

Clean Energy Financing Partnership Facility

Annual Report 2012



Australian Government

AusAID



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
CO ₂	–	carbon dioxide
DC	–	direct charge
DMC	–	developing member country
DMF	–	design and monitoring framework
GCI	–	grant component of investment
GHG	–	greenhouse gas
PPTA	–	project preparatory technical assistance
PSOD	–	Private Sector Operations Department
REG	–	regional
TA	–	technical assistance
TALL	–	technical assistance linked to loan

WEIGHTS AND MEASURES

MW	–	megawatt
TWh	–	terawatt-hour
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 in 2007 with the aim to help 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). Serving as a partnership platform between the Asian Development Bank (ADB) and its financing partners, CEFPF is important in achieving ADB's annual target of \$2 billion clean energy investments by 2013.¹ This annual report informs on CEFPF's operational results and overall implementation progress for the period from 1 January to 31 December 2012.

2. **CEFPF Progress Towards Target Outputs, Outcome and Impacts.** CEFPF's performance for 2012 was subdued. Although 17 projects were added to the portfolio, the total transaction amount of allocations was relatively low, at \$6.9 million; which is perceived to mirror the sluggish economic and investment activities in DMCs.² To date, the cumulative total project allocations amount to \$72.3 million supporting 93 projects covering 29 DMCs, expected to catalyze about \$1.6 billion of clean energy investments and contribute about 6.3 terawatt-hour (TWh) of energy savings, 442.2 megawatt (MW) installed renewable energy capacity and 6.3 million tons of carbon dioxide (tCO₂) per year of emission reduction (Figure 1).

Figure 1: CEFPF Activities Toward Outputs, Outcomes and Impacts

(01 January – 31 December 2012)			Cumulative (As of 31 December 2012) ^a		
Allocation	Outputs	Impacts/Outcomes	Allocation	Outputs	Impacts/Outcomes
GCI/ TALL \$2.3 mn (2)	\$54.9 mn CE investments 9 projects deploying 10 new technologies 1 new approach/ method introduced ^b	985,011 tCO ₂ /year emission reduction ^c	GCI/ TALL \$30.2 mn (21)	\$1.6 billion CE investments 63 projects deploying 38 new technologies 4 new approaches/ methods introduced ^b	6.3 mn tCO ₂ /year emission reduction ^c
TA/ DC \$4.6 mn (15)	400 HHs w/ access to energy ^b 4 access to energy projects (100%) w/ gender benefit ^b	2.8 TWh energy savings ^d	TA/ DC \$42.1 mn (72)	91,400 HHs w/ access to energy ^b 6 access to energy projects (100%) w/ gender benefit ^b	6.3 TWh energy savings ^d
\$6.9 mn (17)	29% (5 of 17 total projects) w/ identified cobenefits ^b 17 projects (100%) lowering barriers	2.2 MW installed RE capacity ^b	\$72.3 mn (93)	21% (7 of 33 total projects) w/ identified cobenefits ^b 93 projects (100%) lowering barriers	442.2 MW installed RE capacity ^b

CE= clean energy, CEFPF = Clean Energy Financing Partnership Facility, DC = direct charge, GCI = grant component of investment, HH = household, mn = million, 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 on projects, such as projects approved by ADB or withdrawn.

^b Based on the new indicators added in the updated clean energy funds design and monitoring framework. Monitoring and reporting on new indicators cover projects beginning 2011.

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

^d Covers only energy efficiency investments attributed to CEFPF financing.

Notes: Numbers may not add-up to total due to rounding off. The number in parenthesis indicates the number of projects.

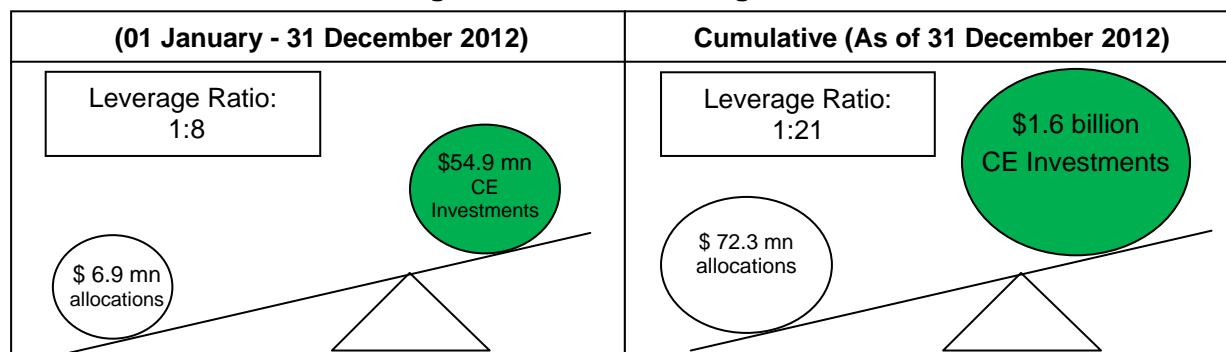
Source: ADB estimates.

¹ Clean energy category in ADB includes renewable energy, energy efficiency and cleaner fuel.

² Asian Development Bank (ADB). 2012. *Asian Development Outlook 2012 Supplement*. Manila.

3. **CEFPF Leverage Ratio.** In 2012, CEFPF's allocations of about \$6.9 million leveraged about \$54.9 million in clean energy investments, resulting in a leverage ratio of 1:8. This means that for every \$1 of financing, the Facility was able to leverage at least \$8 in clean energy investment. Cumulatively, CEFPF's total project allocation is \$72.3 million, leveraging \$1.6 billion clean energy investments and resulting in a leverage ratio of 1:21 (Figure 2).

Figure 2: CEFPF Leverage Ratio



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

Source: ADB estimates.

4. **Adaptive Management of the Facility.** Financing partners have urged ADB to undertake a wider range of financial interventions that would leverage and yield more aggregate outputs, outcomes, and impacts from the same inputs of resources. Discussions between ADB's Private Sector Operations Department (PSOD) and project developers, commercial lenders, private sector investors, and other stakeholders have reinforced the need for new approaches and solutions to the high up-front capital costs and limited availability of long-term financing for low-carbon development. In 2012, ADB approved the expanded scope and use of CEFPF resources to include use of resources for innovative financing mechanisms, and allow channeling of non-grant funds for loans and guarantees.³ These efforts respond to the dynamic market needs and maintain the Facility's relevance in addressing the needs of the DMCs, and contribute more effectively to ADB's overall poverty alleviation and sustainable development agenda.

5. **Sustained Support through Increased Resources and Partnerships.** The multidonor Clean Energy Fund (CEF) received an additional \$10.8 million in contributions from the governments of Australia, Norway and Sweden in 2012.⁴ The Government of the United Kingdom has also joined the partnership by committing to contribute £35.0 million to the Carbon Capture and Storage Fund (CCSF), of which \$16.2 million was received in the last quarter of 2012 representing the first tranche of its commitment.⁵ These contributions received at the tail end of 2012 will positively gear up opportunities for CCS development in the coming year.

³ ADB. 2012. *Expanded Scope and Use of the Clean Energy Financing Partnership Facility Resources*. Manila. Per agreement with the financing partners, innovative financing mechanisms will be applicable only to the multidonor Clean Energy Fund. Allocations to projects on innovative financing mechanisms will commence upon approval of the revised Implementation Guidelines at the next annual consultation meeting scheduled in March 2013.

⁴ The Government of Australia remitted about \$2.7 million in June. The Government of Norway remitted about \$3.3 million in May and \$1.8 million in December. The Government of Sweden committed to contribute an additional SEK 40.0 million to the CEF per Instrument of Contribution dated 6 December 2012, of which about \$3.0 million was remitted in December as the first tranche of its new commitment.

⁵ Per Memorandum of Understanding with the Government of the United Kingdom dated 6 December 2012.

6. **Innovative Models for Energy Efficiency and Access to Energy.** For 2013, CEFPF will continue aiming at supporting projects that contribute to ADB's clean energy investments target. Year 2012 was the United Nation's International Year of Sustainable Energy for All. As such, raising awareness about the importance of increasing sustainable access to energy, energy efficiency, and renewable energy was one of the priorities of the Facility. One innovative financing model being explored to improve energy access is the output-based aid (OBA) scheme which is foreseen to promote off grid renewable energy technologies. ADB, through Office of Cofinancing (OCO), is in dialogue with financing partners, particularly the Swedish International Development Cooperation Agency (Sida), to help mobilize resources that would facilitate the implementation of OBA. CEFPF will complement ADB's sustainable infrastructure programs, aligned with the objectives under the Clean Energy Program and the Energy for All Initiative, by supporting access to energy projects, demand and supply-side energy efficiency activities, sustainable transport and public-private partnership collaborations.

II. RESULTS FRAMEWORK

7. 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.⁶ The DMF is provided in Appendix 2.

A. Impacts

8. 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 carbon dioxide (CO₂) emissions per unit of gross domestic product in participating DMCs is maintained at or lowered from 2006 level by year 2027;*
- (ii) *Average electrification rates in participating DMCs increased from 2006 level, by year 2027; and*
- (iii) *Average percentage of renewable energy share in energy mix in participating DMCs is maintained at or increased from 2006 level, by year 2027.⁷*

B. Outcomes

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

- (i) *Expected cumulative contribution to CO₂ emission reduction in participating DMCs of 17 million tCO₂ per year by 2012; and 20 million tCO₂ per year by 2013;*
- (ii) *Expected cumulative energy saved in participating DMCs of 27 TWh by 2012; and 30 TWh by 2013; and*
- (iii) *Expected cumulative contribution to installed capacity using renewable energy in participating DMCs of 250 MW by 2012; and 300 MW by 2013.*

⁶ In monitoring and reporting on 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.

⁷ All baseline information at 2006 level are provided in the DMF found in Appendix 2 (i.e. Tables A2.1 and A2.2).

C. Progress Towards Impacts and Outcomes

10. The Facility annually reports on its progress towards the set targets. Ultimately, 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 CO₂ emissions reduction, energy savings and renewable energy capacity installed of projects in its portfolio. The guidelines on monitoring and reporting of results are provided in Appendix 3.⁸

11. CEFPF outcome is primarily measured from the expected contributions of grant component of investments (GCIs) and technical assistance linked to loan projects (TALLs), including project preparatory technical assistance of loan projects in the portfolio. Table 1 proves a summary of the progress towards outcomes and impacts while details are in Appendix 4.

Table 1: Progress Towards Outcomes and Impacts

Indicator	Target	1 January - 31 December 2012	Cumulative (As of 31 December 2012) ^a
Expected cumulative contribution to CO ₂ emission reduction in participating DMCs (tCO ₂ per year)	17 million tCO ₂ (by 2012); and 20 million tCO ₂ (by 2013)	985,011.0	6,313,395.0
Expected cumulative energy saved in participating DMCs (TWh)	27 TWh (by 2012); and 30 TWh (by 2013)	2.8	6.3
Expected cumulative contribution to installed capacity using RE in participating DMCs (MW) ^b	250 MW (by 2012); and (300 MW by 2013)	2.2	442.2

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

^a Includes adjustments made on projects, such as projects approved by ADB or withdrawn.

^b A new indicator in the updated DMF and covers project allocations beginning 2011.

Source: ADB estimates

12. In 2012, CEFPF financed four projects that are expected to contribute to CO₂ emission reduction, energy savings and installed renewable energy capacity. One of the projects contributing to CEFPF's outcomes and impacts is the *Bangladesh: Supporting Brick Sector Development*, discussed in Box 1. DMCs path toward low carbon use and energy security are in various stages. Technologies used in a particular DMC may not be as advanced compared to currently available clean energy technologies in the market. Hence, where a particular initiative can make a significant impact in the DMCs, ADB aspires to meet such needs. An example of this kind of investment financing is this Bangladesh project.

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.

Box 1. Bangladesh: Supporting Brick Sector Development (Clean Energy Fund)

To combat the excessive pollutions from fixed chimney kilns (FCKs) in Bangladesh, the government issued a directive requiring that (i) no annual FCK licenses be renewed after September 2012; (ii) environmental clearance favor more energy-efficient improved zigzag kilns, vertical shaft brick kilns, and hybrid Hoffman kilns; and (iii) all FCKs cease to exist from September 2013. However, the compliance to the new directive requires a corresponding financing scheme and complementary development program to incentivize the sector transformation process. In connection, an ADB loan project is providing targeted finance to build up initial energy efficient brick kiln replacement capacity to facilitate the phase-out of FCKs. Supporting the loan implementation and a comprehensive and holistic brick sector development program in Bangladesh, the Clean Energy Financing Partnership Facility (CEFPF) is financing a technical assistance (TA) that will (i) support government's formulation of brick sector policy, strategy, and action plan, (ii) improve market awareness, (iii) improve ADB loan implementation, and (iv) promote research and development of more energy efficient building materials. The TA will also coordinate with ongoing and planned assistance from development partners, including the World Bank, United Nations Development Programme and Deutsche Gesellschaft für Internationale Zusammenarbeit. The TA will also assess the possibility to establish a national brick technical and information center as a one-stop-shop to meet all of brick sector's development needs ensuring the sector development program's long-term sustainability. CEFPF financing amounting to \$750,000 is expected to leverage about \$50 million of clean energy investments and contribute about 980,000 tons of carbon dioxide emission reduction per year and 2,883 gigawatt-hours of energy savings (using 2010 baseline estimate).

D. Outputs

13. Outputs are the physical and/or tangible goods and services delivered. Based on the DMF, ADB monitors six outputs: (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, environment and productivity benefits provided; and (vi) barriers to clean energy/CCS technology investments lowered.

14. **CE Investments in DMCs Increased.** Clean energy funds aim to leverage \$2.5 billion clean energy investments in DMCs by 2013. To date, CEFPF has leveraged a cumulative total of about \$1.6 billion clean energy investments (Table 2). In 2012, the Facility leveraged clean energy investments of about \$54.9 million. This number is lower than clean energy investments leveraged by the Facility in previous years because, externally, the clean energy sector is confronted with European debt crisis, policy uncertainty in the region, and internally, there were low allocations to projects for the year. The Bangladesh project featured in Box 1 and the *Sri Lanka: Solar Rooftop Pilot Project* in Box 2 are two projects which contributed to the Facility's clean energy investment target.

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

Indicator	Target	1 January - 31 December 2012	Cumulative ^a (As of 31 December 2012)
Allocations (\$'000)		6,859	72,302
CE Investments in DMCs leveraged (\$'000)	\$2.5 billion^b	54,940	1,552,806
<i>CE investments leveraged per US\$ of CEFPF financing (\$)</i>		8	21

ADB = Asian Development Bank, CE = clean energy, CEFPF = Clean Energy Financing Partnership Facility, DMC = developing member country.

^a Includes adjustments made on projects, such as projects approved by ADB or withdrawn.

^b This is the cumulative total target of the clean energy funds by 2013, supporting the \$2 billion annual target of ADB.

Source: ADB estimates.

Box 2. Sri Lanka (SRI): Solar Rooftop Pilot under SRI: Clean Energy Network Efficiency Improvement Project (Clean Energy Fund)

Under the Clean Energy and Network Efficiency Improvement Project in Sri Lanka, the Clean Energy Financing Partnership Facility (CEFPF) is financing a solar rooftop power generation pilot of about 1 megawatt (MW) capacity on a public-private partnership (PPP) basis to encourage a private sector market for solar rooftop power generation development, contribute to increased renewable power generation, and encourage wider use of solar rooftop applications by providing a benchmark for replication. The pilot rooftop solar systems to be installed on public buildings/universities will be bid out to the private sector for designing, developing, installation, commissioning, and maintenance, to help bring down capital costs to a reasonable level. The pilot will be accompanied with a credit line of \$1.5 million from the ADB loan financing for solar rooftop systems to be installed and owned by private sector developers. The part of the grant will supplement the credit line and will cover a portion of the incremental costs between grid supply and cost of solar photovoltaic generation, and thus provide incentive for the private sector developers to undertake solar rooftop sub-projects. The pilot project supported by CEFPF with \$1.5 million is estimated to leverage \$1.5 million of clean energy investments, and result in about 1,286 tons of carbon dioxide emission reduction per year. It will help facilitate private sector participation in solar rooftop power generation development and may be replicated in private and public buildings with sufficient roof space through net metering on a PPP basis using private or public financing.

15. At the 18th United Nations Framework Convention on Climate Change (UNFCCC) Conference of the Parties (COP-18) in Doha, ADB's Vice-President for Knowledge Management and Sustainable Development Bindu Lohani underscored the large financing gap needed to address the adverse consequences of climate change, citing that “[a]n estimated \$600 billion to \$1.5 trillion will be needed annually to help developing countries transition to low-carbon and climate-resilient economies... But we are not mobilizing sufficient resources to promote the development and deployment of critically needed climate-friendly technologies.”⁹ Although, ADB has made significant progress towards attaining the target of \$2 billion clean energy investments by 2013, the need to mobilize additional resources and capacity is still palpable. Current clean energy investments in the region fall short while clean energy policies are wanting. However, overall clean energy investment will increase in 2013 and onwards according to Bloomberg New Energy Finance. As such, ADB is shifting to a \$100 billion bank through the Finance++ Strategy—finance plus leverage plus knowledge to undertake these challenges. The Facility's design is aligned with the Finance++ Strategy such that financing is used to leverage investments and lower barriers to clean energy investments through building capacity and sharing knowledge, among others.

16. **Deployment of New Technologies in DMCs.** Clean energy funds aim at the deployment of 55 new clean energy/CCS technologies in DMCs by 2013 and commencement of two CCS demonstration projects in identified priority countries by 2013. In 2012, nine projects are expected to contribute to the deployment of 10 new technologies which includes solar photovoltaic, concentrated solar power, energy efficient brick kiln, pyrolysis, transmission and distribution retrofits/upgrade, CCS, small wind, micro-hydro, biomass, and other mini-grid/off-grid renewable energy applications. Cumulatively, 38 (or about 68%) of CEFPF-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.

⁹ ADB. *Huge Financing Gap Must Be Filled to Promote Climate-Friendly Technology*. In <http://www.adb.org/news/huge-financing-gap-must-be-filled-promote-climate-friendly-technology-ADB>

Table 3: Deployment of New Technologies in DMCs

Indicator	Target	1 January - 31 December 2012	Cumulative ^a (As of 31 December 2012)
Technologies Deployed	55 technologies	10	38
<i>No. of projects contributing to the deployment of new CE technologies in DMCs</i>		9	63
<i>% of projects contributing to the deployment of new technologies</i>		53%	68%

CE = clean energy, DMC = developing member country.

^a Includes adjustments made on projects, such as projects approved by ADB or withdrawn.

Source: ADB estimates.

17. There is an array of grid-based and off-grid solutions of clean and renewable energy technologies applicable for remote Pacific island countries. Tonga is one of Polynesian island countries in need of off-grid solutions such as solar. In 2012, CEFPP provided financing to the *Tonga: Outer Island Renewable Energy Development Project* (Box 3).

Box 3. Tonga: Outer Island Renewable Energy Development Project (Clean Energy Fund)

Petroleum dependency makes Pacific island countries highly vulnerable to oil price shocks, affecting the affordability of food, goods, electricity and transportation. The Government of Tonga is taking a step to address this and enhance the country's energy security with the promotion of the use of renewable energy technologies. The Clean Energy Financing Partnership Facility is financing in the amount of \$225,000, a project preparatory technical assistance (PPTA) for the implementation of a 1.2 megawatt solar power capacity connected to the existing diesel networks. Grid-connected solar photovoltaic is identified as one of the most suitable and cost-effective components of the future energy mix in the Tonga Energy Road Map 2010-2020. Specifically, the PPTA will target the outer islands of Ha'apai namely 'Uiha, Namuka, Ha'ano and Ha'afeva and conduct due diligence activities, such as (i) solar resource assessment, (ii) screening and site selection for one solar plant on each island, (iii) project feasibility design for the selected schemes including all technical, economic, financial, environmental, legal and social considerations, (iv) design the sustainability structure of the project in the remote islands, (v) assessment of willingness to pay and designing of fee structure sustaining electricity services, and (vi) capacity strengthening program of executing and implementing agencies including customers. The project is expected to contribute about 1,700 tons of carbon dioxide emission reduction per year.

18. CEFPP supports projects that will enable DMCs to further explore other options to reduce carbon dioxide emissions even when the developing country is constrained to opt for coal in their energy mix. Based on an International Energy Agency (IEA) report, in order to minimize site specific constraints, it has been proposed that new plants be built "CCS ready" to reduce constraints and other disadvantages apparent when CCS retrofitting an already operational plant. This concept is an important option to not further "lock-in" CO₂ emissions from power plants that will be built in the near future.¹⁰

19. CEFPP provides financing to the *People's Republic of China (PRC): Road Map for CCS Demonstration and Deployment* (Box 4). Support for this technical assistance (TA) contributes towards the realization of at least two CCS demonstration projects targeted by the Facility.

¹⁰ M. Finkenrath, J. Smith and D. Volk. 2012. *CCS Retrofit: Analysis of the Globally Installed Coal-Fired Power Plant Fleet*. In http://www.iea.org/publications/freepublications/publication/CCS_Retrofit.pdf

Box 4. People's Republic of China (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 Fund)

The People's Republic of China (PRC) has committed to reducing its carbon intensity and embarked on "green, low-carbon development concept" primarily anchored on larger share of renewable in primary energy consumption, reducing energy intensity and putting a cap on total energy consumption. However, without making use of the entire portfolio of low-carbon energy technologies, including carbon capture and storage (CCS), the expected decarbonization of energy sector is not feasible. As CCS technology is complex, unproven at-scale in the power sector, and in its early stage of development in the Asia Pacific Region, it requires upstream analytical work, capacity development, piloting and the realization of demonstration projects. The Clean Energy Financing Partnership Facility (CEFPF) is financing, in the amount of \$2.2 million, a TA that will consist of two components: component A for formulating a road map for CCS demonstration and deployment, and component B for an oxy-fuel combustion carbon dioxide (CO₂) capture technology assessment, one remaining critical gap for the formulation of a comprehensive CCS roadmap. Component A will establish a comprehensive roadmap synthesizing capacity development TAs being provided, for a cost-effective demonstration and deployment of CCS technologies by 2025. It will propose appropriate policy, regulatory, fiscal and financial support mechanism and framework; identify early stage investment opportunities for carbon capture, CO₂ utilization and storage; elaborate prefeasibility studies for early stage investment opportunities; and propose appropriate business models for large-scale integrated models. Component B will deliver the analytical work on oxy-fuel combustion technology including techno-economic feasibility assessment of a 100-megawatt equivalent coal-fired power plant CCS, technical standards for oxy-fuel combustion CO₂ capture technology, and a CO₂ storage characterization manual, The TA will also develop the knowledge on the analytical tools developed for CCS roadmap and analysis, planning, and implementation of oxy-fuel combustion with CO₂ capture technology.

20. Guided by the categories for stages in technology development/adoption, Table 4 summarizes how the Facility performed; with 9 of 17 projects this year, and 63 of 79 projects, in total, supporting technology development.

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

Stage in Technology Development/Adoption	No. of Projects ^a	
	1 January - 31 December 2012	Cumulative (As of 31 December 2012) ^b
Research and Development	0	0
Demonstration	2	5
Deployment	6	50
Competitive/Commercial ^c	5	56
Projects contributing to technology deployment	9	63
Projects receiving allocation	17	93

^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 on projects, such as projects approved by ADB or withdrawn.

^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.

21. **New Approaches/Methodologies Introduced.** Per the DMF, clean energy funds target supporting projects to introduce 15 new approaches/methodologies to promote clean energy/CCS in participating DMCs by 2013. In 2012, CEFPF supported the Sri Lanka project featured in Box 2, which is expected to contribute to the introduction of one new approach/methodology. In particular, the project will develop solar power generation on public buildings belonging to universities on a public-private partnership basis as well as on private

buildings. A summary of new approaches/methodologies introduced for the year and in total is provided in Table 5.

Table 5: New Approaches/Methodologies Introduced^a

Indicator	Target	1 January - 31 December 2012	Cumulative ^b (As of 31 December 2012)
Approaches/methodologies introduced	15 approaches	1	4
<i>No. of projects introducing new approaches/methodologies to promote CE/CCS in participating DMCs</i>		1	4
<i>% of projects contributing to introduction of new approaches/methodologies</i>		6%	12%

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

^a A new indicator in the updated DMF and covers project allocations beginning 2011.

^b Includes adjustments made on projects, such as projects approved by ADB or withdrawn.

Source: ADB estimates.

22. **Benefits from Access to Energy Delivered.** There is global recognition that sustainable access to energy is a tool to find alternative solution to combat endemic poverty. The United Nations encourages the world to meet the goal of universal access to clean, affordable energy by 2030. Responding to this global call, ADB seeks to bring together DMCs to become proactive recipients, active contributors and significant participants to this global campaign.

23. CEFPP remains relevant as a platform to provide financing support to enable the development of projects in renewable energy and energy efficiency that would promote sustainable access to energy. In 2012, four projects are expected to contribute to the delivery of access to energy benefits (Table 6). Of note is the Tonga project featured in Box 3, which is expected to provide electricity generated from solar power to at least 400 households. Meanwhile, the *Indonesia: Scaling Up Renewable Energy Access in Eastern Indonesia* project while not directly contributing to provision of energy access target, may help in providing access to modern forms of energy for 750,000 households through the pipeline of projects to be developed under the project (Box 4).

Box 4. Indonesia: Scaling Up Renewable Energy Access in Eastern Indonesia (Clean Energy Fund)

Indonesia lags behind its neighbors in terms of access to energy with only about 65% of the total population having access to electricity or modern forms of energy. A significant portion has no access to modern cooking fuels and thus, dependent on traditional forest-based biomass that negatively impact the forests, health and livelihood opportunities. The government has prioritized rural development and connectivity as a way of promoting greater economic opportunities for the poorer segments of the society, aiming to achieve an electrification ratio of 90% by 2020. In support, the Clean Energy Financing Partnership Facility (CEFPP) is providing \$1 million as a technical assistance grant to promote energy access in small islands and remote areas of Indonesia using renewable sources, focusing on Sumba Island in the Nusa Tenggara Timur region. The technical assistance aims to improve the capacity of local governments to design and manage rural energy access programs using renewable energy sources, through the development of the detailed energy access plan for Sumba, identification and preparation of priority investment projects to be developed by small independent power producers, and strengthening of implementation of ongoing and planned government-financed energy access programs.

24. Both Tonga and Indonesia projects will contribute some gender benefits. For instance, the Tonga project will improve access of female-headed households to renewable-generated, modern electricity services. Provision of energy solutions to remote islands also enables the islanders to have access to energy, substantially uplifting the lives of women and children. The Tonga project will also provide gender awareness training for all project staff and will establish gender-disaggregated baseline and monitoring indicators in the sector. Similarly, the Indonesia project will also provide welfare improvements for women and children. One of the project's outputs is for at least two local or regional banks to initiate their own energy access finance programs, including those that expand livelihood programs for women.

