 billion for climate adaptation. The energy sector is expected to contribute about \$3 billion to climate mitigation. The overall implementation progress and operational results of CEFPF from the period 01 January to 31 December 2016, measured against the design and monitoring framework (DMF) and the 2016 Annual Work Program, is provided in this 2016 Annual Report.² The DMF is attached as Appendix 2.

2. **CEFPF Progress Towards Target Outputs, Outcome and Impacts.** In 2016, the facility was able to leverage \$2.1 billion in clean energy investments. CEFPF continues to provide critical financial support to clean energy projects. A balance of both concessional and grant financing for technical assistance for capacity building activities aimed to enhance capability building and leverage financing in infrastructure and investments in clean energy and renewable energy. Since the facility was established about \$6 billion of clean energy investment was leveraged by the facility. A total of 28 projects received \$49.2 million fund allocation, marking the most number of projects and the highest amount of allocation in a year since the facility's inception. The primary drivers were increased applications of grant component of investments (GCI) and TA linked to loans (TALL) .

3. **Progress in Meeting Targets.** The cumulative project allocations of the facility amount to \$187.2 million supporting 159³ projects covering 37 DMCs, expected to catalyze about \$3.6 billion of clean energy investments, \$848.2 million for private sector and \$1.6 billion for non-private sector clean energy investments. To date, facility is expected to contribute about 7.4 terawatt-hour equivalent (TWh-eq) of energy savings, 1,523.6 megawatt (MW) installed renewable energy capacity and 5.4 TWh renewable energy generation and 9 million tons of carbon dioxide (tCO₂) emission reduction per year (Figure 1).

4. **Renewable Energy Promotion.** One of the priority areas for the year of the facility is to provide support and promote renewable energy. In line with this a regional project preparatory technical assistance (TA) *REG: Pacific Renewable Energy Investment Facility* for an investment facility which will finance renewable energy projects in the Pacific's eleven smallest, most isolated member states is being supported by CEFPF. The first three country projects under the

¹ The multidonor Clean Energy Fund is supported by the governments of Australia, Norway, Spain, Sweden and the United Kingdom; the single donor Asian Clean Energy Fund is supported by the Government of Japan; the Carbon Capture and Storage Fund is supported by the Global Carbon Capture and Storage Institute and the Government of the United Kingdom; while the Canadian Climate Fund on the Private Sector in Asia is supported by the Government of Canada.

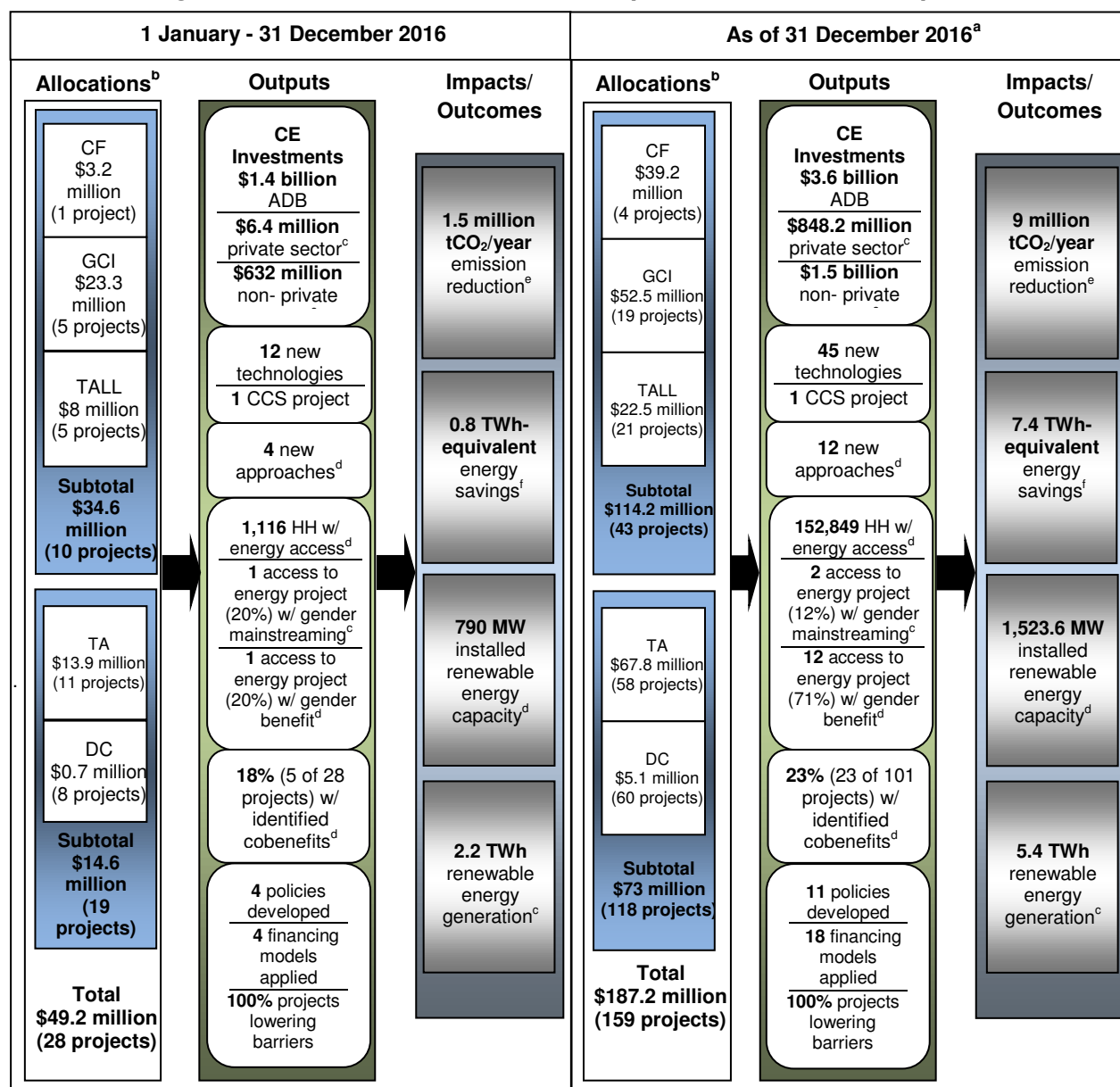
² In monitoring and reporting on the facility's financial status and results, CEFPF considers all project allocations authorized by the Climate Change Steering Committee. Further, phrases "As of 31 December 2014" and "To date" refer to CEFPF's cumulative performance from the start of operations in the fourth quarter of 2007 up to the current reporting period. ADB's clean energy funds include the donor funds under the CEFPF, i.e., (a) multi-donor CEF, (b) single-donor ACEF, and (c) CCSF; and the resources from ADB's Climate Change Fund – Clean Energy Development Component.

³ Excludes two projects on adaptation provided allocation under the Canadian Climate Fund for the Private Sector in Asia.

Pacific investment facility will include renewable energy projects in Cook Islands, Tonga, and Republic of Marshall Islands (RMI).

5. **70:30 INV:TA ratio.** In 2016, the target of 70:30 Investment TA resource sharing was attained with a total investment allocation amounting to \$34.6 million or 70% of total. The ratio reflects the facility's lifetime target of implementing clean energy projects with direct GHG emission impacts.

Figure 1: CEFPP Activities Toward Outputs, Outcomes and Impacts



CE= clean energy, CEFPP = Clean Energy Financing Partnership Facility, DC = direct charge, GCI = grant component of investment, HH = households, MW = megawatt, RE = renewable energy, TWh = terawatt-hour, TA = technical assistance, TALL = technical assistance linked to loan, tCO₂ = ton of carbon dioxide.

^a Includes adjustments made following approval or withdrawal of projects.

^b Allocation refers to the allocation authorized by the Climate Change Steering Committee for projects but excludes two projects on adaptation with authorized allocation under the Canadian Climate Fund for the Private Sector in Asia. These numbers are not the same cited in paragraph 48 which reports on all projects approved by the Board of Directors of the relevant ADB authority and include the two adaptation projects.

^c Performance indicator effective in 2014.

^d Performance indicator effective in 2011.

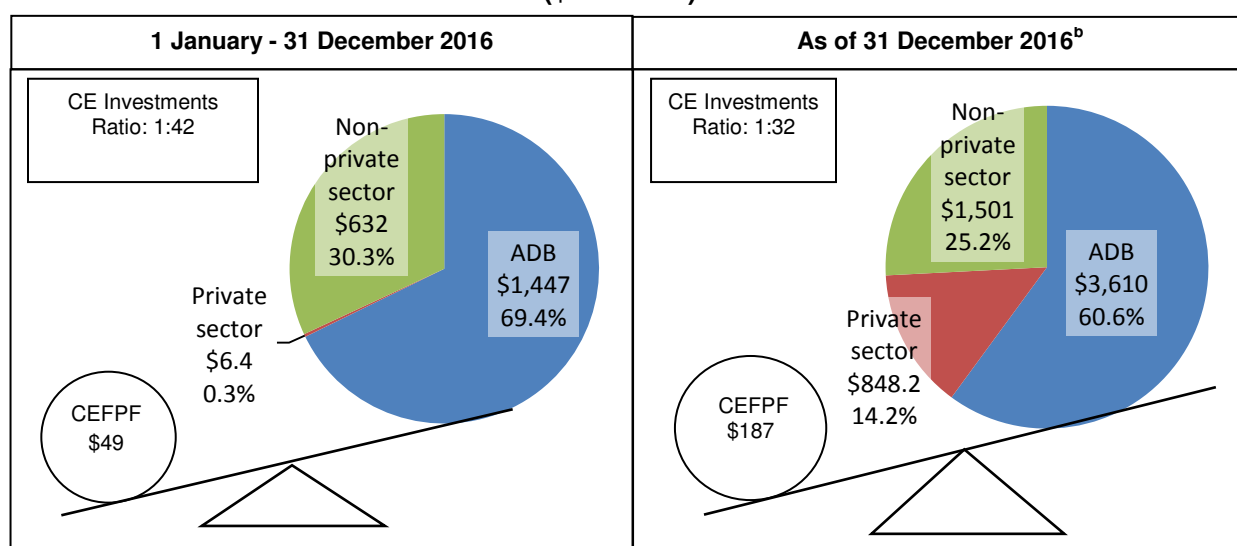
^e Covers all clean energy investments attributed to CEFPP financing, including emission reductions from renewable energy projects.

^f Covers only energy efficiency investments attributed to CEFPP financing.

Source: ADB estimates.

6. **CEFPF Leverage Ratio.** In 2016, CEFPF's total project allocations of \$49.2 million⁴ is expected to leverage about \$1.4 billion of ADB clean energy investments, supporting ADB's institutional annual target where energy sector is expected to contribute about \$3 billion to climate mitigation. It will also leverage about \$6.4 million and \$632 million of private sector and non-private sector clean energy investments, respectively. With a leverage ratio of 1:42, every \$1 of CEFPF financing translates to \$42 dollars of clean energy investments which can be broken down to \$29 of ADB clean energy investments and \$13 of private and non-private sector clean energy investments.⁵ The total cumulative CEFPF project allocation is currently at \$187.2 million⁶, leveraging \$3.6 billion in ADB clean energy investments, \$848.2 million private sector clean energy investments, and \$1.5 billion non-private sector clean energy investments; and resulting to a leverage ratio of 1:32 (Figure 2).

Figure 2. Leveraging ADB, Private Sector and Non-private Sector CE Investments^a
(\$ millions)



ADB = Asian Development Bank, CE = clean energy Source: ADB estimates.

^a Includes adjustments made following approval or withdrawal of projects.

^b Private sector investments refer to volume of financing mobilized, including equity, loans and guarantees) from private enterprises or financial institutions such as banks, private companies, private pensions funds, insurance companies, and the like; excluding resources from multilateral/regional development banks. Non-private sector investments refer to volume of financing mobilized from governments including other donors and partner governments, united nation agencies, multilateral/regional development banks, and the like.

7. **Continued Support of Financing Partners of CEFPF.** Norway remitted new replenishment for CEFPF. Coordination with Office of Co-financing was conducted for a new instrument of contribution for their continued support to multi donor Clean Energy Fund. The year 2016, also marked the first tranche of remittance from United Kingdom as part of the multi donor Clean Energy Fund to support renewable energy technical assistance projects. SDSC in

⁴ Amount excludes fees.

⁵ Private sector investments refer to volume of financing mobilized, including equity, loans and guarantees) from private enterprises or financial institutions such as banks, private companies, private pensions funds, insurance companies, and the like; excluding resources from multilateral/regional development banks. Non-private sector investments refer to volume of financing mobilized from governments including other donors and partner governments, united nation agencies, multilateral/regional development banks, and the like.

⁶ Amount excludes fees.

cooperation with the Office of Cofinancing Operations continuously coordinates with existing financing partners and looks for new contributors to ensure that the Facility will have funds available to support innovative clean energy projects.

8. Management Response to CEFFP Evaluation. The newly reorganized Sustainable Development and Climate Change Department (SDCC) together with the Sustainable Development Sector Cluster of Energy (SDSC-ENE) is now leading the way for the progressive fund management of the facility with a detailed response to the recommendations of the External Evaluation of CEFFP. The report of the external evaluation was officially submitted to ADB and shared with the financing partners in February 2016. The facility is on track in achieving its targets, however, gains particularly for access to energy target need to be scaled up and as a facility target, access to energy indicators will be part of the DMF review scheduled in 2017. The recommendations of the report were considered by the management and necessary actions were taken to address issues facing the Facility. These actions include having the additional staff to strengthen the fund team; spearheading the evaluation of energy projects; and coordinating with energy representatives of the ADB operations departments to increase the uptake of clean energy technologies, and encouraging innovation in technology and financing. Across sector projects with clean energy components are also reviewed by sectoral committees and provided financing. To address slow progress in achieving access to energy output targets, there is a close coordination with the Energy for All team and the Energy for All Partnerships which includes workshops and knowledge sharing events in DMCs providing opportunities and venues to encourage access to energy projects. In 2016, SDSC-ENE which chaired the Multilateral Bank Working Group on Climate Mitigation Financing also developed the guidelines and technical notes for counting climate financing in the energy sector. This guideline for harmonizing the estimation of climate finance across ADB will be used for measuring the CE investment of the CEFFP funded projects in succeeding years. Further SDSC-ENE developed the guidelines for greenhouse gas (GHG) mitigation accounting in energy projects to ensure a harmonized approach to GHG accounting across various departments in ADB.

II. RESULTS FRAMEWORK

9. The design and monitoring framework (DMF) remains to be the measure for judging CEFPF's performance against its objectives and targets, and reporting its results. This section provides a summary of the progress on CEFPF's outputs, outcomes and impacts.⁷ The DMF is provided in Appendix 2.

A. Impacts

10. The target impact is two-fold: (1) to contribute to improved energy access and security in DMCs and (2) to decrease the rate of climate change. These targets are to be measured by:

- (i) *Average CO₂ emissions per unit of GDP in participating DMCs is maintained at or lowered from 2006 level, by year 2030;*
- (ii) *Average electrification rates in participating DMCs increased from 2006 level, by year 2030; and*
- (iii) *Average percentage of RE share in energy mix in participating DMCs is maintained at or increased from 2006 level by year 2030.*

B. Outcomes

11. The target outcome, to increase the use of clean energy in DMCs, is measured by:

- (i) *Expected Cumulative CO₂ emission reduction in participating DMCs of 20 million tCO₂ per year by 2020;*
- (ii) *Expected Cumulative energy savings in participating DMCs of 18 TWh-equivalent per year by 2020;*
- (iii) *Expected Cumulative installed renewable energy capacity in participating DMCs of 3,500 MW by 2020; and*
- (iv) *Expected Cumulative renewable energy generation in participating DMCs of 10 TWh per year by 2020*

C. Progress Towards Impacts and Outcomes

12. CEFPF's performance will be measured against target impacts and outcome at the completion of all projects in its portfolio, noting that a project's outcome is determined at project completion while the impact is often only achieved long after project implementation. Currently, ADB tracks projects' contributions and reports on progress by monitoring the implementation of all financed projects in its portfolio. Specifically, CEFPF accounts the contributions to energy savings, renewable energy capacity installed, renewable energy generation and CO₂ emissions reduction of projects in its portfolio. The guidelines on monitoring and reporting of results are provided in Appendix 3.⁸

13. CEFPF outcome is primarily measured from the expected contributions of concessional financing (CFs), grant component of investments (GCIs) and technical assistance linked to loan

⁷ In monitoring and reporting the facility's financial status and results, ADB considers all project allocations authorized by the Climate Change Steering Committee (CCSC), which may include project allocations still for concurrence by the Government of Japan and/or under consideration by ADB.

⁸ The Clean Energy Funds' Guidelines on Monitoring and Reporting of Results, applied in measuring the facility's performance against target outputs, outcomes and impacts, is a standard appendix to CEFPF's Annual Report and must be read together with the design and monitoring framework.

projects (TALLs), including project preparatory technical assistance of loan projects in the portfolio. Table 1 presents a summary of the progress towards outcomes and impacts while details are presented in Appendix 4.

Table 1: Expected Progress Towards Outcomes and Impacts

Indicator	Target (By 2020)	1 January - 31 December 2016	Cumulative (As of 31 December 2016) ^a
		Total	Total
Cumulative CO ₂ emission reduction in participating DMCs (tCO ₂ per year)	20 million	1,457,344	9,014,816
Cumulative energy savings in participating DMCs (TWh-equivalent per year)	18	0.75	7.44
Cumulative installed renewable energy capacity in participating DMCs (MW) ^b	3,500	789.95	1,523.56
Cumulative renewable energy generation in participating DMCs (TWh per year) ^c	10	2.20	5.36

CO₂ = carbon dioxide, DMC = developing member country, MW = megawatt, RE = renewable energy, TWh = terawatt-hour, tCO₂ = ton of carbon dioxide.

^a Includes adjustments made following approval or withdrawal of projects.

^b Performance indicator effective beginning 2011.

^c Performance indicator effective beginning 2014. The estimates include an allocation in 2013, the Indonesia: Sarulla Geothermal Power Generation Project when monitoring on indicators was initiated.

Source: ADB estimates

14. In 2016, CEFPPF financed 14 projects that are expected to contribute to CO₂ emission reduction, energy savings, installed renewable energy capacity and renewable energy generated. One of the projects contributing to these targets is the Uzbekistan *UZB: Second Solar Power Project* (Box 1).

**Box 1. Uzbekistan: Second Solar Power
(Clean Energy Fund)**

The Clean Energy Financing Partnership Facility is providing a \$2 million grant component of investment (GCI) and a \$1 million project preparatory technical assistance (TA) grant to support a project which will reinforce Uzbekistan's position as Central Asia's emerging solar hub. The proposed project will use modern technologies for large-scale on-grid photovoltaic (PV) installations, increase access to reliable and clean electricity in rural areas, and prepare the solar sector for private sector investments. The GCI will pilot sustainable business models, energy-efficient technologies and rooftop PV systems for at least 16 rural health clinics (RHCs) for future replication in the 2,995 RHCs in the country. The TA will conduct feasibility studies, prepare bidding documents, including sample tender documents and request for proposals for private sector participation, and assist in pre-implementation works including procurement. The project will include a significant institutional capacity development component including intensive hands-on technical training. The project will also explore demonstration of utility scale storage technologies such as batteries. The project is expected to generate 177 GWh of clean energy annually and avoid 105,000 tons of carbon dioxide equivalent greenhouse gas emissions per year.

D. Outputs

15. Outputs are the physical and/or tangible goods and services delivered. Based on the DMF, ADB monitors six general outputs: (i) clean energy investments in DMCs increased; (ii) deployment of new technologies with strong demonstration effect facilitated; (iii) new approaches and/or methodologies to promote clean energy and carbon capture and storage (CCS) introduced; (iv) benefits from access to energy delivered; (v) health, environment and productivity benefits provided; and (vi) barriers to clean energy and CCS technology investments lowered.

16. **CE Investments in DMCs Increased.** By 2020, Clean energy funds aim to leverage \$4 billion of ADB clean energy investments in DMCs. It is also targeting to leverage \$1.2 billion of private sector investments and \$1.2 billion of non-private sector investments for clean energy. For 2016, the Facility leveraged clean energy investments of about \$2.1 billion from ADB, the private sector and non-private sectors. Cumulatively, CEFPPF is on track to reach its leverage target with about \$3.6 billion of clean energy investments from ADB (Table 2). It has also leveraged \$848.2 million CE investments from the private sector. And in 2016, it has surpassed the target for leveraged CE investments from the non-private sector with about \$1.5 billion attributable to new projects which will apply for cofinancing from the Green Climate Fund.

Table 2: Expected Leveraged Clean Energy Investments in ADB's DMCs

Indicator	Target (By 2020)	1 January - 31 December 2016	Cumulative (As of 31 December 2016) ^a
CEFPPF Allocations		\$49.2 million	\$187.2 million
ADB's clean energy investments in DMCs leveraged	\$ 4 billion^b	\$1.4 million	\$3.6 billion
<i>CEFPPF Funds - ADB Clean Energy Investments Leverage Ratio</i>		1 : 29	1 : 19
Private sector clean energy investments leveraged^c	\$ 1.2 billion	\$ 6.4 million	\$ 848.2 million
Non-private sector clean energy investments leveraged^c	\$ 1.2 billion	\$632 million	\$1.5 billion
<i>CEFPPF Funds - Other Clean Energy Investments Leverage Ratio</i>		1 : 13	1 : 13

ADB = Asian Development Bank, CEFPPF = Clean Energy Financing Partnership Facility, DMC = developing member country.

^a Includes adjustments made following approval or withdrawal of projects.

^b This is the cumulative total target of the clean energy funds by 2020, supporting the \$2 billion annual target of ADB.

^c Performance indicator effective in 2014.

Source: ADB estimates.

17. The Uzbekistan UZB: *Sustainable Hydropower Project* will significantly contribute to the Facility's clean energy investment target (Box 2). The TA will assist in the preparation of a \$215 million loan which will increase hydropower generation in Uzbekistan.

**Box 2. Uzbekistan: Sustainable Hydro Power Project
(Asian Clean Energy Fund)**

The Clean Energy Financing Partnership Facility is providing \$2 million to a project preparatory technical assistance (PPTA) that will support the preparation of a project which will mainstream hydropower, enhancing the share of clean energy and resilience against climate change impact in Uzbekistan. The ensuing project will (i) modernize three hydropower plants (HPPs); (ii) construct three new run-of-river small HPPs; and (iii) support the development initiatives for mini/micro HPPs in Uzbekistan, contributing to better rural access to reliable energy. The project will also build capacity on climate change impacts, adaptation and mitigation measures and help develop the domestic supporting industry for hydropower development. The PPTA scope will include conducting technical, economic, financial, safeguards, governance and other due diligence assessments. The expected modernized/constructed RE installed capacity is 84MW, producing 534 GWh of electricity (including 205 GWh saved). The project is expected to avoid 121,000 ton equivalent CO₂ per annum.

18. **Deployment of New Technologies in DMCs.** Clean energy funds aim at the deployment of 55 new clean energy and/or CCS technologies in DMCs by 2020 and commencement of two CCS demonstration projects in identified priority countries by 2020. In 2016, twelve projects are expected to contribute to the demonstration and deployment of 12 new technologies in the DMCs such as off-grid solar kits, renewable energy-based microgrid, solar photovoltaic-based minigrid, electric vehicle, efficiency lighting, hydropower, wind power technology, solar photovoltaic systems, CCS, low carbon technologies in the transport sector, energy efficiency technologies and innovative battery storage.

19. Cumulatively, 94 (about 59%) of CEFPP-supported projects are expected to contribute to the deployment of new technologies. Table 3 provides a summary of deployment of new technologies in DMCs while more details are in Appendix 5.

Table 3: Expected Deployment of New Technologies in DMCs

Indicator	Target (By 2020)	1 January - 31 December 2016	Cumulative (As of 31 December 2016) ^a
New clean energy/CCS technologies deployed	55 technologies	12	45
<i>No. of contributing projects on technology deployment</i>		12	94
<i>No. of projects receiving allocation</i>		28	159
<i>% of contributing projects on technology deployment</i>		43%	59%
No. of CCS demonstration projects in identified priority countries commencing^b	2	1	1

CCS = carbon capture and storage, CE = clean energy, DMC = developing member country.

^a Includes adjustments made following approval or withdrawal of projects.

^b Performance indicator effective in 2011.

20. CEFPP supports projects that enable DMCs to further explore alternative options to reduce CO₂ emissions. In 2016, CEFPP Climate Change Steering Committee (CCSC) authorized fund allocation under concessional financing to the proposed Cambodia *CAM: Solar Power Project* (Box 3) which will construct and operate the first utility-scale solar power project in Cambodia. The CEFPP CCSC also authorized fund allocation to the Indonesia *INO: Pilot Carbon Capture and Storage Activity in the Natural Gas Process* (Box 3). The pilot project will establish and operate facilities to capture and sequester carbon dioxide (CO₂) from a natural gas processing plant and will be the first carbon capture and storage plant in Southeast Asia.

**Box 3. Cambodia: Solar Power Project
(Canadian Climate Fund for the Private Sector in Asia)**

The Clean Energy Financing Partnership Facility is providing \$3.25 million concessional financing to a project which will construct and operate the first utility-scale solar power project in Cambodia. The concessional financing will accommodate the higher, first mover costs associated with the project. The project is expected to contribute about 9,500 tons of carbon dioxide (tCO₂) emission reduction per year, 10 MWp renewable energy capacity and 13,000 MWh of renewable energy generation. It will also leverage around \$9.95 million from sponsor's equity, international banks and ADB. The project is expected to help in unlocking Cambodia's underutilized solar energy resources and provide a benchmark private sector transaction for the country.

**Indonesia: Pilot Carbon Capture and Storage Activity in the Natural Gas Process
(Carbon Capture and Storage Fund)**

The Clean Energy Financing Partnership Facility is providing combined \$16 million grant and \$500,000 technical assistance (TA) to establish and operate facilities to capture and sequester carbon dioxide (CO₂) from a natural gas processing plant in Gundih, Central Java, Republic of Indonesia. The TA would support the completion of the project due diligence and accelerate project readiness for the proposed project. The grant will fund the pilot project itself which would include (i) capturing and preparing CO₂, (ii) transporting and injecting CO₂ for subsurface sequestration, and (iii) monitoring the injection site to verify permanent sequestration. The project will also develop carbon capture and storage (CCS) regulation for deploying CCS technology in Indonesia. The pilot is essential to increase domestic awareness of CCS, test CCS technology in the Indonesian context, and to demonstrate CCS storage and monitoring performance. This pilot project would be the first carbon capture and storage plant in Southeast Asia.

21. Guided by the categories for stages in technology development/adoption, Table 4 summarizes how the Facility performed; with 12 of 28 projects this year, and 94 of 159 projects, in total, supporting technology development.

Table 4: Expected Technologies Deployed Distributed by Stages of Technology Development and/or Adoption

	1 January - 31 December 2016	Cumulative (As of 31 December 2016) ^b
Research and development	0	0
Demonstration	1	10
Deployment	7	62
Competitive/commercial ^c	6	78
<i>No. of contributing projects on technology deployment</i>	<i>12</i>	<i>94</i>
<i>No. of projects receiving allocation</i>	<i>28</i>	<i>159</i>

^a Totals will not necessarily add-up because some projects cover more than one technology. Other projects are not credited with deployment but are valued as key interventions for lowering barriers to deploying clean energy technologies.

^b Includes adjustments made following approving or withdrawal of projects.

^c While there may be commercialization in some parts of the globe, technology adoption in a specific DMC may be weak due to barriers present.

Note: Based on Organization for Economic Co-Operation and Development (OECD) / International Energy Agency (IEA). 2006. Energy Technology Perspectives. Paris, and ADB estimates.

Source: ADB estimates.

22. **New Approaches and/or Methodologies Introduced.** The facility’s DMF target supporting projects to introduce 15 new approaches and/or methodologies to promote clean energy and CCS in participating DMCs by 2020. A summary of new approaches and/or methodologies introduced for the year and in total is provided in Table 5. In Box 4, the regional project *REG: Pacific Renewable Energy Investment Facility* will develop a regional investment facility which will finance renewable energy projects in the Pacific’s eleven smallest, most isolated member states. Another project also described in Box 4 is the grant component of investment for the Solomon Islands which will install solar PV systems in a university in Solomon Islands and will serve as a demonstration site that can be replicated in regional campuses across the Pacific region. This project shows the synergy between education and energy sectors.

Box 4. Regional: Pacific Renewable Energy Investment Facility (Clean Energy Fund)

The Clean Energy Financing Partnership Facility is providing \$3 million project preparatory technical assistance (TA) in support of an investment facility which will finance renewable energy in the Pacific’s eleven smallest, most isolated member states with a combined population of around 1.5 million. The first three projects under the investment facility will include renewable energy projects in Cook Islands, Tonga, and Republic of Marshall Islands (RMI). The CEFPF support will finance project preparation, detail design, implementation supervision, and sector reform. The expected impact of the investments will be improved regional energy security in the Pacific region and the expected outcome will be increased generation of lower cost, reliable, and clean energy.

Solomon Islands: Higher Education in the Pacific Investment Program (Clean Energy Fund)

The Clean Energy Financing Partnership Facility (CEFPF) is providing \$1.5 million grant to support the Higher Education in the Pacific Investment Program in the Solomon Islands which is intended to contribute to the competitiveness and diversification of the Pacific Island economies. The grant support will be for the installation of solar PV system in the new campus of the University of South Pacific (USP) so that the new campus would have a combination of renewable energy (solar power) and power supply from the local power supply authority. By utilizing renewable energy for the USP campus, the load on the local power supply authority will be reduced resulting in reduced carbon emissions as the majority of the power supply generated is from diesel generators. The new USP campus can serve as a demonstration site that can be replicated in 13 other regional campuses in the Pacific. The UPS also offers technical vocational and training programs for youth that include renewable energy maintenance which will leverage the efforts of these inputs. The installed capacity is expected to be 650 kW while the expected reduction in CO2 emissions will be around 600 tons per year.

Table 5: Expected New Approaches and/or Methodologies ^a

Indicator	Target (By 2020)	1 January - 31 December 2016	Cumulative (As of 31 December 2016) ^a
New approaches/methodologies to promote clean energy/CCS introduced^b	15 approaches	4	12
<i>No. of contributing projects on new approach</i>		<i>4</i>	<i>16</i>
<i>No. of projects receiving allocation</i>		<i>28</i>	<i>159</i>
<i>% of contributing projects on new approach</i>		<i>14%</i>	<i>16%</i>

CCS = carbon capture and storage, DMC = developing member country.
^a Includes adjustments made following approval or withdrawal of projects.
^b Performance indicator effective in 2011. The cumulative percentage accounts for projects from 2011 onwards.
 Source: ADB estimates.

23. A regional Pacific project, *Higher Education in the Pacific Investment Program*, includes the program for Solomon Islands (Box 4) which the facility supports. It is an example of the support provided for the promotion of clean energy in non-energy sectors. The financing support is cross sector complementing the work to promote higher education in the Pacific Islands and at the same time providing facilities that would serve as model in the University of South Pacific that renewable energy for education facilities as a better option.

24. **Benefits from Access to Energy Delivered.** The facility's cross sector work includes collaboration and the promotion of sustainable transport that contributes to low carbon development. In 2016, a project of note is the Tajikistan *TAJ: CAREC Corridor 2, 5 and 6 (Dushanbe-Kurgonteppa) Road Project* (Box 5) with a grant component which includes funding a solar PV-based micro-grid system to power the street lights and provide emergency backup to communities along the planned stretch of the project road. Approximate 600 household can be powered with the planned microgrid power systems.

25. To date, 17 projects are expected to contribute to the delivery of access to energy benefits, including gender benefits (Table 6). A project with an access to energy component which also directly address gender equality and/or women's empowerment is the project in Solomon Islands (Box 4). Aside from demonstrating the value of clean energy, this project in the education sector intends to increase female students enrolled in degree programs.

Box 5. Tajikistan CAREC Corridor 2, 5 and 6 (Dushanbe-Kurgonteppa) Road Project with Micro Grid (Clean Energy Fund)

The Clean Energy Financing Partnership Facility is providing \$2 million investment grant that will support the clean energy portion of a transport project in Tajikistan. Specifically, the fund will provide reliable power and backup electricity to the road tunnels and clean and efficient energy-based (solar PV and energy storage technologies) road lighting on the major transportation regional corridors. The tunnel installations and the street lights will result in a total annual energy savings of 78 MWh and an additional 38 MWh of energy benefits that are produced by solar PV. This will result in a total impact of 116 MWh of energy savings annually. A solar PV-based micro-grid will be used to power the street lights and provide emergency backup to approximately 100 households per microgrid. Along the planned stretch of the project road, approximately 600 households can be powered with the planned microgrid power systems. The fund support will provide specific examples on how clean energy and energy efficiency technologies can be used to solve problems and reduce costs in Tajikistan.

Table 6: Expected Access to Energy Benefits^a

Indicator	Target (By 2020)	1 January - 31 December 2016	Cumulative (As of 31 December 2016) ^a
<i>No. of projects with access to energy component</i>		5	17
<i>% of projects with access to energy component</i>		18%	17%
No. of HHs provided with access to energy in participating DMCs^b	700,000	1,116	152,849
HHs connected to electricity ^b	350,000	1,116	152,849
HHs connected to modern fuels and/or efficient devices for cooking ^b	175,000	0	10,000
HHs connected to modern fuels and/or efficient devices for heating ^b	175,000	0	0
% of access to energy projects with gender mainstreaming^c	30%	20%	12%
<i>No. of contributing access to energy projects projects on gender mainstreaming</i>		1	2
% of access to energy projects with gender concerns^b	80%	20%	71%
<i>No. of contributing access to energy projects on gender concerns</i>		1	12

HH = households, DMC = developing member country.

^a Includes adjustments made following approval or withdrawal of projects.

^b Performance indicator effective in 2011. The cumulative percentage accounts for projects from 2011 onwards.

^c Performance indicator effective in 2014.

Source: ADB estimates.

26. Health and Productivity Benefits Provided. Clean energy funds aim to finance projects that directly and indirectly provide health and productivity benefits derived from clean energy and/or CCS interventions, supporting a critical strategic agenda identified in ADB's Strategy 2020: The Long-Term Strategic Framework of the Asian Development Bank 2008-2020, i.e. inclusive economic growth. Per DMF, clean energy funds aim for 50% of projects supported to deliver co-benefits on health and productivity in DMCs. In 2016, there are 5 projects expected to directly and indirectly contribute to the provision of health and productivity benefits (Table 7). One of the projects which will increase CE investment is the Uzbekistan *UZB: Second Solar Power Project* (Box 1). The grant component of the project will pilot sustainable business models, energy-efficient technologies and rooftop PV systems for at least 16 rural health clinics (RHCs) which will serve as models for potential future replication to approximately 2,995 RHCs across Uzbekistan. Provision of the solar PVs will provide access to renewable energy to the rural health clinics that will directly benefit the immediate communities.

Table 7: Expected Health and Productivity Benefits^a

Indicator	Target (By 2020)	1 January - 31 December 2016	Cumulative (As of 31 December 2016) ^a
% of projects supported highlighting cobenefits on health and productivity ^b	50%	18%	23%
<i>No. of contributing projects on cobenefits</i>		5	23
No. of individuals employed ^c		TBD	7,349
No. of women employed ^c		TBD	267
% of women employed ^c		0%	4%
<i>No. of contributing projects on employment</i>		1	5

^a Includes adjustments made following approval or withdrawal of projects.

^b Performance indicator effective in 2011. The cumulative percentage accounts for projects from 2011 onwards.

^c Performance indicator effective in 2014. The estimates include an allocation in 2013, the Indonesia: Sarulla Geothermal Power Generation Project when monitoring on indicators was initiated.

Source: ADB estimates.

27. In general, projects supported by CEFPP are fully compliant with ADB's Safeguard Policy Statement covering involuntary resettlement, indigenous peoples and the environment. The projects also comply with ADB's Policy on Gender and Development and ADB's Operations Manual section on the incorporation of social dimensions into ADB operations. These policies promote the avoidance, minimization and mitigation of harmful environmental impacts, social costs and risks and also provide a platform for participation by affected people and other stakeholders in project design and implementation.

28. **Barriers to Clean Energy and CCS Technology Investments Lowered.** Clean energy funds measure the outputs on barriers lowered by tracking the projects with respect to the following targets: (i) 20 national and local policies enabling clean energy and CCS development in participating DMCs developed by 2013; (ii) 25 financing models suitable for bundling small clean energy and/or CCS investment applied in participating DMCs by 2020; and (iii) 100% of projects supported produce and/or disseminate knowledge products or contribute in building capacity to promote clean energy/CCS development in participating DMCs by 2020.

29. In 2016, all projects supported by CEFPP are expected to contribute to the lowering of barriers and enhancing the enabling environment to facilitate the deployment of clean energy and/or CCS technologies. To date, 16 projects are expected to help address policy barriers while 26 projects will contribute to lowering financing barriers. As targeted, all 159 projects⁹ will produce and/or disseminate knowledge products or contribute to capacity building to promote clean energy/CCS development in DMCs. Of note are these three TAs: *PRC: Strengthening Capacity in the Implementation of the Green Financing Platform for the Greater Beijing–Tianjin–Hebei Region, Republic of Marshall Islands (RMI): Majuro Network Strengthening Project*, , and *REG: Improving Institutional Capacity on Preparing Energy Efficiency Investments* (Box 6). The PRC TA will support a project which will set up a dedicated green financing platform (GFP) to leverage financing and scale up investments in green and pollution-reduction projects. The RMI TA will support the development of investment programs for RE generation while the South Asia regional TA will develop investment grade energy efficiency pipeline projects, as well as increase the institutional capacity, and mainstream energy efficiency policies and regulations.

⁹ Excludes allocations to two projects on adaptation under the Canadian Climate Fund for the Private Sector in Asia.

Box 6. PRC: Strengthening Capacity in the Implementation of the Green Financing Platform for the Greater Beijing–Tianjin–Hebei Region (Clean Energy Fund)

The Clean Energy Financing Partnership Facility is providing \$1 million to a technical assistance linked to a project which will set up a dedicated green financing platform (GFP) in the greater Beijing–Tianjin–Hebei region to leverage financing and scale up investments in green and pollution-reduction projects under a financial intermediation loan. However, such an approach over a wide region and across all key sectors involves risks. CEFPP support will directly address key risks identified in the implementation of the GFP, especially in areas of (a) safeguard compliances with ADB requirements; (b) appraisal of large number of smaller transactions across wide region and diverse sectors; (c) weak demand for financing from GFP by setting up an effective outreach arrangements and establish online application process; and (d) capacity of the financial intermediary and partner domestic commercial banks.

Republic of Marshall Islands: Majuro Power Network Strengthening (Clean Energy Fund)

The Clean Energy Financing Partnership Facility is providing \$690,000 for capacity development technical assistance (CDTA) to assess investment requirements in the Majuro network to accommodate an increase in intermittent renewable generation integration with the Majuro power system in the Republic of Marshall Islands. The TA will assist Marshall Energy Corporation (MEC) in developing an investment program to increase network-connected renewable energy generation and deliver improved service to the country's economy. The scope of the TA will include (i) comprehensive inventory of existing system assets and documentation on their condition and performance characteristics; (ii) modeling of existing system's accommodative capacity for distributed intermittent renewable generation; (iii) identification of sequenced capital investments to allow increased renewable generation and reduce network losses; (iv) full technical, economic and financial feasibility study for investment(s) proposed for immediate implementation; (v) training of MEC and Ministry of Resource and Development Staff; and, (vi) recommendations for improved tariff and financial management policies and practices within MEC.

REG: Improving Institutional Capacity on Preparing Energy Efficiency Investments (Clean Energy Fund)

The Clean Energy Financing Partnership Facility (CEFPP) is providing \$2 million to a regional technical assistance (TA) which will assist five DMCs in South Asia in enhancing government capacity to design and develop energy efficient projects. The TA includes: (i) conducting energy audits and identifying energy-saving measures in industrial facilities and buildings; (ii) developing an inventory of bankable energy-saving projects; and (iii) supporting national and regional energy efficiency policy dialogue, developing energy-saving action plans and road maps, and providing training to energy professionals, such as energy managers and energy auditors, through the South Asia Subregional Economic Cooperation Energy Working Group and cooperation among developing members. The TA will focus on identifying large-scale energy efficiency projects in the two biggest energy consumer countries, Bangladesh and Sri Lanka; and smaller energy efficiency projects in Bhutan, the Maldives and Nepal.

30. Table 8 presents CEFPF's performance summary on lowering the barriers to clean energy technology investments for 2016 and for the entire portfolio.

Table 8: Barriers to CE and CCS Technology Investments Expected to be Lowered

Indicator	Target (By 2020)	1 January - 30 June 2016	Cumulative (As of 30 June 2016) ^a
<i>No. of projects receiving allocation</i>		28	159
National or local policies enabling CE/CCS development in participating DMCs developed^b	20	4	11
<i>No. of contributing projects on policy development</i>		4	16
Financing models suitable for bundling small CE/CCS investment applied in participating DMCs^b	25	4	18
<i>No. of contributing projects on financing models</i>		4	26
% of projects producing/disseminating knowledge products or contributing to capacity building	100%	100%	100%
<i>No. of contributing projects on knowledge products and/or capacity building</i>		28	159
No. of projects that disseminate knowledge products, practices and information in a gender sensitive manner ^c		0	2
No. of knowledge products produced and/or disseminated ^c		17	22
No. of individuals trained ^c		691	5868
No. of women trained ^c		37	2074
% of women trained ^c		5%	35%
No. of trainings/conferences/workshops held ^c		57	128

CCS = carbon capture and storage, CE = clean energy, DMC = developing member country.

^a Includes adjustments made following approval or withdrawal of projects.

^b Total may not add-up due to coverage of policies or financing models by various projects.

^c Performance indicator effective in 2014.

Source: ADB estimates.

31. The details on how each supported project contributes to CEFPF's target outputs are contained in Appendix 6 while the summary of CEFPF's performance for 2016 and to date against its target outputs are presented in Appendix 7.

E. Actual Accomplishments and Progress of Projects

32. To date, CEFPF is supporting a total of 159 projects which aims to contribute to the enhancement of energy security, access and decreased rate of climate change through increased use of clean energy. These projects target to leverage clean energy investments and lower policy, financing, and capacity barriers. A total of 151 projects have been approved for implementation by ADB. The other 8 projects have received Climate Change Steering Committee (CCSC) authorization, and are awaiting ADB approval.¹⁰ Of the ADB-approved projects, there were 91 projects, i.e. six GCI, seven TALL, 32 technical assistance (TA), and 46 direct charges (DC), which have completed their proposed activities.¹¹ The remaining projects in

¹⁰ In 2016, the project Myanmar MYA: Mandalay Solar Power Project was approved for allocation but the project was later withdrawn from the CEFPF portfolio.

¹¹ These numbers do not include projects which have completed their activities but will still process financial close and prepare completion reports. These projects will be reported on once they have obtained financial close and completion reports are made available (if required).

the portfolio are progressing with no major issues, albeit some are experiencing delays which are not expected to provide significant repercussions on planned outputs, outcome and impacts.

33. **Completed Activities and Outputs.**¹² There were five TAs that were completed and financially closed in 2016. These completed projects were generally successful in achieving their designed outputs and outcome supporting clean energy/CCS development and promotion, specifically, completing activities for the development of a CCS pilot, developing the design and implementation of energy access programs based on renewable energy sources; and preparing technical and financial due diligence for renewable energy projects. The Indonesia *INO: Planning a Pilot Carbon Capture and Storage Activity* aimed at developing pilot activities in Indonesia on CCS was able to produce preliminary engineering design for the capture and transport components and costs estimates; financial analysis of the CCS pilot activity; and assessment of legal and regulatory issues pertaining to CCS pilot activities. The use of existing consultants under a JICA-funded feasibility study facilitated rapid implementation of the TA activities and effective information sharing. The study team had to make multiple trips to the site to conduct the necessary analyses, particularly on issues pertaining to integrity and safety of the well for injection. The final review and approval of the study took longer than anticipated as several stakeholders were involved but in the end the activities were well received by the government and the other stakeholders. In 2016, the investment grant to finance the pilot activity in Gundih (Box 3) received fund allocation from CEFPF amounting to \$16 million¹³.

34. Another TA completed in Indonesia is the *INO: Scaling Up Renewable Energy Access in Eastern Indonesia* which supported the design and implementation of energy access programs based on renewable energy sources on Sumba, specifically, and broadly throughout eastern Indonesia. The TA developed detailed energy access plan for Sumba; prepared investment projects to be developed by small independent power producers; and strengthened the implementation of ongoing and planned energy access programs financed by the government. The detailed energy access plan developed has been fully integrated into the planning framework for the government's Sumba Iconic Island (SII) program, known as the Sumba Energy Access Plan, and will continue to guide planning and investment over the lifespan of the SII program. The TA also provided engineering and technical planning assistance to government projects to utilize biomass, wind, small hydro and solar power. Though the TA leveraged an additional \$ 1 million cofinancing from the Government of Norway to design and install 4 to 5 solar PV minigrid projects in Sumba, this component was cancelled because of unfavorable policy environment. The experience prompted a more detailed review of Indonesia's electrification policies and programs, with recommendations made to improve the policy environment for future projects and helped inform the government's policy in this area. The detailed least-cost electrification planning method used for the TA is among the first of its kind in Indonesia, and was introduced to the government and the state electricity company to be used in determining the least-cost electrification plan for a particular area and can be apportioned into streamline public and private investment. The TA has also catalyzed additional funding and technical assistance from other donors to further contribute to the SII initiative and electricity access goals utilizing clean energy resources in eastern Indonesia including contribution from AFD for the preliminary technical, financial and social assessment of three candidate storage hydro sites and one candidate pumped storage site on Sumba to determine the potential for further development and future IPP financing. Follow-on activities after the TA include ADB, World Bank, JICA and other stakeholders providing support to the national rural

¹² This subsection reports on projects completed in 2016 with available completion reports.

¹³ The project has received Climate Change Steering Committee (CCSC) authorization, and is awaiting ADB approval.

electrification program, Program Indonesia Terang, which aims to electrify more than 12,600 remote villages. The specific approach for each village will be determined based on geospatial analysis and least-cost electrification planning demonstrated by the TA. Details on the completed TAs are in Box 7.

35. The PPTA for the project *UZB: Samarkand Solar Power Project* was successfully completed in 2016 with expanded scope. The TA reviewed the feasibility study and executing agency's financial management and procurement capacities, conducted a capacity needs assessment, developed the plant conceptual design, and helped procure (from bidding documents preparation through to bidding and bid evaluation) the design-build-operate (DBO) contract for the 100 MWac photovoltaic (PV) power plant under the ensuing Loan 3058-UZB: Samarkand Solar Power Project. The contract, comprising design-build and 3-year operation and maintenance, was awarded and signed in December 2016. Additional outputs were (i) the TA consultants' assistance in evaluating the proposals for the Project's project management and supervision consultant recruitment, (ii) conducting post-qualification of responsive bidders for the DBO contract including assessment of proposed module suppliers,¹⁴ and purchasing PV systems modeling software for three solar institutes. The ensuing project will improve the country's energy supply and sustainability by generating at least 159 GWh of solar power, and avoiding at least 88,000 tons of CO₂ equivalent emissions by 2018. It is also expected to provide positive impacts to the poor and vulnerable groups through increased access to reliable and clean energy, increased employment, including of women, improved health and education services. The PPTA was extended by 35 months due to delayed government feasibility study approval and prolonged contract procurement. The DBO contract, which incorporates a 3-year operation and maintenance period, was the first of its kind procured for an ADB-funded project. ADB, along with the TA consultants, extensively supported the executing agency throughout the process until the contract was signed in December 2016. The TA enabled significant capacity building for the executing agency, the government, and ADB. It was important for ADB and the TA consultants to fully engage the government in pushing the project forward. Building on the lessons and achievement of the TA and the ensuing project, *UZB: Second Solar Power Project* (Box 1) will continue increasing UZB's renewable energy generation and access through another 100 MWac PV power plant, this time in Sherabad province. In 2016, a \$1million PPTA and a \$2 million grant component of investment for the new project were approved for allocation under CEFPP. Utility scale storage technologies will be demonstrated in the new project. The grant component will install energy efficient technologies and rooftop solar PV in selected rural health clinics across the country. Details on the completed TAs are in Box 7.

