



Part I: Project Information

GEF ID

10885

Project Type

MSP

Type of Trust Fund

GET

CBIT/NGI

CBIT No

NGI No

Project Title

Accelerating low-carbon circular economy through cleantech innovation towards sustainable development in Pakistan

Countries

Pakistan

Agency(ies)

UNIDO

Other Executing Partner(s)

Ministry of Climate Change (MoCC)

Executing Partner Type

Government

GEF Focal Area

Climate Change

Sector

Technology Transfer/Innovative Low-Carbon Technologies

Taxonomy

Waste Management, Chemicals and Waste, Focal Areas, Climate Change, Climate Change Mitigation, Renewable Energy, Technology Transfer, Financing, Energy Efficiency, Influencing models, Demonstrate innovative approaches, Transform policy and regulatory environments, Deploy innovative financial instruments, Strengthen institutional capacity and decision-making, Stakeholders, Private Sector, Capital providers, Individuals/Entrepreneurs, SMEs, Financial intermediaries and market facilitators, Type of Engagement, Information Dissemination, Partnership, Consultation, Participation, Communications, Awareness Raising, Strategic Communications, Public Campaigns, Civil Society, Non-Governmental Organization, Beneficiaries, Local Communities, Gender Equality, Gender results areas, Knowledge Generation and Exchange, Participation and leadership, Access to benefits and services, Capacity Development, Gender Mainstreaming, Sex-disaggregated indicators, Women groups, Gender-sensitive indicators, Capacity, Knowledge and Research, Innovation, Knowledge Generation, Training, Workshop, Seminar, Knowledge Exchange, South-South, Conference

Rio Markers

Climate Change Mitigation

Principal Objective 2

Climate Change Adaptation

No Contribution 0

Biodiversity

No Contribution 0

Land Degradation

No Contribution 0

Submission Date

10/7/2022

Expected Implementation Start

1/1/2023

Expected Completion Date

12/31/2026

Duration

48In Months

Agency Fee(\$)

168,766.00

A. FOCAL/NON-FOCAL AREA ELEMENTS

Objectives/Programs	Focal Area Outcomes	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
CCM-1-4	Promote innovation and technology transfer for sustainable energy breakthroughs in cleantech Innovation	GET	1,776,484.00	11,800,000.00
Total Project Cost(\$)			1,776,484.00	11,800,000.00

B. Project description summary

Project Objective

Promote high-impact clean technology innovation for scale up climate action and creation of green jobs in Pakistan integrating renewable energy, energy efficiencies, and waste management within the context of material, energy and resources sustainability and circularity

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
--------------------------	-----------------------	--------------------------	-------------------------	-------------------	----------------------------------	-----------------------------------

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
1. Transforming early-stage innovative cleantech solutions into scalable enterprises	Technical Assistance	1.1 Early-stage cleantech innovations are accelerated	<p>1.1.1 The Cleantech accelerator operational guidelines including methodologies, guidelines, tools and training systems are developed and adopted in alignment with Clean Green Pakistan Index (CGPI)</p> <p>1.1.2 Pool of cleantech innovation and entrepreneurship experts (trainers, mentors, and judges) is trained through regional training programs in cooperation with local universities and institutions (at least 35 % women)</p> <p>1.1.3 Three cycles of the annual competition-based accelerator are conducted in alignment with the national initiative of 'Clean Green Pakistan Movement' (at least 85 enterprises, at least 35% women led)</p>	GET	260,000.00	2,000,000.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
1. Transforming early-stage innovative cleantech solutions into scalable enterprises	Technical Assistance	1.2 Start-ups and SMEs are supported through advanced and gender-responsive business growth services	<p>1.2.1 Advanced technical, business advisory and commercialization support for the selected start-ups and SMEs provided (for at least 12 startups and SMEs, at least 35% women led)</p> <p>1.2.2 Enterprises are connected to financing opportunities and provided with tipping-point investment facilitation support and/or finances for piloting (for at least 4 of the selected 12 startups and SMEs, at least 35% women led)</p>	GET	400,000.00	2,000,000.00
1. Transforming early-stage innovative cleantech solutions into scalable enterprises	Investment	1.2 Start-ups and SMEs are supported through advanced and gender-responsive business growth services	1.2.3 Investment is mobilized to implement at least one project in each of the four city municipalities performing under CGPI (in total at least 4 projects, at least 35% women led)	GET	280,000.00	4,450,000.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
2. Cleantech innovation and entrepreneurship ecosystem (CIEE) strengthening and connectivity enhanced	Technical Assistance	2.1 The CIEE in Pakistan is strengthened and interconnected	<p>2.1.1 National and regional institutions structural and operational capacities are strengthened considering social and gender dimensions so as to promote GEEW</p> <p>2.1.2 Policy and regulatory recommendations to enhance the clean technology innovation and entrepreneurship ecosystem are developed at local level under consideration of gender equality</p> <p>2.1.3 Linkages, collaboration, and synergies across CIEEs are promoted</p>	GET	500,000.00	1,000,000.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
2. Cleantech innovation and entrepreneurship ecosystem (CIEE) strengthening and connectivity enhanced	Technical Assistance	2.2 Gender equality is supported and strengthened by the CIEE in Pakistan	<p>2.2.1 Women's cleantech hub/network established to support and accelerate the formation of local innovation ecosystems in a more inclusive manner</p> <p>2.2.2 Mentoring programme for women implemented</p> <p>2.2.3 Campaign conducted to raise awareness on roles of women in CIEE</p>	GET	74,986.00	587,276.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
3. Programme coordination, monitoring and coherence	Technical Assistance	3.1 Efficiency and sustainability of the CIEE in Pakistan is ensured	<p>3.1.1 The internal guidelines for project management teams are adapted for Pakistan's country context and implemented</p> <p>3.1.2 Programme-level knowledge management, communication and advocacy strategy is adapted for Pakistan's country context and implemented</p> <p>3.1.3 The web platform is operated for the project to maintain the cleantech community</p>	GET	40,000.00	490,000.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
3. Programme coordination, monitoring and coherence	Technical Assistance	3.2 Impacts and progress of all the project activities and indicators are adequately monitored and reported	3.2.1 National impact monitoring established in coordination with MoCC 3.2.2 Project effectively monitored including monitoring and reporting on the ESMP and risks 3.2.3 Gender mainstreaming action plan operationalized, monitored and gendered impact evaluated 3.2.4 External mid-term review and independent terminal evaluation conducted	GET	60,000.00	200,000.00
Sub Total (\$)					1,614,986.00	10,727,276.00

Project Management Cost (PMC)

GET	161,498.00	1,072,724.00
Sub Total(\$)	161,498.00	1,072,724.00
Total Project Cost(\$)	1,776,484.00	11,800,000.00

Please provide justification

C. Sources of Co-financing for the Project by name and by type

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount(\$)
GEF Agency	UNIDO	Grant	Investment mobilized	50,000.00
GEF Agency	UNIDO	In-kind	Recurrent expenditures	100,000.00
Recipient Country Government	National Productivity Organization (NPO)	In-kind	Recurrent expenditures	350,000.00
Other	National Incubation Center (NIC)	In-kind	Recurrent expenditures	5,000,000.00
Other	National Rural Support Programme (NRSP)	Grant	Investment mobilized	4,000,000.00
Private Sector	Innovators Garage (IG)	In-kind	Recurrent expenditures	200,000.00
Private Sector	Innovators Garage (IG)	Grant	Investment mobilized	400,000.00
Other	Dr. Akhter Hameed Khan Memorial Trust	In-kind	Recurrent expenditures	1,700,000.00
Total Co-Financing(\$)				11,800,000.00

Describe how any "Investment Mobilized" was identified

During the PPG phase, extensive consultations were carried out with the envisaged lead executing agency Ministry of Climate Change (MoCC) and also with financial institutions, entrepreneurs, SMEs, and the private sector. The consultation validation identified many synergies between existing national and international programmes and the Pakistan accelerator project. Co-financing modalities were discussed with interested entities prior to and during the project preparation phase. With regards to investment mobilized, in the framework of these discussions it was agreed as follows (a) UNIDO as the GEF agency involved in the project will provide USD 50,000 in the form a grant; (b) National Rural Support Programme will provide USD 4,000,000 in the form of grant through its initiative Renewable Energy Micro-credit facility for rural communities particularly women entrepreneurs; (c) Innovators Garage (IG) will provide USD 400,000 in the form of grant through its initiative Pakistan National Investor Portal

(PNIP)? While the co-financing letter from Dr. Akhter Hameed Khan Memorial Trust mentions USD 1,700,000 as investment mobilized, it is deemed 'recurrent expenditure' as it states the parallel projects aligned with the project activities. It is expected that there are certain amount of potential private stakeholders in Pakistan with the appetite to invest in cleantech innovations, as supported through Output 1.2.3. The GEF grant is focused on supporting the formative stages of cleantech enterprises, i.e. prototyping, proof of concept, ecosystems building. Co-financing from the public sector (predominantly in-kind) creates the enabling framework conditions that de-risk the key interventions by the project. As was already confirmed by the findings of the Independent Evaluation of the previous GCIP cycles, co-financing in the form of grants, seed funding, equity from angels, venture capital funds, impact investors, crowd funding platforms etc. will be mobilized during the implementation of the project from the private sector in the phases of development, growth and scale-up of the start-ups/SMEs. In line with GEF Guidelines on Co-financing (<https://www.thegef.org/documents/co-financing>), paragraph 9, co-financing that will be mobilized from the private sector during the implementation of the project will be monitored and reported through the regular reporting mechanisms to the GEF. Unlike in the case of demonstration projects for example, the project contributes to market creation for new innovative cleantech products and services. It de-risks, by design, cleantech innovations and businesses through coaching, mentoring and advisory services thereby creating opportunities for follow-on investments into the cleantech companies in terms of angel investors, dedicated cleantech funds (private and public), venture capital funds (corporate and otherwise), impact investors etc. Therefore, the follow-on investments will be realized once the specific cleantech companies have been supported by the project and linked to investors. Under the umbrella project of GCIP, project 10461, a strategic partnership will be established between GCIP and the Private Financing Advisory Network - PFAN (www.pfan.net), under which GCIP alumni companies will be systematically connected to PFAN for specialized project development, business coaching and investment facilitation services and introduction to existing network of global investors, hence mobilize co-financing. Furthermore, in countries where PFAN operates, GCIP activities will be linked to PFAN network of expertise and national investors. This is one example of where investment co-financing will likely be mobilized during project implementation. Apart from the planned investment mobilized at the CEO Approval stage, it is important to underline that project participants may receive substantial investment support at a later stage. There are several examples that confirm this process. Under GEF 5 the GCIP India project from 2013-2017, co-financing planned was 3,000,000 USD at CEO Approval stage, consisting out of 450,000 USD investment mobilized and the remaining amount as in-kind. However, GCIP companies such as Agnisumukh and Atomberg managed to mobilize 2,650,000 USD and 10,000,000 USD respectively in investments within four years of completing the GCIP accelerator, thereby reaching a ratio of 1:13 in GEF funding to investment mobilized . Similarly in the project GCIP Malaysia, investment co-financing at CEO Approval stage encompassed 250,000 USD, while it was subsequently reported in the project's terminal evaluation that 2,000,000 USD was received by GCIP Alumni in form of investment grants by financial organizations, signaling higher involvement and interest by the latter than initially anticipated . In GCIP Turkey, investment mobilized at CEO Approval stage amounted to 250,000 USD, whereas GCIP finalists, such as Positive Energy and Episome Biotech managed to mobilize 1,620,000 USD and 1,700,000 USD respectively, thereby having successfully raised funding from private sector investment groups. These examples are intended to serve as an excerpt for the successful promotion of

GCIP award winning cleantech innovations and their potential to attract follow-on investment from the private sector within the project's lifetime and beyond. GCIP India supported 89 companies, in Malaysia 79 companies and 95 in Turkey; the co-financing ratio will increase as more GCIP companies commercialize and the current project will provide a greater level of support to companies compared to the previous GCIP country projects under GEF 5&6 including investment facilitation.

