REQUEST FOR CEO ENDORSEMENT[1]

PROJECT TYPE: Full-sized Project
TYPE OF TRUST FUND:Multi-Trust Fund

PART I: PROJECT INFORMATION

Project Title: Pilot Asia-Pacific Climate Technology Network and Finance Center			
Country(ies):	Regional	GEF Project ID:[2]	4512
GEF Agency(ies):	AsDB UNEP (select)	GEF Agency Project ID:	AsDB - 45134-001 UNEP - tbc
Other Executing Partner(s):	National governments and other public institutions, private sector, regional and national thematic or sector/technology specific centers or research institutions, academia	Submission Date:	2012-02-20
GEF Focal Area (s):	Climate Change	Project Duration(Months)	30
Name of Parent Program (if applicable): For SFM/REDD+ ☐		Agency Fee ($):	1,090,909

A. FOCAL AREA STRATEGY FRAMEWORK[3]

Focal Area Objectives	Expected FA Outcomes	Expected FA Outputs	Trust Fund	Grant Amount ($)	Cofinancing ($)
CCM-1 (select)	Outcome 1.1: Technologies successfully demonstrated, deployed, and transferred	Output 1.1: Innovative low-carbon technologies demonstrated and deployed on the ground	GEF TF	2,000,000	11,313,248
CCM-1 (select)	Outcome 1. 2: Enabling policy environment and mechanisms created for technology transfer	Output 1.2: National strategies for the deployment and commercialization of innovative low-carbon technologies adopted	GEF TF	890,909	4,691,493
CCM-2 (select)	Outcome 2.1: Appropriate policy, legal and regulatory frameworks adopted and enforced	Output 2.1: Energy efficiency policy and regulation in place	GEF TF	720,000	4,748,535
CCM-2 (select)	Outcome 2.2: Sustainable financing and delivery mechanisms established and operational	Output 2.2: Investment mobilized [estimate]:$70,000,000 Output 2.3: Energy savings achieved through investments [estimate]: 12.3 TWh cumulative over 10 years (assuming levelized cost of $0.025/kWh for direct project investment and $0.035/kWh for	GEF TF	1,805,000	11,951,164

[1] It is important to consult the GEF Preparation Guidelines when completing this template
[2] Project ID number will be assigned by GEFSEC.
[3] Refer to the Focal Area/LDCF/SCCF Results Framework when filling up the table in item A.

		venture capital investment) GHG emissions avoided [estimate]: 9.8 million tCO2e cumulative over 10 years (based on average emission factor of 0.74 tCO2e/MWh for Asia-Pacific, applied to direct project investment; and 0.87 tCO2e/MWh for selected Asia-Pacific countries, applied to venture capital investment)			
CCM-3 (select)	Outcome 3.1: Favorable policy and regulatory environment created for renewable energy investments	Output 3.1 Renewable energy policy and regulation in place	GEF TF	600,000	4,748,535
CCM-3 (select)	Outcome 3.2: Investment in renewable energy technologies increased Investment mobilized [estimate]: $70,000,000	Output 3.2 Renewable energy capacity installed [estimate]: 174 MW (assuming average $2,500/kW capital costs for direct project investment and $3,500/kW for venture capital investments) Output 3.3 Electricity and heat produced from renewable sources [estimate]: 2.5 TWh over 10 years (assuming average 22.80% capacity factor across renewable sources) GHG emissions avoided [estimate]: 2.0 million tCO2e cumulative over 10 years (based on average emission factor of 0.74 tCO2e/MWh for Asia-Pacific, applied to direct project investment; and 0.87 tCO2e/MWh for selected Asia-Pacific countries; applied to venture capital investment)	GEF TF	1,525,000	11,951,164
CCM-4 (select)	Outcome 4.1: Sustainable transport and urban policy and regulatory frameworks adopted and implemented	Output 4.1 Cities adopt low-carbon programs	GEF TF	450,000	2,492,611
CCM-4 (select)	Outcome 4.2 Increased investment in less-GHG	Output 4.2: Investment mobilized [estimate]:	GEF TF	800,000	4,530,053

	intensive transport and urban systems	$20,000,000 Output 4.3: Energy savings achieved through investments [estimate]: 1.5 million barrels of oil equivalent over 10 years (assuming levelized cost of $40/barrel of oil) GHG emissions avoided [estimate]: 0.645 million tCO2e cumulative over 10 years (assuming emission factor of 0.43 tCO2/barrel of oil)			
CCA-3 (select)	Outcome 3.1: Successful demonstration, deployment, and transfer of relevant adaptation technology in targeted areas	Output 3.1: Relevant adaptation technology transferred to targeted groups	SCCF	1,400,000	11,408,318
CCA-3 (select)	Outcome 3.2: Enhanced enabling environment to support adaptation-related technology transfer	Output 3.2: Skills increased for relevant individuals in transfer of adaptation technology	SCCF	418,182	2,852,079
(select) (select)	Others		(select)		
		Subtotal		10,609,091	70,687,200
		Project management cost[4]	(select)	300,000	3684800
		Total project costs		10,909,091	74,372,000

B. PROJECT FRAMEWORK

Project Objective: To enhance the diffusion of technologies that promote low-carbon and climate-resilient development						
Project Component	**Grant Type**	**Expected Outcomes**	**Expected Outputs**	**Trust Fund**	**Grant Amount ($)**	**Confirmed Cofinancing ($)**
Facilitating a network of national and regional centers, networks, organizations, and initiatives	TA	1. Increased collaboration in the region for transfer of climate technologies between thematic or sector/technology specific centers and institutions	1.1 Collaboration is strengthened between key stakeholders at national level 1.2 Regional and thematic expert groups are established to provide guidance and support to private and public actors for climate technology transfer	GEF TF	1,000,000	1,688,267

[4] This is the cost associated with the unit executing the project on the ground and could be financed out of trust fund or cofinancing sources.

			1.3 Public-private partnership on climate technologies are promoted and supported 1.4 North-South cooperation is promoted and South-South cooperation supported for sharing know-how, knowledge and good practices on climate technology transfer			
Building/strengthening national and regional technology transfer centers and centers of excellence	TA	2. Thematic and technology specific institutions are strengthened (and/or created)	2.1 Appropriate institutions and centres for supporting climate technology transfer are identified 2.2 The establishment of specialised national climate technology transfer institutions is supported 2.3 The capacities of climate technology institutions and professions are strengthened 2.4 Tech-entrepreneurship development and green productivity is promoted	GEF TF	1,000,000	328,366
Design, development and implementation of country-driven EST transfer policies, programs, demonstration projects, and scale-up strategies	TA	3.Support and opportunities for national, regional and global investments in ESTs are explored 4. Enabling policy environment and mechanisms created for transfer of climate technlogies	3.1 The design, development and implementaion of country-riven EST transfer programs, demonstration projects, and scale-up strategies is supported 4.1 The design and establishment of country-tailored pro-climate policies	GEF TF	1,000,000	1,448,367

			supporting climate technology transfer is supported 4.2 The design and establishment of national and regional standards and regulations for identified priority climate technologies is supported 4.3 The design and establishment of cost-effective mechanisms adapted to individual country conditions for leveraging increased public and private investment in climate technologies is supported 4.4 The design and establishment of NAMA/NAPA-linked subsidies and other financial incentives aimed at reducing EST project development/transaction costs is supported			
	TA	as above, with focus on adaptation technologies	as above, with focus on adaptation technologies	SCCF	250,000	0
Integrating climate technology financing needs into national development strategies, plans, and investment priorities	TA	5. Higher awareness and better participation of regional stakeholders in global discussions on climate change financing, including the development of the GCF and the operations of the Technology Mechanism 6. Climate change technology transfer and deployment	5.1 Organization of a series of workshops that will facilitate knowledge sharing among national climate change institutions in ADB's developing member countries 5.2 Development of knowledge products on the issues of climate change financing and best practices of climate-friendly technology in Asia and	GEF TF	819,091	1,468,500

		considerations integrated into CPSs and/or COBPs, national and/or subnational investment plans	the Pacific 6.1 National and/or sub-national development strategies, investment plans and policies which promote investments in climate technology and technology transfer			
	TA	as above, with focus on adaptation technologies	as above, with focus on adaptation technologies	SCCF	240,000	0
Catalyzing investments in EST deployment	Inv	7. Increased investments in projects using climate technologies in ADB's developing member countries 8. Increased investments by selected Venture Capital funds in technologies that address climate technology products	7.1 Assistance provided to potential climate technology investment projects (such as alternative technology assessments etc.) 8.1 Identification of technology opportunities across sectors 8.2 Identification of candidate start up firms 8.3 Technology assessments of proposals from fund managers 8.4 Monitoring report on technology aspects of investments made by fund managers	GEF TF	2,571,818	48,027,700
	Inv	as above, with focus on adaptation technologies	as above, with focus on adaptation technologies Note: $15 million equity cofinancing from ADB	SCCF	1,328,182	15,000,000
Establishing a "marketplace" of owners and users of low-carbon technologies to facilitate their transfer	TA	9. Successful demonstration of assisted broker model for transfer of low-carbon technologies	9.1 The transfer of high-impact low-carbon technologies in a period of 24 months 9.2 The necessary operational documentation for a full-fledged business	GEF TF	2,400,000	2,726,000

			based on the assisted broker model			
	(select)			(select)		
				Subtotal	10,609,091	70,687,200
				Project management Cost[5]	(select)	300,000	3,684,800
				Total project costs	10909091	74372000

C. SOURCES OF CONFIRMED COFINANCING FOR THE PROJECT BY SOURCE AND BY NAME ($)

Sources of Co-financing	Name of Co-financier (source)	Type of Cofinancing	Cofinancing Amount ($)
Bilateral Aid Agency (ies)	Government of Finland (UNEP)	Grant	2,640,000
Bilateral Aid Agency (ies)	Government of Denmark (UNEP)	Grant	1,000,000
Bilateral Aid Agency (ies)	Government of Korea (UNEP)	Grant	840,000
GEF Agency	UNEP	In-Kind	1,000,000
GEF Agency	AsDB Equity Invesment (AsDB)	(select)	60,000,000
GEF Agency	AsDB Climate Change Fund (AsDB)	Grant	2,850,000
GEF Agency	AsDB TA Special Fund (AsDB)	Grant	842,000
GEF Agency	Asian Clean Energy Fund under the Clean Energy Financing Partnership Facility - Government of Japan (AsDB)	Grant	5,000,000
GEF Agency	VITO- Flemish Institute for Technological Research (AsDB)	Grant	200,000
(select)		(select)	
Total Co-financing			74,372,000

D. GEF/LDCF/SCCF/NPIF RESOURCES REQUESTED BY AGENCY, FOCAL AREA AND COUNTRY[1]

GEF Agency	Type of Trust Fund	Focal Area	Country Name/ Global	(in $)		
				Grant Amount (a)	Agency Fee (b)[2]	Total c=a+b
UNEP	GEF TF	Climate Change	Asia-Pacific	3,000,000	300,000	3,300,000
UNEP	SCCF	Climate Change	Asia-Pacific	250,000	25,000	275,000
AsDB	GEF TF	Climate Change	Asia-Pacific	6,090,909	609,091	6,700,000
AsDB	SCCF	Climate Change	Asia-Pacific	1,568,182	156,818	1,725,000
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
Total Grant Resources				10,909,091	1,090,909	12,000,000

E. CONSULTANTS WORKING FOR TECHNICAL ASSISTANCE COMPONENTS:

[5] Same as footnote #3.

Component	Estimated Person Weeks	Grant Amount ($)	Cofinancing ($)	Project Total ($)
Local consultants*	1,140.00	838,800	243,000	1,081,800
International consultants*	2,976.00	5,965,000	5,180,700	11,145,700
Total		6,803,800	5,423,700	12,227,500

* Details to be provided in Annex C.

F. PROJECT MANAGEMENT COST

Cost Items	Total Estimated Person Weeks/Months	Grant Amount ($)	Co-financing ($)	Project Total ($)
Local consultants*	597.00	171,000	251,500	422,500
International consultants*	837.00	0	3,060,300	3,060,300
Office facilities, equipment, vehicles and communications*				0
Travel*		24,000	220,000	244,000
Others**	Equipment, permisses, misc.			0
	Dissemination, outreach, contingency	105,000	153,000	258,000
Total		300,000	3,684,800	3,984,800

* Details to be provided in Annex C. ** For others, to be clearly specified by overwriting fields *(1) and *(2).

G. DOES THE PROJECT INCLUDE A "NON-GRANT" INSTRUMENT? Yes

(If non-grant instruments are used, provide in Annex E an indicative calendar of expected reflows to your Agency and to the GEF/LDCF/SCCF/NPIF Trust Fund).

H. DESCRIBE THE BUDGETED M &E PLAN:

The M&E processes for the project will follow all standard ADB-UNEP-GEF procedures for monitoring, evaluation and reporting. This will include annual project implementation reports and auditing, climate change adaptation and mitigation tracking tools and mid-term and terminal evaluations. ADB and UNEP managed components will be monitored independently by the respective agencies. These activities will be coordinated and delivered in a consolidated report format by the ADB (as lead agency) to meet GEF reporting requirements. Objective, outcome, output and activity indicators will be monitored as described in the project framework (Annex A). An outline plan and budget for M&E activities to be conducted are given in the table below. Details of M&E frameworks will be developed at project inception and will include further definition of baselines, indicators and performance metrics to evaluate progress by 2015, specifically if the project is on track to meet its goals (e.g. emission reduction, technology diffusion, adaptation benefits). Examples of indicators as cited in Annex A are amount of investments mobilized and leveraged financing, number of investment plans integrated with climate technology considerations, number of projects assisted with technology options assessments, number of deals signed under the assisted broker model for marketplace.

TABLE 1: BUDGETED OUTLINE M&E PLAN

M&E Activity	Description	Responsible Parties	Time Frame	Cost (excluding agency staff time)
Inception report	• Report prepared immediately following inception meeting • Will detail annual work plan for the first year. As well as a broader overview work plan for the whole implementation period. • Will include details of M&E and reporting activities, meetings of the steering committee and other project management activities • Will include more detail on the responsibilities of the respective agencies, budgets and more detail on project implementation mechanisms.	• ADB-UNEP • Project Management Unit (PMU) • Steering committee	Immediately following project start-up	$2,000
Financial reports	• Part of ADB and UNEP procedures for project monitoring (based on Financial Procedures Agreements with the GEF Trustee). • Detailed progress reports and financial reports with justification of any change (if required).	• ADB component subprojects • ADB pilot Climate Technology Finance Center • UNEP Climate Technology Network Secretariat • PMU	• Two reports for any given year (July 31 and January 31) • Last Progress & Financial Report (Final report) within 60 days of project closure	None
Progress reports	• Short reports describing project activities implementation status. • Thematic periodic reports may also be prepared to focus on specific areas of activity.	• ADB component subprojects • ADB pilot Climate Technology Finance Center • UNEP Climate Technology Network Secretariat PMU	• Quarterly • As necessary for any reports	$4,000
Annual Project Report	• Analyses project performance over the year. • Describes constraints experienced in the progress towards results and the reasons • Describes the annual work plan and the detailed budget that have been conducted. • Makes clear recommendations for future orientation in addressing any key problems.	• ADB component subprojects • ADB pilot Climate Technology Finance Center • UNEP Climate Technology Network Secretariat • PMU	• Annually	$2,000
Project Implementation Report (PIR)	• Annual preparation of PIR following GEF guidelines • Prepared in collaboration with UNEP coordination and government counterparts within a year of project start.	• ADB component subprojects • ADB pilot Climate Technology Finance Center	Annually	None

		• UNEP Climate Technology Network Secretariat • ADB-UNEP PMU • Project steering committee		
Mid term evaluation of the functioning of pilot Climate Technology Finance Center (ADB)	• Internal review of the function of the center with a view to drawing lessons for future institutional arrangements for a center.	• Project coordinators • ADB	After one and a half years	Indicative cost $40,000
Mid-term evaluation the assisted broker model (component 6)	• Internal review of component 6 to asses the functioning of and suitable design for the assisted broker model.	• Project coordinators • ADB	After one and a half years	Indicative cost $20,000
Midterm independent evaluation	• Determine progress being made towards the achievement of outcomes and identify course corrections if needed. • Focus on the effectiveness, efficiency, and timeliness of project implementation; highlight issues requiring decisions and actions; and present initial lessons learned about project design, implementation, and management.	• External consultants • PMU • ADB pilot Climate Technology Finance Center • UNEP Climate Technology Network Secretariat	At the midpoint of project implementation	Indicative cost $40,000 UNEP: $20,000 ADB: $20,000
Project final report	• Comprehensive report summarizing all activities, achievements, lessons learnt, objectives met or not achieved, structures and systems implemented, etc. • Lay out recommendations for any further steps that may need to be taken to ensure sustainability and replication of the project activities.	• ADB pilot Climate Technology Finance Center • UNEP Climate Network Secretariat • ADB-UNEP PMU	Last three months of project implementation	Indicative cost $10,000
UNEP end of project evaluation (UNEP components only)	• Determine progress being made towards the achievement of expected outcomes. • Focus on the effectiveness, efficiency, and timeliness of the project and present lessons learned about project design, implementation, and management.	• UNEP Evaluation Office • UNEP Climate Technology Network Secretariat	• Three months prior to the end of the project	Indicative cost $50,000
Terminal Evaluation Report (TER)	• To follow GEF requirements for TERs • Focus on the same issues as the midterm evaluation. • Look at the impact and sustainability of results, including the contribution to capacity development and the	• External consultants • PMU • ADB pilot Climate Technology	• Three months prior to the end of the project	Indicative cost $40,000 UNEP: $20,000

	achievement of global environmental goals.	Finance Center • UNEP Climate Technology Network Secretariat		ADB: $20,000
Total cost				$208,000

PART II: PROJECT JUSTIFICATION

A. DESCRIPTION OF THE CONSISTENCY OF THE PROJECT WITH:

A.1.1. The GEF focal area/LDCF/SCCF strategies/*NPIF Initiative*:

Agreement was reached at the COP 16 in Cancun to develop a Technology Mechanism to facilitate transfer and diffusion of climate technologies. As part of this agreement all parties recognized the need for climate technology centers and associated networks as a key tool to accelerate the transition to low-carbon and climate-resilient development through technology transfer in developing countries. The GEF-5 climate change objectives are in line with this thrust, targeting '*a transformative impact in helping GEF-recipient countries to move to a low-carbon development path through market transformation and investment in environmentally sound, climate-friendly technologies*'.

The Pilot Asia-Pacific Climate Technology Network and Finance Center (henceforward "Project") will support the deployment of technologies for both climate change mitigation and adaptation in developing countries of the Asia-Pacific region.

The Project is consistent with both the Cancun agreement on a Technology Mechanism and with GEF-5's strategy to promote a broad portfolio of technologies at various stages of the technology development cycle. The Project will include a focus on market demonstration, deployment, and diffusion, involving a combination of technology push and market pull interventions (CCM-1). The project will also seek to foster investments in low-carbon and climate-resilient technologies across a range of priority sectors such as energy efficiency (CCM-2), renewable energy (CCM-3), sustainable transport and urban systems (CCM-4) and sectors sensitive to climate change impacts such as water and agriculture (CCA-3).

The project is also consistent with GEF-5's approach to further enhancing engagement with the private sector. It seeks to catalyze private sector investments by helping to establish enabling conditions for private sector investment, to extend knowledge advisory services to private sector stakeholders, to leverage private sector resources, and to foster other partnerships with the private sector. UNEP led project components will, for example, seek to promote public-private partnership in the deployment of ESTs through enhancing dialogue between the public and private sectors, and identifying existing mechanisms for public-private cooperation. Examples of ADB led components engagement with the private sector include support for privately run Venture Capital Funds investing in ESTs and development of a 'assisted broker' model to facilitate private sector intellectual property(IP) related transactions.

A.1.2. For projects funded from LDCF/SCCF: the LDCF/SCCF eligibility criteria and priorities:

With regard to adaptation, the Project is consistent with the GEF-5 Strategy on Adaptation to Climate Change for the LDCF and SCCF. Specifically, the Project will focus on promoting the transfer and adoption of adaptation technologies (CCA-3). The Project will directly contribute to SCCF priority areas on technology transfer, including implementation of the results of technology needs assessments (TNAs), broader dissemination of information on appropriate adaptation technologies, capacity building for technology transfer and developing enabling environments to facilitate the transfer of appropriate technologies.

The Project will achieve these objectives through a focus on piloting innovative financial mechanisms and catalyzing investments in climate change adaptation technologies in priority sectors. This will include sectors such as water, agriculture/food security, disaster risk management and urban development.

The overall approach will include:

(i) Identification of appropriate technologies and building the knowledge and awareness of these technologies amongst selected stakeholders;
(ii) Facilitating policy formation and improving the enabling environment for the transfer and diffusion of environmentally sound technologies (ESTs). This will include the integration of adaptation technology needs and financing strategies with national and sub-national adaptation strategies and sectoral planning processes;
(iii) Developing and piloting innovative financing mechanisms for the transfer and diffusion of ESTs, including equity investments through venture capital funds; and,
(iv) Strengthening country knowledge and information networks, including cooperation between developing countries for adaptation technology transfer.

In middle-income countries, the Project will place greater emphasis on financing the deployment of new technologies. The project will seek to mobilize investment from various sources including both public and private sector funds, with a particular focus on the promotion of investments through Venture Capital Funds (VCFs). The VCFs will identify and invest in predominantly small and medium sized enterprises (SMEs) with products that meet local market demands (in terms of the budget and tastes of local consumers) though applying advanced ESTs. For example, adaptation technologies may include, local off-grid water supply technologies and flood defense technologies. The Project will include technical assistance to the VCFs in finding technology information in sectors and sub-sectors in which they may currently lack expertise, such as the water sector, so that the technological scope of the VCFs' investments can be broadened.

In Least Developed Countries (LDCs), the Project components focus on support for policy development, and will seek to assess adaptation technology needs identified in National Adaptation Programs of Action (NAPAs), and identify barriers and opportunities for making technology investments. The investment and investment facilitation components of the Project (4, 5 and 6) will focus on financing strategies to support the integration of adaptation technologies in public sector financed investments using proven technologies that are not yet commercially available in those countries.

Initially, a broad range of potential adaptation technologies will be considered. Examples of adaptation technologies that may be considered include:

(i) Those suitable for coastal zones (e.g. dykes, building designs);
(ii) Water resources (e.g. flood management, rainwater harvesting);
(iii) Agriculture/food security (e.g. drought-tolerant crops, water efficiency, drip irrigation);
(iv) Disaster risk management (e.g. early warning systems, innovative flood protection technologies); and,
(v) Urban development (e.g. building and transport sector technologies).

Given the pilot basis of the Project, there will be a need for selectivity, targeting specific technologies for different developing country needs and where there is private sector interest. Priorities for project interventions are described in greater detail in section B.1 (below).

Adaptation-related outcomes from the Project will include (i) the mainstreaming of adaptation technologies and financing strategies in broader development frameworks at national levels and for priority sectors; (ii) an enhanced environment for financing adaptation-related technologies, through the testing and development of innovative finance mechanisms; and (iii) successful demonstration, deployment, and transfer of relevant adaptation technologies in targeted areas.

A.1.3 For projects funded from NPIF, relevant eligibility criteria and priorities of the Fund:

N/A

A.2. National strategies and plans or reports and assessments under relevant conventions, if applicable, i.e. NAPAS, NAPs, NBSAPs, national communications, TNAs, NIPs, PRSPs, NPFE, etc.:

Developing countries across the Asia - Pacific are already taking steps to follow low-carbon and climate-resilient development pathways. But they are requesting international financial and technical support to identify, prioritize and deploy innovative technologies. The Project will help developing countries meet the growing demand for climate technology related investments described in key national policy documents. These include planning and strategic documents such as National Climate Change Strategies and related action plans (Low carbon development plans/Nationally Appropriate Mitigation Actions (NAMAs), National Adaptation Plans of Action (NAPAs)), National Communications to the United Nations Framework Convention on Climate Change (UNFCCC), National Energy Plans and Strategies, Technology Needs Assessments (TNAs), National Investment Plans (NIPs), Medium Term Expenditure Frameworks (MTEFs), Poverty Reduction Strategy Papers (PRSPs) and National Development Plans (NDPs).

The pilot Project has been conceptualized in recognition of the importance of technology transfer to the global response to climate change, as reflected in the 2007 Bali Action Plan, the Copenhagen Accord, and the recent Cancun Agreement. The Cancun Agreement defines the key elements of a proposed Technology Mechanism. These include the establishment of a Climate Technology Center and Network (CTCN), which could entail the setting up of regional and national technology centers to facilitate information sharing, coordination, and investments.

Developing countries have also sought to enhance cooperation in tackling climate change through regional and sub-regional bodies such as the Association of Southeast Asian Nations (ASEAN), the Central Asia Regional Economic Cooperation (CAREC), the Greater Mekong Subregion Economic Cooperation Program (GMS-ECP) and the South Asian Association for Regional Cooperation (SAARC). For example, ASEAN and CAREC leaders have cited environmentally sound technology as an important area of collaboration, in a number of joint statements including those issued to the UNFCCC. The project will seek to ensure alignment with these bodies and their on-going initiatives, and, where possible, seek their engagement in the project.

It should be noted that UNEP and ADB are already engaged with regional and sub-regional bodies in the region. For example, in Central Asia, UNEP's Central Asia Climate Change Network supported by the Korean Energy Management Corporation (KEMCO) works with the Central Asia Interstate Sustainable Development Commission (ISDC) to support the five Central Asia states to implement sub-regional climate change recommendations more specifically on policy frameworks for low carbon development and capacity building with a strong focus on Energy Efficiency issues. In Southeast Asia, UNEP's Southeast Asia Climate Change Network (SEAN-CC) is strongly engaged with the ASEAN Secretariat and the ASEAN Centre for Energy (ACE) as official project associate and technical expert for the ASEAN Energy Management Scheme (AEMAS). In addition, in line with the ASEAN Roadmap which aims at the harmonization of standards in the region by 2015, UNEP – through SEAN-CC - and the International Copper Association (ICA) developed a Strategic Framework for the Harmonization of Energy Efficiency Standards for Appliances in ASEAN which was approved by the ASEAN Energy Efficiency and Conservation Sub-Sector Network (EE&C SSN) during its annual meeting on 27 May 2011 in Singapore. At this same meeting, EE&C SSN also provided the mandate to UNEP and ICA to support and coordinate the harmonization process for Air Conditioners (ACs) under the lead of the ASEAN Secretariat and ASEAN Centre for Energy (ACE); as the first experience in the region for harmonizing Minimum Energy Performance Standards (MEPS) for appliances.