¹⁴ Following para 2.58 of ADB's Procurement Guidelines, and a minor change in TA scope, CWEN engaged another consultant under the TA to undertake further due diligence on the first-ranked bidder from July to September 2016, as a recourse to the Government's initial proposal for rebidding. The first-ranked bidder was reconfirmed as responsive, and ADB gave no objection to contract award in November.

Box 7: Selected Completed TA projects

INO: Planning a Pilot Carbon Capture and Storage Activity (Carbon Capture and Storage Fund)

With CEFPP financing of \$225,000, this small-scale capacity development technical assistance (TA) supported the development and planning of carbon capture and storage (CCS) pilot activities in Indonesia. The TA produced the following outputs: (i) preliminary engineering design for the capture and transport components and cost estimates; (ii) financial analysis of the CCS pilot activity, and (iii) assessment of legal and regulatory issues pertaining to pilot CCS activities. The TA activities were well received with a memorandum of cooperation signed among ADB, the government and other stakeholders and an investment grant requested from ADB to finance the pilot activity at the natural gas Central Processing Plant in Gundih, Central Java. Establishing a pilot CCS activity can demonstrate proven reductions once the technology is applied broadly to Indonesia's gas sector operations.

INO: Scaling Up Renewable Energy Access in Eastern Indonesia (Clean Energy Fund)

With CEFPP financing of \$1 million, this technical assistance (TA) provided support in the design and implementation of energy access programs based on renewable energy sources on Sumba, specifically, and broadly throughout eastern Indonesia. The TA produced the following outputs: (i) detailed energy access plan for Sumba developed; (ii) investment projects to be developed by small independent power producers (IPP) prepared; (iii) implementation of ongoing and planned energy access programs financed by the government strengthened. The TA leveraged an additional \$ 1 million cofinancing from the Government of Norway for the design and implementation of 4 to 5 solar PV minigrid projects. This TA component was later cancelled due to unfavorable policies. This experience prompted a more detailed review of Indonesia's electrification policies and programs, with recommendations made to improve the policy environment for future projects. The TA also published a report entitled: Achieving Universal Electricity Access in Indonesia which provided recommendations on how to streamline public and private financing nationally to achieve government goals of universal electricity access. The report is the most comprehensive resource available about the many actors and mechanisms involved in Indonesia's electrification efforts, and the government has begun to turn several of the report's recommendations into action, including incorporating recommendations into the new national electrification program launched in 2016.

UZB: Samarkand Solar Power Project (Clean Energy Fund)

CEFPP provided financing of \$750,000 to the project preparatory technical assistance (TA) of an investment project that will construct a 100 megawatt grid-connected crystalline photovoltaic power plant and provide institutional capacity building on solar energy and project management and supervision support. The TA was successfully completed and produced the following outputs: (i) reviewed the feasibility study and the executing agency's financial management and procurement capacities; (ii) developed the plant conceptual design; and (iii) helped procure the design-build-operate (DBO) contract for the power plant under the ensuing loan. The contract, comprising design-build and 3-year operation and maintenance, was awarded and signed in December 2016. The ensuing loan will generate at least 159 GWh of solar power, and avoiding at least 88,000 tons of CO₂ equivalent emissions by 2018, improving Uzbekistan's energy supply and sustainability. It is also expected to provide positive impacts to the poor and vulnerable groups through increased access to reliable and clean energy, increased employment, including women, improved health and education services.

36. Two GCIs were completed and financially completed in 2016¹⁵. One of them is the grant for Nepal *NEP: Compact Fluorescent Lighting and Solar-Powered Street Lighting under loan project Energy Access and Efficiency Improvement* includes countrywide expansion of the CFL program and establishment of solar/solar-wind street lighting system (Box 8).

**Box 8: NEP: Compact Fluorescent Lighting and Solar-Powered Street Lighting
(under loan project -NEP: Energy Access and Efficiency Improvement)
(Clean Energy Fund)**

CEFPF supported the grant component of an investment which will assist the Government of Nepal in exploring key options in alleviating energy supply constraints by facilitating access to clean energy (substation and transmission line improvement), energy efficiency in supply, EE in street-lighting and facilitating private sector investment. CEFPF/CCF supported the two demand-side management (DSM) interventions: (i) energy efficient lighting (CFL), and (ii) stand-alone renewable energy-based street-lighting using Solar or hybrid powered street-lighting; which will significantly contribute to the reduction in the lighting-load relieving the burden on the system in terms of both energy and peak-load capacity. The project distributed 750,000 CFLs in 24 distribution centers of the Nepal Electricity Authority spread over 24 districts of Nepal. It also installed 1,316 new solar street lighting systems and retrofitting 185 existing street light. The project also completed the installation of a 50 kWp grid tier solar roof top and 10 kWp backup system in Bir Hospital and 100 kWp grid tied solar system in Nepal Electricity Authority Training Center.



1,316 solar powered street lighting systems were installed to demonstrate the technical and economic viability of solar power street light. When the country was facing severe electricity shortage, the successful demonstration of the project paved the way for widespread use of solar power street lighting systems in many other locations under government and local initiatives.



This 100 kWp grid tied solar system is NEA's first major initiative to demonstrate the technical and economic viability of other type of renewable energy system apart from the hydropower.

¹⁵ For these reported GCIs, while the related investment projects may not yet be fully completed and financially closed as other project components may still be ongoing, the CEFPF-supported components have been completed, as such already financially closed.

37. The other completed GCI is Indonesia *INO: Pilot Project for Efficient Lighting under loan project Java-Bali Electricity Distribution Performance Improvement Project* which supported the pilot of retrofitting light emitting diodes (LEDs), a new and emerging technology, for street-lights and substation lighting in Java Bali area (Box 9). The project encouraged interest among municipal/city governments in energy efficient street lighting. ADB has received some invitations from municipal governments to discuss about implementation of the same program in their regions. The government has issued regulations that will allow local governments to build projects with multi-year budgets. It has also encouraged more cities/municipals to retrofit their street-lights using their own budget.

**Box 9: INO: Pilot Project for Efficient Lighting (under loan project - INO: Java-Bali Electricity Distribution Performance Improvement Project)
(Clean Energy Fund)**

CEFPF supported the pilot retrofitting light emitting diodes (LEDs) for street-lights and substation lighting in Java Bali area. The project completed the baseline lighting survey in selected areas; retrofitted existing street lights in two selected cities and substation lights with LED luminaires; and proposed a standard for LED lamps and fixtures for Indonesia. Through this assistance, the evening peak in the project area will be reduced as customers switch to such efficient lights. CEFPF's support supplemented ADB's broader energy efficiency initiative under the proposed loan entitled, "Java Bali Distribution Performance Improvement Project" which aims at upgrading the power distribution network in East, Central and West Java and Bali island through the installation of key components, and lower the cost of power supply in the long run.



The retrofitted LEDs at the Cilegon Substation provided improvement in the uniformity ratio, bringing more evenly-distributed light, with lower wattage consumption.



The LED street lighting at Sugiyopranoto Street in Semarang City provided improvement to the illumination level in the surrounding area, with lower energy consumption.

38. In 2016, one DC was completed and financially closed.¹⁶ The DC *Vietnam VIE: Preparation of the market Readiness Proposal (Phase 2) of the Partnership for Market Readiness Project in Vietnam* has been useful in providing assistance in the preparation of the organizing framework and Market Readiness Proposal (MRP) under the Ministry of Natural Resources and Environment. The MRP that was developed for Viet Nam details the country's plan for its proposed market-based instrument(s) and market readiness components. The consultants hired under the DC conducted consultations to ensure that the MRP will fully reflect the needs of the national authorities and concerns of all stakeholders. The DC supported the travel of an ADB staff who served as resource person at the Seventh Meeting of the Partnership Assembly (PA) and during the expert in-country review of the draft MRP. The DC also supported the travel of government officials to present the draft MRP to the Ninth Meeting of the PA and the final MRP to the Tenth Meeting of the PA, during which Viet Nam's final MRP was approved and allocated \$3 million for its implementation. CEFPPF's contribution helped Viet Nam in setting the framework for developing its domestic carbon market which calls for large scale deployment of renewables (Appendix 8).

39. **Ongoing Activities and Outputs.**¹⁷ CEFPPF projects are generally progressing well and on-track in achieving their target outputs, outcome and impacts (Box 9). However, some projects have experienced delays relating to: (i) start-up activities, (ii) changes in implementation arrangements, and (iii) external factors to the project. Nonetheless, the project teams worked in resolving these issues through discussions internally within ADB and externally with governments, implementing and executing agencies, without significantly affecting planned outputs, outcome and impacts.

40. Some projects had concerns on project start-up relate to government requirements and consultant engagement. Though the project *REG: Economics of Climate Change in Central and West Asia* initially experienced delays in the nomination of government focal points and consultant recruitment, it is currently finalizing all TA activities including knowledge products and climate change mitigation concept notes for a small-hydro project proposal for Uzbekistan, an agro-energy facility in Azerbaijan, and compressed natural gas fueling stations in Kazakhstan. In 2016, a PPTA which will include a small-hydro project (Box 2) received fund allocation from CEFPPF amounting to \$2 million. Another project, the Indonesia *INO: Sarulla Geothermal Power Generation Project*, had a delay in plant commissioning of the first generation unit for minor technical reason. Turnkey engineering, procurement and construction (EPC) contract on date and lump sum basis was able to mitigate the risk of financial impact of the minor delay. In some cases, projects need to address challenges in introducing a new system or technology in the DMCs such is in the case of the grant component of the project Nepal *NEP: Lumbini Clean Public Transport Project* under the *South Asia Tourism Infrastructure Development Project* in which the Solar Power System and off-grid power supply were new to the clients, Nepal's Ministry of Civil Aviation, Tourism and Culture (MOCTCA) and Lumbini Development Trust (LDT). Attracting good bidders who hardly or have never worked in Nepal to bid for such investment packages is another challenge.

¹⁶ Some DCs have completed their activities but will still process financial close and prepare completion reports. These projects will be reported on once they have obtained financial closure and completion reports are submitted.

¹⁷ This subsection reports on the progress of the ongoing projects based on information received from project teams in December 2016 via email correspondence. This subsection does not provide an exhaustive discussion on all projects in the CEFPPF portfolio but rather inform on the general experiences and progress of the projects.

41. The smooth implementation of projects was affected by issues relating to transitioning project management, procurement and implementation decisions of executing agencies. The project Myanmar: *Renewable Energy for the Nationwide Telecommunications Project*, which aims to enhance the capacity of private and public stakeholders on renewable energy technologies for telecom towers, had to change implementing agencies. The initial entity was not able to commit sufficient resources to support the TA and the replacement entity was more suitable having direct involvement in rolling out telecom towers and the associated power system. With the delay in the signing of the TA Letter Agreement and the change in implementation agreement, the TA validity approval was extended for a year. For the project Pakistan PAK: *Determining the Potential for Carbon Capture and Storage*, aside from delays in the government concurrence, it was later decided that instead of engaging a consulting firm (limited number of firms with the required expertise), individual experts were recruited for the activities. These delays meant it was necessary to extend the completion date.

42. Some project slowdown was due to external factors. The progress of TA implementation of REG: *Promotion of Investment in Climate Technology Projects through Venture Capital Funds* faced difficulty in obtaining a no-objection letter from some countries due to issues external to the TA which affected the engagement for a think-tank firm with the component activity in those countries put on hold. A minor change in scope and implementation arrangement was approved in 2016 to engage individual consultants for the other DMCs in lieu of a think tank firm. In response to the situation, the subproject shifted more focus to other promising DMCs such as PRC and the Philippines. The TA is still looking into those left out countries to see if agreements for accelerator programs can still push through.

43. Projects also made minor changes in their scope to remain responsive to the needs of the DMCs. CDTA AFG: *Renewable Energy Development in Afghanistan* is on track and with enhanced outputs to meet changing government priorities and development agenda. Project and site selection criteria have also slightly changed, as focus was given to a wider range of configurations covering utility-scale solar plants including hybrids, mini-grid, off-grid, and solar rooftop projects. Apart from 4 pre-feasibility studies, advanced technical due diligence including full feasibility study and bidding documents are being prepared for a 100 MW solar power park. The TA also had a minor change in scope to cover the pilot-testing and development of a solar powered kit intended primarily for household use. The minor change and all additional outputs are consistent with the TA's outcome, components, and benefits. The grant component of the project Indonesia INO: *West Kalimantan Power Grid Strengthening Project*, which aims to strengthen the power supply grid and connect new customers in West Kalimantan by investing in new power transmission lines and substations, experienced some delays in the early implementation stage. There was a demand from the communities for electricity connection so the scope of the grant expanded the electricity distribution lines (medium voltage and low voltage) to provide electricity access to the affected areas. There is an issue the household connections since the executing agency is not authorized to directly conduct household connections and is to be done by an independent certified contractor. There will be a household connection charge applies for which communities considered the charge is high and thus, has delayed and limited their abilities to have electricity connection. An appropriate mechanism is being discussed internally to increase the number of household connections utilizing the grant. A minor change in scope and reallocation was necessary since there was a request to expand the medium voltage network and establish several house connections to the affected households. The reallocation was to expand electricity distribution system to the areas impacted by the transmission line construction under the loan where household connections can be further processed. The project also extended its completion date to finalize the operational certification and administration works of targeted output. The implementation of TA: *Supporting*

Brick Sector Development Program was delayed by a year as the non-performing consulting firm had to be replaced by four individual consultants. After which, the TA started gaining momentum. A minor change in scope was approved in 2016 to change performance indicators but keeping its objectives unchanged after further discussions with the government on what is still relevant, what are the available expertise and government mandate. The project achieved all its performance targets in impact, outcome, and outputs utilizing the TA funds fully. Some projects have extended their completion dates to allow sufficient time to complete all activities which includes publications, launch and dissemination of reports and completion of all payments.

Box 9: Status of Selected Progressing Projects

REG: Economics of Climate Change in Central and West Asia (Asian Clean Energy Fund)

The Asian Clean Energy Fund, generously funded by the Government of Japan and administered under the Clean Energy Financing Partnership Facility, is part-financing a technical assistance (TA) for \$2 million to: build the capacity of decision-makers in six Central West Asian countries (Azerbaijan, Kazakhstan, Kyrgyz Republic, Pakistan, Tajikistan and Uzbekistan) toward more informed climate adaptation and mitigation investment decisions. Specifically on climate change mitigation (focus of ACEF financing), the TA will: (i) establish evidence-based data on emission reduction opportunities and assess the full cost of climate change mitigation measures; (ii) identify the gaps and barriers, synergies and opportunities in the public and private sector; (iii) formulate clean energy (CE) strategies to lower those barriers and deploy CE technologies, while developing climate capital markets; (iv) develop one climate change mitigation or CE investment concept paper on transport or energy in 3 of the 6 DMCs (i.e. Azerbaijan, Kazakhstan and Uzbekistan); and, (v) disseminate knowledge products to help promote climate change mitigation and CE development. These activities will enable the development of replicable and scalable investment pilots across the six target DMCs.

INO: Sarulla Geothermal Power Generation Project (Canadian Climate Fund for the Private Sector in Asia)

CEFPF is providing \$20 million to support the project that will develop the steam resources in the Sarulla concession area, and construct, operate and maintain three geothermal power generation units with a total capacity of about 320 megawatt (MW). The project, the first large-scale private sector geothermal project in Indonesia for over a decade, will demonstrate the viability of a bankable model for a large-scale independent power producer geothermal project which will contribute to the expansion of geothermal power generation, (ii) increase private sector investment in geothermal development and (iii) increase electrification rate in Indonesia. To address the inherent risks, capital-intensive development and current market stagnation in the geothermal sector, the project will deploy a discrete amount of concessional financing to leverage commercial lending and accelerate sector development. CEFPF provides a critical support for the project to proceed to construction and commercial operations and contributes to the financial sustainability of the geothermal subsector. CEFPF support is expected to leverage \$330 million of ADB's clean energy investments, \$698.8 million and \$533.6 million of private and non-private sector investments, respectively. The project is expected to generate employment for the local communities including opportunities for women, reduce 1.3 million tons of annual carbon emission and generate 2.529 terawatt-hour of annual renewable energy. Ultimately, the project will help the government advance towards its renewable energy and climate change mitigation goals.

INO: West Kalimantan Power Grid Strengthening Project (Clean Energy Fund)

CEFPF is supporting this project that will strengthen the power supply grid and connect new customers in West Kalimantan (L3015) by investing in new power transmission lines and substations. Specifically, CEFPF was originally cofinancing the provision of access to electricity to a total of about 8,000 households and other community centers such as hospitals and schools from the grid in the West Kalimantan area. A minor change in scope was approved by ADB in April 2015 to provide electricity access for communities who live along the project's site of transmission line (TL). Several communities demand an electricity access and blocked access to the sites of project financed by ADB L3015. This access is provided by expanding the medium and low voltage network and establishing several household connections. With a successful demonstration, this model will be replicated in other parts of the country. Indonesia's rate of electrification is one of the lowest in the region at only about 60% and some 70 million people lack access to electricity. The Government of Indonesia places high priority on making service delivery responsive to the needs of the poor to alleviate poverty and improve the standard of living. This priority is supported by ADB through its Energy for All Initiative that aims at increasing access to modern forms of energy in Asia. Without the CEFPF support, these households have little chance to connect to the grid in the near future and they will continue using kerosene or oil lamps, the most inefficient source of lighting, affecting their health and livelihood. The CEFPF support in the amount of \$2 million is expected to leverage \$49.5 million of clean energy investments. It is also expected to contribute to the reduction of about 400,000 tons of carbon dioxide/year.

III. FINANCIAL STATUS

44. The Facility remained responsive in supporting clean energy programs and activities, while contributions from new commitments to the CEF were received on schedule. This section details the Facility's financial performance for 2016.

A. Financing Partner Contributions and Status of Grant

45. The CEF received a couple of contributions during the year. The Government of the United Kingdom remitted \$2.8 million in February representing the first tranche of its commitment as a new financing partner of the CEF.¹⁸ The Government of Norway then remitted about \$2.4 million in October in fulfilment of its new contribution to the fund.¹⁹ Overall, the CEF received \$5.2 million in replenishment for 2016.

46. To date, a total of \$265.8 million has been remitted to ADB for CEFPF (Table 9).

Table 9: Summary of Actual Remittances, As of 31 December 2016 (\$ millions)

Financing Partners	2007-2015	2016	TOTAL
Clean Energy Fund (CEF)	80.8	5.2	86.0
Australia	13.3	-	13.3
Norway ^a	33.8	2.4	36.2
Spain	9.5	-	9.5
Sweden	24.2	-	24.2
United Kingdom ^b	-	2.8	2.8
Asian Clean Energy Fund (ACEF)	57.1	-	57.1
Japan	57.1	-	57.1
	41.1	-	41.1
Global CCS Institute ^c	17.3	-	17.3
United Kingdom	23.8	-	23.8
Canadian Climate Fund for the Private Sector in Asia (CFPS)	81.5	-	81.5
Canada	81.5	-	81.5
Total	260.6	5.2	265.8

^a Includes new contribution remitted in October 2016 (\$2.4 million).

^b Includes the first tranche of commitment remitted in February 2016 (\$2.8 million). The United Kingdom signed a Memorandum of Understanding with ADB on 17 December 2015 to become a financing partner of the CEF with commitment of £10.0 million.

^c Global Carbon Capture and Storage Institute

Note: Totals may not add-up due to rounding off.

Source: ADB estimates.

47. As of year-end 2016, cumulative allocations of the Facility sum up to \$198.3 million, inclusive of fees. CEFPF's unaudited status of grant as of 31 December 2016, as prepared by the Controller's Department, is presented in Appendix 9 while the actual contributions and allocations tabulated by the secretariat is presented in Table 10.²⁰

¹⁸ The United Kingdom signed a Memorandum of Understanding with ADB in December 2015 to become a financing partner of the CEF with commitment of £10.0 million to be remitted in three tranches thru 2018.

¹⁹ Norway committed NOK 20.0 million to the CEF per instrument of contribution dated 30 September 2016.

²⁰ The funds status in Table 10 is at facility level reporting which accounts for all of CEFPF's allocations to projects as authorized by the Climate Change Steering Committee (CCSC) including those still undergoing ADB's approval process. To guide in budgeting and prevent over-allocation of resources, it does not count receivables from financing partners as part of contributions until they have actually been remitted and are available for allocation. On the other hand, the Status of Grant report in Appendix 9 by the Controllers is at ADB level reporting which only accounts for projects approved by ADB while already including receivables as part of contributions. This explains the difference between Table 10 on Actual Contributions vs. Allocations and the Status of Grant reports in Appendix 9.

Table 10: CEFPF Actual Contributions vs. Allocations, As of 31 December 2016 (\$ millions)

ITEM	CLEAN ENERGY FUND (CEF)		ASIAN CLEAN ENERGY FUND (ACEF)		CARBON CAPTURE AND STORAGE FUND (CCSF)		CANADIAN CLIMATE FUND FOR THE PRIVATE SECTOR IN ASIA (CFPS)		TOTAL
	2007-2015	2016	2008-2015	2016	2009-2015	2016	2013-2015	2016	
Contributions, Beginning Balance (A)		34.6		20.1		31.2		35.9	
Remittances (B)									
Australia	13.3	-	-	-	-	-	-	-	13.3
Canada	-	-	-	-	-	-	81.5	-	81.5
Global CCS Institute ^a	-	-	-	-	17.3	-	-	-	17.3
Japan	-	-	57.1	-	-	-	-	-	57.1
Norway	33.8	2.4	-	-	-	-	-	-	36.2
Spain	9.5	-	-	-	-	-	-	-	9.5
Sweden	24.2	-	-	-	-	-	-	-	24.2
United Kingdom	-	2.8	-	-	23.8	-	-	-	26.6
Subtotal - CONTRIBUTIONS (C=A+B)	80.8	39.8	57.1	20.1	41.1	31.2	81.5	35.9	265.8
Income / Gain (D)									
Interest/Investment Income	0.5	0.2	1.1	0.1	0.3	0.2	0.3	0.2	3.0
Interest / service charge on loans	-	-	-	-	-	-	1.7	1.3	3.0
Other income from loans	-	-	-	-	-	-	0.0	0.0	0.0
Total Available Funding Resources (E=C+D)	81.3	40.0	58.2	20.2	41.4	31.4	83.5	37.5	271.8
Funds Utilization^b (F)									
Grant Allocations	(45.1)	(24.7)	(47.5)	(3.5)	(9.5)	(16.5)	(4.1)	(0.5)	(151.4)
Non-Grant Allocations	-	-	-	-	-	-	(81.0)	(23.3)	(104.3)
Project Fees	(2.0)	(1.2)	(2.4)	(0.2)	(0.5)	(0.8)	(4.3)	(1.2)	(12.5)
Direct Charges	(4.1)	(0.6)	-	-	(0.2)	(0.2)	-	-	(5.1)
Other Activities Affecting Balance (G)									
Audit Fees/Bank Charges ^c	(0.2)	(0.0)	(0.2)	(0.0)	(0.1)	(0.0)	(0.1)	(0.9)	(1.7)
Project Adjustments/Withdrawals ^d	0.4	-	6.5	-	(1.0)	-	40.0	25.3	71.2
Project Fees Adjustments	0.0	-	0.5	-	(0.1)	-	2.0	1.3	3.8
Project Savings	4.3	0.5	4.9	0.0	1.2	0.5	0.1	-	11.6
Deferred loan fees/ origination costs	-	-	-	-	-	-	0.2	(0.0)	0.2
Direct loan origination costs	-	-	-	-	-	-	0.0	-	0.0
Special Reserve	-	-	-	-	-	-	(0.5)	-	(0.5)
Ending Balance (H=E+F+G)	34.6	14.0	20.1	16.5	31.2	14.4	35.9	38.2	83.1

^a Global Carbon Capture and Storage Institute

^b Projects allocated with funding by the Climate Change Steering Committee. For ACEF, this pertains to projects that have received CCSC allocation and concurrence from the Government of Japan.

^c Includes estimates for audit fees.

^d 2009 CEF - Realignment of SRI: Clean Energy and Access Improvement Project (\$800K) from CCF to CEF; 2009 ACEF - Project Withdrawal-IND: Support for Clean Power Technology Transfer (\$2.0M); 2009 CCSF - Realignment of PRC: Carbon Dioxide Capture and Storage Demonstration-Strategic Analysis and Capacity Strengthening from CCF to CCSF (\$1.0M); 2010 ACEF - Project Withdrawal-THA: Chaiyapun Wind Farm Development (\$160K), THA: Lamthakong Wind Farm Development (\$160K); 2011 CEF - Project Withdrawal - PRC: Railway Sector Energy Efficiency Strategy (\$800K); 2011 ACEF - Project Withdrawal - PAK: Cattle Colony Waste to Fertilizer and Energy Project (\$900K), PAK: Developing Renewable Energy in Baluchistan and Sindh Provinces (\$1.5M), SRI: Nonsovereign Loan to People's Leasing Company Limited (\$750K); 2012 CEF - Project Withdrawal - IND: NTPC Renewable Energy Development Project (\$225K); 2012 ACEF - Project Withdrawal - LAO: Renewable Energy Development in Remote Communities (\$1.0M); 2013 CEF - Project Withdrawal - LAO: S-CDTA for Hydropower Impacts and Best Practices: A Communications Project (\$180K); 2015 CFPS - Project Withdrawal - PAK: Gulpur Hydro Power Projects (\$20.0M), PHI: 60 MW Calatagan Solar Power Plants(\$20M); 2016 CFPS - Project Withdrawal - MYA: Mandalay Solar Power Project (\$20.0M), INO: Toll Road Upgrade and Climate Change Adaptation Project (\$5.3M).

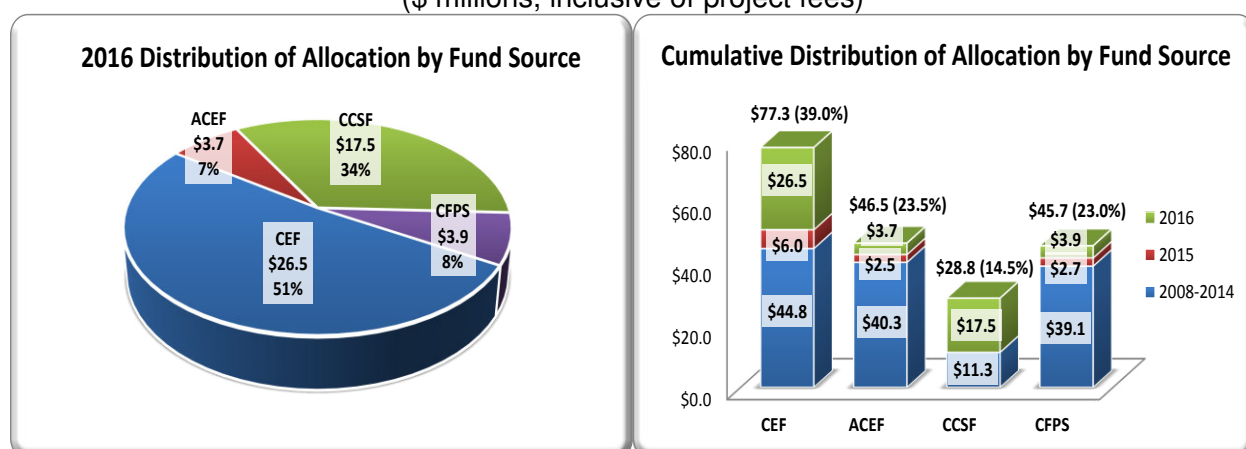
Note: Totals may not add-up due to rounding-off.

B. Resource Utilization

48. CEFPF received requests for funding support amounting to about \$71.2 million for various projects during the year.²¹ The Facility Manager is in constant communication with the project team leaders throughout the project application process. Projects that are not eligible for financing support are advised to seek other sources of financing while those that proceed are thoroughly evaluated by the Clean Energy Working Group (CEWG) and the Facility Manager.

49. In 2016, CEFPF allocated \$49.2 million to 28 projects, with \$2.4 million in corresponding project fees. Inclusive of fees, the CCSC allocated \$26.5 million to 21 projects under CEF, \$3.7 million to 2 project under ACEF²², \$17.5 million to 3 projects under CCSF, and \$3.9 million to 2 projects under CFPS. Figure 4 presents the distribution of allocation by fund source.

Figure 4: Distribution of Allocations by Fund Source
(\$ millions, inclusive of project fees)



ACEF = Asian Clean Energy Fund, CCSF = Carbon Capture and Storage Fund, CEF = Clean Energy Fund, CFPS = Canadian Climate Fund for the Private Sector in Asia.

Source: Asian Development Bank estimates.

50. To date, CEFPF has allocated \$198.3 million (inclusive of fees) to 161 projects.²³ Of the total, \$98.3 million went to projects that promote renewable energy, \$44.1 million to multiscope projects, \$24.1 million to energy efficiency, \$28.7 million to CCS, and \$0.7 million to carbon market development.²⁴ Further, \$52.7 million of these project allocations have components that contribute to access to energy. Figure 5 shows the distribution of allocation by clean energy project type and access to energy.

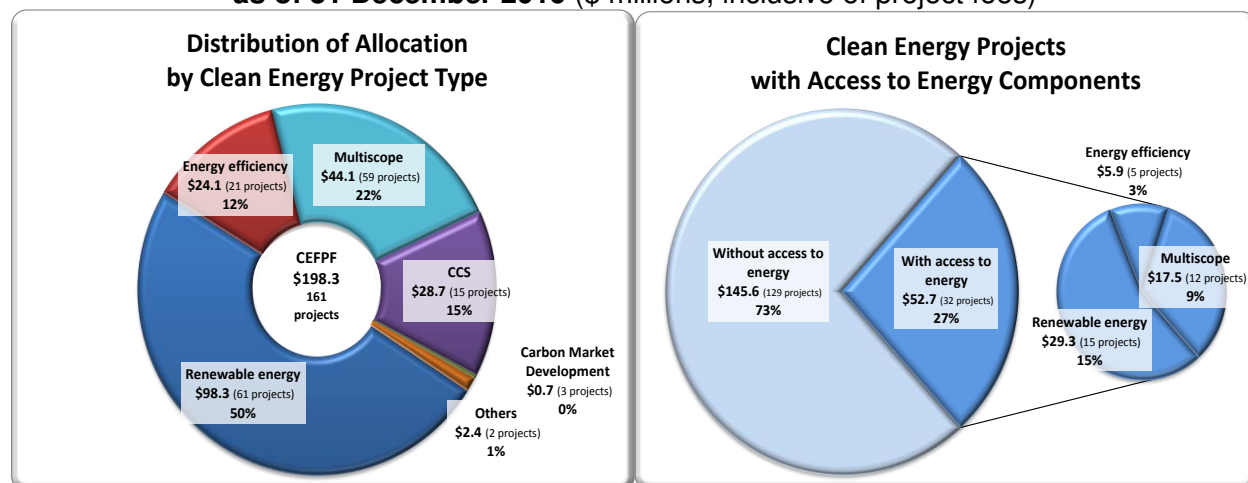
²¹ One project requesting \$20 million of concessional financing was withdrawn after CCSC allocation while another requesting \$2 million grant is pending allocation subject to fulfillment of CEWG recommendations.

²² The two projects have received CCSC allocation and concurrence from the Government of Japan for funding under ACEF in 2016.

²³ Includes two projects on adaptation under the Canadian Climate Fund for the Private Sector in Asia.

²⁴ *Multiscope* projects cover two or more clean energy project categories, have broad focus, or are general in nature; *carbon market development* involves projects that support the establishment of a carbon market through development of market infrastructure and capacity building.

Figure 5: Distribution of Allocations by CE Project Type and Access to Energy, as of 31 December 2016 (\$ millions, inclusive of project fees)



CE= clean energy, CEFPF=Clean Energy Financing Partnership Facility.

Notes: *Carbon Market Development* supports the establishment of a carbon market through development of market infrastructure and capacity building; *CCS* involves projects that deploy, demonstrate, or support Carbon Capture and Storage technologies; *Energy Efficiency* involves projects that deploy/support technologies which use less energy to provide the same or improved level of output; *Multiscope* covers two or more clean energy project categories, have broad focus, or are general in nature; *Renewable Energy* projects deploy/help support technologies that use energy from natural resources; *Others* pertain to adaptation projects supported by CFPS; *With Access to Energy* are clean energy projects with components that support scaling up of access to modern, cleaner energy for the poor.

Source: Asian Development Bank estimates.

51. **Disbursement.** Of CEFPF's \$198.3 million allocations to date, ADB has approved a total of \$161.8 million (\$169.2 million, inclusive of fees) with \$126.8 million coming from grant and \$35.0 million from non-grant resources.²⁵ CEFPF generally accepts project application for financing support at the concept paper stage. This is ideal as the Facility would be able to provide inputs to improve the project quality at entry. As CEFPF authorization is obtained early in the project design process, there is a significant time interval between CEFPF authorization and ADB approval, wherein the project undergoes a series of interdepartmental and management reviews.

52. Of the resources approved by ADB, \$60.7 million or 52.4% of grant resources and \$34.1 million or 97.4% of non-grant resources have been disbursed. Overall facility disbursements amount to \$94.7 million or 62.9%, up from 61.7% of year 2015.²⁶

53. In general, disbursements of GCIs and TALLs are relatively slower than TAs. As GCIs and TALLs are connected to a loan and usually involve construction of a structure, purchase and installation of equipment, or other related services, disbursement may take long and the utilization of financed component relies significantly on the project schedule.

54. ADB is mindful of the CEFPF's disbursement rate and continues to monitor facility disbursements, look into causes of delay, and explore and propose ways to improve disbursements. The actions taken to address this issue include: (i) regular disbursement

²⁵ Total approved amount excludes withdrawn/cancelled projects.

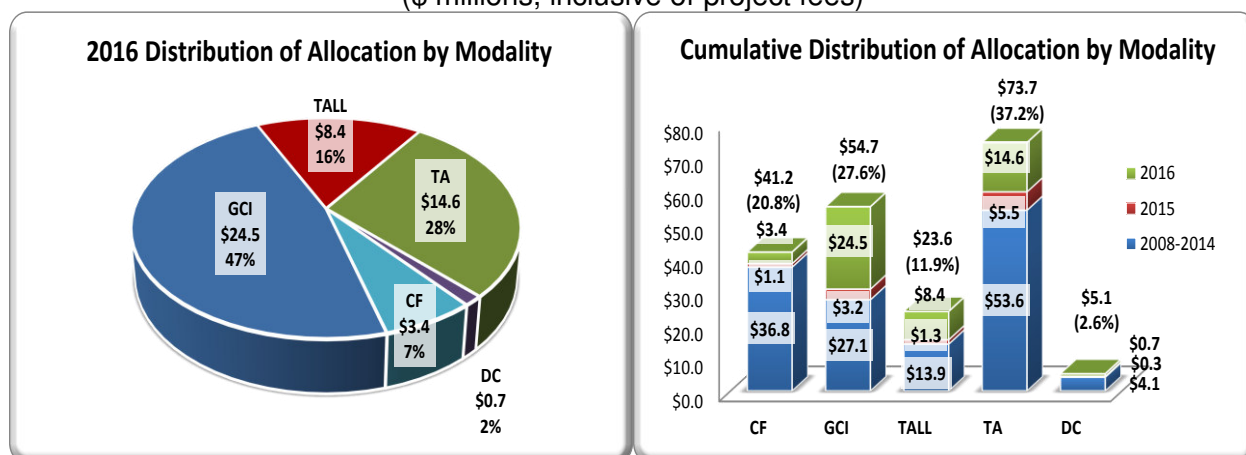
²⁶ Disbursement rate is computed as total disbursements over approved allocations less project savings. Amounts exclude project fees.

review, wherein CEFPP supported projects that have been approved by ADB are reviewed twice a year to determine progress based on the rate of disbursements and contracts awarded; and (ii) coordination with project team leaders to maximize disbursement activities, such as expediting the awarding of contracts, front-loading CEFPP resources, processing final payments and facilitating official closure of projects, assisting DMCs in meeting the effectiveness criteria, and cancelling projects that are not likely to progress. Details on disbursement ratios and reasons for disbursement delay are provided in Appendix 10.

C. Resource Allocation Structure

55. Per Implementation Guidelines, CEFPP targets a resource sharing ratio of 70:30 between investments and stand-alone technical assistance over the Facility's lifetime, to prioritize the implementation of clean energy projects with direct GHG emission impacts.²⁷ This year ended with an INV: TA ratio of 70:30. Overall, the cumulative ratio which covers all projects receiving CEFPP allocations since the start of the Facility's operations is at 60:40. As the Facility continues to operate, this ratio is expected to change overtime to eventually reach 70:30. Figure 6 presents the distribution of allocation by modality.

Figure 6: Distribution of Allocations by Modality
(\$ millions, inclusive of project fees)



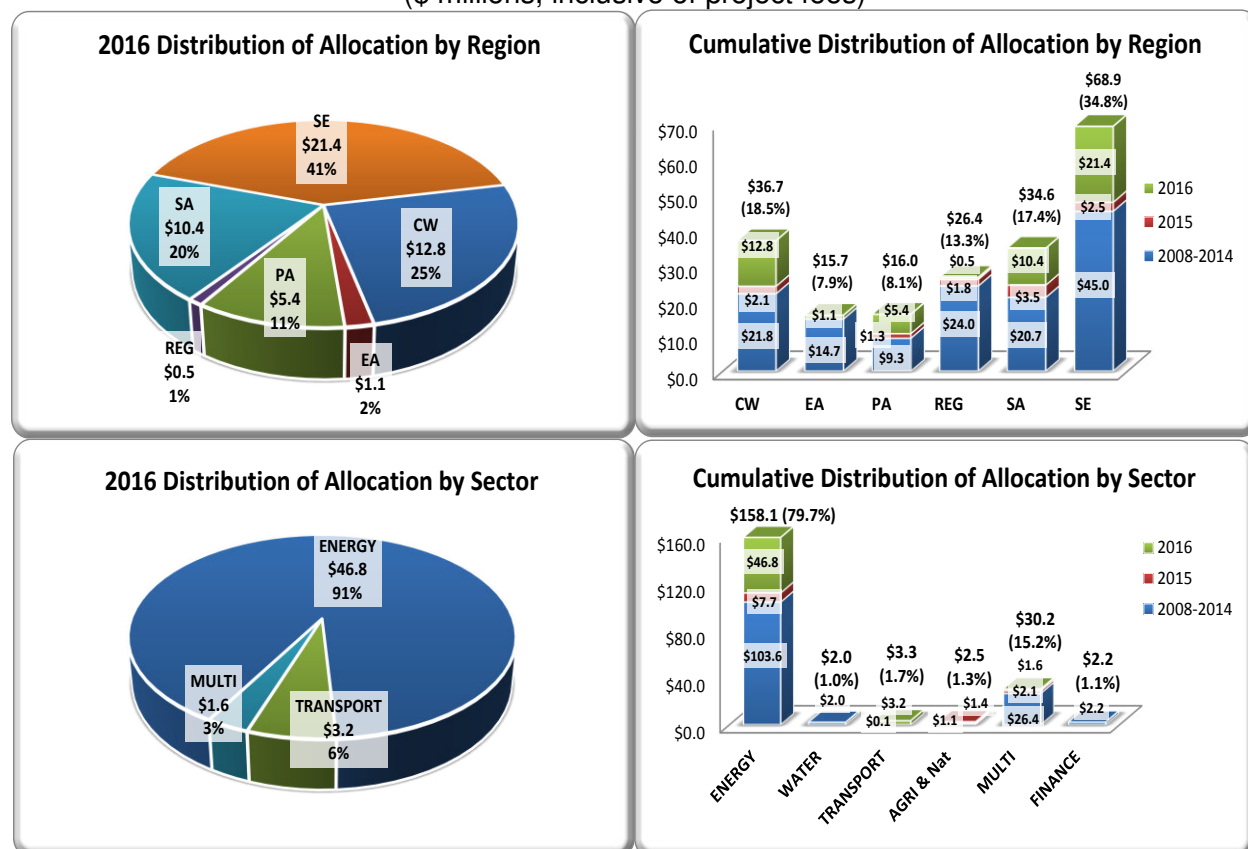
CF = concessional financing, DC = direct charge, GCI = grant component of investment, TA = technical assistance, TALL = technical assistance linked to loan.

Source: Asian Development Bank estimates.

53. In 2016, Southeast Asia received majority of the allocations (41%), followed by Central and West Asia (25%), South Asia (20%), and the Pacific (11%), with the remainder shared between East Asia and regional projects. Figure 7 provides the summary of distribution of allocation by region and sector, while Appendix 11 contains the details and Appendix 12 shows the cumulative allocation by DMC.

²⁷ The 70:30 INV-TA ratio is a target for overall facility operations during its existence, with concessional financing, GCIs, and TALLs comprising the investment component while TAs and DCs make up the TA component of the ratio. CEFPP also tries to achieve the same allocation ratio on an annual basis. The annual fund allocation is based on prevailing needs and priorities. CEFPP management balances allocation to investments in technology and infrastructure that directly contribute to GHG reductions versus allocating resources to developing institutional and technical capacity, and regulatory framework.

Figure 7: Distribution of Allocations by Region and Sector
(\$ millions, inclusive of project fees)



AGRI & Nat = Agriculture & Natural Resources, CW = Central and West Asia, EA = East Asia, MULTI = multisector, PA = Pacific, REG = regional, SA = South Asia, SE = Southeast Asia.

Source: Asian Development Bank estimates.

IV. MANAGEMENT OF THE FACILITY

A. Steering Committee and Working Group Membership

54. The CCSC and CEWG continued effective participation in the management of the Facility in 2016. There was nominal movement in both CCSC and CEWG membership, and all responsibilities were met effectively and efficiently. The practice of sending alternates to the regular CEWG review and management meetings remains valuable when a regular member was away, ensuring a high level of transparency and participation in the management of the Facility and allocation of funds. This arrangement also helps build a critical mass of sector professionals who are aware of and regularly engaged in the Facility's operations and clean energy program overall.

B. Steering Committee and Working Group Meetings

55. In 2016, the CEWG convened six times to discuss policy and procedural recommendations regarding CEFPP operations and to deliberate on and endorse projects applications to CCSC for allocation. Recommendations of the CEWG on the allocation of resources or on policies and procedures were forwarded to, and received concurrence from CCSC. The Facility's activities and operations proceeded as planned, particularly on the

processing of applications, preparation and submission of reports to the financing partners, meeting with the financing partners during the Annual Consultation Meeting, and dissemination activities.

C. Approval of Procedural Matters

56. For the year 2016, the following administrative and strategic matters were discussed and agreed to by the CEWG:

- (i) Proceed with normal operations regarding allocation and fund use;
- (ii) Strengthen partnerships and coordination with current financing partners and engage other partners for future cooperation;
- (iii) Endorse to financing partners and CCSC the implementation guidelines for CFPS;
- (iv) Assess the effective utilization of resources from all funds under CEFPP;
- (v) Review of the Investment:TA ratio and targets for the DMF;
- (vi) Facilitate approval and implementation, including disbursements, of projects supported by CEFPP.
- (vii) Monitor and maintain accurate facility level results reporting; and
- (viii) Request for pipeline of priority projects from operations departments for 2017.

D. Audit Compliance, Issues and Actions

57. The audited financial statement for the multidonor CEF, CFPS, CCSF for the year ending 31 December 2015 was circulated to the financing partners as scheduled in August 2016, with CEFPP's 2016 Semiannual Progress Report.

E. Dissemination Activities

58. In 2016, a two-pronged approach to information dissemination concerning CEFPP was sustained. Internally, information dissemination activities were maintained as ad-hoc responses to on-demand requests for information on the Facility's objectives, resources, requirements, and the like by a range of audiences from individuals to ADB's operations departments.

59. Externally, project teams are encouraged to promote the visibility and local awareness of the Facility and the supported projects in recipient countries. Also, within ADB's Climate Change Program, CEFPP's overall performance and achievements, specifically the contributions on energy savings and CO₂ emissions reductions, were presented on various occasions by management and staff in workshops and conferences in and outside the region.

V. RELATIONSHIP WITH FINANCING PARTNERS

60. The 2015 Annual Report, 2016 Annual Work Program, 2016 Semiannual Progress Report, and 2015 Audited Financial Statements to the financing partners were delivered on schedule. These reports were prepared in consideration of financing partners' suggestions and comments. In March 2016, the 9th Annual Consultation Meeting (ACM) between the financing partners and ADB was held at ADB Headquarters in Manila, Philippines.

61. In February 2016, the UK through the Business, Energy and Industrial Strategy formerly known as the Department of Energy and Climate Change have provided first tranche of remittance for their contribution to the multi-donor Clean Energy Fund in line with the MOU signed in December of 2015. UK now is the financing partner for two trust funds under the

Facility. Mid 2016, Norway also signed a new Instrument of Contribution and provided replenishment to the multi donor Clean Energy Fund.

62. On 19 April 2016, a new memorandum of agreement has been signed between ADB and Global CCS Institute Ltd. which includes provision to extend the effectiveness of agreement until 31 December 2018 which also required the Facility to update the Implementation Guidelines to accommodate the revised eligibility criteria for Carbon Capture and Storage Projects.

63. During the ACM, dialogue between ADB and financing partners began with discussions on ADB's Clean Energy Program, CEFPP's annual report for 2015, strategic direction and annual work program for 2016. Other highlights of the ACM included discussions on the performance in meeting targets, result based management, project allocations, Investment:TA ratio analysis, facilitating disbursements, project processing timeline, priorities of financing partners, internal marketing of the facility, approval of the amended multidonor CEF implementation guidelines, and other matters such as collaboration with other MDBs, Asian Clean Energy Forum and presentation of the approach and process for the planned second external evaluation for the PPFs.

VI. LESSONS LEARNED, EXPERIENCES GAINED, AND KEY CONSTRAINTS

64. **Implementation Guidelines Update.** The implementation guidelines of the Carbon Capture and Storage Fund (CCSF) have been updated to clarify the eligibility criteria for CCS projects and timing of seeking support from the financing partners under the CCSF. The revised guidelines were circulated to relevant financing partners who concurred on the changes. The implementation guidelines of all funds under the CEFPP will follow the general provisions agreed and will be reviewed and updated based on any changes arising from the reorganization of the Sustainable Development and Climate Change Department.

65. **Conduct of External Evaluation.** During the 2016 ACM, financing partners were informed that second external evaluation of the PPFs including the CEFPP as a follow-up to the Special Evaluation Study (SES) conducted by ADB's Independent Evaluation Department (IED) in 2010. It was agreed with financing partners that this follow-up evaluation will have a narrower focus with an objective of assessing the overall effectiveness, value addition, and sustainability of the facility. At the time of the Annual Consultation Meeting 2016, the results of the external evaluation was reviewed and considered by ADB fund management for consistency with existing energy sector initiatives. Following the final report of the evaluation, a management response was drafted to address the recommendations.

66. **Increased Promotion of the Facility.** With a healthy fund balance including recent remittances to the CEF, active promotion of the facility will be undertaken in 2017. The facility will coordinate with the operations departments as it seeks to support more clean energy projects towards the attainment of its target impact, outcome, and outputs. Continued support for Access to Energy will be targeted by the Facility in line with the OBA targets of the trust fund

VII. EXTERNAL FACTORS RELEVANT TO THE FACILITY

67. **Nationally Determined Contributions.** The SDCC published a working paper entitled "Assessing the Intended Nationally Determined Contributions of ADB Developing Member Countries" a publication aimed to help ADB formulate the strategic approach on climate financing aligned with International Agreements based on NDCs of member countries. NDC's

were formulated following the Paris Agreement which was drafted during the UN Climate Change Conference 2015 (COP 21) an agreement forged to combat climate change and unleash actions and investment towards a low carbon, resilient and sustainable future was agreed by 195 nations in Paris taking stock of current and future responsibilities. The universal agreement's main aim is to keep a global temperature rise this century well below 2 degrees Celsius and to drive efforts to limit the temperature increase even further to 1.5 degrees Celsius above pre-industrial levels.²⁸

68. **Accreditation to Green Climate Fund (GCF).** The Green Climate Fund, or GCF, is an important new multilateral tool for investing in projects in developing countries that reduce their greenhouse gas emissions and enhance their ability to adapt to a changing climate. Its broader mission is to create a paradigm shift in development, so that economic growth is both climate resilient and decoupled from dependence on fossil fuels. GCF officially convened for the first time in 2015 with more than 30 countries—both developed and developing—have made pledges to the fund that total more than \$10 billion over the next few years.²⁹ The GCF is expected to become the main global channel for acquiring and delivering climate change finance. However, for countries to make fundamental shifts toward climate compatible development, they need access to funding on a much bigger scale. And in order to mobilize this funding, they need to have certain enabling conditions - often referred to as “readiness”—in place.³⁰ ADB is one of the first to be accredited in the Asia Pacific and can be the focal to help member countries transition to climate compatible low carbon development. The first project supported by GCF is a project from Fiji.