D. Trust Fund Resources Requested by Agency(ies), Country(ies), Focal Area and the Programming of Funds

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount(\$)	Fee(\$)	Total(\$)
UNIDO	GET	Pakistan	Climate Change	CC STAR Allocation	1,776,484	168,766	1,945,250.00
Total Grant Resources(\$)					1,776,484.00	168,766.00	1,945,250.00

E. Non Grant Instrument

NON-GRANT INSTRUMENT at CEO Endorsement

Includes Non grant instruments? **No**

Includes reflow to GEF? **No**

F. Project Preparation Grant (PPG)

PPG Required **true**

PPG Amount (\$)

50,000

PPG Agency Fee (\$)

4,750

Agency	Trust Fund	Country	Focal Area	Programmin g of Funds	Amount(\$)	Fee(\$)	Total(\$)
UNIDO	GET	Pakistan	Climate Change	CC STAR Allocation	50,000	4,750	54,750.00
Total Project Costs(\$)					50,000.00	4,750.00	54,750.00

Core Indicators

Indicator 6 Greenhouse Gas Emissions Mitigated

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO ₂ e (direct)	153000	153000	0	0
Expected metric tons of CO ₂ e (indirect)	765000	765000	0	0

Indicator 6.1 Carbon Sequestered or Emissions Avoided in the AFOLU (Agriculture, Forestry and Other Land Use) sector

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO ₂ e (direct)				
Expected metric tons of CO ₂ e (indirect)				
Anticipated start year of accounting				
Duration of accounting				

Indicator 6.2 Emissions Avoided Outside AFOLU (Agriculture, Forestry and Other Land Use) Sector

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO ₂ e (direct)	153,000	153,000		
Expected metric tons of CO ₂ e (indirect)	765,000	765,000		
Anticipated start year of accounting	2022	2023		
Duration of accounting	10	10		

Indicator 6.3 Energy Saved (Use this sub-indicator in addition to the sub-indicator 6.2 if applicable)

Total Target Benefit	Energy (MJ) (At PIF)	Energy (MJ) (At CEO Endorsement)	Energy (MJ) (Achieved at MTR)	Energy (MJ) (Achieved at TE)
Target Energy Saved (MJ)				

Indicator 6.4 Increase in Installed Renewable Energy Capacity per Technology (Use this sub-indicator in addition to the sub-indicator 6.2 if applicable)

Technology	Capacity (MW) (Expected at PIF)	Capacity (MW) (Expected at CEO Endorsement)	Capacity (MW) (Achieved at MTR)	Capacity (MW) (Achieved at TE)
------------	---------------------------------	---	---------------------------------	--------------------------------

Indicator 11 People benefiting from GEF-financed investments

	Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
Female	924	924		
Male	1,716	1,716		
Total	2640	2640	0	0

Provide additional explanation on targets, other methodologies used, and other focal area specifics (i.e., Aichi targets in BD) including justification where core indicator targets are not provided

Indicator 6: Methodology for estimating GHG emissions keeps consistency to the approach taken by the GEF approved program GEF ID10408 whereby the target of between 5 to 10 USD/tCO₂e avoided, that is set for the GCIP Framework, translates into avoided GHG emissions per enterprise of between 1,800 to 3,600 tCO₂e for direct emission savings. The three cycles of Pakistan accelerator programme are expected to support at least 85 enterprises (semi-finalists), as a result of which, based on the above benchmark, the avoided direct GHG emissions over a ten-year horizon are estimated at between 153,000 to 306,000 tCO₂e. The lower range has been used as input to the GEF corporate core GHG indicator target as a conservative estimation. Indirect GEBs facilitated through the CIEE strengthening are also expected. In particular, indirect GHG emission reductions could result from: strengthened capacity of institutions and human resources to support commercialization and uptake of cleantech solutions at large; investments mobilized for cleantech solutions at large due to reduced risk perceptions; as well as longer-term emission reductions from behavioral change. An estimated factor of 5 is chosen to provide a projection for indirect GEBs. This equates to estimated indirect emissions for Pakistan of between 765,000 tCO₂e to 1,530,000 tCO₂e. Please find the attached annex for calculation of GHG emission reductions. Indicator 11: 2,640 beneficiaries (at least 35% female) consisting of: 85 enterprises (around 3-5 persons per enterprise) accelerated under output 1.1.3 (around 25- 30 enterprises per accelerator cycle, 3 cycles), 100 cleantech experts trained and certified under output 1.1.2, as well as approximately 2,200 stakeholders sensitized which are estimated based on prior project experience and the scope of stakeholder engagement activities. Gender mainstreaming target of at least 35% beneficiaries being women is set, based on experience in other similar projects as well as

taking into consideration of the fact that, in Pakistan, the levels of women's engagement in entrepreneurial ecosystem and activities are still low and the country ranks in one of the lowest in the global gender gap index.

Part II. Project Justification

1a. Project Description

1) The global environmental and/or adaptation problems, root causes and barriers that need to be addressed (systems description)

1. The most recent 2018 IPCC report[1]¹ notes that current trends indicate that global warming will pass 1.5° above pre-industrial levels between 2030 and 2052. The effects of climate change in Pakistan are already evident including floods and droughts as well as sea level rise and spread of diseases. The socio economic impacts of climate change are significant and negatively affect its developmental agenda since the country has a predominantly agriculture based economy which is particularly vulnerable to climate change[2]².

2. According to the Second National Communication on Climate Change in 2018, the national GHG emissions of Pakistan for the year 2015 was estimated to be at 408.1 million tons of carbon dioxide equivalent. The figures more than doubled since 1994 due to its steady growth of population and economy as well as increasing industrialization and urbanization. The growing trend of GHG emissions is therefore expected to continue if no effective mitigation measures are taken. It is estimated that the total GHG emissions of Pakistan as per the government's economic growth strategy may be around 14 times by 2050 compared to the emissions in 2008[3]³.

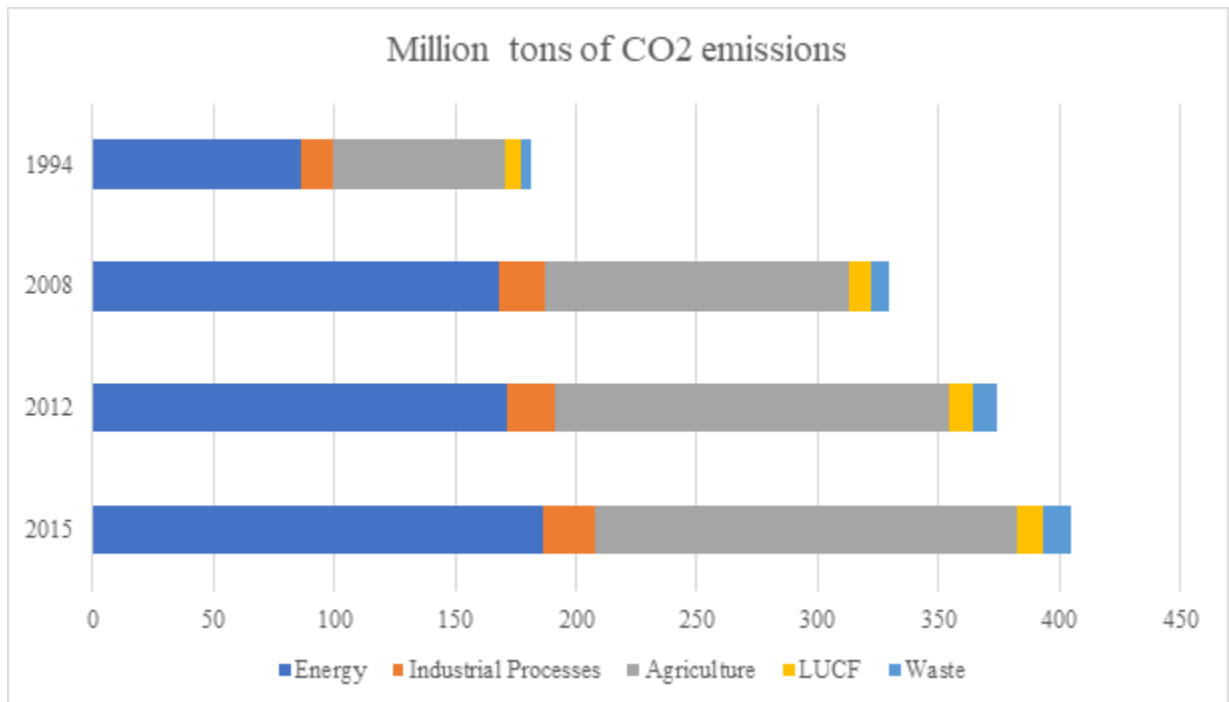


Figure 1: CO2 emissions in Pakistan by sector in 1994, 2008, 2012 and 2015[4]⁴

3. Among the sources of GHG emissions, the largest, 45.5% share is from energy sector. The energy sector is heavily relying on fossil fuels. 93% of the emissions from the sector is derived from fossil fuel combustion in the subsectors such as energy industries, transport including road transport, aviation, and railways, and manufacturing industries in cement, iron and steel, chemicals, brick and kiln, and others. As such, economic growth is directly result in the increase of GHG emissions. The Pakistan's current energy mix is mainly relying on natural gas which has relatively lower per unit GHG emissions compared to the other fossil fuel resources. Hence Pakistan's GHG intensity of energy production is yet among the lowest in the world as of today. It is observed that the country's natural gas reserve is being depleted and reliance on coal as alternative for natural gas is seen as an option to meet its energy demand which will further increase towards future. It is of utter importance to decouple economic growth from the fossil fuel use in Pakistan in consideration of its impact on climate change. The government essentially understands the importance of integrating the energy policy with climate change objective to avoid lock-in of infrastructure, technology and associated fuel in energy sector, however, the renewable energy technologies are not fully exploited in the country. The aging and weak electricity transmission system infrastructure poses further complexity hindering the uptake ability of the system upon needs for expansion of grid connected generation capacity. In addition, weak regulatory frameworks do not take into account the potential of utilizing cleaner electricity sources including uptake of renewable energy and enhance energy efficiency to reduce the environmental burden. This systemic problem also causes risks to the energy security of the country while demands for electricity grow rapidly.

4. Next to the energy sector, agriculture and livestock sector has the share of 42.7%, which is followed by 5.4% share of industrial processes, 3.8 % share of waste and 2.5% share of land use change for forestry sectors. The waste sector has only a marginal share in the national GHG inventory as of 2015 generating the total emissions of 12.29 million tons of CO₂ equivalent. Nevertheless, the measures to address emissions from the waste sector is regarded no less important than the others as the emissions from the waste sector has been steadily growing. It is estimated that Pakistan generates about 50 million tons of solid waste annually, which has been increasing with a rate of more than 2.0% per year^[5]. The overwhelming amount of waste generated without appropriate waste management infrastructure leads to the situation where such wastes are either burned, dumped, or buried on vacant lots without any environmental protection measures. This causes significant negative impacts on human welfare including bad odor, degrading water quality, air pollution, water and soil pollution, dermatological, respiratory diseases, vector borne diseases etc. Moreover, urbanization is also put another layer of environmental problems including urban sprawl, land- use change, increased demand for transportation and energy and resultant air pollution. In conjunction with the country's vulnerability to the climate change impacts which are leading to increase frequency and occurrence of natural disaster, the increasing threats to health as well as human welfare lead to poverty and easily jeopardize continuous economic growth and sustainable development in Pakistan.