The regional approach will facilitate (i) the development of country-specific activities for addressing climate change that are appropriate for the common social, economic and environmental conditions in the region; and, (ii) the development and strengthening of institutions to facilitate knowledge sharing, particularly between groups of countries which face common challenges from climate change.

B. PROJECT OVERVIEW:

B.1. Describe the baseline project and the problem that it seeks to address:

Context

Recent projections from the International Energy Agency suggest that even if OECD countries reduced their greenhouse gas (GHG) emissions to zero, without abatement effort in developing countries this would not be enough to stabilize emissions at a level which could avoid an increase in global temperatures of above 2°C. The Asia - Pacific region is key to tackling global climate change. Per capita emissions in developing countries in the Asia - Pacific remain far lower than those of the developed world (at approximately 4.0 tCO_2e/capita in 2005 compared to 13.8 tCO_2e/capita in OECD countries).[6] But in terms of absolute emissions levels, some countries in the region have now joined the ranks of the world's largest national emitters of GHGs. The region as a whole accounted for an estimated 32% of global emissions in 2005. The GHG emissions intensity of developing countries in the region at 782 tCO_2e/million international $ in 2005, was almost twice that of OECD countries, at about 382 tCO_2e/million international $.[7][8] This is primarily due to rapid economic growth and structural change along with large and growing populations. Emissions from energy use alone in developing Asia have grown by 194% since 1990, and the region also accounts for a growing share of global GHG emissions. Business-as-usual projections by the IEA suggest this share could increase from about 33% in 2008 to 45% by 2030. Land-use change, rapid industrialization and waste management challenges further add to the region's rising emissions. It is increasingly clear that the region could "make or break" global efforts to mitigate climate change.

The region also stands to reap substantial co-benefits to climate change mitigation efforts as energy security is also a growing concern. The region is highly exposed to volatility in energy prices, as most of the region's countries depend on fossil fuel imports.

Meanwhile, with its large poor population that are directly dependent on natural resources, the Asia and Pacific region is particularly vulnerable to the negative impacts of climate change. The increasing frequency and severity of extreme weather events (such as floods, droughts and tropical storms), rising sea levels, and changing and unpredictable precipitation patterns may result in declining availability of freshwater, declining crop and fisheries productivity, an expanded threat from diseases such as dengue fever and malaria, and threats to infrastructure and population centers. These impacts could seriously challenge economic growth across the region. [9]

Effective technology transfer mechanisms enabling systemic technological change are essential for addressing the challenges posed by climate change. It is recognized under the United Nations Framework Convention on Climate Change (UNFCCC) that technology transfer will be essential in helping developing countries transition to low-carbon and climate-resilient development pathways. Given the long lifespan of infrastructure systems, continued investments in incumbent technologies will 'lock in' GHG emission patterns for decades to come. For example, energy demand in the region is projected by ADB to increase by about 80% between 2005 and 2030; and under the current business as usual scenario, nearly 80% of the region's energy needs will be met by fossil fuels.[10] Only with the use of low-carbon technologies can Asia and the Pacific 'leapfrog' the carbon-intensive phase of development that most developed countries experienced during the past century, and move directly to cleaner and more advanced energy, transport, and land-use solutions. New technologies are also needed to adapt to the adverse impacts of climate change that are bound to occur with the existing levels of atmospheric GHG concentration. These are also urgently needed to avoid the region being locked into infrastructure, technologies or land use plans that are not resilient to climate change.

Technology transfer has been a focus of international negotiations since the Rio Summit in 1992, and is mentioned in Agenda 21. It is also covered in Articles 4.3, 4.5 and 4.7 of the UNFCCC. Issues relating to technology transfer have also been an important part of the on-going Conference of the Parties' (COP) discussions. In 2008, COP 14 in

[6] GHG emissions figures have been obtained from the World Resources Institute (WRI) Climate Analysis Indicators Tool (CAIT) 8.0 released on December 2010.
[7] Ibid.
[8] This figure includes land use change.
[9] See for example, Dasgupta, S., Laplante, B. Meisner, C. Wheeler, D and Yan, J. The impact of sea level rise on developing countries: a comparative analysis. Climatic Change (2011) 106:567–579
[10] ADB (2009) *Energy Outlook for Asia and the Pacific.* Asian Development Bank, Mandaluyong City, Philippines.

Bali endorsed the GEF proposal for the Poznan Strategic Programme on Technology Transfer. The experience of the implementation of this program, particularly in the development of pilot projects and TNAs, has highlighted the need to go beyond current practices to catalyze private sector investment in technology transfer.

Decision 2/CP.14 of the COP recognizes that enhancing technology transfer activities including scaling up of investments in ESTs will entail the following elements:

(i) Support for climate technology centers and a climate technology network;
(ii) Piloting priority technology projects to foster innovation and investments;
(iii) Public-private partnership for technology transfer;
(iv) TNAs; and,
(v) GEF as a catalytic supporting institution for technology transfer.

The current proposal focuses on three of these elements, namely (i) support for technology networks and centers; (iii) public-private partnership for technology transfer; and, through this (v) GEF as a catalytic supporting institution for technology transfer.

The Problem

Enormous investments will be required to transition to a low-carbon and climate-resilient development path. Mitigation investment needs are estimated to be more than $100 billion per year by 2030 for all developing countries, [11] and adaptation investment needs in Asia-Pacific countries alone are expected to reach $40 billion per year between 2010 and 2050.[12] Public financial resources alone will be insufficient to meet the large-scale financing needs of low-carbon, climate-resilient development.

Successful wide-scale deployment of climate technologies will require that limited public sector funds be used to leverage far greater amounts of private capital. For example, in the technological innovation process where returns to private investment are less certain, public funding is frequently necessary for research and development. At the pilot and demonstration phases public funding can bring down the initial costs of technologies. Public funding can also catalyze venture capital for companies with early stage technology products to enable them to overcome the so-called 'valley of death' that lies between achieving economic and technological feasibility, and bringing products to the commercial market. Similarly, public funds can reduce transaction costs through supporting mechanisms, which facilitate technology searches and technology licensing deals between private sector investors.

At present, the levels of both public and private investment in developing countries for low-carbon and climate-resilient growth are not sufficient to address the problems posed by climate change. This is due to a number of interlinked barriers to investment (other than general macroeconomic conditions or business environment concerns). These include; (i) Lack of adequate regulation and regulatory uncertainty; (ii) Lack of coherent policy frameworks to support climate technology development, transfer and diffusion; (iii) Institutional arrangements that implicitly support, and therefore 'lock in' incumbent carbon intensive and climate-sensitive technologies; (iv) Lack of access to capital for firms producing EST technologies, especially smaller firms; (v) Lack of sufficient commercial return for investors in climate technologies, particularly for adaptation solutions; (vi) Lack of market demand for products with high upfront costs; (vii) Perceived high risks of introducing new technologies, including concerns regarding protection of intellectual property rights (IPR); and, (viii) lack of information on appropriate technologies, policies and approaches to financing.

The economics of innovation and technological change is replete with examples of these barriers and how they act as a brake on technological change, meaning initial investments in new technologies tend to be more expensive than existing technologies. Similarly, on the supply-side many empirical studies show that technology unit costs decline as a function of cumulative production. Speeding up the diffusion of suitable climate technologies by addressing external barriers to their diffusion will also lead to greater cumulative production and more rapidly declining

[11] International Bank for Reconstruction and Development and World Bank. 2010. *World Development Report 2010*. Washington, DC.
[12] International Bank for Reconstruction and Development and World Bank. 2010. *Economics of Adaptation to Climate Change (Synthesis Report).* Washington, DC.

production costs on the supply side.

A key element of addressing the investment gap is the need to build institutional and human capacity to create an environment which promotes investment in ESTs. For example, there are urgent needs to build public sector capacities to assess technology needs and options, design and implement policy frameworks for EST transfer and diffusion, and to effectively protect IPRs. Some private sector players also lack the required technical capacity and knowledge to fully realize the potential of ESTs. The employment of climate technology centers, networks, or both is endorsed under the proposed Technology Mechanism. These bodies would support national technology planning and program design, capacity building, knowledge management, strengthening of enabling environments, technology research, development, and demonstration, and technology deployment and transfer. By providing these support services, climate technology centers and networks could help provide integrated solutions to accelerate the transition to a low-carbon and climate-resilient world.

Project Baseline

The baseline for project interventions has two dimensions, namely (i) the baseline conditions without any project implementation (business as usual); and (ii) the baseline conditions, but with selected ADB and/or UNEP projects (without GEF support). For (i), in the case of this project, given its regional and technological breadth and the demand-led nature of many of its interventions, determining in detail a quantified baseline presents methodological difficulties. However, a project data and information system and monitoring mechanism will be established at inception, to clarify and establish the baseline conditions in the particular contexts for intervention, once target technologies and countries have been identified, and to meet GEF requirements for tracking and reporting on results. In the case of (ii), the project seeks to build on and enhance the extensive baseline activities on-going at ADB and UNEP, through the development of regional capabilities to promote the transfer and diffusion of climate technologies and through the facilitation and mobilization of public and private sector investments in climate technologies.

United Nations Environment Programme (UNEP). The Project will build on the climate change activities implemented by UNEP in the region, and especially the UNEP-led regional climate change networks. The Southeast Asia and Central Asia climate change networks have a strong focus on mitigation and technology transfer to support member countries in making a transition towards a low-carbon development path. Baseline activities relating to Adaptation in the region include the Asia - Pacific Adaptation Network (APAN) - facilitated by UNEP, the Institute for Global Environment Strategies (IGES), the Asian Institute of Technology/UNEP Regional Resource Centre for Asia and the Pacific (AIT/UNEP RRC.AP) and ADB in partnership with other key actors in the region, and the Regional Climate Change Adaptation Knowledge Platform for Asia jointly established by the AIT/UNEP RRC.AP, the Stockholm Environment Institute (SEI), the Swedish Environmental Secretariat for Asia (SENSA) and UNEP. These networks are based on country/region-driven and multi-sector processes, serving the specific needs of participating countries. In particular, they seek to engage with national UNFCCC focal points as well as other relevant national officials dealing with climate change issues. The objectives of these networks is to encourage the development of good policies, foster the sharing of best practice and information, accelerate the deployment of climate friendly technologies, and contribute directly to the development of capacity while supporting regional and national activities.

These activities are closely related to a number of UNEP supported climate change initiatives and associated centers of excellence. Such as, (i) initiatives focusing on efforts to reduce GHG emissions by fostering cleaner and more efficient technologies, including the GEF-UNEP-United Nations Development Programme (UNDP) TNA project currently active in 13 countries in the Asia-Pacific region, the GEF-UNEP Global Market Transformation for Efficient Lighting Programme (en.lighten), the related GEF-UNEP country project for Phasing out Incandescent Lamps through Lighting Market Transformation in Vietnam, the UNEP-United Nations Industrial Development Organization (UNIDO) National Cleaner Production Centres and related support program on energy efficiency guides for industry in Asia, the Sustainable Buildings and Construction Initiative (SBCI) and the Sustainable Transport Programme; (ii) initiatives focusing climate finance readiness, including the UNEP-ADB Seed Capital Assistance Facility (SCAF), the Sustainable Energy Finance Initiative (SEFI) and SEF Alliance, and UNEP's

carbon finance/Clean Development Mechanism (CDM) support initiatives; and, (iii) UNEP's numerous initiatives for climate change adaptation including GEF-UNEP support to NAPA development and the Assessments of Impacts and Adaptations to Climate Change Initiative.

Asian Development Bank (ADB). The baseline activities for the ADB-managed components of the Project include two key initiatives that are being established by ADB to support an up-scaling of investments in low-carbon and climate-resilient technologies in Asia and the Pacific.

The Asia Climate Change and Clean Energy Venture Capital Initiative has been developed over the past 2 years through a bank-wide task force. It aims to provide early stage finance and advisory services that will help new technology products become competitive and affordable to the large consumer base in Asia. Most cutting-edge technologies and their applications continue to originate in the developed world, making these products unaffordable to the majority of consumers in developing countries. However, a series of discussions with fund managers in Asia has confirmed substantial venture capital market growth opportunities in the region. While the majority of clean-tech start-ups in Asia are not technology inventors, many are agile and capable of applying a variety of existing technologies and know-how to developing products that can meet the needs of local markets (e.g. specification, features, and price/quality). To date, $60 million equity investment by ADB has been approved, which is expected to leverage over $240 million from bilateral sources and institutional investors. With the help of co-funders, ADB plans to complement the equity investment with a technical assistance facility so that it can provide advice to venture capital funds in sectors where they may lack expertise. This will broaden the climate technology reach of selected venture capital funds including those that will not benefit from private equity investments. With baseline funding (no GEF), the technical support facility will be able to cover a very limited scope of knowledge advisory services. In terms of sector, it will be able to focus only on clean energy, particularly renewable energy. In terms of market, coverage will likely be limited to mature and more advanced markets such as East Asia and South Asia, with only 3-4 funds receiving technical support.

In addition to the above, ADB has developed a project to establish a low-carbon technology marketplace based on an assisted broker model. The structure and scope of the assisted broker model is based on lessons learned from existing intellectual property marketplaces, and in particular those for ICTs, which have been highly successful. The value it will bring to technology providers, particularly to SMEs and research institutions, will be additional revenue, contact with potential partners and the provision of suitable structures for technology and IPRs transactions. At the same time, technology buyers will gain access to patents and know-how and support from a trustworthy third party for structuring transactions. Baseline funding will allow the development of only one type of technology within the timeframe of the project.

The two initiatives described above can be further enhanced through GEF finance in order to increase global environmental benefits by expanding the coverage of technologies and steering the flow of investments towards broader sets of beneficiaries. The combination of a climate technology exchange assisted by specialized brokers to pair providers and users, and venture capital investments supported by a special technical advisory facility promises great synergy, and could help achieve the multiple leverage effect needed to rapidly deploy innovative technology applications across the Asia-Pacific region by mobilizing private capital.

ADB's investment projects in developing member countries in the region constitute another component of the project baseline, and provide important, but not yet fully realized opportunities for the transfer of ESTs (for both mitigation and adaptation). For example, ADB has committed to over $1 billion of lending and investment support for clean energy annually since 2008 and has increased its target to $2 billion per year starting in 2013. Furthermore, ADB provides major investments annually in the key sectors such as transport, urban development and water. For example, in 2011 ADB invested $3.5 billion in the transport sector, including in $492 m in urban transport and $775 m in railways, and $2.33 billion in the water sector, including investments in water supply and irrigation. Investment projects funded by ADB will however typically embody technologies selected to reflect some combination of lowest costs and proven performance. As a result, projects would normally use available technologies rather than adopt new or innovative technologies with higher mitigation or adaptation potential due to initial higher costs, information deficiencies or other barriers. For example, a planned water sector investment

project (e.g., irrigation) will typically be designed around mature water management technologies which in most cases will be selected on a least cost basis. Through project resources, technology that makes more efficient use of water (thereby increasing resilience) can however be introduced and evaluated, leading to (i) reduction of information barriers via market research; (ii) reduction in information barriers via demonstration effect; and (iii) long-term reduction in costs via spreading of fixed costs (including R&D) and increasing economies of scale, particularly if the technology demonstrated becomes associated with best practice and incorporated into subsequent water sector projects.

It follows therefore that projects in ADB's investment pipeline can be refocused towards climate change mitigation and/or increased climate resilience by addressing information barriers and developing a specific focus on technologies as part of the development of ADB's Country Partnership Strategies (CPS) and Country Operation Business Plans (COBP) with its developing member countries. This would enable specific opportunities to introduce, test and/or evaluate ESTs, and as a result increasing the overall impact of projects.

The Project

This Project responds to the international community's call for enhanced action on the development, transfer, and diffusion of technologies to achieve global environmental and adaptation benefits by helping developing countries to address climate change, as articulated in decisions of the UNFCCC COP. As set out in the recent Cancun Agreements, the Technology Mechanism will involve, among other things, the establishment of a CTCN, which is to facilitate a network of regional, sectoral and international technology networks, organizations and initiatives. The Project seeks to contribute to the network as a regional initiative supporting various approaches to technology transfer in developing countries in Asia and the Pacific. Without prejudging the outcome of COP negotiations, it also seeks to generate information useful to the UNFCCC COP in the ongoing dialogue on operationalization of the Technology Mechanism.

The Project will pilot a regional approach to facilitating deployment of climate technologies that combines capacity development, enhancement of enabling environments for market transformation, financial investments and investment facilitation. UNEP will lead interventions to enhance the enabling conditions for climate technology transfer and deployment processes by (i) Network facilitation - supporting the development of regional networks which will enhance capacity by facilitating the exchange of institutional and technological know-how to national and regional technology centers in the Asia - Pacific; (ii) Supporting the strengthening of capacities of regional and national climate technology centers; and, (iii) Supporting national capacity for policies to promote the transfer and dissemination of climate technologies, as well as more direct support for policy formation itself. These capacity readiness and enabling conditions for market transformation interventions are described in more detail below as components 1, 2 and 3 (also see figure 1 below).

ADB will lead the financial investment and investment facilitation interventions. These will support the mobilization of public and private financial resources for investment in climate technology, including (i) Mainstreaming climate technology considerations in national investment planning; (ii) Facilitating project and venture capital investment in climate technology; and, (iii) Development of a dedicated climate technology market place to facilitate climate technology IPR deals. These components are described in more detail below as components 4, 5, and 6 (also see figure 1 below).

All the components of the project will contribute to addressing the different barriers to technology deployment and diffusion such as regulatory absence/uncertainty, lack of access to capital, high upfront costs, perceived high risks of introducing new technologies, weak flow of information, and inadequate developing country capacity. Component 3 is particularly focused on the policy side and will advise on enabling policy and regulatory frameworks including identification of existing policies that hamper technology deployment such as subsidized energy pricing in favor of conventional fuels. Component 1 will also help in this regard by disseminating best practices and lessons learned on policy design and implementation.

Both GEF agencies will work together closely in project implementation through two centralized hubs. The UNEP

components combined will operate as a networking hub operating from a regional Climate Technology Network Secretariat in Bangkok. The ADB components will together constitute the functioning of a pilot Climate Technology Finance Center in Manila. Capacity building will be treated as a cross-cutting issue as it is a necessary element for the successful implementation of each of the project components.

As a whole, the project seeks to demonstrate, on a pilot basis, the effectiveness of linking technology and finance mechanisms in catalyzing climate change mitigation and adaptation actions. This will be accomplished through the transfer, and diffusion of ESTs. These technologies will help realize lower emission growth pathways and greater resilience to climate change impacts, which can in turn enhance long term socio-economic development prospects, and foster more sustainable development overall. It is expected that both the Bangkok Secretariat and the Manila pilot center will also contribute valuable experience that could help inform on-going negotiations on the CTCN.

The Project's overarching focus is on the facilitation and mobilization of investments in ESTs, from both public and private sources. The Project will catalyze public and private finance for ESTs through assisting with the integration of technology transfer and diffusion considerations into developing countries' policies and investment programs, and strengthening design and enforcement capacities of public institutions in regard to technology transfer. Lessons and experience from the Project can be drawn upon in replicating the approach in other regions.

The Project will also assist developing countries in the Asia - Pacific to put in place policies and measures that can support EST transfer and diffusion. This will include policies and measures on (i) Improved energy efficiency, emissions reduction, and enhanced climate resilience, e.g. national energy efficiency and renewable energy targets; (ii) The promotion of market mechanisms that can support the transfer and diffusion of ESTs, e.g. feed-in tariffs for renewable energy, renewable energy certificates, enhanced use of carbon finance, and clear and long term fee structures for waste and waste water treatment services; and, (iii) Strengthening other policies and institutions to facilitate the transfer of ESTs. The Project will also assist in assessing technology needs, enhancing governance and capacity, and facilitating partnerships for the development and transfer of existing and emerging technologies. All this will build on recent and ongoing work as described in the project baseline.

The Project will seek to promote regional cooperation, the formation of regional networks and regional knowledge sharing. The project will seek to utilize existing regional cooperation platforms such as the Association of Southeast Asian Nations (ASEAN), the Central Asia Regional Economic Cooperation (CAREC), and the South Asian Association for Regional Cooperation (SAARC). More specifically, the Project's regional focus is derived from i) components 1 and 2 which have an explicit objective of building/strengthening national and regional institutions; and ii) the investment components (5 and 6) - while individual investments will necessarily be realised on a national basis, the venture capital fund facility will potentially provide support to funds regionally. The technology marketplace will also facilitate deals on a regional basis. It should also be noted that Component 3 while essentially responding to specific country requests will also seek to support regional bodies on regional policies for the promotion of technology transfer such as activities for the harmonization of energy performance standards for appliances.

Financial resources for the Project will include a combination of climate-specific funding (e.g. GEF Climate Change Focal Area) and mainstream development funding sources (e.g., Asian Development Fund, public and private co-financing) made accessible through ADB and UNEP.

Project Components

1. **Facilitating a network of national and regional technology centers, networks, organizations, and initiatives. (Managed by UNEP)**

   The development and enhancement of regional institutional networks for ESTs is critical to ensuring their speedy and effective deployment. Effective networks can ensure the rapid dissemination of knowledge on ESTs and polices to promote them, as well as providing opportunities for collaboration and strategic alliances between individuals and institutions, in particular between the public and private sector. Activities under

Component 1 will be structured around the following five key interventions: (i) Strengthening national collaboration between key players to support climate technology transfer (e.g. between the climate change offices and sectoral ministries for the design and implementation of climate compatible policies and programs for technology transfer; between government institutions and research institutions for identifying and adapting technologies to local conditions; between government officials and professionals from the private sector to enhance the development of enabling policies and appropriate market mechanisms); (ii) Establishing regional and thematic expert groups —based on regionally agreed climate technology priorities— to advise governments on technology transfer for low carbon and climate resilient development; (iii) Promoting and supporting the establishment of public-private partnerships for climate technology transfer (such as partnerships with industries and suppliers for the phase-out of inefficient technologies and market transformation for ESTs); (iv) Promoting cooperation and technology transfer both between developed and developing countries and between developing countries, with a focus on cooperation within regions and sub-regions, where important synergies are likely to lie (through e.g. supporting the development of regional technology initiatives, stimulating twinning arrangements between technology centres, promoting cross-border business cooperation, organizing exchange visits); and, (v) Sharing of good practices.

2. Building/ strengthening national and regional climate technology centers and centers of excellence (Managed by UNEP)

Specialized regional and national institutions, both from the public and private sectors, can act as focal points for information, advice and expertise for climate technology transfer, and have the potential to greatly enhance and facilitate the technology transfer process. In developing countries, these institutions and the professionals that work within them frequently need capacity development assistance. Suitable guidance and training for additional skills can enhance their efficiency and effectiveness in the design and implementation of national efforts to accelerate EST transfer, for example, in implementing energy efficiency and conservation initiatives. Component 2 will be structured around the following interventions: (i) Identifying private and public institutions and potential climate technology centers that have the greatest capability to influence public sector policy and private sector investment choices in Asia-Pacific; (ii) Promoting and supporting the establishment and strengthening of specialized national institutions mandated to act as focal points for expertise and advice on EST transfer, and for the dissemination of relevant regulations or policies; (iii) Building capacity of institutions and professionals on EST transfer. For example, capacity or evaluating technologies, assessing technology needs, evaluating social and economic consequences of technology transfer actions, designing, implementing and monitoring technology transfer measures); and, (iv) Promoting climate technology entrepreneurship development through strengthening actors and institutes that can play an advisory role clean technology start-up enterprises and other clean technology related entrepreneurial activities.

3. Design, development and implementation of country-driven EST transfer policies, programs, demonstration projects and scale-up strategies (Managed by UNEP)

This component will focus on technical assistance to help develop enabling conditions for climate technology transfer and investment. A range of technical assistance activities are needed to support decision-makers design and deliver climate compatible development and facilitate related investment. These technical assistance activities must be delivered in close cooperation with local experts or institutions to ensure local capacity building and the sustainable impact of project activities. Through this component the Project will offer facilities and services that enable countries to design, develop and implement appropriate EST transfer policies. Examples of activities to be undertaken under this component are: (i) Supporting countries in the design of national pro-climate policies and pro-climate regulations and related monitoring and evaluation tools (e.g. by supporting the design of NAMAs, LEDS, TAPs; by supporting the establishment of financial mechanisms to for climate tech transfer such as feed-in tariffs or special fiscal measures; by supporting the establishment of national and regional standards and labels for energy efficiency for building envelopes, mechanical systems and equipment, and appliances) and (ii) Supporting the design, development and implementation of country-driven EST transfer programmes, demonstration projects and scale-up strategies by further analyzing and costing specific priority technology related mitigation and adaptation actions with a view to support decision-makers to

design and deliver climate compatible development (i.e. conducting sustainable energy resource assessments to identify specific sites with high development potential; identifying cost effective adaptation technology options suitable to address climate change vulnerabilities in priority areas and sectors; developing forestry, biodiversity and land-use research and pilot projects or tailored phase out programs for obsolete technologies like lighting or cooling devices).