69. **Sustainable Development Goals (SDG).** There are two SDGs that can directly influence the Facility these are SDG Goal 13: “Take urgent action to combat climate change and its impacts” according to the UN, climate change presents the single biggest threat to development, and its widespread, unprecedented impacts disproportionately burden the poorest and most vulnerable. Urgent action to combat climate change and minimize its disruptions is integral to the successful implementation of the Sustainable Development Goals.³¹ SDG 13 is directly aligned with the target impact of CEFPP in decreasing climate change. Climate change mitigation is closely linked to energy which centrally placed amongst the sustainable development goals SDG Goal 7: “Ensure access to affordable, reliable, sustainable and modern energy for all”. ADB is one of the institutions in the Asia Pacific region that can help the global community to fulfill the aim of SDGs.

70. The CEFPP given the expanded scope as a facility, become even more relevant this time when financing clean energy projects is at the core of mitigation action against climate change. Climate action and mitigation initiatives would definitely require financial support. Developing countries need help in the implementation of their NDCs as part of their international commitments. Reviews and studies have cited that the cost of no action greater than implementing climate actions. DMC options to choose clean energy vs business as usual would be a smooth transition with global support. ADB priority projects in the pipeline can be supported with the new commitments and replenishment from financing partners have been made during the past year.

²⁸ <http://newsroom.unfccc.int/unfccc-newsroom/finale-cop21/>

²⁹ <https://www.americanprogress.org/issues/green/report/2015/03/23/109483/opportunities-for-the-green-climate-fund-in-2015/>

³⁰ <http://www.wri.org/blog/2013/03/4-ways-green-climate-fund-can-support-readiness-climate-finance>

³¹ <https://sustainabledevelopment.un.org/sdg13>

VIII. OVERVIEW OF 2017 ANNUAL WORK PROGRAM

71. At the start of 2017, CEFPP has approximately \$83.1 million available for allocation to activities and projects requesting CEFPP support, of which \$14.4 million under CCSF will be used specifically for exploring CCS technology and \$38.2 million under CFPS will be used to finance clean energy activities in the private sector. The multi donor CEF which received replenishment and new contributions in 2016 has a total available balance of \$14.0 million while ACEF has an available balance of \$16.5 million as of yearend. As in the past, ADB will endeavour to meet the targets outlined in the DMF, while selection and prioritization of projects will continue to be guided by CEFPP eligibility criteria, particularly on being innovative, participatory, catalytic, scalable and replicable. The Investment:TA ratio and the project's transformational impact on the DMC's energy consumption and use will be strongly considered in determining support from CEFPP.

72. For 2017, CEFPP will continue to support projects that focus on energy efficiency, access to energy, renewable energy, CCS, sustainable transport, as well as projects that leverage private sector investments. CEFPP will prioritize support for project preparatory assistance for clean energy and energy access related projects, and pilot projects which will deliver innovative designs and high-level technology adoption and deployment in the DMCs.

OVERVIEW AND GOVERNANCE STRUCTURE CLEAN ENERGY FINANCING PARTNERSHIP FACILITY/CLIMATE CHANGE FUND

CLEAN ENERGY FINANCING PARTNERSHIP FACILITY¹

A. Overview

1. Energy use in developing member countries (DMCs) of the Asian Development Bank (ADB) is rapidly increasing to support the economic growth needed to raise the living standards of large populations. The current energy path relies on increased use of fossil fuels and is neither environmentally sustainable nor economically desirable. The Clean Energy Financing Partnership Facility (CEFPF) as encapsulated in its design and monitoring framework was developed to bolster ADB's response to the dual issues of energy security and climate change confronting its DMCs today. As in all operations of ADB, the approach to helping DMCs in this area is anchored in poverty reduction and pro-growth strategies leading toward sustainable development.

1. Objectives and Scopes

2. Established in April 2007, the CEFPF aims to help provide financing to DMCs to improve energy access and security and transition to low carbon economies through cost effective investments in technologies and practices that result in greenhouse gas mitigation. CEFPF resources also finance policy, regulatory, and institutional reforms that encourage clean energy (CE)/carbon capture and storage (CCS) development.² Potential investments include (i) deployment of new CE/CCS technologies; (ii) projects that lower the barriers to adopting CE/CCS technologies, e.g., innovative investments and financing mechanisms, and bundling of smaller CE projects; (iii) projects that increase access to modern forms of clean and efficient energy for the poor; and (iv) technical capacity programs for CE/CCS.

2. Eligible Activities

3. About 30% of CEFPF's resources will be used for standalone technical assistance projects and direct charges that fund consulting services and related equipment and works needed to achieve technical assistance and direct charges objectives; and about 70% will be used for concessional financing and grant components of investments and may also be used to procure equipment and works based on advanced technologies, back financing mechanisms or risk sharing facilities to promote CE/CCS, and services to lower barriers. CEFPF's Implementation Guidelines detail the facility's eligibility criteria. Following are examples of activities supported by CEFPF:

- (i) Biomass/biofuel/biogas;
- (ii) Rural electrification/energy access;

¹ Financing partners contributing to the multidonor Clean Energy Fund are the governments of Australia, Norway, Spain, Sweden and the United Kingdom. The financing partner contributing to the single donor Asian Clean Energy Fund is the Government of Japan. Financing partners contributing to the Carbon Capture and Storage Fund are the Global Carbon Capture and Storage Institute and the Government of United Kingdom. The financing partner contributing to the Canadian Climate Fund for the Private Sector in Asia is the Government of Canada. As of 31 December 2013, total contributions amount to \$246.8 million. Overall target: \$250 million.

² CE initiatives in ADB include initiatives in renewable energy, energy efficiency, and cleaner fuel.

- (iii) Distributed energy production;
- (iv) Waste-to-energy projects;
- (v) Carbon capture and storage;
- (vi) Demand-side management projects;
- (vii) Energy efficient district heating;
- (viii) Energy efficient buildings and end-use facilities;
- (ix) Energy efficient transport;
- (x) Energy efficient streetlighting;
- (xi) CE power generation, transmission, and distribution;
- (xii) Manufacturing facilities of CE system components, high efficiency appliances and industrial equipments; and
- (xiii) Energy service company development.

3. How to Apply

4. User departments will submit project proposals to the Facility Manager using CEFPF's application form and ADB's standard concept paper template. Applications are reviewed in six batches and are due on: 31 January, 31 March, 31 May, 31 July, 30 September, and 30 November. The Clean Energy Working Group will review and endorse project proposals based on implementation guidelines, guided by the design and monitoring framework, both agreed between CEFPF's financing partners and ADB. The Climate Change Steering Committee finally authorizes allocations of resources to selected project proposals. Following fund allocation from CEFPF, the approval of the proposed project follows the standard ADB procedure.

B. Governance Structure (Based on CEFPF Implementation Guidelines)

Party	Responsibilities
Financing Partners	
Members: CEFPF contributors	<ul style="list-style-type: none"> (i) Provide strategic direction to CEFPF (ii) Meet with the Asian Development Bank for annual consultation (iii) Review progress and administration and annual work program
Climate Change Steering Committee (CCSC)^a	
Chair: Director General, SDCC Secretariat: SDAS Members: Directors general of operation departments, and Chief Economist	<ul style="list-style-type: none"> (i) Provide strategic direction to CEFPF (ii) Director General, SDCC approves CEFPF policy and procedures (iii) Approves allocation of funds to applications for TAs, concessional financing and grant components of investments
Clean Energy Working Group (CEWG)	
Chair and Co-Chairs: Chair and Co-Chairs, ADB's Technical Advisor- Energy Secretariat: SDAS Members: Energy specialists nominated by the Directors general of operation departments as members	<ul style="list-style-type: none"> (i) Review and endorse proposals for CEFPF support (ii) Recommend policy and procedures of CEFPF to CCSC
CEFPF Manager (SDAS)	
Manager: Senior Director, SDAS or Designate Assistant: A team of staff and consultants	<ul style="list-style-type: none"> (i) Serve as Secretariat and oversee CEFPF day-to-day operations (ii) Oversee review process for applications (iii) Review applications for compliance with Implementation Guidelines for use of funds (iv) Prepare annual work program and progress reports (v) Serve as focal point for CEFPF partners for technical matters
Office of Cofinancing Operations (OCO)	
Contact: Designated by Head, OCO	<ul style="list-style-type: none"> (i) Facilitate partner contributions to CEFPF (ii) Communicate on financial issues among the partners (iii) Lead negotiations with partners on financial and procedural agreements for CEFPF contributions and framework agreement

CEFPF = Clean Energy Financing Partnership Facility, SDAS = Sector Advisory Services Division, SDCC = Sustainable Development and Climate Change Department.

^a Functions of the Clean Energy Steering Committee under the CEFPF will now be carried out by the Climate Change Steering Committee, as per memorandum circulated from the Vice President, Knowledge Management and Sustainable Development, to the Directors General of the operations departments and the Chief Economist on 18 June 2008.

CLIMATE CHANGE FUND (\$50 million)³

A. Overview

1. The Asian Development Bank (ADB) is working to make climate change an integral part of its entire future development work cutting across multiple sectors and covering a wide range of focus/themes. The Climate Change Fund (CCF) addresses climate change through scaling up developing member countries' (DMCs) mitigation, adaptation, forest management, and land use management activities.

1. Objectives and Scope

2. On 6 May 2008, ADB established CCF to facilitate greater investments in DMCs to effectively address the causes and consequences of climate change alongside ADB's own assistance in various related sectors. CCF will invest in projects that lead to greenhouse gas (GHG) emission reductions and carbon sequestration, biological diversity conservation, and climate proofing of development plans, investments, and livelihoods.

2. Eligible Activities

3. Eligible areas for use of CCF resources include climate change mitigation and adaptation activities under ADB's Climate Change Program. Specifically:

- (i) **Mitigation: Clean Energy (CE) Development.** Proposals must be consistent with ADB's Energy Strategy, as amended from time to time, anchored in poverty reduction and pro-growth strategies. Responding to the dual issues of energy security and climate change confronting its DMCs today, CCF will prioritize interventions that (a) help DMCs achieve energy security and transition to low carbon economies through cost effective investments, especially in pre-commercial clean energy technologies, that result in GHG mitigation; and (b) financial, policy, and institutional reforms, as well as regulatory frameworks that encourage clean energy development and energy access.
- (ii) **Mitigation: Reduced Emissions from Deforestation and Degradation (REDD) and Improved Land Use Management.** Proposals must be consistent with relevant ADB sector strategies, as amended from time to time. Responding to international interest to slow deforestation and degradation rates accounting for more than 50% of anthropogenic GHG emissions in many countries of Asia and the Pacific, CCF will prioritize interventions that (a) maintain, restore, and enhance carbon-rich natural ecosystems, especially forests, and prevent these carbon sinks from becoming sources of GHG emissions; and (b) maximize co-benefits from sustainable development and the conservation of biodiversity and generation of other ecosystem services and ecological processes.
- (iii) **Adaptation.** Responding to special threats facing Asia and the Pacific, CCF will prioritize interventions that will enhance the climate resilience of infrastructure and other investments, community livelihoods and key sectors, especially in the following geographic areas: (a) arid and rain-fed agricultural areas, (b) densely populated coastal lowlands and deltas, and (c) low-lying islands.

³ From ADB's ordinary capital resources.

3. How to Apply

4. User departments will submit project proposals to the Facility Manager using the CCF application form and ADB standard concept paper template. CE development proposals are sent to the Sustainable Infrastructure Division Secretariat, while REDD, land use and adaptation proposals are sent to the Environment and Social Safeguards Division Secretariat. Applications are reviewed in six batches and are due on 31 January, 31 March, 31 May, 31 July, 30 September, and 30 November.

5. The Clean Energy Working Group (CEWG) and Adaptation and Land Use Working Group (ALUWG) will endorse project proposals to the Climate Change Steering Committee (CCSC) based on CCF's Implementation Guidelines. CEWG reviews and endorses projects on CE development, while ALUWG reviews and endorses projects on REDD+, land use and adaptation. CCSC finally allocates resources to selected project proposals.

B. Governance Structure (Based on CCF Implementation Guidelines)

Party	Responsibilities
Financing Partners	
Members: CCF contributors	<ul style="list-style-type: none"> (i) Provide strategic direction to CCF (ii) Meet with the Asian Development Bank for annual consultation (iii) Review progress and administration and annual work program
Climate Change Steering Committee (CCSC)	
Chair: Director General, SDCC Secretariat: SDAS and SDES Members: Directors general of operation departments, and Chief Economist	<ul style="list-style-type: none"> (i) Provide strategic direction to CCF (ii) Director General, SDCC approves CCF policy and procedures (iii) Approves allocation of funds to applications for TAs and grant components of investments
Working Groups (CEWG and ALUWG)	
Chair and Co-Chairs: Chair and Co-Chairs, ADB's Technical Advisor - Energy Secretariat: SDAS ALUWG Chair: Director, SDES Secretariat: SDES Members: Representatives from the operation departments (and ERCD for CEWG), as well as any additional technical specialists nominated by the Directors general of operation departments as members	<ul style="list-style-type: none"> (i) Review and make recommendations on mitigation and adaptation related activities to be supported from CCF (ii) Recommend policy and procedures of CCF to CCSC
CCF Manager (SDAS)	
Manager: Senior Director, SDAS or Designate Assistant: A team of staff and consultants	<ul style="list-style-type: none"> (i) Serve as Secretariat and oversee CCF day-to-day operations (ii) Oversee review process for applications (iii) Review applications for compliance with Implementation Guidelines for use of funds (iv) Prepare annual work program and progress reports (v) Serve as focal point for CCF partners for technical matters
Office of Cofinancing Operations (OCO)	
Contact: Designated by Head, OCO	<ul style="list-style-type: none"> (i) Facilitate partner contributions to CCF (ii) Communicate on financial issues among the partners (iii) Lead negotiations with partners on financial and procedural agreements for CCF contributions and framework agreement

ADB = Asian Development Bank, ALUWG = Adaptation and Land Use Working Group, CCF = Climate Change Fund, CEWG = Clean Energy Working Group, ERCD = Economics Research and Regional Cooperation Department, SDCC = Sustainable Development and Climate Change Department, SDAS = Sector Advisory Services Division, SDES = Environment and Social Safeguards Division, TA = technical assistance.

Source: Asian Development Bank

Clean Energy Funds Design and Monitoring Framework (DMF)

1. The Asian Development Bank's (ADB) clean energy funds are intended to provide financing to its developing member countries (DMCs) in enhancing energy access and security and transitioning to low carbon economies through cost-effective investments, especially in technologies that results in greenhouse gas mitigation. Extensive and effective adoption of new technologies and effective policies will enable DMCs to respond to the environmental challenges in the economic and social development. The clean energy funds give preference to the demonstration and deployment of new technologies and capacity-building for low carbon development. They support ADB's operations on clean energy, energy for all, climate change mitigation, and sustainable transport. Aligned with ADB's Strategy 2020 and Energy Policy 2009, the clean energy funds embody ADB's commitment to be Asia and Pacific region's catalyst for mobilizing greater financial flows and technology transfer to assist DMC's transition toward low carbon development.

2. This DMF defines the clean energy funds' objectives and targets. It guides management in the review of applications submitted for financing and in the monitoring and assessment of facility's performance. It applies amongst all funds under the Clean Energy Financing Partnership Facility (CEFPF) and the Climate Change Fund-Clean Energy Development Component (CCF-CE), allowing consolidated operations and holistic assessment.⁴ Originally implemented in 2008, the DMF was initially updated in 2011, in accordance with the agreement with financing partners.⁵ Updates on the DMF are intended to preserve the funds relevance in responding to the needs of the DMCs, reflect latest and emerging trends and opportunities, and contribute more effectively to ADB's overall poverty alleviation and sustainable development agenda. Future updates may be possible (if necessary) and will be guided by consultations and agreements with the financing partners.

3. This DMF is guided by the principles outlined below and uses proxy indicators in place of indicators with data availability constraints:

- (i) The *Impact* is the desired medium-term and beneficial impact to people that is partly, but not exclusively, attributable to ADB's clean energy funds. Other external factors may have influence on the impact. The baseline year is 2006.⁶
- (ii) The *Outcome* is the development results from the successful completion of outputs. It is directly attributable to ADB's clean energy funds and achievable having delivered the outputs.
- (iii) The *Outputs* are the main deliverables that arise from using the *Inputs* and transforming these through the *Activities*.

⁴ ADB's clean energy funds include CCF and the four funds under the CEFPF, i.e. (a) multi-donor Clean Energy Fund with contributing partners from governments of Australia, Norway, Spain, Sweden, and the United Kingdom (b) single-donor Asian Clean Energy Fund with contributing partner from the Government of Japan, (c) Carbon Capture and Storage Fund with contributing partners from the Global Carbon Capture and Storage Institute and the Government of United Kingdom and (d) Canadian Climate Fund for the Private Sector in Asia with contributing partner from the Government of Canada.

⁵ The 2011 update reflected a high level of ambition with increased targets and additional indicators on access to energy and co-benefits on health, environment and productivity. It built on the key recommendations of the evaluation undertaken by ADB's Independent Evaluation Department in 2010 and absorbed the lessons from operations (i.e. trends on contributions, demand for financing support, allocations, and expected outputs and outcomes) to feed into more appropriate performance indicators.

⁶ CEFPF was established in 2007. Latest available information in participating DMCs for the performance indicators identified is 2006, thus, used as baseline year. This will be updated if and when 2007 data become available.

Clean Energy Funds Design and Monitoring Framework⁷

Design Summary	Performance Targets/Indicators	Data Sources/Reporting Mechanisms	Assumptions (A) and Risks (R)
Impact⁸			
Improved access to energy, enhanced energy security, and decreased rate of climate change in DMCs	<p>Average CO₂ emissions per unit of GDP in participating DMCs is maintained at or lowered from 2006 level (see Appendix A2.1), by year 2030</p> <p>Average electrification rates in participating DMCs increased from 2006 level (see Appendix A2.1), by year 2030⁹</p> <p>Average percentage of RE share in energy mix in participating DMCs is maintained at or increased from 2006 level (see Appendix A2.2), by year 2030</p>	<p>(a) Primary: Energy Statistics in Asia & the Pacific (ADB), World Energy Outlook (IEA), Key World Energy Statistics (IEA); and other publications such as the Urban Remote Sensing: Monitoring, Synthesis and Modeling in the Urban Environment</p> <p>(b) Secondary: Ministry of Energy and Power (or equivalent) in DMCs</p>	<p>A: DMCs are committed to prioritizing clean energy technologies to address energy access and security and climate change</p> <p>A: New clean energy technologies are available to DMCs</p> <p>A: GDPs in DMCs are maintained or improved</p> <p>A: Year 2006 provides the latest available baseline information in participating DMCs for the performance indicators identified</p>
Outcome			
Increased use of clean energy	<p>Cumulative CO₂ emission reduction in participating DMCs of 20 million tCO₂ per year by 2020¹⁰</p> <p>Cumulative energy savings in participating DMCs of 18TWh-equivalent per year by 2020 (footnote 10)</p> <p>Cumulative installed renewable energy</p>	<p>(a) ADB project documents: concept clearance paper, TAR, RRP, PPR, TPR, PCR, and TCR</p> <p>(b) ADB PPIS database</p> <p>(c) Project implementation and monitoring reports</p> <p>(d) Project updates from project</p>	<p>A: Support from financing partners continue and increase</p> <p>A: Project outcomes are counted and adjusted as project goes through the process of approval up to completion</p> <p>A: At least one clean energy technology is accessible and affordable for each DMC</p>

⁷ The Guidelines on Clean Energy Funds Results Monitoring and Reporting is an accompanying document to the DMF and provides the details on the indicators and how they are measured.

⁸ Impact targets are anticipated by the 10th year after the final fund allocation.

⁹ Electrification rate is the ratio of population with electricity to the total population of a DMC expressed as a percentage

¹⁰ Reduction in other greenhouse gas emissions and the realized avoided annual CO₂ emission reduction, electricity or energy savings, energy generated using renewable energy will be reported, as available.

Design Summary	Performance Targets/Indicators	Data Sources/Reporting Mechanisms	Assumptions (A) and Risks (R)
	<p>capacity in participating DMCs of 3,500 MW by 2020</p> <p>Cumulative renewable energy generation in participating DMCs of 10 TWh per year by 2020 (footnote 10)</p>	<p>teams</p>	<p>A: Energy efficiency and renewable energy projects are submitted and approved</p> <p>A: Expected outputs of access to energy projects will contribute to RE capacity installed</p> <p>A: Profile of projects reviewed, allocated and approved for the coming years continues, following the pattern as experienced by CEFPP and CCF in previous years (i.e. substantial number of GCI/TALL projects submitted and approved), or improves</p> <p>A: Outcome performance of CEFPP and CCF in previous years provides a reliable trend and basis for the indicated values of targets/indicators</p> <p>A: Necessary updates on the DMF to be implemented every 3 years (if necessary, and agreed between ADB and financing partners)</p> <p>R: Lack of fiscal support and change in DMC governments' priorities on clean energy resulting to low demand for sector investments</p>
Outputs			
<p>1. Clean energy investments in DMCs increased</p>	<p>Cumulative \$ 4 billion in ADB's clean energy investments leveraged by 2020 (contributing to ADB's \$2 billion clean energy investments target every year)</p>	<p>(a) ADB PPIS database</p> <p>(b) ADB project documents: concept clearance paper, TAR, RRP, PPR, TPR, PCR,</p>	<p>A: Project approvals versus disbursements are counted as investments</p> <p>A: Support from financing partners continue and increase</p>

Design Summary	Performance Targets/Indicators	Data Sources/Reporting Mechanisms	Assumptions (A) and Risks (R)
	<p>Cumulative \$1.2 billion of private sector investments leveraged by 2020¹¹</p> <p>Cumulative \$1.2 billion non-private sector investments leveraged by 2020¹²</p>	<p>and TCR</p> <p>(c) Project updates from project teams</p>	<p>A: Profile of projects reviewed, allocated and approved for the coming years continues, following the pattern as experienced by CEFPP and CCF in previous years (i.e. substantial number of GCI/TALL projects submitted and approved), or improves</p> <p>A: Output performance of CEFPP and CCF in previous years provides a reliable trend and basis for the indicated values of targets/indicators</p> <p>A: Necessary updates on the DMF to be implemented every 3 years (if necessary, and agreed between ADB and financing partners)</p> <p>R: Lack of fiscal support and change in DMC governments' priorities on clean energy resulting to low demand for sector investments</p>
<p>2. Deployment of new technologies with strong demonstration effect facilitated</p>	<p>55 new clean energy/CCS technologies deployed in DMCs by 2020</p>	<p>(a) ADB project documents: concept clearance paper, TAR, RRP, PPR, TPR, PCR, and TCR</p> <p>(b) Progress updates and final/completion reports for DC</p>	<p>A: Support from financing partners continue and increase</p> <p>A: Projects are generating and systematically using lessons towards scaling-up and/or replication</p> <p>A: Output performance of</p>

¹¹ Private sector investments refer to volume of financing mobilized, including equity, loans and guarantees) from private enterprises or financial institutions such as banks, private companies, private pensions funds, insurance companies, and the like; excluding resources from multilateral/regional development banks.

¹² Non-private sector investments refer to volume of financing mobilized from governments including other donors and partner governments, united nation agencies, multilateral/regional development banks, and the like.

Design Summary	Performance Targets/Indicators	Data Sources/Reporting Mechanisms	Assumptions (A) and Risks (R)
			<p>CEFPF and CCF in previous years provides a reliable basis for the indicated value of target/indicator</p> <p>A: Necessary updates on the DMF to be implemented every 3 years (if necessary, and agreed between ADB and financing partners)</p> <p>R: Lack of fiscal support and change in DMC governments' priorities on clean energy resulting to low demand for sector investments</p>
	2 CCS demonstration projects in identified priority countries commenced by 2020	<p>(a) ADB project documents: concept clearance paper, TAR, RRP, PPR, TPR, PCR, and TCR</p> <p>(b) Progress updates and final/completion reports for DC</p>	<p>A: Support from financing partners on CCS technology continue and increase</p> <p>A: CCS projects are submitted and approved</p> <p>A: Necessary updates on the DMF to be implemented every 3 years (if necessary, and agreed between ADB and financing partners)</p> <p>R: Lack of fiscal support and change in DMC governments' priorities on clean energy resulting to low demand for sector investments</p>
3. New approaches/methodologies to promote clean energy/CCS introduced	15 new approaches/methodologies to promote clean energy/CCS introduced in participating DMCs by 2020	<p>(a) ADB project documents: concept clearance paper, TAR, RRP, PPR, TPR, PCR, and TCR</p> <p>(b) Progress updates and final/completion reports for DC</p>	<p>A: Support from financing partners continue and increase</p> <p>A: DMC governments develop enabling regulatory frameworks to promote new approaches/methodologies</p> <p>A: Projects are generating</p>

Design Summary	Performance Targets/Indicators	Data Sources/Reporting Mechanisms	Assumptions (A) and Risks (R)
			<p>and systematically using lessons towards scaling-up and/or replication</p> <p>A: Output performance of CEFPP and CCF in previous years provides a reliable basis for the indicated value of target/indicator</p> <p>A: Necessary updates on the DMF to be implemented every 3 years (if necessary, and agreed between ADB and financing partners)</p> <p>R: Lack of fiscal support and change in DMC governments' priorities on clean energy resulting to low demand for sector investments</p>
<p>4. Benefits from access to energy delivered</p>	<p>Cumulative total of 700,000 households provided with access to energy in participating DMC's supported by 2020 (contributing to ADB-led Energy for All Partnership target of 100 million people by 2015)</p> <ul style="list-style-type: none"> • 350,000 households connected to electricity • 175,000 households connected to modern fuels and/or efficient devices for cooking • 175,000 households connected to 	<p>(a) ADB project documents: concept clearance paper, TAR, RRP, PPR, TPR, PCR, and TCR</p> <p>(b) Progress updates and final/completion reports for DC</p>	<p>A: Support from financing partners continue and increase</p> <p>A: Per Energy for All Initiative, access to energy projects are submitted and approved</p> <p>A: At least 25% of supported projects annually comprise access to energy</p> <p>A: Access to energy will involve any or combination of the following: (a) provision of electricity and motive power to households; (b) improvement in the supply and delivery of energy services to households; (c) provision of modern fuels and/or efficient devices for cooking and/or heating to households; and (d)</p>

Design Summary	Performance Targets/Indicators	Data Sources/Reporting Mechanisms	Assumptions (A) and Risks (R)
	modern fuels and/or efficient devices for heating		<p>provision of finance to households to access energy</p> <p>A: Target households are effective, aligned with the Energy for All Partnership target by 2015, and may be updated beyond 2015.</p> <p>A: Necessary updates on the DMF to be implemented every 3 years (if necessary, and agreed between ADB and financing partners)</p> <p>R: Lack of fiscal support and change in DMC governments' priorities on clean energy resulting to low demand for sector investments</p>
	<p>30% of access to energy projects with gender mainstreaming by 2020¹³</p> <p>80% of access to energy projects with gender concerns by 2020¹⁴</p>	<p>(a) ADB projects approved with gender category i) Gender Equity (GEN), ii) Effective Gender Mainstreaming (EGM) or iii) some gender elements (SGE)</p> <p>(b) ADB project documents: concept clearance paper, TAR, RRP, PPR, TPR, PCR, and TCR</p> <p>(c) Progress updates and final/completion reports for DC</p>	<p>A: Support from financing partners continue and increase</p> <p>A: Per Energy for All Initiative, access to energy projects are submitted and approved</p> <p>A: ADB projects are categorized based on the Guidelines for Gender Mainstreaming Categories of ADB Projects (http://www.adb.org/themes/gender/gender-mainstreaming-categories)</p> <p>A: Clean energy funds will capture all efforts to address</p>

¹³ Projects with Gender Mainstreaming include those classified under Gender Equity Theme and Effective Gender Mainstreaming.

¹⁴ Projects with gender concerns include those classified under Gender Equity Theme, Effective Gender Mainstreaming and Some Gender Benefits.

Design Summary	Performance Targets/Indicators	Data Sources/Reporting Mechanisms	Assumptions (A) and Risks (R)
			<p>gender benefits, covering gender categories: GEN, EGM, SGE; and at the minimum, provide some gender elements. Some gender element is provided if a project is likely to directly improve women's access to social services; and/or economic and financial resources and opportunities, and/or basic rural and urban infrastructure, and/or enhance their voices and rights, or unlikely to directly improve women's access to these but significant efforts were made during project preparation to identify potential positive and negative impacts on women and some gender design features were included to enhance benefits to women and where resettlement is involved includes attention to women in the mitigation/resettlement plans</p> <p>A: Necessary updates on the DMF to be implemented every 3 years (if necessary, and agreed between ADB and financing partners)</p> <p>R: Lack of fiscal support and change in DMC governments' priorities on clean energy resulting to low demand for sector investments</p>
5. Health and productivity	40% of projects supported highlights	(a) ADB project documents:	A: Support from financing partners continue and

Design Summary	Performance Targets/Indicators	Data Sources/Reporting Mechanisms	Assumptions (A) and Risks (R)
benefits provided ¹⁵	co-benefits on health/productivity by 2020 ¹⁶	concept clearance paper, TAR, RRP, PPR, TPR, PCR, and TCR (b) Progress updates and final/completion reports for DC	<p>increase</p> <p>A: At least 25% of supported projects annually comprise access to energy</p> <p>A: 100% of access to energy projects supported will provide health/productivity co-benefits</p> <p>A: Co-benefits may not be easily identified in all supported projects. But where they can be, they will be highlighted. E.g. access to energy projects and renewable energy projects: (a) offering increased local control of energy production to stabilize prices, (b) helping improve local air quality, and (c) boosting local economies through job creation or livelihood development.</p> <p>A: Necessary updates on the DMF to be implemented every 3 years (if necessary, and agreed between ADB and financing partners)</p> <p>R: Lack of fiscal support and change in DMC governments' priorities on clean energy resulting to low demand for sector investments</p>
6. Barriers to clean energy/CCS	20 national/local policies enabling clean energy/CCS	(a) ADB project documents: concept clearance	A: Support from financing partners continue and increase

¹⁵ All ADB projects are expected to contribute to economic growth of DMCs. The output and indicator indicate increasing productivity in terms of improved education, income, livelihood and social services.

¹⁶ The clean energy funds will monitor and report on the cumulative total number of individuals employed, including employment of women.

Design Summary	Performance Targets/Indicators	Data Sources/Reporting Mechanisms	Assumptions (A) and Risks (R)
investments lowered	development in participating DMCs developed by 2020	<p>paper, TAR, RRP, PPR, TPR, PCR, and TCR</p> <p>(b) Progress updates and final/completion reports for DC</p>	<p>A: Major barriers to adopting CE technologies are identified and prioritized</p> <p>A: The development of national/ local policies is coordinated with ADB</p> <p>A: Output performance of CEFPP and CCF in previous years provides a reliable basis for the indicated value of target/indicator</p> <p>A: Necessary updates on the DMF to be implemented every 3 years (if necessary, and agreed between ADB and financing partners)</p> <p>R: Lack of fiscal support and change in DMC governments' priorities on clean energy resulting to low demand for sector investments</p>
	25 financing models suitable for bundling small clean energy/CCS investment applied in participating DMCs by 2020	<p>(a) ADB project documents: concept clearance paper, TAR, RRP, PPR, TPR, PCR, and TCR</p> <p>(b) Progress updates and final/completion reports for DC</p>	<p>A: Support from financing partners continue and increase</p> <p>A: Output performance of CEFPP and CCF in previous years provides a reliable basis for the indicated value of target/indicator</p> <p>A: Necessary updates on the DMF to be implemented every 3 years (if necessary and agreed between ADB and financing partners)</p> <p>R: Lack of fiscal support and change in DMC governments' priorities on clean energy resulting to low</p>

Design Summary	Performance Targets/Indicators	Data Sources/Reporting Mechanisms	Assumptions (A) and Risks (R)
			demand for sector investments
	100% of projects supported produce and/or disseminate knowledge products or contribute in building capacity to promote clean energy/CCS development in participating DMCs by 2020 ¹⁷	(a) ADB project documents: concept clearance paper, TAR, RRP, PPR, TPR, PCR, and TCR (b) Progress updates and final/completion reports for DC	<p>A: Support from financing partners continue and increase</p> <p>A: Knowledge products and capacity services are effectively targeting policy and decision makers</p> <p>A: Necessary updates on the DMF to be implemented every 3 years (if necessary, and agreed between ADB and financing partners)</p> <p>R: Lack of fiscal support and change in DMC governments' priorities on clean energy resulting to low demand for sector investments</p>
Activities and Milestones (For 2008-2020)			Inputs (For 2008-2020)
<p>1.1 Pool grants from multilateral and bilateral sources</p> <ul style="list-style-type: none"> • Promote CEFPF and CCF to the multilateral and bilateral donor community • Build and maintain network of financial partners • Secure \$700 million equivalent for CEFPF and CCF¹⁸ • Maintain relations with financing partners through annual consultation meetings, as well as submission of annual work programs, annual reports, semiannual progress reports <p>1.2 Explore and develop innovative investment programs and financing mechanisms</p> <ul style="list-style-type: none"> • Engage expert services to develop innovative investment programs and financing mechanisms • Develop new and innovative investment programs and 			<ul style="list-style-type: none"> • \$250 million for CEFPF and CCF to facilitate investments • \$450 million for CEFPF and CCF to facilitate investments¹⁹ • 120 person-month of ADB professional staff • 528 person month of domestic consultants • 130 person-month of international consultants • Series of clean energy

¹⁷ The clean energy funds will monitor and report on the cumulative total of: (a) projects that disseminate knowledge products, practices and information in a gender sensitive manner, (b) knowledge products produced and/or disseminated, (c) individuals trained, including average percentage of women, and (d) trainings/conferences/workshops held.

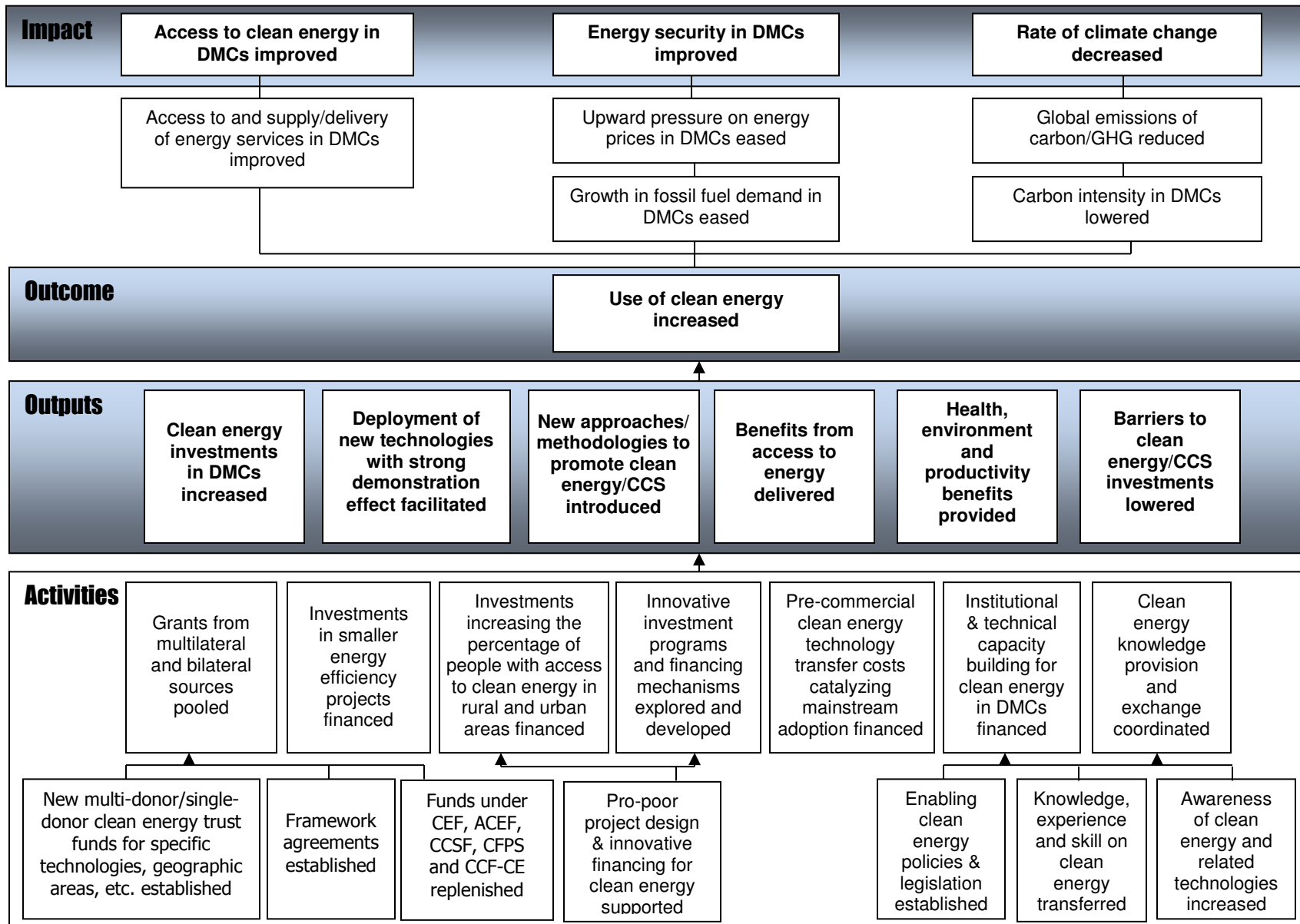
¹⁸ Upon securing the \$250 million targeted, ADB will aim at raising an additional \$450 million by 2020 to further facilitate clean energy investments.

¹⁹ The \$450 million is additional financing by 2020. The outputs, outcomes and impacts for this additional financing will be developed and determined in consultation with financing partners.

Design Summary	Performance Targets/Indicators	Data Sources/Reporting Mechanisms	Assumptions (A) and Risks (R)
<p>financing mechanisms</p> <ul style="list-style-type: none"> • Facilitate the implementation of investment programs and financing mechanisms in priority DMCs • Monitor and evaluate results of programs and financing mechanisms • Use lessons to innovate for more effective investment programs and financing mechanisms <p>1.3 Finance proven investments in smaller clean energy projects</p> <ul style="list-style-type: none"> • Develop and update CEFPF/CCF Implementation Guidelines, as necessary • Initiate call for proposals/applications to the CEFPF/CCF six times a year • Review and prioritize proposals to finance 1.3, 1.4, 2.1, and 3.1 • Allocate available resources to finance 1.3, 1.4, 2.1 and 3.1 • Monitor and evaluate results of financed proposals <p>1.4 Finance investments that increase the percentage of people with access to clean energy in rural and urban areas</p> <p>2.1 Finance technology transfer costs of pre-commercial (i.e., proven and ready for deployment) clean energy technology catalyzing mainstream adoption</p> <p>3.1 Finance technical and capacity building programs for clean energy in DMCs</p> <p>3.2 Coordinate clean energy/CCS knowledge provision and exchange</p> <ul style="list-style-type: none"> • Disseminate lessons learned in project report documents and publications • Produce technical studies that enable the increased use of clean energy/CCS in DMCs (given available resources) • Network with other institutions to maximize information dissemination and acquisition on best practices, model templates and procedures, advocacy, and the like • Co-sponsor annual Clean Energy Forum • Engage and deploy expert services to operations departments to aid in project planning, design implementation, monitoring and evaluation, and adaptive management • Update technical and management capacity to support progressive CEFPF/CCF implementation 			<p>reports and knowledge sharing events</p> <p>Also activities for 1.4, 2.1 and 3.1</p>

ADB = Asian Development Bank, CCS = carbon capture and storage, CCF = Climate Change Fund, CEFPF = Clean Energy Financing Partnership Facility, DC = direct charge, DMC = developing member country, GCI = grant component of investment, GDP = gross domestic product, IEA = International Energy Agency, MW = megawatt, PCR = project completion report, PPIS = Project Processing Information System, PPR = project performance report, RE = renewable energy, RRP = report and recommendation of the President, TAR = technical assistance report, TCR = technical assistance completion report, TPR = technical assistance performance report, TALL = technical assistance linked to loan, TWh = terawatt-hour, tCO₂ = ton of carbon dioxide.

CLEAN ENERGY FUNDS RESULTS CHAIN



ACEF = Asian Clean Energy Fund, CCS = carbon capture and storage, CCSF = Carbon Capture and Storage Fund, CEF = Clean Energy Fund, CCF-CE = Climate Change Fund – Clean Energy Development component, CFPS = Canadian Climate Fund for the Private Sector in Asia, DMC = developing member country, GHG = greenhouse gas.

**Table A2.1: Carbon Intensity and Electrification Rate, 2006
ADB's Developing Member Countries**

	Country	Carbon Intensity (in ton of carbon equivalent/constant 2000 US\$ million) ^a	Electrification Rates (%) ^b
1	Afghanistan	19	29.5
2	Azerbaijan	703	81.3
3	Bangladesh	153	53
4	Bhutan	90	33.6
5	Cambodia	177	15.8
6	China, People's Republic of	831	74.9
7	Cook Islands	117	90.9
8	Fiji	212	55.1
9	Georgia	281	74.1
10	India	504	75.8
11	Indonesia	391	79.5
12	Kazakhstan	1611	73
13	Kiribati	112	2.6
14	Kyrgyz Republic	776	86.2
15	Lao People's Democratic Republic	131	22
16	Malaysia	304	90.2
17	Maldives	230	53.6
18	Federal States of Micronesia	143	79.6
19	Mongolia	1824	52.2
20	Myanmar	229	26.2
21	Nepal	105	30.1
22	Pakistan	342	90.8
23	Papua New Guinea	340	17.9
24	Philippines	161	62.8
25	Samoa	135	49.6
26	Solomon Islands	96	0.5
27	Sri Lanka	154	95.3
28	Tajikistan	480	87.1
29	Thailand	319	70.2
30	Timor-Leste	184	9
31	Tonga	228	85.4
32	Tuvalu	nd	1.4
33	Uzbekistan	1629	94.5
34	Vanuatu	44	15
35	Viet Nam	490	80.3
	Average	398	55

nd = no data.

^a Source: Asian Development Bank. 2013. Energy Statistics in Asia and the Pacific (1990-2009)

^b C. Elvidge, et.al. 2011. Who's in the Dark: Satellite Based Estimates of Electrification Rates. In X. Yang, ed. Urban Remote Sensing: Monitoring, Synthesis and Modeling in the Urban Environment. West Sussex, UK: John Wiley & Sons, Ltd. Additional Note: The electrification count was estimated by tallying the total population count in areas having lighting (i.e. night-time lights collected by the US Air Force Defense Meteorological Satellite Program Operational Linescan System) as compared with total population count.

**Table A2.1: Renewable Energy Share in Energy Mix, 2006
ADB's Developing Member Countries**

	Country	2006									
		Power Generation (in GWh)								Total	RE share (%)
		Thermal	Nuclear	Renewable Energy							
				Hydro	Geothermal	Solar	Wind	Others	Subtotal		
1	Afghanistan	375	-	601	-	-	-	-	601	976	62%
2	Azerbaijan	21,093	-	2,518	-	-	-	-	2,518	23,611	11%
3	Bangladesh	28,490	-	1,389	-	-	-	-	1,389	29,879	5%
4	Bhutan	2	-	4,519	-	-	-	-	4,519	4,521	100%
5	Cambodia	1,035	-	51	-	-	-	2	53	1,088	5%
6	China, People's Republic of	2,369,604	54,843	435,786	-	-	-	5,494	441,280	2,865,727	15%
7	Cook Islands	32	-	-	-	-	-	-	-	32	0%
8	Fiji	152	-	688	-	-	-	-	688	840	82%
9	Georgia	1,972	-	5,315	-	-	-	-	5,315	7,287	73%
10	India	610,084	18,802	113,720	-	19	8,690	1,930	124,359	753,245	17%
11	Indonesia	116,795	-	9,623	-	-	-	32	9,655	126,450	8%
12	Kazakhstan	63,889	-	7,768	-	-	-	-	7,768	71,657	11%
13	Kiribati	24	-	-	-	-	-	-	-	24	0%
14	Kyrgyz Republic	2,195	-	14,887	-	-	-	-	14,887	17,082	87%
15	Lao People's Democratic Republic	-	-	3,595	-	-	-	-	3,595	3,595	100%
16	Malaysia	83,344	-	6,439	-	-	-	-	6,439	89,783	7%
17	Maldives	212	-	-	-	-	-	-	-	212	0%
18	Federal States of Micronesia	58	-	-	-	-	-	-	-	58	0%
19	Mongolia	3,649	-	-	-	-	-	-	-	3,649	0%
20	Myanmar	2,839	-	3,325	-	-	-	-	3,325	6,164	54%
21	Nepal	13	-	2,735	-	-	-	-	2,735	2,748	100%
22	Pakistan	64,109	2,288	31,953	-	-	-	-	31,953	98,350	32%
23	Papua New Guinea	2,222	-	863	227	-	-	-	1,090	3,312	33%
24	Philippines	36,325	-	9,939	10,465	1	53	-	20,458	56,783	36%
25	Samoa	64	-	53	-	-	-	-	53	117	45%
26	Solomon Islands	75	-	-	-	-	-	-	-	75	0%
27	Sri Lanka	4,847	-	4,634	-	15	2	2	4,653	9,500	49%
28	Tajikistan	234	-	16,701	-	-	-	-	16,701	16,935	99%
29	Thailand	116,883	-	8,125	-	-	-	13,732	21,857	138,740	16%
30	Timor-Leste	86	-	-	-	-	-	-	-	86	0%
31	Tonga	45	-	-	-	-	-	-	-	45	0%
32	Tuvalu	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
33	Uzbekistan	41,760	-	9,160	-	-	-	-	9,160	50,920	18%
34	Vanuatu	46	-	-	-	-	-	-	-	46	0%
35	Viet Nam	41,008	-	20,408	-	-	-	43	20,451	61,459	33%
AVERAGE		32%									

Nd = no data.

Source: Asian Development Bank. 2013. Energy Statistics in Asia and the Pacific (1990-2009).

Guidelines on Monitoring and Reporting of Results of the Clean Energy Funds²⁰

1. The Asian Development Bank's (ADB) clean energy funds²¹ are intended to provide financing to its developing member countries (DMCs) to achieve improved energy access and security and transition to low carbon economies through cost-effective investments, especially in technologies that result in greenhouse gas mitigation. The primary benchmark used in reporting on clean energy funds results and judging its achievements is the Design and Monitoring Framework (DMF). The DMF defines the objectives and targets of the funds and directs resource allocations. It is a result of the close collaboration between the ADB and its financing partners.²² This document discusses in detail each part of the DMF and the approach used in monitoring and reporting the overall performance of the funds against the set targets. Projects receiving support from clean energy funds enter the clean energy funds results monitoring and reporting system when authorization from the Climate Change Steering Committee is received. Except where indicated, data from clean energy funds portfolios as of 31 December 2013 were used for illustration purposes.

I. MEASURING IMPACTS

2. Clean energy funds aim to contribute to the following impacts: (a) improved access to energy in DMCs, (b) enhanced energy security in DMCs, and (c) decreased rate of climate change. These target impacts will be measured by:

- (i) *Average electrification rates in participating DMCs increased from 2006 level by year 2030.* This impact indicator is measured using the ratio of population with electricity to total population of a DMC, expressed as a percentage, compared with a given baseline.
- (ii) *Average percentage of renewable energy share in energy mix in participating DMCs is maintained at or increased from 2006 level by year 2030.*²³ This impact indicator is measured by the ratio of power generation from renewable energy sources (as reported

²⁰ This guidelines accompanies the 2014 Clean Energy Funds Design and Monitoring Framework, as agreed between the ADB and financing partners in June 2014. This is a working document refined as projects receiving allocations enter implementation and clean energy funds gain experience in monitoring its portfolio and adapts its approach accordingly.