5. There is normally a strong correlation among the amount waste generated and population growth as well as urbanization. As of 2019, the total population of the country is estimated to be about 217 million increased 5 times since 1960^[6]. Pakistan is projected to be the fifth most populous country in the world by 2050 with population growth at the rate of about 2% annually. According to the Second National Communication, Pakistan's urban population has increased from 43.0 to 72.5 million between 1998 to 2014 and is expected to become predominantly urbanized by the year 2025, making the country as the most urbanized nation in South Asia during the period. The impact of waste sector is particularly high as the dominant sources of the emission from the sector is CH₄ (methane) which has more than 20 times higher global warming potential compared to CO₂. The Second National Communication and INDC predicts that the emissions from waste sector will increase exponentially in future with the unprecedentedly high urbanization rate and forecasted GDP growth of the country. According to the estimation given by the Government of Pakistan in the National Communication and INDC, the emissions from the waste sector is projected to be 89 million tons of CO₂ equivalent in 2030 which is 7 times higher than 2015 level.

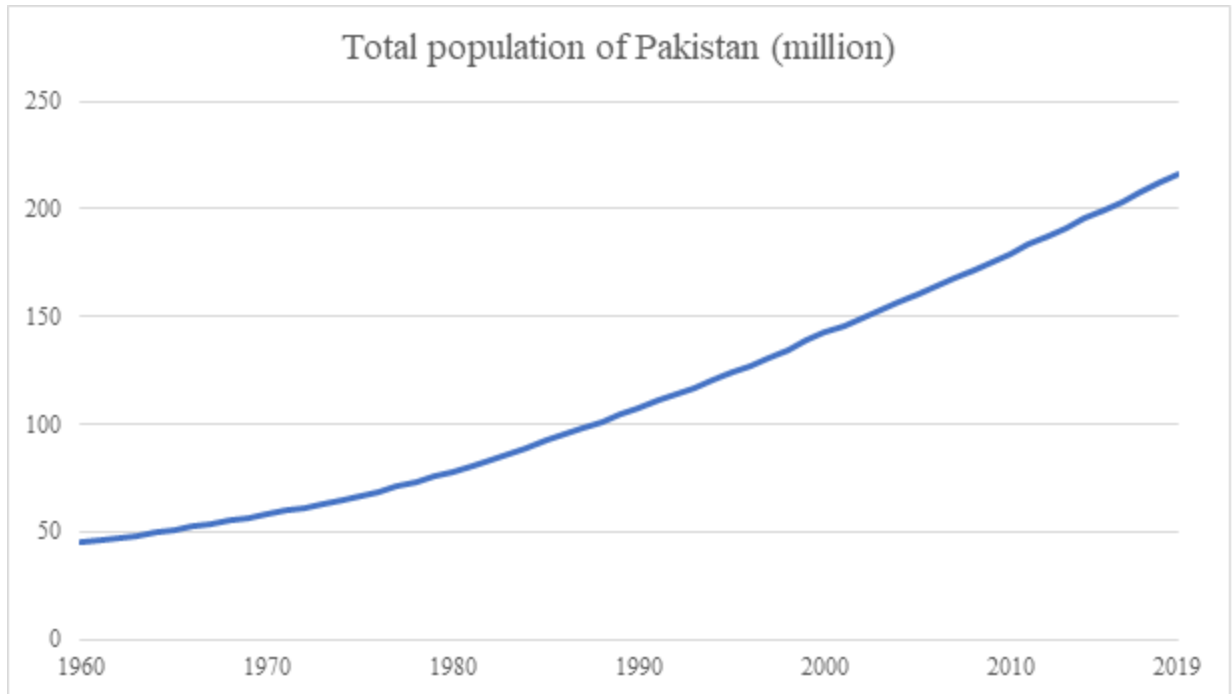


Figure 2: Total population of Pakistan from 1960 - 2019

6. The introduction of public-private partnerships is widely regarded as one of the solutions to effectively implement solid waste management systems. It is observed that mobilization of private sector initiatives in waste management system are yet in its infant stage in Pakistan. Such privatization was implemented in one urban city in Pakistan, Lahore. The study "Solid waste management practices under public and private sector in Lahore, Pakistan" (Ashraf et al., 2016)[7]⁷ showed mixed results as there was certainly an increase in the collection rate and larger storage capacity but there were no significant changes in street sweeping. Measures such as waste to energy or material recovery were not utilized. The study concluded that the full benefits of privatization are yet to come if measures such as energy and material recovery, sanitary landfill and integration of informal sector, are introduced. There are still much rooms for further elaboration and materialization of opportunities in the sector.

7. According to the World Bank, Pakistan is classified as a lower middle-income country.[8]⁸ Economic growth of the country is projecting a mixed message. In the past ten years GDP growth is in upward trend while over the past two decades, the average growth rate was at 2% which is less than half of the South Asia average point. This was regarded as due to inconsistent macroeconomic policies and an under-reliance on investment and exports. Most recently, due to Covid-19 the GDP growth was stagnated the economy and the GDP growth was at 0.9% in 2019[9]⁹. Accordingly, it was

observed that half of the working population lost job or income sources where informal and low-skilled workers were the hardest hit[10]¹⁰. As a result, poverty rate was increased from 4.4 to 5.4 % in 2020 meaning more than two million people fell below the line of USD 1.9 per day.

8. Small and medium enterprises (SMEs) play pivotal role in the Pakistan's economy constituting nearly 90% of all the enterprises in the country and providing non-agricultural sector employment of 80%, which shares 40% in the GDP[11]¹¹. Due to the inherent nature of SMEs, their business faces several constraints. While regulatory and policy environment as well as institutional and networking support are not systematically developed for the SMEs in Pakistan, the largest barriers is the access to finance[12]¹².

9. The increased promotion of entrepreneurship and adoption of clean technology innovations will be able to

addressing challenges of the country spread across the sectors integrating renewable energy, energy efficiencies, and waste management. This will build and enhance the sustainability of Pakistan economy, while also having positive economic and social benefits through the promotion and support of entrepreneurs and innovation, and through its contribution to energy diversification and security while accruing other environmental benefits such as reduced contamination and pollution. The potential beneficiaries are not only the entrepreneurs themselves, but all actors along the value chain, including distributors and retailers who might come from historically disadvantaged communities.

10. The need for Pakistan to foster innovation and research on economic (as opposed to socio-ecological) grounds alone is highlighted by Pakistan's relatively low position in the Global Innovation Index (107 of 131)[13]¹³, the Knowledge Economy Index (116 of 144)[14]¹⁴ and the Global Competitiveness Index (110 of 141)[15]¹⁵. In addition, innovation in cleantech has the potential to help Pakistan, as the country with the growing carbon emissions profile in Asia with expectation of population and economic growth, to achieve its policy commitment to transition away from its legacy of fossil-fuel-powered development that produce harmful environmental, social and economic conditions.

11. The integrated and sustainable waste management can be a driver for cleantech innovation, particularly in contributing to climate change mitigation, as it encompasses such a wide range of sectors and technologies. The integrated and sustainable waste management takes approaches aligned with the concept of circular economy by recognizing that natural resources are finite and aims to use waste materials or keep the materials in products in circulation for as long as possible: reusing, repairing, remanufacturing, sharing and recycling. Within the context of material, energy and resources sustainability and circularity, solutions such as renewable energy, energy efficiency, biogas, water recycling and a reduction in new materials will be integrated and have clear potential to contribute to GHG emission reductions and a low carbon economy.

12. In making the transition to a low carbon economy, the country is faced with complex interconnected challenges of structural unemployment, socio-economic inequality, lackluster economic growth and resource-intensive economic activity and development. Although switching to greener, more sustainable industrialization pathways present short and medium-term policy challenges, it can also create more resilient opportunities over the short, medium and long-term while simultaneously mitigating serious social-ecological risks.

Root causes and barriers that need to be addressed

13. Pakistan, like other developing countries, has challenges in planning infrastructural management and coming up with new and innovative solutions towards taking sustainable pathway[16]¹⁶. For example, apart from large scale projects in energy and urban infrastructural development, the government has not been able to make meaningful strides in finding solutions including utilization of public private partnerships as well as grass root level development support. Even the large-scale projects are marred with resource unavailability and face delay in their implementations which result in additional costs over time and/or causing long suspension or non-implementations.

14. Nurturing business models, services and products with established local ecosystem for cleantech innovation can be one of the counter measures to address these issues including e.g. maximizing energy source from renewables, enhancing energy efficiency at the process including recovery of energy as well as minimizing environmental impact considering life cycle of materials. However, there are no vibrant mechanisms to support introduction, develop and maintain such initiatives and actions at the scale until today. The performance of such cleantech businesses as well as to accelerate domestically grown cleantech innovations are yet marginal due to for example, weak

institutions and political instability, ineffectiveness of regulatory frameworks, inefficiencies of conventional systems and a lack of investor confidence. In addition, the capacity of market players like developers, technology suppliers and financiers needs to be further strengthened especially in terms of dealing with the business in the field of sustainable and integrated waste management as well as the associated technologies.

15. There are complex challenges and barriers in Pakistan related to acceleration of SMEs and startups towards operationalization of sustainable and integrated waste management as follows:

-

Barriers and challenges to Cleantech Innovation in Pakistan

Barrier category	Description
Policy and regulatory related barriers	<p>The current policy and regulatory frameworks do not comprehensively support the demand for cleantech finance. Additionally, they do not envisage innovative market mechanisms, particularly those suiting the needs of the SME sector that would incentivize uptake of cleantech. Also, there are no mechanisms to regulate additional cost of external verification, enhanced disclosure (in the case of green bonds) and the participation of institutional investors and the capital market to indirectly stimulate demand. Challenges related to policy and regulatory related barriers include the following:</p> <ul style="list-style-type: none"> ? Lack of an enabling and supporting policy and regulatory environment targeting innovations ? Limited government financial incentives to support industrial enterprises for the uptake of innovation in clean technology ? Limited strategy and planning ? Lack of enforceable legislative and regulatory measures for promoting waste management

Awareness, knowledge and capacity related barriers

In general, there exists a lack of awareness about the potential of financial innovations and market mechanisms in accelerating low-carbon economy development. At the institutional level, there remain significant weaknesses in the organization and capacity around sustainable and low-carbon development planning and execution in general especially. Government entities have limited national capacity to manage the planned transition and mobilization of finance at the necessary scale. The absence of a platform to efficiently operationalize and leverage the various available green and low-carbon financial instruments hurdle their mainstreaming. The relevant national actors are not fully aligned and coordinated along the green financing cycle.

