Project **ACCESS TO CLEAN ENERGY INVESTMENT PROJECT**

Document **ANNEX – Analysis of Climate Change Benefits**

Project number **PPTA 9047 PAK**

Prepared for **ADB (Asian Development Bank)**

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Content

Analysis of Climate Change Benefits

1.1 Climate Change Impact

1.1.1 Impact on the Project

Climate change will be an additional stressor to hydropower as changing patterns of monsoon rains, winter precipitation, and snow and ice melt alter the spatial and temporal distribution of water.

With the amount of electricity generated varying with the flow, the changing river patterns in south Asia will disrupt hydropower production. A 1% reduction in stream flow can reduce electricity output by roughly 3%. Generation rates will be high in the spring but lower in the summer, when energy is most needed for cooling. Greater uncertainty in the reliability of hydropower will heighten disputes between the countries through which the rivers flow.1

According to the ADB guidelines for climate proofing investment in the energy sector, potential climate change impacts to MHPs could be summarized as follows:

- Precipitation (including drought)
  - Changing annual or seasonal patterns can affect river flows and water levels behind dams, either reducing or increasing power output
  - Siltation can reduce reservoir storage capacity
  - Increased uncertainty in water flows can affect power output and generation costs
- Extreme events (glacier melting, floods): Floods and glacial lake outburst floods can damage or destroy infrastructure
- Higher air temperature, wind speeds, and humidity Can increase surface evaporation, reducing water volumes and power output

1.1.2 Impact from the Project

Hydropower is mainly criticized for its negative environmental impacts on local ecosystems and habitats. Damming a river alters its natural flow regime and temperature, which in turn changes the aquatic habitat. Such a change disturbs the river's natural flora and fauna. Fish are very sensitive to hydropower operations, and fish species have been significantly affected by hydropower dams.

Small, low and micro hydropower facilities have much smaller negative environmental impacts than large hydropower facilities. Especially run-of-the-River Hydropower Plants have a low-impact profile and are usually built on rivers with steady natural flows or regulated flows discharged from upstream reservoirs. These units have little or no storage capacity, and hydropower is generated using the river flow and water head.

[1] IISD; The Vulnerability of Pakistan's Water Sector to the Impacts of Climate Change; 2015

1.1.3 The programs´ emission reduction potential on the national power mix

a. Methodology

The programs´ emission reduction potential has been estimated using a simplified baseline methodology. According to the United Nations Framework on Climate Change UNFCCC, "the baseline for project activities is the scenario that reasonably represents anthropogenic emissions by sources of GHGs […] that would occur in the absence of the proposed project activity".

Here, the methodology has been applied as follows: First, future annual baseline emission factors of the national power generation mix have been established by dividing projected total power sector emissions by total electricity generation. Second, the programs´ annual electricity output has been forecasted. Third, to obtain the amount of mitigated emissions, the annual output has been multiplied by the corresponding baseline emission factor.

b. Assumptions

This approach is based upon the following key assumptions: Power, generated by MHPs or PV Solar have a direct emission factor of zero, whereby indirect emissions are not taken into account. All generated power will be consumed Generation capacity targets are met following a linear growth rate from 2011 until 2022. Power generated by the program reduces emissions by the corresponding national power emission factor as established above, where it replaces consumption of national grid power from off-takers connected to the national grid in the baseline scenario. Thus, the higher the portion of grid-connected consumers in the baseline, the higher the emission reduction. Given the purpose of estimating the reduction potential, double counting and additionality considerations have not been taken into account. Beneficiaries are private households grid connectivity of 30% as well as off-grid Basic Health Units Schools. Where applicable, MHPs have an expected load factor of 67% and PV Solar annual productivity is expected to be 1,400 kWh / kWp in Khyber Pakhtunkhwa. Load shedding is considered to be 12 hrs/day and thus has a factor of 50%.

c. Findings

Based upon the recent Pakistan Low Carbon Scenario Analysis, the expected national power mix emission factor from 2011 to 2022 oscillates between 480 and 630 $kgCO_2$ / MWh. Volatilities are believed to be mainly caused by the national energy scenario up to 2025 to phase out oil, bridge the resulting gap with coal and build up hydro and renewables to meet long-term demand. Short- and mid-term supply shortages, will be reduced with additional gas- and coal-fired generation capacities. This causes a temporarily increase of the overall emission factor, which eventually will be compensated by additional capacities in hydropower and other renewable energy such as wind, solar, or biomass-based sources.

The program foresees the commissioning of 9,187 projects during Phase I (2011-2016) and Phase II (2017-2022) including micro hydro plants (MHP) and Photovoltaic Solar plants (PV Solar). The latter can include roof-top systems with an average installed capacity of 3 kWp as well as ground-mounted systems with an average installed capacity of 5 kWp. Once all sites operational from 2022 onwards, the total annual output will be approximately 732,000 MWh, mitigating 53,000 tCO_{2eq} emissions every year.