²¹ ADB's clean energy funds include the donor funds under the Clean Energy Financing Partnership Facility, i.e. (a) multi-donor Clean Energy Fund with contributing partners from governments of Australia, Norway, Spain, Sweden and the United Kingdom (b) single-donor Asian Clean Energy Fund with contributing partner from the Government of Japan, (c) Carbon Capture and Storage Fund with contributing partners from the Global Carbon Capture and Storage Institute and the Government of United Kingdom and (d) Canadian Climate Fund for the Private Sector in Asia with contributing partner from the Government of Canada; and the resources from ADB's Climate Change Fund – Clean Energy Development Component.

²² In accordance with the agreement made with the financing partners, the original DMF designed in 2008 was updated in 2011 to reflect greater level of ambition with increased targets and additional indicators, and will be regularly revisited every three years and may be updated in consultation with financing partners, to preserve the funds' relevance in responding to the needs of the DMCs, reflect latest and emerging trends and opportunities, and contribute more effectively to ADB's overall poverty alleviation and sustainable development agenda. The latest update was made in June 2014.

²³ CEFPF will continue to support projects in countries with a high RE share in the energy mix, such as Bhutan (100% RE), Nepal (~99.8% RE) and Lao (~97%), for as long as these projects are: (i) demonstration projects that can be up-scaled and replicated in other DMCs in the region; (ii) energy access projects, increasing the number of people with access to modern forms of electricity obtained from clean energy sources, and; (iii) regional cooperation projects, supporting the export of clean energy to countries still showing high fossil fuel use and corresponding carbon emissions.

in megawatt-/terawatt-hour equivalent) to total power generation of a DMC, expressed as a percentage, compared with a given baseline.

- (iii) *Average carbon dioxide (CO₂) emissions per unit of gross domestic product (GDP) in DMCs is maintained at or lowered from 2006 level by year 2030.* This impact indicator is measured using carbon intensity or the carbon emission relative to production level or gross domestic product, compared with a given baseline.

II. MEASURING OUTCOMES

3. The clean energy funds outcomes anchor its design, and describe what they are intended to accomplish at the conclusion of the activities described in the DMF. The target outcome is to increase use of clean energy²⁴ in DMCs, and is measured by four indicators:

- (i) *Cumulative carbon dioxide (CO₂) emission reduction in participating DMCs of 20 million tons of carbon dioxide (tCO₂) per year by 2020.* The avoided annual CO₂ emission of a project or component, measured in metric ton, accounted from investment or investment-related projects.²⁵
- (ii) *Cumulative energy savings in participating DMCs of 18 terawatt-hours equivalent (TWh-eq.) by 2020.*²⁶ The electricity/fuel or energy savings of a project or component, measured in TWh-eq., accounted from investment or investment-related projects. It is the difference between electricity or energy converted or used with or without the energy efficiency component.
- (iii) *Cumulative installed renewable energy capacity in participating DMCs of 3,500 megawatt (MW) by 2020.* The rated capacity of project or component using renewable energy, measured in MW (broken down for off-grid/on-grid), accounted from investment or investment related projects.
- (iv) *Cumulative renewable energy generation in participating DMCs of 10 terawatt-hour (TWh) per year by 2020.* The renewable energy generation of a project or component, measured in TWh, accounted from investment or investment-related projects.

4. The target values for the outcomes were derived from rationalized projections based on the average outcome performance of clean energy funds in the last 6 years (i.e. 2008-2013) which is assumed to provide a reliable trend and basis for the indicated values of outcome targets/indicators.

III. PROGRESS TOWARDS IMPACTS AND OUTCOMES

5. At the conclusion of the clean energy funds operations, after the implementation of its last financed project is completed, the data available at that time on the identified impact indicators will be collated and compared against the established baseline. Data may also be

²⁴ Clean energy category in ADB includes renewable energy, energy efficiency and cleaner fuel.

²⁵ Reduction in other greenhouse gas emissions will be provided, as available.

²⁶ Energy savings will include electricity and thermal/fuel savings.

collated at meaningful, regular intervals in the interim to review the continued relevance of the funds' targets and interventions overall. The impact targets are anticipated by the 10th year after the final fund allocation. As final fund allocation is currently expected by year 2020, impacts are expected by year 2030.

6. The baseline data for the average electrification rate and carbon intensity are presented in Table A3.1 while the renewable energy share in energy mix baseline is found in Table A3.2.²⁷ Presently, the baseline information includes 35 DMCs that were covered by the range of allocations to projects as of 31 December 2015. As can be seen, one smaller country reflects "no data" readily available. In this regard, the clean energy funds will continue to explore other data sources to arrive at an estimate.

²⁷ Year 2006 is the baseline year used because it provides the latest available information that is nearest the year the clean energy funds were established.

**Table A3.1: Carbon Intensities and Electrification Rates, 2006
Developing Member Countries Covered by Clean Energy Funds Support**

	Country	Carbon Intensity (in ton of carbon equivalent/constant 2000 US\$ million) ^a	Electrification Rates (%) ^b
1	Afghanistan	19	29.5
2	Azerbaijan	703	81.3
3	Bangladesh	153	53
4	Bhutan	90	33.6
5	Cambodia	177	15.8
6	China, People's Republic of	831	74.9
7	Cook Islands	117	90.9
8	Fiji	212	55.1
9	Georgia	281	74.1
10	India	504	75.8
11	Indonesia	391	79.5
12	Kazakhstan	1611	73
13	Kiribati	112	2.6
14	Kyrgyz Republic	776	86.2
15	Lao People's Democratic Republic	131	22
16	Malaysia	304	90.2
17	Maldives	230	53.6
18	Federal States of Micronesia	143	79.6
19	Mongolia	1824	52.2
20	Myanmar	229	26.2
21	Nepal	105	30.1
22	Pakistan	342	90.8
23	Papua New Guinea	340	17.9
24	Philippines	161	62.8
25	Samoa	135	49.6
26	Solomon Islands	96	0.5
27	Sri Lanka	154	95.3
28	Tajikistan	480	87.1
29	Thailand	319	70.2
30	Timor-Leste	184	9
31	Tonga	228	85.4
32	Tuvalu	nd	1.4
33	Uzbekistan	1629	94.5
34	Vanuatu	44	15
35	Viet Nam	490	80.3
	Average	398	55

nd = no data.

^a Source: Asian Development Bank. 2013. Energy Statistics in Asia and the Pacific (1990-2009).

^b C. Elvidge, et.al. 2011. Who's in the Dark: Satellite Based Estimates of Electrification Rates. In X. Yang, ed. Urban Remote Sensing: Monitoring, Synthesis and Modeling in the Urban Environment. West Sussex, UK: John Wiley & Sons, Ltd. Additional Note: The electrification count was estimated by tallying the total population count in areas having lighting (i.e. night-time lights collected by the US Air Force Defense Meteorological Satellite Program Operational Linescan System) as compared with total population count.

Table A3.2: Renewable Energy Share in Energy Mix, 2006
Developing Member Countries Covered by Clean Energy Funds Support

	Country	Power Generation (in GWh)								RE share (%)	
		Thermal	Nuclear	Renewable Energy					Total		
				Hydro	Geothermal	Solar	Wind	Others			Subtotal
1	Afghanistan	375	-	601	-	-	-	-	601	976	62%
2	Azerbaijan	21,093	-	2,518	-	-	-	-	2,518	23,611	11%
3	Bangladesh	28,490	-	1,389	-	-	-	-	1,389	29,879	5%
4	Bhutan	2	-	4,519	-	-	-	-	4,519	4,521	100%
5	Cambodia	1,035	-	51	-	-	-	2	53	1,088	5%
6	China, People's Republic of	2,369,604	54,843	435,786	-	-	-	5,494	441,280	2,865,727	15%
7	Cook Islands	32	-	-	-	-	-	-	-	32	0%
8	Fiji	152	-	688	-	-	-	-	688	840	82%
9	Georgia	1,972	-	5,315	-	-	-	-	5,315	7,287	73%
10	India	610,084	18,802	113,720	-	19	8,690	1,930	124,359	753,245	17%
11	Indonesia	116,795	-	9,623	-	-	-	32	9,655	126,450	8%
12	Kazakhstan	63,889	-	7,768	-	-	-	-	7,768	71,657	11%
13	Kiribati	24	-	-	-	-	-	-	-	24	0%
14	Kyrgyz Republic	2,195	-	14,887	-	-	-	-	14,887	17,082	87%
15	Lao People's Democratic Republic	-	-	3,595	-	-	-	-	3,595	3,595	100%
16	Malaysia	83,344	-	6,439	-	-	-	-	6,439	89,783	7%
17	Maldives	212	-	-	-	-	-	-	-	212	0%
18	Federal States of Micronesia	58	-	-	-	-	-	-	-	58	0%
19	Mongolia	3,649	-	-	-	-	-	-	-	3,649	0%
20	Myanmar	2,839	-	3,325	-	-	-	-	3,325	6,164	54%
21	Nepal	13	-	2,735	-	-	-	-	2,735	2,748	100%
22	Pakistan	64,109	2,288	31,953	-	-	-	-	31,953	98,350	32%
23	Papua New Guinea	2,222	-	863	227	-	-	-	1,090	3,312	33%
24	Philippines	36,325	-	9,939	10,465	1	53	-	20,458	56,783	36%
25	Samoa	64	-	53	-	-	-	-	53	117	45%
26	Solomon Islands	75	-	-	-	-	-	-	-	75	0%
27	Sri Lanka	4,847	-	4,634	-	15	2	2	4,653	9,500	49%
28	Tajikistan	234	-	16,701	-	-	-	-	16,701	16,935	99%
29	Thailand	116,883	-	8,125	-	-	-	13,732	21,857	138,740	16%
30	Timor-Leste	86	-	-	-	-	-	-	-	86	0%
31	Tonga	45	-	-	-	-	-	-	-	45	0%
32	Tuvalu	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
33	Uzbekistan	41,760	-	9,160	-	-	-	-	9,160	50,920	18%
34	Vanuatu	46	-	-	-	-	-	-	-	46	0%
35	Viet Nam	41,008	-	20,408	-	-	-	43	20,451	61,459	33%
AVERAGE		32%									

nd = no data.

Source: Asian Development Bank. 2013. Energy Statistics in Asia and the Pacific (1990-2009).

7. The specific contributions of clean energy funds portfolio toward meeting the sectoral objectives can be measured by the contributions on: (i) carbon dioxide emissions reductions, (ii) energy savings, (iii) installed renewable energy capacity, and (iv) renewable energy generation from implementing concessional financing (CF), grant component of investment (GCI) and technical assistance linked to loan (TALL) projects, including project preparatory technical assistance of loan projects. Actual contributions can only be measured after the full implementation of projects. Following project implementation and towards plant operations, the project will determine the actual contributions with respect to the target outcomes.²⁸ The outcomes may differ from the original estimate because of design changes, better or superior technologies introduced, or broadened project scope (within budget).

8. Meanwhile, the individual projects are being monitored whether they are on-track toward keeping their implementation targets, and any adjustments, as the individual projects undergo ADB's project design and implementation cycle. The cycle is further described in para. 45.

9. As of 31 December 2015, the clean energy funds portfolio is expected to contribute to annual emission reduction of about 7.6 million tCO₂, annual energy savings of about 6.7 TWh-eq., installed renewable energy capacity of 733.6 MW and renewable energy generation of 3.2 terra-hour (TWh).²⁹ These estimates are updated based on the clean energy funds yearly operations and when new information on project implementation becomes available.

IV. MEASURING OUTPUTS

10. Outputs are the physical and/or tangible goods and services delivered by clean energy funds and describe the scope of funds. Clean energy funds outputs are as follow: (i) clean energy investments in DMCs increased, (ii) deployment of new technologies with strong demonstration effect facilitated, (iii) new approaches/methodologies to promote clean energy/carbon capture and storage (CCS) introduced, (iv) benefits from access to energy delivered, (v) health and productivity benefits provided, and (vi) barriers to clean energy/CCS investments lowered. Details are provided in the succeeding subsections

11. Outputs are accounted based on the features identified in the project documents and linked with the scope of work financed by the funds. Many clean energy projects in ADB proceed without clean energy funds support. If a project has approached clean energy funds for financing and successfully receives allocation, it has been determined that the project: (a) is aligned with the design and monitoring framework, contributing to target indicators, (b) meets the funds eligibility criteria,³⁰ and (c) aligned with the strategic priorities as programmed annually.³¹ It was also deemed that the clean energy funds support is catalytic to the project, in particular, clean energy funds help defray the higher cost of clean energy investments (in terms

²⁸Realized avoided annual CO₂ emission reduction, electricity or energy savings, energy generated using renewable energy will be reported, as available.

²⁹ Installed renewable energy capacity and renewable energy power generation are additional indicators implemented effective 2011 and 2014, respectively.

³⁰ Per the funds general eligibility criteria, projects should: (a) be consistent with the country partnership strategy and results framework, (b) be consistent with the objectives of ADB's Energy Efficiency Initiative, (c) introduce innovative solutions, (d) adopt a participatory approach, (e) be catalytic, (f) have high demonstration value in the sector, and (g) have good potential for replication and scalability in the country and/or region. The clean energy funds eligibility criteria are detailed in the Implementing Guidelines.

³¹ The strategic priorities for the utilization of the clean energy funds are identified in the Annual Work Program.

of financial, technical and non-technical barriers) that deter them from being the preferred option for governments and the private sector.

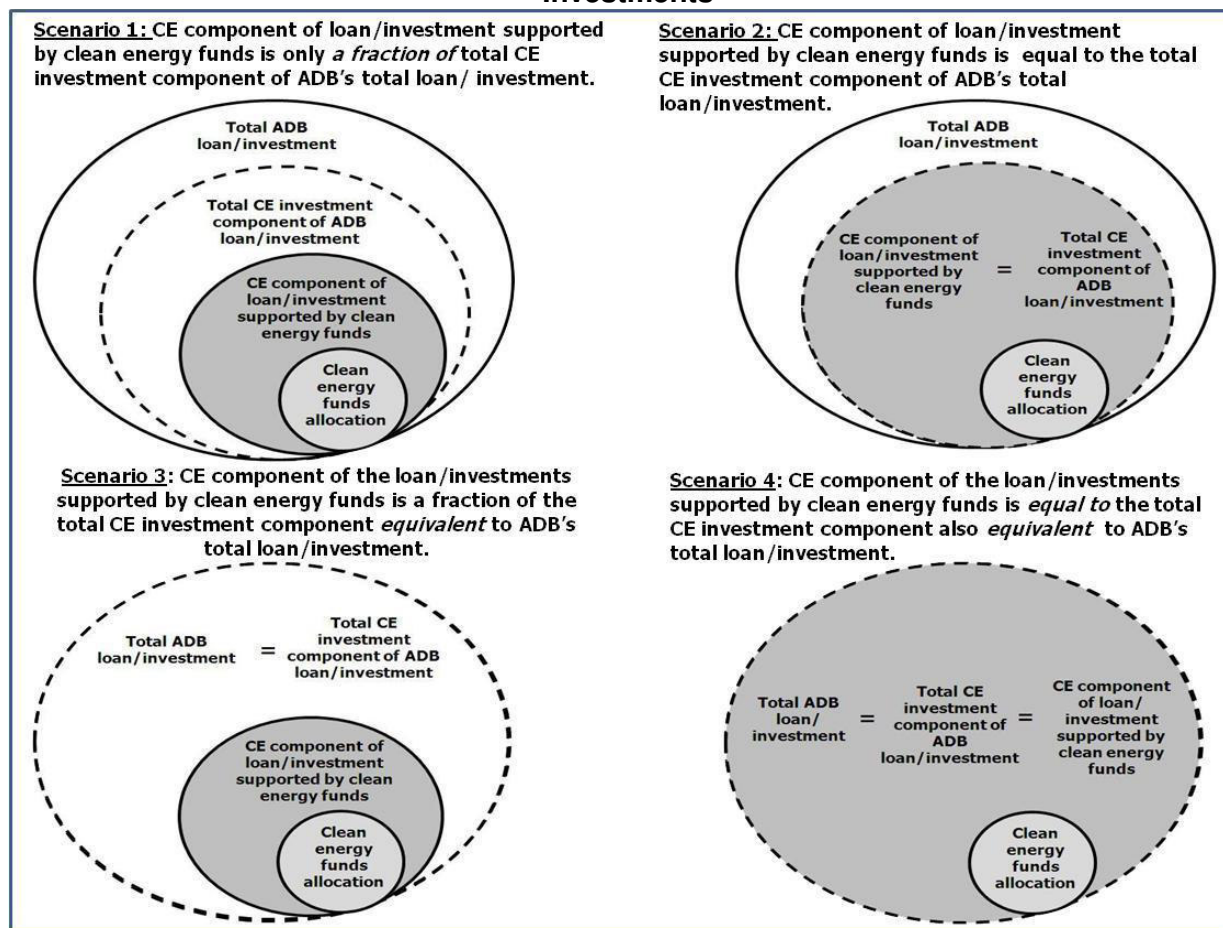
A. Clean Energy Investments in DMCs increased

12. Per the DMF, clean energy funds will directly contribute to increased clean energy investments in ADB's DMCs, targeting:

- (i) *Cumulative \$4 billion in ADB's clean energy investments leveraged by 2020 (contributing to ADB's \$2 billion clean energy investments target every year).* This indicator measures the amount of clean energy co-financing from ADB and ADB-administered funds, in US dollars, accounted from investment or investment-related projects.

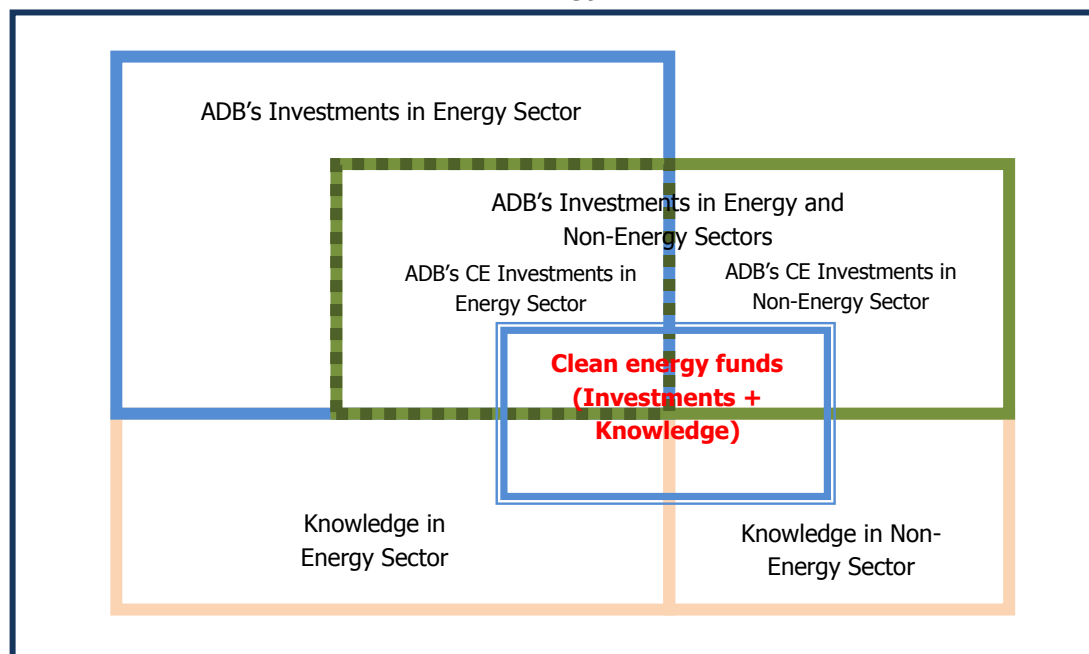
13. Figure A3.1 shows how the clean energy funds allocations relate with ADB's total and clean energy investments while Figure A3.2 presents how clean energy financing contributes in terms of investments and knowledge in the energy and non-energy sectors.

Figure A3.1: Clean Energy Funds Allocations and Clean Energy Components of ADB Investments



ADB = Asian Development Bank, CE = clean energy.

Figure A3.2: Clean Energy Funds' Allocations and ADB's Investments in Energy and Non-Energy Sectors



ADB = Asian Development Bank, CE = clean energy.

14. The clean energy funds will also directly contribute to enhanced private and non-private sector investments, targeting:

- (i) *Cumulative \$1.2 billion in private sector investments leveraged by 2020; and*
- (ii) *Cumulative \$1.2 billion non-private sector investments leveraged by 2020.*³² These two indicators measure the amount of co-financing from private and non-private sectors, accounted from investment or investment-related projects.

a. Determining the Amount of Clean Energy Components

15. In determining the amount of total clean energy investments (or investment components), the project document that completed the review and approval process of the clean energy funds and ADB management, in particular, the amount pre-determined therein is used. For example:

- (i) Bhutan: Green Power Development (Allocation from ACEF under CEFPPF: \$1 million). The total ADB loan is for \$80 million. Although the entire loan is characteristically on clean energy, only \$25.28 million is accounted as the resulting clean energy investment attributed to CEFPPF allocation, identified by the project team leader as the rural electrification component which the Clean Energy Financing Partnership Facility is

³² Private sector investments refer to volume of financing mobilized, including equity, loans and guarantees) from private enterprises or financial institutions such as banks, private companies, private pensions funds, insurance companies, and the like; excluding resources from multilateral/regional development banks. Non-private sector investments refer to volume of financing mobilized from governments including other donors and partner governments, united nation agencies, multilateral/regional development banks, and the like.

helping to finance. The rest of the loan pertains to the regional power trade which includes hydropower development for export to India.

16. If the clean energy component is not already delineated in the project document, the estimates are derived from the Guidelines for Estimating ADB's Investments in Renewable Energy and Energy Efficiency Projects.³³ A summary of factors/percentages is presented in Table A3.3. These percentages are estimated based on a review of ADB's loans with clean energy components from 2004 to 2006, and will be updated at meaningful, regular intervals to remain representative of ADB's total loan portfolio over time.

17. Following is an example of a clean energy project where the pre-determined factor was applied in determining the clean energy component of the ADB investment. The clean energy component will be continuously validated as relevant information from the project team become available:

- (i) Thailand: Solar Power Project (Allocation from CEF under CEFPF: \$2 million). The total loan ADB is \$70 million. Per the guidelines, the percentage renewable energy investment share is 100%. Thus, the \$70 million is accounted as the resulting CE investments attributed to its allocation providing contingency financing for a large-scale solar farm project using thin film photovoltaic technology.
- (ii) Indonesia: Sarulla Geothermal Power Generation Project (Allocation from CFPS under CEFPF: \$20 million). The total ADB loan is \$330 million while the private and non-private sector investments are \$698.8 million and \$533.6 million, respectively. As the entire renewable energy investments are characteristically on clean energy, the resulting investments attributed to CEFPF allocation are these whole amounts for ADB, private and non-private investments.

³³The full document is available online on ADB's energy webpage: <http://www.forum-adb.org/BACKUP/pdf/PDF-Energy/CE%20Investment%20Estimation%20Guidelines.pdf>

Table A3.3: Percentages for Estimating Clean Energy Components of Project Loans/Investments in the Asian Development Bank's Portfolio.

Projects	Fuel	% RE/EE/CF Investment	Remarks/Assumptions
A. Renewable Energy			
Power/Energy Generation using Wind, Solar, Hydro, Geothermal, biomass, biofuel, biogas, landfill gas, municipal wastes		100%	RE projects are carbon neutral
Dedicated T&D from RE sources		100%	T & D is considered part of the RE project
B. Demand Side Energy Efficiency			
Dedicated EE projects (i.e. Guangdong EPP, etc.)		100%	Entire investment is used to improve demand side energy efficiency
Reduction of non-revenue water (NRW)		15%	Baseline is the typical NRW losses of 35% (65% efficiency) with reduced losses of about 25% (75% efficiency) after the project. The factor would be $(75 - 65)/65 = 0.154$ or a rounded number of 15%. Use actual numbers if available
Railways		20%	Percentage represents the average proportion of the present value of energy savings attributable to ADB loans. Road transport is considered the baseline.
Assistance to ESCOs, and manufacturers of energy efficient appliances and industrial equipments		100%	Entire investment is used to make energy efficient equipment available in the market
C. Supply Side Energy Efficiency			
C-1 New Power Plant			
Single Cycle Combustion Turbines	Nat. Gas	35%	See Tables 2 (Power Gen Tech 1 worksheet) for spreadsheet calculations
	Fuel Oil	15%	See Tables 2 (Power Gen Tech 1 worksheet) for spreadsheet calculations
Combined Cycle Combustion Turbines	Nat. Gas	60%	See Tables 2 (Power Gen Tech 1 worksheet) for spreadsheet calculations
	Diesel	45%	See Tables 2 (Power Gen Tech 1 worksheet) for spreadsheet calculations
	Fuel Oil	45%	See Tables 2 (Power Gen Tech 1 worksheet) for spreadsheet calculations
Conventional Steam Turbines	Nat. Gas	40%	See Tables 2 (Power Gen Tech 1 worksheet) for spreadsheet calculations
	Diesel	20%	See Tables 2 (Power Gen Tech 1 worksheet) for spreadsheet calculations
	Fuel Oil	20%	See Tables 2 (Power Gen Tech 1 worksheet) for spreadsheet calculations
	Coal	0%	DEFAULT BASELINE POWER PLANT
Cogeneration	Nat. Gas	75%	See Tables 2 (Power Gen Tech 1 worksheet) for spreadsheet calculations
	Diesel	65%	See Tables 2 (Power Gen Tech 1 worksheet) for spreadsheet calculations
	Fuel Oil	65%	See Tables 2 (Power Gen Tech 1 worksheet) for spreadsheet calculations
	Coal	60%	See Tables 2 (Power Gen Tech 1 worksheet) for spreadsheet calculations
IGCC	Coal	20%	See Tables 2 (Power Gen Tech 1 worksheet) for spreadsheet calculations
Supercritical	Coal	20%	See Tables 2 (Power Gen Tech 1 worksheet) for spreadsheet calculations
C-2 Power Plant Upgrading			
Single Cycle Combustion Turbines		15%	See Tables 3 (Power Plant Upgrades work sheet) for spreadsheet calculations
Combined Cycle Combustion Turbines		10%	See Tables 3 (Power Plant Upgrades work sheet) for spreadsheet calculations
Conventional Steam Turbines		15%	See Tables 3 (Power Plant Upgrades work sheet) for spreadsheet calculations
Cogeneration		6%	See Tables 3 (Power Plant Upgrades work sheet) for spreadsheet calculations
IGCC		10%	See Tables 3 (Power Plant Upgrades work sheet) for spreadsheet calculations
Supercritical		10%	See Tables 3 (Power Plant Upgrades work sheet) for spreadsheet calculations
C-3. Transmission & Distribution (T & D)			
HVDC & Superconductors		6%	Baseline is 750 kv AC transmission system with losses taken at about 8%/1000 km (92% efficient). HVDC losses at about 800 kv is about 2.5%/1000 or about 3% (97% efficient) considering the relatively small voltage difference. The factor would be $(97 - 92)/92 = 0.054$ or 5.4%. Use 6%. Use actual numbers if available.
T & D Retrofits and Upgrades		7%	The factor is based on 5% reduction in losses. (Efficiency improvement = $(E_{after} - E_{before})/E_{before}$). The factor could be higher depending on improvement in efficiency. Assume a typical baseline losses of 25% (baseline efficiency = 75%) and a 20% losses after upgrading (efficiency = 80%). The factor would be $(80 - 75)/75 = 0.0667$ or 6.67%, use 7%. Use actual numbers if available
D. Cleaner Fuel (Natural Gas)			
Dedicated Pipelines and storage facilities for gas-fired plants		30%-75%	Values vary according to the type of power plants (assuming gas is to be used for power generation)
NOTE: For power plants using gas see Section C-1 above			

AC = alternating current, CF = cleaner fuel, EE = energy efficiency, EPP = efficiency power plant, ESCOs = energy service companies, HVDC = high voltage direct current, IGCC = Integrated Gasification Combined Cycle, RE = renewable energy.

Note: These percentages will be used only for clean energy projects in the pipeline with insufficient information. Validation of percentages will be done for each project as soon as relevant information becomes available.

b. Determining the Clean Energy Funds-ADB Clean Energy Investments Leverage Ratio

18. Using same project examples described in para. 15 and para. 17, Table A3.4 presents sample projects receiving clean energy funds' support and the corresponding estimation of their clean energy components that input into the calculation of clean energy funds-ADB leverage

ratio. Given these examples, total ADB loans amounted to \$686.24 million of which \$513 million is the estimated amount of clean energy investment components. Of the total \$513 million, \$458.28 million is the clean energy component attributed to clean energy funds financing.³⁴ The private and non-private sector investments are \$698.8 million and \$533.6 million, respectively.

**Table 4: Translating Clean Energy Allocations into ADB CE Investments
(Inputs to Calculating Clean Energy Funds-ADB Leverage Ratio)**

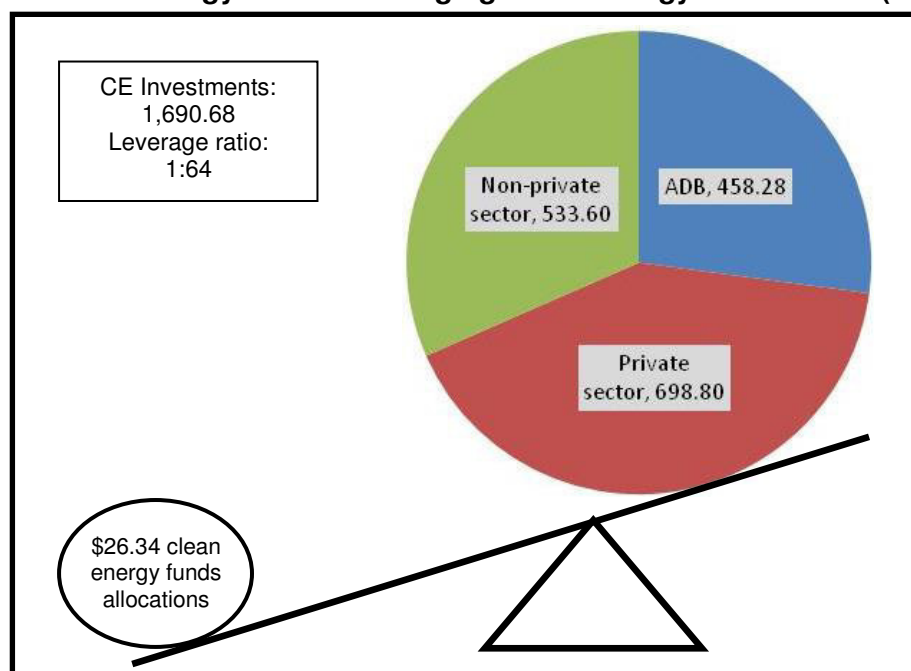
(In \$ millions)										
Project name	Modality	ADB loan/TA amount	CE component of ADB loan / investment	CE component of ADB loan/ investment supported by clean energy funds	CE component of Private sector investment supported by clean energy funds ^a	CE component of Non-private sector investment supported by clean energy funds ^a	Clean energy funds allocation	Determining the CE component loan / investment	Latest approved project document (as of 31 December 2013)	
BHU: Green Power Development Project - Sustainable Solar Technology Application for Rural Electrification	GCI	80.00	80.00	25.28	n/a	n/a	1.00	As described in project document	RRP	
THA: Solar Power Project	GCI	70.00	70.00	70.00	-	-	2.00	100% based on ADB's estimation framework	RRP	
INO: Sarulla Geothermal Power Generation Project	CF	333.00	333.00	333.00	698.80	533.60	20.00	100% based on ADB's estimation framework	RRP	
INO: Institutional Capacity Building of Indonesia Eximbank	TALL	200.00	30.00	30.00	n/a	n/a	1.10	As described in project document	RRP	
PRC: Utilization of Foreign Capital to Promote Energy Conservation and Energy Efficient Power Generation Scheduling	TA	2.00	n/a	n/a	n/a	n/a	1.00	n/a	TA Report	
REG: Promoting Energy Efficiency in the Pacific	TA	1.20	n/a	n/a	n/a	n/a	1.20	n/a	TA Report	
REG: Transport and Climate Change, the missing link: how should transport address its emissions and energy use	DC	0.04	n/a	n/a	n/a	n/a	0.04	n/a	Application paper	
Total		686.24	513.00	458.28	698.80	533.60	26.34			

ADB = Asian Development Bank, BHU = Bhutan, CE = clean energy, CF = concessional financing, DC = direct charge, GCI = grant component of loan, INO = Indonesia, PRC = People's Republic of China, REG = regional, RRP = Report and Recommendation of the President, TA = technical assistance, TALL = technical assistance linked to loan, THA = Thailand.

^a Performance indicator effective in 2014.

19. Clean energy funds leverage ratio is equivalent to the total volume of allocations in proportion to the total volume of clean energy components in financing attributed to clean energy funds. The total volume of allocations considers all concessional financing, GCI, TALL, TA, and Direct Charges (DC) projects. In this sample case, \$26.34 million translates to \$1,690.68 million clean energy investments. Thus, the clean energy funds leverage ratio computed is about 1:64, or \$1 of clean energy funds resources translates to about \$64 of clean energy investments, broken down as \$17 of ADB clean energy investments and \$47 other investments. (Figure A3.3)

³⁴ Specifically, this covers facility's allocations to concessional financing, GCIs, TALLs, including project preparatory technical assistance of loan projects.

Figure A3.3: Clean Energy Funds Leveraging Clean Energy Investments (In \$ millions)

B. Deployment of new technologies with strong demonstration effect facilitated

20. The key word for this output is “facilitated”. Following the same principle of attribution described in paras. 15-16, concessional financing, GCIs and TALLs incorporated in projects that actually deploy technologies, as well as TAs and DCs that intervene to enable the deployment of clean energy technologies are counted.

a. New clean energy/CCS technologies deployed in DMCs

21. Clean Energy Financing Partnership Facility’s and Climate Change Fund’s Implementation Guidelines emphasize the manageability of technology risks taken with usage of funds. Thus, it will not be used to support technologies that are still in the research and development stage. Instead, it will focus on technology deployment, which may include demonstration of new technologies. Toward this end, clean energy funds is guided by the following categories for stages in technology development/adoption:³⁵

- (i) **Research and Development.** Technology needs further research and development to overcome technical barriers.
- (ii) **Demonstration.** Projects establish the technical viability on a commercial-scale, albeit at a higher cost.
- (iii) **Deployment.** Technical operations are successful but the technology has to be used widely; entities must absorb the new technology to lower risk perceptions and identify collateral costs, if any.
- (iv) **Competitive/Commercial.** Based on extensive deployment and economies of scale in manufacturing, technology becomes cost competitive in some or all markets.

³⁵Based on Organisation for Economic Co-Operation and Development (OECD)/International Energy Agency (IEA). 2006. *Energy Technology Perspectives*. Paris.

22. Per the DMF, clean energy funds aim to facilitate the deployment of new clean energy/CCS technologies, targeting:

- (i) *55 new clean energy/CCS technologies deployed in DMCs by 2020.* This indicator measures the number of new clean energy/CCS technologies deployed/demonstrated in DMCs as facilitated by all projects in the portfolio, guided by the information presented in paras. 23 and 24. The clean energy/CCS technology will be counted so long as financing support will contribute to an actual deployment/demonstration or creation/enhancement of the enabling environment through activities such as policy/regulatory dialogues, awareness raising, knowledge product production and dissemination, capacity building, etc.

23. The Clean Energy Working Group agreed that commercially viable projects may vary between countries. For instance, geothermal technologies may be commercially viable in the Philippines, but not in Indonesia. Projects supporting technologies categorized in the competitive stages are carefully considered based on the specific country and the particular technology involved, as well as the added value of the initiative in mainstreaming clean energy technologies in Asia and the Pacific. For example, the compact fluorescent lighting (CFL) is a technology considered to be in the commercial/competitive stage. However, in Sri Lanka, where it is being promoted as part of the Sri Lanka: Demand Side Management for Municipal Street Lighting Project, the use of CFLs is not widespread. The CFLs are being incorporated into a pilot energy efficient street lighting initiative at the municipal-level to be scaled-up nationally. The project Thailand: Mainstreaming Energy Efficiency Measures for Thai Municipalities is another case-in-point. Thailand is the leading country for energy conservation in the region, showcasing particularly Bangkok. However, very little is being done outside the capital. Clean energy funds' financing of municipal-level energy efficiency projects will result in models that can be replicated in other municipalities throughout the region. Box A3.1 further describes clean energy funds' involvement in these projects.

Box A3.1: Examples of Projects Supported by Clean Energy Funds Deploying Clean Energy Technologies

Sri Lanka: Demand Side Management for Municipal Street Lighting

Sri Lanka's generation capacity is severely deficient and projected to continue lagging behind demand requirements over the near and midterm time horizon. CEFPP/CCF-CE's resources are used to set up a system for utility-based energy service company or ESCO units, to manage contracts for the implementation of demand side municipal lighting. This innovative public-private partnership approach will allow energy efficiency savings to be used for future efficiency programs to help capital constrained consumers and municipal governments achieve savings, efficiency, and carbon dioxide reductions. The investment component includes the installation of automatic control panels with metering, time-of-day switches and electronic timers to help manage related costs, and compact fluorescent lamps and sodium lights to replace incandescent and mercury lights.

Thailand: Mainstreaming Energy Efficiency Measures for Thai Municipalities

CEFPP resources are used to fully fund this project designed to improve Thailand's energy security and decrease the rate of greenhouse gas emissions by promoting energy efficiency initiatives in Thai municipalities. The energy service companies in Thailand primarily market their services to private clients in the commercial and industrial sector such that there are few energy efficiency initiatives that promote energy conservation at the municipal level. CEFPP resources will be used to help strengthen the capacity of Thailand's Provincial Electricity Authority and Thai municipalities to identify, design, finance, and implement pilot energy efficiency projects, and to plan for the replication of energy efficiency projects nationwide based on their implementation. The pilot projects include retrofitting old buildings and upgrading municipal street lighting using energy efficiency technologies.

24. Clean energy funds support projects categorized in the competitive/commercial stages because, although commercialization has happened in some parts of the globe, adoption of the particular technology in the specific DMC is weak due to barriers present (for more information on barriers to new technologies, please see next section). In cases involving these competitive/commercial technologies, clean energy funds is actually supporting the demonstration or deployment rather than the widespread commercial application of these technologies in the DMCs where they are being implemented.

25. Table A3.5 identifies sample technologies supported by clean energy funds in the different technology development/adoption stages. These categories will be updated at meaningful, regular intervals to reflect the latest technology developments globally.

Table A3.5: Sample Technologies Supported by Clean Energy Funds in Various Stages of Technology/Adoption

Technology Development/Adoption Stage ^a	Technology
Research and Development	
Demonstration	Carbon capture and storage
Deployment	Biofuel, smart grid, solar photovoltaic, solar thermal, white light emitting diodes, wind power, integrated gasification combined cycle
Competitive/commercial	Biogas, biomass, building retrofits, compact fluorescent lighting, improved cook stoves, light emitting diodes, micro/mini hydropower, natural gas, variable frequency drive, waste-to-energy (e.g. biomethanation)

^a Based on Organisation of Economic Co-operation and Development (OECD)/International Energy Agency (IEA). 2008. Energy Technologies Perspectives. Paris.

b. CCS Demonstration Projects in Identified Priority DMCs Commenced

26. Clean energy funds support the deployment of the CCS technology through the Carbon Capture and Storage Fund (CCSF), a technology-specific fund established under the Clean Energy Financing Partnership Facility (CEFPF). In particular, CCSF envisages helping DMCs in considering CCS for reducing CO₂ emissions, through successful demonstration projects. CCSF supports projects that contribute to acceleration of, or removal of barriers/risks to CCS technology development. CCSF supports grant component of investments (GCI), technical assistance linked to loans (TALL), technical assistance (TA), and direct charges (DC) that engage in capacity development, supporting geological investigations and environmental studies related to potential carbon dioxide storage sites, and undertaking community awareness and support programs.

27. Per the DMF, clean energy funds will support CCS development, targeting:

- (i) *2 CCS demonstration projects in the identified priority countries commenced by 2020.* This indicator accounts the number of demonstration projects on CCS that are commencing in priority countries, as prescribed in the CCSF Implementation Guidelines.³⁶

³⁶The priority DMCs are: People's Republic of China, India, Indonesia, and Viet Nam.

C. New approaches/methodologies to promote clean energy/CCS introduced

28. Clean energy funds serve as mechanisms in exploring and introducing innovative solutions to promote and deploy clean energy/CCS technologies. Clean energy funds support the development of key methodologies/approaches to help with the deployment of and/or the lowering of barriers to clean energy/CCS technologies. For instance, the Sri Lanka: Demand Side Management for Municipal Street Lighting Project (Box A3.1) is setting-up a system for utility-based energy service company (ESCO) units to manage contracts for the implementation of demand side municipal lighting. The project works on an innovative public-private partnership approach that will allow energy efficiency savings to be used for future efficiency program to achieve targeted CO₂ emission reduction.³⁷

29. Per the DMF, clean energy funds is targeting:

- (i) *15 new approaches/methodologies to promote clean energy/CCS introduced in participating DMCs by 2020.* This indicator measures the new approaches/methodologies introduced/developed associated with the deployment/demonstration of and/or lowering of barriers to clean energy/CCS technologies development as facilitated by the projects in the portfolio, following the principle of attribution described in paras. 15-16.

D. Benefits from access to energy delivered

30. Aligned with the 2009 Energy Policy which identifies maximizing access to energy for all as one of its three pillars for ADB's overall support to the energy sector, clean energy funds will contribute to increasing access by the rural and urban poor to modern forms of energy. As defined in the Guidelines for Estimating ADB Investments in Access to Energy Projects, access to energy addresses the energy, environment and poverty nexus by linking households to modern energy sources, technologies and finance. Specifically, it involves any or a combination of the following:

- (i) Provision of electricity and motive power³⁸ to households,
- (ii) Improvement in the supply and delivery of energy services to households,
- (iii) Provision of modern fuels and/or efficient devices for cooking and/or heating to households, and
- (iv) Provision of finance to households to access energy

31. ADB projects are categorized based on the Guidelines for Gender Mainstreaming Categories of ADB projects.³⁹ Clean energy funds will capture all efforts to address gender benefits, covering gender categories: (a) Gender Equity (GEN), (b) Effective Gender Mainstreaming (EGM), and (c) some gender elements (SGE), in projects which at the minimum, provide some gender elements. Per the gender mainstreaming guidelines, each gender category is defined as follow: a project is assigned "some gender elements" if it meets either the following:

³⁷ The project allocation received authorization from CCSC in 2008. Reference is being made to serve as example. As a new indicator added in the updated clean energy funds DMF, new approaches/methodologies are accounted from projects receiving CCSC-authorization beginning January 2011 onwards.

³⁸ Motive power is defined here as "the effective outcome transforming different forms of energy sources (e.g. wind, hydro, fossil fuels, etc.) to kinetic energy (to cause motion).

³⁹ For more details, please visit: <http://www.adb.org/themes/gender/gender-mainstreaming-categories> .

- (i) Gender Equity (GEN). Gender equity theme covers projects that directly address gender equality and/or women's empowerment by narrowing gender disparities through access to social services, and/or economic and financial resources and opportunities, and/or basic rural and urban infrastructure; and/or enhancing voices and rights. And, the outcome statement of the project's DMF explicitly mentions gender equality and women's empowerment and/or, the outcome performance indicators include gender indicators
- (ii) Effective Gender Mainstreaming (EGM). Effective gender mainstreaming covers projects with outputs designed to directly improve women's access to social services, and/or economic and financial resources and opportunities, and/or basic rural and urban infrastructure, and/or enhancing voices and rights, which contribute to gender equality and women's empowerment
- (iii) Some Gender Elements (SGE). A project is assigned "some gender elements" if it meets either of the following:
 - By its nature it is likely to directly improve women's access to social services; and/or economic and financial resources and opportunities, and/or basic rural and urban infrastructure, and/or enhance their voices and rights (for example education, health, rural development, microfinance, water supply and sanitation, food security, and emergency food and rehabilitation assistance), but that included little, if any gender analysis and few or no specific design features; and did not meet the EGM criteria
 - It is unlikely to directly improve women's access to social, economic or financial resources or opportunities, but significant efforts were made during project preparation to identify potential positive and negative impacts on women. Some gender features are included to enhance benefits to women (for example targets for employment of women in project construction work, provision of equal pay for equal work, information campaigns on HIV/AIDS risk, gender training of executing/implementing agencies, and adherence to core labor standards, especially child labor); and where resettlement is involved includes attention to women in the mitigation/resettlement plans (such as compensation payments to both men and women, joint-ownership of replacement land/housing, restoration of livelihood initiatives for women, and so forth).

32. Projects with defined energy access components receiving support from clean energy funds are accounted. Per the DMF, clean energy funds is targeting:

- (i) *Cumulative total of 700,000 households provided with access to energy in participating DMCs by 2020 (contributing to the ADB-led Energy for All Partnership target of 100 million people by 2015).* This indicator measures the number of households provided with access to modern energy sources, technologies and finance, including any or combination of (i) to (iv) in para. 30, accounted from all projects in the portfolio. This target is further broken down as follow:
 - 350,000 households with electricity connection,
 - 175,000 households with modern fuels and/or efficient devices for cooking, and
 - 175,000 households with modern fuels and/or efficient devices for heating.
- (ii) *30% of access to energy projects with gender mainstreaming by 2020.* This indicator measures the ratio of projects with gender equity theme and effective gender mainstreaming, to total number of projects with access to energy component, expressed as a percentage and accounted for all access to energy projects in the portfolio.

- (iii) *80% of access to energy projects with gender concerns by 2020.* This indicator measures the ratio of projects with gender benefits (i.e. covering gender categories: (i) gender equity theme, (ii) effective gender mainstreaming, and (iii) some gender elements, at the minimum) to total number of projects with access to energy components, expressed as a percentage and accounted for all access to energy projects in the portfolio.⁴⁰

E. Health and productivity benefits provided

33. Aligning with one of the critical strategic agenda identified in Strategy 2020 which is inclusive economic growth, clean energy funds support projects which will provide co-benefits to reduced CO₂ emissions. Per the DMF, clean energy funds will aim at:

- (i) *40% of projects supported highlights co-benefits on health and/or productivity by 2020.* This indicator measures the ratio of projects providing health and/or productivity benefits derived from clean energy interventions, to the total number of projects, expressed as a percentage and accounted for all projects in the portfolio.⁴¹ These benefits may not be easily identified in all supported projects, but where they can be, they will be highlighted. For instance, access to energy projects and renewable energy projects which offer increased local control of energy production to stabilize prices, help improve local air quality and boost local economies.

34. Clean energy funds will seek to support projects that boost local economies through livelihood development or job creation. In this regard, the number of individuals employed during construction and/or operation as well as the average ratio of women to total employees, expressed as a percentage, will be accounted for all projects in the portfolio.

F. Barriers to clean energy/CCS investments lowered

35. Barriers to new clean energy technologies are policy, capacity, institutional, financial, economic, and even sociopolitical obstacles that place clean energy technologies at a disadvantage against conventional energy technologies, inhibiting adoption and widespread use. Besides the higher capital cost of clean energy technologies commonly acknowledged, some of the key barriers include:

- (i) Lack of enabling policies and regulations;
- (ii) Inadequate skills and training to manufacture, install, maintain, and/or service new clean energy technologies;
- (iii) Lack of public awareness and information dissemination on clean energy options and benefits;
- (iv) Disposition to established energy systems (e.g., technological lock-in; centralized power plant operation);
- (v) Inadequate financing options (e.g., limited access to affordable financing); and
- (vi) Failure to internalize externalities (e.g., pollution cost of conventional energy; energy security benefits of clean energy).

⁴⁰ For projects not categorized, gender concerns/benefits addressed will be determined, as mentioned, in project documents,

⁴¹ All ADB projects are expected to contribute to economic growth of DMCs. The output and indicator were modified to clarify the target of increasing productivity in terms of improved education, income, livelihood and social services.

36. Clean energy funds particularly consider (i) to (v) of para. 35 in the projects they support and summarize these in the DMF, targeting:

- (i) *20 national/local policies enabling clean energy/CCS development in participating DMCs developed by 2020.* This indicator which in some cases may consider the internalization of externalities, measures the number of national or local policies developed supporting the enhancement of enabling environment for clean energy/CCS promotion, accounted for all projects in the portfolio.
- (ii) *25 financing models suitable for bundling small clean energy/CCS investments applied in participating DMCs by 2020.* This indicator measures the number of financing models applied suitable for bundling small clean energy/CCS investments, accounted for all projects in the portfolio.
- (iii) *100% of projects supported produce and/or disseminate knowledge products or contribute in building capacity to promote clean energy/CCS development in participating DMCs by 2020.* This indicator measures the number of projects producing and disseminating knowledge products such as feasibility study reports, training manuals, etc., and providing activities that help in building the capacity of relevant institutions, effectively targeting policy and decision makers, such as trainings, workshops, discussions.