Table 6: Access to Energy Benefits Delivered^a

Indicator	Target	1 January - 31 December 2012	Cumulative ^b (As of 31 December 2012)
<i>No. of projects with access to energy component</i>		4	6
<i>% of projects with access to energy component</i>		24%	18%
No. of HHs provided with access to energy in participating DMCs	700,000	400	91,400
HHs connected to electricity	350,000	400	91,400
HHs connected to modern fuels and/or efficient devices for cooking	175,000	-	-
HHs connected to modern fuels and/or efficient devices for heating	175,000	-	-
% of access to energy projects providing gender benefits	80%	100%	100%
<i>No. of access to energy projects with gender benefits</i>		4	6

HH = household, DMC = developing member country.

^a New indicators in the updated DMF and cover project allocations beginning 2011.

^b Includes adjustments made on projects, such as projects approved by ADB or withdrawn.

Source: ADB estimates.

25. **Health, Environment and Productivity Benefits Provided.** Worldwide, around three billion people still cook and heat their homes using solid fuels in open fires and leaky stoves. About 2.7 billion burn biomass (wood, animal dung, crop waste) and a further 0.4 billion use coal. Most are poor, and live in developing countries. Such cooking and heating produces high levels of indoor air pollution with a range of health-damaging pollutants, including small soot particles that penetrate deep into the lungs. In poorly ventilated dwellings, indoor smoke can be 100 times higher than acceptable levels for small particles. Exposure is particularly high among women and young children, who spend the most time near the domestic hearth.¹¹

26. Clean energy funds aim to finance projects that directly and indirectly provide health, environment and productivity benefits derived from clean energy/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 the DMF, clean energy funds aim for 50% of projects supported to deliver co-benefits on health, environment and productivity in DMCs by 2013.

27. In 2012, five projects are expected to directly and indirectly contribute to the provision of health, environment and productivity benefits (Table 7). For example, CEFPP's financing support to the Bangladesh project featured in Box 1, with the construction of more advanced

¹¹ World Health Organization. Indoor Air Pollution and Health. In <http://www.who.int/mediacentre/factsheets/fs292/en/index.html>

brick kilns, will help reduce carbon dioxide emissions and fine particulate pollution and improve health of people living at or in the vicinity of the brickfields. The mechanization will help reduce occupational hazards while year-round operation of more advanced brick kilns will reduce seasonality of migrant workers, thus, improving productivity, wages and living/health conditions. The project will also contribute to the designing of a corresponding alternative livelihood strategy to help some unqualified fixed chimney kiln owners and workers gradually exit the brick sector.

Table 7: Cobenefits Delivered^a

Indicator	Target	1 January - 31 December 2012	Cumulative ^b (As of 31 December 2012)
% of projects providing health, environment and productivity benefits	50%	29%	21%
<i>No. of projects providing health, environment and productivity benefits</i>		5	7

^a A new indicator in the updated DMF and covers project allocations beginning 2011.

^b Includes adjustments made on projects, such as projects approved by ADB or withdrawn.

Source: ADB estimates.

28. In 2012, the Facility supported energy sector projects which include projects that contributed to the concerns of sectors that may otherwise be marginalized without protection. And 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.

29. **Barriers to Clean Energy/CCS Technology Investments Lowered.** Clean energy funds measure the outputs on barriers lowered by tracking the projects with respect to the following targets: (i) 18 national/local policies enabling clean energy/CCS development in participating DMCs developed by 2013; (ii) 15 financing models suitable for bundling small clean energy/CCS investment applied in participating DMCs by 2013; 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 2013.

30. In 2012, all projects supported by CEFPP will contribute to the lowering of barriers and providing an enabling environment to facilitate the deployment of clean energy/CCS technologies. Two supported projects are expected to help address policy barriers while two projects will contribute to lowering financing barriers. And as targeted, all 17 projects will produce and/or disseminate knowledge products or contribute to capacity building to promote clean energy/CCS development in DMCs. A sample project, the *REG: Carbon Capture and Storage in Developing Asia*, a direct charge (DC), is featured in Box 5. Table 8 presents the performance summary of the Facility on the lowering of barriers while Table 9 summarizes how the 17 projects receiving allocations during this reporting period and the 93 projects to date fared in terms of addressing the key barriers to clean energy technologies.

**Box 5. Regional: Carbon Capture and Storage in Developing Asia
(Carbon Capture and Storage Fund)**

The Clean Energy Financing Partnership Facility (CEFPF) provided \$68,500 to finance the participation of selected participants from Asian Development Bank's (ADB) developing member countries (DMCs) and resource speakers to the 11th International Conference on Greenhouse Gas Control Technologies, a premier international platform for the presentation of cutting edge research and the latest developments in carbon capture and storage (CCS) technologies, held on 18-22 November 2012 in Kyoto, Japan. As part of the event, ADB and the International Energy Agency's Greenhouse Gas R&D Programme co-organized a session entitled: CCS in Developing Asia. This panel allowed representatives from the People's Republic of China, Indonesia, Thailand and Viet Nam to present assessments of opportunities for the deployment of CCS in their countries. ADB also outlined plans for supporting near-term pilot CCS activities in the region. The event provided a venue for exchange of knowledge and experiences on latest CCS developments, and contributed to the network-building, capacity development and awareness raising of DMC representatives.

Table 8: Barriers to CE/CCS Technology Investments Lowered

Indicator	Target	1 January - 31 December 2012	Cumulative ^a (As of 31 December 2012)
National or local policies enabling CE/CCS development in participating DMCs developed	18	2	9
<i>No. of projects contributing to lowering of policy barriers</i>		2	11
Financing models suitable for bundling small CE/CCS investment applied in participating DMCs	15	1	12
<i>No. of projects contributing to lowering of financing barriers</i>		2	16
No. of projects producing and/or disseminating knowledge products or contributing to building capacity to promote CE/CCS development in participating DMCs		17	93
<i>% of projects producing/disseminating knowledge products or contributing to capacity building</i>	100%	100%	100%

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

^a Includes adjustments made on 2008-2011 projects, such as projects approved by ADB or withdrawn.

Source: ADB estimates.

Table 9: Barriers to New Technologies Addressed by Projects Receiving CEFPF Allocations

Barrier	No. of projects ^a	
	1 January - 31 December 2012	Cumulative (As of 31 December 2012) ^b
Lack of enabling policies and regulations	2	11
Inadequate skills and training to manufacture, install and maintain and/or services new CE technologies	8	38
Lack of information, dissemination and public awareness on CE options and benefits	17	92
Disposition to established energy systems	0	1
Inadequate financing options	2	16
Projects receiving allocation	17	93

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

^a Totals will not necessarily add-up because some projects address more than one barrier.

^b Includes adjustments made on projects, such as projects approved by ADB or withdrawn.

Note: Based on Margolis, R. and J. Zuboy. 2006. Non-technical Barriers to Solar Energy Use: Review of Recent Literature. National Renewable Energy Laboratory. USA.

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 2012 and to date against its target outputs are presented in Appendix 7.

E. Actual Accomplishments and Progress of Projects

32. With 93 projects to date, CEFPF is positioned to significantly contribute in the advancement of clean energy agenda in DMCs through leveraging of clean energy investments and lowering of policy, financing and information barriers on the deployment of clean energy/CCS technologies. To date, a few projects which received Climate Change Steering Committee (CCSC) approval, are still awaiting approval by ADB.¹² Of the ADB-approved projects, there were seven TAs and 20 DCs which have completed their proposed activities. Other projects in the portfolio are progressing well, with those at midterm largely on-track to achieve their target outputs, outcomes and impacts. Some are experiencing administration delays, hampering the start-up of activities, while others are in the process of changing the project scope and planned activities given developments on the ground.

33. **Completed Activities and Outputs.** The TA which has completed its activities and has financially closed this year is the *Thailand: Mainstreaming Energy Efficiency Measures in Thai Municipalities* (Box 6).¹³ The TA was generally successful in achieving its key outcome and outputs as it demonstrated the feasibility of municipal energy efficiency measures, informed on financing arrangements, and contributed to the capacity building of energy authority to increase confidence among stakeholders, in preparation for widespread replication and scaling up of energy efficiency measures. A follow-up to the TA is a proposed project implementing large-scale street lighting under the clean development mechanism that would serve as a model for future projects nationwide.

Box 6: Completed Projects

Thailand: Mainstreaming Energy Efficiency Measures in Thai Municipalities (Clean Energy Fund)

The technical assistance (TA), with Clean Energy Financing Partnership Facility (CEFPF) support in the amount of \$1 million, was designed to improve energy security and decrease the rate of greenhouse gas emissions by promoting energy efficiency initiatives in Thai Municipalities. Its desired outcome is the strengthened capacity of the Provincial Electricity Authority (PEA) and municipalities to identify, design, finance and implement energy efficiency measures. The TA outputs: (i) design and implementation of pilot municipal energy efficiency projects which included the retrofitting of municipal buildings and upgrading of public street lighting, (ii) innovative project financing arrangements, (iii) plan for expanding and scaling-up of municipal energy efficiency projects throughout the country, (iv) capacity building for PEA and municipalities to replicate and mainstream energy efficiency measures; significantly met the objective of providing specialized policy and advisory support to the executing agency and relevant stakeholders. The pilot projects exceeded targets, with building retrofits for public buildings in six pilot municipalities showing energy savings of 20-50% (versus four pilot municipalities and energy savings of at least 10% targeted). The demonstration of light emitting diodes roadway luminaries showed significant improvement in light output quality with less energy consumption. The project findings and recommendation of free electricity quota were informative and accepted by the executing agency, municipalities and relevant government agencies. The consulting team worked directly with staff from executing agency and municipalities using a learning-by-doing approach to strengthen their capacities and mainstream energy efficiency measures. To startup replication of pilot energy efficiency projects across Thailand, workshops showcasing the achievements and lessons of the TA with more than 60 persons from municipalities, various government agencies and other interested parties in attendance, were conducted.

¹² There were two projects in the portfolio which were withdrawn this year. In line with ADB management's decision, allocations for non-sovereign operations were transferred to the Private Sector Operations Department (PSOD). As PSOD could not process the non-sovereign operations with National Thermal Power Corporation Limited (NTPC) as they have no head room at this time, the project India: NTPC Renewable Energy Development Project was withdrawn. On the other hand, the project Lao: Renewable Energy Development in Remote Communities was envisaged to be a capacity development technical assistance to be implemented together with an approved project preparatory technical assistance (PPTA). However, as the scope of the PPTA was revised and would be processed on its own, the CDTA had to be withdrawn.

¹³ At the time of writing, another TA supported by CEFPF, the Regional: Carbon Dioxide Capture and Storage Demonstration in Developing Countries – Analysis of Key Issues and Barriers, has already completed its activities and is in the process of being closed.

34. The DC modality has contributed to the efficient use of CEFPP resources, supporting CEFPP's targets and overall promotion of the clean energy agenda. DC financing allowed DMCs to participate in regional cooperation activities that help build capacity and institutions for clean energy development and implementation, catalyze enabling policies and reform and increase clean energy financing. Through support for activities such as the annual events, *Regional (REG): Carbon Forum Asia 2011* and the *REG: Clean Energy Expo Asia 2011* as well as the *REG: Montreal 2010: 21st World Energy Congress*, CEFPP provided knowledge and experience sharing platforms permitting information acquisition and dissemination and enhancing cooperation, partnership and networking for DMCs (Box 7).

Box 7: Completed Projects
Regional (REG): Carbon Forum Asia 2011 (Clean Energy Fund)

This direct charge (DC) with allocation of \$ 50,000 financed the participation of 23 representatives from 11 of the Asian Development Bank's developing member countries (DMCs) to the Carbon Forum Asia (CFA) held from 2-3 November 2011 in Singapore. The CFA has become one of ADB's yearly trademark events and an important arena in promoting clean energy in Asia. It serves as a platform for governments, private organizations and financial institutions across the world to showcase the carbon market opportunities for clean energy projects in the region and to level out key issues and carry forward insightful viewpoints on the future international climate change framework. In 2011, 1,028 participants from over 54 countries participated in 40 insightful discussions on Asia's carbon dilemmas, most notable of which are dialogues on the future of the Clean Development Mechanism given the end of the Kyoto Protocol's first commitment period. Sponsored participants of the event provided positive feedback and expressed appreciation on support provided for sustainable development in region and their participation which proved useful for networking and capacity building.

REG: Clean Energy Expo Asia 2011 (Clean Energy Fund)

This DC with allocation of \$50,000 supported the participation of five representatives from government ministries of Lao People's Democratic Republic, Nepal, Philippines, Sri Lanka and Malaysia to the Clean Energy Expo Asia (CEEA) 2011 held from 1-3 November 2011 in Singapore. Originally, the DC aimed to support ten participants but due to late replies, last minute cancellation and logistical issue (i.e. need for translators which are not available at the event), only five were able to attend the event. The CEEA is one of the major events for the Singapore International Energy Week which was launched by the government in support of their effort to position the country as a regional hub for energy, especially for clean energy. It brings together the private sector and governments and facilitates the dialogues among and between these two sectors and their successful peers, to help lower the barriers to clean energy development. CEEA 2011 was attended by over 5,000 clean energy industry players from 63 countries with about 170 international exhibitors and over 130 speakers at the conference. The CEEA is an excellent venue for ADB and DMC representatives to interact with technology focused clean energy practitioners, especially private sector operators working on clean energy.

REG: Montreal 2010: 21st World Energy Congress (Clean Energy Fund)

This DC with allocation of \$35,000 was intended to cover participation of five representatives from selected DMCs to the 21st World Energy Congress (WEC), a premier international sectoral forum for global energy leaders held from 12-17 September 2012 in Montreal, Canada. However, due to unexpected circumstances for some sponsored participants, only a delegate from Uzbekistan participated in the event. The 21st WEC aimed to develop the Montreal Action Plan, a concrete and focused set of proposals and required measures to address the challenges faced by the energy sector and served as the benchmark for measuring achievements leading to the 22nd WEC. The support would help ensure representation of DMCs at the WEC and in the development of the Action Plan, as well as help increase the knowledge of ADB's national partners on the latest energy sector strategies, technologies and systems for consideration in their own countries' national agenda. The 21st WEC focused on energy supply, energy poverty alleviation and sustainability in the next 20 years, and highlighted that (i) increasing challenges to the world oil supply will ultimately provide an ample amount of economic opportunities resulting in future sustainability, (ii) technologies and the speed with which they can be developed, deployed and disseminated are key drivers for future energy, economic and environmental sustainability, (iii) reliance on fossil fuel will continue in the next 10-20 years with more energy choices in parallel to address the needs of environmental protection and sustainability, (iv) public awareness and acceptance is a key driver to the success of energy efficiency and renewable energy projects and technology advancement and improvement will shift the existing energy regime from reliance on conventional energy to new and renewable energy, with solar considered to be the fastest growing energy.

35. CEFPF's DCs such as the *REG: Quantum Leap in Wind Power in Asia* and *REG: Recruitment of Clean Energy Expert*, also helped engage expert/skilled services to aid in project planning, design, implementation, monitoring and evaluation as well as the building up of knowledge base, development of technologies and processing of models for replication (Box 8).

Box 8: Completed Projects

Regional (REG): Quantum Leap in Wind Power in Asia (Clean Energy Fund)

This direct charge (DC) with allocation of \$100,000 supported a key event whose findings contributed in formulating a follow-on technical assistance, and financed consultancy services to help build the knowledge base on wind power. Specifically, the direct charge financed the participation of six DMC representatives and speakers and the welcome reception to the Quantum Leap in Wind Power Structured Consultation Workshop held on 20-21 June 2010 in Manila. The event was one of the first workshops in wind power held in the region and brought together over 180 major stakeholders from 35 countries to consolidate lessons learned and formulate country-level road maps for scaling up wind power deployment. Influential players in the wind industry, government officials, and experts discussed key challenges in the areas of financing and costs, turbine and grid technology, policy and regulation, project and program development, and small wind applications and identified potential solutions. The findings of the consultation workshop contributed in formulating a follow-on technical assistance project, *REG: Quantum Leap in Wind* which is presently ongoing. The DC support also engaged consultancy services who prepared the draft wind power roadmaps for the Philippines, Mongolia and Sri Lanka, provided a lecture on wind resource assessment, provided baseline wind power development information in nine DMCs and background notes on wind topics, and led the preparation of the draft *Wind Future in Asia Report*. The DC also helped enable the design of another related technical assistance, *Sri Lanka (SRI): Clean Energy and Network Efficiency Improvement Project*, and disseminate and share the knowledge, best practices and lessons on wind power development as the outputs were added to the knowledge products on wind power and shared with various stakeholders in the region and posted online at the ADB website for wider distribution.

REG: Recruitment of Clean Energy Expert (Clean Energy Fund)

This DC with allocation of \$180,000 financed the hiring of a consultant who (i) prepared the draft scope of work and terms of reference for a wind mapping technical assistance project in Afghanistan and the techno-commercial assessment of advanced renewable fuel project in Thailand, for the Private Sector Operations Department, (ii) assisted in the drafting of the Climate Change Implementation Plan for the Pacific Regional Department, (iii) supported joint missions of ADB, International Bank of Reconstruction and Development, and International Financing Corporation for Climate Investment Funds/Clean Technology Fund Investment Plans, and development project financing proposals for Indonesia, Philippines and Vietnam, as well as preliminary reconnaissance for India, (iv) contributed to the Green Growth, Resources and Resilience report prepared jointly by ADB, United Nations Environment Programme and Economic and Social Commission for Asia and the Pacific for Environment and Safeguards Division. In general, the consultant's services were useful in the development of clean energy projects, largely directed to the Clean Technology Fund (CTF) investment plans and projects.

36. **Ongoing Activities and Outputs.** Based on updates received from projects that are at their midterm of implementation, CEFPF projects are progressing well and generally on-track in achieving their target activities and outputs, with a few nearing completion of activities and outputs such as the *Bhutan: Green Power Development Project*, *REG: Determining the Potential for Carbon Capture and Storage in Southeast Asia*, *PRC: Municipal Waste to Energy*, *PRC: Developing Smart Grid for Efficient Utilization of Renewable Energy in the PRC* (Box 9). For the case of the above-mentioned CCS project, discussions for follow-on activities are ongoing, guided by the findings of the project which indicated that Indonesia is a country with significant prospects for CCS activity particularly in the gas processing sector. As such, relevant discussions between and among ADB, the state-owned oil and gas company and Japan International Cooperation Agency are ongoing to explore a possible CCS pilot activity in the said sector.

Box 9: Ongoing Projects
Bhutan: Green Power Development Project (Asian Clean Energy Fund)

This grant component support will finance the implementation of the solar photovoltaic systems for remote public facilities such as schools, health clinics, and other community facilities that will apply energy efficient technology through electric double layer capacitors and white light-emitting diode. The project has almost achieved its target output installing 101 of 119 target solar photovoltaic systems in public institutions.

Regional (REG): Determining the Potential for Carbon Capture and Storage in Southeast Asia
(Carbon Capture and Storage Fund)

This technical assistance (TA) aims to determine the potential of carbon capture and storage (CCS) technology in Indonesia, Philippines, Thailand and Viet Nam, and contribute to capacity-building as well as planning and management of CCS demonstration. The project will develop country-specific road maps for CCS demonstration in the focus countries, provide a knowledge dissemination program on key areas related to CCS, undertake country-specific scoping analysis on the potential of CCS, and carry-out a location-specific pre-feasibility analysis to identify specific carbon dioxide action plans and storage options and related costs in Indonesia. The project has completed the country-specific reports and related roadmaps and has conducted knowledge dissemination activities on study findings in various events. Due to confidentiality nature of the information contained in the country reports, a regional analysis report is being developed as a knowledge product. This report is now in circulation for review and the publication is scheduled by the first quarter of 2013.

People's Republic of China (PRC): Municipal Waste to Energy (Clean Energy Fund)

This TA supporting the construction of Waste to Energy (WTE) incineration plants in the People's Republic of China (PRC) aims to deploy advanced and clean WTE technologies eliminating supplemental fuel and meeting stringent international environmental standards through (i) monitoring, assessment and evaluation of operational performance of WTE plans, (ii) analysis of environmental management and capacity development of the sponsor on its environmental safeguards, and (iii) dissemination of knowledge to government agencies, possible sponsors and other stakeholders. The project has completed the capacity building workshops and necessary reports on site visits to existing and new waste to energy plants and the Environmental and Social Management System in compliance with ADB's safeguard policies. The project plans to host a workshop/seminar to disseminate the clean waste incineration technology to other DMCs and allow replication of the successful model in PRC.

PRC: Developing Smart Grid for Efficient Utilization of Renewable Energy in the PRC
(Clean Energy Fund)

This TA aims to improve capacity for grid integration of wind power plants in the State Grid Corporation of China by developing a smart grid road map for harmonizing renewable energy development with grid expansion in regional grid, codifying and upgrading technical standards for connectivity of renewable energy to the grid, upgrading and piloting of short-term day-ahead wind power forecasting systems, and conduct of training and lessons learned dissemination activities. The project has prepared the smart grid road map while the grid integration guidelines and wind power forecasting model are still under implementation. The reports on these two tasks are expected by 2013. The key findings will be presented in a stakeholders' workshop and contained in a knowledge product to be produced and disseminated.

37. Some projects experienced/experiencing start-up/implementation delays relating to (i) bid evaluation - as in the case of the *Nepal: Compact Fluorescent Lighting and Solar-Powered Street Lighting*, a grant component of investment (GCI) supporting the two demand-side management interventions - energy efficient lighting, and stand-alone renewable energy-based street-lighting using solar or hybrid powered street-lighting; (ii) consultant engagement – as in the case of the above-mentioned Nepal project and the *REG: Enhancing Knowledge on Climate Technology and Financing Mechanisms*, a technical assistance facilitating dialogues for and understanding of Asian countries on interrelated issues on climate change financing and climate technology to increase knowledge and advance views on climate change finance discussions; and (iii) contract awarding in one of the project sites and similar ongoing activities undertaken at the project area and the project team wanted to avoid repetitions and ensure that the scope of work would not overlap with existing activities - as in the case of the project *REG: Promoting Access to Renewable Energy in the Pacific*, a technical assistance that will design and

implement small pilot projects for mini-hydropower, alternative fuels, and solar lighting to promote access to and use of renewable energy products in Papua New Guinea, Solomon Islands and Vanuatu. The *Philippines: Preparing Three Wind Farm Projects in Luzon* project that is preparing the feasibility studies supporting the development and construction of wind power plants, is also delayed by the preparation and submission of selected outputs/reports by the consultants. Based on the feasibility studies conducted, one site is deemed most suitable for development while the other two sites present challenges. These issues are being addressed or have been resolved by the concerned project teams to not significantly affect achievement of target results.

38. Selected projects have undergone changes in scope while a few are exploring the possibility of changing the project scope following inception mission and/or succeeding discussions with the DMCs. These changes were on the implementation arrangements relating to changing/expansion of activities, with some receiving additional financing from other sources and/or adhering to requests from the concerned DMC, and hiring of additional consultants or changing the consultants' terms of reference. These changes would not alter the expected target outcomes and impacts but rather enhances their achievement. For instance, the Nepal project expanded its activities by including a pilot grid connected solar photovoltaic component within the CEFPPF-support provided, following request from the government. Additional projects with changes in scope made are in Box 10.

Box 10: Ongoing Projects
Regional (REG): Strengthening Planning Capacity for Low Carbon Growth in Developing Asia
(Asian Clean Energy Fund)

This technical assistance (TA) aims to help strengthen low-carbon economic planning in Indonesia, Philippines, Thailand and Viet Nam, aided by a set of tools that can help prioritize mitigation options, including smart clean energy development; assess the potential cost-effectiveness of each option; and advice on funding requirements for actual implementation. The project is targeting the development and application of country-specific low-carbon growth modeling frameworks, and provision of training sessions and workshops enhancing the capacity of agencies/institutions to utilize the model for informed planning to support the implementation of a low-carbon development path in the long-term. With additional financing from the Government of United Kingdom, the project expanded its activities to include the development of the low-carbon pathway calculator tools, a friendly-user tool for policymaker and non-modeler.

REG: Empowering the Poor Through Increasing Access to Energy (Asian Clean Energy Fund)

This TA aims to increase energy access by promoting strategic approaches and partnerships to replicate and scale up access to modern, reliable and clean energy services among the region's poor. This project is helping operations departments to consolidate and replicate successful models, and facilitate adoption and adaption of models by identifying, developing and scaling-up energy access projects throughout the Asia-Pacific region. With additional resources from Australia, the project now include the design and implementation of 2-3 demonstration projects on how community barriers can be addressed and offer a way forward for deploying successful models at scale.

Sri Lanka: Implementation of Energy Efficiency Policy Initiatives (Asian Clean Energy Fund)

This TA supporting the loan project which aims to expand coverage of power supply and improve efficiency and reliability in service delivery through strengthened transmission system, broadened rural electrification, enhanced energy efficiency and further development of renewable energy. This project is (i) providing expertise and basic laboratory equipment necessary to establish suitable appliance testing laboratories for lighting products and domestic/commercial appliances, (ii) designing guidelines and recommended products for energy efficient domestic lighting, (iii) preparing a strategy report and draft policy for maximum use of energy efficiency lighting, and (iv) developing comprehensive training materials and providing subsidized trainings; to help in implementing ongoing and catalyse future energy efficiency interventions. The project made a minor change in scope to engage a Course Coordinator for the energy auditor training component to organize and facilitate three energy auditor training courses including complex logistical arrangements.

III. FINANCIAL STATUS

39. The Facility remained responsive in supporting clean energy programs and activities. Contributions from ongoing commitments were received while new commitments were secured for the multidonor CEF and the CCSF. This section details the Facility's financial performance for 2012.

A. Financing Partner Contributions and Status of Grant

40. The CEF received a number of contributions during the year. The Government of Norway remitted about \$3.3 million in May followed by the Government of Australia's remittance of approximately \$2.7 million in June, representing the final tranche of its new commitment. The CEF received another set of replenishment from the Government of Norway of around \$1.8 million in fulfillment of its new commitment, and approximately \$3.0 million from the Government of Sweden as the first tranche of its new commitment.¹⁴ In total, the CEF received about \$10.8 million replenishment in 2012. Meanwhile, the CCSF received approximately \$16.2 million from the Government of the United Kingdom representing the first tranche of its commitment.¹⁵

41. To date, a total of \$134.1 million have been remitted to ADB for CEFPF (Table 10).

Table 10: Summary of Actual Remittances, As of 31 December 2012 (\$ millions)

Financing Partners	2007-2011	2012	TOTAL
Clean Energy Fund (CEF), Multidonor	32.7	10.8	43.4
Australia ^a	10.7	2.7	13.3
Norway ^b	8.1	5.1	13.2
Spain	9.5	-	9.5
Sweden ^c	4.4	3.0	7.4
Asian Clean Energy Fund (ACEF), Single Donor	57.1	-	57.1
Japan	57.1	-	57.1
Carbon Capture and Storage Fund (CCSF)	17.3	16.2	33.6
Global CCS Institute ^d	17.3	-	17.3
United Kingdom ^e		16.2	16.2
Total	107.1	27.0	134.1

^a Includes new contribution of \$2.7 million remitted in June 2012.