1.2 Climate Change Adaption

1.2.1 Introduction

While efforts to mitigate climate change are crucial, it is also essential to assist developing countries to adapt to the impacts of climate change already being experienced due to past and current GHG emissions. Finance is necessary to fund activities that respond to impacts such as flooding, cyclones, coastal erosion, droughts and increased variability of precipitation.

According to the OECD Climate Change Adaptation is an activity should be classified as climate change adaptation related if it intends to reduce the vulnerability of human or natural systems to the impacts of climate change and climate-related risks, by maintaining or increasing adaptive capacity and resilience.

In the that sense, Pakistan is one of the most vulnerable countries to climate change: it ranks 8th in the world in terms of long-term risks, and was the fourth worst affected country in 2014. With a poverty rate of 21 percent 2 and a large proportion of the population dependent on agriculture (which contributes 23 percent to GDP) Pakistan must take the threat of climate change seriously. The impacts of climate change cut across several aspects of life. Water, health, energy and food security are increasingly stressed, and in some areas can pose genuine concerns for livelihoods and even survival. These concerns particularly affect the poorest in society.

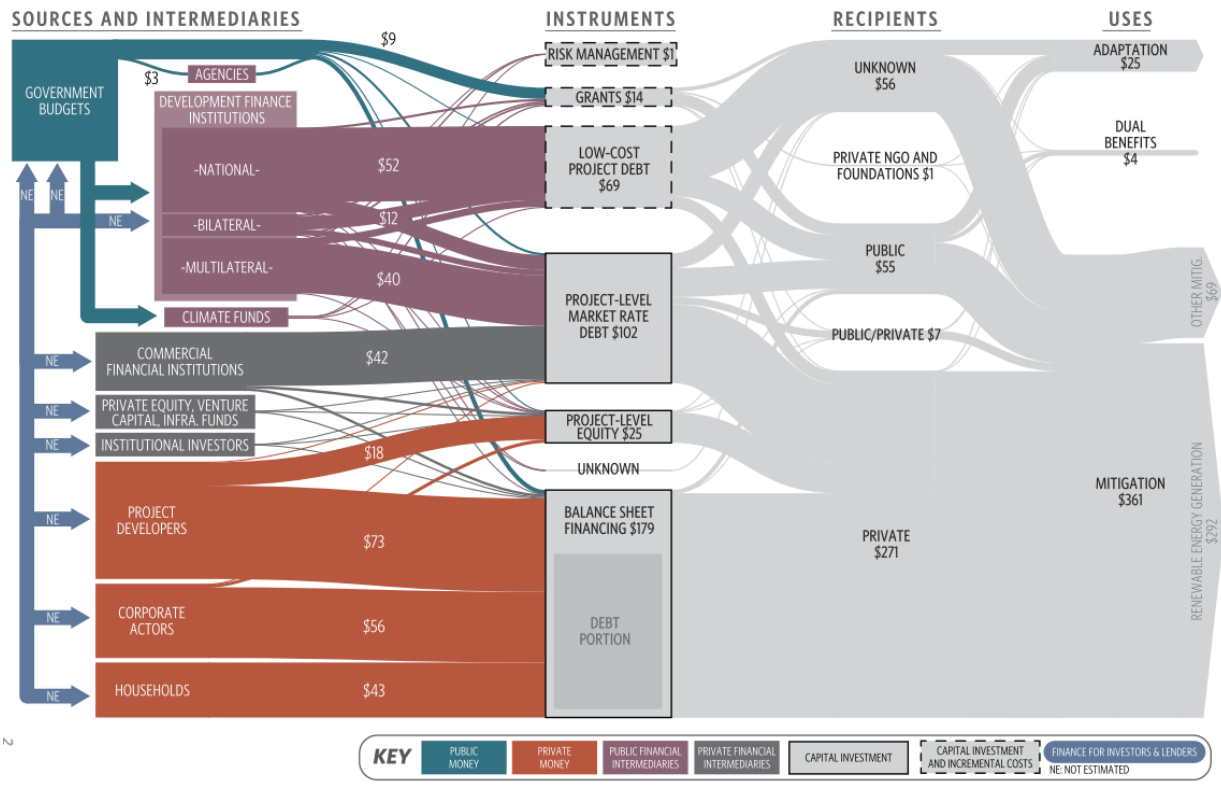
1.2.2 Adaption Finance options

According to the United Nations Framework Convention on Climate Change (UNFCCC), the current levels of funding available for climate change-related initiatives will be insufficient to address the future financial flows estimated to be required for adaptation and mitigation measures under a strengthened future climate change agreement, post-2012. Developing countries currently receive only 20 to 25 per cent of the investment they need for climate change mitigation and adaptation, which only represents approximately 46 per cent of the total that will be required by 2030.