37. Following the principle of attribution in paras. 15-16, projects that intervene to break down the barriers identified here and enable the deployment of clean energy technologies will be accounted. Clean energy funds management realizes getting everything into legislation may be difficult and many things have to be done before a formal policy is arrived at. Any of the forms of policies, be it formal (e.g. acts such as Energy Efficiency Act or Renewable Energy Act and implementing regulations) or policies that are not necessarily enshrined in a formal legislation, will be accounted. ADB will ensure not to count business as usual but will be flexible and claim benefits of projects that had broken the barriers and resulted to specific changes through establishment of a new model, creation of a new process, etc.

38. An example of a financing model accounted is under the Thailand: Solar Power Project where clean energy funds were used for contingency financing to contribute in demonstrating the capacity of large-scale solar projects. Contingency funds were used to cover risks that are directly related to total project capital expenditure (high for solar projects) and entail very high costs resulting in incremental risks and constitute a barrier to project financing and implementation.

39. Clean energy funds seeks to support the enhancement of knowledge and capacity of DMCs for clean energy development and will also monitor and account from all projects in the portfolio the following: (a) number of projects that disseminate knowledge products, practices and information in a gender sensitive manner (i.e. participation of women), (b) number of knowledge products produced and/or disseminated, (c) number of individuals trained, including the ratio of women, expressed as a percentage, and (d) number of trainings/conferences/workshops held.

V. ACTIVITIES

40. Activities are the group of tasks carried out using project inputs to produce the desired outputs. The clean energy funds are operationally guided by the activity inputs identified in the

DMF. Per the DMF, clean energy funds will carry out the following activities and milestones from 2008-2020, towards achieving its established impacts, outcomes and outputs:

- (i) Pool grants from multilateral and bilateral sources;
- (ii) Explore and develop innovative investment programs and financing mechanisms;
- (iii) Finance proven investments in smaller clean energy projects;
- (iv) Finance investments that increase the percentage of people with access to CE in rural and urban areas;
- (v) Finance technology transfer costs of pre-commercial (i.e. proven and ready for deployment) CE technology catalyzing mainstream adoption;
- (vi) Finance technical and capacity building programs for CE in DMCs; and
- (vii) Coordinate CE/CCS knowledge provision and exchange.

41. Within these DMF-prescribed activities, clean energy funds set yearly targets captured in the Annual Work Program (AWP). Based on the latest status of its portfolio, clean energy funds also set annual selection and prioritization criteria for allocations to supplement its Implementations Guidelines with the aim of maintaining a balanced portfolio during the year, and achieving its overall Investment:TA ratio of 70:30.⁴²

42. All of these activities described in clean energy funds' DMF and AWP comprise the clean energy funds' activity inputs to produce the facility's desired outputs. Annually, separate reports are prepared on the operational activities of CEFPP and CCF-CE, measured against the activity targets set in its DMF and current AWP.

VI. INFORMATION SOURCES FOR MONITORING

A. Sources for Impacts

43. Presently refers to the following data sources in monitoring the clean energy funds' impact indicators:

- (i) Energy Statistics in Asia and the Pacific (1990 – 2009)⁴³
- (ii) Urban Remote Sensing: Monitoring, Synthesis and Modeling in the Urban Environment.⁴⁴

44. As illustrated in Tables A3.1 and A3.2, smaller countries often do not have similar, standardized data readily available. In this regard, the necessary information will be derived at through other data sources, including:

- (i) Ministry of Energy and Power (or equivalent) in DMCs
- (ii) Other data sources still to be explored

B. Sources for Monitoring Outcome and Outputs

⁴² In computing CEFPP/CCF-CE's Investment:TA ratio, "Investment" comprises concessional financing, GCIs and TALLs taken together, while "TA" comprises TAs and DCs taken together.

⁴³ Asia-Pacific Economic Cooperation and the Asian Development Bank. Mandaluyong, Philippines.

⁴⁴ C. Elvidge, et.al. 2011. Who's in the Dark: Satellite Based Estimates of Electrification Rates. In X. Yang, ed. *Urban Remote Sensing: Monitoring, Synthesis and Modeling in the Urban Environment*. West Sussex, UK: John Wiley & Sons, Ltd.

45. Table A3.4 identifies the latest project document available for the sample projects. The clean energy funds secretariat monitors the performance indicators for the outcome and outputs by tracking the documentation of projects receiving clean energy funds allocation as it progresses through ADB's project processing and implementation cycle. Specifically, the clean energy funds secretariat reviews the following:

- (i) Approved concept clearance paper, for investment and TA allocations authorized by the Climate Change Steering Committee;
- (ii) Applications/proposal paper for DC allocations approved by the Facility Manager;
- (iii) Report and recommendation of the President or TA report, for projects receiving clean energy funds allocations, approved by ADB (i.e., Board or President) for implementation;
- (iv) Project performance report or TA performance report for ADB-approved projects receiving clean energy funds allocations, in advance stages of implementation;
- (v) Project/TA/DC completion report; and
- (vi) Progress updates as provided by implementing project teams

C. Sources for Monitoring Activities (Inputs)

46. Clean energy funds recount its accomplishments during its yearly operations against the DMF and AWP, as applicable. It examines its annual portfolio profile described in terms of contributions toward the facility's overall targeted results, volume and distribution of allocations, and Investment:TA ratio. Table A3.6 presents the detailed annual schedule for the clean energy funds.

Table A3.6: Clean Energy Funds Annual Schedule

Activity	Jan				Feb				Mar				Apr				May				Jun															
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4												
Application Process		CEWG Review	Revise & Endorse	Batch Jan 31 CCSC Circulation GOJ Submission	Secretariat Review				CEWG Review	Revise & Endorse			CCSC Circulation	GOJ Submission		Batch Mar 31	Secretariat Review				CEWG Review	Revise & Endorse			CCSC Circulation	GOJ Submission		Batch May 31	Secretariat Review				CEWG Review	Revise & Endorse		
Financial Monitoring	Logbook update	Portfolio update		Fund status	Logbook update	Portfolio update										Fund status	Logbook update	Portfolio update	Disbursement Data Gathering	Coordination with project teams (disbursement)				Disbursement Analysis	Fund status	Logbook update	Portfolio update			Fund status	Logbook update	Portfolio update				
Results Monitoring	Results update		Project monitoring and document review		Results update			Blurb devt					Coordination with ODs (closing DC)		Project monitoring and document review		Results update		Blurb devt			Coordination with ODs (closing DC)		Project monitoring and document review		Results update										
Reporting	At-a-Glance		PROMODA		At-a-Glance		Unaudited Financials	PROMODA									At-a-Glance		PROMODA										At-a-Glance		PROMODA					
	CEFPF/CCF Report Writing		Circulation, Revisions, Approvals		CEFPF AR																							CEFPF Report Writing (SPR)								
Knowledge Management and Planning		Spring cleaning							KM										KM											KM						
	Annual Programming/Prioritization						Spring cleaning				Annual Consultation Meeting						Spring cleaning									Pipeline Update		Spring cleaning								
Activity	Jul				Aug				Sep				Oct				Nov				Dec															
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4								
Application Process	CCSC Circulation	GOJ Submission		Batch Jul 31	Secretariat Review				CEWG Review	Revise & Endorse			CCSC Circulation	GOJ Submission		Batch Sep 30	Secretariat Review				CEWG Review	Revise & Endorse			CCSC Circulation	GOJ Submission		Batch Nov 30	Secretariat Review							
Financial Monitoring	Logbook update	Portfolio update	Disbursement Data Gathering (ALL)	Fund status	Logbook update	Portfolio update										Fund status	Logbook update	Portfolio update	Disbursement Data Gathering	Coordination with project teams (disbursement)				Disbursement Analysis	Fund status	Logbook update	Portfolio update			Fund status	Logbook update	Portfolio update				
Results Monitoring	Coordination with ODs (closing DC)		Project monitoring and document review		Results update			Blurb devt					Coordination with ODs (closing DC)		Project monitoring and document review		Results update		Blurb devt				Project monitoring and document review		Results update		Project monitoring and document review									
Reporting	At-a-Glance		PROMODA		At-a-Glance		Unaudited Financials	PROMODA									At-a-Glance		PROMODA										At-a-Glance		PROMODA					
	CEFPF Report Writing (SPR)		Circulation, Revisions, Approvals		CEFPF SPR																							CEFPF/CCF Report Writing								
Knowledge Management and Planning		Spring cleaning							KM										KM									Pipeline Request		Spring cleaning						

AR = annual report, CCF = Climate Change Fund, CEFPF = Clean Energy Financing Partnership Facility, CEWG = Clean Energy Working Group, CCSC = Climate Change Steering Committee, DC = direct charge, GOJ = Government of Japan, KM = knowledge management, OD = operations department, PROMODA = project monitoring database, SPR = semiannual progress report.

Table A4.1: Expected Emission Reductions, Energy Savings and Installed Renewable Energy Capacity from Contributing CEFPP-Supported Projects, as of 31 December 2016

Project	Modality	Allocation (In \$ '000)	Sector	Demand reduction (MW)	CO ₂ emission reduction (tCO ₂ /yr)	Energy savings (MWh-equivalent)	Installed capacity using RE (MW)	RE power generation (MWh)	<Optional> Other emissions avoided (tons/yr)
CLEAN ENERGY FINANCING PARTNERSHIP FACILITY									
2008									
Projects approved by ADB for implementation									
BAN: Capacity Development for Infrastructure Development Co. Ltd. (TA component of loan, BAN: Public-Private Infrastructure Development Facility (PPIDF))	GCI	2,000	Energy	-	27,600.00	-			
BHU: Bhutan Green Power Development Project - Sustainable Solar Technology Application for Rural Electrification	GCI	1,000	Energy	-	190,000.00	-			
PRC: Capacity Building for Implementation of Efficiency Power Plant (formerly Guangdong Energy Efficiency Improvement Investment Program, for \$100 million)	TALL	800	Energy	107.00	415,560.00	532,767.00			TSP: 1,785, SO ₂ : 4,795, NO _x : 1,066
PHI: Energy Efficiency Project (Grant Component of Loan with same project name)	GCI	1,500	Energy	300.00	300,000.00	534,000.00			-
SRI: Clean Energy and Access Improvement (TA Grant component: Demand Side Management (DSM) for Municipal Street Lighting)	TALL	800	Energy	2.20	66,000.00	10,200.00			-
	GCI (2008)	4,500		300.00	517,600.00	534,000.00			
	TALL (2008)	1,600		109.20	481,560.00	542,967.00			
	Subtotal	6,100		409.20	999,160.00	1,076,967.00			
2009									
Projects approved by ADB for implementation									
PRC: Integrated Renewable Biomass Energy Development Sector Project	GCI	3,000	Energy	-	770,000.00	-			-
PRC: Municipal Waste to Energy Project	TALL	653	Energy	-	350,000.00	-			-
INO: Pilot Project for Efficient Lighting (Loan project - INO: Java-Bali Electricity Distribution Performance Improvement Project)	GCI	1,000	Energy	0.30	20,000.00	24,336.82			-
NEP: Compact Fluorescent Lighting and Solar-Powered Street Lighting (Loan project -NEP: Energy Access and Efficiency Improvement)	GCI	4,200	Energy	10.20	15,000.00	23,750.00			-
	GCI (2009)	8,200		10.50	805,000.00	48,086.82			
	TALL (2009)	653		-	350,000.00	-			
	Subtotal	8,853		10.50	1,155,000.00	48,086.82			

ADB = Asian Development Bank, BAN = Bangladesh, BHU = Bhutan, PRC = China, People's Republic of, CEFPP = Clean Energy Financing Partnership Facility, CO₂ = carbon dioxide, GCI = grant component of investments, INO = Indonesia, MW = megawatt, MWh = megawatt-hour, NEP = Nepal, NO_x = nitrogen dioxide, PHI = Philippines, RE = renewable energy, SO₂ = sulphur dioxide, SRI = Sri Lanka, TA = technical assistance, TALL = technical assistance linked to loan, TSP = total suspended particulate.

Note: Estimates include adjustments on projects following project realignments/withdrawal, new information received, and approval by ADB.

Yellow highlights indicate cofinancing.

Source: ADB Estimates

Table A4.1 continued

Project	Modality	Allocation (In \$ '000)	Sector	Demand reduction (MW)	CO ₂ emission reduction (tCO ₂ /yr)	Energy savings (MWh-equivalent)	Installed capacity using RE (MW)	RE power generation (MWh)	<Optional> Other emissions avoided (tons/yr)
2010									
Projects approved by ADB for implementation									
BAN: Energy Efficiency Improvement (Original application title: Solar Powered Street Lights and Energy Efficient Water) (Project: BAN: City Region Development Project)	TALL	1,500	Multisector	-	141,240.00	213,000.00			-
PRC: Development of Energy Manager Program for Energy Conservation in Shandong (Original title - PRC: Capacity Building Technical Assistance for PRC Energy Efficiency and Emissions Reduction in Shandong Province; Retitled - PRC: Shandong Energy Manager System) (Linked to Project - PRC: Shandong Energy Efficiency and Emission Reduction Project)	TALL	1,000	Energy	-	822,297.00	1,285,000.00			SO ₂ : 986
PRC: Municipal Natural Gas Infrastructure Development Project (Phase 2)	TALL	592	Energy	-	300,000.00	-			SO ₂ : 4,000
IND: Capacity Building for Commercial Bank Lending for Solar Energy	TALL	750	Energy	-	-	-			-
INO: Institutional Capacity Building of Indonesia Eximbank (Original title: Indonesia Eximbank Capacity Building)	TALL	1,100	Multisector	-	57,447.00	112,743.00			-
SRI: Implementation of Energy Efficiency Policy Initiatives (TA component of Loan, SRI: Sustainable Power Sector Support Project)	TALL	1,850	Energy	-	353,787.00	480,000.00			-
THA: Solar Power Project	GCI	2,000	Energy	-	50,000.00	-			-
	GCI (2010)	2,000		-	50,000.00	-			
	TALL (2010)	6,792		-	1,674,771.00	2,090,743.00			
	Subtotal	8,792		-	1,724,771.00	2,090,743.00			
2011									
Projects approved by ADB for implementation									
INO: West Kalimantan Power Grid Strengthening Project	GCI	2,000	Energy	-	1,400.00	-	-		-
VIE: Energy Efficiency for Ho Chi Minh City Water Supply Project (Original application title: VIE: Ho Chi Minh City Water Supply PFR 1 MFF Viet Nam Water Sector Investment Program) (Loan Project: VIE: Water Sector Investment Program - Tranche 1)	GCI	2,000	Water	-	7,500.00	10,000.00	-		-
	GCI (2011)	4,000		-	8,900.00	10,000.00	-		
	TALL (2011)	-		-	-	-	-		
	TA (2011)	-		-	-	-	-		
	Subtotal	4,000		-	8,900.00	10,000.00	-		

ADB = Asian Development Bank, BAN = Bangladesh, PRC = China, People's Republic of, CO₂ = carbon dioxide, GCI = grant component of investments, IND = India, INO = Indonesia, MFF = multitrache financing facility, MW = megawatt, MWh = megawatt-hour, PFR = periodic financing request, RE = renewable energy, SO₂ = sulphur dioxide, SRI = Sri Lanka, TA = technical assistance, TALL = technical assistance linked to loan, tCO₂ = ton of carbon dioxide, THA = Thailand, VIE = Viet Nam.

Note: Estimates include adjustments on projects following project realignments/withdrawal, new information received, and approval by ADB.

Yellow highlights indicate cofinancing.

Source: ADB Estimates

Table A4.1 continued

Project	Modality	Allocation (In \$ '000)	Sector	Demand reduction (MW)	CO ₂ emission reduction (tCO ₂ /yr)	Energy savings (MWh-equivalent)	Installed capacity using RE (MW)	RE power generation (MWh)	<Optional> Other emissions avoided (tons/yr)
2012									
Projects approved by ADB for implementation									
BAN: Supporting Brick Sector Development Program	TALL	750	Multisector	-	980,000.00	2,833,149.78	-	-	-
SRI: Solar Rooftop Pilot under SRI: Clean Energy and Network Efficiency Improvement Project	GCI	1,500	Energy	-	1,286.00	-	1.00	-	-
TON: Outer Island Energy Efficiency Project	TA	400	Energy	-	2,025.00	2,575.20	0.03	-	-
TON: Outer Island Renewable Energy Development Project	TA	225	Energy	-	1,700.00	-	1.25	-	-
	GCI (2012)	1,500		-	1,286.00	-	1.00		
	TALL (2012)	750		-	980,000.00	2,833,149.78	-		
	TA (2012)	625		-	3,725.00	2,575.20	1.28		
	Subtotal	2,875		-	985,011.00	2,835,724.98	2.28		
2013									
Projects approved by ADB for implementation									
AZE: Renewable Energy Development (Biomass Cogeneration) Project	TA	1,000	Energy	-	24,000.00	-	16.00	-	-
PRC: Energy Efficiency Multi-Project Financing Program	TALL	500	Energy	-	225,000.00	245,000.00	-	-	-
IND: Concentrated Solar Power Project	TA	1,000	Energy	-	366,420.00	-	100.00	-	-
INO: Sarulla Geothermal Power Generation Project	CF	20,000	Energy	-	1,300,000.00	-	320.00	2,529,000.00	-
NEP: South Asia Tourism Infrastructure Development Project - Additional financing (Original title: NEP: Lumbini Clean Public Transport Project (under the South Asia Tourism Infrastructure Development Project))	GCI	3,000	Multisector	-	156.00	840.00	0.35	-	-
SAM: Renewable Energy Development and Power Sector Rehabilitation Project	TALL	1,000	Energy	-	8,904.00	-	0.81	3,790.00	-
UZB: Samarkand Solar Power Project	TA	750	Energy	-	88,000.00	-	100.00	159,000.00	-
VIE: Renewable Energy Development and Network Expansion and Rehabilitation for Remote Communes Sector Project - Additional Cofinancing (Original title: VIE: Supplementary Financing for Output Based Aid for Rural Electrification under the ongoing project "Loan 2517: VIE: Renewable Energy Development and Network Expansion and Rehabilitation for Remote Communes Sector")	GCI	3,000	Energy	-	60,000.00	-	-	-	-
	CF (2013)	20,000		-	1,300,000.00	-	320.00	2,529,000.00	-
	GCI (2013)	6,000		-	60,156.00	840.00	0.35	-	-
	TALL (2013)	1,500		-	233,904.00	245,000.00	0.81	3,790.00	-
	TA (2013)	2,750		-	478,420.00	-	216.00	159,000.00	-
	Subtotal	30,250		-	2,072,480.00	245,840.00	537.16	2,691,790.00	-

ADB = Asian Development Bank, AZE = Azerbaijan, BAN = Bangladesh, CF = concessional financing, PRC = China, People's Republic of, CO₂ = carbon dioxide, GCI = grant component of investments, IND = India, INO = Indonesia, MW = megawatt, MWh = megawatt-hour, NEP = Nepal, RE = renewable energy, SAM = Samoa, SRI = Sri Lanka, TA = technical assistance, TALL = technical assistance linked to loan, tCO₂ = ton of carbon dioxide, TON = Tonga, UZB = Uzbekistan, VIE = Viet Nam.

Note: Estimates include adjustments on projects following project realignments/withdrawal, new information received, and approval by ADB.

Yellow highlights indicate cofinancing.

Source: ADB Estimates

Table A4.1 continued

Project	Modality	Allocation (In \$ '000)	Sector	Demand reduction (MW)	CO ₂ emission reduction (tCO ₂ /yr)	Energy savings (MWh-equivalent)	Installed capacity using RE (MW)	RE power generation (MWh)	<Optional> Other emissions avoided (tons/yr)
2014									
Projects approved by ADB for implementation									
GEO: Adjaristsqali Hydropower Project	CF	15,000	Energy	-	200,000.00	-	185.00	450,000.00	-
INO: Institutional Capacity Building of Indonesia Eximbank - Additional Financing	TALL	225	Multisector	-	<57,447>	<112,743>	-	-	-
MYA: Renewable Energy for Nationwide Telecommunications Project	TALL	1,000	Multisector	-	10,000.00	-	4.50	5,400.00	-
CF (2014)		15,000		-	200,000.00	-	185.00	450,000.00	-
GCI (2014)									
TALL (2014)		1,225		-	10,000.00	-	4.50	5,400.00	-
TA (2014)									
Subtotal		16,225		-	210,000.00	-	189.50	455,400.00	-
2015									
Projects approved by ADB for implementation									
CAM: Supplementary Financing for Electricity Access to Low Income Households (under Loan CAM: Medium Voltage Sub-Transmission Expansion Sector Project)	GCI	1,000	Energy	-	25,600	-	-	-	-
IND: Demand -Side Energy Efficiency Invest Project	TALL	1,000	Energy	-	371,000	382,474	-	-	-
TAJ: Strengthening Private Sector Participation in Technical and Vocational Education Training(TVET)	GCI	2,000	Multisector	-	1,050	-	0.26	1,737	-
SAM: Solar Power IPP	TALL	225	Energy	-	-	-	-	-	-
Projects awaiting ADB Board approval									
SAM: Solar Power IPP	CF	1,000	Energy	-	4,500	-	4.40	5,700	-
CF (2015)		1,000		-	4,500	-	4	5,700	-
GCI (2015)		3,000		-	26,650	-	0	1,737	-
TALL (2015)		1,225		-	371,000	382,474	-	-	-
TA (2015)									
Subtotal		5,225		-	402,150	382,474	4.66	7,437	-
2016									
Projects approved by ADB for implementation									
SRI: Wind Power Generation Project	TA	2,000	Energy	-	748,862	-	375.00	1,084,050	-
REG: Access to Electricity with New Off-Grid Solar Technology in Central Asia (Original application title: REG: Increase Electricity Access Using Off-Grid Solar Power and New Technology)	TA	2,000	Energy	-	200	749	-	-	-
SRI: Supporting Electricity Supply Reliability Improvement Project-Renewable Energy Micro-grid	GCI	1,800	Energy	-	327	-	0.30	408	-

ADB = Asian Development Bank, CAM = Cambodia, CF = concessional financing, CO₂ = carbon dioxide, GCI = grant component of investments, GEO = Georgia, IND = India, INO = Indonesia, MW = megawatt, MWh = megawatt-hour, MYA = Myanmar, RE = renewable energy, SAM = Samoa, SRI = Sri Lanka, TA = technical assistance, TAJ = Tajikistan, TALL = technical assistance linked to loan, tCO₂ = ton of carbon dioxide.

Note: Estimates include adjustments on projects following project realignments/withdrawal, new information received, and approval by ADB.

Yellow highlights indicate cofinancing.

Source: ADB Estimates

Table A4.1 continued

Project	Modality	Allocation (In \$ '000)	Sector	Demand reduction (MW)	CO ₂ emission reduction (tCO ₂ /yr)	Energy savings (MWh-equivalent)	Installed capacity using RE (MW)	RE power generation (MWh)	<Optional> Other emissions avoided (tons/yr)
CLEAN ENERGY FINANCING PARTNERSHIP FACILITY									
2016									
Projects approved by ADB for implementation									
NEP: Power Transmission and Distribution Efficiency Enhancement Project (Original application title: NEP: Electricity Distribution Efficiency Improvement Project)	TA	1,500	Energy	-	50,000	-	-	-	-
INO: Banten and West Nusa Tenggara Wind Power Development	TA	500	Energy	-	230,000	-	150.00	300,000	-
Sol: Higher Education in the Pacific Investment program - Tranche 2	GCI	1,500	Education	-	600	-	0.65	-	-
TAJ: CAREC Corridor 2, 5 and 6 (Dushanbe-Kurgonteppa) Road Project	GCI	2,000	Transport	-	-	78	-	38	-
UZB: Sustainable Hydropower Project	TALL	2,000	Energy	-	121,000	205,000	84.00	534,000	-
UZB: Second Solar Power Project	TALL	1,000	Energy	-	105,000	-	100.00	177,000	-
Pacific Renewable Energy Investment Facility (original application title REG: Pacific Renewable Energy and Energy Efficiency Investment Facility Pacific Region)	TALL	3,000	Energy	-	37,000	-	-	-	-
Projects awaiting ADB Board approval									
BAN: Rural Hybrid Power Project	TA	1,500	Energy	-	67,355	267,621	70.00	96,360	-
REG: Leapfrogging of Clean Technology in CAREC Countries through Market Transformation (Original application title: REG: Enabling CAREC Countries for Technology Leapfrogging)	TA	2,000	Energy	-	-	-	-	-	-
IND: Railway Energy Efficiency Project	TALL	1,000	Transport	-	71,000	274,542	-	-	-
INO: Pilot Carbon Capture and Storage Activity in Natural Gas Processing Sector	GCI	16,000	Energy	-	20,000	-	-	-	-
UZB: Second Solar Power Project	GCI	2,000	Energy	-	-	-	0.10	-	-
CAM: Solar Power Project	CF	3,250	Energy	-	6,000	-	10.00	9,000	-
CF (2016)		3,250		-	6,000	-	10.00	9,000	-
GCI (2016)		23,300		-	20,927	78	1.05	446	-
TALL (2016)		7,000		-	334,000	479,542	184	711,000	-
TA (2016)		9,500		-	1,096,417	268,370	595.00	1,480,410	-
Subtotal		43,050		-	1,457,344	747,990	790.05	2,200,856	-
Cumulative Total									
CF		39,250		-	1,510,500.00	-	519.40	2,993,700.00	-
GCI		52,500	-	310.50	1,490,518.78	593,004.82	2.66	2,183.48	-
TALL		20,745	-	109.20	4,435,235.00	6,573,875.45	189.31	720,190.00	-
TA		12,875	-	-	1,578,562.28	270,945.28	812.28	1,639,410.00	-
GRAND TOTAL		125,370		419.70	9,014,816.06	7,437,825.55	1,523.65	5,355,483.48	-

ADB = Asian Development Bank, BAN = Bangladesh, CAM = Cambodia, CF = concessional financing, CO₂ = carbon dioxide, GCI = grant component of investments, IND = India, INO = Indonesia, MW = megawatt, MWh = megawatt-hour, NEP = Nepal, RE = renewable energy, REG = Regional, SOL = Solomon Islands, TA = technical assistance, TAJ = Tajikistan, TALL = technical assistance linked to loan, tCO₂ = ton of carbon dioxide, UZB = Uzbekistan

Notes: Estimates include adjustments on projects following project realignments/withdrawal, new information received, and approval by ADB.

Yellow highlights indicate cofinancing.

Source: ADB Estimates

Table A5.1: Technology Deployment/Adoption Stage of CEFPE-Supported Projects, As of 31 December 2016

No.	Project Name	Predominant Technology	Technology Development/Adoption Stage ^a		Barriers Lowered
			2008		
1	BAN: Capacity Development for Infrastructure Development Co. Ltd. (TA component of loan, BAN: Public-Private Infrastructure Development Facility (PPIDF))	Solar photovoltaic (PV) home systems (CCF: biomass, biogas and wind energy)	Deployment		-
2	BHU: Bhutan Green Power Development Project - Sustainable Solar Technology Application for Rural Electrification	Solar photovoltaic systems (White light emitting diodes(WLED), capacitors as energy storage)	Deployment		-
3	PRC: Carbon Dioxide Capture and Storage (CCS) Demonstration - Strategic Analysis and Capacity Strengthening	Carbon Capture and Storage	Demonstration		-
4	PRC: Capacity Building for Implementation of Efficiency Power Plant (formerly Guangdong Energy Efficiency Improvement Investment Program, for \$100 million)	Various energy-efficient technologies applicable to the industrial and commercial sectors (motor and motor-drive systems, transformers and reactive power compensators, lighting, heating, ventilation, and air conditioning, air compressors and pumping systems, recovery of waste energy from industry, industrial boilers and industrial cogeneration, others)	Competitive/commercial	Need to develop efficiency power plant (EPP) model with energy service company (ESCO) financing component; Inadequate EE awareness and lack of capacity for project development, monitoring and evaluation	
5	PRC: Zhangbei Wind Power Project	Wind Power Generation Technology	Deployment		-
6	IND: Initial ADB Loan Due Diligence Preparatory Work for Solar Thermal Power Plant Projection in Rajasthan	Solar thermal power system	Deployment		-
7	PHI: Energy Efficiency Project (Grant Component of Loan with same project name)	Energy-efficient lighting: (CFL)	Competitive/Commercial	Lack of capacity/awareness on energy efficiency ideas and concepts	
8	PHI: Pasuquin East Wind Farm Development (Energy Logics Philippines Inc.-Wind Farm Development)	wind power	Deployment		-
9	REG: Asia Clean Energy Forum 2008	None	n/a		-
10	REG: Promoting Access to Renewable Energy in the Pacific	mini-hydropower, alternative fuels, solar power	Commercial (mini hydropower), Deployment (solar, alternative fuels)	Inadequate availability of innovative financial arrangements for renewable energy projects; general lack of capacity and awareness about renewable energy (RE) concepts and their applications among households, government and private sector	

BAN = Bangladesh, BHU = Bhutan, CFL = compact fluorescent lighting, PRC = China, People's Republic of, IND = India, PHI = Philippines, REG = regional, TA = technical assistance.

^a Based on Organisation of Economic Co-operation and Development (OECD)/International Energy Agency (IEA). 2006. Energy Technology Perspectives. Paris.

Table A5.1 continued

No.	Project Name	Predominant Technology	Technology Development/Adoption Stage ^a	Barriers Lowered
2008				
11	REG: Promoting Energy Efficiency in the Pacific	EE improvements in the industrial, commercial, residential and public sectors	Competitive/Commercial	Inadequate policies influencing the development of energy efficiency improvements in the industrial, commercial, residential and public sectors; insufficient EE capacity, awareness and educational strategy to develop sustainable Pacific EE system
12	REG: Recruitment of Clean Energy Expert	None	n/a	-
13	REG: Transport and climate change, the missing link, how should transport address its emissions and energy use	Energy efficient technologies and practices applicable to transport system	Competitive/Commercial	Inadequate data and information on transport issues related to climate change provided in a specific, simple, concrete and easily understandable manner
14	SRI: Building the Capacity of Sustainable Energy Authority (SEA)	None	n/a	-
15	SRI: Clean Energy and Access Improvement (TA Grant component: Demand Side Management (DSM) for Municipal Street Lighting)	Energy-efficient lighting (compact fluorescent lamps/sodium lamps; feeders and feeder meters; and time-of-day control and electronic timers)	Competitive/commercial	Need to demonstrate the viability of financing EE projects and promote demand side management for municipalities, using utility-based ESCOs (utility-based ESCO model)
16	THA: Mainstreaming Energy Efficiency Measures for Thai Municipalities	building retrofits (lighting and airconditioning systems); upgrading of streetlighting (energy efficient lighting and installation of timers and voltage regulators)	Competitive/Commercial	Need to demonstrate the feasibility of municipal EE measures, introduce financing arrangements, and build capacity of energy authority to increase confidence among stakeholders, in preparation for widespread replications and scaling up
17	VIE: Preparation of Renewable Energy for Remote Island and Mountain Communes	off-grid micro hydropower, wind diesel-solar hybrid power systems	Competitive/commercial;	Need to demonstrate the financial viability and formulate institutional models for implementing off-grid power systems
2009				
1	PRC: Integrated Renewable Biomass Energy Development Sector Project	Waste treatment and renewable biogas production (Anaerobic digestion technology); medium- and large-sized biogas plants	Competitive/commercial	Lack of technical standard for the CE technology, and need for an established performance monitoring mechanism
2	PRC: Municipal Waste to Energy Project	Waste-to-energy (grate incineration technology, advanced flue gas emission control)	Competitive/commercial	Gaps in clean energy technology knowledge and misconceptions about technology risks, higher initial capital expenditure, high due diligence costs, and availability of long term loan for the project.
3	PRC: Qinghai Pasture Conservation Using Solar Photovoltaic (PV)-Driven Irrigation	Solar Photovoltaic (PV)-driven Irrigation pasture	Deployment	-

CE = clean energy, PRC = China, People's Republic of, EE = energy efficiency, ESCO = energy service company, REG = regional, SRI = Sri Lanka, TA = Technical Assistance, THA = Thailand, VIE = Viet Nam

^a Based on Organisation of Economic Co-operation and Development (OECD)/International Energy Agency (IEA). 2006. Energy Technology Perspectives. Paris.

Table A5.1 continued

No.	Project Name	Predominant Technology	Technology Development/Adoption	Barriers Lowered
			Stage ^a	
2009				
4	PRC: Workshop in PRC-ADB Cooperation in Clean Energy Project Financing	None	n/a	-
5	INO: Pilot Project for Efficient Lighting (Loan project - INO: Java-Bali Electricity Distribution Performance Improvement Project)	Energy efficient lighting (compact fluorescent lamps, light-emitting diodes)	Competitive/commercial	Need to demonstrate the viability of a well-established energy efficiency initiative such as the use of CFLs and LEDs
6	MON: CDM Baseline Study for Thermo Technical Rehabilitation of Pre-Cast Panel Buildings in Ulaanbaatar	Building insulation retrofits	Competitive/commercial	Need to determine/establish the suitable CDM baseline
7	MON: Ulaanbaatar Clean Air	Cleaner/energy efficient heating systems	Competitive/commercial	Lack of knowledge and capacity develop, promote and implement energy efficient heating systems.
8	NEP: Compact Fluorescent Lighting and Solar-Powered Street Lighting (Loan project -NEP: Energy Access and Efficiency Improvement)	Energy-efficient lighting (compact fluorescent lighting, solar/solar wind streetlighting)	Competitive/commercial (CFLs); Deployment (solar)	Need to demonstrate the feasibility of and promote the EE/RE applications through use of compact fluorescent lamps and installation of solar and solar-wind streetlights, for demand side energy management
9	NEP: Compact Fluorescent Lighting and Solar-Powered Street-Lighting (Direct Charge)	energy efficient lighting (CFLs) and solar power street-lighting	Competitive/commercial (CFL); Deployment (solar power)	Need for increased awareness and developed financing model for the energy efficient lighting program.
10	REG: 4th Asia Clean Energy Forum 2009	None	n/a	-
11	REG: Clean Energy Expo China Conference 2009	None	n/a	-
12	REG: South Asia Regional Climate Change Conference	None	n/a	-
13	REG: Carbon Forum Asia 2009	None	n/a	-
14	REG: Empowering the Poor Through Increasing Access to Energy	natural gas, micro-hydropower, biogas, small wind, solar, liquefied petroleum gas	Deployment (solar, wind), Competitive/commercial (micro-hydro, natural gas, biogas, liquefied petroleum gas)	Inadequate capacity on development, implementation and monitoring on energy access projects to promote off-grid renewable energy solutions
15	REG: Capacity Building for CDM and Establishment of DNAs (Component of RETA 7394: Strengthening the Capacity of Pacific DMCs to Respond to Climate Change [Phase 1])	None	n/a	-
16	REG: Support for Upscaling Renewable Energy Technologies in the Pacific (Component of RETA 7394: Strengthening the Capacity of Pacific DMCs to Respond to Climate Change [Phase 1])	Wind power, hydropower (small and micro, run of the river), grid-connected solar power	Competitive/commercial (hydropower), Deployment (wind, solar)	Need to demonstrate feasibility renewable energy options. Inadequate financing options for renewable energy projects.
17	REG: Carbon Dioxide Capture and Storage (CCS) Demonstration in Developing Countries - Analysis of Key Issues and Barriers	Carbon Capture and Storage	Demonstration	-

CDM = Clean Development Mechanism, CFL = compact fluorescent lighting, PRC = China, People's Republic of, DMC = developing member country, DNA = designated national authority, EE = energy efficiency, INO = Indonesia, LED = light emitting diode, MON = Mongolia, NEP = Nepal, RE = renewable energy, REG = regional, RETA = regional technical assistance

^a Based on Organisation of Economic Co-operation and Development (OECD)/International Energy Agency (IEA). 2006. Energy Technology Perspectives. Paris.

Table A5.1 continued

No.	Project Name	Predominant Technology	Technology Development/Adoption Stage ^a	Barriers Lowered
2010				
1	BAN: Energy Efficiency Improvement (Original application title: Solar Powered Street Lights and Energy Efficient Water) (Project: BAN: City Region Development Project)	Solar-powered street lighting, energy efficient water system pumps technology (Variable Frequency Drive)	Deployment (solar)/Competitive (Variable Frequency Drive)	Need to demonstrate the economic, financial, social and environmental benefits of best clean energy technologies for streetlighting and water pumps; inadequate capacity and awareness
2	PRC: Development of Energy Manager Program for Energy Conservation in Shandong (Original title - PRC: Capacity Building Technical Assistance for PRC Energy Efficiency and Emissions Reduction in Shandong Province; Retitled - PRC: Shandong Energy Manager System) (Linked to Project - PRC: Shandong Energy Efficiency and Emission Reduction Project)	biogas, solar thermal, zero coal copper ore smelting, waste heat recovery	Commercial/competitive (biogas, waste heat recovery), deployment (solar thermal, zero coal copper ore smelting)	Inadequate capacity to promote, monitor, verify and report energy efficiency improvement in a structured manner. Lack of qualified energy conservation specialists.
3	PRC: Developing Smart Grid for Efficient Utilization of Renewable Energy in the PRC (formerly 'PRC: "Green Silk Way" Developing a High Efficiency Transmission Network to Scale Up Wind Power Development in Western PRC')	Smart grid	Deployment	-
4	PRC: Innovative Financing Mechanisms for Energy Efficiency and Emission Reduction in Small and Medium-sized Enterprises	Various energy efficiency technologies available for small and medium-sized enterprises (SMEs)	Commercial/competitive	Need for appropriate policies and organizational set-up for the promotion of energy efficiency among SMEs, lack of accessible financing support for SMEs to adopt more advanced, energy-efficient technologies
5	PRC: Investment Summit for Hainan's Clean Energy Development	None	n/a	-
6	PRC: Municipal Natural Gas Infrastructure Development Project (Phase 2)	Natural gas conversion	Commercial/competitive	Need for an established model integrating energy saving solution and enhance capacity on combining fuel conversion and energy efficiency improvement measures; lack of awareness of end-users on energy efficiency solutions
7	PRC: Renewable Energy Development in Qinghai	Grid connected solar photovoltaic	Deployment	-
8	IND: Capacity Building for Commercial Bank Lending for Solar Energy	Solar power (crystalline, thin film, concentrated solar power)	Deployment	-
9	INO: Institutional Capacity Building of Indonesia Eximbank (Original title: Indonesia Eximbank Capacity Building)	Energy efficiency technologies in the manufacturing sector	Commercial/competitive	Producers' access to finance; services to finance EE are not available denying enterprises access to integrated energy audits and complementary term financing; need to demonstrate the viability of EE finance to domestic commercial banks

BAN = Bangladesh, PRC = China, People's Republic of, EE = energy efficiency, IND = India, INO = Indonesia.

^a Based on Organisation of Economic Co-operation and Development (OECD)/International Energy Agency (IEA). 2006. Energy Technology Perspectives. Paris.

Table A5.1 continued

No.	Project Name	Predominant Technology	Technology Development/Adoption Stage ^a		Barriers Lowered
			2010		
10	PHI: Preparing Three Wind Farm Projects in Luzon	Wind power		Deployment	-
11	PHI: Rural Community-Based Renewable Energy Development in Mindanao (Original title: PHI: Renewable Energy Development and Poverty Alleviation in Mindanao)	Micro-hydropower, solar PV, small wind		Deployment (solar PV, small wind), Commercial (micro-hydropower)	Limited knowledge, capacity and available financing on RE systems allowing integration of access to energy and productive use of RE for livelihood/income generation.
12	REG: 5th Asia Clean Energy Forum 2010	None		n/a	-
13	REG: Carbon Forum Asia 2010	None		n/a	-
14	REG: Clean Energy Expo Asia 2010	None		n/a	-
15	REG: Climate Friendly Agribusiness Value Chains in the Greater Mekong Subregion [renamed from REG: Climate-Resilient and Green Infrastructure Development in the GMS Economic Corridors (Original application title: REG: Climate-Friendly Bioenergy in the Greater mekong Subregion - Cambodia, Lao PDR, and Viet Nam)]	biomass, biofuels, improved cook stoves		Deployment (biofuel), Competitive (biomass, improved cook stoves)	Need to establish feasibility and proper design for the promotion of biomass-based energy and climate-friendly agriculture technology.
16	REG: Determining the Potential for Carbon Capture and Storage in Southeast Asia	Carbon Capture and Storage		Demonstration	-
17	REG: Demonstration of an Assisted Broker Model for Transfer of Low Carbon Technologies to Asia and Pacific (under Cluster CDTA REG: Establishing a Pilot Center to Facilitate Climate Technology Investments in Asia and the Pacific)	Low carbon technologies (e.g. solar photovoltaic, electric motors, battery storage)		Deployment (solar photovoltaic); Competitive/commercial (electric motors, battery technologies)	Need to demonstrate the feasibility of a marketplace model for transfer of low carbon technologies and enable the accelerated transfer to manufacturers in DMCs of intellectual property and know-how on low carbon technologies.
18	REG: Knowledge Platform Development for the Asia Solar Energy Initiative	Solar power (solar PV, concentrated solar power, grid connected distributed solar PV, off-grid solar power generation, stable grid development)		Deployment	-
19	REG: Needs Assessment and Development of the Solar Energy Program	Solar photovoltaic and solar thermal		Deployment	-
20	REG: Montreal 2010: 21st World Energy Congress	None		n/a	-

CDTA = capacity building technical assistance, GMS = Greater Mekong Subregion, PHI = Philippines, PV = photovoltaic, RE = renewable energy, REG = regional.

^a Based on Organisation of Economic Co-operation and Development (OECD)/International Energy Agency (IEA). 2006. Energy Technology Perspectives. Paris.

Table A5.1 continued

No.	Project Name	Predominant Technology	Technology	Barriers Lowered
			Development/Adoption Stage ^a	
2010				
21	REG: Promoting Energy Efficiency in the Pacific (Phase II) - PNG Component	Energy-efficient lighting (CFL, LED), building retrofits	Competitive/commercial (CFL, LED, building retrofits)	Insufficient knowledge/awareness on EE potential; lack of confidence among stakeholders in EE technologies; inadequate institutional capacity and technical expertise to plan, manage and maintain EE programs; lack of clear EE policy, legislation and regulatory framework
22	REG: Promoting Renewable Energy, Clean Fuels, and Energy Efficiency in the Greater Mekong Subregion (GMS)	biomass, biofuels, solar, wind, micro/mini-hydropower, natural gas	Deployment (biofuel, solar, wind), Competitive/commercial (biomass, mini/micro hydropower, natural gas)	Need to enhance capacity through development of a business model for each GMS country for the promotion and development of renewable energy, clean fuel and EE technologies; inadequate RE and EE awareness
23	REG: Quantum Leap in Wind Power in Asia (Direct Charge)	Wind power	Deployment	-
24	REG: Quantum Leap in Wind Power in Asia and the Pacific	Wind power	Deployment	-
25	REG: Strengthening Planning Capacity for Low Carbon Growth in Developing Asia (subproject under RETA: Enabling Climate Change Responses in Asia and the Pacific)	None	n/a	-
26	REG: Promotion of Investment in Climate Technology Products through Venture Capital Funds (formerly REG: Establishment of a Climate Technology Advisory Facility for Venture Capital/REG: Technology Support Center under the Asia Climate Change and Clean Energy Venture Capital Initiative (AC3EVC)) (under Cluster CDTA REG: Establishing a Pilot Center to Facilitate Climate Technology Investments in Asia and the Pacific)	Emerging climate change mitigation and adaptation technologies across various sectors	Deployment	-
27	SRI: Implementation of Energy Efficiency Policy Initiatives (TA component of Loan, SRI: Sustainable Power Sector Support Project)	Energy-efficient lighting (compact fluorescent lighting, light emitting diodes)	Competitive/commercial	Inadequate local expertise and infrastructure necessary for the effective implementation of energy efficiency initiatives and programs; need to establish technical guidelines and policies for future energy efficient lighting promotions and initiatives.
28	THA: Solar Power Project	Solar photovoltaic (thin film)	Deployment	-

CDTA = capacity building technical assistance, CFL = compact fluorescent lighting, EE = energy efficiency, GMS = Greater Mekong Subregion, LED = light emitting diode, PNG = Papua New Guinea, RE = renewable energy, REG = regional, RETA = regional technical assistance, SRI = Sri Lanka, TA = technical assistance, THA = Thailand.

^a Based on Organisation of Economic Co-operation and Development (OECD)/International Energy Agency (IEA). 2006. Energy Technology Perspectives. Paris.

Table A5.1 continued

No.	Project Name	Predominant Technology	Technology Development/Adoption Stage ^a	Barriers Lowered
2011				
1	CAM: Designing Output-Based Aid Scheme for Rural Electrification in Cambodia	Low carbon alternative, demand-side management, improved cook stoves	Commercial/competitive	Need to develop a system to facilitate access to energy for the poor households and promote demand side management.
2	PRC: Study on Carbon Capture and Storage on Natural Gas-Based Power Plants	Carbon Capture and Storage (natural gas-based power plants)	Demonstration	-
3	INO: West Kalimantan Power Grid Strengthening Project	Solar-powered WLED, energy efficient lamp (CFL) and transmission and distribution	Deployment (solar); Competitive/commercial (CFL, T&D)	Need for suitable financing mechanism on provision of access to clean energy to rural areas for replication/scaling-up.
4	REG: 6th Asia Clean Energy Forum 2011	None	n/a	-
5	REG: Carbon Capture Storage Financing Roundtable	Carbon Capture and Storage	Demonstration	-
6	REG: Carbon Forum Asia 2011	None	n/a	-
7	REG: Clean Energy Expo Asia 2011	None	n/a	-
8	REG: Determining the Potential for Carbon Capture and Storage in Southeast Asia - Supplementary Financing	Carbon Capture and Storage	Demonstration	-
9	REG: Enhancing Knowledge on Climate Technology and Financing Mechanisms (formerly REG: Financing Climate Technology Deployment in the Asia-Pacific)	Low carbon and climate resilient technologies (various)	Deployment	-
10	REG: International Carbon Capture and Storage Conference	Carbon Capture and Storage	Demonstration	-
11	REG: Mainstreaming the Asia Solar Energy Initiative	Solar energy	Deployment	-
12	REG: Regional Economics of Climate Change in Central and West Asia	Various technologies in the transport/energy sector	Competitive/commercial	Lack of data on emission reduction opportunities and full cost of climate change mitigation measures; and information on gaps, synergies and opportunities in the public and private sectors
13	REG: Solar Energy Training	Solar energy	Deployment	-
14	REG: Wind Energy Futures in Asia - Regional	Wind power	Deployment	-
15	VIE: Energy Efficiency for Ho Chi Minh City Water Supply Project (Original application title: VIE: Ho Chi Minh City Water Supply PFR 1 MFF Viet Nam Water Sector Investment Program) (Loan Project: VIE: Water Sector Investment Program - Tranche 1)	Energy efficient water system pumps technology (Variable Frequency Drive), energy efficient air conditioning system	Competitive/commercial	Insufficient knowledge/awareness on energy efficiency in water pumping systems consuming grid electricity

CAM = Cambodia, PRC = China, People's Republic of, CFL = compact fluorescent lighting, INO = Indonesia, MFF = multitranches financing facility, PFR = periodic financing request, REG = regional, T&D= transmission and distribution, VIE = Viet Nam, WLED = white light emitting diode.

^a Based on Organisation of Economic Co-operation and Development (OECD)/International Energy Agency (IEA). 2006. Energy Technology Perspectives. Paris.