^b Includes new contribution of \$3.3 million remitted in May and \$1.8 million remitted in December 2012.

^c Includes new contribution of \$3.0 million remitted in December 2012.

^d Global Carbon Capture and Storage Institute

^e Includes new contribution of \$16.2 million remitted in December 2012.

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

Source: ADB estimates.

42. As of year-end 2012, cumulative allocations of the Facility sum up to \$75.3 million, inclusive of fees. CEFPF's unaudited status of grant as of 31 December 2012, as prepared by the Controller's Department, is presented in Appendix 8 while the actual contributions and allocations tabulated by the secretariat is presented in Table 11.¹⁶

¹⁴ Sweden committed to contribute an additional SEK 40.0 million to the CEF per Instrument of Contribution dated 6 December 2012.

¹⁵ United Kingdom committed to contribute £35.0 million to the CCSF per Memorandum of Understanding dated 6 December 2012.

¹⁶ For budgeting and planning purposes, CEFPF's secretariat does not count receivables as part of contributions until they have actually been remitted and are available for allocation. This explains the difference between Table 11 on Actual Contributions vs. Allocations and the Status of Grant reports in Appendix 8. Furthermore, the Controller's reports reflect only projects already approved by ADB for implementation while Table 11 accounts for all of CEFPF's allocations to projects as authorized by the Climate Change Steering Committee (CCSC) including those undergoing ADB's approval process.

Table 11: CEFPF Actual Contributions vs. Allocations, As of 31 December 2012 (\$ millions)

ITEM	CLEAN ENERGY FUND (CEF)		ASIAN CLEAN ENERGY FUND (ACEF)		CARBON CAPTURE AND STORAGE FUND (CCSF)		TOTAL
	2007-2011	2012	2008-2011	2012	2009-2011	2012	
	Contributions, Beginning Balance (A)		6.0		20.4		
Remittances (B)							
Australia	10.7	2.7	-	-	-	-	13.3
Global CCS Institute ^a	-	-	-	-	17.3	-	17.3
Japan	-	-	57.1	-	-	-	57.1
Norway	8.1	5.1	-	-	-	-	13.2
Spain	9.5	-	-	-	-	-	9.5
Sweden	4.4	3.0	-	-	-	-	7.4
United Kingdom	-	-	-	-	-	16.2	16.2
Subtotal - CONTRIBUTIONS (C=A+B)	32.7	16.8	57.1	20.4	17.3	28.8	134.1
Interest/Investment Income (D)	0.3	0.0	0.8	0.1	0.1	0.0	1.3
Total Available Funding Resources (E=C+D)	32.9	16.8	57.9	20.5	17.4	28.8	135.4
Funds Utilization (F)							
Project Allocations ^b	(24.1)	(3.9)	(41.3)	-	(3.4)	(2.3)	(74.9)
Project Fees	(0.9)	(0.2)	(2.1)	-	(0.2)	(0.1)	(3.5)
Direct Charges	(2.3)	(0.6)	-	-	(0.1)	(0.1)	(3.1)
Other Activities Affecting Balance (G)							
Audit Fees/Bank Charges ^c	(0.2)	(0.0)	(0.1)	(0.0)	(0.1)	(0.0)	(0.4)
Project Adjustments/Withdrawals ^d	-	0.2	5.5	1.0	(1.0)	-	5.7
Project Fees Adjustments	-	0.0	0.5	0.1	(0.1)	-	0.5
Project Savings ^e	0.5	0.4	-	0.3	-	-	1.2
Ending Balance (E+F+G)	6.0	12.8	20.4	21.7	12.6	26.3	60.9

CCS = carbon capture and storage, CEFPF = Clean Energy Financing Partnership Facility.

^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 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 of IND: Support for Clean Power Technology Transfer (\$2 million); 2009 CCSF - Realignment of PRC: Carbon Dioxide Capture and Storage Demonstration-Strategic Analysis and Capacity Strengthening from CCF to CCSF (\$1 million); 2010 ACEF - Project Withdrawal of THA: Chaiyapun Wind Farm Development (\$160K) and THA: Lamthakong Wind Farm Development (\$160K); 2011 CEF - Project Withdrawal of PRC: Railway Sector Energy Efficiency Strategy (\$800K); 2011 ACEF - Project Withdrawals of PAK: Cattle Colony Waste to Fertilizer and Energy Project (\$900K), PAK: Developing Renewable Energy in Baluchistan and Sindh Provinces (\$1.5M), and SRI: Nonsovereign Loan to People's Leasing Company Limited (\$750K); 2012 CEF - Project Withdrawal of IND: NTPC Renewable Energy Development Project (\$225K); 2012 ACEF - Project Withdrawal of LAO: Renewable Energy Development in Remote Communities (\$1.0M).

^e Savings from closed projects: CEF - 2008 Asian Clean Energy Forum (\$41,207.69); Preparation of RE for Remote Island and Mountain Communes (\$16,768.80); 4th Asia Clean Energy Forum 2009 (\$45,416.38); Clean Energy Expo China Conference 2009 (\$36,748.82); Initial ADB Loan Due Diligence Preparatory Work for Solar Thermal Power Plant Project in Rajasthan (\$55,345.72); Workshop on PRC-ADB Cooperation in Clean Energy Project Financing (\$5,336.04); Qinghai Pasture Conservation Using Solar Photovoltaic-Driven Irrigation (\$15,019.80); Carbon Forum Asia 2009 (\$38,700.10); Investment Summit for Hainan's Clean Energy Development (\$21,513.99); Carbon Forum Asia 2010 (\$52,344.41); 5th Asia Clean Energy Forum 2010 (\$31,826.32); Clean Energy Expo Asia 2010 (\$53,285.46); Montreal 2010: 21st World Energy Congress (\$30,667.57); Recruitment of Clean Energy Expert (\$219.48); Quantum Leap in Wind Power in Asia (\$22,269.83); Carbon Forum Asia 2011 (\$66.44); Clean Energy Expo Asia 2011 (\$23,388.90); Building the Capacity of the Sustainable Energy Authority (\$68,644.99); Mainstreaming Energy Efficiency Measures in Thai Municipalities (\$274,241.08); Promoting Energy Efficiency in the Pacific (\$41,702.97); Sri Lanka Demand-Side Management for Municipal Street Lighting (\$53,270.98). ACEF - Ulaanbaatar Clean Air (\$11,892.81); Needs Assessment and Development of the Solar Energy Program (\$246,149.76).

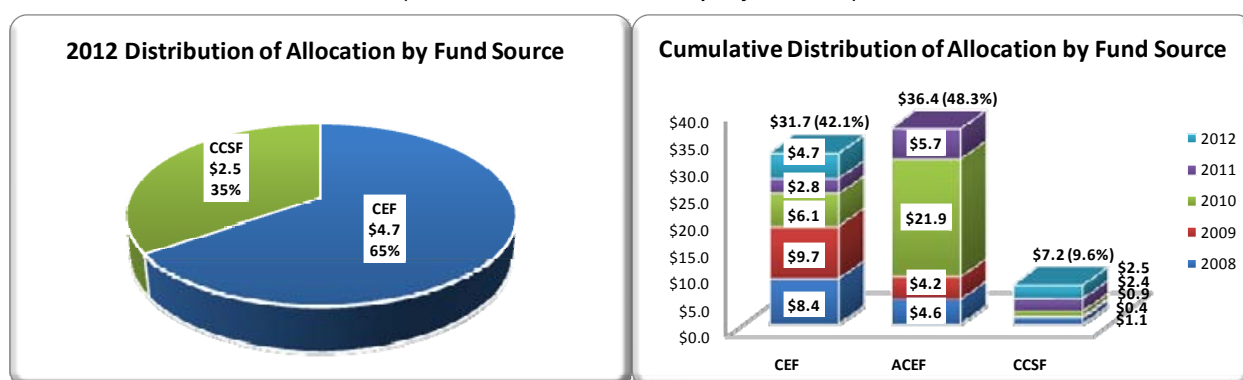
Note: Totals may not add-up due to rounding-off.

B. Resource Utilization

43. CEFPF received requests for support amounting to about \$9.5 million for various projects during the year.¹⁷ 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.

44. In 2012, CEFPF allocated \$6.9 million to 17 projects, with \$0.3 million in corresponding project fees. Fees included, the CCSC allocated \$4.7 million to 14 projects under CEF, and \$2.5 million to 3 projects under CCSF. Figure 3 summarizes the allocation distribution by fund source.

Figure 3: Distribution of Allocations by Fund Source
(\$ millions, inclusive of project fees)



ACEF = Asian Clean Energy Fund, CEF = Clean Energy Fund, CCSF = Carbon Capture and Storage Fund

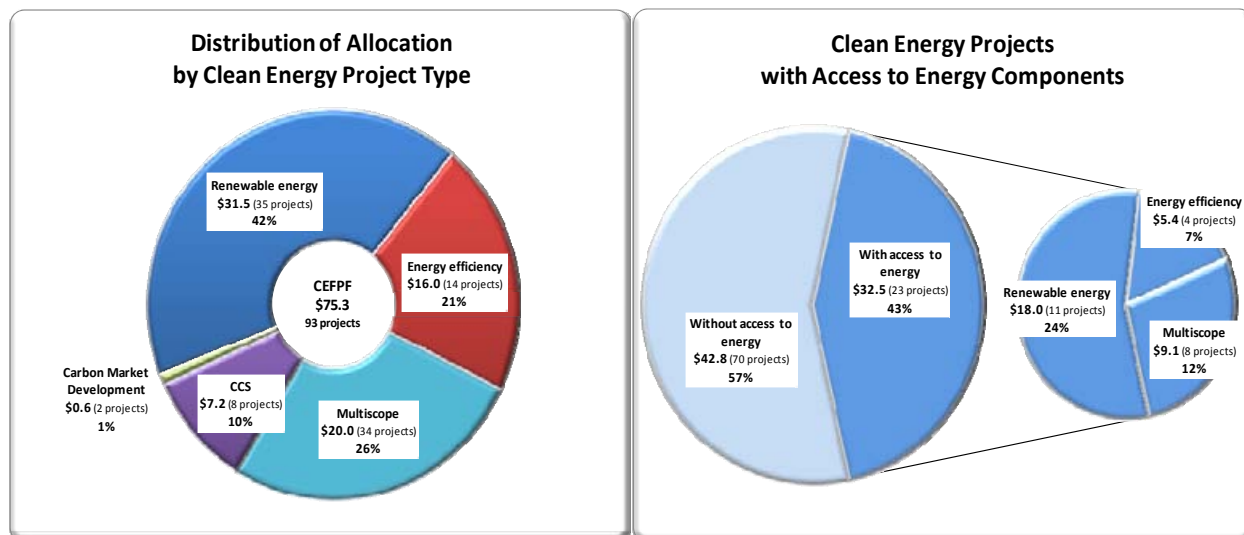
Source: ADB estimates.

45. To date, CEFPF has allocated \$75.3 million, fees inclusive, to 93 projects. Of the total, \$31.5 million went to projects that promote renewable energy, \$20.0 million to multiscope projects, \$16.0 million to energy efficiency, \$7.2 million to CCS, and \$0.6 million to carbon market development.¹⁸ Further, \$32.5 million of these project allocations have components that contribute to access to energy. Figure 4 shows the distribution of allocation by clean energy project type and access to energy.

¹⁷ Two projects requesting a total of \$2.3 million are pending allocation subject to satisfactory fulfillment of Clean Energy Working Group (CEWG) comments while one project requesting \$0.4 million was withdrawn following discussions during the review stage.

¹⁸ *Multiscope* projects cover two or more clean energy project categories, have broad focus, or are general in nature; *energy efficiency* involves projects that deploy/help support technologies which use less energy to provide the same or improved level of output; *carbon market development* involves projects that support the establishment of a carbon market through development of market infrastructure and capacity building.

Figure 4: Distribution of Allocations by CE Project Type and Access to Energy, as of 31 December 2012 (\$ 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; *With Access to Energy* are clean energy projects with components that support scaling up of access to modern, cleaner energy for the poor.

Source: ADB estimates.

46. **Disbursement.** Of CEFPF's \$75.3 million allocations to date, ADB has approved a total of \$66.8 million, or \$69.6 million inclusive of fees. 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.

47. Of the \$66.8 million approved by ADB, \$32.0 million or 48.8% have been committed and awarded in contracts.¹⁹ To date, total disbursement amounts to \$19.0 million or 28.9% of approved allocation, up from 21.3% at the end of 2011.²⁰

48. 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.

49. 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 review, wherein CEFPF 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;

¹⁹ Ratio of awarded contracts is computed as total amount of awarded contracts over approved allocations less project savings.

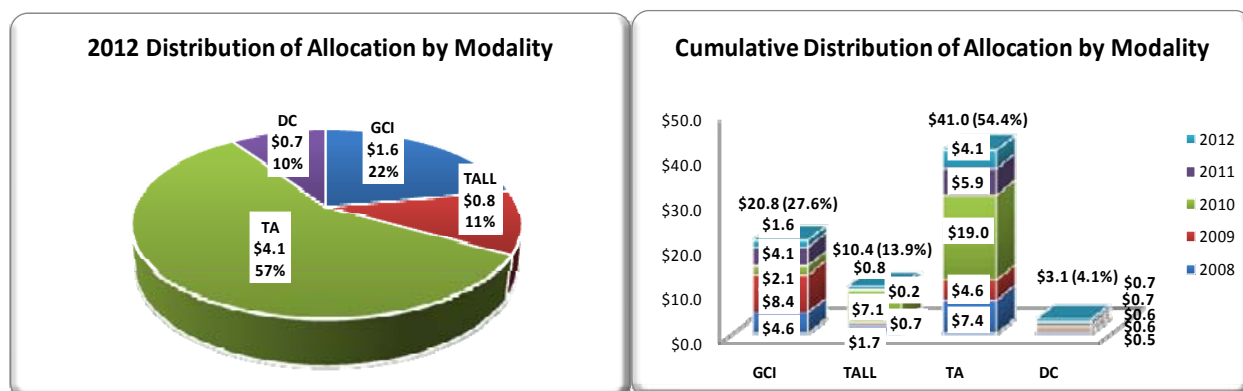
²⁰ Disbursement rate is computed as total disbursements over approved allocations less project savings.

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 meet the effectiveness criteria, and cancel projects that are not likely to progress. Details on disbursement ratios and reasons for disbursement delay are provided in Appendix 9.

C. Resource Allocation Structure

50. Per Implementation Guidelines, CEFPP targets a resource sharing ratio of 70:30 between GCIs and TALLs versus TAs and DCs over the Facility's lifetime, to prioritize the implementation of clean energy projects with direct GHG emission impacts.²¹ This year ended with a ratio of 33:67. Overall, the cumulative ratio which covers all projects receiving CEFPP allocations since the start of the Facility's operations is at 42:58. It is recognized that the GCI:TA ratio indicates that more support has been provided to TAs. More TAs were supported to provide the needed enabling environment for investments in clean energy to happen. It is envisioned that these activities will contribute towards assisting DMCs to transition to low carbon economies. As the Facility continues to operate, this ratio is expected to change overtime to eventually reach 70:30. Figure 5 presents the distribution of allocation by modality.

Figure 5: Distribution of Allocations by Modality
(\$ millions, inclusive of project fees)



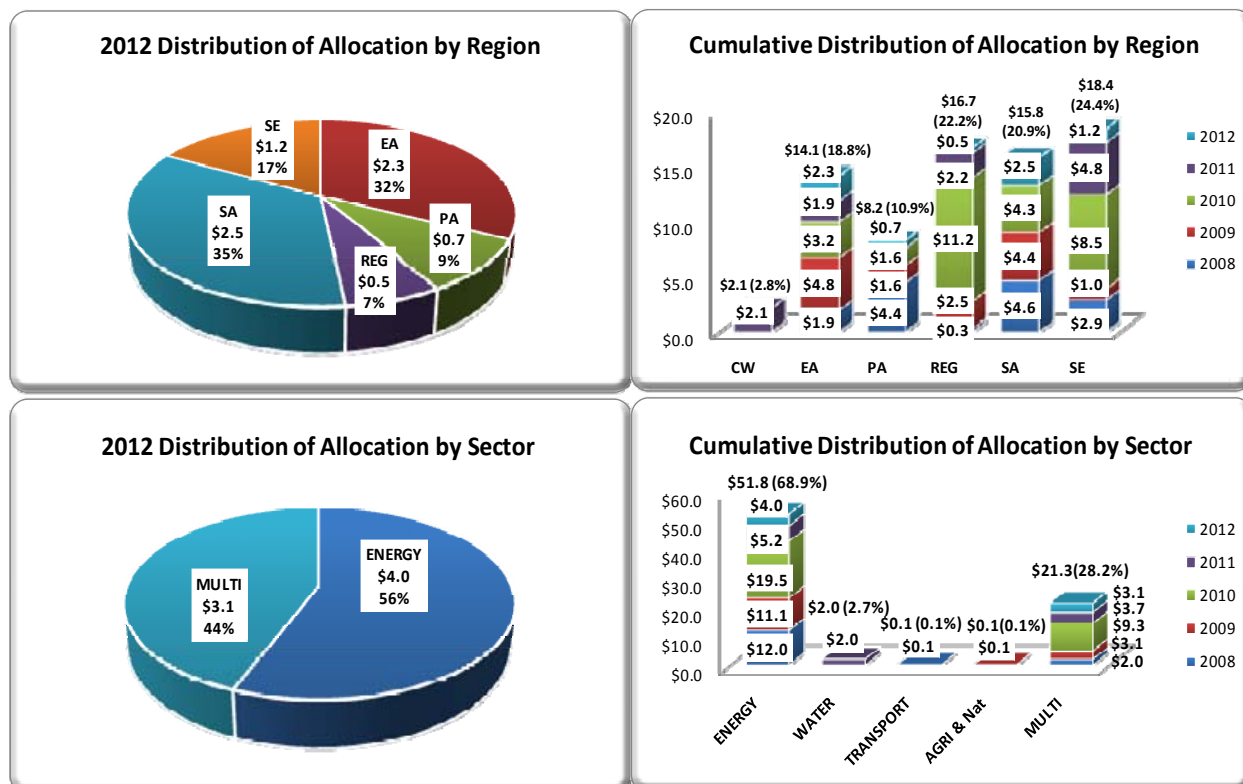
DC = direct charge, GCI = grant component of investment, TA = technical assistance, TALL = technical assistance linked to loan.

Source: ADB estimates.

51. In 2012, South Asia received majority of the allocations (35%), followed by East Asia (32%), Southeast Asia (17%), the Pacific (9%), and regional projects (7%). Figure 6 provides the summary of distribution of allocation by region and sector, while Appendix 10 contains the details and Appendix 11 shows the cumulative allocation by DMC.

²¹ The 70:30 ratio is a target for overall facility operations during its existence. 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 6: 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: ADB estimates.

IV. MANAGEMENT OF THE FACILITY

A. Steering Committee and Working Group Membership

52. In 2012, the CCSC and CEWG continued proactive participation in the management of the Facility. There was considerable movement in both CCSC and CEWG membership, but all responsibilities were met effectively and efficiently. As always, the practice of sending alternates to the regular CEWG review and management meetings was valuable when a regular member was away. This arrangement ensures a high level of transparency and participation in the management of the Facility and allocation of funds, while helping build a critical mass of sector professionals who are aware of and regularly engaged in the Facility's activities and clean energy program overall.

B. Steering Committee and Working Group Meetings

53. In 2012, the CEWG convened four times to discuss policy and procedural recommendations regarding CEFPPF 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. There was no delay in the Facility's activities and operations, 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

54. For the year 2012, 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 updated multidonor CEF and Asian Clean Energy Fund (ACEF) implementation guidelines;
- (iv) Monitor the approval and implementation, including disbursements, of projects supported by CEFPPF;
- (v) Maintain accurate facility level results reporting; and
- (vi) Request for pipeline of priority projects from operations departments for 2013-2014.

D. Audit Compliance, Issues and Actions

55. The audited financial statement for the multidonor CEF for the year ending 31 December 2011 was circulated to the financing partners as scheduled in August 2012, with CEFPPF's 2012 Semiannual Progress Report.

E. Dissemination Activities

56. In 2012, ADB continued its two-pronged approach to information dissemination concerning CEFPPF. 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.

57. Externally, ADB staff is 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, CEFPPF'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

58. The 2011 Annual Report, 2012 Annual Work Program, 2012 Semiannual Progress Report, and 2011 Audited Financial Statements were delivered to the financing partners as scheduled. These reports were prepared in consideration of financing partners' suggestions and comments, including enhancing the reports by providing sufficient and simplified presentation of results. In March 2012, the 5th Annual Consultation Meeting (ACM) between the financing partners and ADB was held at ADB Headquarters in Manila, Philippines. Preceding the ACM, several financing partners visited Marilog District, Davao City, Philippines to interact with women who were trained as technicians of solar PV systems and micro-retailers of solar lanterns, as part of the Energy for All project supported by the CEFPPF.

59. During the ACM, dialogue between ADB and financing partners began with discussions on ADB's Clean Energy Program, CEFPF's annual report for 2012, strategic direction and annual work program for 2013. Other highlights of the ACM included discussions on prioritization of projects with potential for replication and scaling-up, creation of technology-specific funds to encourage and enable DMCs to facilitate deployment of these technologies, development of a strategy for fund replenishment, and the value addition of CEFPF, particularly on leveraging clean energy investments and influence on project readiness.

VI. LESSONS LEARNED, EXPERIENCES GAINED, AND KEY CONSTRAINTS

60. **Expanded Scope and Use of CEFPF Resources.** In April 2012, following the agreement of the financing partners, the ADB Board of Directors approved to expand the scope and use of CEFPF resources to allow:

- (i) additional uses of grant contribution to buy-down margins, provide 'first-loss' protection, provide performance based financing, support feed-in tariffs, among others and
- (ii) acceptance, administration and application of financing partners' non-grant contributions for guarantees, risk transfer products, loans and equity investments in combination with ADB products.

61. **Updated Implementation Guidelines.** The implementation guidelines for the multidonor CEF are being updated to align with the approval of the expanded scope and use board paper. The approval of the multidonor CEF implementation guidelines is expected in 2013 following agreement by the financing partners' and CCSC at the next annual consultation meeting set in March. The implementation guidelines for ACEF were also updated to align with policies and procedures of the Government of Japan.

62. **Continued Action Plan on the Special Evaluation Study.** ADB management is continuing with its action plan prepared to address the recommendations provided in the evaluation. Any updates on the status of the action plan are recorded in ADB's Management Action Response System (MARS).

63. **Increased Promotion of the Facility.** The Facility's subdued performance, in terms of achieving targets in the DMF, was partly a result of fewer project applications received in 2012. With additional newly contributed resources for both CEF and CCSF, internally, active promotion of the Facility will be undertaken in 2013.

VII. EXTERNAL FACTORS RELEVANT TO THE FACILITY

64. **Mixed Economic Growth in Asia.** Economic growth for most of ADB's regions has been slower than expected.²² Uncertain global environment, tight monetary policies and delays in major investment projects are some of the reasons for the sluggish economic growth. The subdued performance in the region has also affected the Facility with low turn-out of project applications in 2012. However, an increase in economic growth and investment is expected 2013.

65. **Scaling-up Green Investments.** Many clean energy experts and advocates agree that scaling-up investments for both climate change adaptation and mitigation are essential not only

²² ADB. 2012. *Asian Development Outlook 2012 Supplement*. Manila.

for the environment but also to stimulate economic growth. Fostering public-private partnerships and introducing innovative financing mechanisms for transformational impact is required. With the expanded scope and use of resources, the Facility expects to promote more private sector participation and cultivate public-private collaboration.

VIII. OVERVIEW OF 2013 ANNUAL WORK PROGRAM

66. CEFPP has approximately \$86.8 million (including anticipated 2013 contributions) available for activities and projects for 2013, of which \$50.7 million will be used specifically for exploring CCS technology. 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 GCI: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.

67. For 2013, CEFPP will continue to support projects that address access to energy through output-based aid projects, energy efficiency, renewable energy, CCS, sustainable transport, as well as public-private partnerships. With a broad range of priorities for 2013, active promotion of the Facility must be carried out and sustained throughout the year.

**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 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)² development. Potential investments include (i) deployment of new clean energy technology; (ii) projects that lower the barriers to adopting clean energy technologies, e.g., innovative investments and financing mechanisms, and bundling of smaller clean energy projects; (iii) projects that increase access to modern forms of clean and efficient energy for the poor; and (iv) technical capacity programs for clean energy.

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 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 clean energy, 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;
- (iii) Distributed energy production;
- (iv) Waste-to-energy projects;
- (v) Carbon capture and storage;

¹ Financing partners contributing to the multidonor Clean Energy Fund are the governments of Australia, Norway, Spain, and Sweden. The financing partner contributing to the single donor Asian Clean Energy Fund is the Government of Japan while the financing partners contributing to the Carbon Capture and Storage Fund are the Global Carbon Capture and Storage Institute and the Government of United Kingdom. Committed and expected contributions as of 31 December 2012 total \$177.8 million. Overall target: \$250 million.

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

- (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) Clean energy 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 CEFPP'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 CEFPP's Implementation Guidelines, guided by the updated clean energy funds design and monitoring framework, both agreed between CEFPP's financing partners and ADB. The Climate Change Steering Committee finally allocates resources to selected project proposals. Following fund allocation from CEFPP, the approval of the proposed CE project follows the normal 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, RSDD Secretariat: RSID Members: Directors general of operation departments, and Chief Economist	<ul style="list-style-type: none"> (i) Provide strategic direction to CEFPF (ii) Director General, RSDD approves CEFPF policy and procedures (iii) Approves allocation of funds to applications for TAs and grant components of investments
Clean Energy Working Group (CEWG)	
Co-Chairs: Co-Chairs, ADB's Energy Community of Practice Secretariat: RSID 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 (RSID)	
Manager: Director, RSID 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, RSID = Sustainable Infrastructure Division, RSDD = Regional and Sustainable Development 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 OVERVIEW AND GOVERNANCE STRUCTURE

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

³ ADB's ordinary capital resources.

populated coastal lowlands and deltas, and (c) low-lying islands.

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, RSDD Secretariat: RSID and RSES Members: Directors general of operation departments, and Chief Economist	<ul style="list-style-type: none"> (i) Provide strategic direction to CCF (ii) Director General, RSDD approves CCF policy and procedures (iii) Approves allocation of funds to applications for TAs and grant components of investments
Working Groups (CEWG and ALUWG)	
Co-Chairs: Co-Chairs, ADB's Energy Community of Practice Secretariat: RSID ALUWG Chair: Director, RSES Secretariat: RSES Members: Representatives from the operation departments (and ERD 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 (RSID)	
Manager: Director, RSID 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, ERD = Economic and Research Department, RSDD = Regional and Sustainable Development Department, RSID = Sustainable Infrastructure Division, RSES = Environment and Social Safeguards Division, TA = technical assistance.