4. Integrating climate technology financing needs into national development strategies, plans, and investment priorities (Managed by ADB)

This component will focus on technical assistance to enable countries to mainstream technology financing considerations into national development strategies and investment priorities. The remit for climate change policy making and planning more often than not rests with environment agencies in developing Asia-Pacific countries. This frequently leads to a disconnection between Climate Change issues and broader development and investment strategies controlled by planning and finance ministries. This component will help address the technology-related gaps and opportunities identified by environment and other line agencies through a specific focus on investment programs coordinated by economic and planning ministries. ADB Country Partnership Strategy (CPS) and Country Operation Business Plan (COBP) processes will be the main vehicles for the integration of EST investments into national planning approaches. CPSs are developed in close consultation governments and other stakeholders in all ADB DMCs to define a medium-term development strategy and operational program. The CPS is aligned with the country's development plan and poverty reduction goals, and its preparation is aligned with the DMC's development planning cycle. COBP are rolling annual operations plans which are closely related to CPSs that define priority investment projects. The component will seek to ensure that (i) best practices and latest information on financing climate technologies, and (ii) the results of TNAs, are adequately reflected in development priorities and actions. This process of engagement will result in cleaner, more resilient investment plans and will promote climate technology transfer and diffusion considerations in national development planning and policy. Capacity development within DMC finance, investment and other government agencies will be an important means of ensuring the strategic impact of the component.

Provision of these support services will be coordinated closely with consultation and programming missions under the Adaptation Fund, the Climate Investment Funds, and prospectively the Green Climate Fund to avoid duplication and maximize synergies.

5. Catalyzing investments in EST deployment (Managed by ADB)

This component will assist in the mobilization of financial resources from both public and private sources to catalyze investments in EST deployment. This will consist of two sub-components, (i) Promotion of Direct Investment in Priority Climate Technology Projects; and, (ii) Promotion of Investment in Climate Technology Products through Venture Capital Funds. The first sub-component (i) will facilitate project finance for climate technology transfer by supporting ADB pipeline investment projects to utilize innovative technologies. Projects using new climate technologies face greater technology risks, higher levels of investor uncertainty and as a result, higher financing costs relative to incumbent technologies. The subcomponent will offer technical support for activities such as alternative technology analysis in identified priority technology areas to address these risks and promote alternative ESTs.

The second sub-component (ii) will help catalyze increased levels of investment in climate technologies by providing technical support to venture capital funds so that they can allocate more resources to companies with climate technology products. Venture capital is expected to be a key source of financing. ADB, through its Asia Climate Change and Clean Energy Venture Capital Initiative, is set to invest at least $60 million in multiple venture capital funds, which in turn is expected to leverage $240 million from bilateral sources and institutional investors for early stage finance to start up companies marketing climate-friendly technologies. Technical support made available through this mechanism will provide advisory support by establishing a complementary technical assistance facility to support selected venture capital funds on topics such as emerging

market opportunities, technological competence, growth potential of investee companies, and IPR issues. This assistance would help venture funds reduce their transaction costs and build their technical capacity in the emerging climate technology market.

This technical support is particularly relevant for Venture Capital Funds as they frequently have a narrow technological focus based upon specialist, in-house capacity - typically in one sub-sector. By offering a broader range of technical support to these funds, fund involvement in a much broader range of technologies will be encouraged expanding the potential for the transfer and diffusion of ESTs in the Asia-Pacific region. Priority technology areas include energy use and production, and adaptation in the water, agriculture/food security and disaster risk management.

6. Establishing a pilot "marketplace" of owners and users of low-carbon technologies to facilitate their transfer (Managed by ADB)

The final project component will address the lack of access to information on ESTs and markets for ESTs, a key barrier to technology transfer. The marketplace will facilitate market creation as a matchmaking platform for ESTs, where potential technology sellers and buyers can gain access to information at every phase of the technology development chain. The structure and scope of the proposed assisted broker model to be piloted is based on lessons gleaned from existing successful IPR marketplaces for ICTs. It will bring value to technology providers, particularly SMEs and research institutions by lowering the transaction costs associated with identifying and establishing contact with potential technology buyers/partners. Though the provision of a platform for such technology transactions, the marketplace will provide additional revenue and a suitable structure for transactions. At the same time, technology recipients will gain access to patents and know-how and support from a trustworthy third party broker. In short, this component will facilitate technology transfer through offering a structure for IP deals attractive to both technology suppliers and buyers, and thus aims to facilitate the realization of a number of climate technology deals within the time horizon of the project.

The successful demonstration of the marketplace will help pave the way for the establishment of a full-fledged business for the transfer of low-carbon technologies in the Asia - Pacific that has the potential to be replicated in other regions. Through addressing incremental transaction costs, the impact of this project in accelerating the deployment of new ESTs is potentially large.

The marketplace will set up a common platform that can be utilized not only for energy technologies but also for adaptation technologies in water, agriculture, and other sectors. The platform will also support Venture Capital Funds involved through Component 5 activities to further expand the market reach of climate change mitigation and adaptation technologies.

Sustainability of project interventions

The sustainability of the project interventions target three levels. First, the project targets sustainable impacts at the regional level. This will be realized though a close linkage to ongoing initiatives and in particular the proposed CTCN. The project has been designed to inform the CTCN through the strengthening and development of regional networks, partnerships and institutions, and through the operational knowledge generated by the project. These linkages are addressed in greater detail in section B.7. Aside from this, sustainable regional impacts will be realized through the strengthening of existing institutions, including networks and technology centres. Components 1 and 2 in particular will target these regional impacts. Second, sustainable impact will be realized at the national level though targeting national policy, planning and capacity development. Component 3 will focus on the enabling environment for climate technologies, including national level policy. Component 4 will target investment plans and planning processes. Both components will seek to enhance the capacity of policy makers and planners to enable the inclusion of climate technology considerations. Third, investments made in projects, VCFs and the technology marketplace (components 5 and 6) will ensure sustainability through promoting broader investment and availability of climate technologies in target markets. All investment components are expected to be financially sustainable post project completion. In particular, component 6 will promote the creation of new, self-sustaining, private sector institutions which will specifically facilitate technology transfer.

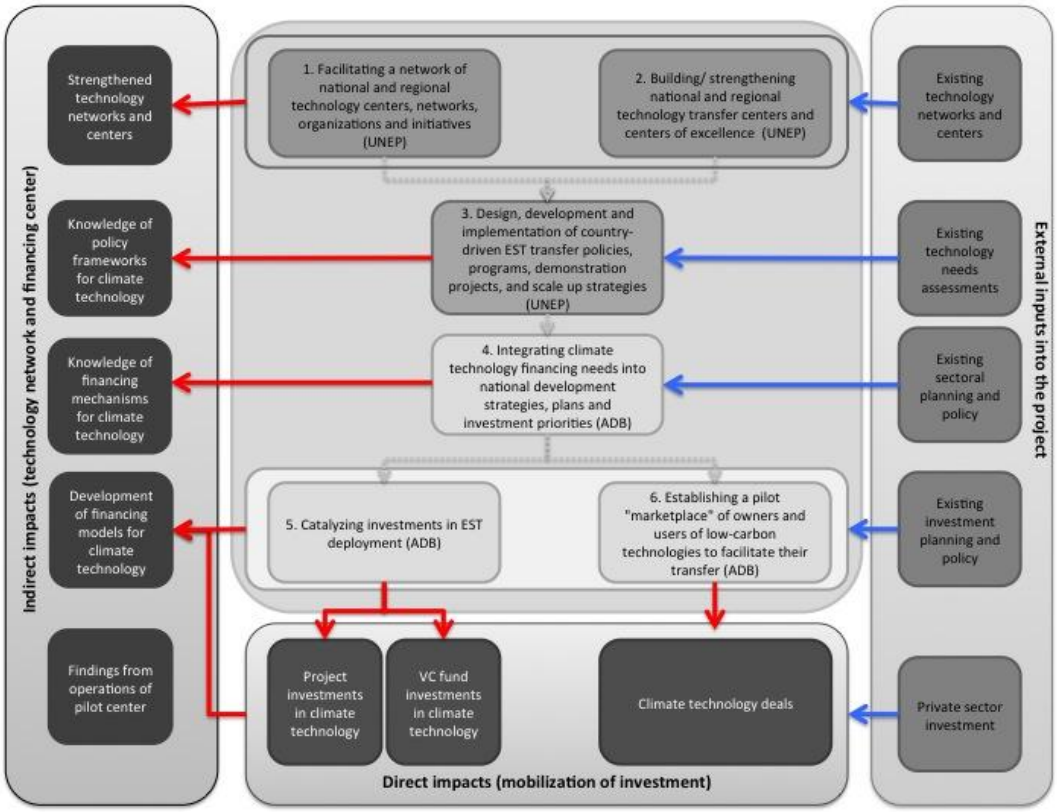
Moreover, it should be noted that through a focus on emerging and new technologies the project investment interventions are likely to be more long-lived and sustainable than projects using established technologies.

Project timeframe and the relationship between project components

The project has been designed as a pilot to inform the development of the CTCN. It is therefore designed to generate knowledge and important practical lessons for the CTCN and other similar initiatives to be undertaken in the coming years. In addition, the project interventions address both (i) capacity readiness and enabling conditions for market transformation; and (ii) investment and investment facilitation in the technology transfer and development process (from top to bottom in figure 1). Thus the Project will address the enabling conditions for EST investment and EST investment itself.

In practice, the project has a short implementation period of 2.5 years. This necessitates the implementation of project components in parallel (from right to left in figure 1). This means that most project interventions will rely on external inputs to the project – rather than outputs from other project components. For example, existing TNAs will feed into the development of sectoral policies (component 3) and the development of country investment plans (component 4). This also means that a number of project outcomes and outputs will focus on intermediate stages of the technology transfer process rather than the direct realization of concrete additional climate technology investments. Nevertheless, significant additional investment in climate technologies will be a direct impact of the financial investment and facilitation components (and in particular components 5 and 6), which focus on facilitating direct climate investments. Also, ADB's project activities will benefit from UNEP's activities when they take place in the same country, and the two agencies will work closely together to fully exploit the synergies of their project interventions. The project implementation timeline with milestones provided in Annex ___shows that these opportunities can be identified early on in the project.

FIGURE 1: RELATIONSHIP OF PROJECT COMPONENTS TO THE TECHNOLOGY PIPELINE



Country and technology selection considerations

General technology selection considerations for the project as a whole include, (i) for mitigation, the need to demonstrate and deploy scalable technologies that could result in long-run GHG emissions reductions; and (ii) for adaptation, identification of technologies that are affordable and adaptable to the needs of people and communities most vulnerable to climate change. Adaptation objectives also include support for the transfer of priority technologies identified by the recipient countries that are commercially available but have not been adapted to and adopted in their particular markets; and, (iii) Lower priority will be given to technologies at the diffusion stage.

Overall, the technologies targeted for support will be consistent with the priorities identified in TNAs, National Communications to the UNFCCC and other national policy documents. In all of these areas, close attention will be paid to technologies, policies, regulations, and instruments that will maximize environmental, economic, and social co-benefits. This approach will seek to avoid "reductionism" in decision-making systems that tend to focus on one benefit while risking the exacerbation of other problems, including social dimensions. Given that this is a pilot project both UNEP and ADB will restrict country engagement to those countries with which the agencies have strong working partnerships; this will help to ensure full government support for the project. More specifically, country and technology selection principles by component are included in table 1 below.

TABLE 2: SELECTION PRINCIPLES BY PROJECT COMPONENT

Project component	Scope	Country selection guidance	Comment
1. Technology network facilitation (UNEP)	Region wide	1.Established UNEP networks in Central Asia (including Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan and Turkmenistan) and South East Asia (including Thailand, Malaysia, the Philippines, Indonesia, Vietnam, Cambodia, Laos; and to a lesser extent Brunei, Singapore, and Myanmar) and the Asia Pacific Adaption Network. 2. Other countries that will be included are TNA countries not covered by existing UNEP CC Networks: Georgia, Azerbaijan, Mongolia, Sri Lanka, Nepal and Bhutan. 3. Inclusive of major countries (PRC, India) and technology centers in the region (TERI, AIT, etc.) 4. Inclusive of countries with particular technological needs such as Pacific Island Countries	The component will benefit from and build on the two existing climate change networks established by the UNEP in C and SE Asia as well as the Asia-Pacific climate change adaptation network (APAN) All countries should benefit from knowledge outputs generated by this project that will be made available on-line.
2. Building and strengthening technology centers (UNEP)	Technology centers in 6-8 countries	1. Established technology centres with clear capacity building needs 2. Centres that have potentially national and regional influence 3. Countries within UNEP Central and SE Asian technology networks 4. Countries which have already been engaged in the GEF TNA project	The component will focus on centres that are adjudged to have considerable capacity development needs to ensure project resources are spent where the need is greatest, and those that represent the greatest potential for national and regional influence.
3. Policies to enable EST transfer (UNEP)	1-2 sectors in 6-8 countries	1. Countries covered in UNEP's Central and SE Asian technology networks, and /or TNA countries in the region that together represent the broad range of conditions and technology needs within the region, therefore including: a. Low and middle income countries b. Countries in different geographical regions (major geographical sub regions) c. Country size (population) d. Emissions growth rates e. Exposure and sensitivity to climate change impacts	Component 3 is focused on country level policy. Outside considerations relating to the feasibility of operating within a particular country context (considerations 1-4), ensuring as wide a range of country conditions as is possible are included in the project is important to maximize the range of lessons learned from the differing country contexts. While a long list of criteria have been included for consideration in this project many of these will tend to pick out similar countries (e.g. LICs may be particularly vulnerable to climate change, certain regional locations are likely to share similar economic and therefore emissions growth rates and be subject to similar

			climatic vulnerabilities).
4. Integrating financing needs with policy (ADB)	6-8 countries	1. Countries that are willing to take part in project and enter into an agreement to that effect 2. Countries that are able to integrate project inputs into their policy/planning cycle (through ADB Country Partnership Strategies (CPSs)/Country Operations Business Plans (COBPs)). 3. Countries that together represent the broad range of conditions and technology needs within the region, to enable the generation of as broad a base of useful knowledge as is possible including, in order of priority: a. Low and middle income countries b. Countries in different geographical regions (major geographical sub regions) c. Country size d. Emissions growth rates e. Exposure to climate change impacts	Component 4, as with 3 focuses on a country level intervention and therefore shares similar country selection considerations to that of 3. If components 3 and 4 happen to operate in the same countries the two components will seek to coordinate activities. For Component 4 integration of the project interventions with on-going ADB and DMC government investment planning is important. This integration will be implemented through the development of ADBs own CPSs, which identify investments for ADB support and are in-synch with country investment planning. So a key selection criterion is for those countries and ADB Regional Departments that will be in the process of CPS development during the implementation period of the project. Examples are CPSs for Bhutan, Cambodia, Maldives, Nepal and Pakistan.
5. Catalyzing investments in EST deployment (Investment project level support, ADB subproject B)	Region wide 6-8 mitigation focused projects 4-5 adaptation focused projects	1. Projects in the ADB pipeline of climate technology investment projects 2. Projects that are sufficiently advanced in the pipeline to ensure commitment to financing within the project implementation timeframe 3. Projects with the potential to add-value in terms of the promotion of new technologies in particular contexts 4. Projects that represent a range of different technologies. For adaption, at least one project in four of the following sectors: a. Water resources b. Agriculture c. Disaster risk management d. Coastal zone/ urban development Mitigation project areas will include at least one of the following: a. Power generation b. Energy efficiency c. Industrial d. Transportation 5. Potential scalability of the technology 6. Country in which technology is based with priority given to LDCs for adaptation technologies and countries with higher emissions intensities for mitigation technologies.	Criteria seek to ensure that the assistance due to the project can (i) show concrete value added within the time frame of the project; (ii) represent a range of new and potentially scalable technologies; and (iii) select both LDCs and middle income countries where appropriate.
5. Catalyzing investments in EST deployment (Venture Capital Fund support facility, ADB subproject C)	India, PRC and SE Asia	Venture Capital Funds (VCFs) prioritized by judgments of the funds viability as assessed in the ACE initiative	1. Funds have already been identified which will operate in India and People's Republic of China. 2. Additional VCFs in SE Asia are likely to be beneficiaries of this project.
6. Pilot	Region	Technology deals will take place based on	Country and technology will be decided by the

"marketplace" of owners and developers (ADB)	wide	commercial considerations with no specific country focus.	implementing firm and will be determined by commercial considerations alone. This will initially target deals in the energy sector and move onto other sectors as the market place develops.

B. 2. incremental /Additional cost reasoning: describe the incremental (GEF Trust Fund/NPIF) or additional (LDCF/SCCF) activities requested for GEF/LDCF/SCCF/NPIF financing and the associated global environmental benefits (GEF Trust Fund) or associated adaptation benefits (LDCF/SCCF) to be delivered by the project:

The activities supported by the GEF Trust Fund are expected to generate incremental global environmental benefits by making significant contributions to climate change mitigation. The focus is on countries of the Asia-Pacific region, home to some of the world's most dynamic yet carbon-intensive economies. The region also has the largest absolute number of vulnerable poor who are expected to bear the brunt of negative climatic impacts, and the project activities financed by SCCF resources should generate significant additional adaptation benefits.

The Technology Network will improve the flow of, access to and quality of the information on the development and transfer of climate technologies in Asia-Pacific connecting and building long-term partnerships between national, regional, and international technology centers and centers of excellence at the regional level to advance technology development, demonstration, and deployment. The Technology Network will act as a market based clearinghouse i.e. connecting private and public stakeholders to explore options for integrating climate technologies and associated best practices and to improve market conditions and institutional frameworks for including the private sector in low carbon and climate resilient development, and facilitating business opportunities and access to new markets including South-South technology transfer for private sector players. Whether in the field of RD&D or market development, public institutions are more effective in reaching their aims if the private sector is involved. Therefore, the Technology Network will seek to stimulate twinning arrangements between technology centers and concrete partnerships between public and private entities.

Mitigation - GEF finance will enable the delivery of the following incremental benefits for climate change mitigation:

(i) With GEF funding, ADB will be able to provide technical support for integrating climate technology financing needs into national development strategies, plans, and investment priorities (Component 4 of this Project/Subproject A of ADB Cluster TA). This will facilitate linking of national commitments to promote climate technologies, technology needs assessments (TNAs), best practices in climate technology finance, and national investment planning processes in environment and other line agencies, and investment programs coordinated by economic and planning ministries, resulting in more climate-responsive plans. It will also create synergy with ongoing ADB TA "Enhancing Knowledge on Climate Technology and Financing Mechanisms" which seeks to equip governments with better knowledge on climate finance, which in turn can facilitate preparation of national investment plans.

(ii) GEF funding will enable ADB to offer specialist technical support for activities such as alternative technology analysis to address specific mitigation needs in investment projects. The provision of such technical assistance (Component 5 of this Project/Subproject B of ADB Cluster TA) at the project identification and design stage will reduce barriers and constraints caused by lack of information and inadequate human and institutional capacity, thereby reducing uncertainty and transaction costs associated with the introduction of new technologies which will intern assist in catalyzing direct investments in priority projects.

(iii) While the Asia Climate Change and Clean Energy Venture Capital Initiative has been launched with the approval of ADB equity investments in selected venture capital funds, the key incremental impact of GEF funding would be to facilitate the operations of these and other funds so that they can extend their scope

and better target technologies with high mitigation impact and market potential (under Component 5 of this Project/Subproject B of ADB Cluster TA). More specifically, GEF funding will enable the facility to extend services not only to more mature/advanced markets such as East Asia and South Asia but also more challenging yet promising sectors, and frontier markets such as Southeast Asia; with 5-6 funds receiving technical support (compared to 3-4 funds without GEF funding). In terms of sector, the TA program with GEF support will be able to cover energy efficiency and transport under climate change mitigation. A wider scope of knowledge services (e.g market survey to identify start-up companies) and on-demand advisory services (technology risks, product risks, patent and market potential) can be provided. The technical support will lead to more effective operation of the selected venture capital funds and swifter diffusion of technologies than would have otherwise been the case.

(iv) GEF financing for "Establishing a pilot marketplace of owners and users of low-carbon technologies" **(**Component 6 of this Project/Subproject D of ADB Cluster TA) will allow three technology verticals to be pursued within the project timeframe. Without additional funding, only one technology vertical could be pursued during the project timeframe. Allowing more technology verticals to be pursued will broaden the availability of technologies and will speed up the testing and refinement of the model. Climate change interventions are time critical therefore ensuring the rapid testing and broader rollout of the model is important.

(v) In terms of Technology Network Facilitation, UNEP baseline resources currently support information exchange, lessons sharing and south-south cooperation on a limited scale regarding low-carbon and climate resilient technologies in the region, and the incremental activities financed by GEF will substantially increase their outreach both in terms of the countries and stakeholders involved (notably by increasing links with the private sector), and technologies explored and promoted. The mobilization and networking between institutions/centres both from the public and private sector and between professionals at national and regional level is critical to promote the necessary strategic alliances and best practices for related technical innovation/adaptation, technology acquisition/deployment and technology management.

(vi) GEF financing will also enable UNEP to (i) increase its current support in strengthening capacities of government institutions and professionals in Asia-Pacific in the area of climate technology transfer and (ii) support countries in establishing more independent technology centres that can address the shortcomings of traditional approaches by acting as focal points for information, advice and expertise for climate technology transfer.

(vii) UNEP led baseline climate change and technology transfer activities in the region lead to the identification of a number of priority policy, regulatory and institutional support needs for climate technology transfer for the region and target countries. Currently UNEP can only address a fraction of these identified priority needs and GEF financing will enable UNEP to expand its technical support to target countries and regional bodies in creating readiness and enabling conditions for market transformation for climate technology transfer of confirmed priority technologies.

The Project will generate associated global environmental benefits through GHG reductions as outlined in the (above) Focal Area Strategy Framework, which are expected to include approximately 12.5 million tCO_2e in GHG reductions directly attributable to project investments, assuming GHG benefits over a 10-year project lifetime. Energy savings projected are 1.5 million barrels of oil and 12.3 million MWh of electricity over 10 years. This translates to less than US$1.2 per ton of direct CO_2e reductions for the GEF financing.

Regarding emissions reductions, it is important to note that the focus of this Project is not on **short term** cost effectiveness in achieving emissions reductions, clean energy supply or energy efficiency. The focus is on achieving much more cost effective emissions reduction impacts over the **medium- to long term**. As the project uses GEF funding to target relatively new technologies with relatively high unit costs initially, in the short term this is likely to result in more costly unit emissions reductions that those achieved using established technologies. In the longer term, however, this approach is designed to lead to a much more effective use of funding through the

promotion of new technologies. Similar considerations also apply to adaptation technologies (see below).

Adaptation - GEF finance will enable the delivery of the following additional benefits for climate change adaptation:

Many of the same considerations discussed above for mitigation apply to adaptation (for example – the need to better target adaptation technologies in national development strategies, plans, and investment priorities; and the need for specialist expertise to identify and support technology considerations from projects and venture capital funds). The additional cost reasoning is however less reflective of a need for qualitatively different technologies to address and adapt to emerging impacts and threats; and more reflective of the need to scale up existing technologies, and more specifically to address the reasons why such technologies are likely to be under-utilized (both under the status quo ante and as climate change progresses). These reasons primarily reflect limited information and poor assimilation of available information; lack of effective demand, nonmarket externalities and unrealized economies of scale.

Information constraints include a lack of research and systematic guidance on the types of technologies required in each climate-sensitive sector and location to mitigate the risks from and/or adapt to the impacts of climate change. In many instances the required adaptation technologies exist, but they are not being adopted due to a lack of awareness and guidance. A related factor is the poor assimilation of information regarding resource scarcity and stress into relative resource and technology prices. As an example, it has been clear to water resources experts for many years that demand and effective supply of utilizable water resources increasingly diverge in many regions of the world, but the *de facto* increase in scarcity has had little impact on water policies, pricing of water or even demand behavior (as demonstrated, for example, by the level of investment in water saving technologies). This suggests that in the absence of Project intervention, emerging information on the likely impacts of climate change will itself be insufficient to motivate the adoption of appropriate technologies.

Other factors limiting uptake of adaptive technologies by the communities in greatest need of them include a lack of effective demand and the presence of non-market externalities. To illustrate, many water-saving agricultural irrigation technologies have demonstrated economic benefits over their service lifetimes relative to traditional practices, but the up-front investment costs are too high for many small farmers to afford, particularly as they lack access to affordable credit. In addition, and compounding this problem, many low-income communities are risk-averse for the same reasons that they are vulnerable to the impacts of climate change, including low levels of assets, savings and income diversification, and they resist early adaptation of new technologies unless the benefits can be clearly demonstrated. And, while technology choices reflect the internal costs and benefits to the prospective adaptor, many of the benefits of adaptive and climate-friendly technologies (and dis-benefits of existing technologies) are found in the externalities. Using the water sector as an example, a primary benefit of a water-saving technology is that less water is removed from the system to achieve a given level of productivity. The water saved is either available for subsequent use, or alternatively is available to support ecological function. If a water user cannot benefit directly from these activities, he or she has no incentive to adapt, particularly as the advanced technology has a higher capital cost than established technologies.

To date few initiatives have been implemented within the region to facilitate adaptation technology transfer, and these are limited primarily to information exchange. The SCCF resources will be used to cover additional costs associated with the dissemination of adaptation technologies in targeted sectors, where they will enhance the long-term resilience of these sectors and reduce associated costs. SCCF funds will enable the project to generate additional adaptation benefits by providing technical support for the identification and facilitation of adaptation technology investments, reducing risks and uncertainty particularly for sectors and technologies where technical knowledge, expertise and experience may be limited. Specifically, Project activities will (i) reduce transaction and information costs associated with adaptation technology transfer and (ii) reduce costs to client countries through increasing efficiencies of scale. The project will support the engagement of companies marketing climate-resilient technology products, enabling them to register, grow, and find exit opportunities in the capital markets.

For adaptation activities under the projects technical assistance components (Components 3 and 4) the GEF funding

will enable the project to: (i) assist developing countries in the region to design appropriate policies, standards and regulations to help catalyze adaptation technologies (component 3); (ii) design and establish financial mechanisms and incentives consistent with priorities and mechanisms under NAPAs or similar documents (under Component 3); and (iii) develop national and or sub-nation investment plans and strategies for adaptation technologies (under Component 4, with linkage to component 3). These activities will be supported by the projects work on technology assessments and knowledge sharing (both directly at country levels and through country and regional networks such as the Asia-Pacific Adaptation Network).