The CPI diagram illustrates the current landscape of climate finance flows along their life cycle. The width of the arrows in the diagram represents the relative size of the flows. The diagram distinguishes between 'incremental costs' and 'capital investment'. The former refers to financial resources provided to cover the difference between a less costly, more polluting option and a costlier, more environmentally-friendly and/or climate-resilient one. The latter refers to tangible investment in mitigation or adaptation projects. Incremental costs are like revenues to recipients, whereas capital investment needs to be paid back. Incremental costs often make the difference in the final investment decision, influencing where investors decide to put their money, and are generally funded by public climate finance resources.[2]

[2] Climate Policy Initiative (CPI); Global Landscape of Climate Finance; 2015

Figure 1: Landscape of Climate Finance – mapping sources, instruments and recipients



Source: Landscape of Climate Finance, Climate Policy Initiative (CPI)

1.2.3 Adaption Finance Mechanisms and Sources

1.2.3.1 Mechanisms

There are various sources of international adaptation finance and there might be some overlap between different funding sources. For instance, several dedicated climate funds are managed by multilateral organizations; international NGOs receive part of their funding from bilateral donors, etc. The different sources of funding are divided into five general categories as follows:

- **Bilateral Institution**: An institution representing a donor country. Depending on the donor, aid can be handled by an Embassy or equivalent, a national development agency, etc. Examples such as Embassies, UKAID, USAID, European Union, etc.
- **Multilateral Institution**: An organization whose membership is made up of member governments, who collectively govern the organization and are its primary source of funding. Examples are World Bank, Asian Development Bank (ADB), UN Agencies, etc.
- **Dedicated Climate Fund**: Funds dedicated to finance climate change activities in developing countries. They are administered by UN bodies under the UNFCCC Framework, such as the Adaptation Fund (AF), Green Climate Fund (GCF), Least Developed Countries Fund (LDCF) through Global Environment Facility (GEF); or administered by the Multilateral Development Banks (MDBs) such as the Climate Investment Funds (CIF), or administered by bilateral development agencies such as the International Climate Initiative (ICI), or by national institutions in the case of

National Climate Trust Funds, e.g. Amazon Fund or Indonesia Climate Change Trust Fund (ICCTF).

- **International NGO**: A non-governmental organization that operates in different countries and whose headquarter is not located in the host country. Examples include WWF, CARE, Oxfam, etc.
- **Private Foundation**: A donor that does not represent a government or multilateral organization and is created by an individual person or a group of persons to provide assistance to developing countries. Examples include the Rockefeller Foundation, Bill and Melinda Gates Foundation, etc.

1.2.3.2 Sources

Multilateral climate funds exclusively targeting adaptation actions: The EU's Global Climate Change Alliance (GCCA) also delivers considerable adaptation funding but is not listed here as it also supports multiple objectives and activities aside from adaptation. The PPCR has approved the largest amount of adaptation finance to date, however it supports only few countries with programmatic funding because of its pilot approach. In contrast, the LDCF, is the fund with the highest number of projects approved in 52 different countries, although individual projects are pretty small. The AF and the SCCF have approved similar amounts of funding. The AF, which receives part of its funding from CDM revenue, remained hampered by plummeting carbon prices and contributions. This shortfall has so far not been made up with increased grant contributions by developed countries.

National Green Climate Fund (NGCF) Pakistan: not operational yet

Green Climate Fund (GCF) Pakistan Board: The GCF is a fund within the UNFCC and aims to redistribute money from the developed to the developing world in order to support the Developing Countries' climate change adaptation and mitigation efforts. All Developing Countries party to the UNFCCC including Pakistan are eligible to receive resources from the Fund. However, only entities accredited by the GCF can process funds within these countries. Currently, there are two routes to accreditation. Entities with an international focus such as the United Nations agencies, development banks and multilateral institutions which have previously been accredited by the Adaptation Fund or Green Environment Facility (past climate funds managed by the UNFCCC) are eligible for International Access which is a fast-track route to receiving funds from the GCF. First-time applicants can become accredited through the Direct Access approach. Entities seeking accreditation to the Fund in order to access its resources are assessed against the Fund's fiduciary principles and standards, environmental and social safeguards and gender policy. Depending on their institutional capacity and size of intended projects, entities can apply in different project categories ranging from Micro (less than USD 10 Million), to Large (more than USD 250 Million).