Furthermore, private and public sector lack experience, knowledge and skills in cleantech, including available market mechanisms and financing sources. In addition, start-ups/SMEs lack expertise in identifying and developing bankable innovative cleantech projects. The limited technical capacity makes it difficult for them to source green investments. In particular, this includes a lack of capacity related to business model elaboration and aspects related to passing detailed due-diligence (proof of concept, financial aspects, legal aspects, etc.) of the projects and companies, which enhances the risks of bankruptcy and financial losses or litigation cases at later stages of product development. The barriers also include limited capabilities in moving an idea to product manufacturing and aspects such as prototype development, identification of production sites and partners, establishing supply chains and logistics, etc. Besides, capacity barrier also relates to lack of understanding of climate change aspects and potential climate mitigation and adaptation benefits of the cleantech products and services. Challenges related to awareness, knowledge and capacity related barriers include the following:

- ? Insufficient participation and support by key stakeholders and the public at large
- ? Inadequate institutional capacity to lead sustainable and integrated waste management activities at national and/or local institutions
- ? Lack of trained experts to mentor start-ups and entrepreneurs on cleantech innovation especially related to the field of waste management
- ? Insufficient information about technology options, best practices and benchmarks
- ? Weak linkages between research institutes and industry and SMEs
- ? Limited awareness of financial schemes, requirements and procedures to access finance for cleantech projects
- ? Immaturity of the sector
- ? Lack of environmental awareness

Finance related barriers

Despite the large array of financial mechanisms, there are significant constraints for the uptake of cleantech projects in the country. Access of start-ups/SMEs to green finance remains limited mainly due to a) the high cost of finance associated with high interest rates and the fact that the foreign exchange loans are exposed to currency risk; b) very short finance maturities for cleantech; c) high collateral requirements for borrowers. Therefore, traditional financing sources that are available today are insufficient. In general, there is lack of innovative financing schemes for start-ups/SMEs, that could help leverage existing instruments, as well as limited transparency in the conditions and availability of financial support. Given SMEs share in country's economy, facilitating their access to green financing schemes and mainstreaming green financing into generic SME financing products becomes a central challenge. Challenges related to finance related barriers include the following:

- ? High investment cost and less or uncertain return on investment
- ? Lack of initial capital
- ? Non-availability of accessible finance (e.g. bank loans) to encourage cleantech
- ? High initial cost of cleantech
- ? Access to Finance i.e. getting financing for such type of product
- ? Difficulties to identify and materialize investment opportunities with longer term and non-quantifiable benefits associated to the intervention

Behaviour related barriers	<p>Associated with the lack of awareness mentioned above, there is consequently a lack of supportive actions including sectoral and cross-sectoral cooperation and partnership among SMEs, academia, finance and policy-making entities. There is no proactive and effective outreach as well as easily accessible information on the initiatives and benefits of cleantech innovation. The information does not reach the relevant target beneficiaries and may not achieve intended outcome. This consequently leads to continuation of the status quo. Challenges related to behaviour related barriers include the following:</p> <ul style="list-style-type: none"> ? Lack of commitment and initiative for promoting cleantech application ? Lack of cooperation or poor organization culture among policy, businesses and general public ? Poor service quality in energy and waste sector ? Lack of pressure from the communities for cleaner energy and better waste management services ? Lack of cooperate social responsibility and ethical standards ? Resistance to change
----------------------------	--

16. In summary, Pakistan's cleantech sector is an emerging sector which lacks capacity and coordination. There remains a need for further support in the field of advanced commercialization support, further incubation, access to early-stage financing, national networking within the complex ecosystem, commercialization with market and finance linkages, widening and increasing the geographical reach and support to national partners. These interventions are required to further strengthen the resilience of the Pakistan's innovation and entrepreneurial economy to address domestic environmental challenges while also to operate within the global market and to result in economic growth, global environmental benefits and job creation. This will create economic opportunities and support a shift towards a sustainable development of the country. The proposed project is therefore designed to directly address the barriers described.

2) The baseline scenario and any associated baseline projects

a) Policy and legislative baseline

17. Pakistan's second National Communication entails several efforts that the country made as well as plans and projections of its actions related to climate change. Among others, energy sector is the largest source of GHG emission in the country. The emission from the sector will be projected to

raise since the country need to keep up with increasing demands for energy from its growing population and economy. While the sector relies heavily on natural gas at this moment, it is projected that the country will inevitably rely on its coal for medium term future, which will result in intensified GHG emissions even utilizing clean coal technologies.

18. While the renewable energy (wind, solar and bagasse) provides only a fraction (3.36 %) of the country's total power generation capacity of 25,374 MW as of 2016[17]¹⁷. The country has taken steps to reduce GHG emissions from the sector. For example, the 2013 Framework for Implementation of Climate Change Policy (FICCP) included several priority actions in energy sector for the purpose of: (i) develop and enhance renewable energy sources and uses to achieve green growth in the energy sector; (ii) develop and obtain clean energy technologies and uses to achieve low carbon growth in the energy sector; and (iii) reduce total energy demand through conservation and efficiency. In 2015, National Power Regulatory Authority (NEPRA) issued net-metering regulations, which allows Distribution Companies (DISCOs) to purchase electricity produced by the consumers and facilitate installation of renewable energy. In addition, back in 2006, the National Energy Conservation Policy was approved by the Cabinet which paved the way for establishing the Energy Efficiency Act. However, in order to utilize full potential of the country's renewable energy while developing and enhancing clean sources and other efficiency measures towards a low carbon economy, there are still rooms for developing and operationalizing creative and sustainable energy policy as recognized in the National Communication.

19. Among others, emissions from the waste sector is also seen as an issue growing significance in the country's second National Communication. This is based on the assumption of the increased share of emission from the sector in the country's GHG inventory due to its growing population and economy as well as rapid urbanization. In conjunction with the energy related constraints as mentioned above, the country sees the opportunities in waste management not only within the sector but also to improve energy use including measures such as landfill gas utilization, composting, wastewater treatment and electricity generation based on municipal solid waste. However, in general, wastes are simply collected, transported and dumped on to public land in the country as of today. In many cases, it is still true that hazardous wastes are mixed and dumped along with municipal waste as well as industrial waste is burned, dumped or drained in a river or mixed with municipal waste without any mitigation measures of environmental protection.

20. Policy measures to promote appropriate waste management system as well as while addressing climate change are emerging in the country. For example, National Electric Power Regulatory Authority (NEPRA) recently announced upfront tariff for municipal solid waste power

plants recently[18]¹⁸. The leveled tariff of US Cents 10/kWh based on 25 years operational period has been announced with overall capacity cap of 250 MW wherein share of each province and federal territory have been kept at 50 MW each. For protection from environmental hazards, the power producer shall obtain necessary approvals from the relevant government agencies. The upfront tariff will be in field for one year. [19]¹⁹ In addition, the Government of Pakistan recently announced ARE Policy 2019, which set target of 30% share of renewable energy in the energy mix by the year 2030[20]²⁰. The innovative approaches to harness renewable energy and alternative energy technologies to reach that target, however, have not been defined in the Policy.

21. In addition, **Clean Green Pakistan Movement (CGPM)** was started by the Pakistan government in 2018 and it is a national campaign underpins behavioral change and institutional strengthening. It also envisages the need to address five pillars: plantation, solid waste management, liquid waste management/ hygiene, total sanitation, and safe drinking water[21]²¹. There are two programmes operated under the CGPM, namely, Pakistan Clean Green Index (CGPI)[22]²² and Clean Green Champions Programme (CGPC) both of which were launched in 2019. CGPI presents city and community level index with a view to rank those stakeholders according to performance indicators to the each pillar of CGPM[23]²³. CGPC aims for mobilizing the voluntary participation of the citizens towards keeping the cities clean, improving civic amenities and creating in them the spirit and sense of owning their habitats. The cities are also aligned with the five pillars by providing points and rewards system to enhance involvement as well as preparing guidelines for educational institutions and training programme[24]²⁴.

b) National baseline initiatives for accelerator programme

22. In Pakistan, SME sector faces multiple challenges and barriers including lack of resources, expertise, time, awareness etc. Besides, the government has recently started to adopt cleantech-friendly policies including green buildings, emissions standards, feed-in tariff and tax incentives for renewable energy projects. The Pakistan government is also working to set up Pakistan Innovation Fund in an effort to support micro, small and medium-sized enterprises in various segments in including farming, fishing, livestock, and poultry, dairy and agro-based industries. The federal government is working with various organizations to facilitate micro-businesses by offering, for example, soft loans and providing them with lower electricity tariff. These recent government

initiatives can potentially be linked to the project, in particular, provision of financing for successful business models by accelerated entrepreneurs under the project.

23. Pakistan Council of Science and Technology (PCST)[25]²⁵ is mandated to advise the Government on the development of Science and Technology involved in related policy making, planning, implementation and in carrying out policy studies. PCST is also the secretariat of National Commission of Science and Technology (NCST), headed by the Prime Minister. Therefore, it plays a pivotal role in nurturing clean technology innovation and entrepreneurship in the country. Its core functions include i) taking measures for effective collaboration among academia, research and development organizations and industry for development of indigenous products or technologies, ii) evaluating national research and development activities, and iii) promoting collaboration among national and international organizations for capacity-building and other policy initiatives in the field of science and technology. The project outputs can be communicated to PCST for its consideration on the approaches taken which will lead to enhancing cleantech innovation ecosystem in the country.

24. National Incubation Centres (NICs)[26]²⁶ were created in Islamabad, Lahore, Peshawar, Karachi and Quetta during 2017 to 2018. Based on a unique public-private partnership between the Ministry of IT & Telecom, Ignite ? National Technology Fund, Jazz and Teamup, the center provides incubation and acceleration support for startups across the country. There are several programs operated under the centers including i) the 12-month incubation program opened twice a year, ii) the Jazz xlr8 Program which is premium acceleration program for start-ups that are market ready, and iii) organization of thematic Hackathons. The project will benefit from NICs in terms of mentors, judges, facility, etc. for the execution of the project. It has hubs in Islamabad, Lahore, Peshawar, Karachi and Quetta, which the project will be utilizing to enhance the outreach of the project.

25. IGNITE[27]²⁷ is a national technology fund mandated by Ministry of Information Technology & Telecom. It provides funds for startups and innovative projects that utilize 4th industrial wave tech to solve local problems and target global opportunities in health, education, energy, agriculture, telecom, finance and other verticals. By doing so, it aims to fulfill its mission of creating a knowledge economy in Pakistan through network of national incubators in thematic areas of artificial intelligence, cloud infrastructure & cyber security, Internet of Things, augmented & virtual reality, wearables & implantable, shared economy, robotics, 3D/4D printings, neuro tech and block-chain. The project will continue to discuss with IGNITE and identify possible area of mutual benefits in coordination with the ongoing activities.

26. Jazz xlr8?s[28]²⁸ is a startup support program under Pakistan?s mobile networking company Jazz. It aims to discover and support Pakistan?s best startups, help them scale and build a thriving startup ecosystem in Pakistan through its global partnerships, customized curriculum, mentor network & expertise services. It offers startups with access to mentors, data & analytics, data distribution and digital marketing services, digital trainings, digital financial services and free access to software. The project will continue to discuss with Jazz xlr8?s and identify possible area of mutual benefits in coordination with the ongoing activities in particular provision of mentors.

27. National Productivity Organization (NPO)[29]²⁹ is mandated to enhance productivity and through human resource development, technology demonstration and improved practices, processes and procedures by 2030. It conducted a number of projects in the field of business acceleration including IFC Business Edge (R) teaser events project of 2016 where NPO completed 4 Teaser events and IFC developed 53 training modules in various disciplines including Marketing Management, Human Resource Management, Financial, Management and Accounting, General and Operations Management, Personal Productivity Skills and Tourism and Sector Specific Management of Accommodation Services, specially designed to train SMEs and MSMEs. NPO under its Green Productivity Center will technically support the project activities to actively promote green productivity in the industrial sector such as training, seminars, workshops, consultancy, release of index surveys, qualification certification, promotion of a comprehensive understanding of energy and the environment and research on productivities. NPO can be a source of mentors for the project.