For adaptation activities under the project investment component (Component 5, Outcomes 7 and 8) the project will demonstrate the use of adaptation technologies to both reduce quantified vulnerabilities and to support technology diffusion. The additionality of project interventions will be established on a project by project basis. This will involve:

(i) identifying 4-6 investment projects in the ADB portfolio that are at medium or high risk due to climate change impacts (based on preliminary climate and disaster risk screening that is mainstreamed in ADB processes). This will focus on four sectors: water resources; agriculture; disaster risk management; coastal zone/ urban development.

(ii) conducting climate change impact and vulnerability assessments as required to quantify climate vulnerability and the likely economic implications for the investments (using ADB and other resources). This will establish a baseline on climate impacts and risks so that the impacts of technologies and can be based on and monitored. Following these assessments, the CCA tracking tool will be updated to enable complete tracking of project impacts.

(iii) assessing technology options for enhancing climate resilience of the projects, considering opportunities for technology diffusion within the sector and where relevant, the country and region (with GEF resources); Selection of technologies will consider a range of issues including their ability to reduce identified vulnerabilities and risks, appropriateness for the sector and end users in developing countries, market potential, costs and demonstration value etc. Note also that while costs of the technologies will be an important consideration in determining the technology selection, the project will focus on achieving cost effectiveness in addressing climate change over the medium- to long term, rather than the short term. This is because the GEF funding will target technologies that have not yet achieved full market uptake, and may as a result have relatively higher unit costs initially (compared to business as usual technologies), but would lead to a much more cost effective adaptation returns in the long-term.

(iv) demonstrating the technology through the project investments (with ADB and GEF resources - to be determined on a project by project basis based on technologies, costs and baseline project resources). For adaptation activities under the project investment component (Outcome 8), the project will enable assessment of adaptation technology options across vulnerable sectors and identification of candidate start-up firms that can develop the technologies for market (with GEF resources), with supporting investments from venture capital funds (ADB and private equity). In the absence of GEF support, these technology assessments would not occur and as a result equity investments would more likely be targeted toward business-as-usual technologies.

The **sustainability** of both mitigation and adaptation results will be enhanced by (i) capacity development for the formation of national policies that are supportive of climate technology development, transfer and diffusion; (ii) assistance for the inclusion of relevant policies in development and environmental frameworks and strategies at sub-national, national and regional levels; and, (iii) creation of technology markets and support to build a critical mass of suppliers of relevant technologies at the regional level. The project's use of both technical assistance grants and investment capital are also considered to be cost-effective, as (i) investments may not be undertaken before the barriers to technology transfer have been identified and addressed (through grant funding), while (ii) grants alone would not be able to leverage a high level of private sector investment. Furthermore the project seeks to build on the complementary comparative advantages of the two cooperating GEF Agencies, which will provide better coordination and synergies in the use of grant and investment resources.

B.3. Describe the socioeconomic benefits to be delivered by the Project at the national and local levels, including consideration of gender dimensions, and how these will support the achievement of global environment benefits (GEF Trust Fund/NPIF) or adaptation benefits (LDCF/SCCF). As a background information, read Mainstreaming Gender at the GEF.":

In addition to mitigation and adaptation benefits, the facilitated provision of affordable technologies can improve the quality of life, especially of the poorest and most vulnerable segments of society. Both mitigation and adaptation technologies can help to address problems faced by the poor and vulnerable. For example, the project will cover technologies that provide basic services such as power and clean water supplies to communities that have no access to grid-connected services, such as slum dwellers and remote rural communities. Many adaptation technologies may also address important climatic impacts that tend to fall more heavily on the poor as well as directly addressing aspects of poverty itself. For example, flood protection and disease prevention address external shocks, which can often be a cause of poverty and to which poor people tend to be more vulnerable. Some mitigation and adaption technologies, in land use, agriculture and water use allow more efficient resource use and management, and promote sustainable resource use practices and poverty reduction. Examples may include new crop varieties, drip irrigation techniques, new types of fertilizer and the introduction of no-till or low-till technologies in agriculture.

Some climate technologies promoted by the project are also likely to have positive gender impacts, through addressing household water and energy needs and so addressing the burden placed upon women by these household roles. For example, renewable energy-based cooking stoves could improve infant and maternal health due to decreased indoor air pollution, and with greater efficiency, they would also reduce the need for women to collect fuel-wood, thus giving women more time to engage in more productive economic activities. Similarly, technologies leading to the provision of clean water supplies for households would reduce both the disease burden and the time taken for women to collect water. Adopted technologies that reduce risks from climate-related disasters will benefit women directly, as they are disproportionately victims of such events. The Project will pay careful attention to gender issues and, wherever possible, give preference to facilitating the transfer of technologies that will directly benefit women.

Potential social benefits and other co-benefits will be identified and monitored during the implementation of the project. Wherever possible the project will seek to maximize the social and co-benefits associated with the project.

B.4 Indicate risks, including climate change risks that might prevent the project objectives from being achieved, and if possible, propose measures that address these risks to be further developed during the project design:

Risks	Likelihood/impact*	Mitigation
Collapse of or delays in international and regional dialogues on climate change actions particularly on Technology Mechanism, financing and other linked mechanisms.	Likelihood 2, impact 1	Collapse of, or delays in the negotiations may impact private sector and counterpart government interest in the project. In such an event the project can focus on technologies, which meet multiple policy goals (such as energy security, provision of basic services etc.) and would receive support from counterpart governments and the private sector even without the prospect of additional support through financing linked to a Technology

		Mechanism. In order to prepare for such an eventuality the project will closely monitor developments in the international and regional arenas on climate change actions.
Political and macroeconomic instability in countries, which may affect national priorities, market conditions, and the policy environment for technology development and transfer.	Likelihood 2, impact 2	Engagement with a range of countries should serve to mitigate country level macroeconomic risk.
Inadequate support from governments and other stakeholders to commit to policy or institutional reforms or to providing needed human and financial resources.	Likelihood 1, impact 4	The project will adopt a participatory and consultative approach in project planning, design, and implementation to ensure strong ownership, which will involve the conduct of workshops and consultations to seek inputs/views of stakeholders during inception, implementation, and monitoring of progress of activities. Where necessary the project will seek to forge formal agreements such as Memoranda of Understanding/Agreements to define key responsibilities with counterpart governments.
Lack of qualified and available staff and experts (especially technology experts) to participate in project support activities.	Likelihood 3, impact 3	The project will seek to use existing networks to identify and engage qualified experts for the Project.
Unable to identify sources for co-funding for funds which have not yet been identified.	Likelihood 2, impact 2	The project design allows for some flexibility in the scope of some project components, in the case where additional funding is not secured the scope of some projects can be reduced accordingly.
Project interventions fail to attract the level of private sector support expected.	Likelihood 1, impact 5	Flexibility in project design and scope will ensure that the project can offer valuable services to a range of private sector investors. Private sector participants will be invited to participate in workshops and will be targeted

		for knowledge dissemination.

*Note: Impact ranked 1-5, with 5 being the most severe, likelihood ranked 1-5 with 5 being the most likely.

B.5. Identify key stakeholders involved in the project including the private sector, civil society organizations, local and indigenous communities, and their respective roles, as applicable:

The Project will work with the national and local governments, private and public sector enterprises, civil society, research and development centers, academia, and not-for-profit organizations pursuing a climate-friendly economy. Similar organizations from developed countries will also participate in Project activities, and they will mainly contribute to capacity building, policy and advice, and research and development.

The main stakeholders of the pilot Asia-Pacific Climate Technology Network and Finance Center are outlined below in Table 2.

TABLE 2: INDICATIVE STAKEHOLDER PROJECT ROLES

Stakeholder role	Agencies	Comments
Lead agencies	ADB, UNEP, GEF	The two agencies responsible for the design and implementation of the project and GEF
Implementing partners	WRI, IGES, Venture Capital Funds, Technology market place operators, technology buyers/sellers, Project developers (public and private), DMC line agencies/ministries, Technology centers/institutes. Regional agencies, ASEAN, APERC.	Stakeholders who have an active role in implementing the project and are an integral part of project activities.
Active cooperation	Other ADB/UNEP projects and programs in related fields in the region, UNFCCC, IEA	Stakeholders with whom the project will seek active cooperation and coordination (e.g. in avoiding duplicating research or other work)
Consultation and Communication only	Other IGOs and NGOs	Stakeholders who will be the targets for knowledge dissemination activities.

National stakeholders:

- National climate change focal points and staff from national/regional climate change offices/departments: as primary contact persons/institutions of their country in the UNFCCC process and for coordinating all national climate change related issues, they will directly benefit from the project activities and play a key role in raising awareness, disseminating relevant information and leading the government institutions to adopt the necessary strategies, policies and regulations for climate technology transfer.
- Line Ministries and related institutions: who have a key role to play in national mitigation and adaptation efforts; they will directly benefit from the project activities and play a key role in developing and implementing the enabling conditions and incentives for climate technology transfer.
- Economic planning and investment line ministries: will be important counterparts in the mainstreaming of climate change technology considerations in their development plans, and be the key stakeholders for component 4.
- National Bureaus of Standards: as the leading institutions for the improvement of national standards and labels, they will directly benefit from the project activities and play a key role to certify climate technologies and promote consumer acceptance e.g. by requiring energy-efficiency labels for appliances.
- Public investment agencies and funds, and related investment entities: they will directly benefit from the project activities and play a key role in providing investments for project development and implementation phases.
- Private sector especially through the private sector technology developers and vendors, utilities, industries, manufactures, installers: they will directly benefit from the project activities and play a key role in developing and implementing projects for the deployment of ESTs.

- Private investors, banks and other financial institutions: they will directly benefit from the project activities and play a key role in providing investments for project development phase and implementation phase for the improvement and deployment of ESTs.
- Private Venture Capital Funds: though technical support for venture capital funds offered through the project, and through greater access to technologies and technology markets.
- Professionals, project developers, project engineers, technical institutions, technology laboratories and centers of excellence, universities and colleges, technical and social society NGOs: they will directly benefit from the project activities and provide support, advice and expertise for policy, market mechanisms and project development.
- In –country development partners/donor community: advocacy and investments for national priority programs both for project development and implementation (including for the development and implementation of enabling policy regulations).

Regional stakeholders

- Regional economic communities: e.g. ASEAN, Asia Pacific Economic Cooperation (APEC). They will play a key role in the development and implementation of regional technology transfer programs i.e. regional harmonization of energy efficiency standards and regional market development programs.
- Regional thematic or sector/technology specific institutes/centers: they will directly benefit from the project activities and provide support, advice and expertise for policy, market mechanisms and project development.

Others

- UNFCCC: benefit from the experience, knowledge and lessons from the project.
- Bilateral donor agencies: benefit from the experience, knowledge and lessons from the project.
- International thematic or sector/technology specific institutes/centers e.g. International Energy Agency (IEA), International Renewable Energy Agency (IRENA): provide support, advice and expertise for policy, market mechanisms and project development.

B.6. Explain how cost-effectiveness is reflected in the project design:

Throughout the design the project has sought to enhance cost effectiveness of GEF funds as far as possible. This has been achieved by (i) Leveraging current baseline activities being undertaken by both agencies, such as building on UNEP's TNA project and ADB's CPSs and COBPs; (ii) Mobilizing private sector investment in ESTs, through direct equity investment in VCFs, by assisting the development of a supportive policy context and through addressing search costs and transaction costs associated with EST transfer; and, (iii) Seeking to ensure that initiatives and mechanisms developed as part of the project have sustainable and long term impacts through integration with broader policy, planning and financing mechanisms.

The project will concentrate on relatively early stage technologies (post pilot demonstration stage/pre- diffusion stage technologies). This means that unit costs for technologies are likely to be higher than for technologies that may have otherwise been used. While short term costs may therefore be higher, the project is expected to reap benefits in the medium and long term as superior climate technologies promoted through the project become more widely disseminated and fall more rapidly in price as a result. Therefore, from the medium term onwards the project is expected to be much more cost-effective than projects with a focus on short term results and incumbent technologies. In terms of expected direct impacts and indirect impacts from the medium term onwards the project is expected to be highly cost effective and represent excellent value for money.

B.7. Outline the coordination with other related initiatives:

The Project will seek collaboration and partnership with institutions and enterprises that have demonstrated capability to analyze the needs of the climate economy and suggest pragmatic solutions. These include the Climate Technology Initiative (CTI) started in 1995 by OECD member countries and now implemented by the IEA. The CTI, among others, has been providing assistance to developing and transition countries carrying out TNAs, and collaborates closely with UNDP and UNEP on TNAs. The IEA has also recently launched the International Low-Carbon Energy Technology Platform. The Project will also coordinate with the World Bank which is establishing a network of climate innovation centers designed to provide targeted financing and

capacity building to entrepreneurs and SMEs to scale up and deploy innovative clean technology solutions. The Asia-Pacific Partnership on Clean Development and Climate, which started in 2006, has public-private task forces to accelerate technology transfer and advance pilot projects in several fields, including carbon capture and storage. The APEC forum also supports market-driven technology transfer between its members.

At a regional level, knowledge and information network activities on adaptation technologies will be coordinated and supported through APAN. As indicated in section B1, APAN, including its regional 'Hub for Asia and the Pacific' shares knowledge and information on adaptation in the region, and facilitates developing countries' access to international adaptation finance mechanisms. Given the involvement of both ADB and UNEP in APAN, the knowledge platform will provide a useful framework for up-scaling project experience and knowledge under the project.

The activities and support provided through the Project also benefit from and promote the experience, expertise and tools developed through the numerous climate change and technology transfer initiatives lead (or co-lead) by UNEP and ADB that cover all the major related aspects i.e. deployment and diffusion of clean technologies, market transformation, access to finance, analysis and information, policy advice/guidance, capacity building and institutional strengthening.

The project will also seek to actively engage with the UNFCCC in communicating findings gained from the experience of the implementation of the project. Project components have been designed to be fully in line with what is expected of the CTCN and will pilot different approaches for strengthening networks and institutions, improving cross sectoral and cross country coordination, improving planning, broadening knowledge on technology transfer and fostering public-private partnership for technology transfer. This will enable the project to inform negotiations relating to the Technology Mechanism and the role of technology centers and the added-value of working with specialized networks in this. Cooperation with the UNFCCC will be managed through the Steering Committee.

C. GEF AGENCY INFORMATION:

C.1 Confirm the co-financing amount the GEF agency brings to the project:

ADB's support for the Project includes the following: (i) equity investments of at least $60 million in multiple venture capital funds which will provide early stage finance to start up companies with climate-friendly technologies; (ii) approximately $9.0 million from its Climate Change Fund, TA Special Fund, and from bilateral and multilateral funding contributions; (iii) supervising staff resources; and, (iv) office space for the pilot Climate Technology Finance Center in Manila.

UNEP's co-financing for the Project includes the following: (i) a total of $5.48 million in cash consisting of $2.64 million co-funding from the Government of Finland in relation to the Southeast Asia Climate Change Network and specifically earmarked for Southeast Asia; plus $1 million from the Government of Denmark in relation to facilitating implementation and readiness for mitigation earmarked for Indonesia and Vietnam; plus $0.84 million co-funding from the Government of Korea in relation to the Central Asia Climate Change Network and specifically earmarked for Central Asia; and, (ii) an in-kind contribution of $1 million, including UNEP staff time and office space for the Network Secretariat in Bangkok.

C.2 How does the project fit into the GEF agency's program (reflected in documents such as UNDAF, CAS, etc.) and staff capacity in the country to follow up project implementation:

ADB has identified environmentally sustainable growth, including climate change, as a top development concern and has made this a core area for ADB operations under its long-term strategic framework "Strategy 2020." In April 2010, the ADB President approved the strategy paper "Addressing Climate Change in Asia and the Pacific: Priorities for Action." This serves as a strategy for helping the region tackle the climate change challenge. It identifies five priorities: expanding the use of clean energy; encouraging sustainable transport and urban development; managing land use and forests for carbon sequestration; promoting climate-resilient development;

and strengthening policies, governance, and capacity. ADB aims to deliver results in these areas through three modalities: financing, knowledge, and partnerships. The strategy places emphasis on technology transfer and diffusion as a means to help developing countries of the region transition to low-carbon and climate-resilient development pathways. ADB works in collaboration with governments, the private sector including venture funds, and other partners, to facilitate the introduction of new clean technologies. Innovative financing, especially through public-private partnerships (PPPs), also is to be provided to address adaptation needs.

ADB has a large ongoing program of climate-related investments including the provision of technical assistance that contribute to meeting climate change technology needs. In the area of clean energy alone, ADB invested $1.76 billion in 2010 across the region and has raised its original clean energy investment target of $1 billion per year for 2008–2012 to a new target of $2 billion starting in 2013. Additionally, ADB has launched several initiatives that may be mainstreamed into its operations over the next few years. Such programs include the Asia Solar Energy Initiative, which aims to implement solar projects with total capacity of at least 3,000 MW, and the Quantum Leap in Wind and Small Wind Power Initiative which helps lower barriers and implement over 1,000 MW of wind capacity. ADB is also collaborating with large international pension funds on a Climate Public Private Partnership Fund to mobilize over $1.5 billion for low-carbon projects in Asia and the Pacific that will contribute to the uptake of technologies that are ripe for mass deployment.

The support for low carbon and climate resilient development is at the core of UNEP's climate change priorities and links directly with the organization's general political mandate, under which UNEP has been asked to assist developing countries with the environmental dimension of sustainable development. UNEP currently implements this mandate through its Medium-Term Strategy (MTS) for 2010-2013, endorsed by the UNEP Governing Council in February 2008 through decision SS.X/3. Climate Change is one of the six crosscutting priorities identified for the organization in the MTS. The Project is fully consistent with the Medium Term Strategy and Programme of Work, and would constitute an important element of UNEP's efforts to help developing countries link development and climate change.

UNEP's strategy on climate change was further elaborated in 2009, with specific focus on three core flagships that give strategic priority to: Ecosystems-Based Adaptation (EbA), Reducing Emissions from Deforestation and Forest Degradation-Plus (REDD+), and Clean Tech Readiness (CTR). These flagship areas directly reflect some of the major priorities emerging from both UNFCCC decisions and the African position paper for COP 15, where clean energy access, technology transfer, forest management and reduced deforestation; and ecosystems based adaptation are specifically mentioned as areas of UN support.

The CTR flagship comprises a set of interrelated efforts aimed at supporting sustainable energy development and enhancing access to clean and efficient energy services for the poor in developing countries. Under the CTR flagship, UNEP partners with countries to build their readiness to:

- Develop low carbon energy plans and GHG mitigation strategies by:
    - Identifying suitable clean technologies and their best applications reflecting specific country circumstances
    - Assessing the potential for reducing GHG emissions given the national context and building a strong macroeconomic case for investing in those technologies
    - Identifying the barriers to adopting each clean technology and developing policies and regulations to address the barriers identified
- Integrate clean technologies into relevant national and sectoral plans
- Engage small-scale businesses in the clean energy sector
- Create a stronger enabling environment for their efficient use
- Access international and local financial support for adoption of the technologies, and
- Explore carbon finance opportunities and build national capacity to tap the CDM.

Through its EbA Programme, UNEP works to develop effective EbA approaches, and helps vulnerable communities adapt to climate change through good ecosystem management practices and their integration into global, regional, national and local climate change strategies and action plans. UNEP's EbA Flagship is being

implemented in diverse ecosystem settings, including mountains, river basins, dry-lands and low-lying coasts. The work is delivered through three main overarching components:

- Assessments and knowledge support,
- Capacity building and demonstration, and
- Integration of EbA options into national development and adaptation plans.

PART III: INSTITUTIONAL COORDINATION AND SUPPORT

A. INSTITUTIONAL ARRANGEMENT:

This Project is a joint project implemented by ADB and UNEP in partnership. UNEP and ADB components are to be implemented independently. ADB will establish a Climate Technology Finance Center in its headquarters in Manila, Philippines, and UNEP will establish a Climate Technology Network Secretariat in its Regional Office for Asia-Pacific in Bangkok, Thailand. The overall coordinator/head of the Climate Technology Secretariat will be the Head of the Technology Transfer Unit based in UNEP's Energy Branch, Division of Technology, Industry and Economics, Paris. ADB as the lead agency will be responsible for reporting to and managing communications with GEF. UNEP will supply all relevant information to allow ADB to fulfill GEF reporting requirements.

While UNEP and ADB components are to be implemented independently, both teams will liaise closely for the overall project management and reporting, and for the implementation of the activities for which they have respective lead responsibility as outlined above. In this regard, ADB and UNEP will retain a core team to coordinate the overall project and manage/oversee M&E activities, and support joint UNEP/ADB activities such as Steering Committee meetings. To manage these tasks ADB and UNEP will establish a project management unit jointly led by the coordinator/head of the Climate Technology Network and the coordinator/head of the Climate Technology Finance Center. The joint ADB-UNEP PMU will include the project staff from the Climate Technology Finance Center in Manila, the Climate Technology Network Secretariat in Bangkok and UNEP's Division of Technology, Industry and Economics in Paris. The terms of reference for the joint ADB-UNEP project management unit are included as attachment 5 to this document. Expert consultants and secondees from partner organizations will also be engaged to support project activities.

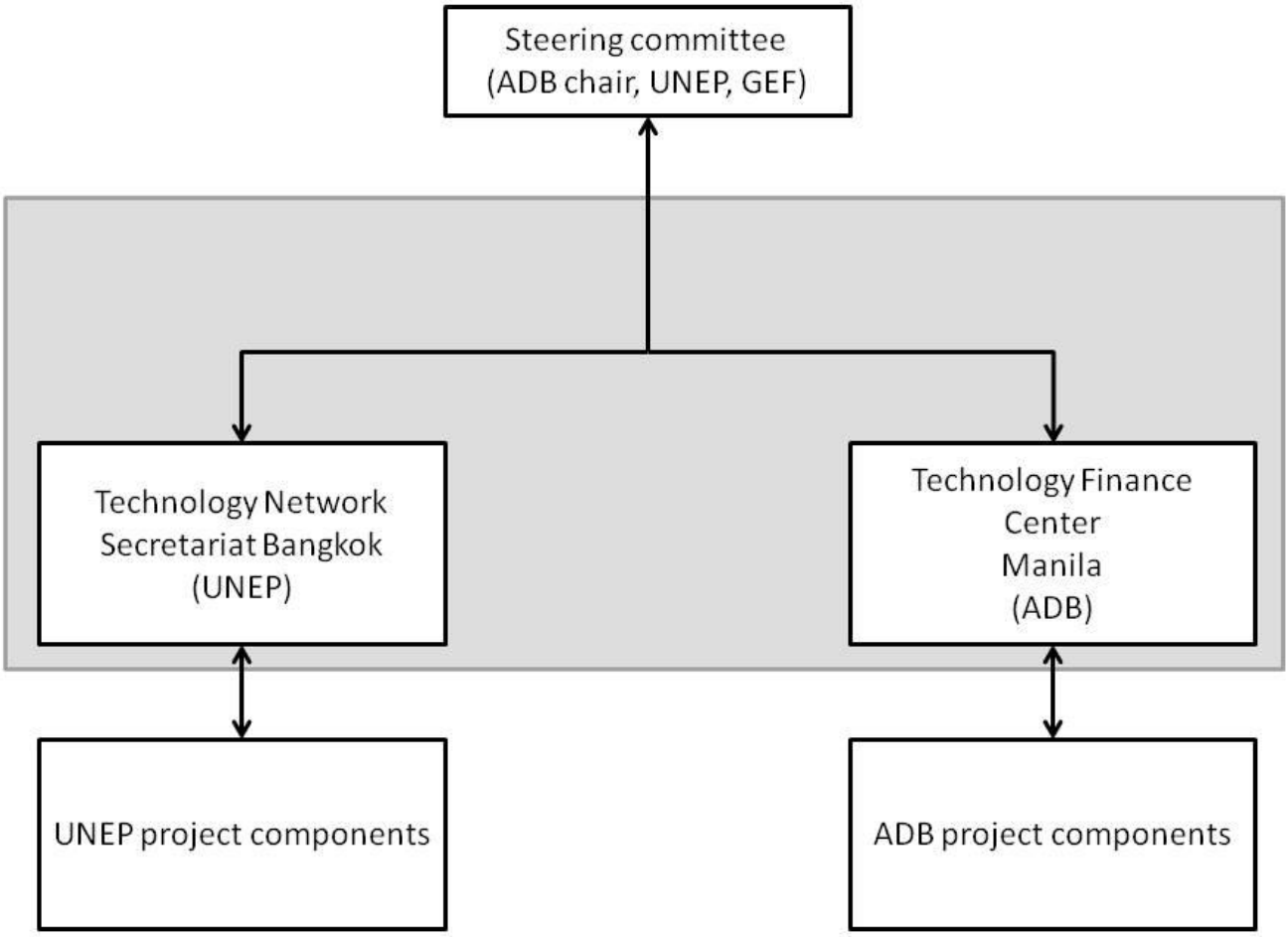
The Project will have a Steering Committee (SC) with members from the GEF-SEC, ADB, and UNEP. Resource persons may be invited to attend the SC meetings, upon prior consultation and approval by the Committee members. As lead agency ADB will act as SC chair and take the coordination responsibilities for the SC. The SC will meet face-to-face at least once a year and use other communications (e.g. email, phone, video-conferencing and tele-conferencing) as necessary to decide on key operational matters such as work plans and resource allocation priorities. The SC also will address project coordination issues that may arise. The cost of participation in the SC will be borne by the Project. The terms of reference are attached in attachment 6 to this document.

ADB and UNEP will take the lead on their respective components, while maintaining active communication and consultation between the two organizations. Both organizations are expected to assume responsibility for the respective portions of documents and other required reporting submissions to the GEF-SEC. Key GEF documents such as project implementation reports will be reviewed and signed by both institutions. ADB will submit these documents to the GEF Secretariat, copied to UNEP. With respect to financial administration, each Agency will be responsible for administering and reporting on the use of GEF grant resources allocated to their respective components as indicated in Table D. The project management and reporting structure is described in figure 2 below.