Table A5.1 continued

No.	Project Name	Predominant Technology	Technology Development/Adoption Stage ^a	Barriers Lowered
2012				
1	BAN: Supporting Brick Sector Development Program	Energy efficient brick kiln technologies (e.g. vertical shaft brick kiln, hybrid hoffman kilns, tunnel kilns)	Competitive/commercial	Lack of brick sector policy/regulation and poor labor standards, leading to a large number of small businesses entering brick sector profiting from back, outmoded technologies
2	PRC: Road Map for CCS Demonstration and Deployment (Original application title: PRC: Oxy-fuel Combustion Carbon Capture for Power Plants and Carbon Capture and Storage Demonstration and Deployment Roadmap)	Carbon Capture and Storage (Oxy-fuel Combustion)	Demonstration	-
3	IND: Preparation of the Utility Scale Concentrated Solar Power Program	Concentrated solar power	Deployment	-
4	INO: Scaling up Renewable Energy Access in Eastern Indonesia	Mini-grid and off-grid renewable energy applications (e.g. small wind, solar, micro-hydro and biomass)	Commercial (micro-hydro, biomass)/Deployment (small wind, solar)	Inadequate institutional capacity to design and manage rural energy access programs using renewable energy resources
5	NEP: Sustainable Rural Ecology for Green Growth	Pyrolysis	Competitive/commercial	Need to demonstrate a technically, economically, and environmentally sound climate responsive farming system generating renewable rural energy
6	REG: 7th Asia Clean Energy Forum 2012	None	n/a	-
7	REG: Carbon Capture and Storage in Developing Asia	Carbon Capture and Storage	Demonstration	-
8	REG: Carbon Forum Asia 2012	None	n/a	-
9	REG: Clean Energy Expo Asia 2012	None	n/a	-
10	REG: Clean Energy Technology Knowledge Sharing 2012	Smart grid and wind power	Deployment	-
11	REG: Determining the Potential for Carbon Capture and Storage in Southeast Asia - Supplementary Financing	Carbon Capture and Storage	Demonstration	-
12	REG: Fourth Meeting of the Asia Solar Energy Forum	Solar energy	Deployment	-

BAN = Bangladesh, CCS = carbon capture and storage, PRC = China, People's Republic of, IND = India, INO = Indonesia, NEP = Nepal, REG = regional.

^a Based on Organisation of Economic Co-operation and Development (OECD)/International Energy Agency (IEA). 2006. Energy Technology Perspectives. Paris.

Table A5.1 continued

No.	Project Name	Predominant Technology	Technology Development/Adoption Stage ^a	Barriers Lowered
2012				
13	REG: Mainstreaming the Asia Solar Energy Initiative II	Solar energy	Deployment	-
14	SRI: Solar Rooftop Pilot under SRI: Clean Energy and Network Efficiency Improvement Project	Solar PV	Deployment	-
15	TON: Outer Island Energy Efficiency Project	Transmission and distribution (T&D) retrofits/upgrade, solar street lighting	Commercial (T&D)/Deployment (solar)	To demonstrate combination of deployment of renewable energy generation and loss reduction of power distribution assets as appropriate to optimize the existing energy mix
16	TON: Outer Island Renewable Energy Development Project	Solar energy	Deployment	-
17	VIE: Partnership for Market Readiness	None	n/a	-
2013				
1	AZE: Renewable Energy Development (Biomass Cogeneration) Project	Biomass	Commercial/competitive	Need to demonstrate the viability of renewable energy investments such as biomass power generation; inadequate skills/capacity to conduct preparatory activities
2	PRC: Energy Efficiency Multi-Project Financing Program	Building retrofits, energy efficiency products in new buildings	Competitive/commercial	Knowledge gap and misperceptions on actual technology risks or low management awareness on EE
3	IND: Concentrated Solar Power Project	Concentrated solar power	Deployment	-
4	INO: Sarulla Geothermal Power Generation Project	Geothermal	Competitive/commercial	Need to demonstrate the viability of a large-scale independent power producer geothermal project
5	INO: Planning a Pilot Carbon Capture and Storage Activity	Carbon Capture and Storage	Demonstration	-
6	NEP: South Asia Tourism Infrastructure Development Project - Additional financing (Original title: NEP: Lumbini Clean Public Transport Project (under the South Asia Tourism Infrastructure Development Project))	Electric vehicles, solar power	Commercial (electric vehicles)/Deployment (solar)	Need to demonstrate energy efficient model for sustainable public transport service provision
7	PAK: Determining the Potential of Carbon Capture and Storage	Carbon capture and storage	Demonstration	-

AZE = Azerbaijan, CCUS = carbon capture utilization and storage, PRC = China, People's Republic of, EE = energy efficiency, IND = India, INO = Indonesia, NEP = Nepal, PAK = Pakistan, REG = regional, SRI = Sri Lanka, TON = Tonga, VIE = Viet Nam.

^a Based on Organisation of Economic Co-operation and Development (OECD)/International Energy Agency (IEA). 2006. Energy Technology Perspectives. Paris.

Table A5.1 continued.

No.	Project Name	Predominant Technology	Technology Development/Adoption Stage ^a	Barriers Lowered
2013				
8	REG: Asia Energy Efficiency Accelerator	Energy efficiency technologies (refurbishing public buildings and municipal lighting, retrofitting high energy intensity industries, upgrading metering systems)	Competitive/commercial	Lack of capacity, awareness and orientation towards demand-side energy efficiency projects. Lack of awareness and incentive structures for financiers.
9	REG: 8th Asia Clean Energy Forum 2013	None	n/a	-
10	REG: Carbon Forum Asia 2013	None	n/a	-
11	REG: Daegu 2013: 22nd World Energy Congress	None	n/a	-
12	REG: Empowering the Poor through Increasing Access to Energy (Supplementary Funding for Output Based Aid)	natural gas, micro-hydropower, biogas, small wind, solar, liquefied petroleum gas	Deployment (solar, wind), Competitive/commercial (micro-hydro, natural gas, biogas, liquefied petroleum gas)	Inadequate capacity on development, implementation and monitoring of financially viable energy access projects to promote off-grid renewable energy solutions; to demonstrate and develop financing mechanisms on access to clean energy
13	REG: International Hydropower Association World Congress on Advancing Sustainable Hydropower 2013	Hydropower	Competitive/commercial	Insufficient knowledge and experience relating to sustainability and appropriate implementation and monitoring of hydropower projects
14	REG: Pacific Energy Summit 2013	None	n/a	-
15	REG: Sustainable Energy Training Program	Wind, solar, transmission and distribution, smart grids, energy efficiency technologies	Commercial (energy efficiency, T&D)/Deployment (smart grid, solar, wind)	-
16	REG: Tianjin Integrated Gasification Combined Cycle Power Plant - Additional Financing (Original title: REG: Appraising Pre-combustion Carbon Capture, Utilization and Storage Pilot Project and Sharing Knowledge and Lessons Learned)	Carbon capture and storage	Demonstration	-
17	SAM: Renewable Energy Development and Power Sector Rehabilitation Project	Small hydropower	Competitive/commercial	Need to demonstrate sustainable operation of small hydropower technology and build local capacity and knowledge to catalyze investments on small hydropower given unexploited potential

REG = regional, SAM = Samoa, T&D = transmission and distribution.

^a Based on Organisation of Economic Co-operation and Development (OECD)/International Energy Agency (IEA). 2006. Energy Technology Perspectives. Paris.

Table A5.1 continued.

No.	Project Name	Predominant Technology	Technology Development/Adoption Stage ^a	Barriers Lowered
2013				
18	UZB: Samarkand Solar Power Project	Solar photovoltaic (crystalline)	Deployment	-
19	VIE: Preparation of Market Readiness Proposal - Phase 2 of the Partnership for Market Readiness Project in Viet Nam	None	n/a	-
20	VIE: Renewable Energy Development and Network Expansion and Rehabilitation for Remote Communes Sector Project - Additional Cofinancing (Original title: VIE: Supplementary Financing for Output Based Aid for Rural Electrification under the ongoing project "Loan 2517: VIE: Renewable Energy Development and Network Expansion and Rehabilitation for Remote Communes Sector")	Transmission and distribution (T&D); CFL	Competitive/commercial	To support service connection costs and demonstrate mechanism that leads to shift to clean energy use and improve community livelihood
2014				
1	AFG: Renewable Energy Development	Renewable energy technologies (wind/solar/diesel hybrid)	Deployment	To facilitate demonstrable projects (to the feasibility level); Insufficient capacity for development of renewable energy projects; To strengthen institutions for scaling up of activities and future renewable energy investments
2	INO: Institutional Capacity Building of Indonesia Eximbank - Additional Financing	Energy efficiency technologies in the manufacturing sector	Commercial/competitive	Producers' access to finance; services to finance EE are not available denying enterprises access to integrated energy audits and complementary term financing; need to demonstrate the viability of EE finance to domestic commercial banks
3	GEO: Adjaristsqali Hydropower Project	Hydropower	Competitive/commercial	To demonstrate a new private sector business model to export electricity to neighboring countries and transform regional cooperation on energy; need for concessional financing to achieve financial sustainability
4	MYA: Renewable Energy for Nationwide Telecommunications Project	Renewable energy technologies (wind, solar)	Deployment	-
6	REG: 9th Asia Clean Energy Forum	None	n/a	-
7	REG: Promoting Carbon Capture and Storage in the People's Republic of China and Indonesia	Carbon capture and storage	Demonstration	-
8	REG: Sustainable Energy Training Program 2014	Energy efficiency technologies, solar	Commercial (energy efficiency)/Deployment (solar)	-

AFG = Afghanistan, CFL = compact fluorescent lighting, EE = energy efficiency, GEO = Georgia, INO = Indonesia, MYA = Myanmar, REG = regional, T&D = transmission and distribution, UZB = Uzbekistan, VIE = Viet Nam.

^a Based on Organisation of Economic Co-operation and Development (OECD)/International Energy Agency (IEA). 2006. Energy Technology Perspectives. Paris.

Table A5.1 continued.

No.	Project Name	Predominant Technology	Technology Development/Adoption Stage ^a	Barriers Lowered
2014				
9	REG: US-Asia Pacific Energy Dialogue	None	n/a	-
10	IND: Capacity Building of the Indian Renewable Energy Development Agency	None	n/a	Improvement on social safeguards and suitability to international standards; Meeting international standards eases the borrowers access to finance
11	REG: External Evaluation of Clean Energy Financing Partnership Facility (Carbon capture and Storage Fund Component)	None	n/a	
12	REG: External Evaluation of Clean Energy Financing Partnership Facility (Clean Energy Fund Component)	None	n/a	
2015				
1	REG: 10th Asia Clean Energy Forum	None	n/a	-
2	CAM: Supplementary Financing for Electricity Access to Low Income Households	Transmission and distribution (T&D); CFL, LED, Low carbon alternative,	Commercial/competitive	To support service connection costs and demonstrate mechanism that leads to shift to clean energy use and improve community livelihood, also promote demand side management.
3	REG: Promoting Sustainable Energy for All in Asia and the Pacific	Energy efficiency and conservation	Commercial/competitive	Insufficient capacity for development of sustainable energy projects; Facilitate capacity develop and secure financing for sustainable energy investments.
4	IND: Demand -Side Energy Efficiency Invest Project	energy efficient lighting (LED) lights and energy efficient agricultural pumps	Commercial/competitive	Need to demonstrate the viability of financing EE projects and promote demand side management for municipalities, using utility-based ESCOs (utility-based ESCO model)
5	TAJ: Strengthening Private Sector Participation in Technical and Vocational Education Training (TVET)	Energy efficiency	Competitive/commercial	A lack of practical skills for technology and system design, installation and maintenance. The support will directly facilitates the improvement of domestic clean energy skills
6	REG: International Hydropower Association World Congress on Advancing Sustainable Hydropower 2015	Hydropower	Competitive/commercial	Insufficient knowledge and experience relating to sustainability and appropriate implementation and monitoring of hydropower projects

CAM = Cambodia, CFL = compact fluorescent lighting, EE = energy efficiency, ESCO = energy service company, IND = India, LED = light emitting diode, REG = regional, SAM = Samoa, TAJ = Tajikistan, T&D = transmission and distribution.

^a Based on Organisation of Economic Co-operation and Development (OECD)/International Energy Agency (IEA). 2006. Energy Technology Perspectives. Paris.

Table A5.1 continued.

No.	Project Name	Predominant Technology	Technology Development/Adoption Stage ^a	Barriers Lowered
2015				
7	REG: Pacific Energy Summit 2015	None	n/a	-
8	IND: Preparing the India solar Park Development and Transmission Sector Park	Solar energy	Deployment	Need to provide a model on how solar parks are developed in India
9	SAM: Solar Power IPP	Solar PV	Deployment	Need to support the expenses of the due diligence to be able to qualify for long term financing
10	SAM: Solar Power IPP	Solar PV	Deployment	Access to long term credit in the Pacific region is very limited, particularly for projects with high upfront capital costs such as renewable energy projects.
11	INO: Preparing the Eastern Indonesia Sustainable Energy Access Sector Project	Solar photovoltaic (PV) - gas hybrid	Deployment	Need to enhance energy access across islands and coastal communities with lower electrification rates
2016				
1	SRI: Wind Power Generation Project	wind power	Deployment	Need to introduce wind park concept in Sri Lanka, increase clean energy generation, and build capacity of executing agency in forecasting, controlling and managing intermittent wind power generation.
2	REG: Access to Electricity with New Off-Grid Solar Technology in Central Asia (Original application title: REG: Increase Electricity Access Using Off-Grid Solar Power and New Technology)	Solar kit	Deployment	to promote clean energy investment and improve energy security in off-grid areas and reduce use of diesel.
3	REG: Supporting the Asia solar energy Forum to Scale Up Solar energy Development in Asia and the Pacific (under TA REG: Empowering the Poor Through Increasing Access to Energy)	Solar	Deployment	to support the capacity building of DMCs in scaling up solar energy development in their respective countries.
4	REG: 11th Asia Clean Energy Forum 2016	None	n/a	to enhance knowledge, experiences and best practices on clean energy technology transfer and deployment in Asia Pacific
5	SRI: Supporting Electricity Supply Reliability Improvement Project-Renewable Energy Micro-grid	Renewable energy-based microgrid (Solar), AC-Deployment DC hybrid microgrid		to explore innovative options for reliability improvement in the distribution network through implementing the renewable energy microgrid pilot
6	BAN: Rural Hybrid Power Project	hybrid power generating capacity - solar PV minigrids and energy storage	Deployment	Need to support the conduct of the project due diligence
7	NEP: Power Transmission and Distribution Efficiency Enhancement Project (Original application title: NEP: Electricity Distribution Efficiency Improvement Project)	Energy Efficiency technology	Competitive/commercial	to demonstrate the potential for energy efficiency achievements in the distribution systems which can be replicated in other cities of Nepal

Table A5.1 continued.

No.	Project Name	Predominant Technology	Technology	Barriers Lowered
			Development/Adoption Stage ^a	
2016				
8	REG: Leapfrogging of Clean Technology in CAREC Countries through Market Transformation (Original application: REG: Enabling CAREC Countries for Technology Leapfrogging)	Electric vehicles, efficient lighting	Commercial (electric vehicle and efficient lighting)	to demonstrate the market potential for new technologies, build necessary capacities, and train policy makers to create enabling environment for private investments in selected CAREC countries
9	INO: Banten and West Nusa Tenggara Wind Power Development	Wind Power	Deployment	Need to offset the high costs of development in Indonesia's nascent wind energy sector and to assist in overcoming early mover risks associated with these projects
10	IND: Railway Energy Efficiency Project	Energy efficient technologies and practices applicable to transport system	Competitive/commercial	to provide adequate training in the operation and maintenance of energy efficiency measures for locomotives
11	RMI: Majuro Power Network Strengthening	None	n/a	Have an assessment of investment requirements to increase renewable energy generation in the country.
12	REG: CCS Way Forward in Asia (Deep dive workshop)	CCS	Demonstration	Provide a venue to facilitate awareness raising, information sharing and dialogue on CCS among DMCs and international stakeholders from outside the region.
13	INO: Preparation of the Gundih Pilot Carbon Capture and Storage	CCS	Demonstration	Need to support the preparation of project documents for the CCS project
14	REG: CAREC ESCC Investment Forum	None	n/a	need to create foreign investors' awareness of opportunities in the energy sector, especially clean energy and energy efficiency technologies.
15	SRI: Consultancy Services for Technical Design and Specifications for Installation of +100/-50 Mvar Compensator at Biyagama Grid Substation	0	Commercial/competitive	Need to improve system reliability, enabling further development of the intermittent RE sources and increase CE investments
16	Sol: Higher Education in the Pacific Investment program - Tranche 2	Solar photovoltaic system	Deployment	To demonstrate value of clean energy through a regional university
17	TAJ: CAREC Corridor 2, 5 and 6 (Dushanbe-Kurgonteppa) Road Project	Solar PV-based micro-grid, light emitting diode	deployment	-
18	REG: Mainstreaming Energy Efficiency in Bangladesh, Bhutan, Maldives, Nepal and Sri Lanka	None	n/a	-
19	REG; Deep Dive Workshop on "Paving Clean and Low Carbon Transport and Energy Systems Using Hydrogen and Fuel Cells"	Low carbon technology in the transport sector	Commercial/competitive	-

Table A5.1 continued.

No.	Project Name	Predominant Technology	Technology Development/Adoption Stage ^a	Barriers Lowered
20	INO: Minimum Energy Performance Standards (MEPS) Development for Appliances in Indonesia	none	n/a	To support development of the Minimum Energy Performance Standards (MEPS)
21	INO: Pilot Carbon Capture and Storage Activity in Natural Gas Processing Sector	CCS	Demonstration	To complete the project due diligence and accelareate project readiness of Indonesia's CCS activity
22	INO: Pilot Carbon Capture and Storage Activity in Natural Gas Processing Sector	CCS	Demonstration	To pilot a CCS in the natural gas processing sector in Indonesia.
23	PRC: Strengthening Capacity in the Implementation of the Green Financing Platform for the Greater Beijing–Tianjin–Hebei Region (Original application title: PRC: Green Financing Platform for Accelerating Air Quality Improvement in the Greater Beijing–Tianjin–Hebei Region)	None	n/a	To support a dedicated green financing platform (GFP) to leverage financing and scale up investments in green and pollution-reduction projects under a financial intermediation loan
24	UZB: Sustainable Hydropower Project	Hydropower	Competitive/commercial	To mainstream hydropower, enhance the share of clean energy and resilience against climate change impact
25	UZB: Second Solar Power Project	Solar photovoltaic (crystalline)	Deployment	To support the development of the solar power project in Uzbekistan
26	UZB: Second Solar Power Project	Solar photovoltaic system	Deployment	To pilot sustainable business models, energy-efficient technologies and rooftop PV systems for at least 16 rural health clinics
27	KAZ: Introducing the Auction Mechanism for Renewable Energy Projects	None	n/a	To improve the investment climate for renewable energy increase penetration of renewable in the largely coal-based Kazakhstan generation mix
28	CAM: Solar Power Project	Solar PV	Deployment	Need to accommodate the higher, first mover costs associated with the construction and operation of a solar power project in Cambodia
29	KAZ: Fostering the Development of Renewable Energy Generation in Kazakhstan	None	n/a	To support the development of renewable energy generation plants
30	Pacific Renewable Energy Investment Facility (application title REG: Pacific Renewable Energy and Energy Efficiency Investment Facility Pacific Region)	Various energy efficient and renewable energy techonologies (including battery storage)	Competitive/commercial	To support an investment facility which will finance renewable energy in the Pacific

Table A6.1: Contribution of CFs, GCIs and TALLs toward Achieving CEFPF Outputs, as of 31 December 2016

Outputs Performance Targets and Indicators by 2020															
No.	Project Name	Sector	Allocation (In \$'000)	\$4 billion in ADB's clean energy investments leveraged (\$000)	\$1.2 billion in private sector investments leveraged (\$000)	\$1.2 billion in non private sector investments leveraged (\$000)	55 new CE/CCS technologies deployed by DMCs	2 CCS demonstration projects commenced	15 new approaches/ methodologies to promote CE/CCS introduced	700,000 HHs provided with access to energy	350,000 HHs connected to electricity	175,000 HHs connected to modern fuels and/or efficient devices for cooking	175,000 HHs connected to modern fuels and/or efficient devices for heating	30% of access to energy projects with gender mainstreaming	80% of access to energy projects with gender concerns
CONCESSIONAL FINANCING/GRANT COMPONENT OF INVESTMENT/TECHNICAL ASSISTANCE LINKED TO LOAN/TECHNICAL ASSISTANCE/DIRECT CHARGES															
	2008-2014		128,647	1,965,996	836,800	737,100				141,733	141,733	-	-		
	2015		9,386	195,000	5,000	132,000				10,000	10,000	10,000	-		
	2016		38,415	531,825	6,430	132,000				1,116	1,116	-	-		
	Total Cumulative Amount		176,448	2,692,821	848,230	1,001,100				152,849	152,849	10,000			
	2008-2014		125	32	2	2	83	-	9	9	5	-	-	-	9
	2015		11	4	-	-	3	-	3	3	1	1	-	1	2
	2016		28	10	2	3	12	1	4	5	5	-	-	1	1
	Total Projects Contributing to Outputs		159	46	4	5	94	1	16	17	11	1	-	2	12
Concessional Financing	Total		39,250	408,500	848,100	737,100									
	2013-2014		35,000	405,000	836,800	737,100									
	2015		1,000	-	5,000	-									
	2016		3,250	3,500	6,300	-									
	Total		4	4	4	3	4		4	1	1				
	2013-2014		2	2	2	2	2	-	2	-	-	-	-	-	-
	2015		1	1	1	1	1	-	1	-	-	-	-	-	-
2016		1	1	1	-	-	1	1	1	1	-	-	-	-	
2015															
1	SAM: Solar Power IPP	Energy	1,000	2,000	5,000	-	Solar PV		independent power producers for solar power generation						
2016															
1	CAM: Solar Power Project	Energy	3,250	3,500	6,300	-	Solar PV		first renewable IPP in the country	TBD	TBD				0
Grant Component of Investments	Total		52,500	544,880	-	14,000				66,949	66,949	10,000			
	2008-2014		26,200	361,780	-	-				56,333	56,333	-	-	-	-
	2015		3,000	75,000	-	12,000				10,000	10,000	10,000	-	-	-
	2016		23,300	108,100	-	2,000				616	616	-	-	-	-
	Total		19	15	-	1	15	1	5	7	6	1	-	-	2
	2008-2014		12	11	-	-	12	-	3	3	2	-	-	-	3
	2015		2	2	-	-	-	-	1	1	1	1	-	-	1
2016		5	2	-	1	3	1	1	3	3	-	-	-	1	
2015															
1	CAM: Supplementary Financing for Electricity Access to Low Income Households (under Loan CAM: Medium Voltage Sub-Transmission Expansion Sector Project)	Energy	1,000	45,000		10,000				10,000	10,000	10,000		Increased support to female-headed households to access modern energy services targets 35% of 10,000 household connected will be female headed households. Gender balanced human resource management and management within the national power utility EDC.	
2	TAJ: Strengthening Private Sector Participation in Technical and Vocational Education Training (TVET)	Multisector	2,000	30,000		2,000			Technology and Vocational Education and Training						

ADB = Asian Development Bank, CAM = Cambodia, CCS = carbon capture and storage, CE = clean energy, CEFPF = Clean Energy Financing Partnership Facility, DMC = developing member countries, HH = household, IPP = Independent Power Producer, SAM = Samoa, TAJ = Tajikistan, TBD = To be determined, TVET = Technology and Vocational Education and Training.

Source: ADB estimates.

Table A6.1 continued

Outputs Performance Targets and Indicators by 2020													
No.	Project Name	Sector	40% of projects supported provide co-benefits	Number of individuals employed	Number of women employed	20 national and local policies enabling CE development in DMCs	25 financing models suitable for bundling small CE investment projects used in DMCs	100% of projects supported produce knowledge products or contribute in building capacity to promote CE/CCS	Number of knowledge products produced/ disseminated	Number of projects in which knowledge products, practices or information are disseminated in gender sensitive manner	Number of individuals trained	Number of women trained	Number of trainings/ conferences/ workshops held
CONCESSIONAL FINANCING/GRANT COMPONENT OF INVESTMENT/TECHNICAL ASSISTANCE LINKED TO LOAN/TECHNICAL ASSISTANCE/DIRECT CHARGES													
	2008-2014			7,324	267				4		177	37	33
	2015			25	-				1		5,000	2,000	38
	2016			-	-				9		691	37	57
	Total Cumulative Amount			7,349	267				14		5,868	2,074	128
	2008-2014		16	3	2	11	22	125	1	2	3	2	9
	2015		2	1	-	1	2	10	1	-	4	4	6
	2016		5	1	1	4	4	28	19	-	20	14	21
	Total Projects Contributing to Outputs		23	5	3	16	26	159	21	2	27	20	36
Concessional Financing	Total		-	2,349	267	-	-	-	-	-	-	-	-
	2013-2014		-	2,324	267	-	-	-	-	-	-	-	-
	2015		-	25	-	-	-	-	-	-	-	-	-
	2016		-	-	-	-	-	-	-	-	-	-	-
	Total		4	4	2	-	4	3	-	-	-	-	-
	2013-2014		2	2	1	-	2	2	-	-	-	-	-
	2015		1	1	-	-	1	-	-	-	-	-	-
2016		1	1	1	-	1	1	-	-	-	-	-	
2015													
1	SAM: Solar Power IPP	Energy	provide employment	25				Blended finance with concessional funds	design and feasibility study				
2016													
1	CAM: Solar Power Project	Energy	provide employment	TBD	TBD	0		Blended finance with concessional funds	project report				
Grant Component of Investments	Total		-	-	-	-	-	-	1	-	5,110	2,013	29
	2008-2014		-	-	-	-	-	-	-	-	-	-	-
	2015		-	-	-	-	-	-	-	-	5,000	2,000	5
	2016		-	-	-	-	-	-	1	-	110	13	24
	Total		8	-	-	1	5	19	4	-	3	3	5
	2008-2014		4	-	-	4	12	-	-	-	-	-	-
	2015		1	-	-	-	1	2	-	-	1	1	2
2016		3	-	-	-	-	5	4	-	2	2	3	
2015													
1	CAM: Supplementary Financing for Electricity Access to Low Income Households (under Loan CAM: Medium Voltage Sub-Transmission Expansion Sector Project)	Energy	Socio-economic development benefits such as improved indoor air quality, extended hours of productive activities and studies, lower fire hazards, enhanced security, recreation, access to information, and opportunities for income generation					Output-based aid (electricity connection)	due diligence				4
2	TAJ: Strengthening Private Sector Participation in Technical and Vocational Education Training(TVET)	Multisector						0	trainings,workshop		5,000	2,000	1

CAM = Cambodia, CCS = carbon capture and storage, CE = clean energy, CEFPF = Clean Energy Financing Partnership Facility, DMC = developing member countries, IPP = independent power producer, SAM = Samoa, TAJ = Tajikistan.

Source: ADB estimates.

Table A6.1 continued

				Outputs Performance Targets and Indicators by 2020													
No.	Project Name	Sector	Allocation (In \$'000)	\$4 billion in ADB's clean energy investments leveraged (\$000)	\$1.2 billion in private sector investments leveraged (\$000)	\$1.2 billion in non private sector investments leveraged (\$000)	55 new CE/CCS technologies deployed by DMCs	2 CCS demonstration projects commenced	15 new approaches/ methodologies to promote CE/CCS introduced	700,000 HHs provided with access to energy	350,000 HHs connected to electricity	175,000 HHs connected to modern fuels and/or efficient devices for cooking	175,000 HHs connected to modern fuels and/or efficient devices for heating	30% of access to energy projects with gender mainstreaming	80% of access to energy projects with gender concerns		
2016																	
1	SRI: Supporting Electricity Supply Reliability Improvement Project- Renewable Energy Micro-grid	Energy	1,800	8,100	-	2,000	Renewable energy-based microgrid (Solar), AC-DC hybrid microgrid		0	n/a	n/a	n/a		-	0		
2	Sol: Higher Education in the Pacific Investment program - Tranche 2	Education	1,500	-	-	-	Solar photovoltaic system		demonstration site to promote replication in Universities (education sector)	TBD	TBD	-		At least 10% of all females are enrolled in degree programs by 2020 with the campus utilizing clean energy sources for 75% of their power needs	0		
3	TAJ: CAREC Corridor 2, 5 and 6 (Dushanbe-Kurgonteppa) Road Project	Transport	2,000	-	-	-	Solar PV-based micro-grid, light emitting diode		0	600	600	-		-	0		
4	INO: Pilot Carbon Capture and Storage Activity in Natural Gas Processing Sector	Energy	16,000	-	-	-		CCS	0	n/a	n/a	n/a		-	0		
5	UZB: Second Solar Power Project	Energy	2,000	100,000	-	-			0	16	16	-		-	10% of training participants (100) are women		
Technical Assistance Linked to Loan			Total	15,495	965,776	-	120,000	0	0	0	10,000	10,000	0	0	0		
			2008-2014	13,270	875,776	-	-	-	-	-	10,000	10,000	-	-	-	-	
			2015	1,225	120,000	-	120,000	-	-	-	-	-	-	-	-	-	
			2016	1,000	-	-	-	-	-	-	-	-	-	-	-	-	
			Total	21	17	-	1	16	-	2.00	2.00	1.00	-	-	-	-	2.00
			2008-2014	15	14	-	-	14	-	1	1	1	-	-	-	-	1
			2015	2	1	-	-	1	-	-	1	-	-	-	-	-	1
2016	5	3	-	1	2	-	1	-	-	-	-	-	-	-			
2015																	
1	IND: Demand -Side Energy Efficiency Invest Project	Energy	1,000	120,000	-	120,000	energy efficient lighting (LED) lights and energy efficient agricultural pumps			TBD					Some Gender Elements		
2	SAM: Solar Power IPP	Energy	225	-	-	-											

ADB = Asian Development Bank, CCS = carbon capture and storage, CE = clean energy, HH = household, IND = India, INO = Indonesia, LED = light emitting diodes, SAM = Samoa, SOL = Solomon Islands, SRI = Sri Lanka, TAJ = Tajikistan, TBD = To be determined, UZB = Uzbekistan.

Source: ADB estimates.

Table A6.1 continued

Outputs Performance Targets and Indicators by 2020													
No.	Project Name	40% of projects supported provide co-benefits	Number of individuals employed	Number of women employed	20 national and local policies enabling CE development in DMCs	25 financing models suitable for bundling small CE investment projects used in DMCs	100% of projects supported produce knowledge products or contribute in building capacity to promote CE/CCS	Number of knowledge products produced/disseminated	Number of projects in which knowledge products, practices or information are disseminated in gender sensitive manner	Number of individuals trained	Number of women trained	Number of trainings/conferences/workshops held	
2016													
1	SRI: Supporting Electricity Supply Reliability Improvement Project-Renewable Energy Micro-grid	0	-	-	0	0	training of implementing agency engineering staff in design and implementation of micro-grids; feasibility study and detailed design of microgrid	1		10	3	1	
2	Sol: Higher Education in the Pacific Investment program - Tranche 2	improved productivity with increased number of enrollment in degree programs	-	-	0	0	final report and university solar installation used as demonstration site	1		-	-	-	
3	TAJ: CAREC Corridor 2, 5 and 6 (Dushanbe-Kurgonteppa) Road Project	improved productivity with access to energy	-	-	0	0	Workshop on utilizing CE for energy access; Workshop for local talents in designing and implementing CE solutions; and training on monitoring system	-		TBD	-	3	
4	INO: Pilot Carbon Capture and Storage Activity in Natural Gas Processing Sector	0	-	-	proposed CCS regulatory framework	0	proposed CCS regulatory framework published	1		-	-	-	
5	UZB: Second Solar Power Project	52 rural health clinics have reliable and uninterrupted power supply	-	-	0	0	design and feasibility study	1		100	10	20	
Technical Assistance Linked to Loan		0	5,000	0	0	0	0	5	0	392	47	30	
		-	5,000	-	-	-	-	4	-	126	37	20	
		-	-	-	-	-	-	-	-	-	-	-	-
		-	-	-	-	-	-	-	1	-	266	10	10
		3.00	1.00	1.00	3.00	7	21	4	1	6	5	6	
		3	1	1	2	6	15	1	1	2	2	2	
		-	-	-	-	-	-	2	-	-	-	-	-
2015													
1	IND: Demand -Side Energy Efficiency Invest Project						awareness program						
2	SAM: Solar Power IPP						due diligence report						

CCS = carbon capture and storage, CE = clean energy, DMC = developing member country, IND = India, INO = Indonesia, SAM = Samoa, SOL = Solomon Islands, SRI = Sri Lanka, TAJ = Tajikistan, UZB = Uzbekistan.

Source: ADB estimates.

Table A6.1 continued

				Outputs Performance Targets and Indicators by 2020											
No.	Project Name	Sector	Allocation (In \$'000)	\$4 billion in ADB's clean energy investments leveraged (\$000)	\$1.2 billion in private sector investments leveraged (\$000)	\$1.2 billion in non-private sector investments leveraged (\$000)	55 new CE/CCS technologies deployed by DMCs	2 CCS demonstration projects commenced	15 new approaches/ methodologies to promote CE/CCS introduced	700,000 HHs provided with access to energy	350,000 HHs connected to electricity	175,000 HHs connected to modern fuels and/or efficient devices for cooking	175,000 HHs connected to modern fuels and/or efficient devices for heating	30% of access to energy projects with gender mainstreaming	80% of access to energy projects with gender concerns
2016															
1	IND: Railway Energy Efficiency Project	Transport	1,000	-	-	-			0	n/a	n/a	n/a		-	0
2	PRC: Strengthening Capacity in the Implementation of the Green Financing Platform for the Greater Beijing-Tianjin-Hebei Region (Original application title: PRC: Green Financing Platform for Accelerating Air Quality Improvement in the Greater Beijing-Tianjin-Hebei Region)	Energy	1,000	500,000	-	<1500000>			0	n/a	n/a	n/a		-	0
3	UZB: Sustainable Hydropower Project	Energy	2,000	215,000	-	-	Hydropower		0	n/a	n/a	n/a		-	0
4	UZB: Second Solar Power Project	Energy	1,000	-	-	-			0	n/a	n/a	n/a		-	0
5	Pacific Renewable Energy Investment Facility (application title REG: Pacific Renewable Energy and Energy Efficiency Investment Facility Pacific Region)	Energy	3,000	200,000	-	500,000	Various energy efficient and renewable energy technologies (including battery storage)		development of an investment facility to finance Re projects	n/a	n/a	n/a		-	0
TOTAL FOR CF, GCIs AND TALLs															
2008-2014			74,470	1,612,556	836,800	737,100	-	-	-	66,333	66,333	-	-	-	-
2015			5,225	195,000	5,000	132,000	-	-	-	10,000	10,000	-	-	-	-
2016			27,550	111,600	6,300	2,000	-	-	-	616	616	-	-	-	-
Total Amounts			107,245	1,919,156	848,100	871,100	-	-	-	76,949	76,949	-	-	-	-
2008-2014			29	27	2	2	28	-	6	4	3	-	-	-	4
2015			5	4			2		2	2	1	1	-	-	1
2016			11	6	1	2	6	1	3	4	4	-	-	-	1
Total Projects Contributing to Outputs			44	37	3	4	36	1	11	10	8	1	-	2	6

ADB = Asian Development Bank, CCS = carbon capture and storage, CE = clean energy, CF = concessional financing, CFL = compact fluorescent lighting, PRC = China, People's Republic of, DMC = developing member country, GCI = grant component of investment, HH = Households, IND = India, TALL = technical assistance linked to a loan, UZB = Uzbekistan.

Source: ADB estimates.

Table A6.1 continued

Outputs Performance Targets and Indicators by 2020												
No.	Project Name	40% of projects supported provide co-benefits	Number of individuals employed	Number of women employed	20 national and local policies enabling CE development in DMCs	25 financing models suitable for bundling small CE investment projects used in DMCs	100% of projects supported produce knowledge products or contribute in building capacity to promote CE/CCS	Number of knowledge products produced/ disseminated	Number of projects in which knowledge products, practices or information are disseminated in gender sensitive manner	Number of individuals trained	Number of women trained	Number of trainings/ conferences/ workshops held
2016												
1	IND: Railway Energy Efficiency Project	0	-	-	0	0	training program and report	1	-	16	-	1
2	PRC: Strengthening Capacity in the Implementation of the Green Financing Platform for the Greater Beijing-Tianjin-Hebei Region (Original application title: PRC: Green Financing Platform for Accelerating Air Quality Improvement in the Greater Beijing-Tianjin-Hebei Region)	0	-	-	0	green financing platform	online knowledge platform	1	-	150	TBD	5
3	UZB: Sustainable Hydropower Project	0	-	-	0	0	roadmap for mini/micro hydropower	-	-	-	-	-
4	UZB: Second Solar Power Project	0	-	-	0	0	due diligence (technical, economic and financial, governance, safeguards, and poverty and social)	1	-	100	10	4
5	Pacific Renewable Energy Investment Facility (application title REG: Pacific Renewable Energy and Energy Efficiency Investment Facility Pacific Region)	0	-	-	support for energy sector reform includes review and revision of regulatory and policy frameworks	Regional Investment Facility for RE projects	due diligence (financial management, procurement, anticorruption and project management) and feasibility studies	-	-	TBD	TBD	TBD
TOTAL FOR CF, GCIs AND TALLs												
2008-2014		-	7,324	267	-	-	-	4	-	126	37	20
2015		-	25	-	-	-	-	-	-	5,000	2,000	5
2016		-	-	-	-	-	-	2	-	376	23	34
Total Amounts		-	7,349	267	-	-	-	6	-	5,502	2,060	59
2008-2014		9	3	2	2	12	29	1	1	2	2	2
2015		2	1	-	-	2	4	-	-	1	1	2
2016		4	1	1	2	3	11	7	-	6	5	7
Total Projects Contributing to Outputs		15	5	3	4	17	44	8	1	9	8	11

CCS = carbon capture and storage, CE = clean energy, CF = concessional financing, CFL = compact fluorescent lighting, PRC = China, People's Republic of, DMC = developing member country, GCI = grant component of investment, HH = Households, IND = India, TALL = technical assistance linked to a loan, UZB = Uzbekistan.

Source: ADB estimates.

Table A6.2: Contribution of TAs and DCs toward Achieving CEFPF Outputs, as of 31 December 2016

No.	Project Name	Sector	Allocation (in '\$000)	Outputs Performance Targets and Indicators by 2020											
				\$4 billion in ADB's clean energy investments leveraged (\$000)	\$1.2 billion in private sector investments leveraged (\$000)	\$1.2 billion in non-private sector investments leveraged (\$000)	55 new CE/CCS technologies deployed by DMCs	2 CCS demonstration projects commenced	15 new approaches/ methodologies to promote CE/CCS introduced	700,000 HHs provided with access to energy	350,000 HHs connected to electricity	175,000 HHs connected to modern fuels and/or efficient devices for cooking	175,000 HHs connected to modern fuels and/or efficient devices for heating	30% of access to energy projects with gender mainstreaming	80% of access to energy projects with gender concerns
Stand Alone Technical Assistance	Total		64,395	773,440	130	130,000	-	-	-	900	900	-	-	-	-
	2008-2014		50,080	353,440	-	-	-	-	-	400	400	-	-	-	-
	2015		3,900	-	-	-	-	-	-	-	-	-	-	-	-
	2016		10,415	420,000	130	130,000	-	-	-	500	500	-	-	-	-
	Total		58	8	1	1	47	-	4	6	2	-	-	-	5
	2008-2014		47	5	-	-	42	-	2	4	1	-	-	-	4
	2015		3	-	-	-	1	-	1	1	-	-	-	-	1
2016		11	3	1	1	4	-	1	1	1	-	-	-	-	
2015															
1	REG: Promoting Sustainable Energy for All in Asia and the Pacific	Energy	1,500	-	-	-			0	TBD					Some Gender Elements
2	IND: Preparing the India solar Park Development and Transmission Sector Park	Energy	1,000	-	-	-			Development of solar Park Development and Transmission Sector Park						
3	INO: Preparing the Eastern Indonesia Sustainable Energy Access Sector Project	Energy	1,400	-	-	-	Solar photovoltaic (PV) - gas hybrid		0						
2016															
1	SRI: Wind Power Generation Project	Energy	2,000	200,000	-	-	wind power		Development of wind park	n/a	n/a	n/a	n/a		0
2	REG: Access to Electricity with New Off-Grid Solar Technology in Central Asia (Original application title: REG: Increase Electricity Access Using Off-Grid Solar Power and New Technology)	Energy	2,000	-	-	-	Solar kit		0	500	500	-	-		0
3	REG: Supporting the Asia solar energy Forum to Scale Up Solar energy Development in Asia and the Pacific (under TA REG: Empowering the Poor Through Increasing Access to Energy)	Energy	225	-	-	-			0	n/a	n/a	n/a	n/a		0
4	BAN: Rural Hybrid Power Project	Energy	1,500	120,000	-	130,000	hybrid power generating capacity - solar PV minigrids and energy storage		0	n/a	n/a	n/a	n/a		0
5	NEP: Power Transmission and Distribution Efficiency Enhancement Project (Original application title: NEP: Electricity Distribution Efficiency Improvement Project)	Energy	1,500	100,000	-	-			0	n/a	n/a	n/a	n/a		0

ADB = Asian Development Bank, BAN = Bangladesh, CCS = carbon capture and storage, CE = clean energy, CEFPF = Clean Energy Financing Partnership Facility, HH = household, IND = India, INO = Indonesia, NEP = Nepal, PV = photovoltaic, REG = regional, SRI = Sri Lanka.

Source: ADB estimates.

Table A6.2 continued

Outputs Performance Targets and Indicators by 2020												
No.	Project Name	40% of projects supported provide co-benefits	Number of individuals employed	Number of women employed	20 national and local policies enabling CE development in DMCs	25 financing models suitable for bundling small CE investment projects used in DMCs	100% of projects supported produce knowledge products or contribute in building capacity to promote CE/CCS	Number of knowledge products produced/ disseminated	Number of projects in which knowledge products, practices or information are disseminated in gender sensitive manner	Number of individuals trained	Number of women trained	Number of trainings/ conferences/ workshops held
Stand Alone Technical Assistance		-	-	-	-	-	-	7	-	180	14	54
		-	-	-	-	-	-	-	-	-	-	9
		-	-	-	-	-	-	1	-	-	-	30
		-	-	-	-	-	-	6	-	180	14	15
		7	-	-	11	8	58	10	1	9	9	15
		6	-	-	9	9	47	-	1	-	-	3
		-	-	-	1	-	3	1	-	-	-	1
	1	-	-	-	1	-	11	9	9	9	11	
2015												
1	REG: Promoting Sustainable Energy for All in Asia and the Pacific				capacity building activities and dialogues will be carried out to have enabling national plans and policies adopted to meet sustainable energy for all		trainings , investor forums, workshops; centers of excellence for capacity -building; websites/social media/newsletters; publications	1				30
2	IND: Preparing the India solar Park Development and Transmission Sector Park				0		knowledge on sustainable design and implementation of solar parks with wide replication potential across the country and the region					
3	INO: Preparing the Eastern Indonesia Sustainable Energy Access Sector Project				0		technical reports including technical design					
2016												
1	SRI: Wind Power Generation Project	0			0		capacity building of executing agency to forecast, control and manage intermittent renewable energy in the power system			10	3	1
2	REG: Access to Electricity with New Off-Grid Solar Technology in Central Asia (Original application title: REG: Increase Electricity Access Using Off-Grid Solar Power and New Technology)	improve productivity of rural households and contribute to livelihood in the region			0		training materials developed	1		30	-	1
3	REG: Supporting the Asia solar energy Forum to Scale Up Solar energy Development in Asia and the Pacific (under TA REG: Empowering the Poor Through Increasing Access to Energy)	0			0		Asia Solar Energy Forum			-	-	1
4	BAN: Rural Hybrid Power Project	0			0		due diligence report	1		-	-	-
5	NEP: Power Transmission and Distribution Efficiency Enhancement Project (Original application title: NEP: Electricity Distribution Efficiency Improvement Project)	0			0		prepared loan, including social and environmental analysis, technical, economic and financial due diligence and capacity building support to the Nepal Electricity Authority staff on using advance and smart distribution technologies, improving operational and financial performance of the distribution centers, and medium- to long-term distribution planning documents	1		TBD	TBD	1

BAN = Bangladesh, CCS = carbon capture and storage, CE = clean energy, CEFPPF = Clean Energy Financing Partnership Facility, HH = household, IND = India, INO = Indonesia, NEP = Nepal, REG = regional, SRI = Sri Lanka.

Source: ADB estimates.

Table A6.2 continued

Outputs Performance Targets and Indicators by 2020															
No.	Project Name	Sector	Allocation (In '\$000)	\$4 billion in ADB's clean energy investments leveraged (\$000)	\$1.2 billion in private sector investments leveraged (\$000)	\$1.2 billion in non-private sector investments leveraged (\$000)	55 new CE/CCS technologies deployed by DMCs	2 CCS demonstration projects commenced	15 new approaches/ methodologies to promote CE/CCS introduced	700,000 HHs provided with access to energy	350,000 HHs connected to electricity	175,000 HHs connected to modern fuels and/or efficient devices for cooking	175,000 HHs connected to modern fuels and/or efficient devices for heating	30% of access to energy projects with gender mainstreaming	80% of access to energy projects with gender concerns
2016															
6	REG: Leapfrogging of Clean Technology in CAREC Countries through Market Transformation (Original application: REG: Enabling CAREC Countries for Technology Leapfrogging)	Energy	2,000	-	-	-	Electric vehicles, efficient lighting		0	n/a	n/a	n/a	n/a		0
7	INO: Banten and West Nusa Tenggara Wind Power Development	Energy	500	-	130	-			0	n/a	n/a	n/a	n/a		0
8	RMI: Majuro Power Network Strengthening	Energy	690	-	-	-			0	n/a	n/a	n/a	n/a		0
9	REG: Improving Institutional Capacity on Preparing Energy Efficiency Investments (Original submitted application title: REG: Mainstreaming Energy Efficiency in Bangladesh, Bhutan, Maldives, Nepal and Sri Lanka)	Energy	2,000	-	-	-			0	n/a	n/a	n/a	n/a		0
10	INO: Pilot Carbon Capture and Storage Activity in Natural Gas Processing Sector	Energy	500	-	-	-			0	n/a	n/a	n/a	n/a		0
11	KAZ: Fostering the Development of Renewable Energy Generation in Kazakhstan	Energy	1,000	-	-	-			0	n/a	n/a	n/a	n/a		0
Direct Charges	Total		4,808	225	-	-	-	-	-	75,000	75,000	-	-	-	-
	2008-2014		4,097	-	-	-	-	-	-	75,000	75,000	-	-	-	-
	2015		261	-	-	-	-	-	-	-	-	-	-	-	-
	2016		450	225	-	-	-	-	-	-	-	-	-	-	-
	Total		60	1	-	-	15	-	1	1	1	-	-	-	1
	2008-2014		49	-	-	-	-	-	1	1	1	-	-	-	1
	2015		3	-	-	-	-	-	-	-	-	-	-	-	-
2016		8	1	-	-	-	-	2	-	-	-	-	-	-	
2015															
1	REG: 10th Asia Clean Energy Forum	Energy	150												
2	REG: International Hydropower Association World Congress on Advancing Sustainable Hydropower 2015	Energy	36												
3	REG: Pacific Energy Summit 2015	Energy	75												

ADB = Asian Development Bank, CAREC = Central Asia Regional Economic Cooperation, CCS = carbon capture and storage, CE = clean energy, DMC = developing member country, HH = households, INO = Indonesia, KAZ = Kazakhstan, REG = regional, RMI = Republic of the Marshall Islands.

Source: ADB estimates.