Source: Asian Development Bank.

Clean Energy Funds Design and Monitoring Framework⁴

1. The Asian Development Bank's (ADB) clean energy funds⁵ are intended to provide financing to its developing member countries (DMCs) to achieve improved access to energy, energy security and transition to low carbon economies through cost-effective investments, especially in technologies that results in greenhouse gas mitigation. This design and monitoring framework (DMF) which defines the clean energy funds' objectives and targets, is being updated to reflect emerging trends and opportunities, remain timely and relevant in responding to the needs of the DMCs, and contribute more effectively to ADB's overall poverty alleviation and sustainable development agenda. As agreed with the financing partners, the initial DMF was maintained for the first 3 years of operations. It now reflects a greater level of ambition with the additional indicators on access to energy and health, environment and productivity co-benefits as well as higher target levels for performance indicators. Specifically, the update:

- (i) provides a joint DMF for all clean energy funds, allowing consolidated operations and holistic assessment;
- (ii) absorbs the lessons from the three years of operations, specifically on initial trends in contributions, demand for clean energy resources, allocations to projects, expected project outputs and outcomes, to feed into more appropriate performance targets/indicators;
- (iii) builds on the assessment and key recommendations provided by the independent evaluation on CEFPP undertaken in 2010;
- (iv) complements ADB's intensified efforts on its various initiatives such as the Sustainable Transport Initiative, Quantum Leap in Wind, Energy for All Initiative, and Solar Energy Initiative, while maintaining alignment with ADB's Strategy 2020, Energy Policy, Climate Change Program and Clean Energy Program.

2. In updating the DMF, proxy indicators are used in place of indicators with data availability constraints. The guiding principles in updating the DMF are as follow:

- (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, as it provides the latest available baseline information in participating DMCs for the performance indicators identified. This will be updated if and when data become available for 2007, the year the Clean Energy Financing Partnership Facility was established.
- (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 This updated DMF is being implemented following discussions at the Annual Consultation Meeting held on 22-24 March 2011 at ADB Headquarters, Manila, and agreement with the financing partners in April 2011. The CEFPP management reviews proposals guided by this DMF, and monitors and reports on the facility's performance on the basis of this DMF covering projects starting January 2011. If deemed appropriate by both parties, the DMF will be updated for 2014.

⁵ 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, and Sweden, (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) the multi-donor Asia Accelerated Solar Energy Development Fund (if and when operational); and the resources from ADB's Climate Change Fund – Clean Energy Development Component.

Clean Energy Funds Design and Monitoring Framework⁶

Design Summary	Performance Targets/Indicators	Data Sources/Reporting Mechanisms	Assumptions (A) and Risks (R)
Impact			
Improved access to clean energy and 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 Table A2.1), by year 2027</p> <p>Average electrification rates in participating DMCs increased from 2006 level (see Table A2.1), by year 2027</p> <p>Average percentage of RE share in energy mix in participating DMCs is maintained at or increased from 2006 level (see Table A2.2), by year 2027</p>	<p>(a) Primary: Energy Statistics in Asia & the Pacific (ADB) or IEA</p> <ul style="list-style-type: none"> • World Energy Outlook • IEA Statistics • Key World Energy Statistics <p>(b) Secondary: Ministry of Energy and Power or equivalent in DMC</p> <p>(c) United Nations Data Retrieval System</p>	<p>A: Countries have reasonable oil supply policy</p> <p>A: DMCs are committed to prioritizing clean energy technologies to address energy security and climate change</p> <p>A: DMCs have secure access to the supply of new clean energy technologies</p> <p>A: Electrification rate is the ratio of population with electricity to the total population of a DMC expressed as a percentage</p> <p>A: Year 2006 provides the latest available baseline information in participating DMCs for the performance indicators identified</p> <p>A: Impact targets are expected by the 15th year after the end of the first compliance period of the Kyoto Protocol (2027)</p>
Outcome			
Increased use of clean energy	Expected cumulative contribution to CO ₂ emission reduction in participating DMCs of 17 million tCO ₂ per year by 2012; and 20 million tCO ₂ per year	<p>(a) Primary: Energy Statistics in Asia & the Pacific (ADB) or IEA</p> <ul style="list-style-type: none"> • World Energy Outlook 	<p>A: Support from financing partners continue and increase</p> <p>A: Project outcomes are counted and adjusted as project goes through the</p>

⁶ This document must be read together with the Guidelines on Clean Energy Funds Results Monitoring and Reporting which will provide the details on the indicators and how they are measured.

Design Summary	Performance Targets/Indicators	Data Sources/Reporting Mechanisms	Assumptions (A) and Risks (R)
	<p>by 2013</p> <p>Expected cumulative energy saved in participating DMCs of 27 TWh by 2012; and 30 TWh by 2013</p> <p>Expected cumulative contribution to installed capacity using renewable energy in participating DMCs of 250 MW by 2012; and 300 MW by 2013</p> <p><i>[Excluding the contributions of projects under the Asia Accelerated Solar Energy Development Fund (AASEDF), if and when operational]</i></p>	<ul style="list-style-type: none"> • IEA Statistics • Key World Energy Statistics <p>(b) Secondary: Ministry of Energy and Power or equivalent in DMC</p> <p>(c) United Nations Data Retrieval System</p>	<p>process of approval up to completion</p> <p>A: At least one clean energy technology is accessible and affordable for each DMC</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 previously experienced by CEFPP and CCF in the last 3 years. (i.e. substantial number of GCI/TALL projects submitted and approved), or improves</p> <p>A: Average outcome performance of CEFPP and CCF in the last 3 years (i.e. 2008-2010) provides a reliable trend and basis for the indicated values of outcome targets/indicators with assumed level of growth (3% in 2012 and 5% in 2013)</p> <p>A: Necessary updates on the DMF to be implemented in 2014</p>
Outputs			
1. Clean energy investments in	Cumulative total of \$ 2.5 billion in ADB's	(a) ADB PPIS database	A: Project approvals versus disbursements are

Design Summary	Performance Targets/Indicators	Data Sources/Reporting Mechanisms	Assumptions (A) and Risks (R)
DMCs increased	clean energy investments leveraged by 2013 (contributing to ADB's \$2 billion annual target by 2013)	(b) ADB project documents: concept clearance paper, TAR, RRP, PPR, TPR, PCR, and TCR (c) Project updates from project teams	counted as investments A: Support from financing partners continue and increase A: Profile of projects reviewed, allocated and approved for the coming years continues, following the pattern as previously experienced by CEFPP and CCF in the last 3 years. (i.e. substantial number of GCI/TALL projects submitted and approved), or improves A: Average output performance of CEFPP and CCF in the last 3 years (i.e. 2008-2010) provides a reliable trend and basis for the indicated values of targets/indicators with assumed level of growth (3% in 2012 and 5% in 2013) A: Necessary updates on the DMF to be implemented in 2014
2. Deployment of new technologies with strong demonstration effect facilitated	55 new clean energy/CCS technologies deployed in DMCs by 2013	(a) ADB project documents: concept clearance paper, TAR, RRP, PPR, TPR, PCR, and TCR (b) Progress updates and final/completion reports for DC (c) Appropriate ministries in DMCs involved in the project	A: Support from financing partners continue and increase A: Projects are generating and systematically using lessons towards scaling-up and/or replication A: Output performance of CEFPP and CCF for the 3 years (i.e. 2008-2010) provides a reliable basis for the indicated value of target/indicator with

Design Summary	Performance Targets/Indicators	Data Sources/Reporting Mechanisms	Assumptions (A) and Risks (R)
			<p>assumed level of growth (15% in 2012 and 20% in 2013)</p> <p>A: Necessary updates on the DMF to be implemented in 2014</p>
	<p>[3,000 MW of solar power developed in participating DMCs by 2013] (Per AASEDF, if and when operational)</p>	<p>(a) [ADB project documents: concept clearance paper, TAR, RRP, PPR, TPR, PCR, and TCR] (b) Progress updates and final/completion reports for DC (c) Appropriate ministries in DMCs involved in the project]</p>	<p>[A: Support from financing partners on solar technology ensue, continue and increase] A: Per the Asia Solar Energy Initiative, solar projects are submitted and approved A: Necessary updates on the DMF to be implemented in 2014]</p>
	<p>2 CCS demonstration projects in identified priority countries commenced by 2013 (Per Carbon Capture and Storage Fund)</p>	<p>(a) ADB project documents: concept clearance paper, TAR, RRP, PPR, TPR, PCR, and TCR (b) Progress updates and final/completion reports for DC (c) Appropriate ministries in DMCs involved in the project</p>	<p>A: Support from financing partners on CCS technology continue and increase A: CCS projects are submitted and approved A: Necessary updates on the DMF to be implemented in 2014</p>
<p>3. New approaches/methodologies to promote clean energy/CCS introduced</p>	<p>15 new approaches/methodologies to promote clean energy/CCS introduced in participating DMCs by 2013</p>	<p>(a) ADB project documents: concept clearance paper, TAR, RRP, PPR, TPR, PCR, and TCR (b) Progress updates and final/completion</p>	<p>A: Support from financing partners continue and increase A: Projects are generating and systematically using lessons towards scaling-up and/or replication A: Output performance of</p>

Design Summary	Performance Targets/Indicators	Data Sources/Reporting Mechanisms	Assumptions (A) and Risks (R)
		reports for DC (c) Appropriate ministries in DMCs involved in the project	CEFPP and CCF for the 3 years (i.e. 2008-2010) provides a reliable basis for the indicated value of target/indicator with assumed level of growth (25% in 2012 and 30% in 2013) A: Necessary updates on the DMF to be implemented in 2014
4. Benefits from access to energy delivered	Cumulative total of 700,000 households provided with access to energy in participating DMC's supported by 2013 (contributing to ADB-led Energy for All Partnership target of 100 million people by 2015) <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 modern fuels and/or efficient devices for heating 	(a) ADB project documents: concept clearance paper, TAR, RRP, PPR, TPR, PCR, and TCR (b) Progress updates and final/completion reports for DC (c) Appropriate ministries in DMCs involved in the project	A: Support from financing partners continue and increase A: Per Energy for All Initiative, access to energy projects are submitted and approved A: At least 25% of supported projects annually comprise access to energy 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) provision of finance to households to access energy A: Necessary updates on the DMF to be implemented in 2014
	80% of access to energy projects	(a) ADB projects approved with	A: Support from financing partners continue and

Design Summary	Performance Targets/Indicators	Data Sources/Reporting Mechanisms	Assumptions (A) and Risks (R)
	supported address gender benefits by 2013	<p>gender category</p> <p>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>(d) Appropriate ministries in DMCs involved in the project</p>	<p>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 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</p>

Design Summary	Performance Targets/Indicators	Data Sources/Reporting Mechanisms	Assumptions (A) and Risks (R)
			<p>involved includes attention to women in the mitigation/resettlement plans</p> <p>A: Necessary updates on the DMF to be implemented in 2014</p>
<p>5. Health, environment and productivity benefits provided⁷</p>	<p>50% of projects supported provide co-benefits on health/environment/productivity by 2013</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>(c) Appropriate ministries in DMCs involved in the project</p>	<p>A: Support from financing partners continue and 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/environment/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 in 2014</p>
<p>6. Barriers to</p>	<p>18 national/local</p>	<p>(a) ADB project</p>	<p>A: Support from financing</p>

⁷ 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.

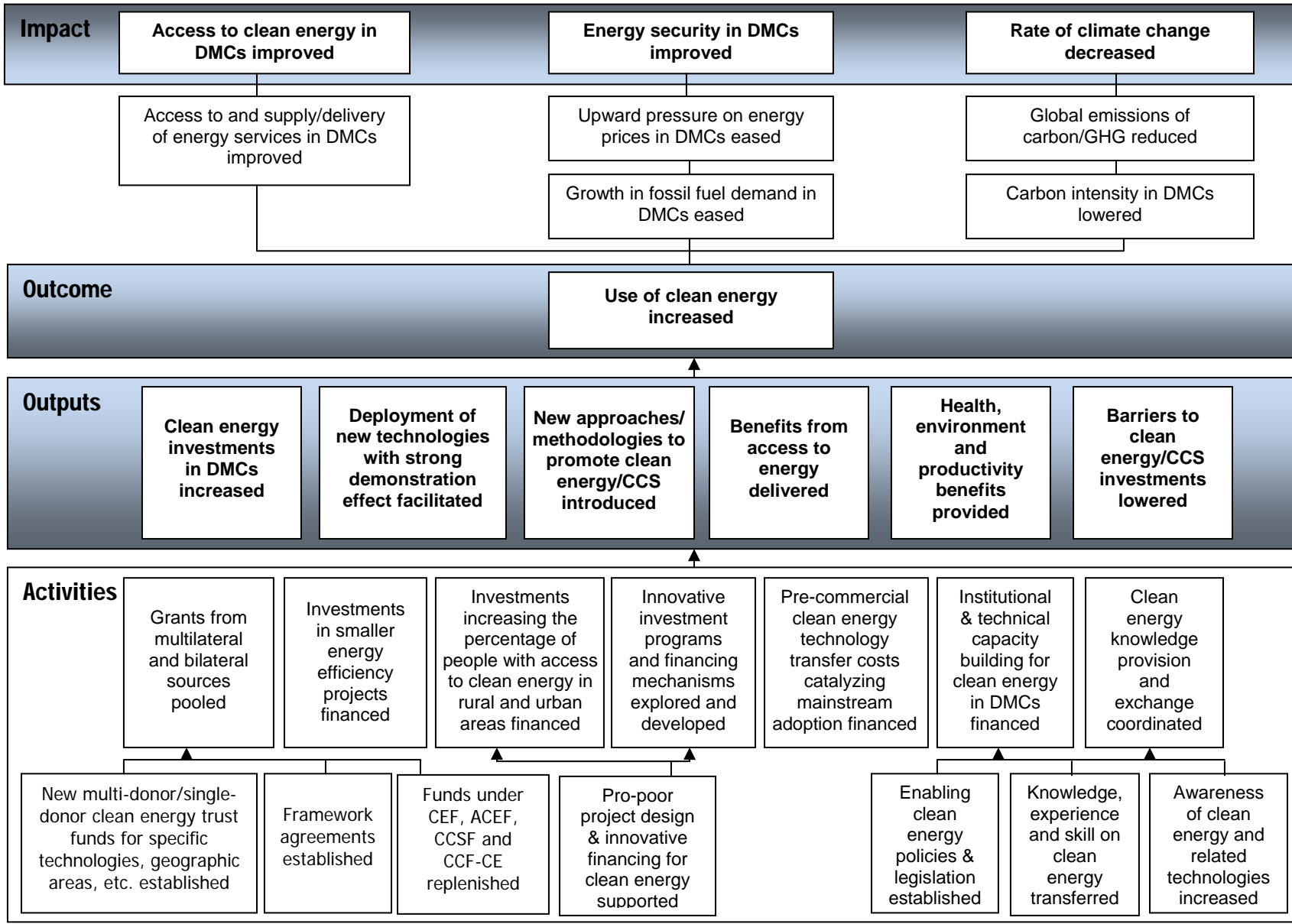
Design Summary	Performance Targets/Indicators	Data Sources/Reporting Mechanisms	Assumptions (A) and Risks (R)
clean energy/CCS investments lowered	policies enabling clean energy/CCS development in participating DMCs developed by 2013	documents: concept clearance paper, TAR, RRP, PPR, TPR, PCR, and TCR (b) Progress updates and final/completion reports for DC (c) Appropriate ministries in DMCs involved in the project	partners continue and increase A: Major barriers to adopting CE technologies are identified and prioritized A: The development of national/ local policies is coordinated with ADB A: Output performance of CEFPP and CCF for the 3 years (i.e. 2008-2010) provides a reliable basis for the indicated value of target/indicator with assumed level of growth (15% in 2012 and 20% in 2013) A: Necessary updates on the DMF to be implemented in 2014
	15 financing models suitable for bundling small clean energy/CCS investment applied in participating DMCs by 2013	(a) ADB project documents: concept clearance paper, TAR, RRP, PPR, TPR, PCR, and TCR (b) Progress updates and final/completion reports for DC (c) Appropriate ministries in DMCs involved in the project (d) LFIs in DMCs involved in the project	A: Support from financing partners continue and increase A: Output performance of CEFPP and CCF for the 3 years (i.e. 2008-2010) provides a reliable basis for the indicated value of target/indicator with assumed level of growth (15% in 2012 and 20% in 2013) A: Necessary updates on the DMF to be implemented in 2014
	100% of projects supported produce and/or disseminate knowledge products or contribute in building	(a) ADB project documents: concept clearance paper, TAR, RRP, PPR,	A: Support from financing partners continue and increase A: Knowledge products

Design Summary	Performance Targets/Indicators	Data Sources/Reporting Mechanisms	Assumptions (A) and Risks (R)
	capacity to promote clean energy/CCS development in participating DMCs by 2013	TPR, PCR, and TCR (b) Progress updates and final/completion reports for DC (c) Appropriate ministries in DMCs involved in the project	and capacity services are effectively targeting policy and decision makers A: Necessary updates on the DMF to be implemented in 2014
Activities and Milestones (For 2008-2013)			Inputs (For 2008-2013)
<p>1.1 Pool grants from multilateral and bilateral sources</p> <ul style="list-style-type: none"> • Promote CEFPP and CCF to the multilateral and bilateral donor community • Build and maintain network of financial partners • Secure \$250 million equivalent in ADB and donor funds for CEFPP and CCF • [Secure an additional \$500 million in donor funds for the AASEDF] • 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 financing mechanisms • 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 CEFPP/CCF Implementation Guidelines, as necessary • Initiate call for proposals/applications to the CEFPP/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</p>			<ul style="list-style-type: none"> • \$250 million for CEFPP and CCF to facilitate investments • [\$500 million for AASEDF to facilitate investments] • 36 person-month of ADB professional staff • 192 person month of domestic consultants • 60 person-month of international consultants • 2-3 technical studies • 4-5 workshops <p>Also activities for 1.4, 2.1 and 3.1</p>

Design Summary	Performance Targets/Indicators	Data Sources/Reporting Mechanisms	Assumptions (A) and Risks (R)
<p>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 CEFPP/CCF implementation 			

ADB = Asian Development Bank, CCS = carbon capture and storage, CCF = Climate Change Fund, CEFPP = 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, LFI = local financial institution, 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.

Figure A2.1 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, DMC = developing member country, GHG = greenhouse gas

Table A2.1: Carbon Intensity and Electrification Rate, 2006
Developing Member Countries covered by CEFPF/CCF-CE

	Country	Carbon Intensity ^a (in tCO ₂ /million constant 2000 US\$)	Electrification Rate (%)
1	AZE	2,072	81.30 ^b
2	BAN	525	32.00 ^c
3	BHU	436	33.60 ^b
4	CAM	179	20.00 ^c
5	PRC	2,712	99.00 ^c
6	FSM	nd	79.60 ^b
7	FIJ	790	55.10 ^b
8	IND	1,672	56.00 ^c
9	INO	1,512	79.50 ^b
10	KAZ	5,165	73.00 ^b
11	LAO	299	22.00 ^b
12	MLD	910	53.60 ^b
13	MON	6,138	65.00 ^c
14	MYA	654	11.00 ^c
15	NEP	548	33.00 ^c
16	PAK	1,184	54.00 ^c
17	PHI	680	62.80 ^b
18	PNG	1,220	17.90 ^b
19	RMI	nd	0.00 ^b
20	SRI	539	95.30 ^b
21	TAJ	3,715	87.10 ^b
22	THA	1,266	99.00 ^c
23	TIM	1,253	9.00 ^b
24	UZB	5,140	94.50 ^b
25	VIE	1,726	84.00 ^c
26	COO		90.90 ^b
27	SAM	739	49.60 ^b
28	SOL		0.50 ^b
29	TON		85.40 ^b
30	VAN		15.00 ^b
	Average	1,711	54.62

AZE = Azerbaijan, BAN = Bangladesh, BHU = Bhutan, CAM = Cambodia, PRC = People's Republic of China, CCF-CE = Climate Change Fund - Clean Energy Development, CEFPF = Clean Energy Financing Partnership Facility, COO = Cook Islands, FSM = Federal States of Micronesia, FIJ = Fiji, IND = India, INO = Indonesia, KAZ = Kazakhstan, LAO = Lao People's Democratic Republic, MLD = Maldives, MON = Mongolia, MYA = Myanmar, nd = no data, NEP = Nepal, PAK = Pakistan, PHI = Philippines, PNG = Papua New Guinea, RMI = Marshall Islands, SAM = Samoa, SOL = Solomon Islands, SRI = Sri Lanka, TAJ = Tajikistan, THA = Thailand, TIM = Democratic Republic of Timor-Leste, tCO₂ = ton of carbon dioxide, TON = Tonga, UZB = Uzbekistan, VAN = Vanuatu, VIE = Vietnam.

^a Source: Asian Development Bank and the Asia-Pacific Economic Cooperation. 2009. Energy Outlook for Asia and the Pacific.

^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 DMSP lighting as compared with total population count.

^c Source: ADB, 2009. Energy Statistics in Asia and the Pacific (1990-2006).

Note: Developing member countries covered by the bracket are jointly classified as "Other Pacific Islands" and include Kiribati, Nauru and Palau.

Table A2.2: Renewable Energy Share in Energy Mix, 2006
Developing Member Countries covered by CEFPP/CCF-CE

Countries	Electricity Net Generation, in Billion Kilowatt-hour											RE share (%)	
	Nuclear	Conventional Thermal	Hydroelectric Pumped Storage	Renewable Electricity (in Billion KWh)							Total Net Electricity Generation		
				Hydroelectric	Geothermal	Wind	Non-Hydroelectric		Total Non-Hydroelectric	Total Renewable			
				Solar, Tide & Wave			Biomass & Waste						
1 AZE	0.0000	19.8270	0.0000	2.4930	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.4930	22.320	11%
2 BAN	0.0000	26.7810	0.0000	1.3750	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.3750	28.156	5%
3 BHU	0.0000	0.0010	0.0000	4.5740	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	4.5740	4.575	100%
4 CAM	0.0000	0.9730	0.0000	0.0500	0.0000	0.0000	0.0020	0.0019	0.0039	0.0039	0.0539	1.027	5%
5 PRC	54.8450	2,225.0640	0.0000	431.4280	0.0000	3.6746	0.0998	2.2572	6.0316	437.4596	2,717.369	16%	
6 FSM	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
7 FIJ	0.0000	0.3950	0.0000	0.6810	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.6810	1.076	63%
8 IND	15.5940	573.2650	0.0000	112.5820	0.0000	8.2560	0.0180	1.8335	10.1075	122.6895	711.549	17%	
9 INO	0.0000	109.8170	0.0000	9.5270	6.3251	0.0000	0.0000	0.0320	6.3571	15.8841	125.701	13%	
10 KAZ	0.0000	60.0560	0.0000	7.6900	0.0000	0.0000	0.0000	0.0000	0.0000	7.6900	67.746	11%	
11 LAO	0.0000	0.3120	0.0000	3.2410	0.0000	0.0000	0.0000	0.0000	0.0000	3.2410	3.553	91%	
12 MLD	0.0000	0.1990	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.199	0%	
13 MON	0.0000	3.3310	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	3.331	0%	
14 MYA	0.0000	2.6700	0.0000	3.2910	0.0000	0.0000	0.0000	0.0000	0.0000	3.2910	5.961	55%	
15 NEP	0.0000	0.0090	0.0000	2.6630	0.0000	0.0000	0.0000	0.0000	0.0000	2.6630	2.672	100%	
16 PAK	2.5480	60.2620	0.0000	31.6330	0.0000	0.0000	0.0000	0.0000	0.0000	31.6330	94.443	33%	
17 PHI	0.0000	34.1460	0.0000	9.8400	9.9420	0.0500	0.0013	0.0000	9.9933	19.8334	53.979	37%	
18 PNG	0.0000	2.0200	0.0000	0.8540	0.0000	0.0000	0.0000	0.0000	0.0000	0.8540	2.874	30%	
19 RMI	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
20 SRI	0.0000	4.5560	0.0000	3.8490	0.0000	0.0020	0.0143	0.0019	0.0182	3.8672	8.423	46%	
21 TAJ	0.0000	0.2200	0.0000	16.5340	0.0000	0.0000	0.0000	0.0000	0.0000	16.5340	16.754	99%	
22 THA	0.0000	119.8160	0.0000	8.0440	0.0030	0.0000	0.0010	2.9925	2.9965	11.0405	130.857	8%	
23 TIM	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.000	0%	
24 UZB	0.0000	39.2540	0.0000	9.0680	0.0000	0.0000	0.0000	0.0000	0.0000	9.0680	48.322	19%	
25 VIE	0.0000	37.6800	0.0000	20.2040	0.0000	0.0000	0.0000	0.0000	0.0000	20.2040	57.884	35%	
26 COO	0.0000	0.0300	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.030	0%	
27 SAM	0.0000	0.0590	0.0000	0.0510	0.0000	0.0000	0.0000	0.0000	0.0000	0.0510	0.110	46%	
28 SOL	0.0000	0.0710	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.071	0%	
29 TON	0.0000	0.0420	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.042	0%	
30 VAN	0.0000	0.0420	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.042	0%	
Average												30%	

AZE = Azerbaijan, BAN = Bangladesh, BHU = Bhutan, CAM = Cambodia, PRC = People's Republic of China, CCF-CE = Climate Change Fund - Clean Energy Development, CEFPP = Clean Energy Financing Partnership Facility, COO = Cook Islands, FSM = Federal States of Micronesia, FIJ = Fiji, IND = India, INO = Indonesia, KAZ = Kazakhstan, kWh = kilowatt-hour, LAO = Lao People's Democratic Republic, MLD = Maldives, MON = Mongolia, MYA = Myanmar, nd = no data, NEP = Nepal, PAK = Pakistan, PHI = Philippines, PNG = Papua New Guinea, RE = renewable energy, RMI = Marshall Islands, SAM = Samoa, SOL = Solomon Islands, SRI = Sri Lanka, TAJ = Tajikistan, THA = Thailand, TIM = Democratic Republic of Timor-Leste, TON = Tonga, UZB = Uzbekistan, VAN = Vanuatu, VIE = Vietnam.

Source: International Energy Statistics. US Energy Information Administration Independent Statistics and Analysis. (webpage link - <http://tonto.eia.doe.gov/cfapps/ipdbproject/IEDIndex3.cfm>)

Guidelines on Monitoring and Reporting of Results of the Clean Energy Funds⁸

1. The Asian Development Bank's (ADB) clean energy funds⁹ are intended to provide financing to its developing member countries (DMCs) to achieve improved access to energy, energy 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.¹⁰ 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 2010 were used throughout the document for illustration purposes.