Separate Advisory Committees, as needed, will also be established to oversee and advise on the implementation of the project components. In the case of the three ADB led components they will be implemented and managed as interlinked subprojects under a larger cluster technical assistance project (see the attached technical

assistance paper).

FIGURE 2: PROJECT MANAGEMENT STRUCTURE



B. **PROJECT IMPLEMENTATION ARRANGEMENT:**

ADB pilot Climate Technology Finance Centre: ADB will retain a core team for overall project coordination and implementation of activities for which it has lead responsibility through the pilot Climate Technology Finance Center. The core team will consist of management level staff, technical staff, secondees, and consultants with climate change-related expertise in the energy, transport, water, and agriculture sectors.

As described in the attached technical assistance paper (attachments 1 and 2), ADB will implement the three components into which it has inputs as five inter-linked subprojects under one cluster technical assistance project entitled 'Establishing a Pilot Center to Facilitate Climate Technology Investments in Asia and the Pacific', and one separate technical assistance project entitled 'Enhancing Knowledge on Climate Technology and Financing Mechanisms' (to be implemented as part of component 4). Together these projects and subprojects will form the operations of the Manila pilot center. Each of these subprojects will retain management and administrative staff as deemed necessary as well as teams of technical consultants. Where appropriate, technical consultants will be pooled between subprojects. Components 5 and 6 will also retain the services of consultancy firms. Actual implementation procedures will differ from subproject to subproject depending upon the project modality. The components/subprojects will be implemented as follows:

Component 4 (subproject A and a related TA) - **Integrating climate technology financing needs into national development strategies, plans.** As mentioned above, a related ADB TA "Enhancing Knowledge on Climate Technology and Financing Mechanisms" will also be part of this component. The TA will retain both a core team of long-term national and international consultants and a team of technical experts retained on a short-term basis and will support the organization of consultation workshops and preparation of knowledge products and work to enhance the ability of DMCs to advance their views related to the on-going international discussions regarding climate finance. In addition, this TA implementing partners will include the Institute for Global Environmental Strategy (IGES) and the World Resources Institute (WRI).

The main part of Component 4 (subproject A) will be implemented in the first instance through identification of partner countries, which meet the selection criteria (given in Table 1 above), and following this the development of an agreement with ADB to ensure country ownership and that adequate country resources are devoted to the project. Countries will also be selected on the basis of the country-ADB CPS and COBP planning cycles, such that project inputs directly inform investment and policy choices. National and international consultants will be retained to work closely with ADB Regional Departments and government counterparts on the incorporation of climate technology considerations into government plans.

Component 5 (subprojects B and C) - **Catalyzing investments in EST deployment.** Subproject B will work closely with the ADB Regional Departments in identifying pipeline projects for project assistance, whereas subproject C will provide assistance mainly on a demand-led basis to selected Venture Capital Fund managers on technology l and legal issues. Subproject B will retain a team of individual consultants while Subproject C will largely engage firms to provide expert services. Subproject C will also tap ad hoc experts to provide supplementary expertise on as needed basis, either individual consultants or consulting firms.

Component 6 (subproject D) - **Establishing a pilot "marketplace" of owners and users of low-carbon technologies to facilitate their transfer.** This subproject/component will be implemented through the engagement of a firm using a quality-and cost-based selection procedure to design the operational procedures and be the Operator of the demonstration phase of the market-place. The project will also engage an implementation consultant with expertise in providing high level advisory services on low carbon technology transfer. The implementation consultant will also assist ADB and the Operator in preparation of the mid-term review report and the separate paper for continuation of the business model for technology transfer.

UNEP Climate Technology Network Secretariat: UNEP will retain a core team to implement activities for which it has lead responsibility through the Climate Technology Network Secretariat – a light structure not exceeding 6 staff members (one coordinator, 2 program officers, one technical advisor for mitigation, one technical expert for adaptation, and one administrative assistant). The UNEP core team will comprise the overall coordinator/head of the Climate Technology Secretariat and Head of the Technology Transfer Unit based in UNEP DTIE's Energy Branch in Paris, a technical advisor and a technical expert to be recruited and to be based in Bangkok, two program officers and a financial and administrative assistant already working for the Southeast Asia Climate Change Network Secretariat in UNEP's Regional Office for Asia-Pacific based in Bangkok as well as other staff coordinating UNEP's Climate Change Networks in the region (Southeast Asia and Central Asia CC Networks as well as APAN and Adaptation Knowledge Platform for Asia) and staff from the headquarter divisions coordinating and supporting UNEP's Climate Change and technology transfer activities.

The Regional Technology Network Secretariat will provide day-to-day support for the implementation of the various Network activities at regional and national level of the 'capacity readiness and enabling conditions for market transformation' components (UNEP led components 1,2 and 3). It will be supported technically and methodologically by relevant staff at the UNEP Division of Technology, Industry and Economics (DTIE, Paris) which provides back stopping services to staff, as well as a link with the broader UNEP climate change programs, and projects. UNEP will also collaborate with governments and regional institutions and engage specialized institutes or centres of excellence as well as local and international consultants as deemed necessary for the success of the activities.

PART IV: EXPLAIN THE ALIGNMENT OF PROJECT DESIGN WITH THE ORIGINAL PIF

The current project is closely aligned with the original PIF document. The major changes are:

(i) The inclusion of the additional ADB technical assistance project 'Enhancing Knowledge on Climate Technology and Financing Mechanisms' in component 4. This is funded through ADB sources and has been included in the overall project, as it will form an integral part of the functioning of the project and the ADB finance center in particular;
(ii) Greater clarity on technology and country selection criteria, resulting in a more careful delimitation of the project scope;
(iii) Revised project framework and M&E targets have also been included to reflect better estimates of project effects and to provide greater clarity;
(iv) Emissions reductions projection have been revised upwards using new methodologies that are deemed to better reflect project impacts and the incremental cost reasoning has been adjusted to reflect this; and,
(v) Co-financing amounts have been revised to reflect the addition of a new subproject to component 4 and other changes in over all financing.

The response to the STAP and country comments are addressed in greater detail in Annex B and give greater detail on the major changes.

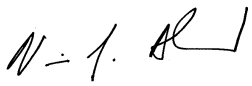
PART V: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S) AND GEF AGENCY(IES)

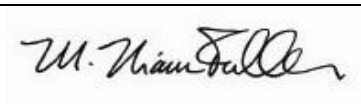
A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT(S) ON BEHALF OF THE GOVERNMENT(S):):
(Please attach the Operational Focal Point endorsement letter(s) with this template. For SGP, use this OFP endorsement letter).

NAME	POSITION	MINISTRY	DATE *(MM/dd/yyyy)*

B. GEF AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with GEF/LDCF/SCCF/NPIF policies and procedures and meets the GEF/LDCF/SCCF/NPIF criteria for CEO endorsement/approval of project.

Agency Coordinator, Agency Name	Signature	Date *(Month, day, year)*	Project Contact Person	Telephone	Email Address
Nessim J. Ahmad, Director, Environment and Safeguards, concurrently Practice Leader (Environment)		May 11, 2012	Xuedu Lu Advisor (Climate Change)	+632 632 4444	xlu@adb.org

Asian Development Bank					
Maryam Niamir-Fuller, Director, GEF Coordination Office, UNEP		May 11, 2011	Mark Radka, Chief, Energy Branch Division of Technology, Industry and Economics	+33 1 44 37 14 50	Mark.Radka@unep.org

ANNEX A: PROJECT RESULTS FRAMEWORK

Project objectives and outcomes

	Indicator	Baseline	Targets	Source of verification
		Start of Project (2012)	End of Project (2015)	
Project Objective: Diffusion of technologies that promote low-carbon and climate-resilient development enhanced (overall objective, ADB/UNEP combined)	Total investment in low-carbon and climate resilient technologies in participating DMCs increases by more than 10% from 2012 to 2020 (baseline 2012: to be determined)	(baseline 2012: to be determined)	More than 10% increase in investment from 2012 to 2020	DMC reports to the United Nations Framework Convention on Climate Change DMC and ADB investment portfolios, market surveys
	Direct investment in climate resilient and mitigation technologies realized.	(baseline 2012: to be determined)	$180 million investment for climate technologies mobilized leading to $480 million leveraged from cofinanciers	Industry and market reports Reporting requested by ADB TA progress reports
Outcome 1: Increased collaboration in the region for transfer of climate technologies between thematic or sector/technology specific centers and institutions (Component 1: UNEP)	Number of climate technology networks linking public and private professionals on climate technology transfer in the region Improved cross-sectoral and cross regional coordination for climate technology transfer at national and regional levels	Near zero Limited cross-sectoral coordination and cross-regional for climate technology transfer	5 new regional or sub-regional sector-specific or technology specific climate technology networks 6-8 countries and 2 sub-regional associations/economic organizations (ASEAN, CAREC) have officially made steps to improve coordination for climate technology transfer	Reports from the new regional or sub-regional sector-specific or technology specific climate technology networks Reports/strategies/plans/statements from national and sub-regional climate change coordination entities on climate technology transfer (e.g. National Climate Change Councils, ASEAN working group on Climate Change…)
Outcome 2: Thematic and technology specific institutions and centers are strengthened (and/or created) (Component 2: UNEP)	Level of support provided to thematic and technology institutions and centers with a view to improve the quality and availability of climate technology transfer services at regional and national level	Baseline to be established	At least 12 institutions/centers supported 70% of the supported institutions and/or centers respond that the support provided meet their needs	Feedback from institutions/centers on tailored technical support/assistance received (survey, letters/written communications…) Reports training workshops delivered or other capacity building events and workshop Evaluation forms by participants
Outcome 3: Support and opportunities for national, regional and global investments in ESTs are explored (Component 3: UNEP)	Number of new high quality bankable country-driven EST transfer programmes, demonstration projects and scale-up strategies developed	BAU scenario	5-8 new high quality bankable country-driven EST transfer programmes, demonstration projects and scale-up strategies submitted for funding	National and regional country-driven EST transfer programmes, demonstration projects and scale-up strategies
Outcome 4: Enabling policy environment and mechanisms created for transfer of climate technologies (Component 3: UNEP)	Number of new legal and regulatory instruments to promote sustainable EST market development	Limited number of enabling policies for climate technology transfer	New enabling policies to foster climate technology transfer are established in 6-8 countries	National policy documents

	Indicator	Baseline	Targets	Source of verification
		Start of Project (2012)	End of Project (2015)	
Outcome 5: Higher awareness and better participation of regional stakeholders in global discussions on climate change financing, including the development of the GCF and the operations of the Technology Mechanism (Component 4: ADB)	Concrete inputs from the Asia-Pacific region to the global process			Workshop reports Knowledge products
Outcome 6: Climate change technology transfer and deployment considerations integrated into CPSs and/or COBPs, national and/or subnational investment plans (Component 4/subproject A: ADB)	Climate technology investments integrated into investment plans, including national and/or subnational investment plans and ADB CPSs and/or COBPs	No participating governments have comprehensive technology investment and financing strategies integrated with national development goals	Climate technology investments integrated into 3–4 investment plans	DMC investment portfolios, other government reports ,CPSs and/or COBPs
Outcome 7: Increased investments in projects using climate technologies in DMCs (Component 5/Subproject B:ADB)	Amount of investment mobilized for climate technology investment project(s) Number of projects GHG emissions reductions		$120 million of ADB financing leveraging at least $240 million in non-ADB financing for climate technology investment project(s) ADB assists 4–6 projects using adaptation technologies and 6–8 projects using mitigation technologies which will reduce greenhouse gas emission by 597,084 tons of CO_2e annually over 10 years starting 2015	TA progress reports, consultants' reports, government reports
Outcome 8: Increased investments by selected Venture Capital funds[13] in technologies that address climate technology products (Component 5/Subproject C:ADB)	Amount of private capital invested by VC funds in early stage climate technology companies GHG emissions reductions	VC Funds invested $432 million in clean technology in PRC and India in 2012 (assuming no growth since 2009)	$60 million of ADB financing, leveraging at least $240 million of private capital invested by venture capital funds in early stage climate technology companies Greenhouse gas emission reduction of 654,438 tons of CO_2e annually over 10 years starting 2015 in DMCs where climate technology investments are made by venture capital funds	Venture capital industry reports, reports of fund managers Consultants' reports, government reports
Outcome 9: Successful demonstration of assisted broker[14] model for transfer of LCTs (Component 6/Subproject D:ADB)	LCT transfer model, market and technology focus is tested and model is commercially viable.	There is no climate technology specific assisted broker model technology market place.	LCT transfer model is tested with at least 2 deals signed LCT transfer business model detailed design finalized	Annual reports

[13] An investment fund that manages money from investors seeking private equity stakes in startup and small- and medium-size enterprises with strong growth potential. These investments are generally characterized as high-risk/high-return opportunities.

[14] An assisted broker model for technology transfer is one in which a third party broker offers services to facilitate the sale/purchase of IPRs. Please see attached TA paper for a fuller understanding of this model

	Indicator	Baseline	Targets	Source of verification
		Start of Project (2012)	End of Project (2015)	
Outcome 10: Project managed on time and within budget (Project management/Subproject E:ADB)	Pilot climate technology finance center operationalized, providing services to DMC, public sector, and private sector clients New financing modality proposed for DMC targeted climate technology transfer TA consultants engaged per schedule	N/A	TA progress reports, completion report TA progress reports, completion report TA progress reports, completion report	Monitoring and evaluation reports Other reporting

Project outcomes and outputs

	Targets	Source of verification	Risks and Assumptions
	End of Project		
Outcome 1: Increased collaboration in the region for transfer of climate technologies between thematic or sector/technology specific centers/institutions (Component 1: UNEP)			
Output 1.1: Collaboration is strengthened between key stakeholders at national level	6-8 national and 2 sub-regional inter-sectoral meetings on climate technology transfer	Meeting/workshop reports Government/regional bodies websites	**Risks** • Willingness of all stakeholders to communicate and get involved • Political stability • Financial attractiveness and opportunities to invest in climate technologies
Output 1.2: Regional and thematic expert groups are established to provide guidance and support to private and public actors for climate technology transfer	3-6 active regional (and/or sub-regional) thematic expert groups	Project monitoring reports Meeting/workshop reports Tools/ guidebooks Research papers/policy briefs developed	**Risks** • Existing human resources and sufficient experts • Efficient coordination and communication practice • Use of client oriented and clear messages from the experts
Output 1.3: Public-private partnership on climate technologies are promoted and supported	1-2 new enabling policies that support public-private partnership and/or private investment	Policy documents	**Risks** • Government existing agencies and private sector agencies are willing to cooperate for the successful establishment of EST development facilities.
Output 1.4: North-South cooperation is promoted and South-South cooperation supported for sharing know-how, knowledge and good practices	CTNFC online knowledge platform 3 regional network meetings	Project monitoring reports Meeting/workshop reports Website	**Assumptions** Sufficient involvement of both private and public sector actors for a win-win cooperation on climate technology transfer
Outcome 2: Thematic and technology specific institutions and centers are strengthened (and/or created) (Component 2: UNEP)			
Output 2.1: Appropriate institutions and centres for supporting climate technology transfer are identified	12-15 appropriate institutions/centres identified for providing climate technology transfer services in the region	Project monitoring reports	**Assumptions** • Government existing agencies and private sector agencies in ESTs are willing to cooperate for the successful establishment of climate change development facilities • Skillful human resources are available
Output 2.2: The establishment of specialized national climate technology transfer institutions is supported	3-6 country requests supported 3-6 studies audits /assessments/business plans developed	Project monitoring reports Institutional audit reports and capacity assessments Business plans	**Risks** • Institutions willingness to cooperate availability

	Targets End of Project	Source of verification	Risks and Assumptions
Output 2.3: The capacities of climate technology institutions and professionals are strengthened	10-15 trainings designed and implemented 300 – 450 people trained with 95% satisfaction	Training material Training workshop reports Feedback and evaluation forms from training participants	N/A
Output 2.4: Tech-entrepreneurship development and green productivity is promoted	3-6 of the organizations/ institutes supported are playing an advisory role for tech-entrepreneurship	Business plans and reports from organizations and institutes Feedback from the beneficiaries of their services	**Assumptions** • Policy framework and enabling conditions ready on time
Outcome 3: Support and opportunities for national, regional and global investments in ESTs are explored (Component 3: UNEP)			
Output 3.1: The design, development and implementation of country-driven EST transfer programs, demonstration projects, and scale-up strategies is supported	12 demonstration projects EST transfer programmes and scale-up strategies in key technologies designed by the end of the project	Project concepts/documents	**Assumptions** • All stakeholders are market ready • Successful implementation of advice and best practice
Outcome 4: Enabling policy environment and mechanisms created for transfer of climate technologies (Component 3: UNEP)			
Output 4.1: The design and establishment of country-tailored pro-climate policies supporting climate technology transfer is supported	3-6 country tailored policies for climate technology transfer are improved/established	Policy documents	**Assumptions** • Policy framework considers both mitigation and adaptation aspects to climate change
Output 4.2: The design and establishment of national and regional standards and regulations for identified priority climate technologies is supported	3-6 new regulations for EST standards are adopted	Policy documents	**Assumptions** • Information campaigns and communication focused on consumers • Global approach of policy for EE (i.e. from manufacturing chain to final consumer)
Output 4.3: The design and establishment of cost-effective mechanisms adapted to individual country conditions for leveraging increased public and private investment in climate technologies is supported	1-2 new financing models/mechanisms specifically tailored for EST market needs developed	Financing models/mechanisms	**Assumptions** • Successful testing of business models and mechanisms for providing EE improvements and services through ESCOs • Private investment attractiveness for EST's and opportunity creation
Output 4.4: The design and establishment of NAMA/NAPA-linked subsidies and other financial incentives aimed at reducing EST project development/transaction costs is supported	1-2 financial incentives to foster climate technology transfer developed	Financial incentive mechanisms	**Assumptions** Financial involvement of the government to provide support on NAMA/NAPA implementation
Outcome 5: Higher awareness and better participation of regional stakeholders in global discussions on climate change financing, including the development of the GCF and the operations of the Technology Mechanism (Component 4 ADB)			
Output 5.1: Organization of a series of workshops that will facilitate knowledge sharing among national climate change institutions in ADB's DMCs	At least 2 workshops organized	Workshop reports	**Assumptions** • Demand for these knowledge products exists • Interest of national climate institutions for regional dialogue is high **Risks**

	Targets End of Project	Source of verification	Risks and Assumptions
Output 5.2: Development of knowledge products on the issues of climate change financing and best practices of climate-friendly technology in Asia and the Pacific	At least 3 knowledge products developed	Reports/ publications	• Poor participation in the workshop
Outcome 6: Climate change technology transfer and deployment considerations integrated into CPSs and/or COBPs, national and/or subnational investment plans (Component 4/Subproject A: ADB)			
Output 6.1:National and/or sub-national development strategies, investment plans and policies which promote investments in climate technology and technology transfer	Climate technology investment planning and policy programs integrated into 3-4 CPSs/COBPs at national and/or sub-national levels	TA reports, Country partnership strategies, sub-national investment plans, national investment plans, national sectoral policies	**Assumptions** • Institutions in target countries show interest in and willingness to participate in TA **Risks** • Lack of qualified and available government staff to participate in project support • Delays in legislative and planning cycles cause delays in the generation of outputs
Outcome 7: Increased investments in projects using climate technologies in DMCs (Component 5/Subproject B:ADB)			
Output 7.1: Assistance provided to potential climate technology investment projects (such as alternative technology assessments etc.)	6-8 investment projects using mitigation technologies and 4-6 projects using adaptation technologies which are new to their context given technical assistance	Monitoring and evaluation reports	**Assumptions** • Government system allows for the engagement of the private sector • Demand for ADB's technical support exists • Top caliber technology experts are available for this assignment **Risks** • Poor quality of assessments and reports by experts. • Demand for ADB's technical support may far exceed what can be supported by TA budget
Outcome 8: Increased investments by selected Venture Capital funds in technologies that address climate technology products (Component 5/Subproject C:ADB)			
Output 8.1: Identification of technology opportunities across sectors	VC fund managers and ADB make use of technology assessments prepared by the TA experts in making investment decisions	Consultant reports	**Assumptions** • Government system allows for the engagement of the private sector • Demand for ADB's technical support exists • Top caliber technology experts are available for this assignment **Risks** • Poor quality of assessments and reports by experts. • Demand for ADB's technical support may far exceed what can be supported by TA budget
Output 8.2: Identification of candidate start up firms	Provide advice to at least 2 VC funds.		
Output 8.3: Technology assessments of proposals from fund managers	Quarterly reports for 3-4 DMCs	Feedback from fund managers and ADB	
Output 8.4:Monitoring report on technology aspects of investments made by fund managers	60-80 participants in annual regional workshops		
Outcome 9: Successful demonstration of assisted broker model for transfer of LCTs (Component 6/Subproject D:ADB)			
Output 9.1: The transfer high-impact LCTs in a period of 24 months	At least 2 deals signed to transfer high impact LCTs	Technology transfer agreements	**Assumptions** • Cooperation from private sector technology firms and respective governments is available • Required technical expertise and business experience in the intellectual property market available to navigate properly and safely **Risks** • Most intellectual property transactions are complex and

	Targets End of Project	Source of verification	Risks and Assumptions
			would require significant time and efforts from all to close the deal • Deals cannot be signed due to unmet financing gap between selling and buying prices
Output 9.2: The necessary operational documentation for a full-fledged business based on the assisted broker model	Final business model design established	Final design report for a full-fledged business	**Assumptions** • Cooperation from private sector technology firms and respective governments is available • Required technical expertise and business experience in the intellectual property market available to navigate properly and safely **Risks** • Most intellectual property transactions are complex and would require significant time and efforts from all to close the deal • Deals cannot be signed due to unmet financing gap between selling and buying prices
Outcome 10: Project managed on time and within budget (Project management/Subproject E:ADB)			
Output 10.1: Work plans	Specified schedule and DMF targets met	Monitoring and evaluation reports, TA reports	
Output 10.2: Reporting			

Project outcomes, outputs and activities

Project outcomes and outputs	Activities
Outcome 1: Increased collaboration in the region for transfer of climate technologies between thematic or sector/technology specific centers/institutions (Component 1: UNEP)	
Output 1.1: Collaboration is strengthened between key stakeholders at national level	1.1.1 Strengthen coordination amongst decision-makers to implement climate compatible policies and programs for technology transfer 1.1.2 Support sectoral dialogue and collaboration for climate technology transfer
Output 1.2: Regional and thematic expert groups are established to provide guidance and support to private and public actors for climate technology transfer	1.2.1 Identify the five major regional climate technology priorities through consultations with the key government institutions 1.2.2 Identify relevant national/regional experts or existing expert groups in line with the five major regional climate technology priorities 1.2.3 Establish (or engage existing) thematic expert groups related to the five major regional climate technology priorities to provide technical guidance/advice to national and regional institutions.
Output 1.3: Public-private partnership on climate technologies are promoted and supported	1.3.1 Identify existing mechanisms/ for public-private collaboration 1.3.2 Conduct technology specific studies and assessments incl. case studies, organize exchange visits and workshops to demonstrate the benefits for private sector engagement in the national low carbon and climate resilient development efforts 1.3.4 Strengthen the dialogue on climate technology transfer between private sector and governments to inform the establishment of enabling policies and appropriate market mechanisms
Output 1.4: North-South cooperation is promoted and South-South cooperation supported for sharing know-how, knowledge and good practices	1.4.1 Based on priority technologies/technology issues, identify opportunities for South-South and North-South cooperation 1.4.2 Provide advice and establish special incentives to stimulate twinning arrangements between centres to encourage cooperative R&D for adapting technologies to local conditions, or the development of joint analysis and research programs or to facilitate professional exchange programs 1.4.3 Promote cross-border business cooperation by supporting the development of regional climate technology initiatives 1.4.4 Develop or scale-up Climate Change knowledge management platforms/website 1.4.5 Establish or 'link existing' virtual networks, communities of practice around prioritized climate technologies 1.4.6 Develop or 'link existing' searchable databases on ESTs 1.4.7 Develop and improve availability of reliable and accessible climate technology knowledge 1.4.8 Organize regional or sub-regional network meetings to share lessons learned and successes between sectors, countries and institutions.