Table A6.2 continued

Outputs Performance Targets and Indicators by 2020													
No.	Project Name	40% of projects supported provide co-benefits	Number of individuals employed	Number of women employed	20 national and local policies enabling CE development in DMCs	25 financing models suitable for bundling small CE investment projects used in DMCs	100% of projects supported produce knowledge products or contribute in building capacity to promote CE/CCS	Number of knowledge products produced/ disseminated	Number of projects in which knowledge products, practices or information are disseminated in gender sensitive manner	Number of individuals trained	Number of women trained	Number of trainings/ conferences/ workshops held	
2016													
6	REG: Leapfrogging of Clean Technology in CAREC Countries through Market Transformation (Original application: REG: Enabling CAREC Countries for Technology Leapfrogging)	0			0		training on new technology and capacity building	1		TBD	TBD	5	
7	INO: Banten and West Nusa Tenggara Wind Power Development	0			0		grid integration studies, environmental and social baseline and red-flag assessments	1		-	-	-	
8	RMI: Majuro Power Network Strengthening	0			0		report and workshops and/or seminars on use of analytical tools and project technical, financial and economic analysis and investment project prioritization	1		16	4	2	
9	REG: Improving Institutional Capacity on Preparing Energy Efficiency Investments (Original submitted application title: REG: Mainstreaming Energy Efficiency in Bangladesh, Bhutan, Maldives, Nepal and Sri Lanka)	0			development of action plan/roadmap (including policy dialogue and capacity building)		5 building and 5 industrial energy audits; database of best practices for South Asia; policy dialogue, capacity building and action plan/roadmap development	0		100	-	2	
10	INO: Pilot Carbon Capture and Storage Activity in Natural Gas Processing Sector	0			0		final technical assessments, safeguards due diligence	1		-	-	-	
11	KAZ: Fostering the Development of Renewable Energy Generation in Kazakhstan	0			0		train the system operations and planning staff of state-owned electricity transmission and dispatch joint stock company in modern transmission system planning tools	0		24	7	2	
Direct Charges		-	-	-	-	-	-	1	-	186	-	15	
		-	-	-	-	-	-	-	-	51	-	4	
		-	-	-	-	-	-	-	-	-	-	-	3
		-	-	-	-	-	-	-	1	-	135	-	8
		1	-	-	-	1	2	60	3	-	9	3	10
		1	-	-	-	-	1	49	-	-	1	-	4
		-	-	-	-	-	-	3	-	-	3	3	3
		-	-	-	-	1	8	3	-	5	-	3	
2015													
1	REG: 10th Asia Clean Energy Forum				0		forum and pre-forum events, forum documents			0	0	1	
2	REG: International Hydropower Association World Congress on Advancing Sustainable Hydropower 2015				0		forum for all hydropower stakeholders to cover various aspects of sustainable hydropower			0	0	1	
3	REG: Pacific Energy Summit 2015				0		high-level dialogues and briefings participated in by governments, private sector and researchers from DMCs			0	0	1	

CAREC = Central Asia Regional Economic Cooperation, CCS = carbon capture and storage, CE = clean energy, DMC = developing member country, HH = households, INO = Indonesia, KAZ = Kazakhstan, REG = regional, RMI = Republic of the Marshall Islands.

Source: ADB estimates.

Table A6.2 continued

		Outputs Performance Targets and Indicators by 2020													
No.	Project Name	Sector	Allocation (In \$'000)	\$4 billion in ADB's clean energy investments leveraged (\$000)	\$1.2 billion in private sector investments leveraged (\$000)	\$1.2 billion in non-private sector investments leveraged (\$000)	55 new CE/CCS technologies deployed by DMCs	2 CCS demonstration projects commenced	15 new approaches/methodologies to promote CE/CCS introduced	700,000 HHs provided with access to energy	350,000 HHs connected to electricity	175,000 HHs connected to modern fuels and/or efficient devices for cooking	175,000 HHs connected to modern fuels and/or efficient devices for heating	30% of access to energy projects with gender mainstreaming	80% of access to energy projects with gender concerns
2016															
1	REG: 11th Asia Clean Energy Forum 2016	Energy	150												
2	REG: CCS Way Forward in Asia (Deep dive workshop)	Energy	75												
3	INO: Preparation of the Gundih Pilot Carbon Capture and Storage	Energy	75				Carbon capture and storage								
4	REG: CAREC ESCC Investment Forum	Multisector	150	225											
5	SRI: Consultancy Services for Technical Design and Specifications for Installation of +100/-50 Mvar Compensator at Biyagama Grid Substation	Energy	75	-											
6	REG: Deep Dive Workshop on "Paving Clean and Low Carbon Transport and Energy Systems Using Hydrogen and Fuel Cells"	Transport	85	-			Low carbon technology in the transport sector								
7	INO: Minimum Energy Performance Standards (MEPS) Development for Appliances in Indonesia	Energy	51	-											
8	KAZ: Introducing the Auction Mechanism for Renewable Energy Projects	Energy	75	-											
TOTAL FOR TAs AND DCs															
2008-2014			54,177	353,440	-	-	-	-	-	75,400	75,400	-	-	-	-
2015			4,161	-	-	-	-	-	-	-	-	-	-	-	-
2016			10,865	420,225	130	130,000	-	-	-	500	500	-	-	-	-
Total Amounts			69,203	773,665	130	130,000	-	-	-	75,900	75,900	-	-	-	-
2008-2014			96	5	-	-	55	-	3	5	2	-	-	-	5
2015			6	-	-	-	1	-	1	1	-	-	-	-	1
2016			19	4	1	1	6	-	1	1	1	-	-	-	-
Total Projects Contributing to Outputs			118	9	1	1	59	-	5	7	3	-	-	-	6

ADB = Asian Development Bank, CAREC = Central Asia Regional Economic Cooperation, CCS = carbon capture and storage, CE = clean energy, DC = direct charge, DMC = developing member country, HH = households, INO = Indonesia, KAZ = Kazakhstan, REG = regional, TA = technical assistance.

Source: ADB estimates.

Table A6.2 continued

Outputs Performance Targets and Indicators by 2020												
No.	Project Name	40% of projects supported provide co-benefits	Number of individuals employed	Number of women employed	20 national and local policies enabling CE development in DMCs	25 financing models suitable for bundling small CE investment projects used in DMCs	100% of projects supported produce knowledge products or contribute in building capacity to promote CE/CCS	Number of knowledge products produced/ disseminated	Number of projects in which knowledge products, practices or information are disseminated in gender sensitive manner	Number of individuals trained	Number of women trained	Number of trainings/ conferences/ workshops held
2016												
1	REG: 11th Asia Clean Energy Forum 2016				0		forum and pre-forum events, forum documents	0		-	-	1
2	REG: CCS Way Forward in Asia (Deep dive workshop)				0		CCS deep dive workshop	0		30	-	1
3	INO: Preparation of the Gundih Pilot Carbon Capture and Storage				0		EIA or IEE, safeguards assessments and final report	1		-	-	
4	REG: CAREC ESCC Investment Forum				0		investment forum	0		30	-	1
5	SRI: Consultancy Services for Technical Design and Specifications for Installation of +100/-50 Mvar Compensator at Biyagama Grid Substation				0		final report and staff training focused on design and application of Static Var Compensator (SVC)	1		20	-	2
6	REG: Deep Dive Workshop on "Paving Clean and Low Carbon Transport and Energy Systems Using Hydrogen and Fuel Cells"				0		deep dive workshop	0		25	-	1
7	INO: Minimum Energy Performance Standards (MEPS) Development for Appliances in Indonesia				development of standards for energy efficiency of appliances		minimum energy performance standards developed for appliances	0		-	-	-
8	KAZ: Introducing the Auction Mechanism for Renewable Energy Projects				0	RE projects auctions	consultant report on comprehensive analysis and recommendations for introducing RE projects auction; and at least 2 workshops from public and private sector	1		30	-	2
TOTAL FOR TAs AND DCs												
2008-2014		-	-	-	-	-	-	-	-	51	-	13
2015		-	-	-	-	-	-	1	-	-	-	33
2016		-	-	-	-	-	-	7	-	315	14	23
Total Amounts		-	-	-	-	-	-	8	-	366	14	69
2008-2014		7	-	-	9	10	96	-	1	1	-	7
2015		-	-	-	1	-	6	1	-	3	3	4
2016		1	-	-	2	1	19	12	-	14	9	14
Total Projects Contributing to Outputs		8	-	-	12	11	118	13	1	18	12	25

CAREC = Central Asia Regional Economic Cooperation, CCS = carbon capture and storage, CE = clean energy, DC = direct charge, DMC = developing member country, EIA = environmental impact assessment, HH = households, IEE = initial environmental examination, INO = Indonesia, KAZ = Kazakhstan, RE = renewable energy, REG = regional, SVC = static var compensator, TA = technical assistance.

Source: ADB estimates.

Table A7: CEFPF Activities against Target Outputs, as of 31 December 2016

Indicator	Target (By 2020)	1 January - 31 December 2016						Cumulative (As of 31 December 2016) ^a					
		CF	GCI	TALL	TA	DC	Total	CF	GCI	TALL	TA	DC	Total
Allocations (\$'000)		3,250	23,300	8,000	13,915	736	49,201	39,250	52,500	22,495	67,895	5,094	187,234
No. of projects receiving allocation		1	5	5	11	8	28	4	19	21	58	60	159
CE Investments in DMCs Increased													
ADB's clean energy investments in DMCs leveraged (\$'000)	\$ 4 billion^b	3,500	108,100	915,000	420,000	225	1,446,825	410,500	544,880	1,880,776	773,440	225	3,609,821
<i>ADB CE investments leveraged per US\$ of CEFPF financing (\$)</i>		29						-					
Private sector clean energy investments leveraged (\$000)^c	\$ 1.2 billion	6,300	-	-	130	-	6,430	848,100	-	-	130	-	848,230
		CAM Solar		INO Banten									
Non-private sector clean energy investments leveraged (\$000)^c	\$ 1.2 billion	-	2,000	500,000	130,000	-	632,000	737,100	14,000	620,000	130,000	-	1,501,100
<i>Other CE investments leveraged per US\$ of CEFPF financing (\$)</i>		12.98						13					
Deployment of New Technologies with Strong Demonstration Effect Facilitated													
New clean energy/CCS technologies	55	1	3	1	5	2	12	3	14	23	32	14	45
<i>No. of contributing projects on technology deployment</i>		1	3	2	4	2	12	4	15	16	44	15	94
<i>% of contributing projects on technology deployment</i>		100%	60%	40%	36%	25%	43%	100%	79%	76%	76%	25%	59%
No. of CCS demonstration projects in identified priority countries commencing^d	2	-	1	-	-	-	1	-	1	-	-	-	1
New Approaches/Methodologies to Promote CE/CCS Introduced													
New approaches/methodologies to promote clean energy/CCS introduced^d	15 approaches	1	1	1	1	0	4	3	5	2	4	1	12
<i>No. of contributing projects on new approach</i>		1	1	1	1	0	4	4	5	2	4	1	16
<i>% of contributing projects on new approach</i>		0%	20%	20%	9%	0%	14%	100%	42%	15%	11%	3%	16%
Benefits from Access to Energy Delivered													
<i>No. of projects with access to energy</i>		1	3	-	1	-	5	1	7	2	6	1	17
<i>% of projects with access to energy component</i>		0%	60%	0%	9%	0%	18%	25%	58%	15%	17%	3%	17%
No. of HHs provided with access to energy in participating DMCs^d	700,000	TBD	616	-	500	-	1,116	0	66,949	10,000	900	75,000	152,849
<i>HHs connected to electricity^d</i>	350,000	TBD	616	-	500	-	1,116	0	66,949	10,000	900	75,000	152,849
<i>HHs connected to modern fuels and/or efficient devices for cooking^d</i>	175,000	-	-	-	-	-	-	-	10,000	-	-	-	10,000
<i>HHs connected to modern fuels and/or efficient devices for heating^d</i>	175,000	-	-	-	-	-	-	-	-	-	-	-	-
% of access to energy projects with gender mainstreaming^e	30%	0%	33%	0%	0%	0%	20%	0%	29%	0%	0%	0%	12%
<i>No. of contributing access to energy projects on gender mainstreaming</i>		-	1	-	-	-	1	-	2	-	-	-	2
% of access to energy projects with gender concerns^d	80%	0%	33%	0%	0%	0%	20%	0%	57%	100%	83%	100%	71%
<i>No. of contributing access to energy projects on gender concerns</i>		-	1	-	-	-	1	0	4	2	5	1	12

ADB = Asian Development Bank, CCS = carbon capture and storage, CE = clean energy, CEFPF = Clean Energy Financing Partnership Facility, CF = concessional financing, DC = direct charge, DMC = developing member country, GCI = grant component of investment, HH = household, TA = technical assistance, TALL = technical assistance linked to loan.

^aIncludes adjustments made following approval or withdrawal of projects.

^bThis is the cumulative total target of the clean energy funds by 2020, supporting the \$2 billion annual target of ADB.

^cPerformance indicator effective in 2014. The estimates include an allocation in 2013, the Indonesia: Sarulla Geothermal Power Generation Project when monitoring on indicators was initiated.

^dPerformance indicator effective in 2011. The cumulative percentage accounts for projects from 2011 onwards.

Source: ADB estimates.

Table A7 continued

Indicator	Target (By 2020)	1 January - 31 December 2016						Cumulative (As of 31 December 2016) ^a					
		CF	GCI	TALL	TA	DC	Total	CF	GCI	TALL	TA	DC	Total
Health and Productivity Benefits Provided													
% of projects supported highlighting cobenefits on health and productivity ^b	40%	100%	60%	0%	9%	0%	18%	100%	67%	23%	20%	3%	23%
<i>No. of contributing projects on cobenefits</i>		1	3		1		5	4	8	3	7	1	23
No. of individuals employed ^c		TBD					TBD	2,349	-	5,000	-	-	7,349
No. of women employed ^c		TBD					TBD	267	-	-	-	-	267
% of women employed ^c		0%	0%	0%	0%	0%	0%	11%	0%	0%	0%	0%	4%
<i>No. of contributing projects on employment</i>		1					1	4	0	1	0	0	5
Barriers to CE/CCS Investments Lowered													
National or local policies enabling CE/CCS development in participating DMCs developed ^d	20		1	1	1	1	4	0	1	3	8	1	11
<i>No. of contributing projects on policy development</i>			1	1	1	1	4	0	1	3	11	1	16
Financing models suitable for bundling small CE/CCS investment applied in participating DMCs ^d	25	1		2			4	1	4	6	9	2	18
<i>No. of contributing projects on financing models</i>		1		2			4	4	5	7	8	2	26
% of projects producing/disseminating knowledge products or contributing to capacity building	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
<i>No. of contributing projects on knowledge products and/or capacity building</i>		1	5	5	11	8	28	4	19	21	58	60	159
No. of projects that disseminate knowledge products, practices and information in a gender sensitive manner ^e							-	-	-	1	1	-	2
No. of knowledge products produced and/or disseminated ^e		0	4	3	7	3	17	0	4	7	8	3	22
No. of individuals trained ^e			110	266	180	135	691	0	5110	392	180	186	5868
No. of women trained ^e			13	10	14	0	37	0	2013	47	14	0	2074
% of women trained ^e		0%	12%	0%	0%	0%	5%	0%	39%	12%	0%	0%	35%
No. of trainings/conferences/workshops held ^e			24	10	15	8	57	0	29	30	54	15	128

CCS = carbon capture and storage, CE = clean energy, CF = concessional financing, DMC = developing member country, GCI = grant component of investment, DC = direct charge, TA = technical assistance, TALL = technical assistance linked to loan.

^aIncludes adjustments made following approval or withdrawal of projects.

^bPerformance indicator effective in 2011. The cumulative percentage accounts for projects from 2011 onwards.

^cPerformance indicator effective in 2014. The estimates include an allocation in 2013, the Indonesia: Sarulla Geothermal Power Generation Project when monitoring on indicators was initiated.

^dTotal may not add-up due to coverage of policies or financing models by various projects.

Note: As of 31 December 2015, there are 3 project allocations to adaptation projects under CFPS. These are not accounted in this table.

Source: ADB estimates.

Completed Clean Energy Financing Partnership Facility Direct Charge Project in 2016

VIE: Preparation of the market Readiness Proposal (Phase 2) of the Partnership for Market Readiness Project in Vietnam

The Clean Energy Financing Partnership Facility provided \$75,000 to assist in the preparation and implementation of the Partnership for Market Readiness (PMR) project in Viet Nam. It has been useful in providing assistance in the preparation of the organizing framework and Market Readiness Proposal (MRP) of Viet Nam. The Partnership for Market Readiness (PMR) project is a grant-based, capacity building trust fund that provides funding and technical assistance to selected developing countries with transitioning economies for innovation and piloting of carbon market instruments to enhance investments in advanced energy efficiency, renewable energy, waste to energy recovery technologies, and scale-up reduction in greenhouse gas emissions. PMR country projects are intended to help operationalize carbon market instruments through support for policy and regulation making, institutional setting, piloting of carbon market instruments, training of qualified human resources, and other related capacity building activities. The MRP that was developed for Viet Nam details the country's plan for its proposed market-based instrument(s) and market readiness components. The consultants hired under the DC conducted various internal and external consultations to ensure that the MRP will fully reflect the needs of the national authorities and concerns of all stakeholders. The DC supported the travel of an ADB staff who served as resource person at the Seventh Meeting of the Partnership Assembly (PA) in Marrakech, Morocco and during the expert in-country review of the draft MRP in Hanoi, Viet Nam. The DC also supported the travel of three government officials in Cologne, Germany to present the draft MRP to the Ninth Meeting of the PA as well as the travel of two government officials to Chile, Santiago to present the final MRP to the Tenth meeting of the PA, during which the PA approved Viet Nam's final MRP and allocated \$ 3 million to Viet Nam for the implementation of its MRP. CEFPF's contribution helped Viet Nam in setting the framework for developing its domestic carbon market which calls for large scale deployment of renewables.

Table A9.1: Status of GrantStatement 1

ASIAN DEVELOPMENT BANK
ADMINISTRATOR FOR
CLEAN ENERGY FUND
CHANNEL FINANCING AGREEMENT

STATUS OF GRANT
As of 31 December 2016
(Expressed in US Dollars)

TOTAL CONTRIBUTION COMMITTED		100,900,509.18
Gain (loss) arising from change in value of currency		<u>(4,977,678.58)</u>
Amount received:		
Government of Australia (AUD13,584,000)	13,333,980.70	
Government of Norway (NOK240,000,000)	36,172,042.48	
Government of Spain (USD9,500,000)	9,500,000.00	
Government of Sweden (SEK175,000,000)	24,241,608.51	
Government of UKNI (GBP2,000,000)	<u>2,789,600.00</u>	
	86,037,231.69	
Receivable from DECC (GBP8,000,000)	<u>9,885,598.91</u> ^{b/}	
NET CONTRIBUTION AVAILABLE		95,922,830.60
Interest income - cash in bank	58,699.30	
Interest income - investments	701,649.86	
Gain (loss) on foreign exchange transactions	<u>2,840.70</u>	<u>763,189.86</u>
TOTAL AMOUNT AVAILABLE		96,686,020.46
Amounts utilized for:		
Project expenditures (Statement 2)		
Grant component of investment (GCI)	(7,483,475.72)	
Technical assistance linked to loan (TALL)	(4,646,222.52)	
Technical assistance (TA)	(13,641,325.64)	
Direct charges	(3,214,221.72)	
ADB administration cost	(1,103,779.67) ^{c/}	
Audit fees	(139,828.00)	
Financial expenses	<u>(8,259.42)</u>	<u>(30,237,112.69)</u>
UNUTILIZED BALANCE		66,448,907.77 ^{a/}
Outstanding commitments - GCI, TALL and TA	(27,680,735.65)	
Reserve for ADB administration cost	(1,314,553.79) ^{c/}	
Undisbursed direct charges	<u>(547,891.11)</u>	<u>(29,543,180.55)</u>
UNCOMMITTED BALANCE		36,905,727.22

Projects approved but not yet effective:

G0486-SRI: Supporting Electricity Supply Reliability Improvement Proj-Ren Energy (GCI)	(1,800,000.00)	
G0505-REG: Higher Education in the Pacific Investment Program- Project 2(Addl Fin) (GCI)	(1,500,000.00)	
G0510-TAJ: Carec Corridors 2,5 & 6 (Dushanbe-Kurgonteppa) Road Project (GCI)	(2,000,000.00)	
TA 9251-CD: Strengthening Capacity in Implementation of Green Financing Platform (TALL)	(1,000,000.00)	
Reserve for ADB administration cost	<u>(315,000.00)</u> ^{c/}	<u>(6,615,000.00)</u>
UNCOMMITTED BALANCE AVAILABLE FOR NEW COMMITMENTS		<u><u>30,290,727.22</u></u>

As applicable, non-US dollar currencies are expressed in thousands. Undrawn contributions in local currency are translated at the applicable exchange rate as of reporting date.

^{a/} Represented by:

Cash in bank	3,173,305.88
Investment	52,948,314.69
Accrued interest	8,050.29
Undrawn contribution	9,885,598.91
Advances-suppliers/contractors	35,439.96
Advances under TA Grants	462,894.92
Interfund payable	<u>(64,696.88)</u>
	<u><u>66,448,907.77</u></u>

^{b/} Undrawn contribution represents the amount of promissory notes from DECC.

^{c/} Represents 5% and 2% of TA and Grant project expenditures/outstanding commitments/projects approved not yet effective. For Grants under Contributions committed starting 6 November 2009, admin cost will be 5% for grants up to \$5 million, or 2% with a minimum of \$250,000 (whichever is greater) for grants above \$5 million.

ASIAN DEVELOPMENT BANK
Statement of TA/Grant Expenditures and Direct Charges
Clean Energy Fund
As of 31 December 2016
(Expressed in US Dollars)

TA/Grant Title Approved Application	TA/Grant/ Application No./Type	Date of Approval ^{4/}	TA/Grant/ Direct Charge Amount ^{1/}	Amount Received	Project Expenditures/Direct Charges ^{2/}			Outstanding Commitments	Expected TA/Grant Completion Date	Completed TAs/Grants/DCs	
					Cumulative up to 31/12/15	Transactions 01/01-31/12/16	Cumulative up to 31/12/16			Unutilized Commitment (Savings)	Financial Completion Date
			(A)	(B)	(C)	(D)	(E) = (C) + (D)	(F) = (A) - (E)	(G)	(H) = (A) - (E)	(I)
APPROVED and EFFECTIVE PROJECTS											
Grant Component of Investment (GCI):											
Cambodia											
Medium-Voltage Sub-Transmission Expansion Sector - Additional Financing	G0468	9-Dec-15	1,000,000.00		-	-	-	1,000,000.00	30-Jun-18		
China, People's Republic of											
Integrated Renewable Biomass Energy Development Project	G0202	16-Apr-10	3,000,000.00		569,502.02	114,398.08	683,900.10	2,316,099.90	31-Dec-17		
Indonesia											
Java-Bali Electricity Distribution Performance Improvement Project	G0198	22-Mar-10	1,000,000.00		397,946.17	567,641.61	965,587.78			34,412.22	25-Nov-16
West Kalimantan Power Grid Strengthening Project	G0354	27-Aug-13	2,000,000.00		-	1,664,797.63	1,664,797.63	335,202.37	31-Jul-17		
Nepal											
Energy Access and Efficiency Improvement Project	G0183	27-Nov-09	4,200,000.00		3,680,715.31	29,631.72	3,710,347.03			489,652.97	9-Nov-16
Sri Lanka											
Clean Energy and Network Efficiency Improvement Project	G0303	18-Sep-12	1,500,000.00		108,661.03	335,030.36	443,691.39	1,056,308.61	30-Jun-17		
Thailand											
NSP: Solar Power Project	G0201	16-Apr-10	2,000,000.00		-	-	-			2,000,000.00	3-Dec-13
Viet Nam											
Renewable Energy Development and Network Expansion and Rehabilitation for Remote Communes Sector - Additional Financing	G0384	9-Apr-14	3,000,000.00			-	-	3,000,000.00	31-Dec-17		
Tajikistan											
Strengthening Technical and Vocational Education and Training	G0453	9-Nov-15	2,000,000.00			15,151.79	15,151.79	1,984,848.21	30-Sep-21		
Sub Total			19,700,000.00		4,756,824.53	2,726,651.19	7,483,475.72	9,692,459.09		2,524,065.19	
Technical Assistance Linked to Loan (TALL):											
Bangladesh											
Supporting Brick Sector Development Program	8197/CD	22-Oct-12	750,000.00		189,164.52	242,647.75	431,812.27	318,187.73	31-Dec-16		

TA/Grant Title Approved Application	TA/Grant/ Application No./Type	Date of Approval	TA/Grant/ Direct Charge Amount ^{1/}	Amount Received	Project Expenditures/Direct Charges ^{2/}			Outstanding Commitments	Expected TA/Grant Completion Date	Completed TAs/Grants/DCs	
					Cumulative up to 31/12/15	Transactions 01/01-31/12/16	Cumulative up to 31/12/16			Unutilized Commitment (Savings)	Financial Completion Date
					(C)	(D)	(E) = (C) + (D)			(F) = (A) - (E)	(G)
Technical Assistance Linked to Loan (TALL):											
China, People's Republic of											
Guangdong Energy Efficiency and Environment Improvement Investment Program	G0109	4-Jun-08	800,000.00		799,216.73	-	799,216.73			783.27	27-Apr-15
Railway Sector Energy Efficiency Strategy - WITHDRAWN/CANCELLED	7171/AO	18-Nov-08	800,000.00		-	-	-			800,000.00	25-Jul-11
NSP: Municipal Waste to Energy Project	7294/CD	4-Jun-09	653,000.00		288,234.00	93,000.00	381,234.00	271,766.00	30-Jun-17		
Municipal Natural Gas Infrastructure Development Project	7636/CD	9-Nov-10	592,000.00		62,430.00	83,240.00	145,670.00	446,330.00	31-Dec-16		
Development of Energy Manager Program for Energy Conservation in Shandong	7817/CD	31-May-11	1,000,000.00		977,575.53	-	977,575.53			22,424.47	30-Apr-14
Energy Efficiency Multi-project Financing Program	8431/CD	16-Oct-13	500,000.00		213,864.87	66,071.22	279,936.09	220,063.91	31-Mar-17		
India											
Demand-Side Energy Efficiency Investment	9081/PP	23-Feb-16	1,000,000.00		-	112,015.76	112,015.76	887,984.24	30-Apr-18		
Lao People's Democratic Republic											
Hydropower Impacts and Best Practices : A Communications Project - WITHDRAWN/CANCELLED	8058/CD	8-Feb-12	180,000.00		-	-	-			180,000.00	19-Jul-13
Regional											
Pacific Renewable Energy Investment Facility	9242/PP	24-Nov-16	3,000,000.00		-	-	-	3,000,000.00	30-Nov-26		
Samoa											
Renewable Energy Development and Power Sector Rehabilitation	G0371	15-Nov-13	1,000,000.00		552,854.30	216,642.11	769,496.41	230,503.59	30-Jun-19		
Sri Lanka											
Demand-Side Management for Municipal Street Lighting	7267/CD	14-Apr-09	800,000.00		749,265.73	-	749,265.73			50,734.27	20-Dec-12
Uzbekistan											
Second Solar Power Project	9262/PP	5-Dec-16	1,000,000.00		-	-	-	1,000,000.00	30-Jun-18		
Sub Total			12,075,000.00		3,832,605.68	813,616.84	4,646,222.52	6,374,835.47		1,053,942.01	

Technical Assistance (TA):

Afghanistan

Renewable Energy Development 8808/CD 12-Dec-14 1,000,000.00 53,024.00 318,871.49 371,895.49 628,104.51 30-Jun-17

Azerbaijan

Renewable Energy Development Biomass Cogeneration Project 8364/PP 8-May-13 1,000,000.00 292,834.69 - 292,834.69 707,165.31 31-Dec-16

TA/Grant Title Approved Application	TA/Grant/ Application No./Type	Date of Approval	TA/Grant/ Direct Charge Amount ^{1/}	Amount Received	Project Expenditures/Direct Charges ^{2/}			Outstanding Commitments	Expected TA/Grant Completion Date	Completed TAs/Grants/DCs	
					Cumulative up to 31/12/15	Transactions 01/01-31/12/16	Cumulative up to 31/12/16			Unutilized Commitment (Savings)	Financial Completion Date
					(C)	(D)	(E) = (C) + (D)				
Technical Assistance (TA):											
<u>China, People's Republic of</u>											
Innovating Financing Mechanisms for Energy Efficiency and Emissions Reduction in SMEs	7564/PA	21-Jul-10	300,000.00		300,000.00	-	300,000.00			-	26-Mar-13
Renew able Energy Development in Qinghai	7643/CD	10-Nov-10	200,000.00		200,000.00	-	200,000.00			-	27-Dec-12
Developing Smart Grid Technology for Efficient Utilization of Renew able Energy	7721/CD	8-Dec-10	900,000.00		810,249.98	-	810,249.98			89,750.02	27-Jan-14
<u>India</u>											
Concentrated Solar Pow er Project	8455/PP	24-Sep-13	1,000,000.00		485,810.50	202,141.59	687,952.09	312,047.91	31-Mar-16		
<u>Indonesia</u>											
Scaling Up Renew able Energy Access in Eastern Indonesia	8287/CD	12-Dec-12	1,000,000.00		1,000,000.00	-	1,000,000.00			-	27-Jun-16
<u>Marshall Islands</u>											
Majuro Pow er Network Strengthening	9225/CD	9-Nov-16	690,000.00		-	-	-	690,000.00	30-Nov-17		
<u>Nepal</u>											
Pow er Transmission & Distribution Efficiency Enhancement Project	9144/PP	22-Jul-16	1,500,000.00			31,929.44	31,929.44	1,468,070.56	31-Dec-19		
<u>Philippines</u>											
NSP: SSTA for Pasuquin East Wind Farm Development Project	7097/PP	11-Jun-08	200,000.00		200,000.00	-	200,000.00			-	23-Sep-10
<u>Sri Lanka</u>											
Building the Capacity of the Sustainable Energy Authority	7011/AO	12-Dec-07	600,000.00		534,623.82	-	534,623.82			65,376.18	16-Sep-11
Wind Pow er Generation Project	9085/PP	18-Mar-16	2,000,000.00			353,973.61	353,973.61	1,646,026.39	31-Jul-17		
<u>Thailand</u>											
Mainstreaming Energy Efficiency Measures in Thai Municipalities	7194/AO	8-Dec-08	1,000,000.00		738,818.02	-	738,818.02			261,181.98	22-Jun-12
<u>Tonga</u>											
Outer Island Renew able Energy Project	7940/PP	2-Dec-11	225,000.00		224,998.97	-	224,998.97			1.03	12-Jul-13
Outer Island Energy Efficiency Project	8296/PP	17-Dec-12	400,000.00		390,000.00	-	390,000.00			10,000.00	11-Feb-14
<u>Uzbekistan</u>											
Samarkand Solar Pow er Project	8372/PP	29-May-13	750,000.00		507,947.37	239,124.00	747,071.37			2,928.63	31-Dec-16

TA/Grant Title Approved Application	TA/Grant/ Application No./Type	Date of Approval	TA/Grant/ Direct Charge Amount ^{1/}	Amount Received	Project Expenditures/Direct Charges ^{2/}			Outstanding Commitments	Expected TA/Grant Completion Date	Completed TAs/Grants/DCs		
					Cumulative up to	Transactions	Cumulative up to			Unutilized Commitment (Savings)	Financial Completion Date	
					31/12/15	01/01-31/12/16	31/12/16					
(A)	(B)	(C)	(D)	(E) = (C) + (D)	(F) = (A) - (E)	(G)	(H) = (A) - (E)	(I)				
Technical Assistance (TA):												
Regional												
Promoting Energy Efficiency in the Pacific	6485/REG	12-Sep-08	1,200,000.00		1,160,282.89	-	1,160,282.89			39,717.11	31-Aug-11	
Promoting Access to Renewable Energy in the Pacific	7329/CD	11-Aug-09	3,000,000.00		2,655,986.14	-	2,655,986.14			344,013.86	9-Dec-15	
Empowering the Poor through Increasing Access to Energy	7512/PP	9-Apr-10	1,225,000.00		128,078.85	758,921.28	887,000.13	337,999.87	31-Dec-16			
Promoting Renewable Energy, Clean Fuels, and Energy Efficiency in the Greater Mekong Subregion	7679/CD	18-Nov-10	200,000.00		42,988.73	-	42,988.73			157,011.27	31-Mar-15	
Sustainable Energy Training Program	8446/CD	12-Sep-13	225,000.00		201,155.32	-	201,155.32			23,844.68	23-Dec-14	
Asia Energy Efficiency Accelerator	8483/CD	10-Oct-13	2,000,000.00		394,826.53	1,179,751.48	1,574,578.01	425,421.99	30-Nov-16			
Sustainable Energy Training Program 2014	8644/CD	8-May-14	225,000.00		133,591.49	-	133,591.49			91,408.51	31-Oct-15	
Promoting Sustainable Energy for All in Asia and the Pacific	8953/CD	10-Sep-15	1,500,000.00		-	37,956.04	37,956.04	1,462,043.96	31-Dec-20			
Access to Electricity w/ New Off-Grid Solar Tech in Central Asia	9168/CD	14-Sep-16	2,000,000.00		-	63,439.41	63,439.41	1,936,560.59	31-Oct-18			
Improving Institutional Capacity on Preparing Energy Efficiency Investment	9266/CD	6-Dec-16	2,000,000.00		-	-	-	2,000,000.00	30-Nov-19			
Sub Total			26,340,000.00		10,455,217.30	3,186,108.34	13,641,325.64	11,613,441.09		1,085,233.27		
Total TAs and Grants			58,115,000.00		19,044,647.51	6,726,376.37	25,771,023.88	27,680,735.65		4,663,240.47		

Direct Charge (DC):

Asia Clean Energy Forum 2008	CEFPDC 00001	2-Apr-08	50,000.00		8,792.31	-	8,792.31			41,207.69	22-Jul-08
Transport and Climate Change "The Missing Link: How Should Transport Address Its Emissions and Energy Use"	CEFPDC 00002	25-Aug-08	70,000.00		70,000.00	-	70,000.00			0.00	26-Oct-10
Preparation of Renewable Energy for Remote Island and Mountain Communes	CEFPDC 00003	29-May-08	75,000.00		58,231.20	-	58,231.20			16,768.80	22-Jul-08
Initial ADB Loan Due Diligence Preparatory Work for Solar Thermal Power Plant Project in Rajasthan	CEFPDC 00004	5-Jun-08	75,000.00		19,654.28	-	19,654.28			55,345.72	26-Oct-10
Recruitment of Clean Energy Expert (National Consultant in Lao)	CEFPDC 00005	25-Aug-08	180,000.00		179,780.52	-	179,780.52			219.48	15-Jun-12
PRC: Zhangbei Wind Power Project	CEFPDC 00006	25-Aug-08	40,000.00		40,000.00	-	40,000.00			0.00	26-Oct-10
Qinghai Pasture Conservation Using Solar Photovoltaic (PV)-Driven Irrigation	CEFPDC 00010	19-Jan-09	75,000.00		59,980.20	-	59,980.20			15,019.80	31-Aug-10
NEP: Compact Fluorescent Lighting and Solar-Powered Street-Lighting in Clean Energy Project Financing	CEFPDC 00011	9-Feb-09	75,000.00		64,276.25	-	64,276.25			10,723.75	28-May-13

TA/Grant Title Approved Application	TA/Grant/ Application No./Type ^{4/}	Date of Approval	TA/Grant/ Direct Charge Amount ^{1/}	Amount Received	Project Expenditures/Direct Charges ^{2/}			Outstanding Commitments	Expected TA/Grant Completion Date	Completed TAs/Grants/DCs		
					Cumulative up to 31/12/15	Transactions 01/01-31/12/16	Cumulative up to 31/12/16			Unutilized Commitment (Savings)	Financial Completion Date	
					(C)	(D)	(E) = (C) + (D)					(H) = (A) - (E)
Direct Charge (DC):												
4th Asia Clean Energy Forum 2009	CEFPDC 00012	16-Mar-09	100,000.00		54,583.62	-	54,583.62			45,416.38	12-Aug-09	
Workshop on PRC-ADB Cooperation in Clean Energy Project Financing	CEFPDC 00013	31-Mar-09	27,000.00		21,663.96	-	21,663.96			5,336.04	26-Oct-10	
Clean Energy Expo China Conference 2009	CEFPDC 00014	30-Jun-09	60,000.00		23,251.18	-	23,251.18			36,748.82	19-Aug-09	
South Asia Regional Climate Change Conference	CEFPDC 00015	29-Jul-09	50,000.00		50,000.00	-	50,000.00			0.00	26-Oct-10	
CDN Baseline Study for Rehabilitation of Pre-Cast Panel Buildings in Ulaanbaatar	CEFPDC 00016	10-Sep-09	75,000.00		71,721.30	-	71,721.30			3,278.70	27-May-14	
Carbon Forum Asia 2009 (Financial Support for up to 60 representatives from DMC)	CEFPDC 00017	15-Sep-09	150,000.00		111,299.90	-	111,299.90			38,700.10	31-Aug-11	
Investment Summit for Hainan's Clean Energy Development	CEFPDC 00018	3-Mar-10	75,000.00		53,486.01	-	53,486.01			21,513.99	08-Sep-11	
Montreal 2010: 21st World Energy Congress	CEFPDC 00019	4-Mar-10	35,000.00		4,332.43	-	4,332.43			30,667.57	3-Mar-12	
5th Asia Clean Energy Forum 2010	CEFPDC 00020	6-Apr-10	150,000.00		118,173.68	-	118,173.68			31,826.32	21-Dec-11	
Quantum Leap in Wind Power in Asia	CEFPDC 00021	3-May-10	100,000.00		77,730.17	-	77,730.17			22,269.83	14-May-12	
Clean Energy Expo Asia 2010	CEFPDC 00022	7-Sep-10	93,000.00		39,714.54	-	39,714.54			53,285.46	21-Dec-11	
Carbon Forum Asia 2010	CEFPDC 00023	21-Sep-10	150,000.00		97,655.59	-	97,655.59			52,344.41	26-Sep-11	
6th Asia Clean Energy Forum 2011	CEFPDC 00026	14-Mar-11	100,000.00		87,527.01	-	87,527.01			12,472.99	30-Sep-13	
Wind Energy Futures in Asia - Regional Consultation and Report	CEFPDC 00028	30-May-11	150,000.00		37,393.57	-	37,393.57			112,606.43	07-Jan-13	
Mainstreaming the Asia Solar Energy Initiative	CEFPDC 00030	21-Jul-11	43,200.00		42,813.02	-	42,813.02			386.98	03-Apr-13	
Carbon Forum Asia 2011	CEFPDC 00031	22-Jul-11	50,000.00		49,937.64	-	49,937.64			62.36	28-Jun-12	
Clean Energy Expo Asia 2011	CEFPDC 00032	11-Aug-11	50,000.00		26,611.10	-	26,611.10			23,388.90	25-Sep-12	

TA/Grant Title Approved Application	TA/Grant/ Application No./Type	Date of Approval	TA/Grant/ Direct Charge Amount ¹¹	Amount Received	Project Expenditures/Direct Charges ²¹			Outstanding Commitments	Expected TA/Grant Completion Date	Completed TAs/Grants/DCs	
					Cumulative up to 31/12/15	Transactions 01/01-31/12/16	Cumulative up to 31/12/16			Unutilized Commitment (Savings)	Financial Completion Date
					(C)	(D)	(E) = (C) + (D)			(F) = (A) - (E)	(G)
Designing Output-based Aid Scheme for Rural Electrification in Cambodia	CEFPDC 00033	17-Nov-11	60,000.00		40,521.42	-	40,521.42			19,478.58	28-Feb-13
Solar Energy Training	CEFPDC 00034	9-Dec-11	100,000.00		98,159.62	-	98,159.62			1,840.38	23-Jan-13
Partnership for Market Readiness (PMR) Project in Vietnam	CEFPDC00035	16-Jan-12	60,000.00		25,571.98	-	25,571.98			34,428.02	28-Jun-13
Sustainable Rural Ecology for Green Growth	CEFPDC00036	2-Mar-12	50,000.00		21,637.51	-	21,637.51			28,362.49	03-Sep-13
Fourth Meeting of the Asia Solar Energy Forum (ASEF)	CEFPDC00037	23-Mar-12	50,000.00		12,452.38	-	12,452.38			37,547.62	30-Sep-14
7th Asia Clean Energy Forum 2012	CEFPDC00038	24-Apr-12	150,000.00		146,500.76	-	146,500.76			3,499.24	12-May-14
Mainstreaming the Asia Solar Energy Initiative (ASEI) II	CEFPDC00039	30-May-12	30,000.00		27,306.40	-	27,306.40			2,693.60	29-Sep-14
Clean Energy Expo Asia 2012	CEFPDC00040	31-Jul-12	50,000.00		24,101.35	-	24,101.35			25,898.65	13-Oct-14
Carbon Forum Asia 2012	CEFPDC00041	21-Aug-12	50,000.00		36,049.60	-	36,049.60			13,950.40	15-Jan-14
Preparation of Utility Scale Concentrated Solar Power Program	CEFPDC00042	3-Sep-12	75,000.00		55,630.75	-	55,630.75	19,369.25			
Clean Energy Technology Knowledge Sharing 2012	CEFPDC00043	19-Sep-12	100,000.00		55,231.14	-	55,231.14			44,768.86	29-Sep-14
Pacific Energy Summit 2013	CEFPDC00045	11-Jan-13	150,000.00		129,083.35	-	129,083.35			20,916.65	14-May-14
8th Asia Clean Energy Forum 2013	CEFPDC00046	3-Apr-13	150,000.00		139,712.13	-	139,712.13			10,287.87	05-Nov-15
International Hydropower Association (IHA) World Congress on Advancing Sustainable Hydropower 2013	CEFPDC00047	8-May-13	35,000.00		22,416.91	-	22,416.91			12,583.09	30-Sep-14
Daegu 2013: 22nd World Energy Congress	CEFPDC00048	8-May-13	150,000.00		23,464.95	-	23,464.95	126,535.05			
Preparation of the Market Readiness Proposal - Phase 2 of the Partnership for Market Readiness (PMR) Project in Viet Nam	CEFPDC00049	16-Jul-13	75,000.00		71,784.86	-	71,784.86			3,215.14	23-Sep-16
Carbon Forum Asia 2013	CEFPDC00050	9-Aug-13	50,000.00		47,537.92	-	47,537.92			2,462.08	12-Mar-14

TA/Grant Title Approved Application	TA/Grant/ Application No./Type ^{4/}	Date of Approval	TA/Grant/ Direct Charge Amount ^{1/}	Amount Received	Project Expenditures/Direct Charges ^{2/}			Outstanding Commitments	Expected TA/Grant Completion Date	Completed TAs/Grants/DCs		
					Cumulative up to 31/12/15	Transactions 01/01-31/12/16	Cumulative up to 31/12/16			Unutilized Commitment (Savings)	Financial Completion Date	
					(C)	(D)	(E) = (C) + (D)					(F) = (A) - (E)
Direct Charge (DC):												
9th Asia Clean Energy Forum	CEFPDC00052	28-Mar-14	150,000.00		145,724.25	-	145,724.25			4,275.75	14-Jul-15	
US-Asia Pacific Energy Dialogue	CEFPDC00053	11-Apr-14	130,000.00		112,280.30	-	112,280.30			17,719.70	20-Aug-15	
Reg: External Evaluation for Clean Energy Financing Partnership Facility (CEFPF) - CEF Fund Component	CEFPDC00054	13-Dec-14	100,000.00		74,560.11	-	74,560.11	25,439.89				
10th Asia Clean Energy Forum	CEFPDC00056	1-Apr-15	150,000.00		147,250.98	(1,978.42)	145,272.56	4,727.44				
Reg: International Hydropower Association World Congress on Advancing Sustainable Hydropower 2015	CEFPDC00057	16-Apr-15	36,000.00		1,281.47	-	1,281.47			34,718.53	28-Sep-15	
Pacific Energy Summit 2015	CEFPDC00058	28-Apr-15	75,000.00		-	67,253.28	67,253.28	7,746.72				
11th Asia Clean Energy Forum	CEFPDC00060	1-Mar-16	150,000.00		-	124,664.23	124,664.23	25,335.77				
CAREC ESCC Investment Forum	CEFPDC00064	14-Jun-16	150,000.00		-	49,310.50	49,310.50	100,689.50				
SRI: Consultancy Services for Technical Design and Specifications for Installation of +100/-50 Mvar Static Var Compensator at Biyagama Grid Substation	CEFPDC00065	22-Jul-16	74,900.00		-	-	-	74,900.00				
Deep Drive Workshop on "Paving Clean and Low Carbon Transport and Energy System Using Hydrogen and Fuel Cells" at the ADB Transport Forum 2016 and relevant knowledge products on Hydrogen and fuel cells	CEFPDC00066	24-Aug-16	85,000.00		-	42,665.01	42,665.01	42,334.99				
Minimum Energy Performance Standards (MEPS) Development for Appliances in Indonesia	CEFPDC00067	25-Aug-16	51,250.00		-	5,437.50	5,437.50	45,812.50				
Introducing the Auction Mechanism for Renewable Energy Project	CEFPDC00068	7-Oct-16	75,000.00		-	-	-	75,000.00				
Total Direct Charges			4,710,350.00		2,926,869.62	287,352.10	3,214,221.72	547,891.11		948,237.17		
TOTAL APPROVED and EFFECTIVE PROJECTS			62,825,350.00	86,037,231.69	21,971,517.13	7,013,728.47	28,985,245.60	28,228,626.76		5,611,477.64		

TA/Grant Title Approved Application	TA/Grant/ Application No./Type	Date of Approval	TA/Grant/ Direct Charge Amount ^{1/}	Amount Received	Project Expenditures/Direct Charges ^{2/}			Outstanding Commitments	Expected TA/Grant Completion Date	Completed TAs/Grants/DCs	
					Cumulative up to 31/12/15	Transactions 01/01-31/12/16	Cumulative up to 31/12/16			Unutilized Commitment (Savings)	Financial Completion Date
					(C)	(D)	(E) = (C) + (D)				

Add:

Approved But Not Yet Effective Projects

Grant Component of Investment (GCI):

Regional

Higher Education in the Pacific Investment Program -Project 2(Addl Fin) G0505 21-Oct-16 1,500,000.00

Sri Lanka

Supporting Electricity Supply Reliability Improvement Proj-Ren Energy G0486 26-Jul-16 1,800,000.00

Tajikistan

Carec Corridors 2, 5 & 6 (Dushanbe-Kurgonteppa) Road Project G0510 31-Oct-16 2,000,000.00

Sub Total 5,300,000.00

Technical Assistance Linked to Loan (TALL):

China, People's Republic of

Strengthening Capacity in Implementation of Green Financing Platform 9251/CD 29-Nov-16 1,000,000.00

Sub Total 1,000,000.00

TOTAL APPROVED BUT NOT YET EFFECTIVE PROJECTS 6,300,000.00

GRAND TOTAL 69,125,350.00

Contributions received:

Government of Australia	AUD	13,584,000	\$	13,333,980.70
Government of Norway	NOK	240,000,000		36,172,042.48
Government of Spain	USD	9,500,000		9,500,000.00
Government of Sweden	SEK	175,000,000		24,241,608.51
Government of UKNI	GBP	2,000,000		2,789,600.00
				<u>\$ 86,037,231.69</u> ^{3/}

^{1/} US\$ equivalent of TA Grant and Direct Charges at time of TA approval.

^{2/} Actual disbursements.

^{3/} Represents actual US\$ equivalent of contributions received.

^{4/} TA Types: PP = Project Preparatory; AO = Advisory; CD = Capacity Development; PA = Policy and Advisory; REG = Regional

ASIAN DEVELOPMENT BANK
ADMINISTRATOR FOR
ASIAN CLEAN ENERGY FUND (ACEF)
GOVERNMENT OF JAPAN
CHANNEL FINANCING AGREEMENT

STATUS OF GRANT
As of 31 December 2016
(Expressed in US Dollars)

TOTAL CONTRIBUTION COMMITTED (JPY5,472,500,000)		55,702,503.17
Gain (loss) arising from change in value of currency		<u>1,389,186.53</u>
NET CONTRIBUTION AVAILABLE		57,091,689.70
Interest income - cash in bank	22,689.01	
Interest income - investments	1,190,417.75	
Gain (loss) on foreign exchange transactions	<u>47,928.08</u>	<u>1,261,034.84</u>
TOTAL AMOUNT AVAILABLE		58,352,724.54
Amounts utilized for:		
Project expenditures (Statement 2)		
Grant component of investment (GCI)	(4,044,698.90)	
Technical assistance linked to a loan (TALL)	(3,664,914.75)	
Technical assistance (TA)	(16,799,668.44)	
ADB administration cost	(1,106,771.29) ^{b/}	
Audit fee	(153,923.00)	
Financial expenses	<u>(7,556.89)</u>	<u>(25,777,533.27)</u>
UNUTILIZED BALANCE		32,575,191.27 ^{a/}
Outstanding commitments-GCI, TALL and TA	(13,778,393.40)	
Reserve for ADB administration cost	<u>(628,919.67) ^{b/}</u>	<u>(14,407,313.07)</u>
BALANCE AVAILABLE FOR FURTHER COMMITMENTS		<u><u>18,167,878.20</u></u>

^{a/} Represented by:

Cash		1,676,450.39
Investments		30,975,060.98
Accrued interest		5,162.51
Interfund receivable		21,560.15
Advances		203,294.38
Interfund payable		<u>(306,337.14)</u>
		<u><u>32,575,191.27</u></u>

^{b/} Represents 5% and 2% of TA and Grant project expenditures/outstanding commitments/approved not yet effective. For Grants under Contributions committed starting 6 November 2009, admin cost will be 5% for grants up to \$5 million or 2% with a minimum of \$250,000 (whichever is greater) for grants above \$5 million.