I. MEASURING IMPACTS

2. Clean energy funds aim to contribute to the following impacts: (a) improve access to energy in DMCs, (b) improve 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 2027.* This impact indicator is measured using the electrification rate which is the ratio of population with electricity to the total population of a DMC expressed as a percentage.
- (ii) *Average percentage of renewable energy share in energy mix in participating DMCs is maintained at or increased from 2006 level by year 2027.*¹¹ This impact indicator is measured by the percentage contribution of renewable energy with respect to the whole energy mix, as reported in megawatt-hour.
- (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 2027.* This impact indicator is measured using carbon intensity or the carbon emission relative to production level or gross domestic product.

⁸ 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.

⁹ 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, and Sweden, (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) the multi-donor Asia Accelerated Solar Energy Development Fund (if and when operational); and the resources from ADB's Climate Change Fund – Clean Energy Development Component.

¹⁰ Following rounds of comments and discussions, and agreement with the financing partners, the updated DMF was finalized in May 2011 and commenced implementation.

¹¹ 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.

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 energy¹² in DMCs, and is measured by three indicators:

- (i) *Expected cumulative contribution to carbon dioxide (CO₂) emission reduction in participating DMCs of 17 million tCO₂ per year by 2012; and 20 million tCO₂ per year by 2013.*
- (ii) *Expected cumulative energy saved in participating DMCs of 27 terawatt-hours (TWh) by 2012; and 30 TWh by 2013.*¹³
- (iii) *Expected cumulative contribution to installed capacity using renewable energy in participating DMCs of 250 megawatt (MW) by 2012; and 300 MW by 2013.*¹⁴

4. The target values for the outcomes were derived based on the average outcome performance of clean energy funds in the last 3 years (i.e. 2008-2010) which is assumed to provide a reliable trend and basis for the indicated values of outcome targets/indicators with assumed level of growth, 3% in 2012 and 5% in 2013.

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 updated data available at that time on the identified impact indicators will be collated and compared against the established baseline. Data may also be collated at meaningful, regular intervals in the interim to review the continued relevance of the funds' targets and interventions overall. Impact targets are expected by the 15th year after the end of the first compliance period of the Kyoto Protocol, (i.e. 2027).

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 A3.2.¹⁵ Presently, the baseline information includes 30 DMCs that were covered by the range of allocations to projects as of 31 December 2012. As can be seen, two smaller countries reflect "no data" readily available. In this regard, the clean energy funds will continue to explore other data sources to arrive at an estimate.

¹² Clean energy category in ADB includes renewable energy, energy efficiency and cleaner fuel.

¹³ Energy savings will include electricity and thermal/fuel savings.

¹⁴ On the installed capacity using renewable energy indicator, the contributions of solar projects supported by the Asia Accelerated Solar Energy Development Fund (AASEDF), if and when operational, will be accounted to the AASEDF output indicator.

¹⁵ 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 of Developing Member Countries Covered by Clean Energy Funds, 2006

Country	Carbon Intensity ^a (in tCO ₂ /million constant 2000 US\$)	Electrication Rate (%)	
1	AZE	2,072	81.30 ^b
2	BAN	525	32.00 ^c
3	BHU	436	33.60 ^b
4	CAM	179	20.00 ^c
5	PRC	2,712	99.00 ^c
6	FSM	nd	79.60 ^b
7	FIJ	790	55.10 ^b
8	IND	1,672	56.00 ^c
9	INO	1,512	79.50 ^b
10	KAZ	5,165	73.00 ^b
11	LAO	299	22.00 ^b
12	MLD	910	53.60 ^b
13	MON	6,138	65.00 ^c
14	MYA	654	11.00 ^c
15	NEP	548	33.00 ^c
16	PAK	1,184	54.00 ^c
17	PHI	680	62.80 ^b
18	PNG	1,220	17.90 ^b
19	RMI	nd	0.00 ^b
20	SRI	539	95.30 ^b
21	TAJ	3,715	87.10 ^b
22	THA	1,266	99.00 ^c
23	TIM	1,253	9.00 ^b
24	UZB	5,140	94.50 ^b
25	VIE	1,726	84.00 ^c
26	COO	739	90.90 ^b
27	SAM		49.60 ^b
28	SOL		0.50 ^b
29	TON		85.40 ^b
30	VAN		15.00 ^b
Average	1,711	54.62	

AZE = Azerbaijan, BAN = Bangladesh, BHU = Bhutan, CAM = Cambodia, PRC = People's Republic of China, CCF-CE = Climate Change Fund - Clean Energy Development, CEFPP = Clean Energy Financing Partnership Facility, COO = Cook Islands, FSM = Federal States of Micronesia, FIJ = Fiji, IND = India, INO = Indonesia, KAZ = Kazakhstan, LAO = Lao People's Democratic Republic, MLD = Maldives, MON = Mongolia, MYA = Myanmar, nd = no data, NEP = Nepal, PAK = Pakistan, PHI = Philippines, PNG = Papua New Guinea, RMI = Marshall Islands, SAM = Samoa, SOL = Solomon Islands, SRI = Sri Lanka, TAJ = Tajikistan, THA = Thailand, TIM = Democratic Republic of Timor-Leste, tCO₂ = ton of carbon dioxide, TON = Tonga, UZB = Uzbekistan, VAN = Vanuatu, VIE = Vietnam.

^a Source: Asian Development Bank and the Asia-Pacific Economic Cooperation. 2009. Energy Outlook for Asia and the Pacific.

^b Source: 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 DMSP lighting as compared with total population count.

^cSource: ADB, 2009. Energy Statistics in Asia and the Pacific (1990-2006).

Note: Developing member countries covered by the bracket are jointly classified as "Other Pacific Islands" and include Kiribati, Nauru and Palau.

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

Countries	Electricity Net Generation, in Billion Kilowatt-hour											RE share (%)	
	Nuclear	Conventional Thermal	Hydroelectric Pumped Storage	Renewable Electricity (in Billion kWh)						Total Renewable	Total Net Electricity Generation		
				Hydroelectric	Non-Hydroelectric								
					Geothermal	Wind	Solar, Tide & Wave	Biomass & Waste	Total Non-Hydroelectric				
1 AZE	0.0000	19.8270	0.0000	2.4930	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.4930	22.320	11%
2 BAN	0.0000	26.7810	0.0000	1.3750	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.3750	28.156	5%
3 BHU	0.0000	0.0010	0.0000	4.5740	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	4.5740	4.575	100%
4 CAM	0.0000	0.9730	0.0000	0.0500	0.0000	0.0000	0.0020	0.0019	0.0039	0.0039	0.0539	1.027	5%
5 PRC	54.8450	2,225.0640	0.0000	431.4280	0.0000	3.6746	0.0998	2.2572	6.0316	437.4596	2,717.369	16%	
6 FSM	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
7 FIJ	0.0000	0.3950	0.0000	0.6810	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.6810	1.076	63%
8 IND	15.5940	573.2650	0.0000	112.5820	0.0000	8.2560	0.0180	1.8335	10.1075	122.6895	711.549	17%	
9 INO	0.0000	109.8170	0.0000	9.5270	6.3251	0.0000	0.0000	0.0320	6.3571	15.8841	125.701	13%	
10 KAZ	0.0000	60.0560	0.0000	7.6900	0.0000	0.0000	0.0000	0.0000	0.0000	7.6900	67.746	11%	
11 LAO	0.0000	0.3120	0.0000	3.2410	0.0000	0.0000	0.0000	0.0000	0.0000	3.2410	3.553	91%	
12 MLD	0.0000	0.1990	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.199	0%	
13 MON	0.0000	3.3310	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	3.331	0%	
14 MYA	0.0000	2.6700	0.0000	3.2910	0.0000	0.0000	0.0000	0.0000	0.0000	3.2910	5.961	55%	
15 NEP	0.0000	0.0090	0.0000	2.6630	0.0000	0.0000	0.0000	0.0000	0.0000	2.6630	2.672	100%	
16 PAK	2.5480	60.2620	0.0000	31.6330	0.0000	0.0000	0.0000	0.0000	0.0000	31.6330	94.443	33%	
17 PHI	0.0000	34.1460	0.0000	9.8400	9.9420	0.0500	0.0013	0.0000	9.9933	19.8334	53.979	37%	
18 PNG	0.0000	2.0200	0.0000	0.8540	0.0000	0.0000	0.0000	0.0000	0.0000	0.8540	2.874	30%	
19 RMI	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
20 SRI	0.0000	4.5560	0.0000	3.8490	0.0000	0.0020	0.0143	0.0019	0.0182	3.8672	8.423	46%	
21 TAJ	0.0000	0.2200	0.0000	16.5340	0.0000	0.0000	0.0000	0.0000	0.0000	16.5340	16.754	99%	
22 THA	0.0000	119.8160	0.0000	8.0440	0.0030	0.0000	0.0010	2.9925	2.9965	11.0405	130.857	8%	
23 TIM	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.000	0%	
24 UZB	0.0000	39.2540	0.0000	9.0680	0.0000	0.0000	0.0000	0.0000	0.0000	9.0680	48.322	19%	
25 VIE	0.0000	37.6800	0.0000	20.2040	0.0000	0.0000	0.0000	0.0000	0.0000	20.2040	57.884	35%	
26 COO	0.0000	0.0300	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.030	0%	
27 SAM	0.0000	0.0590	0.0000	0.0510	0.0000	0.0000	0.0000	0.0000	0.0000	0.0510	0.110	46%	
28 SOL	0.0000	0.0710	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.071	0%	
29 TON	0.0000	0.0420	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.042	0%	
30 VAN	0.0000	0.0420	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.042	0%	
Average												30%	

AZE = Azerbaijan, BAN = Bangladesh, BHU = Bhutan, CAM = Cambodia, PRC = People's Republic of China, CCF-CE = Climate Change Fund - Clean Energy Development, CEFPF = Clean Energy Financing Partnership Facility, COO = Cook Islands, FSM = Federal States of Micronesia, FIJ = Fiji, IND = India, INO = Indonesia, KAZ = Kazakhstan, kWh = kilowatt-hour, LAO = Lao People's Democratic Republic, MLD = Maldives, MON = Mongolia, MYA = Myanmar, nd = no data, NEP = Nepal, PAK = Pakistan, PHI = Philippines, PNG = Papua New Guinea, RE = renewable energy, RMI = Marshall Islands, SAM = Samoa, SOL = Solomon Islands, SRI = Sri Lanka, TAJ = Tajikistan, THA = Thailand, TIM = Democratic Republic of Timor-Leste, TON = Tonga, UZB = Uzbekistan, VAN = Vanuatu, VIE = Vietnam.

Source: International Energy Statistics. US Energy Information Administration Independent Statistics and Analysis. (webpage link - <http://tonto.eia.doe.gov/cfapps/ipdbproject/IEDIndex3.cfm>)

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, and (iii) installed renewable energy capacity from implementing the grant component of investment (GCI) and technical assistance linked to loan (TALL), including project preparatory technical assistance of loan projects in the portfolio. Actual contributions can only be measured after the full implementation of projects. Following project implementation, the project completion report will recalculate the actual contributions with respect to the target outcomes. The outcomes may differ from the original estimate because of design changes, better or superior technologies introduced, or broadened project scope (within budget) due to barriers lowered.

8. Meanwhile, the clean energy funds secretariat monitors whether individual projects are on-track toward keeping their implementation targets, and reports on any adjustments, as the individual projects undergo ADB's project design and implementation cycle. The cycle is further described in Para. 47.

9. As of 31 December 2011, the clean energy funds portfolio is expected to contribute to annual emission reduction of about 8.1 million tons of carbon dioxide (tCO₂), annual energy savings of about 9.6 terawatt-hour (TWh) and installed renewable energy capacity of 540 MW.¹⁶ These estimates are updated resulting from 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: (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, environment and productivity benefits provided, (vi) barriers to clean energy/CCS investments lowered. Details are provided in the succeeding subsections

11. In accounting outputs, clean energy funds secretariat counts features identified in the project documents that link to 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 merits/receives allocations, it has been determined that the project: (a) is aligned with the design and monitoring framework, (b) meets the funds eligibility criteria,¹⁷ and (c) aligned with the strategic priorities as programmed annually.¹⁸ It was also deemed that the clean energy funds support is catalytic to the project. Particularly, clean energy funds help defray the higher cost of clean energy investments (in terms of financial, technical and non-technical barriers) that deter them from being the preferred option for governments and the private sector.

¹⁶ Contributions of projects in the clean energy funds portfolio on installed capacity on renewable energy are measured from project allocations beginning 2011.

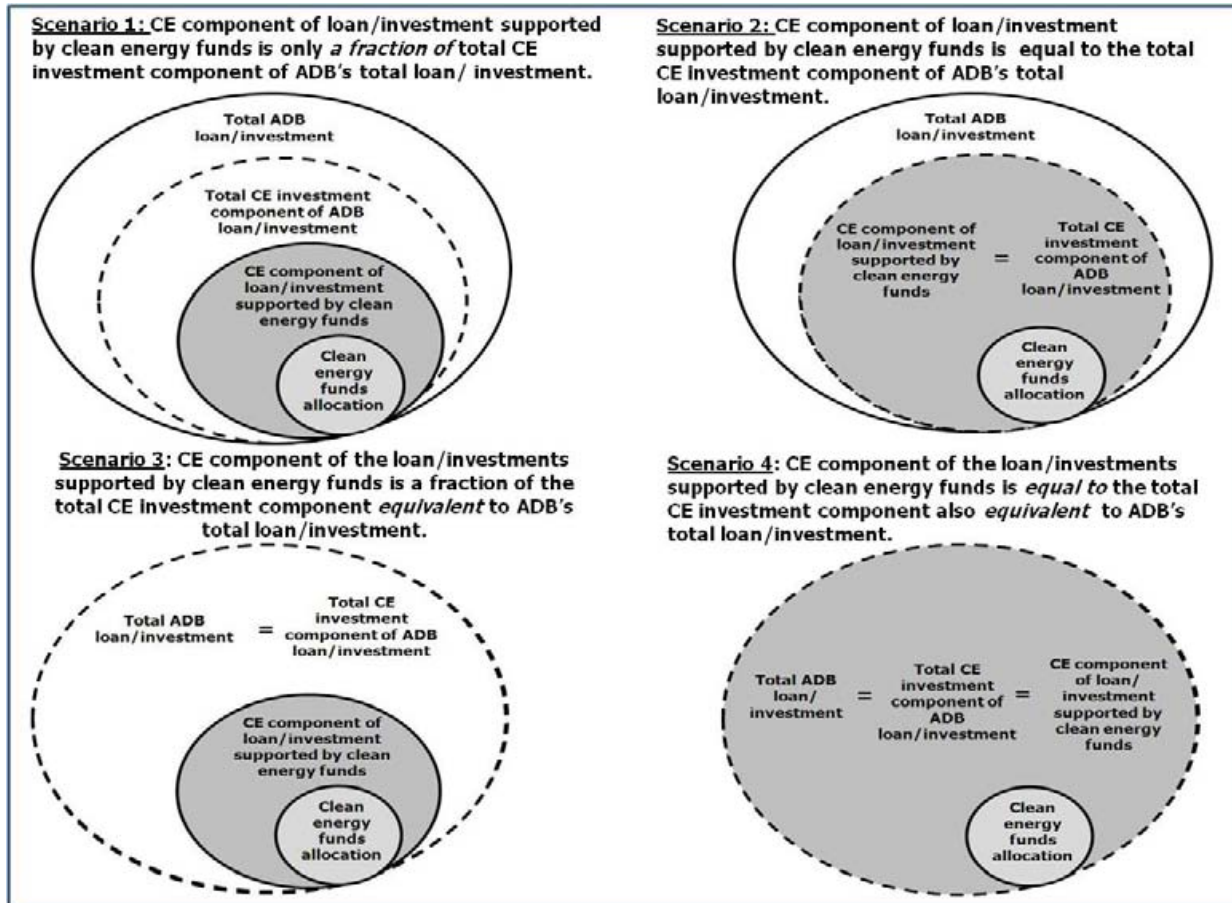
¹⁷ Per the funds general eligibility criteria, projects should: (a) be consistent with the country partnership strategy and results framework, (b) be consistent with the objectives of ADB's Energy Efficiency Initiative, (c) introduce innovative solutions, (d) adopt a participatory approach, (e) be catalytic, (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.

¹⁸ The strategic priorities for the utilization of the clean energy funds are identified in the Annual Work Program.

A. Clean Energy Investments in DMCs increased

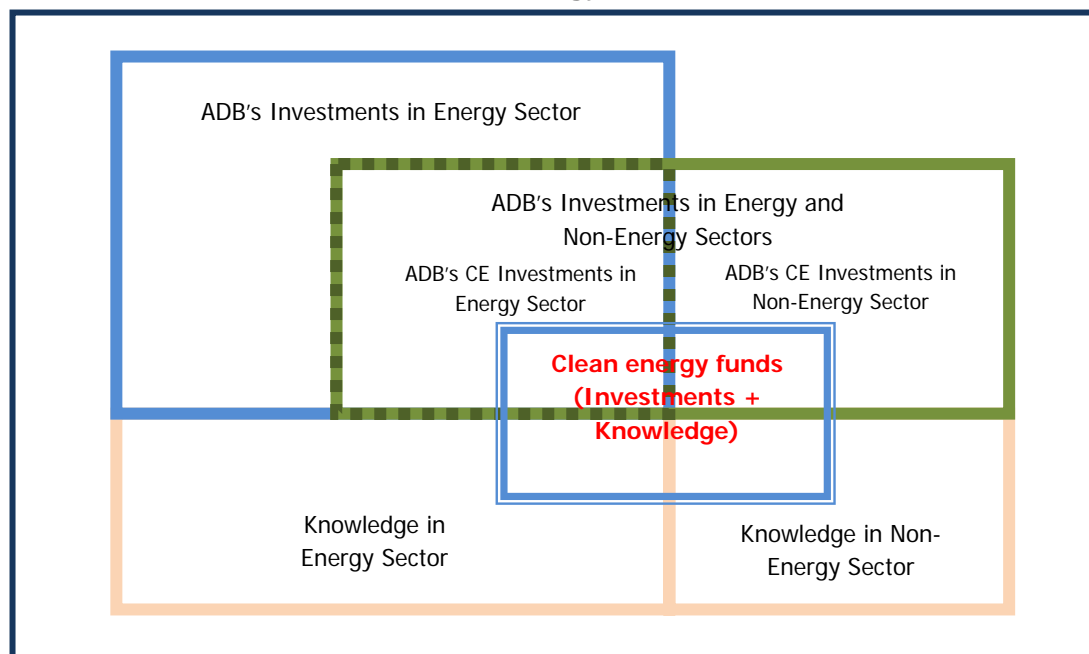
12. Per the DMF, clean energy funds will directly contribute to increased clean energy investments in ADB's DMCs, targeting to leverage a cumulative total of \$2.5 billion in ADB's clean energy investments by 2013, in support of ADB's annual target of \$2 billion by 2013. Figure A3.1 shows how the clean 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.

a. Determining the Amount of Clean Energy Components

13. In determining the amount of total clean energy investments (or investment components), clean energy funds secretariat consults the project document that completed the review and approval process of the clean energy funds and ADB management, and bases the amount as pre-determined therein. 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, the clean energy funds secretariat counts only \$25.28 million as the resulting clean energy investment attributed to its allocation, identified by the project team leader as the rural electrification component which the Clean Energy Financing Partnership Facility is helping to finance. The rest of the loan pertains to the regional power trade which includes hydropower development for export to India.

14. If the clean energy component is not already delineated in the project document, the clean energy funds secretariat derives the estimates from the Guidelines for Estimating ADB's Investments in Renewable Energy and Energy Efficiency Projects.¹⁹ 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 meaning, regular intervals to remain representative of ADB's total loan portfolio over time.

¹⁹The 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.

15. 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 CEFPPF: \$2 million). The total loan ADB is \$70 million. Per the guidelines, the percentage renewable energy investment share is 100%. Thus, the clean energy funds secretariat counts the \$70 million as the resulting CE investment attributed to its allocation providing contingency financing for a large-scale solar farm project using thin film photovoltaic technology.

b. Determining the Leverage Ratio

16. Using same project examples described in Para. 13 and Para. 15, 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' leverage ratio. Given these examples, total ADB loans amounted to \$353.24 million of which \$180 million is the estimated amount of total clean energy investment components. Of the total \$180 million, \$125.28 million is the clean energy component attributed to clean energy funds financing.²⁰

**Table A3.4: Translating Clean Energy Allocations into CE Investments
(Inputs to Calculating Clean Energy Funds Leverage Ratio)**

Project name	Modality	(In \$ millions)				ADB loan/TA amount	Determining the CE component of the ADB loan / investment	Latest approved project document (as of 31 Dec 2011)
		Clean Energy Funds Allocation	CE Component Supported by Clean Energy Funds	CE component of loan / investment				
BHU: Green Power Development Project - Sustainable Solar Technology Application for Rural Electrification	GCI	1.00	25.28	80.00	80.00	As described in project document	RRP	
THA: Solar Power Project	GCI	2.00	70.00	70.00	70.00	100% based on ADB's estimation framework	RRP	
INO: Institutional Capacity Building of Indonesia Eximbank	TALL	1.10	30.00	30.00	200.00	As described in project document	RRP	
PRC: Utilization of Foreign Capital to Promote Energy Conservation and Energy Efficient Power Generation Scheduling	TA	1.00	n/a	n/a	2.00	n/a	TA Report	
REG: Promoting Energy Efficiency in the Pacific	TA	1.20	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	0.04	n/a	Application paper	
Total		6.34	125.28	180.00	353.24			

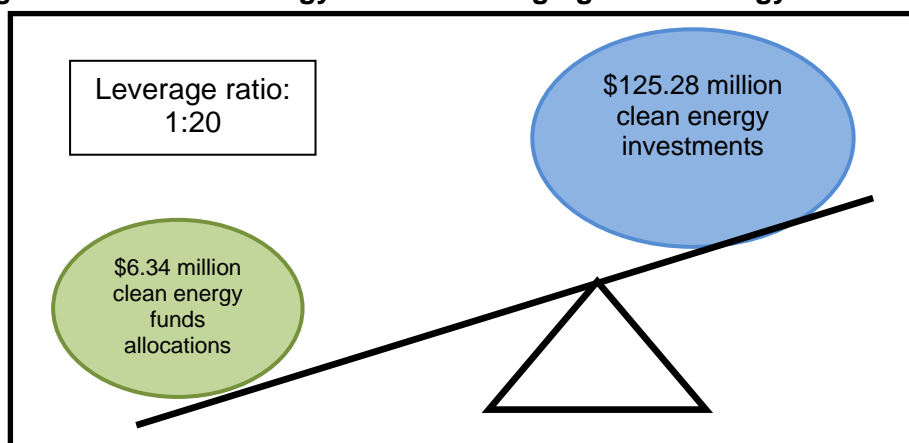
ADB = Asian Development Bank, BHU = Bhutan, CE = clean energy, DC = direct charge, GCI = grant component of loan, INO = Indonesia, PRC = People's Republic of China, REG = regional, RRP = Report and Recommendation of the President, TA = technical assistance, TALL = technical assistance linked to loan,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

17. Clean energy funds leverage ratio is equivalent to the total volume of allocations in proportion to the total volume of clean energy components attributed to clean energy funds. The total volume of allocations considers all GCI, TALL, TA, and Direct Charges (DC) projects. In this sample case, \$6.34 million translates to \$125.28 million. Thus, CEFPPF's leverage ratio

²⁰ Specifically, this covers facility's allocations to GCIs, TALLs, including project preparatory technical assistance of loan projects.

computed is about 1:20, or \$1 of CEFPF resources translates to about \$20 of clean energy investments. (Figure A3.3)

Figure A3.3: Clean Energy Funds Leveraging Clean Energy Investments



B. Deployment of new technologies with strong demonstration effect facilitated

18. The key word for this output is “facilitated”. Following the same principle of attribution described in Para. 11, 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

19. 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 or pilot testing 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:²¹

- (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 project, 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.

²¹ Based on Organisation for Economic Co-Operation and Development (OECD)/International Energy Agency (IEA). 2006. *Energy Technology Perspectives*. Paris.

20. Per the DMF, 55 clean energy/CCS technologies should be deployed in participating DMCs by 2013. Clean energy secretariat will count new technologies deployed in DMCs guided by the information presented in Paras. 21 and 22.

21. 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. In this instance, 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. CEFPF/CCF-CE's resources will be 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

CEFPF resources will be 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. CEFPF 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.

22. 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.

23. 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

24. 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 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.

25. Per the DMF, clean energy funds aim for 2 CCS demonstration projects in the identified priority countries commencing by 2013. The clean energy funds secretariat will count the number of demonstration projects that has been initiated in the four (4) identified priority DMCs namely: People's Republic of China, India, Indonesia, and Viet Nam, with financing support from clean energy funds.

c. Solar Power Developed in Participating DMCs²²

26. Clean energy funds support the rapid enlargement of the solar energy market through the Asia Accelerated Solar Energy Development Fund (AASEDF), another technology-specific fund to be established under CEFPF. AASEDF is intended to: (i) support solar project and program preparation in DMCs; (ii) help mitigate risks associated with solar energy projects, including exploration risk, specification risk, and off-take and payment risk; and (iii) introduce incentive generation to reduce the cost of solar-based generation to be close to alternate fossil

²² Clean energy funds secretariat will initiate monitoring and reporting on this indicator if and when AASEDF is already operational.

fuel-based generation. In the initial stages of deployment of the solar energy technology, greater emphasis is being given to capacity installment (measured in MW) to lower the costs of equipment and components of solar power, which is the objective of AASEDF. As costs come down, solar energy cost will be closer to competitively priced electricity.

27. While all DMCs are eligible for support, clean energy funds will prioritize projects in large markets that accelerate the deployment of significant solar energy generation capacity and cost reduction that would contribute largely to lowering costs, consequently making solar technology affordable to many more markets.

28. Per the DMF, clean energy funds is aiming at 3,000 megawatt (MW) of solar power developed in participating DMCs by 2013. The clean energy funds secretariat will account the additional solar power capacity developed, in MW, of projects receiving assistance from AASEDF.

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

29. 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.²³

30. Per the DMF, 15 new approaches/methodologies to promote clean energy/CCS will be introduced in participating DMCs by 2013. The clean energy funds secretariat will account the new approaches/methodologies developed by projects receiving financing, following the principle of attribution described in Para. 11.

D. Benefits from access to energy delivered

31. 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 of concerns 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 power²⁴ to households,
- (ii) Improvement in the supply and delivery of energy services to households,

²³ 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 starting January 2011.

²⁴ 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).

- (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

32. Clean energy funds secretariat considers projects with clearly defined energy access components receiving support from clean energy funds. In particular, the clean energy funds secretariat will monitor and report on the number of households benefiting from access to energy and the percentage of access to energy projects providing gender benefits.