28. Pakistan Institute of Management (PIM)[30]³⁰ was set up in 1954 as a non-profit organization with the mandate to ?take the lead role in management development in Pakistan ?. It is under oversight of Ministry of Industries & Production and has hubs in Karachi, Lahore and Islamabad and providing leading services in the field of management training and development. PIM offers several programmes including various sector specific professional trainings, consulting services such as Marketing Management and Research, Human Resource Management, Quality Systems and Supply Chain Management, Financial Management and Restructuring, Organizational Development, Security and Risk Management, Production Operations Management, Information System Auditing and Systems Development. PIM will support the project to build capacity of the public and private sector with its fully equipped training centers and faculty. The project will closely partner with PIM in particular for sourcing the mentors for the project.

29. The Small and Medium Enterprises Development Authority (SMEDA)[31]³¹ is a government institution under Ministry of Industries & Production, which is mandated to provide an enabling environment and business development services to small and medium enterprises. For example, SMEDA provides Business Development Services for SMEs where it provides, among others, financial, legal and capacity building consulting services. It also implements projects 'Kamyab Jawan' Youth Entrepreneurship Scheme where young entrepreneurs and existing businesses between the age group of 21 - 45 years (18 Years for IT sector), are provided finance through 21 Commercial, Islamic and SME banks under the guidance and supervision of the State Bank of Pakistan. Under 'Economic Revitalization of Khyber Pakhtunkhwa Project (ERKP)', which was designed to support the Government of Pakistan in the economic recovery and revitalization of the crisis-affected areas, SMEDA is implementing the SME development component to increase the income of the SMEs and also to boost employment opportunities by providing grants from the region's private sector. Two types of grant supports are provided, namely (1) Up-gradation and (2) Rehabilitation. The Projects Round-1 was from Oct 2011- March 2017 and Round-2 is from April 2017 - June 2020. The Round-2 of the project is being extended for another two years i.e. July 2020- June 2022. Under 'Public Sector Development Programme (PSDP)', SMEDA provided support to catalyze adaptation of best business practices and induction of new technologies through demonstration, training, provision of common facilities and ancillary services. The project will learn from the knowledge and experiences from ongoing activities by SMEDA in particular for the project Component 2.

30. Pakistan Credit Guarantee Company (PCGC)[32]³² was established in 2019 as development finance institution which is mandated to develop SMEs sector and to promote access to finance especially collateral deficient SME borrowers. to increase SME lending, reduce Collateral constraints for small farmers and small enterprises, increase quality of SME credit granting & risk monitoring, mitigate against business cycles & external shocks, enhance public information dissemination, facilitate access to reinsurance capital, improve treatment of Risk Weighted Assets, reduce risk perception /increase risk appetite of banks, and lower financing cost for SMEs. These initiatives by PCFC can potentially be linked to the project, in particular, provision of financing for successful business models by accelerated entrepreneurs under the project.

31. Pakistan Innovation Foundation (PIF)[33]³³ is a private sector driven and donor supported non-profit organization charged with promoting innovation across the country, particularly in corporate sector delivered through three pillars of activities i.e. awareness building, reward and recognition and research and advocacy. It operations various initiatives including, Innovation Labs & Challenges which support youth, students, professionals and citizens in Pakistan to find innovative solutions to address the country's development challenges, Innovation celebration which is an annual events featuring

National Conference, Innovations Showcase and Awards Gala, Creativity, Science & Innovation which gives opportunities for youth to build awareness and knowledge on science and technology, and Research and Advocacy which is to create capacity for promoting science and science based innovation and entrepreneurship in Pakistan. The project will continue to discuss with PIF and identify possible area of mutual benefits in coordination with the ongoing activities in particular identification of possible entrants to the accelerator.

32. PAKImpactInvest[34]³⁴ is organized by Ministry of Information, Technology & Telecommunication under which pitching events are organized to bring together businesses and startups from Pakistan with high growth and impact potential and impact investors. For example, the pitching event in 2021 will comprise of live pitch sessions by businesses, speeches by the guest of honor, video livestreaming showcasing investment opportunities in Pakistan and emerging sectors in education, health and medicine, energy, automobile, smart agriculture and tourism. The project will continue to discuss with PAKImpactInvest and facilitate participation to the accelerator.

33. Plan 9[35]³⁵ is Pakistan's largest technology incubator; a project of the Punjab Information Technology Board (PITB) that was launched in August 2012 to promote a new wave of technological entrepreneurship in the country providing early-stage technology startups with a nurturing ecosystem to facilitate the successful and sustainable development of their business ideas into commercially viable companies. The services include: provision of office space for free for 6 months, provide grants of Rs. 20,000 for up to 5 member of startups for 6 months, support networking and partnership at national and international level, provide mentorship support, and support business model development. The project will seek for the linkage with Plan 9 in particular for sourcing the mentors for the project.

34. National Solutions Convention (NasCon)[36]³⁶ is annually organized by FAST National University, Islamabad campus which comprises of competitions of thematic categories such as computer science, engineering and business to address challenges of the country. Due to the COVID-19 crises, the 2020 convention was postponed but it on average gather 7,000 participants annually from all over the country showcase of exceptional professional skill and a platform for innovation[37]³⁷. The project will continue to discuss with NasCon and facilitate participation to the accelerator as well as identify possible mentors.

35. Pakistan Startup Cup[38]³⁸ is business model competition open to any type of business idea in Islamabad, Karachi, Lahore and Peshawar. It is hosted by TiE Islamabad. The Competition based program are given to grow businesses, entrepreneurs and the ecosystems that support entrepreneurs. It offers opportunities through support programmes including: i) StartUp Academy which provides fifteen weekly interactive, visually driven business-building sessions, ii) Extreme Build-A-Business Weekend, which consists of either a 48-hour event or three-hour workshop where mentor training and certification on the GriffinWorx business building methodology and VizToolz. This is regarded as the first level vetting process to identify potential mentors to advance through the mentor certification programs with the goal of identifying potential Master Mentors. StartUp Cup Challenge, a proven business acceleration program run over 208 times in over 72 countries since 2012. The participants are transformed into investment ready businesses as they build their business or take an existing one to the next level during the 6 ? 7 months judging and mentoring. The project will seek for coordination with the ongoing activities by Pakistan Startup Cup to enhance cleantech ecosystem effectively.

36. LUMS Entrepreneurial Society (LES)[39]³⁹ is a student society of Lahore University of Management Sciences (LUMS) established to play an active role in developing the local entrepreneurial ecosystem and supporting sustainable student-run initiatives in Pakistan and beyond. It operates several projects to support students to build skills in entrepreneurship. The projects include i) Young Leaders and Entrepreneurs Summit (YLES) which is held annually and convene more than 800 participants all across the country, ii) Social Outreach Program (SOP) which supports cultivation and channeling the entrepreneurial spirit in the society through social work at the very grass root level, iii) Innovation which supports provision of a tenable platform for future entrepreneur by showcasing business idea and conducting skills trainings, and iv) Initiate which supports refinement and development of the business ideas of peers towards successful implementation. The project will continue to discuss with LES and facilitate participation to the accelerator as well as identify possible mentors.

37. The Indus Entrepreneurs (TiE)[40]⁴⁰ was founded in 1992 in Silicon Valley to foster entrepreneurship through mentoring, networking, education, funding and incubation. In Pakistan, the chapters of TiE are located in Islamabad and Lahore with missions of promoting entrepreneurial culture, mentoring and coaching new entrepreneurs and arranging discussion forums for various entrepreneurial ideas. TiE Islamabad, together with US Embassy in Islamabad, organizes Pakistan Startup Cup which is one of the Pakistan's largest startup competition based accelerator

programs.[41]⁴¹ The project will continue to discuss with TiE in particular identification of possible mentors.

c) Regional and international initiatives on accelerator programmes

GCIP

38. Since 2011 UNIDO has been supporting cleantech companies in their development via GCIP which uniquely fosters an ecosystem approach that supports cleantech innovations in existing and new SMEs and start-ups through the provision of catered tools and methodologies that enhance their productivity and competitiveness while promoting the establishment of a supportive policy and regulatory framework. By the end of 2017, GCIP accelerated over 865 start-ups/SMEs in 8 countries.

39. The success of GCIP was confirmed through the GEF's evaluation in 2018[42]⁴². In its framework it was also recommended that: a) Any future GCIP or similar program should be structured using a more globally coordinated approach with appropriate choice of interventions based on strategic country selection; b) GCIP should actively support national-level coordination to dynamize the CIEE; c) There should be sufficient time allowed to customize and sharpen the focus on policy strengthening and regulatory frameworks to foster cleantech innovation and its adoption; d) The network of private sector partners should be expanded to address GCIP participant needs for business expertise and early stage technology validation; e) Direct and indirect impacts of the GCIP should be measured by establishing adequate monitoring and evaluation systems and ensure that they are implemented using standardized and relevant indicators; f) Country engagement should be deepened during the project period, including a plan and resourcing to sustain activities and expand outcomes after project closure.

40. Based on the above-mentioned recommendations UNIDO designed the GCIP Framework in 2019. The GCIP Framework consists of ten country child projects, all of which are connected to the three driving pillars, including a) Pillar 1. Transforming early-stage innovative cleantech solutions into commercial enterprises; b) Pillar 2. Cleantech innovation and entrepreneurship ecosystems strengthening and connectivity; c) Pillar 3. Programme coordination and coherence. The coherence within the GCIP Framework is ensured through the GCIP global coordination child project (GEF ID 10461) (hereinafter referred to as GCIP Global).

41. The GCIP Framework builds upon the achievements and key lessons learned from the implementation of the GCIP projects so far. In particular, it benefits from the collective feedback by various stakeholders including national counterparts, institutions and SMEs successfully participating in GCIP as well as strategic partners at the global level.

GCIP 1 in Pakistan

42. The 'Global Cleantech Innovation Programme for SMEs and Start-ups' (GCIP Phase 1) in Pakistan was implemented from 2014 to 2018. The main aim of the project was to seek to promote clean energy technology innovations through a cross-sectoral and multi-tiered approach that combines strengthening of the national technology innovation policy framework with institutional strengthening so as to build a sustainable 'ecosystem' for innovative entrepreneurship in small businesses. The programme focused on fostering emerging clean energy technology start-ups in Pakistan, enhancing engagement with the private sector, scaling up the momentum for sustainable development and strengthening the policy framework as required. The project also employed a competition-based ecosystem approach to identify the most promising entrepreneurs across the country with especially targeting SMEs and startups involving extensive mentoring, training, access to investors and opportunities to showcase their innovations.

43. GCIP Phase 1 in Pakistan was a pioneer in introducing commercialization of cleantech focused innovations. According to the Terminal Evaluation completed in March 2019^[43], the programme contributed to: environmental safeguarding by supporting the development of cleantech ideas, solutions, and services related to energy efficiency, renewable energy, waste to energy, and water efficiency; 40% of the cleantech startups supported by the project successfully reached commercialization during the project's timeframe, which is above the average rate of commercialization for start-ups; and gender mainstreaming with intention to create more opportunities for women entrepreneurs. It was also reported that GCIP Phase 1 in Pakistan played an instrumental role in raising awareness about the significance of cleantech in the country by sensitizing many stakeholders including those of universities, R&D institutions, chambers of commerce, government bodies, incubation & other startup bodies regarding the cleantech's potential to revolutionize the economy. In addition, around 43 semi-finalists among 249 between 2014-2018 competitions were focused on waste related clean technologies, which showed a potential interest of the innovators in this sector.

44. The Terminal Evaluation also identified some recommendations which included, among others, the followings: 1) further enhancing engagement of overlooked groups and leverage previously untapped resources and contributions through adoption of a strategic approach to gender mainstreaming; 2) developing an up-to-date mapping of the innovation eco-system for cleantech and beyond to identify synergistic effects considering the growth and evolution of the innovation landscape in the country as well as possible entry of multiple players during the project's implementation; 3) operationalizing national cleantech platform under national ownership, while maintaining service quality, to sustain momentum and effectively leverage the GCIP reputation and achievements thus far; and 4) budgeting and allocating a full-time resource for communications, advocacy, and training of partner organizations on these aspects can expand outreach and magnify impact. These recommendations have been taken into account in the design and implementation of the proposed project in order to enhance effectiveness and sustainability of the project intervention.