ASIAN DEVELOPMENT BANK
Statement of TA/Grant Expenditures - Government of Japan
Asian Clean Energy Fund
As of 31 December 2016
(Expressed in US Dollars)

TA/Grant Title	TA/Grant No./Type	Date of Approval	TA/Grant Amount ^{1/}	Amount Received	Project Expenditures ^{2/}			Outstanding Commitments	Expected TA/Grant Completion Date	Completed TAs/Grants	
					Cumulative up to 31/12/15	Transactions 01/01-31/12/16	Cumulative up to 31/12/16			Unutilized Commitment (Savings)	Financial Completion Date
			(A)	(B)	(C)	(D)	(E) = (C) + (D)	(F) = (A) - (E)	(G)	(H) = (A) - (E)	(I)
APPROVED and EFFECTIVE PROJECTS											
Grant Component of Investment (GCI):											
<u>Bangladesh</u>											
Public-Private Infrastructure Development Facility	0254	17-May-11	2,000,000.00		2,000,000.00	-	2,000,000.00			-	21-Jul-14
<u>Bhutan</u>											
Green Power Development Project	0141	26-Dec-08	1,000,000.00		917,346.72	-	917,346.72			82,653.28	2-Apr-14
<u>Nepal</u>											
South Asia Tourism Infrastructure Development Project	0383	28-Mar-14	3,000,000.00		37,618.38	50,652.16	88,270.54	2,911,729.46	31-Dec-17		
<u>Philippines</u>											
Philippine Energy Efficiency Project	0142	29-Jan-09	1,500,000.00		1,039,081.64	-	1,039,081.64			460,918.36	11-Oct-13
<u>Viet Nam</u>											
Energy Efficiency for Ho Chi Minh City Water Supply	0365	17-Oct-13	2,000,000.00		-	-	-	2,000,000.00	30-Jun-18		
Sub Total			9,500,000.00		3,994,046.74	50,652.16	4,044,698.90	4,911,729.46		543,571.64	

TA/Grant Title	TA/Grant No./Type ^{4/}	Date of Approval	TA/Grant Amount ^{1/}	Amount Received	Project Expenditures ^{2/}			Outstanding Commitments	Expected TA/Grant Completion Date	Completed TAs/Grants	
					Cumulative up to 31/12/15	Transactions 01/01-31/12/16	Cumulative up to 31/12/16			Unutilized Commitment (Savings)	Financial Completion Date
			(A)	(B)	(C)	(D)	(E) = (C) + (D)	(F) = (A) - (E)	(G)	(H) = (A) - (E)	(I)
Technical Assistance Linked to Loan (TALL):											
<u>Bangladesh</u>											
Energy Efficiency Improvement	7642/CD	10-Nov-10	1,500,000.00		973,757.44	-	973,757.44			526,242.56	17-Mar-14
<u>India</u>											
Capacity Building for Commercial Bank Lending for Solar Energy	7802/CD	8-Apr-11	750,000.00		36,138.41	-	36,138.41			713,861.59	30-Jun-14
Capacity Building of the Indian Renewable Energy Development Agency Ltd.	8937/CD	6-Aug-15	750,000.00		-	68,830.58	68,830.58	681,169.42	31-Dec-19		
<u>Indonesia</u>											
Institutional Capacity Building of Indonesia Eximbank	7793/CD	25-Mar-11	1,100,000.00		1,095,264.50	-	1,095,264.50			4,735.50	31-Jul-15
<u>Sri Lanka</u>											
Implementation of Energy Efficiency Policy Initiative	7778/CD	27-Jan-11	1,850,000.00		1,490,923.82	-	1,490,923.82			359,076.18	26-Jan-15
<u>Uzbekistan</u>											
Sustainable Hydropower Project	9236/PP	22-Nov-16	2,000,000.00		-	-	-	2,000,000.00	28-Feb-18		
Sub Total			7,950,000.00		3,596,084.17	68,830.58	3,664,914.75	2,681,169.42		1,603,915.83	
Technical Assistance (TA):											
<u>India</u>											
Preparing the Solar Park Development and Transmission Sector Project	8979/PP	23-Oct-15	1,000,000.00		-	242,068.77	242,068.77	757,931.23	24-Jun-17		
<u>Mongolia</u>											
Ulaanbaatar Clean Air	7462/PA	14-Dec-09	500,000.00		488,673.51	-	488,673.51			11,326.49	18-Oct-12
<u>Philippines</u>											
Three Wind Farm Projects in Luzon	7569/PP	30-Jul-10	630,000.00		587,799.86	(199,879.43)	387,920.43			242,079.57	20-Dec-16
Rural Community-Based Renewable Energy Development in Mindanao	7781/PA	16-Feb-11	2,000,000.00		1,437,459.61	-	1,437,459.61			562,540.39	23-Dec-15

TA/Grant Title	TA/Grant No./Type	Date of Approval	TA/Grant Amount ^{1/}	Amount Received	Project Expenditures ^{2/}			Outstanding Commitments	Expected TA/Grant Completion Date	Completed TAs/Grants	
					Cumulative up to 31/12/15	Transactions 01/01-31/12/16	Cumulative up to 31/12/16			Unutilized Commitment (Savings)	Financial Completion Date
					(C)	(D)	(E) = (C) + (D)				
(A)	(B)	(C)	(D)	(E) = (C) + (D)	(F) = (A) - (E)	(G)	(H) = (A) - (E)	(I)			
Technical Assistance (TA):											
Thailand											
Lamthakong Wind Farm Development Project - WITHDRAWN/CANCELLED	7444/PP	8-Dec-09	160,000.00	-	-	-	-	-	-	160,000.00	21-Dec-10
Chaiyapun Wind Farm Development Project - WITHDRAWN/CANCELLED	7445/PP	8-Dec-09	160,000.00	-	-	-	-	-	-	160,000.00	21-Dec-10
Regional											
Strengthening the Capacity of Pacific DMC to Respond to Climate Change	7394/CD	23-Nov-09	1,500,000.00	-	-	1,385,097.16	-	1,385,097.16	-	114,902.84	14-Mar-14
Needs Assessment and Development of the Solar Energy Program	7510/CD	17-Mar-10	1,000,000.00	-	-	765,571.66	-	765,571.66	-	234,428.34	31-Dec-12
Empowering the Poor through Increasing Access to Energy Knowledge Platform Development for the Asia Solar Energy Initiative	7512/PP	9-Apr-10	2,000,000.00	-	-	1,749,882.98	3,600.00	1,753,482.98	246,517.02	31-Dec-16	-
Enabling Climate Change Responses in Asia and the Pacific	7613/REG	1-Oct-10	2,000,000.00	-	-	1,326,987.07	-	1,326,987.07	-	673,012.93	31-May-15
Promoting Renewable Energy, Clean Fuels, and Energy Efficiency in the Greater Mekong Subregion	7645/RD	15-Nov-10	700,000.00	-	-	613,212.86	79,656.60	692,869.46	-	7,130.54	11-Oct-16
Promoting Energy Efficiency in the Pacific, Phase II	7679/CD	18-Nov-10	800,000.00	-	-	730,740.17	-	730,740.17	-	69,259.83	31-Mar-15
Enhancing Knowledge on Climate Technology and Financing Mechanism	7798/CD	31-Mar-11	1,500,000.00	-	-	906,347.60	-	906,347.60	-	593,652.40	23-Oct-15
Quantum Leap wind Power Development In Asia and the Pacific	7842/CD	1-Aug-11	1,500,000.00	-	-	1,463,496.29	-	1,463,496.29	-	36,503.71	22-Dec-15
Promotion of Investment in Climate Technology Products Through Venture Cap	7990/CD	9-Dec-11	2,000,000.00	-	-	810,177.29	307,461.96	1,117,639.25	882,360.75	30-Apr-17	-
Demonstration of an Assisted Brkr Model for Transfer Low-Carbon Tech	8018/PA	20-Dec-11	1,500,000.00	-	-	391,026.58	196,535.34	587,561.92	912,438.08	31-Dec-18	-
Economics of Climate Change in Central	8105/CD	15-Jun-12	2,000,000.00	-	-	786,002.72	645,758.36	1,431,761.08	568,238.92	31-Dec-18	-
Climate-Friendly Agribusiness Value Chains Sector	8119/RD	18-Jul-12	2,000,000.00	-	-	1,206,246.27	547,468.86	1,753,715.13	246,284.87	30-Jun-17	-
Eastern Indonesia Sustainable Energy Access Sector Project	8897/PP	12-May-15	1,500,000.00	-	-	-	236,127.86	236,127.86	1,263,872.14	31-Mar-17	-
	9082/PP	2-Mar-16	1,400,000.00	-	-	-	92,148.49	92,148.49	1,307,851.51	10-Jun-17	-
Sub Total			25,850,000.00			14,648,721.63	2,150,946.81	16,799,668.44	6,185,494.52		2,864,837.04
TOTAL APPROVED and EFFECTIVE PROJECTS			43,300,000.00	57,091,689.70 ^{3/}		22,238,852.54	2,270,429.55	24,509,282.09	13,778,393.40		5,012,324.51
GRAND TOTAL			43,300,000.00								

Contributions received:

Government of Japan	JPY 2,320,000,000	\$ 23,050,173.41
Government of Japan	JPY 1,107,400,000	11,078,086.85
Government of Japan	JPY 1,297,800,000	13,995,470.72
Government of Japan	JPY 747,300,000	8,967,958.72
	JPY 5,472,500,000	\$ 57,091,689.70 ^{3/}

^{1/} US\$ equivalent of TA/Grant at time of approval.

^{2/} Actual disbursements.

^{3/} Represents actual US\$ equivalent of contributions received.

^{4/} TA Types: PP = Project Preparatory; PA = Policy and Advisory; CD = Capacity Development; RD = Research and Development

ASIAN DEVELOPMENT BANK
ADMINISTRATOR FOR
CARBON CAPTURE AND STORAGE FUND
CLEAN ENERGY FINANCING PARTNERSHIP FACILITY
CHANNEL FINANCING AGREEMENT

STATUS OF GRANT
As of 31 December 2016
(Expressed in US Dollars)

TOTAL CONTRIBUTION COMMITTED		66,026,832.91
Gain (loss) arising from change in value of currency		<u>(187,325.92)</u>
Amount received:		
Amount received from Global CCS Institute (AUD 21,500,000)	17,322,509.72	
Amount received from DECC - Promissory Note (GBP 15,000,000)	<u>23,803,000.00</u>	
	41,125,509.72	
Receivable from DECC - Promissory Note (GBP 20,000,000)	<u>24,713,997.27</u> ^{c/}	
NET CONTRIBUTION AVAILABLE		65,839,506.99
Interest income - cash in bank	4,085.06	
Interest income - investments	424,423.90	
Gain (loss) on foreign exchange transactions	<u>688.25</u>	<u>429,197.21</u>
TOTAL AMOUNT AVAILABLE		66,268,704.20
Amounts utilized for:		
Project expenditures (Statement 2)		
Technical assistance (TA)	(6,652,071.56)	
Direct charges	(208,958.60)	
ADB administration cost	(332,603.59) ^{b/}	
Audit fees	(79,831.00)	
Financial expenses	<u>(5,335.00)</u>	<u>(7,278,799.75)</u>
UNUTILIZED BALANCE		58,989,904.45 ^{a/}
Outstanding commitments	(2,757,134.72)	
Reserve for ADB administration cost	(137,856.74) ^{b/}	
Undisbursed direct charges	<u>(126,258.35)</u>	<u>(3,021,249.81)</u>
UNCOMMITTED BALANCE		55,968,654.64

^{a/} Represented by:

Cash in bank	1,283,694.60
Investments	33,002,805.52
Accrued interest	5,133.77
Undrawn contribution	24,713,997.27
Advances	1,700.00
Interfund payable	<u>(17,426.71)</u>
	<u>58,989,904.45</u>

^{b/} Represents 5% of the project expenditures/outstanding commitments/ approved not yet effective.

^{c/} Undrawn contributions in local currency are translated at the applicable exchange rate as of reporting date. This represents the balance of promissory note received from DECC (GBP 20,000,000).

ASIAN DEVELOPMENT BANK
Statement of TA Expenditures and Direct Charges - Carbon Capture and Storage Fund
As of 31 December 2016
(Expressed in US Dollars)

TA/DC Title	TA/ DC No./ Type	Date of Approval	TA Direct Charge Amount ^{1/}	Amount Received	Project Expenditures/Direct Charges ^{2/}			Outstanding Commitments	Expected TA Completion Date	Completed TAs/DCs	
					Cumulative up to 31/12/15	Transactions 01/01-31/12/16	Cumulative up to 31/12/16			Unutilized Commitment (Savings)	Financial Completion Date
			(A)	(B)	(C)	(D)	(E) = (C) + (D)	(F) = (A) - (E)	(G)	(H) = (A) - (E)	(I)
APPROVED and EFFECTIVE PROJECTS											
Technical Assistance (TA):											
Indonesia											
SSTA-Planning a Pilot Carbon Capture and Storage Activity	8407/CD	18-Jul-13	225,000.00		180,632.64	22,586.82	203,219.46			21,780.54	17-Mar-16
Pilot Carbon Capture and Storage Activity in the Natural Gas Process	9189/PP	29-Sep-16	500,000.00		-	-	-	500,000.00	30-Sep-17		
Pakistan											
Determining the Potential for Carbon Capture and Storage	8648/CD	14-May-14	1,000,000.00		5,221.11	135,808.51	141,029.62	858,970.38	31-Aug-17		
PRC											
Carbon Dioxide Capture and Storage (CCS) Demonstration- Strategic Analysis and Capacity Strengthening	7286/CD	22-May-09	1,000,000.00		1,000,000.00	-	1,000,000.00			0.00	18-Oct-12
Study on Carbon Capture & Storage in Natural Gas Based Power Plants	8001/CD	12-Dec-11	1,800,000.00		1,430,913.44	-	1,430,913.44			369,086.56	15-Sep-15
Road Map for Carbon Capture and Storage Demonstration and Deployment	8133/PA	10-Aug-12	2,200,000.00		1,572,209.95	-	1,572,209.95			627,790.05	3-Sep-15
Regional											
Carbon Dioxide Capture and Storage (CCS) Demonstration in Developing Countries-Analysis of Key Issues and Barriers	7278/PA	7-May-09	350,000.00		290,609.20	-	290,609.20			59,390.80	28-Feb-13
Determining the Potential for Carbon Capture and Storage (CCS) in Southeast Asia	7575/CD	11-Aug-10	1,350,000.00		1,303,943.34	-	1,303,943.34			46,056.66	28-Feb-14
Tianjin Integrated Gasification Combined Cycle Power Plant	8499/PP	31-Oct-13	800,000.00		262,137.52	46,173.37	308,310.89			491,689.11	31-Oct-16
Promoting Carbon Capture and Storage in PRC and Indonesia	8714/RD	29-Aug-14	1,800,000.00		80,434.56	321,401.10	401,835.66	1,398,164.34	31-Jul-17		
Sub Total			11,025,000.00		6,126,101.76	525,969.80	6,652,071.56	2,757,134.72		1,615,793.72	
Direct Charge (DC):											
Reg: Carbon Capture Storage Financing Roundtable	CCSFDC 00027	8-Mar-11	50,000.00		26,185.25	-	26,185.25			23,814.75	30-Jun-14
Reg: International Carbon Capture Storage Conference	CCSFDC 00029	15-Jul-11	80,500.00		74,918.28	-	74,918.28			5,581.72	6-Mar-13

TA/DC Title	TA/ DC No./ Type ^{4/}	Date of Approval	TA Direct Charge Amount ^{1/}	Amount Received	Project Expenditures/Direct Charges ^{2/}			Outstanding Commitments	Expected TA Completion Date	Completed TAs/DCs	
					Cumulative up to 31/12/15	Transactions 01/01-31/12/16	Cumulative up to 31/12/16			Unutilized Commitment (Savings)	Financial Completion Date
					(C)	(D)	(E) = (C) + (D)				
Direct Charge (DC):											
Reg: Carbon Capture and Storage in Developing Asia	CCSFDC 00044	9-Oct-12	68,500.00		49,113.42	-	49,113.42			19,386.58	26-Nov-13
Reg: External Evaluation for Clean Energy Financing Partnership Facility (CEFPF) - CCSF Fund Component	CCSFDC 00055	13-Dec-14	35,000.00		5,640.64	-	5,640.64	29,359.36			
Reg: CCS Way Forward in Asia	CCSFDC 00062	3-May-16	75,000.00			26,932.62	26,932.62	48,067.38			
INO: Preparation of the Gundih Pilot Carbon Capture and Storage	CCSFDC 00063	10-May-16	75,000.00			26,168.39	26,168.39	48,831.61			
Sub Total			384,000.00		155,857.59	53,101.01	208,958.60	126,258.35		48,783.05	
TOTAL APPROVED AND EFFECTIVE PROJECTS			11,409,000.00	41,125,509.72 ^{3/}	6,281,959.35	579,070.81	6,861,030.16	2,883,393.07		1,664,576.77	

Contributions received:

Government of Australia	AUD 21,500,000.00	17,322,509.72
Government of UKNI	GBP 15,000,000.00	23,803,000.00
		<u>41,125,509.72</u>

^{1/} US\$ equivalent of TA/DC at the time of TA approval.

^{2/} Actual disbursements.

^{3/} Represents the actual US\$ equivalent of contributions received.

^{4/} TA/DC Types: CD = Capacity Development; PA = Policy and Advisory; RD = Research and Development
CCSFDC=Carbon Capture Storage Fund Direct Charges

ASIAN DEVELOPMENT BANK
ADMINISTRATOR FOR
CANADIAN CLIMATE FUND FOR THE PRIVATE SECTOR IN ASIA
GOVERNMENT OF CANADA

Statement 1

STATUS OF FUND
As of 31 December 2016
(Expressed in US dollars)

	Concessional Financing	Grant	Total
TOTAL CONTRIBUTION COMMITTED (CAD82,392,968.00)	73,435,817.10 ^{ai}	7,238,781.94 ^{ai}	80,674,599.04
Gain arising from change in value of currency	755,497.57	74,471.60	829,969.17
NET CONTRIBUTION RECEIVED	74,191,314.67	7,313,253.54	81,504,568.21
Interest income - cash in bank	9,576.03	5,179.92	14,755.95
Interest income - investments	449,877.27	54,272.57	504,149.84
Interest / service charge on loans	3,023,824.76	-	3,023,824.76
Other income from loans			
Amortized front-end fees on loans	33,249.17	-	33,249.17
Amortized loan origination costs	(4,431.96)	-	(4,431.96)
TOTAL AMOUNT AVAILABLE	77,703,409.94	7,372,706.03	85,076,115.97
Amounts utilized for:			
Loan outstanding			
Loans	(34,074,204.00)		
Deferred front-end fees on loans	191,750.83		
Deferred loan origination costs	(25,568.04)		
Direct loan origination costs	30,000.00	-	30,000.00
Technical assistance linked to loan (TALL)	-	(162,506.00)	(162,506.00)
Technical assistance (TA)	-	(157,200.33)	(157,200.33)
ADB administration cost	(1,703,710.20) ^{af}	(15,985.33) ^{af}	(1,719,695.53)
Audit fee	(11,404.12)	(1,127.88)	(12,532.00)
Financial expenses	(290.99)	(56.40)	(347.39)
UNUTILIZED BALANCE	42,109,983.42 ^{bi}	7,035,830.09 ^{bi}	49,145,813.51
Outstanding commitments:			
Loans - non sovereign	(925,796.00)	-	(925,796.00)
TA and TALL	0	(2,835,793.67)	(2,835,793.67)
Reserve for bank administration cost	(46,289.80) ^{af}	(141,789.68) ^{af}	(188,079.48)
UNCOMMITTED BALANCE	41,137,897.62	4,058,246.74	45,196,144.36
Projects approved but not yet effective:			
8921 / CD - Renewable Energy for the Nationwide Telecommunications Project (TALL)	-	(1,000,000.00)	(1,000,000.00)
Reserve for bank administration cost	-	(50,000.00) ^{af}	(50,000.00)
BALANCE AVAILABLE FOR FURTHER COMMITMENTS	41,137,897.62	3,008,246.74	44,146,144.36

^{ai} Contributions committed in local currency of Concessional Financing and Grant is CAD 75,000,000 and CAD 7,392,968, respectively
Contributions committed under Concessional Financing includes Special Reserve for the Fund amounting to \$500,000

^{bi} Represented by:

Cash in bank	575,719.12	503,013.22	1,078,732.34
Investments	41,241,539.22	6,553,259.93	47,794,799.15
Accrued interest - time deposit	6,665.26	988.04	7,653.30
Accrued Interest/ service charge	286,059.82	-	286,059.82
Advances	-	-	-
Interfund payable	-	(21,431.10)	(21,431.10)
	42,109,983.42	7,035,830.09	49,145,813.51

^{af} Represents 5% of project expenditures / outstanding commitment / project approved but not yet effective.

ASIAN DEVELOPMENT BANK
Statement of TA / Loan / Grant Expenditures -Canadian Climate Fund for the Private Sector in Asia
As of 31 December 2016

(Expressed in US Dollars)

TA / Loan / Grant Title	TA / Grant ⁶ⁱ Loan No.	Date of Approval/ Supplementary	TA / Grant Loan Amount ^{1f} (A)	Amount Received (B)	Project Expenditures ^{2f}			Outstanding Commitments (F) = (A) - (E)	Expected TA / Grant Completion Date (G)	Completed TA / Grant Unutilized Commitment Savings (H) = (A) - (E)	Financial Completion Date (I)
					Cumulative	Transactions	Cumulative				
					up to 12/31/2015 (C)	1/01-31/12/16 (D)	up to 31/12/16 (E) = (C) + (D)				
APPROVED and EFFECTIVE PROJECTS											
Concessional Financing (CF)											
Indonesia											
Sarulla Geothermal Power Development Project	8278	5-Dec-13	US\$ 20,000,000.00		20,000,000.00	-	20,000,000.00	-			
Georgia											
Adjaristsqali Hydropower Project	8281	19-May-14	US\$ 15,000,000.00		6,982,000.00	7,092,204.00	14,074,204.00	925,796.00			
					<u>35,000,000.00</u>	<u>26,982,000.00</u>	<u>7,092,204.00</u>	<u>34,074,204.00</u>	<u>925,796.00</u>		
Technical Assistance Linked to Loan (TALL)											
Indonesia											
Institutional Capacity Building of Indonesia Eximbank	7793/CD	17-Jul-14	225,000.00		130,500.00	-	130,500.00			94,500.00	31-Jul-15
Samoa											
Development of Solar Power Ipp	8999/PP	25-Nov-15	225,000.00		-	32,006.00	32,006.00	192,994.00	20-Apr-17		
			<u>450,000.00</u>		<u>130,500.00</u>	<u>32,006.00</u>	<u>162,506.00</u>	<u>192,994.00</u>		<u>94,500.00</u>	
Technical Assistance (TA)											
Bhutan											
Climate Resilient Hazelnut Value Chain	9092/CD	11-Apr-16	1,300,000.00		-	-	-	1,300,000.00	15-Oct-19		
Indonesia											
Banten and West Nusa Tenggara Wind Power Development Project	9104/PP	8-Apr-16	500,000.00		-	-	-	500,000.00	31-Dec-17		
Regional											
Climate Friendly Agribusiness Value Chains	8897/REG	12-May-15	1,000,000.00		-	157,200.33	157,200.33	842,799.67	31-Mar-17		
			<u>2,800,000.00</u>		<u>-</u>	<u>157,200.33</u>	<u>157,200.33</u>	<u>2,642,799.67</u>		<u>-</u>	
TOTAL APPROVED and EFFECTIVE PROJECTS			<u>38,250,000.00</u>		<u>27,112,500.00</u>	<u>7,281,410.33</u>	<u>34,393,910.33</u>	<u>3,761,589.67</u>		<u>94,500.00</u>	

TA / Loan / Grant Title	TA / Grant ^{6/} Loan No.	Date of Approval/ Supplementary	TA / Grant Loan Amount ^{1/} (A)	Amount Received (B)	Project Expenditures ^{2/}			Outstanding Commitments (F) = (A) - (E)	Expected TA / Grant Completion Date (G)	Completed TA / Grant	
					Cumulative up to 12/31/2015 (C)	Transactions 1/01-31/12/16 (D)	Cumulative up to 31/12/16 (E) = (C) + (D)			Unutilized Commitment (H) = (A) - (E)	Financial Completion Date (I)

Add:
Approved But Not Yet Effective Projects

Technical Assistance Linked to Loan (TALL)

Myanmar

Renew able Energy for the Nationwide Telecommunications Projects	8921/CD	30-Jun-15	1,000,000.00
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GRAND TOTAL 39,250,000.00

US\$ 74,191,314.67^{3/ 4/}
CAD 75,000,000.00

US\$ 7,313,253.54^{3/ 5/}
CAD 7,392,968.00

^{1/} US\$ equivalent of TA / Grant / Loan at the time of approval.

^{2/} Actual disbursements.

^{3/} Represents actual US\$ equivalent of contributions received.

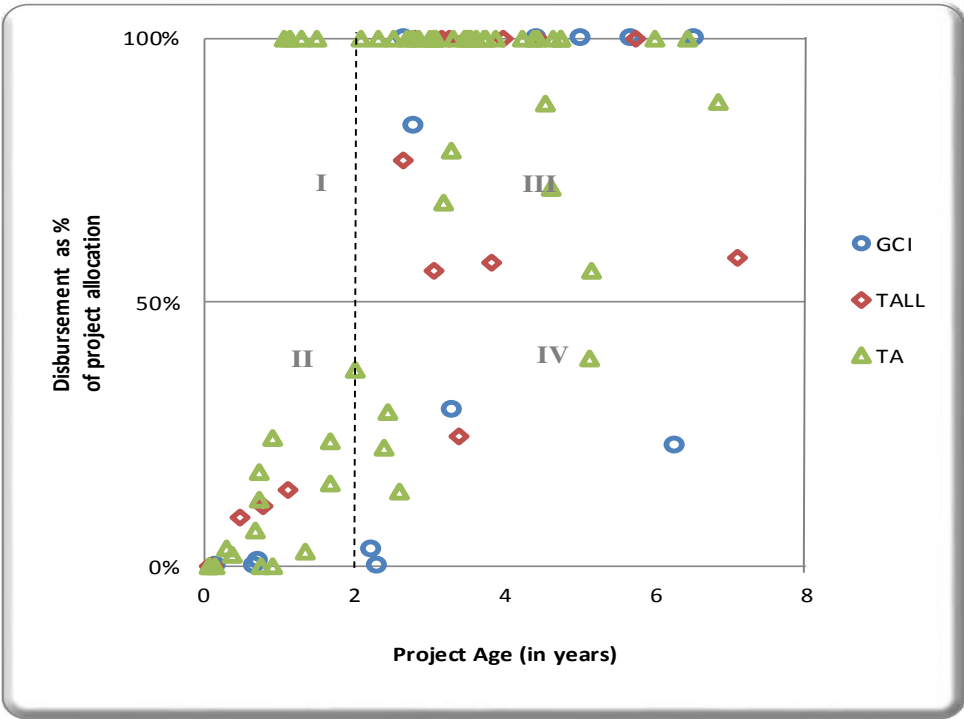
^{4/} Contribution received for concessional financing.

^{5/} Contribution received for grant.

^{6/} TA Type: CD = Capacity and Development ; REG = Regional; PP = Project Preparatory

CEFPF Disbursement Analysis

Figure A10: Disbursement Ratios of GCIs, TALLs, & TAs as of 31 December 2016



GCI = grant component of investment, TA = technical assistance, TALL = technical assistance linked to loan.
Note: Disbursement ratio is computed as total disbursements over approved allocations less project savings; project ageing is based on effective date.
Source: Asian Development Bank estimates.

Figure 10 presents the disbursement ratios of GCI, TALL, and TA projects supported by CEFPF.

- **Quadrants I and II** cover projects that are 2 years or less. Relatively, these projects have just gotten off the ground and may require time to award contracts and for consultants/relevant personnel to gain familiarity with ADB or DMC processes. As such, these projects are not expected to make significant disbursements immediately and are not a cause for concern.
- **Quadrant III** pertains to projects that are more than 2 years and have made significant disbursements. These are well progressing projects that could be nearing their completion. They do not present a concern for the facility.
- **Quadrant IV** involves 10 projects (out of 88) that are more than 2 years but have not made significant disbursements. These projects are a cause for concern to the facility. In this regard, the CEFPF Management requested information from relevant project teams regarding the slow disbursements of projects. Among the causes cited include: a) implementation delays, b) delay in procurement, c) incomplete or late submission of payment claims, and d) project change in scope in view of new information available or due to change in field conditions.

To address the factors encountered by Quadrant IV projects, project teams are coordinating with ADB departments and respective executing agencies (EAs) to expedite awarding of service contracts and consultant recruitment. Approximately \$7.9 million out of the \$16.4 million project allocation in *Quadrant IV* have been awarded in contracts, or 48.3%⁴⁵ of total allocation in said quadrant. EAs are likewise encouraged to commit to results by agreeing to time-bound implementation plans. Through regular process of administration and supervision, project teams also inform and remind EAs of liquidation and payment procedures. Finally, project teams make necessary adjustments as projects move along to make sure that they reach completion.

The CEFPP Secretariat is in constant coordination with respective ADB operations department for project updates. It will continue regular project monitoring and disbursement reviews to help improve disbursements, taking note of slow moving projects and discussing possible courses of action with project teams. Further, the CEFPP Secretariat will continue providing disbursement reports and memoranda to all ADB user departments encouraging them to expedite project disbursements.

⁴⁵ Contracts awarded ratio is computed as total contracts awarded over approved allocations.

Table A11.1: CEFPF Portfolio Profile – Resource Utilization, as of 31 December 2016 (Inclusive of fees)

No.	Project Name	Sector	Operations Dept.	Country	Amounts in \$'000										
					ADB Loan Portfolio	CEFPF Allocation	Use of CEFPF Funds					CEFPF Fund Source			
							CF	GCI	TALL	TA	DC	CEF	ACEF	CCSF	CFPS
GRAND TOTAL					6,577,373	198,291	41,213	54,684	23,596	73,705	5,094	77,347	46,509	28,760	45,675
					6,577,373	100%	60%			40%		39%	23%	15%	23%
I. Allocations to projects approved by ADB for implementation															
2008-2014 TOTAL (122 projects)					3,055,273	135,460	36,750	27,069	13,910	53,634	4,097	44,774	40,314	11,285	39,086
2015 TOTAL (11 projects)					1,026,000	11,207	1,050	3,150	1,286	5,460	261	6,036	2,520	-	2,651
1	Supporting Electricity Supply Reliability Improvement Project – Renewable Energy Micro-grid	Energy	SARD	SRI	120,000	1,890		1,890				1,890			
2	Higher Education in the Pacific Investment Program - Tranche 2	Multisector	PARD	SOL	15,400	1,575		1,575				1,575			
3	CAREC Corridor 2, 5 and 6 (Dushanbe Kurgonteppa) Road Project	Transport	CWRD	TAJ	77,200	2,100		2,100				2,100			
4	Pacific Renewable Energy Investment Program	Energy	PARD	REG	750,000	3,150			3,150			3,150			
5	Sustainable Hydropower Project	Energy	CWRD	UZB	215,000	2,100			2,100				2,100		
6	Second Solar Power Project PPTA	Energy	CWRD	UZB		1,050			1,050			1,050			
7	Green Financing Platform for Accelerating Air Quality Improvement in the Greater Beijing-Tianjin-Hebei Region	Energy	EARD	PRC	500,000	1,050			1,050			1,050			
8	Wind Power Generation Project	Energy	SARD	SRI	200,000	2,100				2,100		2,100			
9	Increase Electricity Access Using Off-Grid Solar Power and New Technology	Energy	CWRD	REG		2,100				2,100		2,100			
10	Mainstreaming Energy Efficiency in Bangladesh, Bhutan, Maldives, Nepal, and Sri Lanka	Energy	SARD	REG		2,100				2,100		2,100			
11	Electricity Distribution Efficiency Improvement Project	Energy	SARD	NEP		1,575				1,575		1,575			
12	Majuro Power Network Strengthening	Energy	PARD	RMI		725				725		725			
13	Banten and West Nusa Tenggara Wind Power Development	Energy	PSOD	INO		525				525					525
14	PPTA Pilot Carbon Capture and Storage Activity in the Natural Gas Processing Sector	Energy	SERD	INO		525				525				525	
15	Supporting the Asia Solar Energy Forum to Scale up Solar Energy Development in Asia and the Pacific	Energy	SDCC	REG		236				236		236			
16	11th Asia Clean Energy Forum	Energy	SDCC	REG		150					150	150			
17	CCS Way Forward in Asia	Energy	EARD	REG		75					75			75	
18	Preparation of the Gundih Pilot CCS Project	Energy	SERD	INO		75					75			75	

ACEF = Asian Clean Energy Fund, ADB = Asian Development Bank, CAM = Cambodia, CAREC = Central Asia Regional Economic Cooperation, CCS = Carbon Capture and Storage, CCSF = Carbon Capture and Storage Fund, CEF = Clean Energy Fund, CEFPF = Clean Energy Financing Partnership Facility, CF = concessional financing, CFPS = Canadian Climate Fund for the Private Sector in Asia, PRC = China, People's Republic of, CWRD = Central and West Asia Department, DC = direct charge, EARD = East Asia Department, GCI = grant component of investment, INO = Indonesia, NEP = Nepal, PARD = Pacific Department, PPTA = Project Preparatory Technical Assistance, PSOD = Private Sector Operations Department, REG = regional, RMI = Republic of the Marshall Islands, SARD = South Asia Department, SDCC = Sustainable Development and Climate Change Department, SERD = Southeast Asia Department, SOL = Solomon Islands, SRI = Sri Lanka, TA = technical assistance, TAJ = Tajikistan, TALL = technical assistance linked to loan, UZB = Uzbekistan.

Source: Asian Development Bank estimates

Table A11.1 continued

No.	Project Name	Sector	Operations Dept.	Country	Amounts in \$'000										
					ADB Loan Portfolio	CEFPF Allocation	Use of CEFPF Funds					CEFPF Fund Source			
							CF	GCI	TALL	TA	DC	CEF	ACEF	CCSF	CFPS
Allocations to projects approved by ADB for implementation (continued)															
19	CAREC ESCC Investment Forum	Energy	CWRD	REG		150					150	150			
20	Consultancy Services for Technical Design and Specifications for Installation of +100/-50 Mvar Static Var Compensator at Biyagama Grid Substation	Energy	SARD	SRI		75					75	75			
21	Deepdive Workshop on "Paving Clean and Low Carbon Transport and Energy Systems Using Hydrogen and Fuel Cells" at the ADB Transport Forum 2016	Transport	SDCC	REG		85					85	85			
22	Minimum Energy Performance Standards (MEPS) Development for Appliances in Indonesia	Energy	SERD	INO		51					51	51			
23	Introducing the Auction Mechanism for Renewable Energy Projects	Energy	CWRD	KAZ		75					75	75			
Subtotal					5,958,873	170,204	37,800	35,784	22,546	68,980	5,094	71,047	44,934	11,960	42,263
					5,958,873	86%	56%		44%		42%	26%	7%	25%	
II. Allocations to projects awaiting approval by ADB for implementation															
24	Solar Power Project	Energy	PSOD	CAM	3,500	3,413	3,413								3,413
*	Pilot Carbon Capture and Storage Activity in the Natural Gas Processing Sector	Energy	SERD	INO		16,800		16,800						16,800	
*	Second Solar Power Project	Energy	CWRD	UZB	100,000	2,100		2,100				2,100			
25	Railway Energy Efficiency Project	Transport	SARD	IND	280,000	1,050			1,050			1,050			
26	Rural Hybrid Power Project	Energy	SARD	BAN	235,000	1,575				1,575			1,575		
27	Enabling CAREC Countries for Technology Leapfrogging to Tackle Climate Change	Energy	CWRD	REG		2,100				2,100		2,100			
28	Fostering the Development of Renewable Energy Generation in Kazakhstan	Energy	CWRD	KAZ		1,050				1,050		1,050			
Subtotal					618,500	28,088	3,413	18,900	1,050	4,725	-	6,300	1,575	16,800	3,413
					618,500	14%	83%		17%		22%	6%	60%	12%	
2016 TOTAL (28 projects)					2,496,100	51,624	3,413	24,465	8,400	14,611	736	26,537	3,675	17,475	3,938
GRAND TOTAL					6,577,373	198,291	41,213	54,684	23,596	73,705	5,094	77,347	46,509	28,760	45,675
					6,577,373	100%	60%		40%		39%	23%	15%	23%	

ACEF = Asian Clean Energy Fund, ADB = Asian Development Bank, BAN = Bangladesh, CAM = Cambodia, CAREC = Central Asia Regional Economic Cooperation, CCSF = Carbon Capture and Storage Fund, CEF = Clean Energy Fund, CEFPF = Clean Energy Financing Partnership Facility, CF = concessional financing, CFPS = Canadian Climate Fund for the Private Sector in Asia, CWRD = Central and West Asia Department, DC = direct charge, EARD = East Asia Department, ESCC = Energy Sector Coordinating Committee, GCI = grant component of investment, INO = Indonesia, IND = India, KAZ = Kazakhstan, PSOD = Private Sector Operations Department, REG = regional, SARD = South Asia Department, SDCC = Sustainable Development and Climate Change Department, SERD = Southeast Asia Department, SRI = Sri Lanka, TA = technical assistance, TALL = technical assistance linked to loan, UZB = Uzbekistan..

Note: * The "Pilot Carbon Capture and Storage Activity in the Natural Gas Processing Sector" and "Second Solar Power Project" both have GCI and TA components supported by the facility. Despite having multiple modalities/components supported by the facility, each project is counted as one.

Source: Asian Development Bank estimates.

Table A11.2: CEFPF Portfolio Profile – Regional Distribution of Projects, as of 31 December 2016 (Inclusive of fees)

No.	Project Name	Sector	Operations Dept	Country	Amounts in \$'000						Sovereign	Non-Sovereign	
					ADB Portfolio Loan	CEFPF Allocation	Use of CEFPF Funds						
							CF	GCI	TALL	TA			DC
GRAND TOTAL					6,577,373	198,291	41,213	54,684	23,596	73,705	5,094	145,345	52,946
						100%	60%			40%		73%	27%
Central And West Asia					637,200	36,713	15,750	6,300	3,150	11,288	225	20,963	15,750
						19%	69%			31%		57%	43%
2008-2014 Total (7 projects)					225,000	21,788	15,750	-	-	6,038	-	6,038	15,750
2015 Total (1 project)					20,000	2,100	-	2,100	-	-	-	2,100	-
2016 Total (8 projects)					392,200	12,825	-	4,200	3,150	5,250	225	12,825	-
1	CAREC Corridor 2, 5 and 6 (Dushanbe-Kurgonteppa) Road Project	Transport	CWRD	TAJ	77,200	2,100		2,100				2,100	
2	Second Solar Power Project	Energy	CWRD	UZB	100,000	3,150		2,100	1,050			3,150	
3	Sustainable Hydropower Project	Energy	CWRD	UZB	215,000	2,100			2,100			2,100	
4	Increase Electricity Access Using Off-Grid Solar Power and New Technology	Energy	CWRD	REG		2,100				2,100		2,100	
5	Enabling CAREC Countries for Technology Leapfrogging	Energy	CWRD	REG		2,100				2,100		2,100	
6	Fostering the Development of Renewable Energy Generation in Kazakhstan	Energy	CWRD	KAZ		1,050				1,050		1,050	
7	CAREC ESCC Investment Forum	Energy	CWRD	REG		150					150	150	
8	Introducing the Auction Mechanism for Renewable Energy Projects	Energy	CWRD	KAZ		75					75	75	
East Asia					1,231,963	15,713	-	3,060	4,748	7,613	292	13,881	1,832
						8%		50%		50%		88%	12%
2008-2015 Total (19 projects)					731,963	14,663	-	3,060	3,698	7,613	292	12,831	1,832
2016 Total (1 project)					500,000	1,050	-	-	1,050	-	-	1,050	-
9	Green Financing Platform for Accelerating Air Quality Improvement in the Greater Beijing-Tianjin-Hebei Region	Energy	EARD	PRC	500,000	1,050			1,050			1,050	
Pacific					788,610	16,002	1,050	1,575	4,436	8,941	-	14,716	1,286
						8%		44%		56%		92%	8%
2008-2014 Total (8 projects)					20,210	9,266	-	-	1,050	8,216	-	9,266	-
2015 Total (1 project)					3,000	1,286	1,050	-	236	-	-	-	1,286
2016 Total (3 projects)					765,400	5,450	-	1,575	3,150	725	-	5,450	-
10	Higher Education in the Pacific Investment Program - Tranche 2	Multisector	PARD	SOL	15,400	1,575		1,575				1,575	
11	Pacific Renewable Energy Investment Program	Energy	PARD	REG	750,000	3,150			3,150			3,150	
12	Majuro Power Network Strengthening	Energy	PARD	RMI		725				725		725	

ADB = Asian Development Bank, CAREC = Central Asia Regional Economic Cooperation, CEFPF = Clean Energy Financing Partnership Facility, CF = concessional financing, PRC = China, People's Republic of, CWRD = Central and West Asia Department, DC = direct charge, EARD = East Asia Department, ESCC = Energy Sector Coordinating Committee, GCI = grant component of investment, KAZ = Kazakhstan, PARD = Pacific Department, REG = regional, RMI = Republic of the Marshall Islands, SOL = Solomon Islands, TA = technical assistance, TAJ = Tajikistan, TALL = technical assistance linked to loan, UZB = Uzbekistan.

Source: Asian Development Bank estimates.

Table A11.2 continued

No.	Project Name	Sector	Operations Dept	Country	Amounts in \$'000								
					ADB Portfolio Loan	CEFPF Allocation	Use of CEFPF Funds				Sovereign	Non-Sovereign	
							CF	GCI	TALL	TA			DC
South Asia					2,663,500	34,574	-	13,959	8,820	11,445	350	32,421	2,153
						17%		66%		34%		94%	6%
2008-2014 Total (17 projects)					1,325,500	20,744	-	12,069	6,720	1,680	275	19,957	788
2015 Total (3 projects)					503,000	3,465	-	-	1,050	2,415	-	2,100	1,365
2016 Total (7 projects)					835,000	10,365	-	1,890	1,050	7,350	75	10,365	-
13	Supporting Electricity Supply Reliability Improvement Project – Renewable Energy Micro-grid	Energy	SARD	SRI	120,000	1,890		1,890				1,890	
14	Railway Energy Efficiency Project	Transport	SARD	IND	280,000	1,050			1,050			1,050	
15	Wind Power Generation Project	Energy	SARD	SRI	200,000	2,100				2,100		2,100	
16	Rural Hybrid Power Project	Energy	SARD	BAN	235,000	1,575				1,575		1,575	
17	Electricity Distribution Efficiency Improvement Project	Energy	SARD	NEP		1,575				1,575		1,575	
18	Mainstreaming Energy Efficiency in Bangladesh, Bhutan, Maldives, Nepal, and Sri Lanka	Energy	SARD	REG		2,100				2,100		2,100	
19	Consultancy Services for Technical Design and Specifications for Installation of +100/-50 Mvar Static Var Compensator at Biyagama Grid Substation	Energy	SARD	SRI		75					75	75	
South East Asia					1,256,100	68,910	24,413	29,790	2,441	11,870	396	38,560	30,350
						35%		82%		18%		56%	44%
2008-2014 (22 projects)					752,600	45,002	21,000	11,940	2,441	9,350	270	18,589	26,413
2015 Total (2 projects)					500,000	2,520	-	1,050	-	1,470	-	2,520	-
2016 Total (5 projects)					3,500	21,389	3,413	16,800	-	1,050	126	17,451	3,938
20	Solar Power Project	Energy	PSOD	CAM	3,500	3,413	3,413						3,413
21	Banten and West Nusa Tenggara Wind Power Development	Energy	PSOD	INO		525				525			525
22	Pilot Carbon Capture and Storage Activity in the Natural Gas Processing Sector	Energy	SERD	INO		17,325		16,800		525		17,325	
23	Preparation of the Gundih Pilot CCS Project	Energy	SERD	INO		75					75	75	
24	Minimum Energy Performance Standards (MEPS) Development for Appliances in Indonesia	Energy	SERD	INO		51					51	51	
Regional					-	26,380	-	-	-	22,549	3,831	24,805	1,575
						13%		0%		100%		94%	6%
2008-2014 (49 projects)					-	23,998	-	-	-	20,738	3,260	22,423	1,575
2015 Total (4 projects)					-	1,836	-	-	-	1,575	261	1,836	-
2016 Total (4 projects)					-	546	-	-	-	236	310	546	-
25	Supporting the Asia Solar Energy Forum to Scale up Solar Energy Development in Asia and the Pacific	Energy	SDCC	REG		236				236		236	
26	11th Asia Clean Energy Forum 2016	Energy	SDCC	REG		150					150	150	
27	CCS Way Forward in Asia	Energy	EARD	REG		75					75	75	
28	Deepdive Workshop on "Paving Clean and Low Carbon Transport and Energy Systems Using Hydrogen and Fuel Cells" at the ADB Transport Forum 2016	Transport	SDCC	REG		85					85	85	
GRAND TOTAL					6,577,373	198,291	41,213	54,684	23,596	73,705	5,094	145,345	52,946
					6,577,373	100%		60%		40%		73%	27%

ADB = Asian Development Bank, BAN = Bangladesh, CAM = Cambodia, CCS = Carbon Capture and Storage, CEFPF = Clean Energy Financing Partnership Facility, CF = concessional financing, DC = direct charge, EARD = East Asia Department, GCI = grant component of investment, INO = Indonesia, IND = India, NEP = Nepal, PSOD = Private Sector Operations Department, REG = regional, SARD = South Asia Department, SDCC = Sustainable Development and Climate Change Department, SERD = Southeast Asia Department, SRI = Sri Lanka, TA = technical assistance, TALL = technical assistance linked to loan.

Source: Asian Development Bank estimates.

Table A12: CEFPF Allocation by Country & Allocation Share as of 31 December 2016 (In \$'000, inclusive of fees)

COUNTRY	CODE	CEF	ACEF	CCSF	CFPS	TOTAL
Afghanistan	AFG	1,050	-	-	-	1,050
Azerbaijan	AZE	1,050	-	-	-	1,050
Bangladesh	BAN	788	5,190	-	-	5,978
Bhutan	BHU	-	1,020	-	1,365	2,385
Cambodia	CAM	1,110	-	-	3,413	4,523
Georgia	GEO	-	-	-	15,750	15,750
China, People's Republic of	PRC	9,495	-	5,250	-	14,745
India	IND	3,300	2,625	-	-	5,925
Indonesia	INO	4,221	2,625	17,636	21,761	46,244
Kazakhstan	KAZ	1,125	-	-	-	1,125
Mongolia	MON	75	525	-	-	600
Myanmar	MYA	-	-	-	1,050	1,050
Nepal	NEP	5,984	3,150	-	-	9,134
Pakistan	PAK	-	-	1,050	-	1,050
Philippines	PHI	210	4,292	-	-	4,502
Republic of Marshall Islands	RMI	725	-	-	-	725
Samoa	SAM	1,050	-	-	1,286	2,336
Solomon Islands	SOL	1,575	-	-	-	1,575
Sri Lanka	SRI	7,110	1,943	-	-	9,052
Tajikistan	TAJ	4,200	-	-	-	4,200
Thailand	THA	3,150	-	-	-	3,150
Tonga	TON	656	-	-	-	656
Uzbekistan	UZB	3,938	2,100	-	-	6,038
Vietnam	VIE	3,360	2,040	-	-	5,400
Regional	REG	23,176	21,000	4,824	1,050	50,050
TOTAL		77,347	46,509	28,760	45,675	198,291

ACEF = Asian Clean Energy Fund, CCSF = Carbon Capture and Storage Fund, CEF = Clean Energy Fund, CFPS = Canadian Climate Fund for the Private Sector in Asia, CEFPF = Clean Energy Financing Partnership Facility.

Source: Asian Development Bank estimates.