Project outcomes and outputs	Activities
Outcome 2: Thematic and technology specific institutions and centers are strengthened (and/or created) (Component 2: UNEP)	
Output 2.1: Appropriate institutions and centres for supporting climate technology transfer are identified	2.1.1 Identifying private and public institutions and potential climate technology centres that have the greatest capability to influence policy 2.1.2 Conduct analyses of institutional role and possible interventions will then be conducted in order to find coherent synergies between stakeholders and avoid overlapping and repetition of activities
Output 2.2: The establishment of specialized national climate technology transfer institutions is supported	2.2.1 Institutional audits and capacity assessment of existing public institutions responsible for energy efficiency and renewable energy in view of building fully-fledged and sustainable public institutions for energy efficiency and renewable energy deployment in the countries 2.2.2 Development of business plans for mandated climate technology institutions 2.2.3 National strategies and plans or reports and assessments under relevant conventions, if applicable.
Output 2.3: The capacities of climate technology institutions and professionals are strengthened	2.3.1 Targeted capacity building to selected public and private institutions to deliver climate technology transfer services (including financial institutions) 2.3.2 Training and certification of energy auditors for industry (including thermal oil power plants) 2.3.3 Training and certification of professionals and testing laboratories for conducting energy audits for appliances and equipment 2.3.4 Training of local financial institutions on the essential elements of sustainable energy project financing 2.3.5 Training staff from regulatory agencies and public institutions in charge of energy policies and programs to implement climate compatible development strategies, policy packages and investment decisions, and to leverage funding options and prioritize action
Output 2.4: Tech-entrepreneurship development and green productivity is promoted	2.4.1 Identify and strengthen actors/institutes that can play an advisory role for tech-entrepreneurship 2.4.2 Develop institutional instruments and measures for tech-entrepreneurship 2.4.3 Design/deploy seed and growth capital facilities for tech-entrepreneurs and enterprise development services for clean enterprise start-ups
Outcome 3: Support and opportunities for national, regional and global investments in ESTs are explored (Component 3: UNEP)	
Output 3.1: The design, development and implementation of country-driven EST transfer programs, demonstration projects, and scale-up strategies is supported	3.1.1 Identify with the countries their EST priorities 3.1.2 Assist countries with ESTs program/project/strategy design 3.1.3 Support the design and implementation of small pilot/demonstration projects and the design of related scale-up strategies
Outcome 4: Enabling policy environment and mechanisms created for transfer of climate technologies (Component 3: UNEP)	
Output 4.1: The design and establishment of country-tailored pro-climate policies supporting climate technology transfer is supported	4.1.1 Promoting and assessing the feasibility and relevance of the new concepts and approaches brought forward through the UNFCCC process and building regional and national capacity to evolve towards the design and implementation of the necessary new mechanisms responding to the needs of climate change in countries 4.1.2 Conduct national (or regional) sustainable energy resource assessments leading to the identification of specific sites with high development potential and detailed analysis of infrastructure requirements and costs 4.1.3 Development or strengthening of country tailored policies for public transport or vehicle efficiency 4.1.4 Development or strengthening of monitoring and evaluation mechanisms/instruments for measuring impacts of national policies and regulations for energy efficiency and renewable energy. 4.1.5 Conduct climate change impacts assessments and other adaptation information for decision-making 4.1.6 Provide adaptation strategy advice and economic analysis 4.1.7 Support the development of forestry, biodiversity and land-use strategies and programs
Output 4.2: The design and establishment of national and regional standards and regulations for identified priority climate technologies is supported	4.2.1 Promote best practices in terms of standards and regulations for technologies 4.2.2 Support countries in establishing standards and regulations on for priority ESTs 4.2.3Provide targeted policy support for the implementation of selected standards and regulations 4.2.4 Assess the impact of targeted standards and regulations and provide recommendations for improving them
Output 4.3: The design and establishment of cost-effective mechanisms adapted to individual country conditions for leveraging increased public and private investment in climate technologies is supported	4.3.1 Identifying and promoting highly cost-effective energy efficiency improvements and related technologies 4.3.2 Testing of business models and mechanisms for providing energy efficiency services for existing buildings through energy service companies (ESCOs)

Project outcomes and outputs	Activities
Output 4.4: The design and establishment of NAMA/NAPA-linked subsidies and other financial incentives aimed at reducing EST project development/transaction costs is supported	4.4.1 Enforce the design and establish NAMA-linked subsidies/national climate funds and other financial incentives aimed at reducing EST project development/transaction costs; 4.4.2 Support the design and implementation of fiscal and financial incentives that stimulate investment in clean energy technologies, for example, design of renewable energy feed-in tariffs or investment tax incentive schemes or the establishment of tax incentives, soft loans, or subsidies for designing, constructing, and operating energy efficient buildings
Outcome 5: Higher awareness and better participation of regional stakeholders in global discussions on climate change financing, including the development of the GCF and the operations of the Technology Mechanism (Component 4: ADB)	
Output 5.1: Organization of a series of workshops that will facilitate knowledge sharing among national climate change institutions in ADB's DMCs	5.1.1 organization of workshops
Output 5.2: Development of knowledge products on the issues of climate change financing and best practices of climate-friendly technology in Asia and the Pacific	5.2.1 Provide strategic knowledge on context of the Asia-Pacific region's specific concerns and international agreements that concern the region; 5.2.2 Keep up to date knowledge on the Green Climate Fund and Technology Mechanism in order to advise the national coordinator on the latest developments and their effect on the assignment; 5.2.3 Research existing climate financing schemes and their experiences; 5.2.4 Assess the financing needs of DMCs for climate technologies; 5.2.5 Analyze barriers faced in accessing climate financing within the country and outside and propose some financing instruments that may help deploy climate technologies at a much faster rate; 5.2.6 Assess the role of private sector in climate financing in Asia; 5.2.7 Carry out research on the use of low-carbon technologies in industrialized and in the region's developing countries and review the findings of related activities, research reports; 5.2.8 Examine the technological developments, experiences, costs and GHG emissions reduction potential in the DMCs; 5.2.9 Assess the market for climate technologies in Asia in general and few selected pilot countries in particular; 5.2.10 Assess the current policy frameworks, and review government plans and commitments on promoting climate technologies, setting standards and regulations for climate technologies transfer and deployment, and review the findings of related activities, research reports; 5.2.11 Propose appropriate policy and regulatory frameworks necessary to promote use of climate-friendly technologies using country examples; 5.2.12 Conduct economic assess of the energy demand of the poor in rural and urban areas; 5.2.13 Investigate the energy supply options and the costs; 5.2.14 Develop energy curve to show several energy configurations or energy supply options; 5.2.15 Writing and production of the knowledge products
Outcome 6: Climate change technology transfer and deployment considerations integrated into CPSs and/or COBPs, national and/or subnational investment plans (Component 4/Subproject A: ADB)	
Output 6.1:National and/or sub-national development strategies, investment plans and policies which promote investments in climate technology and technology transfer	6.1.1 Screen and identify suitable DMC countries for assistance; 6.1.2 Assess the current policy frameworks, review government plans and commitments on promoting climate technologies, standards and regulations for climate technologies transfer and deployment; 6.1.3 Organize and conduct consultation meetings and workshops on planning and policy; 6.1.4 Assist in the development of plans and policies to promote climate technologies; 6.1.5 Conduct training and dissemination activities with DMC government agencies; 6.1.6 Provide inputs for progress reports, briefing notes, correspondence, and other technical documents on the TA.
Outcome 7: Increased investments in projects using climate technologies in DMCs (Component 5/Subproject B:ADB)	
Output 7.1: Specific research and other assistance provided to potential climate technology investment projects	7.1.1 Identify and screen ADB project pipeline for candidate projects for assistance; 7.1.2 Provide technical assistance such as pre-feasibility studies, alternative technology analysis, resource potential assessments for renewable energy projects, technical design, and technology resilience assessments; 7.1.3 Capacity building for DMC stakeholders in identified investment projects as required; 7.1.4 Provide inputs for progress reports, briefing notes, correspondences, and other technical documents on the TA.
Outcome 8: Increased investments by selected Venture Capital funds in technologies that address climate technology products (Component 5/Subproject C:ADB)	

Project outcomes and outputs	Activities
Output 8.1: Identification of technology opportunities across sectors	8.1.1 Conduct quarterly reviews of emerging climate change mitigation and adaptation technologies in selected sectors 8.1.2 Identify opportunities across various sectors, technology issues and risks involved 8.1.3 Prepare report with the findings and recommendations on prioritization of technologies for investment 8.1.4 Provide technical support to potential climate technology venture capital funds in more challenging yet promising countries, sectors, frontier markets, or regions, such as Southeast Asia
Output 8.2: Identification of candidate start up firms	8.2.1 Conduct market survey to identify start-up firms engaged in targeted technologies and prepare list of star up firms 8.2.2 Undertake a comparative analysis of candidate firms, identifying strengths and weaknesses 8.2.3 Prepare report with findings and recommendations on prioritization of potential pipeline of investments to facilitate deal sourcing by fund managers
Output 8.3: Technology assessments of proposals from fund managers	8.3.1 Develop operational guidelines for screening and evaluating proposals, including procedures, eligibility criteria, template forms, agreements etc. 8.3.2 Assess proposals including technology failure risks, product risks, and market potential 8.3.3 Submit assessment and recommendations, including measures for risk mitigation and monitoring
Output 8.4:Monitoring report on technology aspects of investments made by fund managers	8.4.1 Assist in monitoring progress of investments by fund managers with respect to technology aspects 8.4.2 Identify early warning signs of key technology risks 8.4.3 Prepare monitoring report with findings and recommendations on how to address identified potential risks
Outcome 9: Successful demonstration of assisted broker model for transfer of LCTs (Component 6/Subproject D: ADB)	
Output 9.1: The transfer high-impact LCTs in a period of 24 months	9.1.1Identify business opportunities for climate technologies; 9.1.2 Develop business plans for buyers during negotiations; 9.1.3 Identify technology holders and licensing issues, landscape technologies and markets including technology holders and potential buyers; 9.1.4 Monitor and evaluate technologies and technology holders 9.1.5Conduct consultation exercises with technology holders and seekers on design; 9.1.6 Provide prioritized market perspective during the design of operational procedure and business plan; 9.1.7 Provide inputs on intellectual property protection issues; 9.1.1 Compile list of existing IP brokers suitable for LCT marketplace operations and select one firm to serve as LCT marketplace operator; 9.1.2 Conduct consultation exercises with technology holders and seekers on design; 9.1.3 Compile relevant information on LCT transfer and provide easy access for potential technology holders and users; 9.1.4 Identify landscape of LCTs and markets including technology holders and potential buyers; 9.1.5 Provide inputs on intellectual property protection and legal issues to both technology holders and buyers; 9.1.6 Develop business plans for buyers during negotiations; 9.1.6 Provide third party assistance in structuring and executing the technology transfer transactions; 9.1.7 Assess the potential impact of low-carbon technologies (LCTs) in reducing GHG emissions in participating countries, review the climate change plans and policies of DMCs and provide inputs during selection of countries and technologies, and provide inputs on host government needs and priorities; 9.1.9 Promote Assisted Broker Model in different forums and establishing partnerships with other similar efforts;
Output 9.2: The necessary operational documentation for a full-fledged business based on the assisted broker model	9.2.1 Based on the experience during demonstration phase, assess appropriate institutional and organizational requirements, and human resource appropriate for the full-fledged operation of the assisted broker model; and, 9.2.2 Prepare the procedures and operation plans for the full fledged operation of the assisted broker model for technology transfer.
Outcome 10: Project managed on time and within budget (Project management/Subproject E:ADB)	
Output 10.1: Work plans	10.1.1 Manage, coordinate, and monitor the project and the GEF ADB-UNEP project; 10.1.2 Assist other subproject teams in managerial tasks; 10.1.3 Coordinate activities between subprojects and any activities relating to the TA; 10.1.4 Assess needs for supplementary experts to conduct required 10.1.5 Coordinate workshops, training and other dissemination activities; 10.1.6 Coordinate/review outputs of supplementary experts
Output 10.2: Reporting	10.2.1 Oversee and coordinate reporting activities; 10.2.3 Provide inputs for progress reports, briefing notes, correspondences, and other technical documents on the TA.

ANNEX B: RESPONSES TO PROJECT REVIEWS

(from GEF Secretariat and GEF Agencies, and Responses to Comments from Council at work program inclusion and the Convention Secretariat and STAP at PIF).

	STAP Guidance	Response
1	The project aims at accelerating climate technology transfer of low-carbon and climate resilient technologies promoting both mitigation and adaptation. However, most of components, activities and policies described in the PIF are all focused on mitigation and adaptation is not treated adequately. STAP recommends that the project either focuses on mitigation only or provides equal / rational consideration for both mitigation and adaptation (M&A). It may be desirable to focus only on mitigation given the limitations of budget, innumerable number of technologies and a large diversity of countries.	The Asia Pacific region is not only key to global climate change mitigation efforts. It also is highly vulnerable to the adverse impacts of climate change. In this regard, we feel a focus on both mitigation and adaptation technologies is appropriate. Moreover, it is deemed that the mobilization of resources for technology transfer and diffusion of both mitigation and adaptation technologies face similar constraints and similar approaches can be adapted to overcoming common barriers. The Technology Mechanism itself fully anticipates support to developing countries with both mitigation and adaptation measures, the project has sought to be closely aligned with this mechanism and the pilot is so designed to allow it to be responsive to this COP direction. What is more, interventions and support offered by this project will be predominantly demand-led (whether for assistance from developing country governments or from the private sector). Therefore, within the gamut of ESTs, the project seeks to be as technology-neutral as possible. In this respect, based upon background policy analysis and market surveys, we anticipate demand for assistance with technology transfer and diffusion of both adaptation and mitigation technologies. Nevertheless, we appreciate the need that for some technologies and contexts that essentially 'picking winners' will be necessary that is not the role of this project. In terms of the design of project interventions, this point is addressed all along the project document, both mitigation and adaptation will be addressed via the establishment and strengthening of thematic expert groups, regional workshop policy support in M&A and pilot projects also in M&A. Indeed, all project components (including the investment components) with the possible exception of component 6 are explicitly designed to address both mitigation and adaption technology needs.
2	The project component identifies the link between low-carbon and climate-resilient development and transfer of climate mitigation technologies as one of the outputs. According to IPCC (2007), M&A linkage and opportunity for promoting synergy exists particularly for land-based sectors and activities such as in agriculture and forestry sectors. STAP suggests that the project explore the cost-effective synergies in agriculture and forest sectors to promote both M&A.	Noted, the project design has been revised to emphasize the range of technologies being considered. The project will address a range of technologies which could potentially include technologies related to land-based sectors such as low-till and no-till agricultural technologies, fertilizers and agricultural chemicals, the use of bio char, irrigation technologies and new crop varieties. However, it is again important to note that the project will be largely demand-driven and the support given by the project will depend upon the requirements of beneficiaries.
3	The PIF is silent on which countries in the region are targeted nor does it provide a robust framework/blueprint for	Detailed country selection guidance is developed in the project

	STAP Guidance	Response
	prioritizing interventions at the regional or national level. A reference is provided to the ongoing TNA project, but no further information is available. PIF's statement to put highest priority on demonstration and deployment of "leap-frog" technologies in mitigation and focus on affordable technologies for vulnerable people for adaptation is not adequately justified. The PIF repeatedly refers to "Innovative Technologies" and "Leap-frog" technologies. How will these be identified, what criteria will be adopted, how will they vary from country to country based on the size of the country and level of economic development? STAP recommends developing criteria to identify the technologies based on mitigation potential, cost effectiveness, barriers, etc.	document on the section 3 (Intervention strategy) for each of the project components Technology selection both in mitigation and adaptation will be determined after consultation with countries and defined in cooperation with focal point combined to feasibility and market study. This is also addressed in project document section 3. DMC selection will, in the first instance, be country-driven, in line with the Cancun Agreements. The criteria for country participation will be defined at the initial stages of project implementation. Selected DMCs will frequently be those where the project can build upon prior and on-going activities carried out by the GEF agencies. In the case of UNEP through the selection of countries that are involved in the TNA initiative which the project will seek to build on. For both ADB and UNEP selected countries should also be at an appropriate stage in their planning cycle such that the project can deliver meaningful inputs to country plans (whether they be national, sectoral or sub-national). While adopting a country-driven or demand-based approach, we will also look to involve a range of countries at different stages of technological development and capacity in order to provide lessons on different contexts and market conditions. Therefore, from the countries that express an interest in participating in the project, the project will select countries such that the project achieves a balance and diversity in terms of geography and country income. It should be noted that not all mechanisms outlined in the components of this project would be suitable for the promotion of all technologies in all countries. For example, the equity investment support for venture capital funds will cover countries where this kind of private equity investment is already viable (i.e. with large potential markets, adequate investor protection and relatively well developed capital markets). However, the advisory support for venture capital funds will cover frontier or promising markets as well so that the fund managers can allocate more of their fund resources to companies with climate technology products, thereby helping developing countries to develop the industry. Similarly, not all of the project interventions will be suitable for the promotion of all types of technologies. The project will offer assistance for the development of plans, policy and capacity to build policies to promote EST transfer and diffusion. This may imply, at the country level, assistance with tools to assess the viability of technologies in different contexts, as well as drawing on TNA exercises. However, the project itself will not lead in the identification of particular technologies.
4	A large number of energy efficient, renewable energy and adaptation technologies are considered. Obviously, there are hundreds of technological options. It is impossible to promote all these technologies. Thus there is need for prioritizing and ranking of technologies. Ranking of technologies could be based on criteria consisting of indicators such mitigation potential, cost-effectiveness, barriers to large scale spread, etc.	Noted, please see response to comment 3. To expand further, the project will not be promoting specific technologies per se, it rather seeks to develop mechanisms and policy environments, which can be promote EST transfer and diffusion. The technologies to be promoted will be 'self-selected' (albeit in some circumstances with project support) by governments and private sector participants.

	STAP Guidance	Response
5	Technology transfer is a complex and non-linear process that should support technological innovation at all stages of technology transfer chain using appropriate tools and methods. STAP recommends stressing support for the entire technology transfer chain targeted at particular countries and technologies. Robust analysis of specific regional and national barriers for selected countries in the region and clear set of policies/measures to respond to these barriers is requested before the CEO endorsement.	Noted, components 3 - "Design, development and implementation of country-driven EST transfer policies, programs, demonstration projects and scale-up strategies", and 4 – "Integrating climate technology financing needs into national development strategies, plans, and investment priorities" of the project are designed to address precisely these issues by assisting countries to develop sectoral, fiscal and economic policies that can support the development, transfer and diffusion of ESTs. Other components are designed to support downstream activities to support ESTs. It should be noted that extensive research has already been conducted by both agencies as described in the project baseline section of the CEO endorsement document. For example, UNEP has a long standing and wide ranging technology needs assessment project in the region, and ADB has undertaken significant research in support of the project investment components. Also addressed in UNEP project document section 2.3.2 Barrier analyses page 21.
6	The project title emphasizes a regional approach to technology transfer, while the PIF itself is ambiguous on how the regional approach will be implemented. Regulatory harmonization across countries in the region can spur technology and market innovation at much larger scales than if implemented at the national level alone. Asia-Pacific countries are very diverse in terms of their enabling environments and baseline conditions for technology transfer. STAP recommends strengthening the regional approach in the PIF by prioritizing policies and measures that would be beneficial at the regional level vis-Ã -vis national levels. Specific policies that might be regionally beneficial are removal of regional trade barriers, subsidies for high-carbon technologies, reform of R&D regional institutions. Prioritization of regional vs. national barriers for technology transfer should take into account the entire technology chain as well as economic development of countries.	Noted. Regional policy harmonization will be promoted through the demonstration of successful approaches at the national and pilot CTCN level, network and knowledge platform development activities will promote, where appropriate regional approaches. It should be noted that the development of a pilot regional CTCN represents both a recognition of the value of a regional approach and a platform to influence policy at the regional level. As the process of technology transfer is highly non-linear, complex, and differs from context to context, approaching regional engagement through the pilot CTCN gives the project reasonable scope and flexibility to identify and pursue regional initiatives should they present themselves. However, the identification of these initiatives would be outcome of the project and cannot be presupposed at this stage. The Project will seek to promote regional cooperation, the formation of regional networks and regional knowledge sharing. The project will seek to utilize existing regional cooperation platforms such as the Association of Southeast Asian Nations (ASEAN), the Central Asia Regional Economic Cooperation (CAREC), and the South Asian Association for Regional Cooperation (SAARC). More specifically, the Project's regional focus is derived from i) components 1 and 2 which have an explicit objective of building/strengthening national and regional institutions; ii) the investment components (5 and 6) , while individual investments will necessarily be realised on a national basis, the venture capital fund facility will potentially provide support to funds regionally. The technology marketplace will also facilitate deals on a regional basis. It should be noted that Component 3 while essentially responding to specific country requests will also seek to support regional bodies on regional policies for the promotion of technology transfer such as activities for the harmonization of energy performance standards for appliances. Aside from these considerations, it is beyond the scope of this project

	STAP Guidance	Response
		to attempt to develop regional policies to promote technology transfer. This is also addressed in section 3.3 Project component and expected results, page 61of the UNEP prodoc.
7	Proposed components 1 and 2 are hardly distinguishable in substance.	Component 1 focuses on the development of networks for EST transfer in the region by strengthening national collaboration between key players, establishing regional and thematic expert groups based on regional climate priorities, promoting PPPs for climate technology transfer, promoting north-south and south-south cooperation for intra-regional technology transfer and sharing best practice. Component 2 has a focus primarily upon the strengthening of specific existing institutions, which could play a key role in facilitating technology transfer. See component 2 description page 65 in project document, section 3 of the UNEP prodoc.
8	Given the low-income level of many countries in the Asia-Pacific region, STAP recommends strengthening knowledge networks for technology transfer in these countries by supporting investments in engineering companies, institutes and universities, improved business environment and focusing on adaptation technologies. As far as feasible this support should encourage South-South cooperation and technology transfer with emerging and developed economies in the region.	This is noted and the project is designed to: (i) Strengthen knowledge networks (components 1 and 2); (ii) Support investment in the manufacture of EST though support to individual projects and support to venture capital funds (though component 5); and, (iii) though establishing a market place for appropriate technologies (including North-South and South-South exchanges) to facilitate transfer of ESTs.
9	Among specific policy tools that proved successful for multilateral funding is the use of prizes and market commitments. STAP proposes to explore this specific tool in this project. Venture capital could play an important role in certain circumstances, particularly in emerging and developed economies of the region. STAP recommends exploring the potential for promoting venture capital investments in emerging economies of the region with possible technological spill-over effects to developing countries (North-South technology transfer).	Noted. The project will actively engage with venture capital both in terms of offering a support facility of venture capital funds investing in ESTs and potentially though the operations of the a knowledge market place which will facilitate the search and transfer of ESTs with firms who wish to produce them regionally. As stated above, the project as conceived is technologically neutral. Therefore, selecting particular technologies to promote based on the likely extent of spill over effects is beyond this project's scope. However, components 3 and 4 in seeking to enhance the policy environment for EST transfer may encourage planning and policy choices which will seek will lead to and enhance greater spill-over effects
	Switzerland	
1.	**Need for a strategic choice and prioritizations already at the stage of planning** On one hand, the project covers the complete chain of activities from technology transfer to demonstration and scale-up strategies and even to the promotion of market places. On the other hand it covers a wide range of sectors, such as energy efficiency, renewable energy, sustainable transport and urban systems and sectors sensitive to climate change impacts such as water, agriculture, and health. That is too ambitious! Even in the case of one single technology, enormous efforts, clear concepts, and methodological and technical skills are needed to progress from technology transfer to a successful full-scale implementation and measureable results and	Technology transfer and demonstration project are managed by UNEP while promotion of market places are managed by ADB; Sectors will be selected through countries requirements and after consultations with national focal points. Prioritisation criteria have been more closely specified in the description of the CEO document. These include country and technology criteria; please see section 3 on the STAP comments above. As stated above the project is conceived of, in as far as is possible, as demand-led and technologically neutral as befits its focus on financing – rather than specific technologies. However, it is likely that different financing instruments and methods are likely to be relevant for different kinds of technology in different country contexts. It should be borne in mind that even if the focus was on one particular technology sector (e.g. energy), or a particular technology (e.g. solar PV), there would still need to be a wide range

	STAP Guidance	Response
	impacts in terms of global benefits. Therefore, the current project is challenged to make strategic choices already at the stage of planning and it cannot postpone strategic decisions and thematic prioritizations to the stage of project implementation. The project should decide or prioritize (otherwise, it risks to disperse and to fail in its interventions): o Between mitigation and adaptation, o Between a capacity building and process-oriented approach on one hand and an environ-mental impact / benefits-oriented (result-oriented) approach on the other hand, o Between different sectors, o Between different technologies. Unless the strategic choices and prioritizations are made, the project's concept remains over-loaded and gives the impression of being ambiguous.	of financing options available for technologies of differing scales etc. Different components of the project and subprojects will be more suitable for financing different kinds of technologies. Some proposed mechanisms already have a stated initial focus on particular technologies (VC initiative and market place). The focus of the project is on process development and capacity building, rather than direct benefits. Nevertheless, direct benefits are expected to be significant.
2.	**The need for regulations and economic instruments is not sufficiently considered** The PIF raises expectations regarding the up-scale of its technology demonstrations. For many of the sectors and technologies in question, this may imply enormous efforts in support of the development and adoption of regulations and / or economic instruments. The project's concept and intervention in that respect are not clear.	The focus of the project is not on technology demonstration, but on mobilising finance for technologies that have already passed this stage of development. There are three main mechanisms by which technological up scaling will be realized in this project (i) Mainstreaming climate technology considerations in development plans; (ii) Venture Capital investments in climate technology production; and, (iii) Facilitation of private sector deals for licensing other climate technology. These have been designed in the broader context of a need to leverage limited public sector funds to mobilize private sector investment. Private sector interest is likely to be in technologies in the early stage of commercialisation, which have large sales potential in target markets. Therefore, it is not deemed unreasonable that certain components of the project are expected to facilitate, albeit indirectly, significant medium to long-term technology deployment.
3.	**What is the regional approach?** The PIF talks in rather theoretical terms about middle income countries and Least Developed Countries (LDCs), but it does not clarify sufficiently in how many and in which countries the project intends to become active. Apart from the ADB center in Manila, the UNEP office in Bangkok and the indication of a Korean co-financing, no further indications on the geographical scope or arrangements of work are given in PIF. The same PIF even claims that *"the regional approach will allow the development of country-specific or transboundary activities tackling climate change under different cultural and socio-economic conditions, increasing the global knowledge value and maximizing synergies; yet, taking advantage of economies of scale. Dissemination of lessons learned and cross-country linkages will ensure ongoing and effective knowledge exchange and dissemination"*. Confronted with such expectations being raised, Switzerland wonders what the regional approach of the project is and to which degree such a proposal may be considered as country-driven. It expects that at least the recipient countries were	The Climate Technology Network Secretariat in Bangkok and the Climate Technology Finance Center in Manila will serve as conduits linking different national and sub-regional institutions, which are dispersed across the region in the region. As regards country selection, more detailed guidance has been included in the document on country selection, which serve to clarify and focus country selection. For the UNEP components, interventions will focus on Central and Southeast Asian countries in which UNEP has already conducted baseline activities, as well as a number of other significant countries and institutions. ADB components will focus on countries which are able to integrate policy support into their planning cycle, projects in as diverse a range of countries as is feasible, and projects lead by private sector demand focusing on the largest economies in the region. Details of the selection guidance are included in table 1. See also response to #6 above.