The Private Financing Advisory Network (PFAN)

45. The Private Financing Advisory Network (PFAN), is an initiative hosted jointly by UNIDO and the Renewable Energy and Energy Efficiency Partnership and is a global network of climate and clean energy financing experts that offer business coaching and investment facilitation to entrepreneurs developing climate projects in emerging markets. PFAN mobilizes private financing to reduce greenhouse gas emissions and build climate resilience contributing to Paris Agreement and SDGs i.e., SDGs 7 (Energy), 9 (Industry), 13 (Climate Action), and 17 (Partnership). A network of 99 in-country private sector experts in 39 countries are supported by network of 45 investment partners globally to provide investment advisory services, investment facilitation and financing. To date, PFAN has supported at least 127 climate and clean energy businesses to mobilize more than USD 1.7 billion of investment. Furthermore, PFAN currently has a pipeline of hundreds of projects across the globe that are being supported. Further results demonstrate that through this investment, 3.3 million tons of CO₂ have been mitigated annually and an additional 975MW of clean power installed. In 2021, PFAN has facilitated at least 69 investment-ready projects.

46. In partnership with the United States Government, UNIDO recently launched the Pakistan Private Sector Energy Project.^[44] Under the project, PFAN will play integral part by expanding the portfolio of commercially-viable small and medium-scale clean energy projects and providing support to enable them to access financing and reach financial close with a view to help to stimulate clean energy technologies in Pakistan and contribute to the country's efforts on mitigating climate change. Through UNIDO, the project will be linked to the ongoing activities under PFAN and benefitted from them by accessing possible investors. Representatives from the Pakistan Private Sector Energy Project will be consulted and invited to participate in and contribute to all activities of the project.

ClimateLaunchpad [45]⁴⁵

47. ClimateLaunchpad is a global initiative by Climate-KIC which is supported by the European Institute of Innovation & Technology (EIT) in which Pakistan is participating. Under the initiative, Climate-KIC together with local consulting firms of Stimulus and CleanTech Republik works on developing strategic green industry partnerships through competition-based support for local entrepreneur towards August 2021. The project will keep communicating with ClimateLaunchpad and incorporate knowledge and experiences into the project intervention in particular designing of accelerator program.

The Global Entrepreneurship Network (GEN)[46]⁴⁶

48. GEN operates a platform of projects and programs in 170 countries aimed at making it easier for anyone, anywhere to start and scale a business, including Pakistan. It has several initiatives including Global Entrepreneurship Week (GEW) through which GEN celebrates the successes and impact of entrepreneurs in an effort to help break down cultural barriers and reach new audiences, the Global Entrepreneurship Research Network (GERN) and GEN's Startup Nations policymaker network through which GEN helps identify and crowdsource best-in-class policies and public programs that help entrepreneurs thrive, the Global Business Angels Network, Global Enterprise Registration, Startup Huddle, GEN Starters Club, Startup Open, and other programs through which GEN offers programs and resources intended to help smooth the path to market for founder teams and provide entrepreneurs at all stages with the support necessary to reach the next level, and other outreaching and networking events including its Global Entrepreneurship Congress (GEC) and GEC+ series, the annual Startup Nations Summit, global annual meetings of its vertical communities and by co-hosting other events across the globe through which GEN helps break down siloes and enhance collaboration among entrepreneurs, investors, policymakers, researchers. The project will learn from the expertise GEN accumulated to create connectivity within the entrepreneurial ecosystem.

Google for Startups Accelerator: Southeast Asia[47]⁴⁷

49. Google for Startups Accelerator: Southeast Asia aims to support local startups and entrepreneurs to solve specific, technical challenges with the best of Google resources - people, network, and technologies. As part of the global programme of 'Google for Startups Accelerator?', once the selected founders outline the top challenges facing their startups, they will be paired with relevant experts from Google and the industry to solve those challenges. Participating startups will receive mentorship and specialized expert supports from the global mentor network. Google for Startups Accelerator: Southeast Asia will cover applications from startups headquartered in Indonesia, Malaysia, Pakistan, Philippines, Singapore, Thailand, and Vietnam. The project will seek for possible area of mutual interest with Google for Startups Accelerator and coordinate its activities.

3) The proposed alternative scenario with a brief description of expected outcomes and components of the project

50. The project promotes the transition towards low-carbon and circular economy by facilitating investments in clean technologies integrating renewable energy, energy efficiencies, and waste management within the context of material, energy and resources sustainability and circularity. It aims to optimize and rationalize the material and energy inputs and controlling the outputs affecting the environment in holistic manner. For this purpose, the project will support, through operationalization of accelerator programme and other relevant activities, introduction of innovative clean technologies which will include improving resource and energy efficiency as well as renewable energy capacity within the material cycle towards disposal in the end. The approach will also take into account of, as applicable, management of wastage and pollution, drawing on methods of pollution control, cleaner production, eco-efficiency, life cycle assessment, closed loop production and industrial ecology efficiency as well as renewable energy capacity within the material cycle towards disposal in the end. The approach will also focus on management of wastage and pollution, drawing on methods of pollution control, cleaner production, eco-efficiency, life cycle assessment, closed loop production and industrial ecology.

51. The project will take advantage of national priorities and initiatives such as Clean and Green Pakistan Index (CGPI). In addition, in the wake of Industry 4.0 as well as the Pakistani governments 'Digital Pakistan'⁴⁸ initiative, digital transformation within the context of waste management will also be considered for prioritization. Taking into account of priorities of the country, the project will effectively lead new startups and entrepreneurs to be supported to contribute in finding innovative solutions.

52. The project will directly respond to the findings of the Independent Evaluation of GCIP Phase 1 in Pakistan⁴⁹ and will be aligned with the approaches of the GEF approved program GEF ID10408, which is designed to respond to the increasing global demand for environmental sustainability, climate action, and to unleash the potential of cleantech innovation and entrepreneurship to help transform priority sectors and systems. To address the highlighted barriers above faced by SMEs in transforming their cleantech innovations into market ready solutions, the programme uses a holistic ecosystem approach which facilitates the growth of cleantech SMEs, improves coordination of national activities and foster synergies between participating countries. The project has a unique approach as it seeks to capacitate the private sector to deliver environmental benefits through transforming early-stage cleantech companies into fast-growing enterprises whilst simultaneously developing the cleantech innovation and entrepreneurship ecosystems in participating countries.

53. The global GCIP framework will aggregate and enhance efforts to strengthen and connect the ecosystems of the countries involved, and at the same time connect them to a truly global innovation ecosystem. Over the long-term, the project seeks to build robust innovation ecosystems that can identify and systematically support high-impact cleantech technology innovations as well as attract large-scale investments. This mechanism is expected to deliver significant global impact on limiting global temperature rise to well below 2 degrees centigrade as well as generating local environmental benefits.

54. The proposed advanced cleantech innovation project for Pakistan which is aligned with the global GCIP framework of which UNIDO is the lead implementing agency. The Theory of Change (ToC) for the project as in the figure below shows how the project will deliver accelerated uptake and investment in SMEs with high-impact cleantech innovation products and services which, in turn, will meaningfully contribute to climate change mitigation targets and to green growth and job creation.

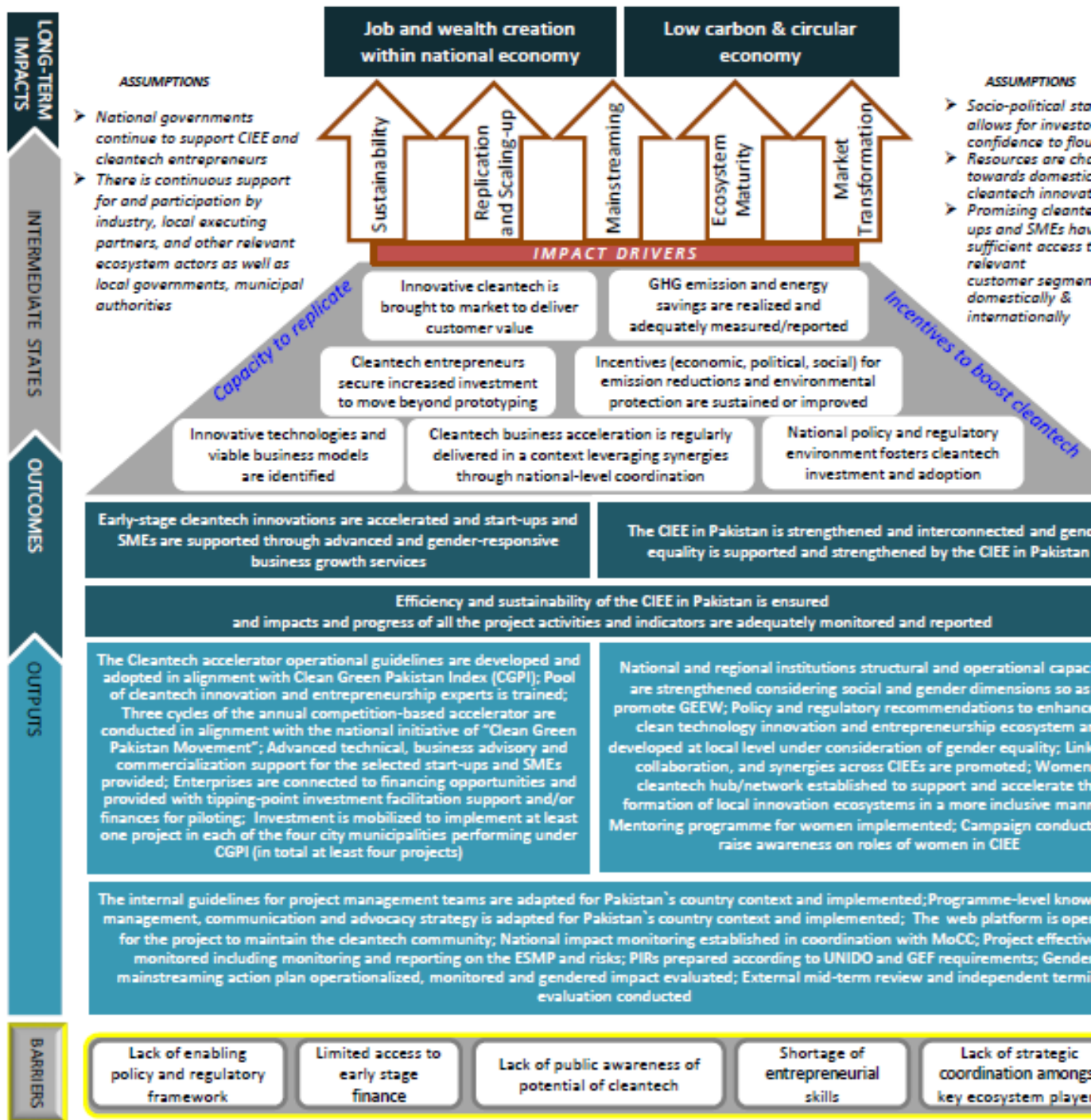


Figure 3: Theory of Change for the Pakistan cleantech project

Brief Description of the Theory of Change

The project has been designed to address the barriers set out in the previous section. Specifically, the barriers faced by innovators will be addressed by the provision of support from concept through to commercialization while helping them adopt different approaches to entrepreneurship. This will include: provision of ideation and concept validation services, holding annual accelerators, advanced accelerators to provide follow-on support to the alumni as well as targeted support services, investment facilitation, mentorship and partnership support - across the country supporting at least 85 entrepreneurs. To assist piloting projects of innovation and early-stage entrepreneurship with a view to support the deployment and scale-up of cleantech solutions integrating renewable energy, energy efficiencies, and waste management within the context of material, energy and resources sustainability and circularity. To support these outputs, guidebooks will be developed for Pakistan and at least 100 business innovation and entrepreneurship experts will be trained in and certified to an enhanced approach to business model development.