The Creditor Reporting System (CRS) by the OECD: provides a set of readily available basic data that enables analysis on where aid goes, what purposes it serves and what policies it aims to implement, on a comparable basis for all DAC members. Data are collected on individual projects and programmes and provides inside into types and individual donor

institutions with energy and environmental engagements in Pakistan. The following selection represents commitments for either renewable energy or environmental projects in Pakistan.[3]

[3] OECD; Creditor Reporting System; https://stats.oecd.org/Index.aspx?DataSetCode=CRS1#; 2016

Figure 2: Creditor Reporting System; Donners Commitments to Environmental Development Assistance to Pakistan

Recipient	Pakistan									
Sector	410: IV.1. General Environment Protection, Total									
Flow	Official Development Assistance									
Channel	All Channels									
Amount type	Constant Prices									
Flow type	Commitments									
Type of aid	All Types, Total									
Unit	US Dollar, Millions, 2014									
Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Donor										
All Donors, Total	26,129	95,339	11,822	21,651	75,518	9,772	182,847	1,987	253,085	..
DAC Countries, Total	20,700	12,008	3,473	11,568	69,166	4,578	101,150	0,471	0,793	..
Australia	..	..	..	..	0,028	0,028	0,049	0,018	0,012	..
Canada	..	0,014	..	..	..	0,143	1,401	..	0,469	..
Finland	..	0,086	..	0,115	0,185	0,580	..	..	..	..
France	..	..	..	..	63,855	..	91,929	0,047	..	..
Germany	..	..	1,451	..	0,098	0,138	6,893	..	..	..
Italy	..	0,723	0,690	0,670	0,020	0,020	0,020	0,268	..	..
Japan	0,264	0,419	0,042	0,815	1,906	1,307	0,476	0,040	0,002	..
Korea	0,235	..	0,009	..	0,013	..	..	0,012	..	..
Luxembourg	..	..	..	..	..	..	..	..	..	..
Netherlands	20,161	9,006	..	8,927	1,415	1,108	0,362	..	0,000	..
New Zealand	..	..	..	..	..	..	..	..	..	..
Norway	..	1,112	..	..	..	1,016	..	..	0,046	..
Spain	..	..	0,089	..	..	..	..	..	..	..
Sweden	..	0,114	..	..	..	..	..	0,063	0,005	..
Switzerland	..	0,458	1,016	0,897	0,597	..	..	..	..	..
United Kingdom	..	0,020	0,076	0,038	0,063	0,165	0,020	..	..	..
United States	0,040	0,056	0,100	0,105	0,985	0,073	..	0,024	0,260	..
Multilateral, Total	5,429	83,331	8,349	10,083	6,331	5,144	81,692	1,516	252,291	..
Adaptation Fund	..	..	..	..	4,092	..	..	..	..	..
AsDB Special Funds	..	..	..	..	..	..	70,666	..	33,333	..
EU Institutions	..	..	1,833	..	..	..	..	..	..	..
Global Environment Facility [GEF]	3,869	..	5,561	8,816	0,398	2,741	5,275	1,029	0,220	..
International Development Association [IDA]	..	82,387	..	..	..	..	4,442	..	217,708	..
UNDP	1,559	0,943	0,955	1,254	1,841	2,403	1,309	0,487	1,030	..
UNICEF	0,001	..	..	0,013	0,000	..	..	..	..	..
Non-DAC Countries, Total	..	..	..	..	0,021	0,050	0,005	..	..	..
United Arab Emirates	..	..	..	..	0,021	0,050	0,005	..	..	..

Data extracted on 18 Sep 2016 21:40 UTC (GMT) from OECD.Stat

Figure 3: Creditor Reporting System; Donners Commitments to Solar Energy Development Assistance to Pakistan

Recipient	Pakistan									
Sector	23230: Solar energy									
Flow	Official Development Assistance									
Channel	All Channels									
Amount type	Constant Prices									
Flow type	Commitments									
Type of aid	All Types, Total									
Unit	US Dollar, Millions, 2014									
Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Donor										
All Donors, Total	..	..	..	..	4,907	..	0,186	0,320	..	..
DAC Countries, Total	..	..	..	..	4,907	..	0,186	0,320	..	..
Germany	..	..	..	..	0,132	..	0,186	0,320	..	..
Japan	..	..	..	..	4,453	..	..	..	..	..
United States	..	..	..	..	0,322	..	..	..	..	..

Data extracted on 18 Sep 2016 21:38 UTC (GMT) from OECD.Stat

Figure 4: Creditor Reporting System; Donners Commitments to hydroelectric Development Assistance to Pakistan

Recipient	Pakistan									
Sector	23220: Hydro-electric power plants									
Flow	Official Development Assistance									
Channel	All Channels									
Amount type	Constant Prices									
Flow type	Commitments									
Type of aid	All Types, Total									
Unit	US Dollar, Millions, 2014									
Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Donor										
All Donors, Total	..	..	..	32,915	43,884	..	395,410	27,017	398,670	..
DAC Countries, Total	..	..	..	..	..	..	0,084	27,017	80,934	..
France	..	..	..	..	..	..	..	..	80,934	..
Germany	..	..	..	..	..	..	..	27,017	..	..
Japan	..	..	..	..	..	..	0,084	..	..	..
Multilateral, Total	..	..	..	32,915	..	..	395,326	..	317,736	..
International Development Association [IDA]	..	..	..	..	..	..	395,326	..	317,736	..
OPEC Fund for International Development [OFID]	..	..	..	32,915	..	..	..	..	..	..
Non-DAC Countries, Total	..	..	..	..	43,884	..	..	..	..	..
Kuwait [KFAED]	..	..	..	..	43,884	..	..	..	..	..