	STAP Guidance	Response
	listed.	
4.	**Request for more information on co-financing** The indicative co-financing amounts 75 million USD. Together with the multi-trust grant, and considering also the agency fees, the overall cost of the project ascends to 87 million USD. Out of the 75 million USD of co-financing, 60 million USD are indicated as AsDB Equity Investment, for which the type of co-financing is not specified and the GEF is given as source. To understand, further information on co-financing is needed. Particularly regarding the co-financing by ADB we wonder which portion of it refers to baseline activities. Please clarify in accordance with GEF guidelines on co-financing!	The $60 million equity is provided by ADB for the Venture Capital Initiative, which is part of component 5. While the Asia Climate Change and Clean Energy Venture Capital has been launched, the key incremental impact of the GEF funding would be to facilitate the operations of these and other funds that will be selected for technical assistance support. The objective is to extend and better target the technology reach of the investments of selected VC funds. More specifically, GEF funding will enable the facility to extend services not only to more mature/advanced markets such as East Asia and South Asia but also more challenging yet promising sectors, and frontier markets such as Southeast Asia; with 5-6 funds receiving technical support (compared to 3-4 funds without GEF funding). In terms of sector, the TA program, with GEF support, will be able to also cover energy efficiency and transport for climate change mitigation, as well as adaptation. A wider scope of knowledge services (e.g market survey to identify start-up companies) and on-demand advisory services (technology risks, product risks, patent and market potential) can be provided. This will lead to the more effective operation of these funds, and the swifter diffusion of technologies than would have otherwise been the case.
	France	
1.	It seems not responding to a request for regional organization or agency. Regional or local network are not yet identified. The design of the project at this stage is top-down.	The project will be demand lead, and seek to answer the demands of regional country governments and the private sector. While the operational structure of the center has been designed in a top-down manner, the actual interventions and implementation of the project will result from bottom-up demands, ensuring ownership and that country and sector level needs are met.
2.	The project embraces too broad in terms of subject (adaptation, mitigation), technology, country, etc. We might doubt (i) the sustainability of the program, (ii) its effective ownership by Asian countries are potential beneficiaries, (iii) its smooth integration into existing institutions and partner countries, without negative collateral effect, (iv) the relevance of the institutional set up and arrangements.	(i) The sustainability of project interventions will be addressed through concentrating on a relatively modest number of countries and private sector partners. With a relatively tight focus it is anticipated that interventions can result in the generation of sustainable capacity. Sustainability will also be assured through mainstreaming activities, meaning that long term planning will incorporate climate technology considerations. Finally, assisting the take-off of private sector investments in climate technologies will ensure the impact of the project interventions will endure well past the end of the project. (ii) Ownership of interventions will be ensured through the demand-lead nature of the project. For example, component 4 seeks to build climate technology considerations into national development and investment plans. (iii) ADB and UNEP will make use of existing institutional mechanisms, both those which have been established in baseline activities as well as institutional mechanisms/initiatives outlined in the project implementation arrangements of the CEO endorsement document. For example, ADB will seek to integrate interventions under component 4 very closely with its country level planning activities. UNEP will integrate interventions under component 3 with existing TNA initiatives conducted in countries across the region. It should be noted that the project will not be seeking to duplicate existing institutional arrangements in the region but will be seeking to complement and further facilitate their functioning.

	STAP Guidance	Response
		(iv) The institutional arrangements are highly relevant to the task in hand. They actively support COP negotiations on the Technology Mechanism. UNEP's Climate Technology Network Secretariat will facilitate on-going UNEP activities in the region. The development of a pilot Climate Technology finance Center at the ADB will help ensure that best practice climate technology considerations are integrated into ADB's investment and TA activities. This responds directly for the call for the multinational development banks to play a greater role in supporting climate technology transfer and diffusion.
3.	It would be relevant to mix the project proposed approach with a bottom-up approach, supporting cooperation between national institutions and decentralized organizations (institutions-driven rather than countries driven), based on more open regional call for proposals.	See above answer 1
	Germany	
	But the Title – only slightly modified from the original title – suggests that this project is already the implementation of the CTCN. This impression should be avoided, since a decision on the structure and function as well as the inter-relationship of the CTCN with the Technology Executive Committee is still outstanding; a decision is expected at COP 17. We therefore suggest that the title and the approach are taking the open issues under the Technology Mechanism into account. GEF and the other funding agents should avoid the impression that the project is preempting any decision on the CTCN.	On one hand, the Cancun Agreement on technology calls for a Network of "national, regional, sectoral and international technology centres, networks, organization and initiatives". As part of this Network, ADB and UNEP have identified a role for regional institutions to help connect the global center with key national players and help facilitate knowledge transfer through network development and strengthening, and mobilize financial resources to accelerate the deployment of mitigation and adaptation technologies. The experience from the pilot center can feed into the ongoing negotiations on operationalizing the Technology Mechanism. At the same time, it will enable ADB and UNEP to intensify support to its developing countries in the region on technology diffusion that is aligned with the thrusts of the global community. On the other hand, it should be stressed that the project is not intended to pre-empt COP negotiations on the Technology Mechanism, and in particular decisions made on the operations, structure or function of the CTCN and its relationship to the Technology Executive Committee. Therefore to avoid any impression that the project is anticipating the decisions of the COP the project title has been modified to the " Pilot Asia Pacific Climate Technology Network and Finance Center". This places the stress on the substantive project objectives of facilitating EST transfer through and the development of regional networks and financing. This avoids any potential misinterpretation of the project's remit.

ANNEX C: CONSULTANTS TO BE HIRED FOR THE PROJECT USING GEF/LDCF/SCCF/NPIF RESOURCES

Position Titles	*$/ Person Week**	*Estimated Person Weeks***	*Tasks To Be Performed*
For Project Management			
Local			
Insufficent room to detail all consultancy positions here, full table has been included in a final annex entitled Annex C (Supplemental) starting on page 67 of this document.			
International			
Justification for travel, if any:			
For Technical Assistance			
Local			
International			
Justification for travel, if any:			

* Provide dollar rate per person week. ** Total person weeks needed to carry out the tasks.

ANNEX D: STATUS OF IMPLEMENTATION OF PROJECT PREPARATION ACTIVITIES AND THE USE OF FUNDS

A. EXPLAIN IF THE PPG OBJECTIVE HAS BEEN ACHIEVED THROUGH THE PPG ACTIVITIES UNDERTAKEN.

NO PPG WAS REQUESTED

B. DESCRIBE FINDINGS THAT MIGHT AFFECT THE PROJECT DESIGN OR ANY CONCERNS ON PROJECT IMPLEMENTATION, IF ANY:

C. PROVIDE DETAILED FUNDING AMOUNT OF THE PPG ACTIVITIES AND THEIR IMPLEMENTATION STATUS IN THE TABLE BELOW:

Project Preparation Activities Approved	***Implementation Status***	***GEF/LDCF/SCCF/NPIF Amount ($)***				***Cofinancing ($)***
		Amount Approved	***Amount Spent Todate***	***Amount Committed***	***Uncommitted Amount****	
	(Select)					
	(Select)					
	(Select)					
	(Select)					
	(Select)					
	(Select)					
	(Select)					
	(Select)					
Total		0	0	0	0	0

* Any uncommitted amounts should be returned to the GEF Trust Fund. This is not a physical transfer of money, but achieved through reporting and netting out from disbursement request to Trustee. Please indicate expected date of refund transaction to Trustee.

ANNEX E: CALENDAR OF EXPECTED REFLOWS (if non-grant instrument is used**)**
Provide a calendar of expected reflows to the GEF/LDCF/SCCF/NPIF Trust Fund or to your Agency (and/or revolving fund that will be set up)

Equity investments are made by ADB in a number of Venture Capital Funds as part of this project. Any returns from these investments to the ADB will be managed by the Private Sector Operations Department of the ADB and will be dependent upon market conditions. The time horizon for investment exits and equity releases from the VCFs is 5 to 7 years.

ANNEX F: NARRATIVE EXPLANATION OF APPROACH TO EMISSIONS TRACKING AND EMISSIONS ESTIMATION CALCULATIONS

1. The overall objective of this project is to "enhance the diffusion of technologies that promote low-carbon and climate-resilient development". As such project is unlike conventional GEF projects, which concentrate on a particular technology or known set of technologies in two ways. Firstly, the focus of the project is on key institutional and financial mechanisms for realising technology transfer and deployment. Secondly, due to this focus, particular technologies have not been identified. By and large the choice of technologies, which will be the focus of this project, will be demand led. The primary objective is therefore not to realise cost-effective emissions in the near term reductions, but to speed up the diffusion of climate technologies and realise greater emissions reductions through more rapid technology deployment in the longer term.

2. The design of this project is informed by ample empirical and historical evidence on the nature of technological diffusion and change. In the process of developing this project, the ADB has conducted extensive research into the demand for climate technologies, and the market and policy environments. While this evidence gives every reason to feel the design of this project is appropriate for the task of accelerating the diffusion of climate technologies, it also highlights the difficulty in arriving at quantified measurements of technological diffusion, and therefore the difficulty of identifying the quantitative impact of this project. In this case where the project is focusing on both indirect and direct interventions to promote a range of as yet unidentified technologies in a range of different market contexts in the region, this difficulty is compounded. Equally, in the case where the particular technologies are not yet known, and given the idiosyncratic pattern and speed of diffusion experienced by different technologies, it is not possible to develop a baseline for this objective until after the technologies have been selected. Given these constraints, the following narrative describes the estimated emissions reductions for the investment component of the project as a proxy for potential emission reductions impacts.

3. Of the projects six components, component five, '**Catalyzing investments in EST deployment'** is expected to result in direct investments in climate mitigation technologies, which will result in attributable GHG emissions reductions.

4. Component 5 is composed of two separate sub-components;

    i. **Promotion of direct investment in priority climate technology projects** - this sub-component focuses upon identifying new and alternative technologies to be promoted in through the ADB's existing project pipeline throughout the Asia-Pacific region. Typically the pipeline projects investments use well-proven, mature technologies. New, alternative technologies with superior technical and/or economic performance often exist but are not chosen for these projects due to a lack of knowledge about the availability and feasibility of these technologies, and resultant perceptions of additional risk amongst project proponents. This project will support the investment in new technologies by addressing knowledge gaps relating to the feasibility of technologies, which can result in perceptions of higher risk. The project will deliver support for alternative technology assessments, and so leverage investment in new GHG mitigation technology. The project is expected lead to investments in new mitigation technologies by ADB worth $120 million leveraging an additional $240 million from non-ADB sources.

    ii. **Promotion of Investment in Climate Technology Products through Venture Capital Funds –** this subcomponent will support the investment operations of ADB's equity investments of $60 million in clean-tech venture capital funds. This $60 million investment from ADB will leverage an additional $240 million from the private sector. 2/3 of these investments are expected to be in mitigation technologies (with the remaining 1/3 in adaptation technologies). The funds will invest in small and medium sized climate technology enterprises to enable them to bring technologies to the market. A particular focus will be upon the commercialization of end-user technologies using established core technologies, such as household appliances. The project may also seek to support other clean technology Venture Capital Funds operating in South East Asia.

5. For projects where the technologies to be used and the country contexts are clearly defined typical project-based accounting methodologies are appropriate. However, this project differs from these typical projects, which means we need a different approach to emissions reduction estimation. Key areas where the project differs from conventional projects are given in paragraphs 4-8 below.

6. **Technology choice for investment is demand led -** The project is not supporting particular, predefined technologies. Rather it is providing support services to promote clean technologies. The specific types and mix of technologies that will be promoted will depend upon project level and fund level decisions – not decisions made within this project. In this sense the project interventions are very much demand-led.

7. **Target countries for investment are demand led** - Project accounting methodologies also require the establishment of a counterfactual baseline that allows the estimation of the extent to which any emissions reductions due to the project are additional. Establishment of a project baseline requires an account of the specific market and country context in which the project is taking place. As specific technologies and host countries are not yet defined, development of a relevant emissions baseline is at this stage not possible.

8. **Equity investment in manufacturing of clean technology** - The equity element of the Venture Capital sub-component will invest in the manufacture of low emissions technologies. The emissions reductions will not result from these activities directly, but from onward sales of clean technology products. Emissions reductions will be realized with the users of these products, unlike standard project accounting methodologies the emissions calculation methodology should seek to take these into account as it is these emissions reductions which justify this intervention.

9. **Focus on immature technologies –** the rationale behind the investments undertaken in component 5 focuses on the promotion of non-mature technologies. That is, technologies that are not yet commercially available (as explained above). This means that compared to commercially available emissions reductions technologies the incremental costs of these technologies will be higher. Therefore, average emissions reduction costs for commercially available technologies are not a good guide for the costs the new technologies promoted by the project will face.

10. It should be noted that ADB and UNEP have ample data and well-established data collection protocols and networks for establishing the costs and performance targets for clean technology project investments. However, these are for relatively mature technologies, the project focus is on technologies which are not yet commercially available necessitates the adoption of target costs which are higher than those for the average mitigation project using commercially available technologies.

11. **Direct post project emissions reductions only** – GEF identifies three potential categories of emissions reductions, which can be reported in the tracking tools. Direct project emissions reductions, direct post project emissions reductions and indirect project emissions. For this project only direct post project emissions are reported. Given the relatively short time horizon of this project (2.5 years) it is unlikely that emissions reductions resulting from this project will be realized within the project time frame, therefore direct project emissions reductions are not estimated in the tracking tool. Indirect emissions are not estimated as the dispersed nature of the project interventions over a wide geographical area means that it is not feasible to calculate indirect emissions. Therefore, direct post project emissions only are reported.

12. The calculation of emissions reduction, drawing on the extensive experience of the project design team, seeks to be as accurate as possible within the constraints posed by this innovative project design and focus. Namely, a) the demand led nature of investments; b) the focus on technologies that are relatively immature/not commercially available; c) the investment across a number of different, as yet to be defined country contexts; d) the investment through the Venture Capital initiative in the manufacture of clean energy products rather than clean energy projects themselves; and, e) the relatively short time horizon of the project. Given this context the emissions estimated methodology is as follows.

13. Promotion of direct investment in priority climate technology projects - key assumptions:

i. ADB's total investment of $120 million will leverage an additional $240 million in non-ADB resulting in a total investment of $360 million.
ii. The investment will be divided in an approximate ratio of 42%/42%/16% between energy efficiency, renewables and transportation investments. Equivalent to $150 million each in energy efficiency and renewables and $60 million in transport.
iii. The lifespan of the project investment will be 10 years.
iv. An emissions factor of 0.7397 tCO_2e/MWh, or 0.0007397tCO_2e/kWh. Based on weighted average of regional emissions factors.

Energy efficiency – A levelized cost of unit energy efficiency savings over the life time of the investments is established based upon staff estimates adjusted appropriately to reflect the immature nature of the technologies. By dividing the investment amount by the levilized cost we reach an estimate of the amount of electrical energy saved due to the investments. This can then be multiplied by the regional emissions factor for the power sector to yield an emissions reduction realized over a ten-year period following the implementation of the investment projects.

$$\left(\frac{I}{\kappa_{10}}\right)\varepsilon = E_{10}$$

Where:
I = Investment mobilized ($)
κ_{10} = Levelized energy saving cost over 10 years ($/kWh)
ε = Grid emissions factor (tCO_2e/kWh)
E_{10} = cumulative emissions reductions over a 10 year period (tCO_2e)

For the project in question the following values were used:

Where:
I = $ 150 million
κ_{10} = 0.025 $/kWh
ε = 0.0007397 tCO_2e/kWh

$$\left(\frac{150{,}000{,}000}{0.025}\right)0.0007397 = \mathbf{4{,}438{,}200\ tCO_2e}$$

Renewable energy – Capacity cost is established based upon staff estimates suitably adjusted to reflect the immature nature of the technologies upon which this project will focus. Total installed renewable capacity realized by the project is given from total investment mobilized for renewables divided by the unit capacity cost. Expected power generated annually from these investments is given by multiplying the total installed capacity by the amount of time it is expected to be generating in a year (this is calculated by multiplying the number of hours in a year by a capacity factor which represents the typical portion of this time the facility is actually generating power at its full potential). The emissions reductions are then calculated by multiplying the amount of power generated by a typical grid emissions factor. This is multiplied by 10 to give the cumulative emissions reductions realized over a 10 year period.

$$10\left(\frac{I}{\alpha}\right)t\varepsilon = E_{10}$$

Where:
I = Investment mobilized ($)
α = Unit capacity cost ($/kW)
t = Time (Hrs) (at full load)
ε = Grid emissions factor (tCO_2e/kWh)
E_{10} = Cumulative emissions reductions over a 10 year period (tCO_2e)

For the project in question the following values were used:

I = $150 million
α = 2,500 $/kW
t = 2,000 Hrs (at full load, equivalent to a load factor of 22.8%)
ε = 0.0007397 tCO_2e/kWh

$$10\left(\frac{150{,}000{,}000}{2{,}500}\right)(2{,}000)0.0007397 = \mathbf{887{,}640\ tCO_2e}$$

Transportation – The cost of energy savings levelized over the estimated project lifespan of 10 years is established based upon staff estimates adjusted to reflect the immature nature of the technology. The total investment mobilized for transport is divided by the cost of energy savings to give the amount of energy savings realized through the investment over the investment lifetime. This is then multiplied by the emissions factor for a unit of oil to give the emissions reductions over the 10 year investment lifespan.

$$\left(\frac{I}{\kappa_{10}}\right)\varepsilon = E_{10}$$

Where:
I = Investment mobilized ($)
κ_{10} = Levelized energy saving cost of oil over 10 years ($/bbl)
ε = Unit emissions for oil (tCO_2e/bbl)
E_{10} = Cumulative emissions reductions over a 10 year period (tCO_2e)

For the project in question the following values were used:

I = $60 million
κ_{10} = 40 $/kWh
ε = 0.43 tCO_2e/bbl

$$\left(\frac{60{,}000{,}000}{40}\right)0.43 = \mathbf{645{,}000tCO_2e}$$

Therefore the expected total emissions reductions resulting from the project investment part of component 5 over a ten year period starting in 2015 amounts to:

4,438,200 + 887,640 + 645,000 = **5,970,840 tCO_2e**

14. **Promotion of Investment in Climate Technology Products through Venture Capital Funds –** Equity investments in Venture Capital Funds differ from project investments in two fundamental ways. First, the investments are in productive capacity for clean technologies rather than the clean technologies themselves. Therefore, the value of the clean technology realized though these investments will not be equal to the amount of investment made but will be equal to the amount of manufactures produced as a result of these investments. Second, the clean technologies produced as a result of these investments are in some cases intermediate goods/components for larger prices of technology or projects and sometimes finished products. In the first case these intermediate goods effectively leverage additional investment in terms of the final good or project to which they contribute.

Key assumptions

i. ADB's total equity investment of $60 million will leverage an additional $240 million in from other fund investors ADB resulting in a total investment of $300 million. One third of this will be invested in adaptation.
ii. The investment will be divided in an approximate ratio of 50%/50% between energy efficiency and renewables. Meaning energy efficiency and renewables would each receive investment of $100 million.
iii. 50% of the investment will go to companies, which make intermediate goods/components for clean energy products, and 50% will go to companies, which produce finished renewables or energy efficiency goods.
iv. Annual product value generated as a result of these investments is equal to gross revenue of the enterprise invested in.
v. Profit rate for energy efficiency and renewables companies is 20% of gross revenue, operating costs are 50% of gross revenue.
vi. The lifespan of the project investment will be 10 years. Project investment is depreciated over the project lifetime in equal amounts.
vii. Average emission factor for Subproject C is calculated as 0,86762 tCO_2e/MWh, assuming 40% of final technology investments are in PRC, 40% in India, and 20% in other countries in the region. The emissions factor in PRC is 0.9275 tCO_2e/MWh, emission factor in India is 0.8717 tCO_2e/MWh and regional emission factor is 0.7397 tCO_2e/MWh.

Calculating effective investments in clean technology. First equation (1) shows how the profit margin is derived as a proportion of gross revenue:

$$\pi = \frac{GR-c-d}{GR} \qquad (1)$$

Given *d*, *c* and π, which we adopt in v and vi above we can derive *GR* using equation (2)

$$\mathrm{I} = GR = \left(\frac{P}{t}\right)/(1-c-\pi) \qquad (2)$$

I=total production value of technologies =GR = gross revenue
P = total equity investment
t =equity investment lifespan
c = operating costs as a proportion of gross revenue
π = operating profits as a proportion of gross revenue

Where:
P = $ 200 million
t = 10 years
c = 50%

π = 20%
d = 20 million

We have:

$$\frac{\left(\frac{200}{10}\right)}{1-0.5-0.2} = \$66.67 \text{ million} = GR$$

It is assumed that this value of resulting annual product output is divided evenly between energy efficiency and renewables production. It is also assumed that in both these sectors 50% of production goes to finished goods and 50% to intermediate goods. Equation 3 calculates the final investment in energy efficiency and renewables sectors:

$$FAI = \frac{1}{2} l + I/2 \qquad (3)$$

Where:

FAI = final annual investment ($)
I = GR = total production value of technologies
l = leverage factor indicating additional technology investments effectively leveraged by intermediate products

$$FAI = \frac{66.67}{2} 1.4 + \frac{66.67}{2} = \$80{,}004{,}000$$

The final investment amount is divided equally between energy efficiency and renewables technologies. Given this investment amount total emissions are calculated as follows:

Energy efficiency

$$C\left(\frac{FAI}{\kappa_{10}}\right)\varepsilon = \mathrm{E}_{10}$$

Where:
C = factor capturing cumulative annual production of emissions reduction technology
FAI = final annual investment ($)
κ_{10} = Levelized energy saving cost over 10 years ($/kWh)
ε = Grid emissions factor (tCO_2e/kWh)
E_{10} = cumulative emissions reductions over a 10 year period (tCO_2e)

For the project in question the following values were used:

Where:
C = 5.5 (accumulation of annual production of emissions reduction technology over 10 years)
FAI = $ 40.002 million
κ_{10} = 0.035 $/kWh
ε = 0.00086762 tCO_2e/kWh

$$5.5\left(\frac{40{,}002{,}000}{0.035}\right)0.00086762 = \mathbf{5,453,758tCO_2e}$$

Renewable energy

$$10C\left(\frac{\mathrm{FAI}}{\alpha}\right)t\varepsilon = \mathrm{E}_{10}$$

Where:
C = factor capturing cumulative annual production of emissions reduction technology
FAI = Final annual investment ($)
α = Unit capacity cost ($/kW)
t = Time (Hrs) (at full load)
ε = Grid emissions factor $\left(\frac{tCO_2e}{kWh}\right)$
E_{10} = Cumulative emissions reductions over a 10 year period (tCO_2e)

For the project in question the following values were used:

C = 5.5 (accumulation of annual production of emissions reduction technology over 10 years)
FAI = $ 40.002 million
α = 3,500 $/kW
t = 2,000 Hrs (at full load, equivalent to a load factor of 22.8%)
ε = 0.00086762 tCO_2e/kWh

$$(5.5\times 10)\left(\frac{40{,}002{,}000}{3{,}500}\right)(2{,}000)0.00086762 = \mathbf{1,090,751\ tCO_2e}$$

15. Please note: At mid term and terminal evaluation a similar methodology will be used. At these stages it should be possible to identify most technologies used and the country contexts in which they will be deployed. Therefore, the assumptions made in these initial calculations can be refined and adjusted to reflect the greater detail available.

ANNEX G: NARRATIVE EXPLANATION OF APPROACH TO ADAPTATION TRACKING

1. Technology transfer in the context of climate change has emphasized mitigation technologies, typically low-carbon power generation and transport technologies. A comparable need exists with respect to adaptation technologies, in particular those that serve to increase resilience in sectors projected to be most extensively affected by the impacts of climate change, including water and agriculture.

2. Project Component 5 addresses the need for direct investment in such technologies (both mitigation and adaptation) via two components:

i. ***Promotion of direct investment in priority climate technology projects:*** this sub-component will focus on new, alternative and/or innovative technologies to address both mitigation and adaptation needs within the region that can be transferred and disseminated through ADB pipeline investment projects. In the context of adaptation, it will also focus on existing technologies that are mature and well-established, for which the need to adapt to climate change provides an additional rationale for adoption. Many technologies of high potential value in supporting climate change adaptation are presently available, but are under-utilized in specific countries, regions or communities due to cost or capacity, or to lack of commercial availability. This sub-project will enable the dissemination and expanded use of adaptation technologies through technology needs assessments, technical and economic analysis of adaptation options and dissemination of information on appropriate adaptation technologies with an emphasis on sectors at high risk from climate change impacts. Current barriers to wider adoption will be identified; and portfolios of appropriate and economically sound adaptation technologies identified for key countries and sectors.

ii. ***Promotion of investment in climate technology products through venture capital funds:*** this subcomponent will support the investment operations of ADB's equity investments of $60 million in climate technology venture capital funds, designed to leverage an additional $240 million from the private sector. One third of these investments will be targeted on adaptation technologies. The funds will invest in small and medium-sized climate technology enterprises to enable them to bring technologies to the market. A focus will be upon the commercialization of end-use technologies utilizing proven core technologies, such as membrane (nanotech) water filtration systems and high-efficiency irrigation technologies.

3. The Project aims to establish the commercial viability of promising adaptation technologies through large scale demonstration and documentation of performance. This process will be facilitated by adaptation technology experts who can assist DMC governments in selecting technologies that are well suited to location-specific social and environmental conditions, and that address critical adaptation needs.

4. Due to constraints posed by Project funding, adaptation investments will focus on a limited number of sectors at high risk from climate change within the region. Sectors targeted under Component 5 of the Project will include (a) water resources; (b) agriculture; (c) climate disaster risk management, and (d) coastal zone/urban development. These sectors are selected due to the extent of climate change-related risk they are exposed to,[15] and the presence of many mature and proven technologies to address and to mitigate these risks.

5. Specific countries, sectors and projects will be selected for alternative adaptation technology analysis on the basis of the following factors: Countries will be selected on the basis of their sectoral risk profile. In this context, risk is associated with (i) exposure to climate change impacts, (ii) sensitivity to those impacts (through e.g., livelihood determinants), and (iii) low adaptive capacity. Sectors and projects will be selected on the basis of ADB's regional investment pipelines for the period 2011 – 2013. This will ensure that adaptation technology evaluations and interventions can be introduced in a timely fashion and completed within the overall timeline of the Project.