33. ADB projects are categorized based on the Guidelines for Gender Mainstreaming Categories of ADB projects.²⁵ 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), at the minimum, provide some gender elements. Per the gender mainstreaming guidelines, a project is assigned “some gender elements” if it meets either the following:

- (i) 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
- (ii) 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)

34. Per the DMF, a cumulative total of 700,000 households will be provided with access to energy in participating DMCs by 2013. Further broken down, this would be equivalent to: 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. In addition, 80% of access to energy projects supported by clean energy funds will address gender benefits by 2013.

E. Health, environment and productivity benefits provided

35. 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. Co-benefits refer to the health/environment/productivity benefits

²⁵ For more details, please visit: <http://www.adb.org/themes/gender/gender-mainstreaming-categories> .

derived from clean energy interventions.²⁶ These co-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 through job creation or livelihood development.

36. Per the DMF, 50% of projects supported by clean energy funds will provide health/environment/productivity benefits to participating DMCs by 2013.

F. Barriers to clean energy/CCS investments lowered

37. 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).

38. Clean energy funds particularly consider (i) to (v) of Para. 37 in the projects they support and summarize these in the DMF, stating that they will promote the following in participating DMCs by 2013: (i) development of 18 national/local policies enabling clean energy /CCS development (which in some cases may consider the internalization of externalities), (ii) application of 15 financing models suitable for bundling small clean energy /CCS investments, and (iii) production and/or dissemination of knowledge products or capacity building to promote clean energy /CCS development in 100% of projects supported.

39. Following the principle of attribution in Para. 11, clean energy funds secretariat accounts GCIs, TALLs, TAs and DCs that intervene to break down the barriers identified here and enable the deployment of clean energy technologies. 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. Clean energy funds secretariat will count 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.

40. Clean energy funds secretariat accounts the financing models applied in projects. For the Thailand: Solar Power Project, clean energy funds were used for contingency financing to contribute in demonstrating the capacity of large-scale solar projects. Contingency funds were

²⁶ 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.

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.

41. Clean energy funds secretariat accounts 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.

V. ACTIVITIES

42. 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 2008-2013, 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.

43. 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 GCI:TA ratio of 70:30.²⁷

44. 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

45. The clean energy funds secretariat refers to the following data sources in monitoring the clean energy funds' impact indicators:

- (i) Energy Statistics in Asia and the Pacific (1990 – 2006)²⁸
- (ii) Energy Outlook for Asia and the Pacific (footnote 20)

²⁷ In computing CEFPP/CCF-CE's GCI:TA ratio, "GCI" comprises GCIs and TALLs taken together, while "TA" comprises TAs and DCs taken together.

²⁸ Asia-Pacific Economic Cooperation and the Asian Development Bank. Mandaluyong, Philippines.

- (iii) International Energy Annual 2006²⁹
- (iv) International Energy Agency Statistics and Balances³⁰
- (v) Urban Remote Sensing: Monitoring, Synthesis and Modeling in the Urban Environment.³¹

46. As illustrated in Tables A3.1 and A3.2, smaller countries often do not have similar, standardized data readily available. In this regard, the clean energy funds secretariat will attempt to compute some of this data informed by 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

47. 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 allocations made by the Climate Change Steering Committee;
- (ii) 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;
- (iii) Project performance report or TA performance report for ADB-approved projects receiving clean energy funds allocations, in advance stages of implementation;
- (iv) Project completion report or TA completion report; and
- (v) Progress updates or final reports for DCs

48. Table A3.4 identifies the latest project document available for the sample projects. Based on these set of examples, at most, some of the projects are in early implementation thus, no progress report documents are available at this time.

C. Sources for Monitoring Activities (Inputs)

49. 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 GCI:TA ratio. Table A3.6 presents the detailed annual monitoring schedule for the facility.

²⁹ U.S. Energy Information Administration. Website: <http://www.eia.doe.gov/emeu/world/country/countrybal.html>

³⁰ International Energy Agency. Website: <http://www.iea.org/stats/index.asp>

³¹ 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.

Table A3.6: Clean Energy Funds Annual Monitoring 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
Batch Review		CCSC Allocation	GOJ Concur.	Batch Jan 31	Secretariat Review	CEWG Review	Revise & Endorse	CCSC Allocation	GOJ Concur.			Batch Mar 31	Secretariat Review	CEWG Review	Revise & Endorse	CCSC Allocation	GOJ Concur.			Batch May 31	Secretariat Review	CEWG Review	Revise & Endorse	
Funds Monitoring		Portfolio update		Fund status	Logbook update				Portfolio update			Fund status	Logbook update				Portfolio update			Fund status	Logbook update			
Results Monitoring		Proj Doc Update	Project Monitoring Against DMF						Proj Doc Update	Project Monitoring Against DMF														
Progress Reports & Updates		Portfolio & Results		Fund status	Spring cleaning				Portfolio & Results			Fund status	Spring cleaning				Portfolio & Results				Update ALL			
Information Dissemination	Blurb Devt	Internal Comms	External Comms						Blurb Devt	Internal Comms	External Comms						Blurb Devt	Internal Comms	External Comms					
Donor Reports	Report Writing	Circulatoin, Revisions, Approvals			CEFPF AR	Unaudited Financials			Annual Consultation Meeting												Report Writing			
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
Batch Review	CCSC Allocation	GOJ Concur.		Batch Jul 31	Secretariat Review	CEWG Review	Revise & Endorse	CCSC Allocation	GOJ Concur.			Batch Sep 30	Secretariat Review	CEWG Review	Revise & Endorse	CCSC Allocation	GOJ Concur.			Batch Nov 30	Secretariat Review	CEWG Review	Revise & Endorse	
Funds Monitoring		Portfolio update		Fund status	Logbook update				Portfolio update			Fund status	Logbook update				Portfolio update			Fund status	Logbook update			
Results Monitoring		Proj Doc Update	Project Monitoring Against DMF						Proj Doc Update	Project Monitoring Against DMF														
Progress Reports & Updates		Portfolio & Results		Fund status	Spring cleaning				Portfolio & Results			Fund status	Spring cleaning				Portfolio & Results				Update ALL			
Information Dissemination	Blurb Devt	Internal Comms	External Comms						Blurb Devt	Internal Comms	External Comms						Blurb Devt	Internal Comms	External Comms					
Donor Reports	Report Writing	Circulatoin, Revisions, Approvals			CEFPF SPR	Audited Financials	CCF Annual														Report Writing			

AR = Annual Report, CEWG = Clean Energy Working Group, CCSC = Climate Change Steering Committee, DMF = design and monitoring framework, GOJ = Government of Japan, 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 2012

Project	Modality	Allocation (In \$ '000)	Sector	Demand reduction (MW)	CO ₂ emission reduction (tCO ₂ /yr)	Energy savings (MWh)	Installed capacity using RE (MW)	<Optional> Other emissions avoided (tons/yr)	
2008									
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									
GCI (2009)		8,200		10.50	1,035,000.00	48,086.82			
TALL (2009)		653		-	350,000.00	-			
Subtotal		8,853		10.50	1,385,000.00	48,086.82			
2010									
GCI (2010)		2,000		-	50,000.00	-			
TALL (2010)		6,792		-	1,885,324.00	2,326,900.00			
Subtotal		8,792		-	1,935,324.00	2,326,900.00			
2011									
GCI (2011)		4,000		-	8,900.00	10,000.00	-	-	
TALL (2011)		180		-	1,000,000	-	440	-	
TA (2011)		-		-	-	-	-	-	
Subtotal		4,180		-	1,008,900.00	10,000.00	440.00	-	
2012									
Projects approved by ADB for implementation									
1	BAN: Supporting Brick Sector Development Program	TALL	750	Multisector	-	980,000.00	2,833,149.78	-	-
2	SRI: Solar Rooftop Pilot under SRI: Clean Energy and Network Efficiency Improvement Project	GCI	1,500	Energy	-	1,286.00	-	1.00	-
3	TON: Outer Island Energy Efficiency Project	TA	400	Energy	-	2,025.00	2,575.20	0.03	-
4	TON: Outer Island Renewable Energy Development Project	TA	225	Energy	-	1,700.00	-	1.20	-
	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	1.23	-
	Subtotal		2,875		-	985,011.00	2,835,724.98	2.23	-
Cumulative Total									
	Total (GCI)		20,200		310.50	1,612,786.00	592,086.82	1.00	-
	Total (TALL)		9,975		109.20	4,696,884.00	5,703,016.78	440.00	-
	Total (TA)		625		-	3,725.00	2,575.20	1.23	-
	GRAND TOTAL		30,800		419.70	6,313,395.00	6,297,678.80	442.23	-

ADB = Asian Development Bank, BAN = Bangladesh, CO₂ = carbon dioxide, CEFPP = Clean Energy Financing Partnership Facility, GCI = grant component of investment, MW = megawatt, MWh = megawatt-hour, RE = renewable energy, SRI = Sri Lanka, TA = technical assistance, TALL = technical assistance linked to loan, TON = Tonga, tCO₂ = ton of carbon dioxide.

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

Table A5.1: Technology Deployment/Adoption Stage of CEFPF-Supported Projects, As of 31 December 2012

No.	Year	Project Name	Predominant Technology	Technology Development/Adoption Stage ^a	Barriers Lowered
2012					
1	2012	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	2012	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	2012	IND: Preparation of the Utility Scale Concentrated Solar Power Program	Concentrated solar power	Deployment	-
4	2012	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	2012	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	2012	REG: 7th Asia Clean Energy Forum 2012	None	n/a	-
7	2012	REG: Carbon Capture and Storage in Developing Asia	Carbon Capture and Storage	Demonstration	-
8	2012	REG: Carbon Forum Asia 2012	None	n/a	-
9	2012	REG: Clean Energy Expo Asia 2012	None	n/a	-
10	2012	REG: Clean Energy Technology Knowledge Sharing 2012	Smart grid and wind power	Deployment	-
11	2012	REG: Determining the Potential for Carbon Capture and Storage in Southeast Asia - Supplementary Financing	Carbon Capture and Storage	Demonstration	-

BAN = Bangladesh, CCS = carbon capture and storage, PRC = China, People's Republic of, CEFPF = Clean Energy Financing Partnership Facility, 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.	Year	Project Name	Predominant Technology	Technology Development/Adoption Stage ^a	Barriers Lowered
2012					
12	2012	REG: Fourth Meeting of the Asia Solar Energy Forum	Solar energy	Deployment	-
13	2012	REG: Mainstreaming the Asia Solar Energy Initiative II	Solar energy	Deployment	-
14	2012	SRI: Solar Rooftop Pilot under SRI: Clean Energy and Network Efficiency Improvement Project	Solar PV	Deployment	-
15	2012	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	2012	TON: Outer Island Renewable Energy Development Project	Solar energy	Deployment	-
17	2012	VIE: Partnership for Market Readiness	None	n/a	-
2011					
1	2011	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	2011	PRC: Study on Carbon Capture and Storage on Natural Gas-Based Power Plants	Carbon Capture and Storage (natural gas-based power plants)	Demonstration	-
3	2011	INO: Strengthening West Kalimantan Power Grid	Solar-powered WLED and energy efficient lamp (CFL)	Deployment (solar); Competitive/commercial (CFL)	Need for suitable financing mechanism on provision of access to clean energy to rural areas for replication/scaling-up.
4	2011	LAO: S-CDTA for Hydropower Impacts and Best Practices: A Communications Project (supporting the Nam Ngum 3 Hydropower Project)	Hydropower	Commercial/competitive	Lack of understanding and need to increase knowledge on impacts, benefits and importance of clean energy technology in combating climate change
5	2011	REG: 6th Asia Clean Energy Forum 2011	None	n/a	-

CAM = Cambodia, PRC = China, People's Republic of, CFL = compact fluorescent lighting, INO = Indonesia, LAO = Lao People's Democratic Republic, PV = photovoltaic, REG = regional, S-CDTA = small scale capacity development technical assistance, SRI = Sri Lanka, TON = Tonga, 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.	Year	Project Name	Predominant Technology	Technology Development/Adoption Stage ^a	Barriers Lowered
2011					
6	2011	REG: Carbon Capture Storage Financing Roundtable	Carbon Capture and Storage	Demonstration	-
7	2011	REG: Carbon Forum Asia 2011	None	n/a	-
8	2011	REG: Clean Energy Expo Asia 2011	None	n/a	-
9	2011	REG: Determining the Potential for Carbon Capture and Storage in Southeast Asia - Supplementary Financing	Carbon Capture and Storage	Demonstration	-
10	2011	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	-
11	2011	REG: International Carbon Capture and Storage Conference	Carbon Capture and Storage	Demonstration	-
12	2011	REG: Mainstreaming the Asia Solar Energy Initiative	Solar energy	Deployment	-
13	2011	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
14	2011	REG: Solar Energy Training	Solar energy	Deployment	-
15	2011	REG: Wind Energy Futures in Asia - Regional	Wind power	Deployment	-
16	2011	VIE: Ho Chi Minh City Water Supply PRF 1 MFF Viet Nam Water Sector Investment Program	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
2010					
1	2010	BAN: Energy Efficiency Improvement (Original application title: Solar Powered Street Lights and Energy Efficient Water) (Project: BAN: City Region Development Project)	Solar PV street lighting, energy efficient water system pumps technology	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

BAN = Bangladesh, MFF = Multitranché Financing Facility, PFR = Periodic Financing Request, REG = regional, 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.	Year	Project Name	Predominant Technology	Technology Development/Adoption Stage ^a	Barriers Lowered
2010					
2	2010	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	2010	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	2010	PRC: Innovating 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	2010	PRC: Investment Summit for Hainan's Clean Energy Development	None	n/a	-
6	2010	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	2010	PRC: Renewable Energy Development in Qinghai	Grid connected solar photovoltaic	Deployment	-
8	2010	IND: Capacity Building for Commercial Bank Lending for Solar Energy	Solar power (crystalline, thin film, concentrated solar power)	Deployment	-
9	2010	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
10	2010	PHI: Preparing Three Wind Farm Projects in Luzon	Wind power	Deployment	-

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

^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.	Year	Project Name	Predominant Technology	Technology Development/Adoption Stage ^a	Barriers Lowered
2010					
11	2010	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	2010	REG: 5th Asia Clean Energy Forum 2010	None	n/a	-
13	2010	REG: Carbon Forum Asia 2010	None	n/a	-
14	2010	REG: Clean Energy Expo Asia 2010	None	n/a	-
15	2010	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	2010	REG: Determining the Potential for Carbon Capture and Storage in Southeast Asia	Carbon Capture and Storage	Demonstration	-
17	2010	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	2010	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	2010	REG: Needs Assessment and Development of the Solar Energy Program	Solar photovoltaic and solar thermal	Deployment	-
20	2010	REG: Montreal 2010: 21st World Energy Congress	None	n/a	-
21	2010	REG: Promoting Energy Efficiency in the Pacific (Phase II) - PNG Component	Energy-efficient lighting (CFL, LED), building retrofits	Competitive/commercial (CFLs, building retrofits); Deployment (LED)	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

CDTA = capacity development technical assistance, CFL = compact fluorescent lighting, DMC = developing member country, EE = energy efficiency, GMS = Greater Mekong Subregion, LED = light emitting diode, PNG = Papua New Guinea, PHI = Philippines, PV = photovoltaic, REG = regional, RE = renewable energy.

^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.	Year	Project Name	Predominant Technology	Technology Development/Adoption Stage ^a	Barriers Lowered
2010					
22	2010	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	2010	REG: Quantum Leap in Wind Power in Asia (Direct Charge)	Wind power	Deployment	-
24	2010	REG: Quantum Leap in Wind Power in Asia and the Pacific	Wind power	Deployment	-
25	2010	REG: Strengthening Planning Capacity for Low Carbon Growth in Developing Asia (RETA: Enabling Climate Change Responses in Asia and the Pacific)	None	n/a	-
26	2010	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	2010	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	2010	THA: Solar Power Project	Solar photovoltaic (thin film)	Deployment	-
2009					
1	2009	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

CDTA = capacity development technical assistance, PRC = China, People's Republic of, CE = clean energy, EE = energy efficiency, REG = regional, RETA = regional technical assistance, RE = renewable energy, 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.	Year	Project Name	Predominant Technology	Technology Development/Adoption Stage ^a	Barriers Lowered
2009					
2	2009	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	2009	PRC: Qinghai Pasture Conservation Using Solar Photovoltaic (PV)-Driven Irrigation	Solar Photovoltaic (PV)-driven Irrigation pasture	Deployment	-
4	2009	PRC: Workshop in PRC-ADB Cooperation in Clean Energy Project Financing	None	n/a	-
5	2009	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	2009	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	2009	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	2009	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	2009	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	2009	REG: 4th Asia Clean Energy Forum 2009	None	n/a	-
11	2009	REG: Clean Energy Expo China Conference 2009	None	n/a	-
12	2009	REG: South Asia Regional Climate Change Conference	None	n/a	-
13	2009	REG: Carbon Forum Asia 2009	None	n/a	-

ADB = Asian Development Bank, PRC = China, People's Republic of, CDM = Clean Development Mechanism, CFL = compact fluorescent lighting, EE = energy efficiency, INO = Indonesia, LED = light emitting diode, MON = Mongolia, NEP = Nepal, REG = regional, RE = renewable energy.

^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.	Year	Project Name	Predominant Technology	Technology Development/Adoption Stage ^a	Barriers Lowered
2009					
14	2009	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 of on energy access project to promote off-grid renewable energy solutions
15	2009	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	2009	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	2009	REG: Carbon Dioxide Capture and Storage (CCS) Demonstration in Developing Countries - Analysis of Key Issues and Barriers	Carbon Capture and Storage	Demonstration	-
2008					
1	2008	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	2008	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	2008	PRC: Carbon Dioxide Capture and Storage (CCS) Demonstration - Strategic Analysis and Capacity Strengthening	Carbon Capture and Storage	Demonstration	-
4	2008	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	2008	PRC: Zhangbei Wind Power Project	Wind Power Generation Technology	Deployment	-

BAN = Bangladesh, BHU = Bhutan, CCF = Climate Change Fund, PRC = China, People's Republic of, CDM = Clean Development Mechanism, DNA = designated national authority, DMC = developing member country, EE = energy efficiency, REG = regional, RETA = regional technical assistance, 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.	Year	Project Name	Predominant Technology	Technology Development/Adoption Stage ^a	Barriers Lowered
2008					
6	2008	IND: Initial ADB Loan Due Diligence Preparatory Work for Solar Thermal Power Plant Projection in Rajasthan	Solar thermal power system	Deployment	-
7	2008	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	2008	PHI: Pasuquin East Wind Farm Development (Energy Logics Philippines Inc.-Wind Farm Development)	wind power	Deployment	-
9	2008	REG: Asia Clean Energy Forum 2008	None	n/a	-
10	2008	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
11	2008	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	2008	REG: Recruitment of Clean Energy Expert	None	n/a	-
13	2008	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	2008	SRI: Building the Capacity of Sustainable Energy Authority (SEA)	None	n/a	-
15	2008	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	2008	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	2008	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

ADB = Asian Development Bank, CFL = compact fluorescent lighting, EE = energy efficiency, ESCO = energy service company, IND = India, PHI = Philippines, REG = regional, RE = renewable energy, 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 A6.1: Contribution of GCIs and TALLs toward achieving CEFPF Outputs
As of 31 December 2012**

No.	Batch	Project Name	Sector	Allocation (In \$'000)	Outputs Performance Targets and Indicators, By 2013				
					\$2.5 billion in ADB's CE ^a investments leveraged (contributing to ADB's \$2 billion annual target) (In \$'000)	55 new CE/CCS technologies deployed by DMCs	2 CCS demonstration projects commenced	15 new approaches/ methodologies to promote CE/CCS introduced	
GCI/TALL/TA/DC									
				2008	13,590	120,972			
				2009	13,815	326,800			
				2010	27,525	464,974			
				2011	10,514	585,120			
				2012	6,859	54,940			
				Total Cumulative Amount	72,302	1,552,806			
				2008	17		14		
				2009	17		11		
				2010	28		22		
				2011	16		9	3	
				2012	17		9	1	
				Total Projects Contributing to Outputs	93		63	4	
Grant Component of Investments					Total	20,200	394,680		
					2008	4,500	76,380		
					2009	8,200	126,800		
					2010	2,000	70,000		
					2011	4,000	120,000		
					2012	1,500	1,500		
					Total	10		10	2
					2008	3		3	
					2009	3		3	
					2010	1		1	
2011	2		2	1					
2012	1		1	1					
2012									
1	Mar 31 (2012)	SRI: Solar Rooftop Pilot under SRI: Clean Energy and Network Efficiency Improvement Project	Energy	1,500	1,500	Solar PV		Public-Private Partnership for solar power generation	
Technical Assistance Linked to Loan					Total	9,975	1,154,686		
					2008	1,600	44,592		
					2009	653	200,000		
					2010	6,792	394,974		
					2011	180	465,120		
					2012	750	50,000		
					Total	11		10	1
					2008	2		2	
					2009	1		1	
					2010	6		6	
2011	1		-	1					
2012	1		1	-					
2012									
1	Jan 31 (2012)	BAN: Supporting Brick Sector Development Program	Multisector	750	50,000	Energy efficient brick kiln technologies (e.g. vertical shaft brick kiln, hybrid hoffman kilns, tunnel kilns)			
TOTAL FOR GCIs AND TALLs									
				2008	6,100	120,972			
				2009	8,853	326,800			
				2010	8,792	464,974			
				2011	4,180	585,120			
				2012	2,250	51,500			
				Total Amounts	30,175	1,549,366			
				2008	5		5		
				2009	4		4		
				2010	7		7		
				2011	3		2	2	
				2012	2		2	1	
				Total Projects Contributing to Outputs	21		18	2	

ADB = Asian Development Bank, BAN = Bangladesh, CCS = carbon capture and storage, CE = clean energy, CEFPF = Clean Energy Financing Partnership Facility, DMC = developing member country, DC = direct charge, GCI = grant component of investment, PV = photovoltaic, SRI = Sri Lanka, TA = technical assistance, TALL = technical assistance linked to loan.

^a Clean energy category in ADB include energy efficiency, renewable energy and cleaner fuel.

Note: Include adjustments made on projects, such as project approval by ADB or withdrawal.

Source: ADB estimates.

Table A6.1 continued

					Outputs Performance Targets and Indicators, By 2013					
No.	Batch	Project Name	Sector	Allocation (In \$'000)	700,000 HHs provided with access to energy	80% of access to energy projects supported address gender benefits	50% of projects supported provide co-benefits	18 national and local policies enabling CE development in DMCs	15 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
GCI/TALL/TA/DC										
		2008		13,590						
		2009		13,815						
		2010		27,525						
		2011		10,514	91,000					
		2012		6,859	400					
		Total Cumulative Amount		72,302	91,400					
		2008		17				3	6	17
		2009		17				1	3	17
		2010		28				5	4	28
		2011		16		2	2	-	1	16
		2012		17		4	5	2	2	17
		Total Projects Contributing to Outputs		93		6	7	11	16	93
		Grant Component of Investments		20,200	16,000					
		2008		4,500						
		2009		8,200						
		2010		2,000						
		2011		4,000	16,000					
		2012		1,500	-					
		Total		10		2	2	-	3	10
		2008		3				-	1	3
		2009		3				-	-	3
		2010		1				-	-	1
		2011		2		1	1	-	1	2
		2012		1	-	1	1	-	1	1
2012										
1	Mar 31 (2012)	SRI: Solar Rooftop Pilot under SRI: Clean Energy and Network Efficiency Improvement Project	Energy	1,500		project will contribute to ensuring more stable and affordable electricity supply and services to rural households for satisfying their basic needs and opening opportunities for energy-based livelihoods for rural women by freeing them from the time-consuming task of gathering fuelwood.	project will directly benefit poor and vulnerable consumers, as well as social services such as hospitals and schools, expected to improve people's living standards by improving health conditions, increasing safety and security, increasing agricultural yields, reducing expenditure on energy by replacing people's dependence on less efficient and more costly types of energy, increasing productivity and diversifying types of economic activity with enhanced livelihood prospects, increasing the number of hours available for study, recreation, and social/cultural activities		solar credit facility for private sector projects	solar rooftop power developed on PPP basis installed in public buildings/ universities and private entities (e.g.hotels, private factories, commercial entities)
		Total		9,975	-					
		2008		1,600						
		2009		653						
		2010		6,792						
		2011		180	-					
		2012		750	-					
		Total		11	-		1	2	4	11
		2008		2				-	2	2
		2009		1				-	-	1
		2010		6				1	1	6
		2011		1				-	-	1
		2012		1				1	1	1
2012										
1	Jan 31 (2012)	BAN: Supporting Brick Sector Development Program	Multisector	750			improve health of people living within the vicinity of the brickfields, mechanization will reduce occupational hazards, year-round operation of more advanced brick kilns reduce concern on seasonality of the migrant workers, improving productivity, wages, living/health conditions; project to design a corresponding alternative livelihood strategy	brick sector policy	bank brick credit facility	trainings on brick sector development and formulation of brick sector policy, strategy and action plan and others; brick sector policy, strategy and action plan; MOU for setting up a national brick center; technical support desk and publication of brick kiln operation and trouble shooting manuals, awareness-raising workshops, information dissemination portal
TOTAL FOR GCIs AND TALLS										
		2008		6,100						
		2009		8,853						
		2010		8,792						
		2011		4,180	16,000					
		2012		2,250	-					
		Total Amounts		30,175	16,000					
		2008		5				-	3	5
		2009		4				-	-	4
		2010		7				1	1	7
		2011		3		1	1	-	1	3
		2012		2		1	2	1	2	2
		Total Projects Contributing to Outputs		21	-	2	3	2	7	21

BAN = Bangladesh, CCS = carbon capture and storage, CE = clean energy, DMC = developing member country, DC = direct charge, GCI = grant component of investment, HH = household, MOU = memorandum of understanding, PPP = public-private partnership, SRI = Sri Lanka. TA = technical assistance, TALL = technical assistance linked to loan.

Note: Include adjustments made on projects, such as project approval by ADB or withdrawal.

Source: ADB estimates.