Data extracted on 18 Sep 2016 21:24 UTC (GMT) from OECD.Stat

The CRS database can be consulted under https://stats.oecd.org/Index.aspx?DataSetCode=CRS1# in which details on every project, including category, recipient, donor, volume, and type of commitment can be identified and compared.

The USAID Adapt Asia-Pacific Quick Guide to Climate Change Adaptation Funds: is an easy to follow collection of 10 multilateral and bilateral climate funds and initiatives currently available for financing adaptation activities in developing countries. This Quick Guide provides key facts about individual funds, such as eligibility criteria, target areas, and, importantly, the mechanisms that will ultimately help you gain access and approval.[4]

[4] USAID; Asia-Pacific Quick Guide to Climate Change Adaptation Funds; 2016

Figure 5: USAid selection of Asia-Pacific Climate Change Adaptation Funds

Fund name	Fund objectives	Fund type	Funds Pledged	Eligible countries	Type of support provided	Fund website
The Adaptation Fund (AF)	Adaptation	Multilateral	USD 478.7 million	All developing countries that are Parties to the Kyoto Protocol.	Grants	[Link]
The Least Developed Countries Fund (LDCF)	Adaptation	Multilateral	USD 934.50 million	All LDCs	Grants	[Link]
The Special Climate Change Fund (SCCF)	Adaptation, Mitigation	Multilateral	USD 348.99 million	All developing countries that are Parties to the UNFCCC	Grants	[Link]
Pilot Program for Climate Resilience (PPCR)	Adaptation	Multilateral	USD 1,168.3 million	Those countries that are eligible for official development assistance according to the OECD with an active in-country multilateral development bank program. Priority is given to vulnerable Least Developed Countries, including Small Island Developing States.	Co-financing, Concessional loans, Grants	[Link]
The Global Climate Change Alliance (GCCA)	Adaptation, Mitigation, REDD	Multilateral	US 386.16 million	Least Developed Countries and Small Island Developing States that are recipients of official development assistance	Grants	[Link]
Nordic Development Fund (NDF)	Adaptation, Mitigation	Multilateral	EUR 1,001.8 million	27 low-income countries in Africa, Asia and Latin America. Eligible countries in Asia include Bangladesh, Cambodia, Kyrgyz Republic, Lao PDR, Maldives, Mongolia, Nepal, Pakistan, Sri Lanka, and Vietnam	Grants	[Link]
Nordic Climate Facility (NCF)	Adaptation, Mitigation	Multilateral	EUR 26.37 million	27 low-income countries in Africa, Asia and Latin America. Eligible countries in Asia include Bangladesh, Cambodia, Kyrgyz Republic, Lao PDR, Maldives, Mongolia	Grants	[Link]
International Climate Initiative (ICI)	Adaptation, Biodiversity, Mitigation, REDD	Bilateral	USD 1,081.84 million	Broad eligibility, including developing, newly industrializing, and transition countries in Africa, South and Southeast Asia, Small Island States in the Pacific and the Caribbean, and others	Concessional loans, Grants	[Link]
International Climate Fund (ICF)	Adaptation, Mitigation, REDD	Bilateral	USD 6,002 million	Broad eligibility: funding for adaptation is for poor and vulnerable countries, including least developed countries, small island states and Africa; funding for mitigation may include some middle-income countries	Grants	[Link]
The Green Climate Fund (GCF)	Adaptation, Mitigation	Multilateral	USD 10,190 million	All developing countries that are Parties to the UNFCCC	Concessional loans, Grants	[Link]

Source: USAID; Asia-Pacific Quick Guide to Climate Change Adaptation Funds; 2016

1.3 Climate Change Monitoring and Reporting

1.3.1 Climate Change Screening

1.3.1.1 Introduction

Climate risk screening is an integral part of efforts to ascertain current and future vulnerabilities and risks related to climate change. It is a prerequisite for identifying and designing adaptation measures, and an important element in the process of integrating, or mainstreaming, climate change adaptation into development project, planning and policy processes. There is a need

for user friendly guidance on climate risk screening tools and their potentials for application that targets developing country stakeholders. [5]

As outlined in the UNDP publication „Climate Risk Screening Tools and their Application" , various tools have been developed in order to facilitate climate screening for political, scientific or investment purposes. Tools vary in function and complexity and may cover one or multiple steps of the screening and assessment process. It includes structuring checklists, document based risk screening and assessment tools, computer based risk screening and assessment tools Data and information tools, including model tools for climate downscaling and socioeconomic scenarios or for analysis of climate data and implications of the outcomes of various climate modelling exercises as well as web-based knowledge sharing platforms.