[15] See IPCC AR4 (2007) WG II

6. To ensure that each adaptation technology is evaluated at a scale sufficient to capture the impacts of variations in factors potentially influencing successful adaptation (e.g., income, education, supporting infrastructure), a limited number of pilot studies will be conducted via the Project. The target will be four to five pilot projects over the duration of the Project. These will be distributed across the climate-sensitive sectors indicated; and representatively across ADB's regions of operation.

7. Projects will be evaluated on the basis of the LDCF/SCCF Results-Based Management Framework[16] and the Adaptation Monitoring and Assessment Tool (AMAT). Under the AMAT, "Promote transfer and adoption of adaptation technology" appears as Objective 3. Specific indicators and proposed quantitative targets (identified by AMAT numbers) indicated below.

8. Please note that for indicators 3.1.1, 3.1.1.1 and 3.1.1.2, the indicators will be updated in the first phase of implementation after the target adaptation sub-projects have been identified. This will involve 5 step process: (i) review of ADB's investment pipeline in target sectors; (ii) screening of projects for climate change risks; (iii) selection of demonstration projects suitable for technology transfer; (iv) additional climate change vulnerability assessment (as appropriate to project context); (v) technology assessment, analysis and consultation with target groups and cost benefit analysis. Following this process the indicators will be updated and the revised AMAT submitted to GEF for monitoring and results tracking.

Outcome 3.1: Successful demonstration, deployment and transfer of relevant adaptation technology in targeted areas.

Indicator 3.1.1: % of targeted groups adopting adaptation technologies by technology type (baseline is 0 without Project). The number and location of targeted groups will be identified after subprojects and technologies have been selected during the first phase of the implementation process.

Output 3.1.1: Relevant adaptation technology transferred to targeted groups:

Indicator 3.1.1.1 Type of adaptation technologies transferred to target groups (Baseline 0). Target four or more of the following (i) water resources technologies; (ii) technologies to improve water productivity in agriculture; (iii) technologies to improve climate disaster risk early warning systems and/or risk management strategies; and (iv) technologies to improve the resilience of urban areas and coastal zones to the impacts of climate change, including architectural design standards. As per Indicator 3.1.1, target groups will be indentified during the implementation process.

Indicator 3.1.1.2 Type of relevant climate change adaptation technology implemented in selected areas by participatory stakeholders (Baseline 0). Target four or more of the above sectoral technologies.

Outcome 3.2: Enhanced enabling environment to support adaptation-related technology transfer

Indicator 3.2.1: Policy environment and regulatory framework for adaptation-related technology transfer established or strengthened (Baseline 0). Target: minimum of three countries in which adaptation technology transfer projects located.

Indicator 3.2.2: Strengthened capacity to transfer appropriate adaptation technologies, as indicated by number of economic and/or technologic feasibility studies developed for specific adaptation technologies and locations. Target: minimum four feasibility studies developed.

Output 3.2.1: Skills increased for relevant individuals in transfer of adaptation technologies

Indicator 3.2.1.1: Number of individuals trained in adaptation-related technologies (Baseline = 0). Target number of individuals (approx 250 individuals, with a gender ration of at least 40% female).

[16] GEF (2010): Updated Results-Based Management Framework for the Least Developed Countries Fund (LDCF) and the Special Climate Change Fund (SCCF) and Adaptation Monitoring and Assessment Tool. GEF/LDCF.SCCF.9/inf4, October 20, 2010.

Output 3.2.2: Relevant policies and frameworks developed and adopted to facilitate adaptation technology transfer.

Indicator 3.2.2.1 Number of policies developed or strengthened. Target: minimum of three countries in which adaptation technology transfer projects located.

ANNEX H: TERMS OF REFERENCE FOR PROJECT STEERING COMMITTEE

Rationale

The proposed project includes a large range of intervention modalities, conducted over a wide geographical area, involving a similarly disparate group of stakeholders, making use of a wide range of funding resources and implemented by two different GEF agencies (UNEP and ADB). The implementation of project components will be managed separately by each of the agencies through the Climate Technology Network secretariat based in Bangkok (UNEP) and the technology finance center in Manila (ADB). To guide strategic project planning decisions and to oversee the overall implementation of the project, a Steering Committee (SC) will be formed.

Objectives and responsibilities

Chaired by ADB, the SC will have a number of responsibilities relating to the overall planning, coordination and oversight of the project, which include but not limited to:

- Coordinate project activities to be conducted by both agencies (meetings, knowledge products etc.);
- Ensure information sharing between project components;
- Oversee content of annual forums;
- Approve project protocols for work planning;
- Approve project protocols for stakeholder engagement;
- Approve project protocols for project reporting;
- Oversee reporting to GEF;
- Oversee communications and consultations with UNFCCC;
- Act as a platform to allow key stakeholders (e.g. GEF secretariat, UNFCCC) to have inputs into strategic project decisions such as priority setting and work plans; and,
- Approve annual work plans for the project.

Composition

The SC will be composed of members from the GEF Secretariat, UNEP and the ADB. While the aim is to keep the SC as small as possible to allow it to work effectively, other organizations may be invited to join in SC meetings and discussions as deemed appropriate on an ad hoc basis. These are likely to include project staff, UNFCCC secretariat staff, project implementation partners such as WRI, IGES and participating country governments, and other stakeholders, including UNDP, World Bank, UNIDO, technical experts and staff from other related initiatives with UNEP and ADB.

Meetings

At least one face-to-face meeting of the SC will be held each year in Bangkok or Manila or other appropriate convenient location. Wherever possible, SC meeting will be held in conjunction with other project activities, such as workshops and conferences organized by the project. Meeting Minutes will be distributed amongst project implementing partners. Each SC member will meet their own staff and travel expenses necessitated by SC activities. For SC meetings, the organization hosting the meeting will meet other costs (room and equipment hire etc).

ANNEX I: TERMS OF REFERENCE FOR PROJECT MANAGEMENT UNIT

Rationale

The proposed project includes six different project components, working through a number of different intervention modalities, conducted over a wide geographical area, involving a similarly disparate group of stakeholders, making use of a wide range of funding sources and jointly implemented by two distinct GEF agencies. While UNEP project components will primarily be implemented and managed under the Climate Technology Network Secretariat based in Bangkok and ADB components will be implemented and managed under the Climate Technology Finance Center based in Manila. The coordinator of the Climate Technology Network Secretariat and the coordinator of the Climate Technology Finance Center will form a joint project management unit (PMU) to ensure that the project as a whole is adequately coordinated.

Objectives and responsibilities

The PMU will have a number of responsibilities relating to the overall management of the project, which include but not limited to:

- Consolidate UNEP and ADB work plans to create joint work plans for the project;
- Consolidate reporting required by GEF;
- Coordinate GEF monitoring and evaluation requirements;
- Develop project monitoring and evaluation protocols in line with GEF requirements;
- Coordinate and assist in the facilitation and organization of project activities that will be jointly implemented by UNEP and ADB, including annual climate technology forums;
- Develop project protocols for stakeholder engagement;
- Coordinate contacts with key stakeholders where they are common to both UNEP and ADB activities, including participating governments, GEF and UNFCCC Secretariat, amongst others;
- Coordinate project activities with on-going UNEP and ADB projects/programs external to the project;
- Develop project reporting protocols;
- Coordinate monitoring and reporting of project, and be responsible for submission of M&E reports to GEF as required;
- Organize monitoring activities including initial, mid-term and baseline assessments;
- Oversee production of project knowledge based outputs, in particular UNEP/ADB joint knowledge based outputs;
- Organize project Steering Committee meetings;
- Organize and facilitate workshops and other dissemination and consultation exercises as required; and,
- Create and manage a project database.

Composition

The PMU will be run jointly by UNEP and ADB. Led jointly by the coordinator/head of the Climate Technology Network and the coordinator/head of the Climate Technology Finance Center, the PMU will include the project staff from Manila, Bangkok and Paris. Additional consultants may be retained as deemed necessary. The PMU will also retain M&E specialists or consultants for the mid-term and final project evaluations.

Organization

Part of the PMU will be based in Manila at the pilot climate technology finance center and other part of PMU will be based UNEP in Bangkok at the Climate Technology Network Secretariat. PMU members will be present at Steering Committee meetings. Each GEF agency will meet their own staff and travel expenses necessitated by PMU activities. For PMU meetings, the organization hosting the meeting will meet other costs (room and equipment hire etc.).

ANNEX C (SUPPLEMENTAL): CONSULTANTS TO BE HIRED FOR THE PROJECT USING GEF/LDCF/SCCF RESOURCES

This supplemental annex has been created as there was insufficient room, to detail all consulting positions in the space provided in annex C.

Position Titles	*$/Person Week*	*Estimated Person Weeks*	*Tasks to be Performed*
For Project Management			
Local			
Project coordinator (ADB)	795	132	(i)Support coordination and integration between the TA and other components of the joint ADB-UNEP project (ii)Coordinate activities of TA subprojects, ensuring their linkages at national level (iii) Prepare progress reports and other project documents that may be required by ADB and partners (iv)Conduct dissemination and outreach activities
Project assistant (ADB)	500	132	(i)Provide administrative and logistical assistance during TA implementation (ii)Create and manage project records (iii)Assist in preparing progress reports and other project documents that may be required by ADB and partners
International			
N/A	0	0	N/A
Justification for travel, if any: consultations, coordination, workshops			
For Technical assistance			
Local			
National policy experts (component 1, UNEP)	1250	22	Technical guidance/advice to national and regional institutions (e.g. peer-reviewing of new national policies/regulations, conducting national/regional assessments, developing policy guidance documents)
National technology experts (component 1, UNEP)	1250	15	Technology specific studies and assessments demonstrating the benefits for the private sector (e.g. power producers, manufacturers, industry and financiers) of committing to achieve a national low carbon and climate resilient development
National policy experts (component 2, UNEP)	1250	20	Institutional audits and capacity assessment of existing public institutions, development of business plans

National climate technology experts (component 3, UNEP)	1250	34	Design, development and implementation of country-driven EST transfer policies, programmes, demonstration projects and scale-up strategies
National technical and policy experts (component 3, UNEP)	1250	25	Sustainable energy resource assessments, Support the development or strengthening of country tailored climate technology transfer policies, climate change impact assessments
National Standards and label experts (component 3, UNEP)	1250	12	Development and improvement of national and regional energy efficiency standards and labels for building envelopes, mechanical systems, equipment, and appliances (for identified priority mitigation technologies) including the establishment of related certification procedures and 'test and verification' facilities
Climate change experts (component 4, ADB)	1,136	123	(i) Assess national and/or subnational policy frameworks and government plans and commitments on promoting climate technologies and on standards, and regulations for climate technology transfer and deployment review national policy strategies, including technology policies and climate change policies (ii) Provide inputs to the countries' development strategies and investment plans to promote climate technologies (iii) Take part in consultation meetings on planning and policy with national and/or subnational government and other key stakeholders (iv) Provide inputs in training and dissemination activities with government agencies (v) Provide inputs to progress reports and briefing notes
Technology Mainstreaming Officer (component 4, ADB)	795	106	(i) Provide inputs in the review of countries' development plans, strategies, and investment programs, ADB's Country Partnership Strategies (CPSs) and Country Operations Business Plans (COBPs) particularly with respect to integration of climate technology considerations (ii) Assist in screening candidate countries for participation in the project (iii) Participate in and help organize and document meetings with government and other stakeholders; as well as with ADB's regional departments

			(iv) Create and maintain database of national policies and briefs related to climate change and technology transfer (iv) Provide inputs to progress reports and briefing notes
Climate change experts (component 5, ADB)	909	26	(i) Assist in identifying additional investment projects for potential ADB assistance in the country concerned (ii) Assist in identifying and assessing candidate projects for assistance from ADB project pipeline for the country concerned (iii) Assist in providing technology-related inputs to pre-feasibility and feasibility studies, resource potential assessments, and technology resilience assessments for identified projects in the country concerned, as required
Project analyst (component 5, ADB)	500	106	(i) Assist in preliminary identification of projects for assistance by monitoring ADB project processing database and other data systems (ii) Organize workshops, meetings, and other consultation activities (iii) Collect information and data on candidate projects and projects being assisted (iv) Assist with documentation and reporting (v) Assist with dissemination and outreach activities
Ad hoc technical specialists (TBD) (component 5, ADB)	1,136	132	(i) Provide inputs into reviews of emerging climate change mitigation and adaptation technologies across sectors (ii) Assist in identifying candidate start-up firms (iii) Assist in the screening and assessment of proposals received from fund managers (iv) Assist in monitoring progress of investments by fund managers, with respect to technology aspects (v) Provide technical support to potential climate technology venture capital funds in more challenging yet promising countries, sectors, frontier markets, or regions, such as Southeast Asia

Venture Capital Operations Officer (component 5, ADB)	795	158	(i) Serve as liaison between ADB, anchor and regional teams, and other experts (ii) Assist in reviewing suitability of funds for assistance through the project (iii) Assist in screening candidate technologies promoted by participating funds (iii) Help review outputs of other experts and synthesize inputs them (v) Participate in and help organize workshops as required (vi) Provide inputs to progress reports and briefing notes
Research Assistant (component 5, ADB)	682	150	(i) Assist the Venture Capital Operations Officer with preparation of draft notes, briefs and progress reports, meeting materials, discussion minutes/summaries, and outreach documents; (ii) Conduct research and analyses; (iii) Collect information and data and manage database of technology-related data used and produced through the subproject (iv) Assist with dissemination and outreach
International			
Selected experts from Thematic Expert Groups (sector specific or technology specific) (component 1, UNEP)	3000	35	Technical guidance/advice to national and regional institutions (e.g. peer-reviewing of new national policies/regulations, conducting national/regional assessments, developing policy guidance documents)
Climate technology experts (component 1, UNEP)	3000	50	Technology specific studies and assessments demonstrating the benefits for the private sector (e.g. power producers, manufacturers, industry and financiers) of committing to achieve a national low carbon and climate resilient development
Climate policy experts (component 2, UNEP)	3000	50	Institutional audits and capacity assessment of existing public institutions, development of business plans
Climate technology experts (component 3, UNEP)	3000	75	Design, development and implementation of country-driven EST transfer policies, programmes, demonstration projects and scale-up strategies
Technical and policy experts (component 3, UNEP)	3000	45	Sustainable energy resource assessments, Support the development or strengthening of country tailored climate technology transfer policies, climate change impact assessments

Standards and label experts (component 3, UNEP)	3000	25	Development and improvement of national and regional energy efficiency standards and labels for building envelopes, mechanical systems, equipment, and appliances (for identified priority mitigation technologies) including the establishment of related certification procedures and 'test and verification' facilities
Team Leader (component 4, ADB)	4,091	132	(i) Screen and identify suitable countries for assistance (ii) Assist with the development of candidate lists for consultant team positions, and advise the head of the pilot technology center during the selection process (iii) Provide inputs to the countries' ADB country partnership strategies and country operations business plans as well as to other national investment planning activities to ensure the integration of best practices, lessons learned, latest information on climate technologies, and technology needs assessments (iv) Assess the current national and/or subnational policy frameworks and review government plans and commitments on promoting climate technologies and standards and regulations for climate technology transfer and deployment. Prepare progress reports, briefing notes, and other documentation, as required (v) Conduct consultation meetings in close consultation with regional departments on planning and policy with national and/or subnational governments and other key stakeholders (vi) Review outputs of other experts in the team

Climate change expert (component 4, ADB)	3,409	35	(i) Assess the current national and/or subnational policy frameworks and review government plans and commitments on promoting climate technologies and standards and regulations for climate technology transfer and deployment (ii) Provide inputs to the countries' ADB country partnership strategies and country operations business plans as well as to other national investment planning activities to ensure the integration of best practices, lessons learned, latest information on climate technologies, and technology needs assessments (iii) Assist in the development of plans and policies to promote climate technologies (iv) Conduct training and dissemination activities with DMC government agencies (v) Prepare reports, briefing notes, and other documentation, as required
Sr. Climate change expert (component 5, direct project investments, ADB)	3,864	106	(i) Refine prioritization criteria for selecting projects, as necessary (ii) Screen and identify possible candidate projects from ADB project pipeline for assistance (iii) Develop, in close consultation with regional departments, a long list of candidate projects to assist (iv) Provide inputs to prefeasibility and feasibility studies, as required, for identified projects (v) Provide inputs to alternative technology analysis and technical design, as required, for identified projects (vi) Provide inputs to resource potential assessments for identified mitigation projects, as required (vii) Provide inputs to technology resilience assessments, as required, for identified adaptation projects (viii) Provide capacity building for DMC stakeholders in identified investment projects, as required (ix) Prepare progress reports, briefing notes, correspondence, and other technical documents, as required

Climate change experts (component 5, direct project investments, ADB)	3,409	106	(i) Screen and identify possible candidate projects from ADB project pipeline for assistance (ii) Establish assistance needs for projects and develop a short list of projects to assist (iii) Develop, in close consultation with regional departments, a long list of candidate projects to assist (iv) Provide inputs to prefeasibility and feasibility studies, as required, for identified projects (v) Provide inputs to alternative technology analysis and technical design, as required, for identified projects (vi) Provide inputs to resource potential assessments for identified mitigation projects, as required (vii) Provide inputs to technology resilience assessments, as required, for identified adaptation projects (viii) Provide capacity building for DMC stakeholders in identified investment projects, as required (ix) Prepare progress reports, briefing notes, correspondence, and other technical documents, as required
Team Leader (component 5, anchor team (firm), ADB)	5,682	18	(i) Lead the team in providing advisory services to help identify technology opportunities across sectors, identify candidate start up firms, assess proposals from fund managers, and monitor progress of investments by fund managers (ii) Assist in engaging additional firm or individual experts to provide identified supplementary technology-related advisory services, including preparation of terms of reference and ranking and selection of candidates (iii) Prepare progress reports, briefing notes, correspondence, and other technical documents on the TA
Lead Technical Specialist (Deputy) (component 5, anchor team (firm), ADB)	4,545	79	(i) Conduct reviews of emerging climate change mitigation and adaptation technologies across sectors (ii) Identify candidate start-up firms (iii) Screen and assess proposals received from fund managers (iv) Assist in monitoring progress of investments by fund managers, with respect

			to technology aspects (v) Provide technical support to potential climate technology venture capital funds in more challenging yet promising countries, sectors, frontier markets, or regions, such as Southeast Asia
Other experts (3-5 experts) (component 5, anchor team (firm), ADB)	3,409	101	(i) Provide inputs into reviews of emerging climate change mitigation and adaptation technologies across sectors (ii) Assist in identify candidate start-up firms (iii) Assist in the screening and assessment of proposals received from fund managers (iv) Assist in monitoring progress of investments by fund managers, with respect to technology aspects (v) Provide technical support to potential climate technology venture capital funds in more challenging yet promising countries, sectors, frontier markets, or regions, such as Southeast Asia
Legal expert (component 5, anchor team (firm), ADB)	5,682	18	(i) Provide technical support to potential climate technology venture capital funds in more challenging yet promising countries, sectors, frontier markets, or regions, such as Southeast Asia (ii) Provide legal advice on technology transfer agreements and intellectual property (iii) Provide advice on legal climate for investment and exit to funds (iv) Conduct reviews of legal climate related to climate technology venture capital activities as required
Lead Technical Specialists (component 5, regional teams (firms), ADB)	4,545	79	(i) Conduct reviews of emerging climate change mitigation and adaptation technologies across sectors (ii) Identify candidate start-up firms (iii) Screen and assess proposals received from fund managers (iv) Assist in monitoring progress of investments by fund managers, with respect to technology aspects (v) Provide technical support to potential climate technology venture capital funds in more challenging yet promising countries, sectors, frontier markets, or regions, such as Southeast Asia

Other experts (4-8 experts) (component 5, regional teams (firms), ADB)	2,273	158	(i) Provide inputs into reviews of emerging climate change mitigation and adaptation technologies across sectors (ii) Assist in identifying candidate start-up firms (iii) Assist in the screening and assessment of proposals received from fund managers (iv) Assist in monitoring progress of investments by fund managers, with respect to technology aspects (v) Provide technical support to potential climate technology venture capital funds in more challenging yet promising countries, sectors, frontier markets, or regions, such as Southeast Asia
Legal experts (component 5, regional teams (firms), ADB)	2,727	26	(i) Provide technical support to potential climate technology venture capital funds in more challenging yet promising countries, sectors, frontier markets, or regions, such as Southeast Asia (ii) Provide legal advice on technology transfer agreements and intellectual property (iii) Provide advice on legal climate for investment and exit to funds (iv) Conduct reviews of legal climate related to climate technology venture capital activities as required
Team leader (component 6, design consultants, ADB)	4,545	9	(i) Lead the team of selected experts to prepare the procedures and operation plans for the demonstration of the assisted broker model for technology transfer (ii) Coordinate with the implementation consultant and ADB to finalize the procedures and operational plans
Technology experts(component 6, design consultants, ADB)	4,545	9	(i) Provide inputs on various technologies, technology holders and licensing issues (ii) Get feedback from technology holders and seekers on draft procedure and operational plan (iii) Work closely with country specialists
Country experts (component 6, design consultants, ADB)	4,545	9	(i) Provide prioritized markets perspective during the design of operational procedure and business plan (ii) Get feedback from various stakeholders in developing countries on the draft procedure and operational plan

Research specialists (component 6, design consultants, ADB)	4,545	9	(i) Landscape technologies and markets including technology holders and potential buyers (ii) Receive inputs and deliver information and reports to technology experts and country experts
Legal expert (component 6, design consultants, ADB)	4,545	9	(i) Provide inputs on IP protection issues (ii) Review the operational and business plans from legal perspective and provide inputs
Team leader (component 6, operation consultants, ADB)	4,545	18	(i) Oversee technology transfer operations using the assisted broker model (ii) Perform licensing and marketing activities (iii) Coordinate with the implementation consultant to ensure the operations stay on track, i.e., enable reduction of carbon emissions from Asia
Business managers (component 6, operation consultants, ADB)	4,545	18	(i) Evaluate the business opportunities for technologies with technical advice from experts (ii) Draft business plans for buyers during negotiations, which will the basis for recovering the cost of technology from product sales
Technology experts (component 6, operation consultants, ADB)	4,545	106	(i) Monitor and evaluate technologies and technology holders (ii) Function as a major liaison to technology holders (iii) Be responsible broker for individual transaction and report directly to CEO (iv) Work closely with country specialists
Country experts (component 6, operation consultants, ADB)	4,545	106	(i) Serve as central coordinator in most prioritized markets (ii) Contact person for buyer to the extent needed
Research specialists (component 6, operation consultants, ADB)	4,545	26	(i) Landscape technologies and markets including technology holders and potential buyers (ii) Receive inputs and deliver information and reports to technology experts and country experts
Legal expert (component 6, operation consultants, ADB)	4,545	26	(i) Oversee IP protection in collaboration with external patent attorneys

Team Leader (component 6, implementation consultants, ADB)	4,545	18	(i) Lead the team to provide oversight during the design and demonstration stages of the assisted broker model (ii) Review and finalize the list of existing and potential IP brokers for the demonstration phase (iii) Provide extensive inputs during the finalization of the procedures to be adopted by the participants and operational plan (iv) Provide inputs to the operator in selecting technologies, countries and setting up organizational structure (v) Assist ADB and the operator in carrying out mid-term review and provide inputs in preparing the next phase of activities (vi) Assist ADB and the operator in preparing the final report on launching the assisted broker model as an independent business – the modality
Climate change expert (component 6, implementation consultants, ADB)	4,545	26	(i) Provide inputs on latest climate change, technology transfer related issues and discussions within and beyond UNFCCC (ii) Assess the potential impact of LCTs in reducing GHG emissions in participating countries (iii) Review the climate change plans and policies of DMCs and provide inputs during selection of countries and technologies (iv) Provide inputs to the Team Leader during the finalization of the procedures to be adopted by the participants and operational plan (v) Assist in promoting Assisted Broker Model in different forums and establishing partnerships with other similar efforts (vi) Assist ADB and the operator in carrying out mid-term review and provide inputs in preparing the next phase of activities (vii) Assist ADB and the operator in preparing the final report on launching the assisted broker model as an independent business – the modality (viii) Carry out any other activities required by the Team Leader

Low carbon technology expert (component 6, implementation consultants, ADB)	4,545	26	(i) Review and provide inputs to the operator on the need and priorities of host governments for low carbon technologies and share their status (ii) Review and assist the operator in identifying and contacting LCT holders (iii) Provide inputs to the operator in selecting the technology area to be chosen first for the demonstration phase (iv) Assist the Team Leader in providing extensive inputs during the finalization of the procedures to be adopted by the participants and operational plan (v) Assist Team Leader and the operator in carrying out mid-term review and provide inputs in preparing the next phase of activities (vi) Assist ADB and the operator in preparing the final report on launching the assisted broker model as an independent business – the modality (vii) Carry out any other activities required by the Team Leader
Institutional expert (component 6, implementation consultants, ADB)	4,545	26	(i) Review institutional set up of existing IP brokers (ii) Provide inputs on appropriate institutional and organizational set up appropriate for the demonstration phase and full fledged operation of the assisted broker model (iii) Provide inputs on appropriate human resource needs during the demonstration phase and full fledged operation of the assisted broker model (iv) Review IPR related organizations and the procedures in countries where the LCTs have been developed and where it will be used (v) Assist the Team Leader in providing extensive inputs during the finalization of the procedures to be adopted by the participants and operational plan (vi) Assist Team Leader and the operator in carrying out mid-term review and provide inputs in preparing the next phase of activities (vii) Assist Team Leader and the operator in preparing the final report on launching the assisted broker model as an independent

			business – the modality (viii) Carry out any other activities required by the Team Leader
Justification for travel, if any: consultations, coordination, workshops			

Note: as part of ADB's contribution to the project, it will assign two international staff to serve as head and deputy head of the adb project management unit. they will be assisted by other international staff and secondee(s) as well as national staff.