**Table A6.2: Contribution of TAs and DCs toward achieving CEFPF Outputs
As of 31 December 2012**

No.	Batch	Project Name	Sector	Allocation (In \$'000)	Outputs Performance Targets and Indicators, By 2013					
					\$2.5 billion in ADB's CE ^a investments leveraged (contributing to ADB's \$2 billion annual target) (In \$'000)	55 new CE/CCS technologies deployed by DMCs	2 CCS demonstration projects commenced	15 new approaches/ methodologies to promote CE/CCS introduced		
Stand Alone Technical Assistance					Total	39,055	3,440			
					2008	7,000	-			
					2009	4,350	-			
					2010	18,130	-			
					2011	5,650	-			
					2012	3,925	3,440			
					Total	33		30	-	-
					2008	6		5		
					2009	5		4		
					2010	15		14		
2011	4		4	-	-					
2012	5		5	-	-					
2012										
1	Mar 31 (2012)	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)	Multisector	2,200		Carbon Capture and Storage (Oxy-fuel Combustion)				
2	July 31 (2011)	INO: Scaling up Renewable Energy Access in Eastern Indonesia	Energy	1,000		Mini-grid and off-grid renewable energy applications (e.g. small wind, solar, micro-hydro and biomass)				
3	Mar 31 (2012)	REG: Determining the Potential for Carbon Capture and Storage in Southeast Asia - Supplementary Financing	Energy	100		Carbon Capture and Storage				
4	Sep 30 (2012)	TON: Outer Island Energy Efficiency Project	Energy	400	1,440	Transmission and distribution (T&D) retrofits/upgrade, solar street lighting				
5	Mar 31 (2012)	TON: Outer Island Renewable Energy Development Project	Energy	225	2,000	Solar energy				
Direct Charges					Total	3,072	-			
					2008	490	-			
					2009	612	-			
					2010	603	-			
					2011	684	-			
					2012	684	-			
					Total	39		13	-	1
					2008	6		4		
					2009	8		3		
					2010	6		1		
2011	9		3	-	1					
2012	10		2	-	-					
2012										
1	n/a	IND: Preparation of the Utility Scale Concentrated Solar Power Program	Energy	75		Concentrated solar power				
2	n/a	NEP: Sustainable Rural Ecology for Green Growth	Multisector	50		Pyrolysis				
3	n/a	REG: 7th Asia Clean Energy Forum 2012	Energy	150						
4	n/a	REG: Carbon Capture and Storage in Developing Asia	Energy	69						
5	n/a	REG: Carbon Forum Asia 2012	Energy	50						
6	n/a	REG: Clean Energy Expo Asia 2012	Energy	50						
7	n/a	REG: Clean Energy Technology Knowledge Sharing 2012	Energy	100						
8	n/a	REG: Fourth Meeting of the Asia Solar Energy Forum	Energy	50						
9	n/a	REG: Mainstreaming the Asia Solar Energy Initiative II	Energy	30						
10	n/a	VIE: Partnership for Market Readiness	Energy	60						
TOTAL FOR TAs AND DCs										
				2008	7,490	-				
				2009	4,962	-				
				2010	18,733	-				
				2011	6,334	-				
				2012	4,609	3,440				
Total Amounts				42,127	3,440					
				2008	12		9			
				2009	13		7			
				2010	21		15			
				2011	13		7	-	1	
				2012	15		7	-	-	
Total Projects Contributing to Outputs				72			43	-	1	

ADB = Asian Development Bank, CCS = carbon capture and storage, PRC = China, People's Republic of, CE = clean energy, DMC = developing member country, DC = direct charge, IND = India, INO = Indonesia, NEP = NEPAL, REG = regional, TA = technical assistance, TON = Tonga. VIE = Viet Nam.

Note: Include adjustments made on projects, such as project approval by ADB or withdrawal.

Source: ADB estimates.

Table A6.2 continued

Outputs Performance Targets and Indicators, By 2013											
No.	Batch	Project Name	Sector	700,000 HHs provided with access to energy	80% of access to energy projects supported address gender benefits	50% of projects supported provide co-benefits	18 national and local policies enabling CE development in DMCs	15 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		
Stand Alone Technical Assistance			Total	400							
			2008								
			2009								
			2010								
			2011								
			2012		400						
			Total			3		3	9	8	33
			2008						3	3	6
			2009						1	2	5
			2010						4	3	15
2011					-	-	-	4			
2012				3		3	1	5			
2012											
1	Mar 31 (2012)	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)	Multisector				A policy and regulatory framework with accompany set of incentives		comprehensive roadmap for CCS, shortlist of early stage CCS demonstration projects with pre-feasibility assessments, pre-feasibility report for power plant with oxy-fuel combustion CO2 capture technology, technical notes, CO2 storage characterization manual, staff trainings		
2	July 31 (2011)	INO: Scaling up Renewable Energy Access in Eastern Indonesia	Energy	750,000 HHs obtain access to modern forms of energy through the pipeline of projects to be developed	Positive social impacts may include welfare improvements for women and children, community engagement models involving women, local/regional banks initiating their own energy access programs including those that expand livelihood programs for women	Increased local enterprise and diversification of livelihoods, and a lowering of indoor air pollution-related illnesses (from use of traditional biomass)			detailed energy access plan, priority investment projects (project design, power purchase agreements, financing/implementation plans), pilot projects, capacity development/training on procurement, financial management, community development, and safeguards, as well as operations and maintenance		
3	Mar 31 (2012)	REG: Determining the Potential for Carbon Capture and Storage in Southeast Asia - Supplementary Financing	Energy						country-specific road maps, scoping analysis reports, CCS demonstration training materials/proceedings, study tour/meeting reports, aide memoires, policy statements, regional workshop, location-specific pre-feasibility analysis for CCS pilot		
4	Sep 30 (2012)	TON: Outer Island Energy Efficiency Project	Energy		Improve access of female headed households to renewable generated, modern electricity services, provide gender awareness training	reduce power supply cost and increase access to modern energy services essential for socio-economic development and provide progressive benefit to poorer households, help prevent decline in real incomes, project to examine opportunities to use fuel savings to subsidize lifeline tariffs targeting poor and female headed households, design capacity building on use of electricity to enhance livelihood, income sources and education			Due diligence study (technical, economic, financial, social, environment), network study, assets inventory, study on potential of solar streetlighting, capacity building/training programs, O&M, manuals		
5	Mar 31 (2012)	TON: Outer Island Renewable Energy Development Project	Energy	400	Improve access of female headed households to renewable generated, modern electricity services, provide gender awareness training	reduce power supply cost and increase access to modern energy services essential for socio-economic development and provide progressive benefit to poorer households, help prevent decline in real incomes, project to examine opportunities to use fuel savings to subsidize lifeline tariffs targeting poor and female headed households, design capacity building on use of electricity to enhance livelihood, income sources and education			country-specific road maps, scoping analysis reports, CCS demonstration training materials/proceedings, study tour/meeting reports, aide memoires, policy statements, regional workshop, location-specific pre-feasibility analysis for CCS pilot		

CCS = carbon capture and storage, CO₂ = carbon dioxide, CE = clean energy, PRC = China, People's Republic of, DMC = developing member country, HH = household, INO = Indonesia, O&M = operations and maintenance, REG = regional, RE = renewable energy, TON = Tonga.

Note: Include adjustments made on projects, such as project approval by ADB or withdrawal.

Source: ADB estimates.

Table A6.2 continued

				Outputs Performance Targets and Indicators, By 2013								
No.	Batch	Project Name	Sector	700,000 HHs provided with access to energy	80% of access to energy projects supported address gender benefits	50% of projects supported provide co-benefits	18 national and local policies enabling CE development in DMCs	15 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			
Direct Charges				Total	75,000							
				2008								
				2009								
				2010								
				2011	75,000							
				2012	-							
				Total			1		1	-	1	39
				2008						-	-	6
				2009						-	1	8
				2010						-	-	6
				2011			1		1	-	-	9
				2012			-		-	-	-	10
2012												
1	n/a	IND: Preparation of the Utility Scale Concentrated Solar Power Program	Energy						review reports and CSP workshop			
2	n/a	NEP: Sustainable Rural Ecology for Green Growth	Multisector						Project design features on pyrolysis of biomass producing rural energy			
3	n/a	REG: 7th Asia Clean Energy Forum 2012	Energy						forum and pre- and post-forum side events to share knowledge and best practices towards achieving clean energy technology transfer and deployment in Asia Pacific, forum documents			
4	n/a	REG: Carbon Capture and Storage in Developing Asia	Energy						CCS knowledge sharing at international technical conference			
5	n/a	REG: Carbon Forum Asia 2012	Energy						forum to exchange information on carbon market, showcasing carbon sellers and CDM projects, forum documents			
6	n/a	REG: Clean Energy Expo Asia 2012	Energy						conference and exhibit covering financing opportunities and market trends, legislation and policies and technological innovation in RE, EE and sustainable development, forum documents			
7	n/a	REG: Clean Energy Technology Knowledge Sharing 2012	Energy						knowledge sharing program			
8	n/a	REG: Fourth Meeting of the Asia Solar Energy Forum	Energy						solar energy forum, field trip			
9	n/a	REG: Mainstreaming the Asia Solar Energy Initiative II	Energy						Asia Solar Energy Forum registration, ASEF information portal			
10	n/a	VIE: Partnership for Market Readiness	Energy						Organizing framework			
TOTAL FOR TAs AND DCs												
2008												
2009												
2010												
2011				75,000								
2012				400								
Total Amounts				75,400								
2008							3	3	12			
2009							1	3	13			
2010							4	3	21			
2011				1		1	-	-	13			
2012				3		3	1	-	15			
Total Projects Contributing to Outputs						4	4	8	72			

ASEF = Asia Solar Energy Forum, CCS = carbon capture and storage, CDM = clean development mechanism, CE = clean energy, CSP = concentrated solar power, DMC = developing member country, DC = direct charge, EE = energy efficiency, HH = households, IND = India, NEP = Nepal, REG = regional, RE = renewable energy, TA = technical assistance, VIE = Viet Nam.

Note: Include adjustments made on projects, such as project approval by ADB or withdrawal.

Source: ADB estimates.

Table A7.1: CEFPF Activities Against Target Outputs

Indicator	Target	1 January - 31 December 2012					Cumulative ^a (As of 31 December 2012)				
		GCI	TALL	TA	DC	Total	GCI	TALL	TA	DC	Total
Allocations (\$'000)		1,500	750	3,925	684	6,859	20,200	9,975	39,055	3,072	72,302
No. of projects receiving allocation		1	1	5	10	17	10	11	33	39	93
CE Investments in DMCs Increased											
CE Investments in DMCs leveraged (\$'000)	\$2.5 billion ^b	1,500	50,000	3,440	-	54,940	394,680	1,154,686	3,440	-	1,552,806
CE investments leveraged per US\$ of CEFPF financing (\$)		8					21				
Deployment of New Technologies with Strong Demonstration Effect Facilitated											
Technologies Deployed	55 technologies	1	1	6	2	10	7	20	25	13	38
No. of projects contributing to the deployment of new CE technologies in DMCs		1	1	5	2	9	10	10	30	13	63
No. of CCS demonstration projects commencing in identified priority countries	2	-	-	-	-	-	-	-	-	-	-
New Approaches/Methodologies to Promote CE/CCS Introduced											
Approaches/methodologies introduced	15 approaches	1	0	0	0	1	2	1	0	1	4
No. of projects introducing new approaches/ methodologies to promote CE/CCS in participating DMCs		1	0	0	0	1	2	1	0	1	4
% of projects contributing to introduction of new approaches/methodologies		100%	0%	0%	0%	6%	200%	100%	0%	10%	12%
Benefits from Access to Energy Delivered											
No. of projects with access to energy component		1	0	3	0	4	2	0	3	1	6
% of projects with access to energy component		100%	0%	60%	0%	24%	67%	0%	33%	5%	18%
No. of HHs provided with access to energy in participating DMCs	700,000	0	0	400	0	400	16,000	0	400	75,000	91,400
HHs connected to electricity	350,000	0	0	400	0	400	16,000	-	400	75,000	91,400
HHs connected to modern fuels and/or efficient devices for cooking	175,000	0	0	0	0	-	-	-	-	-	-
HHs connected to modern fuels and/or efficient devices for heating	175,000	0	0	0	0	-	-	-	-	-	-
% of access to energy projects providing gender benefits	80%	-	-	100%	-	100%	100%	-	100%	100%	100%
No. of access to energy projects with gender benefits		1	0	3	0	4	2	-	3	1	6
Health, Environment and Productivity Benefits Provided											
% of projects providing health, environment and productivity benefits	50%	100%	100%	60%	0%	29%	67%	50%	33%	5%	21%
No. of projects providing health, environment and productivity benefits		1	1	3	0	5	2	1	3	1	7
Barriers to CE/CCS Investments Lowered											
National or local policies enabling CE/CCS development in participating DMCs developed	18	0	1	1	0	2	0	2	7	0	9
No. of projects contributing to lowering of policy barriers		0	1	1	0	2	0	2	9	0	11
Financing models suitable for bundling small CE/CCS investment applied in participating DMCs	15	1	1	0	0	1	3	3	8	1	12
No. of projects contributing to lowering of financing barriers		1	1	0	0	2	3	4	8	1	16
No. of projects producing and/or disseminating knowledge products or contributing to building capacity to promote CE/CCS development in participating DMCs		1	1	5	10	17	10	11	33	39	93
% of projects producing/disseminating knowledge products or contributing to capacity building	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

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

^a Includes adjustments made on projects, such as projects approved by ADB or withdrawn. Contains new performance indicators added in the updated Clean Energy Funds DMF. Monitoring and reporting of new indicators under the updated DMF covers projects starting 2011.

^b This is the cumulative total target of the clean energy funds by 2013, supporting the \$2 billion annual target of ADB.

Note: Numbers may not add-up to total due to multiple counting.

Source: ADB estimates.

Table A8.1: Status of Grant

		<u>Statement 1</u>
ASIAN DEVELOPMENT BANK ADMINISTRATOR FOR CLEAN ENERGY FUND		
STATUS OF GRANT 31 December 2012 (Amounts in US dollar)		
TOTAL CONTRIBUTION COMMITTED		47,200,745.93
Gain (loss) arising from change in value of currency		<u>(711,144.08)</u>
Amount received:		
Government of Australia (AUD13,584,000)	13,333,980.70	
Government of Norway (NOK80,000,000)	13,232,834.37	
Government of Spain (USD9,500,000)	9,500,000.00	
Government of Sweden (SEK55,000,000)	<u>7,353,795.86</u>	43,420,610.93 ^{a/}
Receivable from:		
Government of Sweden (SEK 20,000,000) ^{b/}		<u>3,068,990.92</u>
NET CONTRIBUTION AVAILABLE		46,489,601.85
Add: Interest income	46,846.95	
Income from investments	252,535.26	
Gain/(Loss) on foreign exchange transactions	<u>1,549.52</u>	<u>300,931.73</u>
TOTAL AMOUNT AVAILABLE		46,790,533.58
Less amounts utilized for:		
Project Expenditures (Statement 2)		
Grant Component of Investment (GCI)	(133,686.02)	
Technical Assistance Linked to Loan (TALL)	(1,315,872.57)	
Technical Assistance (TA)	(4,637,596.58)	
Direct Charges	(1,904,654.84)	
ADB Administration Cost	(292,111.50)	
Audit Fees	(83,213.00)	
Financial expense - bank charges	<u>(4,471.88)</u>	<u>(8,371,606.39)</u>
UNUTILIZED BALANCE		38,418,927.19 ^{c/}
Less: Outstanding commitments - GCI, TALL and TA	(14,953,835.29)	
Reserve for ADB administration cost	(489,938.03) ^{d/}	
Undisbursed Direct Charges	<u>(478,419.41)</u>	<u>(15,922,192.73)</u>
UNCOMMITTED BALANCE		22,496,734.46
Less projects approved but not yet effective:		
G0303 Clean Energy and Network Efficiency Improvement		
Project (GCI)	(1,500,000.00)	
TA 7636-PRC: Municipal Natural Gas Infrastructure Development		
Project (TALL)	(592,000.00)	
TA 8197-BAN: Supporting Brick Sector Development		
Program (TALL)	(750,000.00)	
TA 8287-INO: Scaling Up Renewable Energy Access in Eastern		
Indonesia (TA)	(1,000,000.00)	
TA 8296-TON: Outer island Energy Efficiency Project (TA)	(400,000.00)	
Reserve for ADB administration cost	<u>(212,100.00)</u> ^{d/}	<u>(4,454,100.00)</u>
UNCOMMITTED BALANCE AVAILABLE FOR NEW COMMITMENTS		<u>18,042,634.46</u>

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

^{b/} Represents additional contribution from Government of Sweden, translated at the applicable rate of exchange as of 31 December 2012.

^{c/} Represented by:

Cash in bank	4,121,690.94
Investment	31,105,499.57
Accrued interest	1,894.70
Interfund receivable	7,003.40
Advances-Suppliers/Contractors	25,249.55
Advances under TA Grants	216,000.00
Undrawn contribution	3,068,990.92
Interfund payable	(118,082.15)
Accounts payable - Internal	(366.74)
Accrued expenses	<u>(8,953.00)</u>
	<u>38,418,927.19</u>

^{d/} 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 and Direct Charges
Clean Energy Fund
As of 31 December 2012
(Expressed in US dollars)

TA/Grant Title Approved Application	TA/Grant/ Application No./Type	Date of Approval	TA/Grant/ Direct Charge Amount ¹⁷	Amount Received	Project/Direct Charge Expenditures ²⁰			Outstanding Commitments	Expected TA/Grant Completion Date	Completed TAs	
					Cumulative up to 31/12/11	Transactions 01/01-31/12/12	Cumulative up to 31/12/12			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):											
China, People's Republic of											
Integrated Renewable Biomass Energy Development Project	G0202	16Apr10	3,000,000.00		42,996.00	57,329.00	100,325.00	2,899,675.00	30-Jun-16		
Indonesia											
Java-Bali Electricity Distribution Performance Improvement Project	G0198	22Mar10	1,000,000.00		-	-	-	1,000,000.00	31-Oct-14		
Nepal											
Energy Access and Efficiency Improvement Project	G0183	27Nov09	4,200,000.00		-	33,361.02	33,361.02	4,166,638.98	30-Sep-14		
Thailand											
NSP: Solar Power Project	G0201	16Apr10	2,000,000.00		-	-	-	2,000,000.00	30-Jun-13		
Sub Total			10,200,000.00	-	42,996.00	90,690.02	133,686.02	10,066,313.98		-	
Technical Assistance Linked to Loan (TALL):											
China, People's Republic of											
Guangdong Energy Efficiency and Environment Improvement Investment Program	G0109	04Jun08	800,000.00		-	274,522.84	274,522.84	525,477.16	31-Dec-13		
NSP: Municipal Waste to Energy Project	7294/CD	04Jun09	653,000.00		164,854.00	-	164,854.00	488,146.00	15-Feb-15		
Development of Energy Manager Program for Energy Conservation in Shandong	7817/CD	31May11	1,000,000.00		-	127,230.00	127,230.00	872,770.00	30-Dec-13		
Lao People's Democratic Republic											
Hydropower Impacts and Best Practices : A Communications Project	8058/CD	8-Feb-12	180,000.00		-	-	-	180,000.00	31-Dec-17		
Sri Lanka											
Demand-Side Management for Municipal Street Lighting	7267/CD	14-Apr-09	800,000.00		404,062.66	345,203.07	749,265.73	-		50,734.27	20-Dec-12
Sub Total			3,433,000.00	-	568,916.66	746,955.91	1,315,872.57	2,066,393.16		50,734.27	
Technical Assistance (TA):											
China, People's Republic of											
Innovating Financing Mechanisms for Energy Efficiency and Emissions Reduction in SMEs	7564/PA	21Jul10	300,000.00		137,848.64	159,404.56	297,253.20	2,746.80	31-Dec-12		
Renewable Energy Development in Qinghai	7643/CD	10Nov10	200,000.00		197,929.88	2,070.12	200,000.00	-		-	27-Dec-12
Developing Smart Grid Technology for Efficient Utilization of Renewable Energy	7721/CD	08Dec10	900,000.00		130,788.53	204,270.94	335,059.47	564,940.53	30-Jun-13		

TA/Grant Title Approved Application	TA/Grant/ Application No./Type	Date of Approval	TA/Grant/ Direct Charge Amount *	Amount Received	Project/Direct Charge Expenditures ^d			Outstanding Commitments	Expected TA/Grant Completion Date	Completed TAs	
					Cumulative up to 31/12/11	Transactions 01/01-31/12/12	Cumulative up to 31/12/12			Unutilized Commitment (Savings)	Financial Completion Date
			(A)	(B)	(C)	(D)	(E) = (C) + (D)	(F) = (A) - (E)	(G)	(H) = (A) - (E)	(I)
Technical Assistance (TA):											
Philippines											
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
Sri Lanka											
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
Thailand											
Mainstreaming Energy Efficiency Measures in Thai Municipalities	7194/AO	8-Dec-08	1,000,000.00		502,185.57	236,632.45	738,818.02	-		261,181.98	22-Jun-12
Tonga											
Outer Island Renewable Energy Project	7940/PP	2-Dec-11	225,000.00		-	23,072.97	23,072.97	201,927.03	31-Dec-12		
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		511,046.95	630,870.21	1,141,917.16	1,858,082.84	30-Dec-13		
Promoting Renewable Energy, Clean Fuels, and Energy Efficiency in the Greater Mekong Subregion	7679/CD	18Nov10	200,000.00		10.00	6,559.05	6,569.05	193,430.95	18-Jul-13		
Sub Total			7,825,000.00	-	3,374,716.28	1,262,880.30	4,637,596.58	2,821,128.15		366,275.27	
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			
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

TA/Grant Title Approved Application	TA/Grant/ Application No./Type	Date of Approval	TA/Grant/ Direct Charge Amount	Amount Received	Project/Direct Charge Expenditures ^{d/}			Outstanding Commitments (F) = (A) - (E)	Expected TA/Grant Completion Date (G)	Completed TAs	
					Cumulative up to 31/12/11 (C)	Transactions 01/01-31/12/12 (D)	Cumulative up to 31/12/12 (E) = (C) + (D)			Unutilized Commitment (Savings) (H) = (A) - (E)	Financial Completion Date (I)
					(A)	(B)	(C)			(D)	(E) = (C) + (D)
Direct Charge (DC):											
CDN Baseline Study for Rehabilitation of Pre-Cast Panel Buildings in Ulaanbaatar	CEFPDC 00016	10-Sep-09	75,000.00		51,338.58	-	51,338.58	23,661.42			
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		66,220.89	11,509.28	77,730.17		22,269.83	14-May-12	
Clean Energy Expo Asia 2010	CEFPDC 00022	2-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	2-Mar-11	100,000.00		89,391.15	(1,864.14)	87,527.01	12,472.99			
Wind Energy Futures in Asia - Regional Consultation and Report	CEFPDC 00028	30-May-11	150,000.00		16,063.18	21,329.52	37,392.70	112,607.30			
Mainstreaming the Asia Solar Energy Initiative	CEFPDC 00030	7-Jul-11	43,200.00		10,212.27	32,600.75	42,813.02	386.98			
Carbon Forum Asia 2011	CEFPDC 00031	14-Jul-11	50,000.00		43,198.17	6,735.39	49,933.56	-	66.44	28-Jun-12	
Clean Energy Expo Asia 2011	CEFPDC 00032	2-Aug-11	50,000.00		11,941.47	14,669.63	26,611.10	-	23,388.90	25-Sep-12	
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			
Solar Energy Training	CEFPDC 00034	9-Dec-11	100,000.00		-	98,159.62	98,159.62	1,840.38			
Partnership for Market Readiness (PMR) Project in Vietnam	CEFPDC00035	16-Jan-12	60,000.00		-	18,583.14	18,583.14	41,416.86			
Sustainable Rural Ecology for Green Growth	CEFPDC00036	2-Mar-12	50,000.00		-	21,637.51	21,637.51	28,362.49			
Fourth Meeting of the Asia Solar Energy Forum (ASEF)	CEFPDC00037	23-Mar-12	50,000.00		-	9,021.38	9,021.38	40,978.62			
7th Asia Clean Energy Forum 2012	CEFPDC00038	24-Apr-12	150,000.00		-	139,988.06	139,988.06	10,011.94			
Mainstreaming the Asia Solar Energy Initiative (ASEI) II	CEFPDC00039	30-May-12	30,000.00		-	23,645.78	23,645.78	6,354.22			
Clean Energy Expo Asia 2012	CEFPDC00040	31-Jul-12	50,000.00		-	13,590.43	13,590.43	36,409.57			
Carbon Forum Asia 2012	CEFPDC00041	21-Aug-12	50,000.00		-	-	36,049.60	13,950.40			
Preparation of Utility Scale Concentrated Solar Power Program	CEFPDC00042	3-Sep-12	75,000.00		-	-	-	75,000.00			
Clean Energy Technology Knowledge Sharing 2012	CEFPDC00043	19-Sep-12	100,000.00		-	-	55,236.09	44,763.91			
Sub Total			2,873,200.00	-	1,363,241.38	450,127.77	1,904,654.84	478,419.41	490,125.75		
TOTAL APPROVED and EFFECTIVE PROJECTS			24,331,200.00	43,420,610.93	5,349,870.32	2,550,654.00	7,991,810.01	15,432,354.70	907,135.29		

TA/Grant Title Approved Application	TA/Grant/ Application No./Type ^{4/}	Date of Approval	TA/Grant/ Direct Charge Amount ^{1/}	Amount Received (B)	Project/Direct Charge Expenditures ^{2/}			Outstanding Commitments (F) = (A) - (E)	Expected TA/Grant Completion Date (G)	Completed TAs	
					Cumulative up to 31/12/11 (C)	Transactions 01/01-31/12/12 (D)	Cumulative up to 31/12/12 (E) = (C) + (D)			Unutilized Commitment (Savings) (H) = (A) - (E)	Financial Completion Date (I)
Add:											
Approved But Not Yet Effective Projects											
Grant Component of Investment (GCI):											
Sri Lanka											
Clean Energy and Network Efficiency Improvement Project	G0303	18Sep12	1,500,000.00								
Sub Total			1,500,000.00								
Technical Assistance Linked to Loan (TALL):											
Bangladesh											
Supporting Brick Sector Development Program	8197/CD	22Oct12	750,000.00								
China, People's Republic of											
Municipal Natural Gas Infrastructure Development Project (P2)	7636/CD	09Nov10	592,000.00								
Sub Total			1,342,000.00								
Technical Assistance (TA):											
Indonesia											
Scaling Up Renewable Energy Access in Eastern Indonesia	8287/CD	12Dec12	1,000,000.00								
Tonga											
Outer Island Energy Efficiency Project	8296/PP	17Dec12	400,000.00								
Sub Total			1,400,000.00								
TOTAL APPROVED BUT NOT YET EFFECTIVE PROJECTS			4,242,000.00								
GRAND TOTAL			28,573,200.00								

NOTE: TA 7171/AO (Railway Sector Energy Efficiency Strategy) was cancelled on 25 July 2011

Contributions received:

Government of Australia	AUD13,584,000	13,333,980.70
Government of Norway	NOK80,000,000	13,232,834.37
Government of Spain	USD9,500,000	9,500,000.00
Government of Sweden	SEK55,000,000	7,353,795.86
		<u>43,420,610.93</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

Statement 1

ASIAN DEVELOPMENT BANK
ADMINISTRATOR FOR
ASIAN CLEAN ENERGY FUND (ACEF)
FROM THE GOVERNMENT OF JAPAN

STATUS OF GRANT (CONTRIBUTION)
as of 31 December 2012
(Amounts in US dollar)

TOTAL CONTRIBUTION COMMITTED (JPY5,472,500,000)		55,702,503.17
Net gain arising from change in value of currency		<u>1,389,186.53</u>
NET CONTRIBUTION RECEIVED		57,091,689.70 [/]
Add: Income from Investments	854,428.62	
Interest income from bank account	18,958.53	
Gain on foreign exchange transactions	<u>49,009.98</u>	<u>922,397.13</u>
TOTAL AMOUNT AVAILABLE		58,014,086.83
Less amounts utilized for		
Project expenditures (Statement 2)		
Grant Component of Investment (GCI)	(1,078,010.11)	
Technical Assistance Linked to a Loan (TALL)	(1,145,950.97)	
Technical Assistance (TA)	(5,951,488.16)	
ADB administration cost	(376,432.13) ^{b/}	
Audit fee	(59,900.00)	
Financial expense - bank charges	<u>(3,742.95)</u>	<u>(8,615,524.32)</u>
UNUTILIZED BALANCE		49,398,562.51 ^{a/}
Less: Outstanding commitments-GCI, TALL and TA	(22,908,795.93)	
Reserve for ADB administration cost	<u>(1,042,780.10) ^{b/}</u>	<u>(23,951,576.03)</u>
UNCOMMITTED BALANCE		<u><u>25,446,986.48</u></u>

^{a/} Represented by:

Cash	2,066,713.35
Investments	46,941,235.34
Interfund receivable	40,273.79
Accrued interest	2,999.02
Advances	409,195.53
Interfund payable	(25,454.52)
Accrued expense	<u>(36,400.00)</u>
	<u><u>49,398,562.51</u></u>

^{b/} Represents 5% and 2% of TA and Grant project expenditures outstanding commitments.