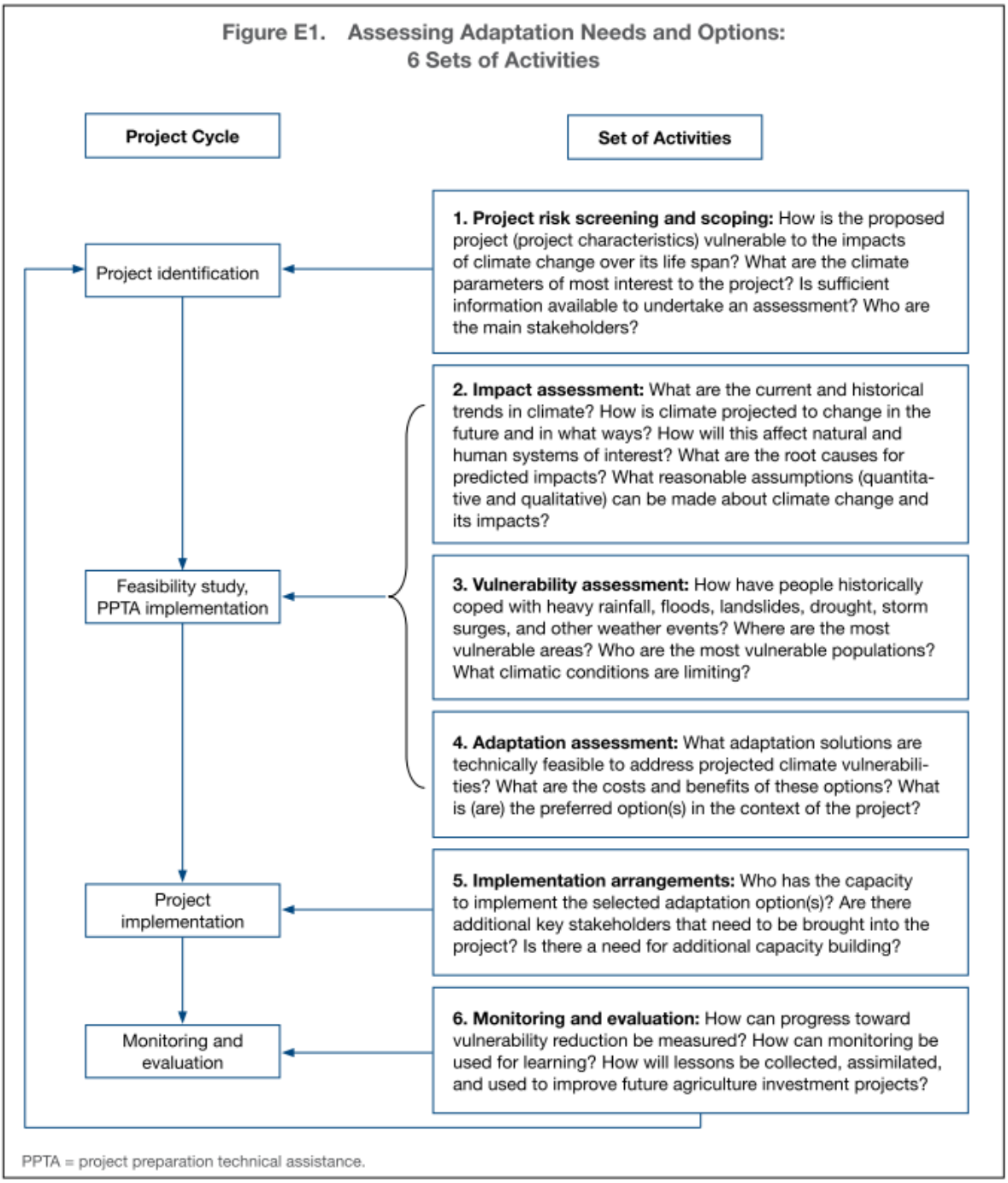
1.3.1.2 Screening tool proposal for program and project levels[6]

To provide climate change risk screening on project level, the Asian Development Bank has developed guidelines and a tool for „Proofing Investment in the Energy Sector" including a set of activities allowing to assess an investments' adaption needs and options as follows:

[5] UNDP; Climate Risk Screening Tools and their Application; 2011

[6] ADB; Guidelines for Climate Proofing Investment in the Energy Sector; 2013

Figure 6: ADB Climate Proofing Activities – Assessing Adaption Needs and Options



Source: ADB; Guidelines for Climate Proofing Investment in the Energy Sector; 2013

The ADB Draft Risk Screening Tool has been designed to take into account climate-induced risks and natural hazards of geophysical origin. This proposed risk screening exercise may be conducted before the project preparatory technical assistance fact-finding mission. It aims to make investments more resilient to risk, in alignment with ADB's Strategy 2020 and developing member countries' partnership strategies.