The fragmented cleantech innovation ecosystem will be addressed with the establishment of a national cleantech innovation platform linking all the project support and the development of at least 3 regional hubs to provide support to entrepreneurs. Capacity gaps will be addressed with targeted capacity building for policy makers and institutional actors, and the policy and regulatory environment will be strengthened with support to address the gaps in areas such as IP, behavior change in value chains and consumers and promoting a circular economy. Networking, advocacy, knowledge generation and exchange will enhance awareness amongst ecosystem stakeholders and increase impact of the project whilst global GCIP cooperation and exchange will increase opportunities for Pakistan entrepreneurs.

IF these outputs are delivered **THEN** the following outcomes will be realized: promising early stage cleantech innovations are accelerated across the country by being supported from concept through to commercialization; alumni are supported and financed for national, regional and global expansion; and the national ecosystem and institutions are strengthened to promote and support cleantech innovation and entrepreneurship. All the outputs are underpinned by a gender mainstreaming action plan that contributes toward the debunking of gender stereotypes and ensuring that women, men and youth can equally lead, contribute to and benefit from the programme. At the same time there will be greater recognition and improved efficiency and sustainability of the Pakistan accelerator programme.

BY identifying and supporting innovative technologies and viable business models whilst increasing institutional capacity and ecosystem connectivity, **THEN** the cleantech entrepreneurs are able to secure increased investment from more aware investors, **AND** enables them to commercialize their innovative products. At the same time, **IF** a supportive policy and regulatory environment, including incentives exists, **THEN** cleantech investment and adoption will be fostered. **ALSO** in turn these interventions will bring innovative clean technologies to market and drive uptake, delivering customer value and contributing to the reduction of GHG emissions and other multiple environmental benefits. Continued growth and the mainstreaming of the technologies will result in market transformation and job and wealth creation within Pakistan, accompanied global environmental benefits including GHG emission reductions.

55. The project has three substantive components, in line with the global GCIP framework pillars. These have been designed based on the current needs of Pakistan, also taking into account recommendations from the GEF 5 GCIP terminal project evaluation and feedback from project participants. An overview of the pillars is shown below, including how this project is expanding the support that was provided under GEF 5.

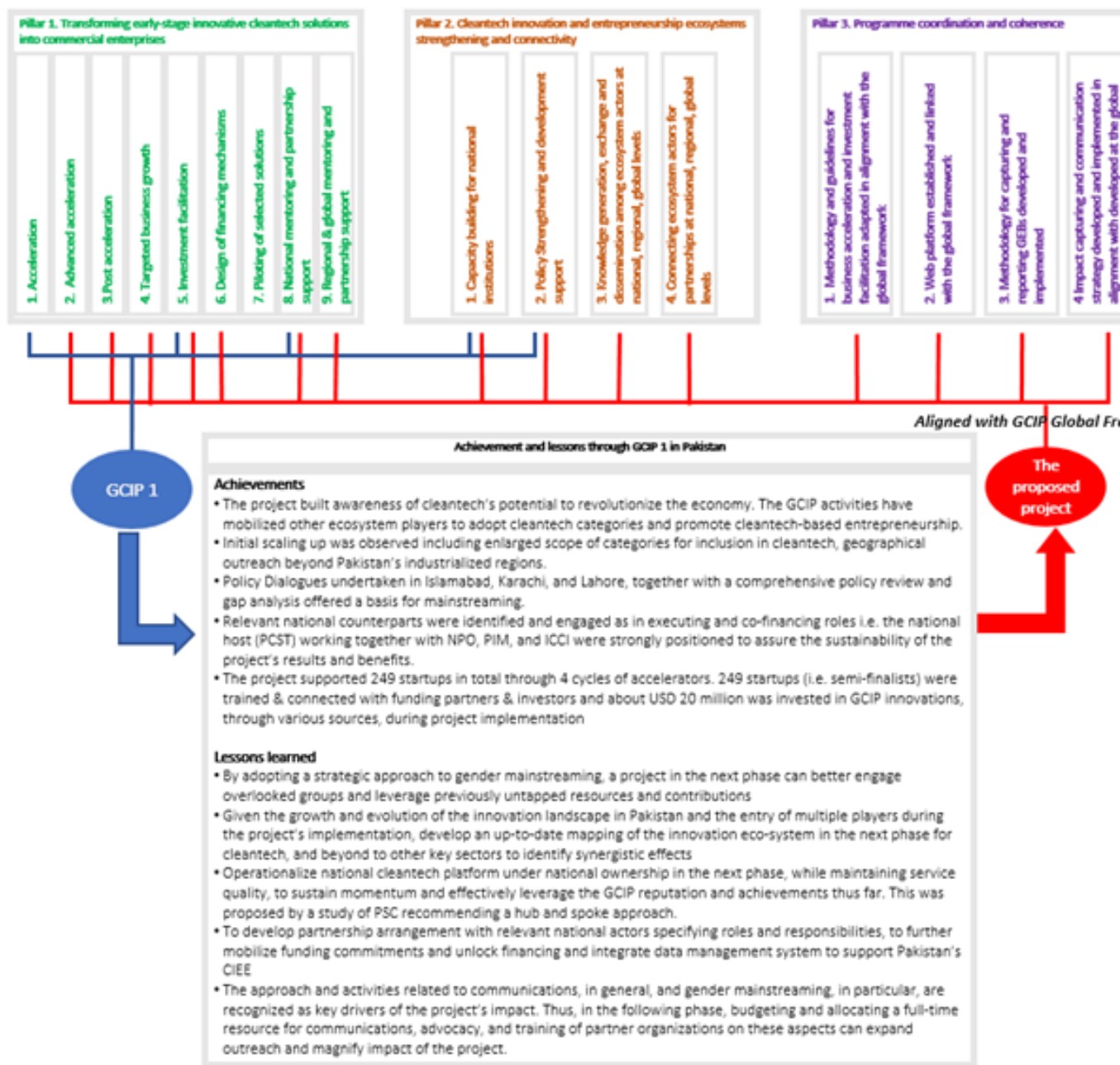


Figure 4: Additional support provided by this project through the GCIPI supported project by GEF5

56. The project approach in Component 1 especially, accelerates innovations that have highest GHG emission reduction potential and have highest chances of going to the market through a number of phases. Together with its initiatives, like PFAN, the project continually de-risks the enterprise's business model in order to increase the likelihood of investor interest. This is important to note since the sources of investment that the project start-ups will be able to mobilize will depend on the alignment of the priorities of the institutions that have shown interest to invest.

The project connection to PFAN to support the start-up to scale up journey of cleantech enterprises



Figure: 5 Start to Scale-up Journey, De-risking for Investment Readiness

57. The objective underpinning the linkages established between the project and PFAN is to offer the ventures supported by the project a continuum of support services as they mature towards commercial viability and scaling up. The project combines a top-down (policy support) with a bottom-up (support for home-grown innovation) approach. It is technology-neutral and its theory of change is grounded in sustainability (incl. energy) transition theories and as such, the type of the innovations that are supported are not pre-determined.

58. The final investment decisions are made between the start-up and the investor, once they find common value. A start-up may have several investors mixing public and private financing. The connection between the Pakistan accelerator programme with the other country projects under the Global GCIP framework enables investors at a global level to also access start-ups from each country i.e., through activities like Investor Connect, National Forums and the Global forums.

Component 1: Transforming early-stage innovative cleantech solutions into scalable enterprises

59. Component 1 focuses on identifying innovative cleantech solutions and business model ideas, and providing entrepreneurial skills and business growth support. Providing direct support to early-stage cleantech SMEs to enhance the capacity and competitiveness for business growth, Pakistan's private sector's potential and contribution as cleantech solution providers, and to leverage market opportunities embedded in climate change mitigation enhances. Outcome 1.1 focuses on early-

stage innovative cleantech solutions and provides business acceleration support related to entrepreneurship and business skills training. Outcome 1.2 provides targeted technical assistance through advanced and gender-responsive business growth and investment facilitation service. Furthermore, cleantech SMEs in the expansion stage will receive investment facilitation and mentoring services towards financing, piloting and commercialization.

Outcome 1.1: Early-stage cleantech innovations are accelerated

60. Early stage cleantech innovations with high impact potential for climate, environment and social benefits in the field of integrating renewable energy, energy efficiencies and waste management will receive business acceleration support for increased market and investment readiness. The selection criteria for innovations to receive support will be determined in alignment with the national priorities outlined in the NDC targets, and other key policies and strategic documents in consultation with key stakeholders, as well as potential contribution for GHG emission reductions which can be plausibly estimated ex-ante and monitored ex-post and will be aligned with GEF 7 programing directions.

61. This project will benefit from the tools, approach and methodologies on how to promote cleantech innovation and entrepreneurship in developing and emerging economy countries as developed under GEF program 10408. This support includes guidebooks and practical tools for operation and management of the accelerator at a national level and complimentary activities, which will provide the reference framework for the accelerator in Pakistan within this project.

62. The diagram below shows the types of assistance required by cleantech SME, depending on their stage of growth, based on which the approach is built where outcome 1.1 focusses on early-stage cleantech SMEs while outcome 1.2 will focus on growth and expansion stage cleantech SMEs.

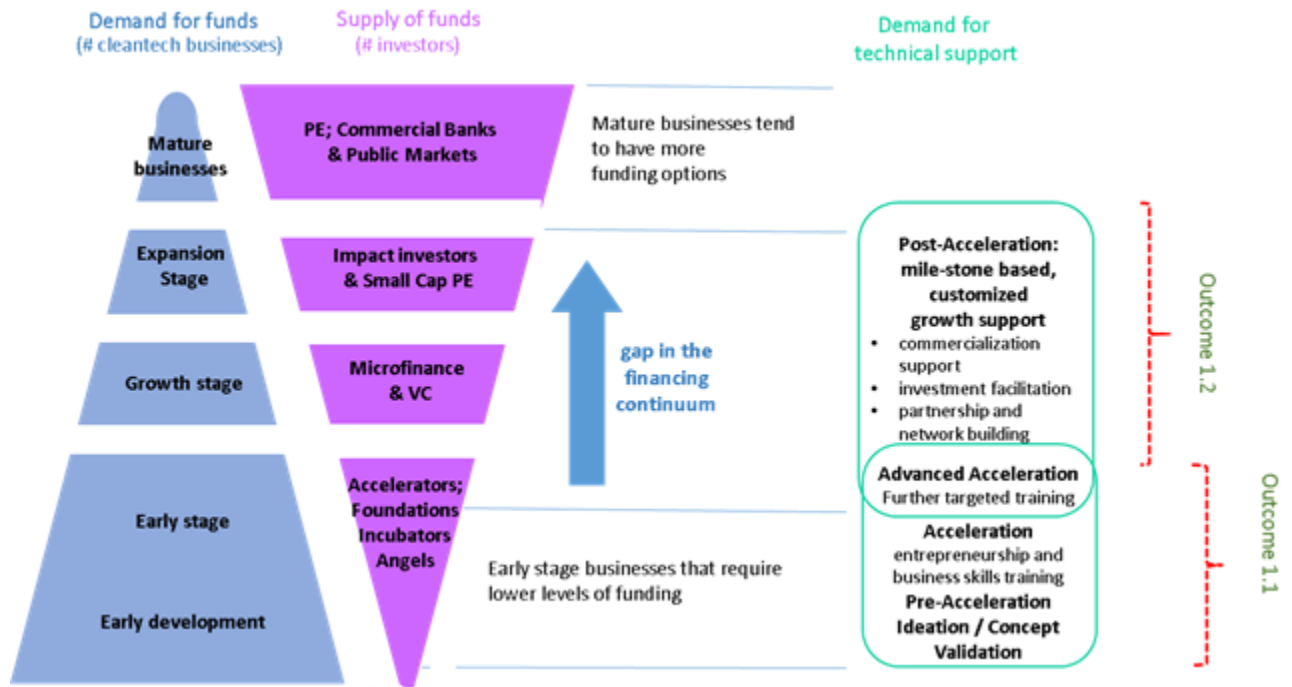


Figure 6: Demand for funds and technical support per development stage

1.1.1 The Cleantech accelerator operational guidelines including methodologies, guidelines, tools and training systems are developed and adapted in alignment with Clean Green Pakistan Index