ASIAN DEVELOPMENT BANK
Statement of TA/Grant Expenditures - Government of Japan
Asian Clean Energy Fund
As of 31 December 2012
(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	
					Cumulative up to 31/12/11	Transactions 01/01-31/12/12	Cumulative up to 31/12/12			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):											
Bangladesh											
Public-Private Infrastructure Development	0254	17May2011	2,000,000.00		-	-	-	2,000,000.00	30-Jun-14		
Bhutan											
Green Power Development Project	0141	26Dec08	1,000,000.00		711,421.93	157,210.98	868,632.91	131,367.09	31-Dec-13		
Philippines											
Philippine Energy Efficiency Project	0142	29Jan09	1,500,000.00		209,377.20	-	209,377.20	1,290,622.80	30-Jun-13		
Sub Total			4,500,000.00	-	920,799.13	157,210.98	1,078,010.11	3,421,989.89			
Technical Assistance Linked to Loan (TALL):											
Bangladesh											
Energy Efficiency Improvement	7642/CD	10Nov10	1,500,000.00		45,818.00	171,645.13	217,463.13	1,282,536.87	31-Aug-13		
India											
Capacity Building for Commercial Bank Lending for Solar Energy	7802/CD	08Apr11	750,000.00		9,032.85	27,105.56	36,138.41	713,861.59	31-Mar-14		
Indonesia											
Institutional Capacity Building of Indonesia Eximbank	7793/CD	25Mar11	1,100,000.00		16,764.50	346,036.89	362,801.39	737,198.61	30-May-13		
Sri Lanka											
Implementation of Energy Efficiency Policy Initiative	7778/CD	27Jan11	1,850,000.00		158,765.28	370,782.76	529,548.04	1,320,451.96	31-Jul-13		
Sub Total			5,200,000.00	-	230,380.63	915,570.34	1,145,950.97	4,054,049.03			
Technical Assistance (TA):											
Mongolia											
Ulaanbaatar Clean Air	7462/PA	14Dec09	500,000.00		453,668.78	35,004.73	488,673.51			11,326.49	18-Oct-12
Philippines											
Three Wind Farm Projects in Luzon	7569/PP	30Jul10	630,000.00		123,074.41	129,214.71	252,289.12	377,710.88	24-Jan-13		
Rural Community-Based Renewable Energy Development in Mindanao	7781/PA	16Feb11	2,000,000.00		48,644.48	9,159.10	57,803.58	1,942,196.42	31-Aug-13		

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	
					Cumulative up to 31/12/11	Transactions 01/01-31/12/12	Cumulative up to 31/12/12			Unutilized Commitment (Savings)	Financial Completion Date
			(A)	(B)	(C)	(D)	(E) = (C) + (D)	(F) = (A) - (E)	(G)	(H) = (A) - (E)	(I)
Technical Assistance (TA):											
Regional											
Strengthening the Capacity of Pacific DMC to Respond to Climate Change	7394/CD	23Nov09	1,500,000.00		365,023.30	568,429.85	933,453.15	566,546.85	5-Dec-13		
Needs Assessment and Development of the Solar Energy Program	7510/CD	17Mar10	1,000,000.00		571,064.79	194,506.87	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	09Apr10	2,000,000.00		543,282.87	574,743.93	1,118,026.80	881,973.20	31-Dec-14		
	7613/CD	01Oct10	2,000,000.00		943,412.56	147,829.49	1,091,242.05	908,757.95	31-Dec-13		
Enabling Climate Change Responses in Asia and the Pacific Promoting Renewable Energy, Clean Fuels, and Energy Efficiency in the Greater Mekong Subregion	7645/RD	15Nov10	700,000.00		46,871.87	442,675.13	489,547.00	210,453.00	30-Jun-13		
	7679/CD	18Nov10	800,000.00		161,958.57	235,189.53	397,148.10	402,851.90	18-Jul-13		
Promoting Energy Efficiency in th Pacific, Phase II Enhancing Knowledge on Climate Technology and Financing Mechanism	7798/CD	31Mar11	1,500,000.00		-	-	-	1,500,000.00	31-Mar-15		
	7842/CD	01Aug11	1,500,000.00		109,239.63	109,730.64	218,970.27	1,281,029.73	31-Dec-13		
Quantum Leap wind Power Development In Asia And the Pacific	7990/CD	09Dec11	2,000,000.00		-	138,438.92	138,438.92	1,861,561.08	31-Dec-14		
Promotion of Investment in Climate Techonology Products Through Venture Cap	8018/PA	20Dec11	1,500,000.00		-	-	-	1,500,000.00	31-Dec-14		
Demonstration of an Assisted Brkr Model fr Transfer Low-Carbn Tech	8105/CD	15Jun12	2,000,000.00		-	-	-	2,000,000.00	31-Jul-14		
Economics of Climate Change in Central	8119/RD	18Jul12	2,000,000.00		-	324.00	324.00	1,999,676.00	31-Dec-14		
Sub Total			21,630,000.00	-	3,366,241.26	2,585,246.90	5,951,488.16	15,432,757.01		245,754.83	
TOTAL APPROVED and EFFECTIVE PROJECTS			31,330,000.00	57,091,689.70 ^{3/}	4,517,421.02	3,658,028.22	8,175,449.24	22,908,795.93		245,754.83	
GRAND TOTAL			31,330,000.00								

Contributions received from Government of Japan:

Government of Japan	JPY2,320,000,000	USD 23,050,173.41
Government of Japan	JPY1,107,400,000	11,078,086.85
Government of Japan	JPY1,297,800,000	13,995,470.72
Government of Japan	JPY 747,300,000	8,967,958.72
	<u>JPY 5,472,500,000</u>	<u>57,091,689.70 ^{3/}</u>

^{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

Statement 1

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

STATUS OF GRANT (CONTRIBUTION)

As of 31 December 2012

(Amounts in US dollar)

TOTAL CONTRIBUTION COMMITTED		73,667,304.18 ^{a/}
Add: Gain arising from change in value of currency		<u>290,678.82</u>
Amount received:		
Amount received from Australia (AUD 21,500,000)	17,322,509.72	
Amount received from DECC - Promissory Note (GBP 10,000,000)	<u>16,233,000.00</u>	33,555,509.72
Receivable from:		
Receivable from DECC - Promissory Note (GBP 25,000,000)		<u>40,402,473.28</u> ^{d/}
NET CONTRIBUTION AVAILABLE		73,957,983.00
Add: Interest income	1,016.92	
Income from investment	107,682.80	
Gain (loss) on foreign exchange transactions	<u>843.91</u>	<u>109,543.63</u>
TOTAL AMOUNT AVAILABLE		74,067,526.63
Less amounts utilized for:		
Project Expenditures (Statement 2)		
Technical Assistance (TA)	(2,689,281.50)	
Direct Charges	(146,296.35)	
ADB administration cost	(134,464.07) ^{c/}	
Audit fee	(29,732.00)	
Financial expense - bank charges	<u>(2,527.72)</u>	<u>(3,002,301.64)</u>
UNUTILIZED BALANCE		71,065,224.99 ^{b/}
Less: Outstanding commitments	(4,010,718.50)	
Reserve for ADB administration cost	(200,535.93) ^{c/}	
Undisbursed Direct Charges	<u>(52,703.65)</u>	<u>(4,263,958.08)</u>
UNCOMMITTED BALANCE		<u><u>66,801,266.91</u></u>

^{a/} Represents actual US\$ equivalent of contribution committed.

^{b/} Represented by:		
Cash in bank		1,500,009.33
Investments		29,189,738.29
Accrued interest		1,459.90
Inerfund receivable		19,038.55
Undrawn contribution		40,402,473.28 ^{c/}
Advances		6,081.00
Interfund payable		<u>(53,575.36)</u>
		<u><u>71,065,224.99</u></u>

^{c/} Represents 5% of the project expenditures (TA) outstanding commitments.

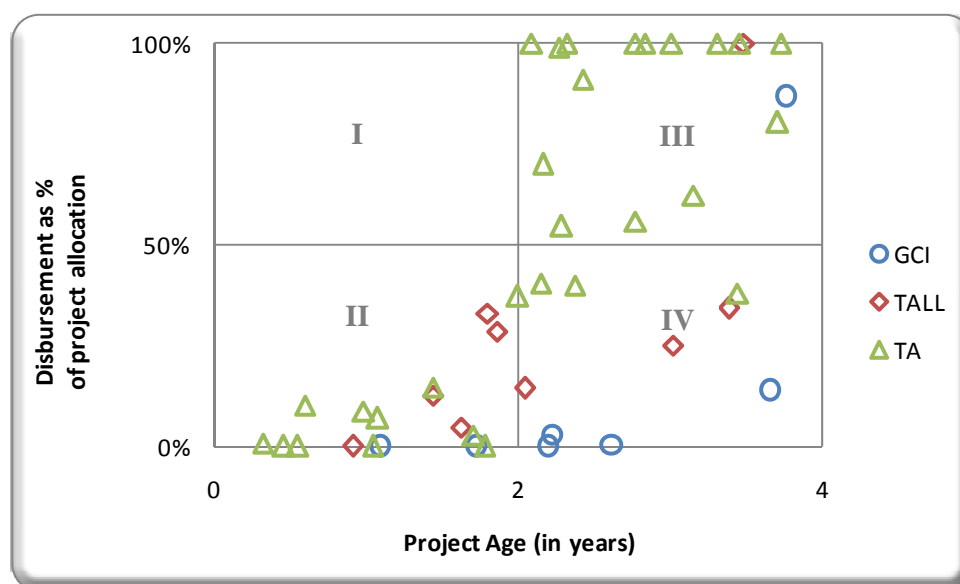
^{d/} Undrawn contributions in local currency are translated at the applicable exchange rate as of 31 December 2012. This represents the balance of promissory note received from DECC (GBP 25,000,000).

ASIAN DEVELOPMENT BANK
Statement of TA Expenditures - Carbon Capture and Storage Fund
As of 31 December 2012
(Expressed in US dollars)

TA/DC Title	TA/DC No./Type ^{4/}	Date of Approval	TA/DC Amount ^{1/}	Amount Received	Project Expenditures ^{2/}			Outstanding Commitments	Expected TA Completion Date	Completed TAs	
					Cumulative up to 31/12/11	Transactions 01/01-31/12/12	Cumulative up to 31/12/12			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):											
PRC											
Carbon Dioxide Capture and Storage (CCS) Demonstration- Strategic Analysis and Capacity Strengthening	7286/CD	22-May-09	1,000,000.00		844,444.92	155,555.08	1,000,000.00	-			18-Oct-12
Study on Carbon Capture & Storage in Natural Gas Based Power Plants	8001/CD	12-Dec-11	1,800,000.00		-	158,587.54	158,587.54	1,641,412.46	31-Dec-13		
Road Map for Carbon Capture and Storage Demonstration and Deployment	8133/PA	10-Aug-12	2,200,000.00		-	18,454.02	18,454.02	2,181,545.98	15-Mar-14		
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		245,463.13	35,714.28	281,177.41	68,822.59	31-Dec-12		
Determining the Potential for Carbon Capture and Storage (CCS) in Southeast Asia	7575/CD	11-Aug-10	1,350,000.00		726,927.25	504,135.28	1,231,062.53	118,937.47	30-Jun-13		
Sub Total			6,700,000.00	-	1,816,835.30	872,446.20	2,689,281.50	4,010,718.50			
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			
Reg: International Carbon Capture Storage Conference	CCSFDC 00029	11-Jul-11	80,500.00		74,918.28	-	74,918.28	5,581.72			
Reg: Carbon Capture and Storage in Developing Asia	CCSFDC 00044	9-Oct-12	68,500.00		-	45,192.82	45,192.82	23,307.18			
Sub Total			199,000.00	-	101,103.53	45,192.82	146,296.35	52,703.65			
TOTAL APPROVED AND EFFECTIVE PROJECTS			6,899,000.00	USD	33,555,509.72 ^{3/}	1,917,938.83	917,639.02	2,835,577.85	4,063,422.15		

AUD	21,500,000.00	US Equivalent	\$ 17,322,509.72
GBP	10,000,000.00		\$ 16,233,000.00
			\$ 33,555,509.72

^{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; CCSFDC=Carbon Capture Storage Fund Direct Charges

Figure A9: Disbursement Ratios of GCIs, TALLs, & TAs as of 31 December 2012

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: ADB estimates.

Figure A9 presents the disbursement ratios of GCI, TALL, and TA projects supported by CEFPP.

- **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 the 45) that are more than 2 years but have not made significant disbursements. These projects are a cause for concern for the facility. In this regard, the CEFPP Management requested information from relevant project teams regarding the slow disbursements of projects. Among the causes cited for the delay include: a) unsuccessful procurement due to lack of qualified consultants/bidders, b) delay in submission of payment claims, c) lead agency's unfamiliarity with new technologies or approaches, d) change in management of lead agency, and e) project change in scope in view of available information 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 \$17.7 million project allocation in *Quadrant IV* have been awarded in contracts, or 45%³² of total allocation in said quadrant. Through regular process of administration and supervision, project teams inform and

³² Contracts awarded ratio is computed as total contracts awarded over approved allocations.

remind EAs of liquidation and payment procedures. EAs are likewise encouraged to commit to results by agreeing to time-bound implementation plans. 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.

Table A10.1: CEFPF Portfolio Profile – Resource Utilization, as of 31 December 2012 (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		
							GCI	TALL	TA	DC	CEF	ACEF	CCSF
I. Allocations to projects approved by ADB for implementation													
2008 TOTALS (17 projects)					416,100	14,086	4,590	1,656	7,350	490	8,446	4,590	1,050
2009 TOTALS (17 projects)					245,000	14,229	8,364	686	4,568	612	9,662	4,200	368
2010 TOTALS (28 projects)					822,500	28,871	2,100	7,132	19,037	603	6,055	21,872	945
2011 TOTALS (16 projects)*					538,000	10,945	4,140	189	5,933	684	2,842	5,715	2,388
1	Solar Rooftop Pilot under Clean Energy and Network Efficiency Improvement Project	Energy	SARD	SRI	130,000	1,575	1,575				1,575		
2	Supporting Brick Sector Development	Multisector	SARD	BAN	50,000	788		788			788		
3	Outer Island Renewable Energy Development Project	Energy	PARD	TON	2,000	236			236		236		
4	Road Map for CCS Demonstration and Deployment	Multisector	EARD	PRC		2,310			2,310				2,310
5*	Determining the Potential for Carbon Capture and Storage (CCS) in Southeast Asia (2nd supplementary financing)	Energy	SERD	REG		105			105				105
6	Partnership for Market Readiness (PMR) Project in Vietnam	Energy	SERD	VIE		60				60	60		
7	Sustainable Rural Ecology for Green Growth	Multisector	SARD	NEP		50				50	50		
8	Fourth Meeting of the Asia Solar Energy Forum (ASEF)	Energy	RSDD	REG		50				50	50		
9	7th Asia Clean Energy Forum 2012	Energy	RSDD	REG		150				150	150		
10	Mainstreaming the Asia Solar Energy Initiative II	Energy	RSDD	REG		30				30	30		
11	Clean Energy Expo Asia 2012	Energy	RSDD	REG		50				50	50		
12	Carbon Forum Asia 2012	Energy	RSDD	REG		50				50	50		
13	Preparation of Utility Scale Concentrated Solar Power Program	Energy	SARD	IND		75				75	75		
14	Clean Energy Technology Knowledge Sharing 2012	Energy	RSDD	REG		100				100	100		
15	Carbon Capture and Storage in Developing Asia	Energy	SERD	REG		69				69			69
16	Scaling Up Renewable Energy Access in Eastern Indonesia	Energy	SERD	INO		1,050			1,050		1,050		
17	Outer Island Energy Efficiency Project	Energy	PARD	TON		420			420		420		
Subtotal					2,203,600	75,299	20,769	10,450	41,008	3,072	31,688	36,377	7,234
					2,203,600	100%	41%		59%		42%	48%	10%
2012 TOTALS					182,000	7,167	1,575	788	4,121	684	4,684	-	2,484
GRAND TOTAL					2,203,600	75,299	20,769	10,450	41,008	3,072	31,688	36,377	7,234
					2,203,600	100%	41%		59%		42%	48%	10%

ACEF = Asian Clean Energy Fund, ADB = Asian Development Bank, BAN = Bangladesh, CCS = Carbon Capture and Storage, CCSF = Carbon Capture and Storage Fund, PRC = China, People's Republic, CEF = Clean Energy Fund, CEFPF = Clean Energy Financing Partnership Facility, DC = direct charge, EARD = East Asia Regional Department, GCI = grant component of investment, IND = India, INO = Indonesia, NEP = Nepal, PARD = Pacific Regional Department, REG = regional, RSDD = Regional and Sustainable Development Department, SARD = South Asia Regional Department, SERD = Southeast Asia Regional Department, SRI = Sri Lanka, TA = technical assistance, TALL = technical assistance linked to loan, TON = Tonga, VIE = Vietnam.

Note: 2008 to 2011 figures were adjusted for project realignments/withdrawal or changes in project documents following project approval by ADB Board. *The 2011 and 2012 allocations for "Determining the Potential for Carbon Capture and Storage in Southeast Asia" are supplementary financing for an earlier project of the same title.

Source: Asian Development Bank estimates.

Table A10.2: CEFPF Portfolio Profile – Regional Distribution of Projects, as of 31 December 2012 (Inclusive of fees)

No.	Project Name	Sector	Operations Dept	Country	Amounts in \$'000							
					ADB Portfolio Loan	CEFPF Allocation	Use of CEFPF Funds				Sovereign	Non-Sovereign
							GCI	TALL	TA	DC		
GRAND TOTAL					2,203,600	75,299	20,769	10,450	41,008	3,072	67,313	7,985
						100%	41%		59%		89%	11%
Central And West Asia					-	2,100	-	-	2,100	-	2,100	-
						3%	0%		100%		100%	0%
2011 Total (1 project)					-	2,100	-	-	2,100	-	2,100	-
East Asia					600,000	14,138	3,060	3,173	7,613	292	12,831	1,307
						19%	44%		56%		91%	9%
2008 Total (3 projects)					100,000	1,906	-	816	1,050	40	1,906	-
2009 Total (7 projects)					200,000	4,815	3,060	686	893	177	4,130	686
2010 Total (6 projects)					300,000	3,217	-	1,672	1,470	75	2,595	622
2011 Total (1 project)					-	1,890	-	-	1,890	-	1,890	-
2012 Total (1 project)					-	2,310	-	-	2,310	-	2,310	-
1	Road Map for CCS Demonstration and Deployment	Multisector	EARD	PRC		2,310			2,310		2,310	
Pacific					2,000	8,216	-	-	8,216	-	8,216	-
						11%	0%		100%		100%	0%
2008 Total (2 projects)					-	4,410	-	-	4,410	-	4,410	-
2009 Total (2 projects)					-	1,575	-	-	1,575	-	1,575	-
2010 Total (1 project)					-	1,575	-	-	1,575	-	1,575	-
2012 Total (2 projects)					2,000	656	-	-	656	-	656	-
2	Outer Island Renewable Energy Development Project	Energy	PARD	TON	2,000	236			236		236	
3	Outer Island Energy Efficiency Project	Energy	PARD	TON		420			420		420	
South Asia					900,000	15,757	8,919	5,933	630	275	14,969	788
						21%	94%		6%		95%	5%
2008 Total (5 projects)					285,000	4,605	3,060	840	630	75	4,605	-
2009 Total (2 projects)					45,000	4,359	4,284	-	-	75	4,359	-
2010 Total (3 projects)					390,000	4,305	-	4,305	-	-	3,518	788
2012 Total (4 projects)					180,000	2,488	1,575	788	-	125	2,488	-
4	Solar Rooftop Pilot under Clean Energy and Network Efficiency Improvement Project	Energy	SARD	SRI	130,000	1,575	1,575				1,575	
5	Supporting Brick Sector Development	Multisector	SARD	BAN	50,000	788		788			788	
6	Sustainable Rural Ecology for Green Growth	Multisector	SARD	NEP		50				50	50	
7	Preparation of Utility Scale Concentrated Solar Power Program	Energy	SARD	IND		75				75	75	

ADB = Asian Development Bank, BAN = Bangladesh, CEFPF = Clean Energy Financing Partnership Facility, CCS = Carbon Capture and Storage, PRC = China, People's Republic, DC = direct charge, EARD = East Asia Regional Department, GCI = grant component of investment, IND = India, NEP = Nepal, PARD = Pacific Regional Department, SARD = South Asia Regional Department, SRI = Sri Lanka, TA = technical assistance, TALL = technical assistance linked to loan, TON = Tonga.

Note: 2008 to 2011 figures were adjusted for project realignments/withdrawal or changes in project documents following project approval by ADB Board.

Source: Asian Development Bank estimates.

Table A10.2 - Continued

No.	Project Name	Sector	Operations Dept	Country	Amounts in \$'000						Sovereign	Non-Sovereign
					ADB Portfolio Loan	CEFPF Allocation	Use of CEFPF Funds					
							GCI	TALL	TA	DC		
South East Asia					701,600	18,393	8,790	1,344	8,064	195	14,078	4,316
						24%	55%		45%		77%	23%
2008 Total (4 projects)					31,100	2,865	1,530	-	1,260	75	2,655	210
2009 Total (1 project)					-	1,020	1,020	-	-	-	1,020	-
2010 Total (6 projects)					132,500	8,537	2,100	1,155	5,282	-	4,620	3,917
2011 Total (5 projects)*					538,000	4,757	4,140	189	368	60	4,568	189
2012 Total (3 projects)*					-	1,215	-	-	1,155	60	1,215	-
8	Determining the Potential for Carbon Capture and Storage (CCS) in Southeast Asia (2nd supplementary financing)	Energy	SERD	REG		105			105		105	
9	Scaling Up Renewable Energy Access in Eastern Indonesia	Energy	SERD	INO		1,050			1,050		1,050	
10	Partnership for Market Readiness (PMR) Project in Vietnam	Energy	SERD	VIE		60				60	60	
Regional					-	16,695	-	-	14,385	2,310	15,120	1,575
						22%	0%		100%		91%	9%
2008 Total (3 projects)					-	300	-	-	-	300	300	-
2009 Total (5 projects)					-	2,460	-	-	2,100	360	2,460	-
2010 Total (12 projects)					-	11,238	-	-	10,710	528	9,663	1,575
2011 Total (9 projects)					-	2,199	-	-	1,575	624	2,199	-
2012 Total (7 projects)					-	499	-	-	-	499	499	-
11	Fourth Meeting of the Asia Solar Energy Forum (ASEF)	Energy	RSDD	REG		50				50	50	
12	7th Asia Clean Energy Forum 2012	Energy	RSDD	REG		150				150	150	
13	Mainstreaming the Asia Solar Energy Initiative II	Energy	RSDD	REG		30				30	30	
14	Clean Energy Expo Asia 2012	Energy	RSDD	REG		50				50	50	
15	Carbon Forum Asia 2012	Energy	RSDD	REG		50				50	50	
16	Clean Energy Technology Knowledge Sharing 2012	Energy	RSDD	REG		100				100	100	
17	Carbon Capture and Storage in Developing Asia	Energy	SERD	REG		69				69	69	
GRAND TOTAL					2,203,600	75,299	20,769	10,450	41,008	3,072	67,313	7,985
					2,203,600	100%	41%		59%		89%	11%

ADB = Asian Development Bank, CEFPF = Clean Energy Financing Partnership Facility, DC = direct charge, GCI = grant component of investment, INO = Indonesia, REG = regional, RSDD = Regional and Sustainable Development Department, SERD = Southeast Asia Regional Department, TA = technical assistance, TALL = technical assistance linked to loan, VIE = Vietnam.

Note: 2008 to 2011 figures were adjusted for project realignments/withdrawal or changes in project documents following project approval by ADB Board. *The 2011 and 2012 allocations for "Determining the Potential for Carbon Capture and Storage in Southeast Asia" are supplementary financing for an earlier project of the same title.

Source: Asian Development Bank estimates.

Table A11.1: CEFPP Allocation by Country & Allocation Share as of 31 December 2012 (In \$'000, inclusive of fees)

COUNTRY	CODE	CEF	ACEF	CCSF	TOTAL
Bangladesh	BAN	788	3,615		4,403
Bhutan	BHU		1,020		1,020
Cambodia	CAM	60			60
India	IND	150	788		938
Indonesia	INO	4,170	1,155		5,325
Laos	LAO	189			189
Mongolia	MON	75	525		600
Nepal	NEP	4,409			4,409
Philippines	PHI	210	4,292		4,502
People's Republic of China	PRC	7,920		5,250	13,170
Sri Lanka	SRI	3,045	1,943		4,988
Thailand	THA	3,150			3,150
Tonga	TON	656			656
Vietnam	VIE	135	2,040		2,175
Regional	REG	6,731	21,000	1,984	29,715
TOTAL		31,688	36,377	7,234	75,299

ACEF = Asian Clean Energy Fund, CCSF = Carbon Capture and Storage Fund, CEF = Clean Energy Fund, CEFPP = Clean Energy Financing Partnership Facility.

Source: Asian Development Bank estimates