This snapshot of project risks helps project officers, mission leaders, environmental specialists, and project stakeholders consider the potential incorporation of risk management measures in project design, technical assistance concept papers, and project operations.

Risk is often regarded as a function of Hazard, Vulnerability, and Exposure and commonly expressed as R = H x V x E. The overall risk of damage or losses is determined by the nature, intensity, and frequency of the hazard (e.g., the frequency of flood at a certain level); the exposure to the hazard (e.g. the number of people living on a flood plain); and the vulnerability to the hazard that is, the conditions determined by physical, social, economic, and environmental factors or processes, which increase the susceptibility of an ADB-funded project or a community to the impact of the hazard.

Figure 7: ADB Climate Proofing – Risk Screening Tool

Risk Screening Tool			
General Project Identification			
1. Date: 2. Country & Project Title: 3. Lending or Financing Modality: 4. Department & Division:			
Risk Assessment Category	**Risk Values**	**Total**	**Remarks**
Pre-determined impacts and risk factors			
1. Which physical environment best describes the project area?	Using Annex 1, add the score for the physical environment that best describes the project location.		
2. Categorize sectoral risk of project (See Annex 2)	Add risk value from 0–3.		
3. List individual hazards that may impact project (Figure A1 above)	Add risk value of 1 for each natural hazard (up to a maximum of 4). If hazards unknown, use 3 as a risk value		
4. Estimate the number of people in the project area "exposed" to risk after the project is completed	For <100 score = 0, 100–1000 score = 1, 1000–10,000 score = 2, >10,000 score = 3		
If the TOTAL value for the first 4 questions sums to 4 or less there is no need to complete the remaining questions.			
Stakeholder engagement and risk knowledge			
1. Do the project proponents have the institutional capacity to successfully incorporate, manage, and deliver risk management measures to the project?	Good capacity, risk value = 0; poor capacity, risk value = 1; very poor capacity, risk value = 2		
2. Will potential hazard impacts on communities, gender, indigenous peoples, or the social dimensions of risk be considered in the concept paper?	Yes/No (If No or unsure, add 1 risk value)		
3. Are there any demographic or socioeconomic variables (i.e., population increase, settlement patterns, biophysical and environmental conditions) that may increase exposure to hazard impacts?	Yes/No (If Yes or unsure, add 1 risk value)		
4. Is it likely that executing agency stakeholders have some practical knowledge of risk reduction measures for the project?	Yes/No (If No or unsure, add 1 risk value)		
5. Will the project reduce, leave unaltered, or increase the risk to project beneficiaries?	Reduce risk, score = 0; leave risk unaltered, score = 1; increase risk, score = 2		
6. Will the project reduce, leave unaltered, or increase the risk to the localized environment/project dependent ecosystem?	Reduce risk, score = 0; leave risk unaltered, score = 1; increase risk, score = 2		
7. Do country/institutional policies or environmental laws significantly promote risk management measures?	Yes/No (If No or unsure, add 1 risk value)		
8. Does the project require a risk expert to introduce risk reduction measures in project design, implementation, or operations and maintenance?	No = 0 Yes = 1 or 2 based on your assessment of the level of risk		
Total Risk Value (Range 0 to 25)	**High Risk: 17–25** **Moderate Risk: 8–16** **Low Risk: 0–7**		

Source: ADB; Guidelines for Climate Proofing Investment in the Energy Sector; 2013

Answers to questions in the risk screening tool, when summed up, generate a risk value of High, Medium, or Low. Where projects are deemed to be at medium or high risk, other risk management measures (such as climate risk mapping, vulnerability assessments to extreme events, risk reduction policies and practices) will need to be introduced during project design and implementation.

1.4 Program contribution to the Paris Agreement objectives

1.4.1 Nature and Introduction

The COP21 framework consists of a decision (140 points and 20 pages), and the actual text of the Paris Agreement (29 articles), which is presented as an annex to the decision. (UNFCCC, COP21, FCCC/CP/2015/L.9' in its version of 12/12/2015)[7]

The Paris Agreement (PA) is a treaty under international law, but only certain provisions are legally binding (such as preparation and implementation of NDCs and reporting). Others that are voluntary.

The PA avoids quantified targets for emissions reductions or financial flows, and does not provide for enforcement or sanctions. However, many provisions establish common commitments while allowing flexibility to accommodate different national capacities and circumstances - either through self-differentiation, as implicit in the concept of nationally determined contributions, or through more detailed operational rules still to be developed.

The PA applies to all Parties, overcoming the traditional split between developed countries on the one hand and developing countries on the other. Differentiation between Parties of the PA is to be based on 'equity and the principle of common but differentiated responsibilities and respective capabilities, in the light of different national circumstances'. Thus, it represents a shift away from the categorical binary approach of the Kyoto Protocol toward more nuanced forms of differentiation, reflected differently in different provisions.[8]

1.4.2 Main objectives and Ambition

The Agreement reaffirms its central ambition to limit global temperature increase well below 2 degrees Celsius, while urging efforts to limit the increase to 1.5 degrees. It aims to increase the ability to adapt to the adverse impacts of climate change, foster climate resilience and low greenhouse gas emissions development, and to make finance flows consistent with a pathway towards low GHG emissions and climate-resilient development.[9]

1.4.3 Project areas of engagement contributing to COP21 objectives

To achieve the overall objectives, the PA identifies key engagement areas and objectives to which the 'Access to Clean Energy Investment Project' (Project) may be able contribute. Those areas include:[10]

- **Mitigation**: The agreement commits parties to "pursue domestic measures with the aim of achieving the objectives" of its NDC, but does not make the implementation or achievement of NDCs a binding obligation. It also encourages, but does not require,

[7] UNFCCC; 21st Conference of the Parties (COP21); FCCC/CP/2015/L.9; 12/12/2015
[8] European Parliament Briefing; The Paris Agreement; January 2016

[9] Centre for Climate and Energy Solutions (C2ES); Outcomes of the U.N. Climate Change Conference in Paris; December 2015

[10] European Parliament Briefing; The Paris Agreement; January 2016

countries to develop and communicate long-term low emission development strategies. The core mitigation commitments are common to all parties, but there is some differentiation in the expectations set: developed countries "should" undertake absolute economy-wide reduction targets, while developing countries "are encouraged" to move toward economy- wide targets over time. In addition, developing countries are to receive support to implement their commitments. The Project will be able to provide a significant contribution to national mitigation objectives by adding an overall installed capacity of 119 MWp (MHP) and 54 MWp (PV Solar) to the national power generation mix, especially in rural areas, thus contributing not only to low-carbon electricity supply, but also to social development goals by improving living and service standards for private households, Basic Health Units (BHU), and schools.

- **Adaptation**: A major priority for many developing countries was strengthening adaptation efforts under the UNFCCC. So it was to Pakistan, explicitly stating by the Minister for Climate Change, that "In recent years, Pakistan has witnessed the vagaries of climate change with growing regularity and destructive ferocity. Droughts, desertification, glacial melt, sea-level rise and recurrent floods are all manifestations of climate-induced phenomena." The Project not only assesses the risks related to climate change and its adaption priorities, but also outlines adaption financing options, which will help to enhance especially those adaption measures, which may not be developed depending exclusively on private financing.
- **Finance**: Developed countries shall provide financial resources to assist developing country Parties with both mitigation and adaptation, in continuation of their existing obligations under the UNFCCC. Regarding the amount of climate finance to be provided by developed countries, the COP 21 decision affirms the existing goal of mobilising at least US$100 billion per year by 2020, and commits to setting a higher collective quantified goal for the period after 2025. The project may be able enhance public as well as private finance engagement by the means of sound business models and successful pilot project references, reducing investors scepticism. It also supports local/national project developers by providing access to financial resources under reasonable conditions.
- **Transparency**: With respect to countries' individual mitigation efforts, the agreement prescribes a set of binding procedural commitments: to "prepare, communicate and maintain" an NDC; to provide information necessary for clarity and transparency; and to communicate a new NDC every five years. It also sets the expectation that each successive NDC will "represent a progression" beyond the previous one and reflect a party's "highest possible ambition." The project includes regular monitoring and reporting procedures, which will facilitate Pakistan's commitment to "prepare, communicate and maintain" its NDC as well as support its efforts to prepare a GHG Emission Inventory on a regular basis.
- **Loss and damage**: its inclusion was a priority demand of countries that are particularly vulnerable to the impacts of climate change. While the COP21 decision explicitly rules out the agreement providing a basis for liability or compensation, the agreement recognises 'the importance of averting, minimising and addressing loss and damage. The monitoring and reporting outcomes within the project may be useful to a more comprehensive documentation of loss and damage to climate change advertises. This, in any case, has to be the first step before any liability and compensation framework could be formulated or even put into force.
- **Capacity building**: Recognising that developing countries may lack the capacities to fully implement the PA, the COP21 decision establishes the Paris Committee on Capacity Building to oversee a work plan to enhance capacity-building across the

globe. This Committee will identify capacity gaps and needs, foster international cooperation and identify opportunities to strengthen capacity for climate action. The Technical Assistance Special Fund, from which the present technical assistance has been financed, is itself and includes capacity building measures to enhance technical capabilities in developing countries such as Pakistan.

All major action areas, outlined in the Paris Agreement, have their complementary engagement areas in the project. It can be stated, that not only the project enhances the clean energy access in rural areas on Khyber Pakhtunkhwa and Punjab, but also supports Pakistan's public authorities not only in its fight against climate change adversities, but also in the compliance with its COP21 commitments.