63. Accelerator guidebooks that emphasize the approach and methodology for promoting cleantech innovation and entrepreneurship in developing and emerging countries, aligned with the Global GCIP framework, will be made available as practical tools and guidelines for the operation and management of the national accelerator in Pakistan. These guidebooks will be reviewed and adapted by the national Project Executing Entity (PEE) to reflect the context of Pakistan’s cleantech ecosystem including market conditions, policy environment, development priorities, technology priorities, local examples, etc. Three accelerator guidebooks will be developed on i) acceleration; ii) advanced acceleration; and iii) post-acceleration support. These guidebooks will define the scope, criteria and awards categories of the accelerator in consultation with Pakistan’s ecosystem actors, including the government, business and civil organization stakeholders and so be aligned with their priorities and in line with the country’s innovation potential. The level of innovation to be eligible to receive support through the accelerator will also be specified during the review of the guidebooks, as well as the selection criteria of the accelerator. The guidelines will also be the principal input to the web based knowledge management tool.

Activities to be implemented:

Activity 1.1.1 a To review and adapt the guidebooks to reflect the context of Pakistan's CIEE, including market conditions, gender context, policy environment, development priorities, technology focus, local examples, etc.
Activity 1.1.1 b To disseminate the guidebooks to the relevant stakeholders including organization of information and consultation sessions.
Activity 1.1.1 c To Identify criteria for cleantech mentors, judges and coaches, integrating gender-sensitivity within the approach - technical, financial, and gender consultants.
Activity 1.1.1 d To develop methodologies, tools and training materials and certification system, including integration of the gender mainstreaming approach.

1.1.2 Pool of cleantech innovation and entrepreneurship experts (trainers, mentors, and judges) is trained through regional training programs, in cooperation with local universities and institutions

64. Regional entrepreneurship training programme will be organized for local universities. The training sessions on entrepreneurship will be organized, focusing on those aspiring students and individuals who want to be the torchbearer and hand holders, to further spread the message for innovation to other aspiring for making careers in innovation in clean technologies to themselves become role models.

65. Developing a pool of cleantech innovation and entrepreneurship experts to act as mentors, coaches and judges is critical to the effectiveness of accelerators in providing the right support to the participating teams as well as their long-term sustainability. This is because the delivery of the accelerator curriculum and the connections facilitated with the right actors will depend on the capacity and networking of these experts. In order to ensure coherence of approach among mentors, coaches and judges, the project will adopt and employ a cleantech innovation and entrepreneurship expert training system developed under UNIDO/GEF program 10408. Similar to the accelerator guidebooks, the training system will be reviewed by the Pakistan PEE and adapted for the national context, ensuring that the training materials accurately reflect market, business, policy, and investment climates.

66. A pool of experts with the knowledge and connections to support cleantech innovations towards commercialization is also crucial to the cleantech ecosystem. The community of experts trained/certified are expected to positively influence the cleantech innovation initiatives at national level, and will contribute to the strengthening of the cleantech innovation and entrepreneurship ecosystem in general.

Activities to be implemented:
Activity 1.1.2 a To provide (at least 4) capacity building/expert training as well as conduct evaluation and certification for (at least 100) Cleantech innovation mentors, judges and coaches, with inputs from Global GCIP, technical, financial and gender consultants.

Activity 1.1.2 b To organize two entrepreneurship training programmes at universities including identification of the teachers/professors, adaptation of the GCIP accelerator course, delivery of training programme and initial delivery of training to students.

Complementary activities provided under GCIP Global which can be linked to this project:

? Global curriculum and training content for the GCIP cleantech innovation and entrepreneurship expert training and

certification system for the Pakistan experts (trainers, mentors, judges), including training curricula/materials,

guidance on the training delivery methods, and certification requirements.

? An assessment framework for evaluation of experts (trainers, mentors, judges), as well as to facilitate the expert

accreditation at global institutions/initiatives.

1.1.3 Three cycles of the annual competition-based accelerator are conducted in alignment with the national initiative of ?Clean Green Pakistan Movement? (at least 85 enterprises)

67. Three annual competitions based cleantech innovation and entrepreneurship accelerators will be conducted based on the guidelines and tools developed under output 1.1.1. The accelerator is a 4-to-6-month curriculum designed specifically to support cleantech innovations stemming from developing and emerging countries, to develop viable business models and grow cleantech enterprises. About 25-30 enterprises are supported through each accelerator cycle. The accelerator will identify promising cleantech teams with high-impact potential, and provide intensive mentoring and coaching to accelerate the growth of the participating teams. Competition elements will be incorporated into the accelerator as an incentive to participating teams. The call for applications will be issued in ?impact categories?, defined to address multiple environmental challenges with specific focus on those related to solutions on integrating renewable energy, energy efficiencies, and waste management. Support is also provided to improve their business skills and investor pitch and in connecting them to potential business partners, financiers or investors.

68. The National accelerator cycle will be aligned with Clean Green Champions ranking criteria. The organization of the competition cycle will be guided by a general timeline recommended by UNIDO that aims to leverage the ongoing cycles across the global programme and allows Pakistan to align with some activities under the global GCIP framework, where possible (e.g. online webinars, participation at the global forum, etc.).

69. In terms of selection criteria, priority will be given to innovations with significant GHG reduction potential, which will be determined by plausibly estimated ex-ante and monitored ex-post and determined through the reduction potential of the innovation (technology or business model) itself, and the estimated market and business potential which will determine the uptake of the innovation. Accordingly, selection criteria of the accelerator will include a threshold for the projected

environmental impact per USD for supported technologies. Women and youth empowerment and entrepreneurship will also be a key consideration in the selection process into the accelerator. In addition, specific considerations are given so that the project will assist the country's programme of CGPI by directing and focusing the startups and innovators to come up new models/solutions to applicable to the specific local settings.

Activities to be implemented:
Activity 1.1.3 a To provide pre-accelerator services for potential accelerator entrants, tailored to the three priority sectors of renewable energy, energy efficiencies and waste management (The Pre-accelerator as a 10-day (7 days virtual/3 day in-person) programme for around 50 participants annually, around 6-8 weeks prior to the accelerator application deadline for customized assistance in developing their pool of potential applications.
Activity 1.1.3 b To deliver three annual cycles of the Pakistan accelerator.
Activity 1.1.3 c To oversee, through a gender expert, gender-related outcomes and the integration of gender-responsive project implementation throughout the programme.
Complementary activities conducted under GCIP Global which can be linked to this project:
? An assessment framework for evaluation of experts (trainers, mentors, judges), as well as to facilitate the expert accreditation at global institutions/initiatives.
? Recommendations to ensure continuous improvement of the cleantech innovation and entrepreneurship expert training and certification system.

Outcome 1.2: Start-ups and SMEs are supported through advanced and gender-responsive business growth services

70. Start-ups and SMEs will be supported through advanced and gender-responsive business growth services as well as receiving investment facilitation services. Post-accelerator Business growth support and tipping point investment facilitation services will be provided to the cleantech SMEs to commercialization.

1.2.1 Advanced technical, business advisory and commercialization support for the selected start-ups and SMEs provided (for at least 12 startups and SMEs)

71. The guidelines adapted to Pakistan's ecosystem context (under output 1.1.1) will be the basis of executing this output. The advanced and post-acceleration support will be tailored to the specific alumni's needs for progressing into the next phase of business growth and in overcoming product related market barriers. This may include technology verification, prototyping and product development, piloting, legal and administrative support, IT services, tax registration, protection of intellectual property (IP), product life cycle assessment, environmental and social risks assessment, additional mentoring/courses on cleantech entrepreneurship, etc. Additional business model validation may also be necessary to reflect the developments in technology/product readiness, business, market and manufacturing readiness. Market conditions and market demand created by national policies and

development priorities of Pakistan will be an integral part of the business model development and market potential of the innovations. Therefore innovations supported under this output will further integrate sustainable waste management systems and small-scale waste to energy models of Pakistan.

72. As each innovation and enterprise is different and will require customized support, extensive consultations will take place as part of the selection criteria and process to ensure that the needs and expectations of the alumni is fully understood and agreed on at entry into advanced and post acceleration support. A mile-stone based approach will be employed to measure progress of each enterprise.

73. International consultants will be assigned to provide first hand technical support for the small-scale project proponents such as startups, small local entrepreneurs, to commercialize their solutions and for the large-scale deployment of clean technologies.

74. At least 12 innovative technologies as identified under Output 1.1.3 will receive support for detailed feasibility studies towards the implementation of demonstration according to the result of the accelerator program. These will include decentralized and small-scale clean technologies for integrating renewable energy, energy efficiencies, and waste management with necessary localization and modification.

Activities to be implemented:
Activity 1.2.1 a Conduct capacity needs assessment of selected entrepreneurs for systematic promotion and acceleration of cleantech commercialization (at least 12).
Activity 1.2.1 b To identify accelerator participants that would benefit from the Advanced accelerator support to tackle specific operational, financial, and strategic issues.
Activity 1.2.1 c To provide training and business growth support to selected cleantech entrepreneurs and SMEs through advanced acceleration services, i.e. identification of mentors, bespoke mentoring around actions, weekly calls, workshopping financial models with mentors.
Complementary activities conducted under GCIP Global which can be linked to this project:
? Identification and facilitation of cross-border networking and matchmaking opportunities with internationally recognized mentors, GCIP alumni enterprises, corporations, investors, and governments
? High-level national and international events (including GCIP Global Forum and other major international events) for showcasing cleantech innovations.

1.2.2 Enterprises are connected to financing opportunities and provided with tipping-point investment facilitation support and/or finances for piloting (for at least 4 startups and SMEs)

75. Investment facilitation and support for selected start-ups and SMEs including those integrating renewable energy, energy efficiency and waste management will be implemented, as selected from accelerator program. It will promote the cause of CGPI on broad level, as selected startups will be strengthened to provide scale up projects under the project.

76. Moreover, to assist companies in making connections to potential investors and partners, investment facilitations will be held at partner corporations and government agencies to highlight opportunities for investment, loans, grants, technology adoption and partnerships. The intention is to assist as many semifinalist companies as possible to raise funding (grant and equity), find customers, and build partners within 12 months of completing the competition. There will be a specific focus on undertaking activities that would involve women entrepreneurs more actively in seminars and investor group meetings. National investor forums will be organized to encourage linkages, collaboration and synergies across the stakeholders.

77. At least 4 of 12 selected startup/projects supported by mobilizing the investor connect to enable the demonstration of clean technologies in medium to small cities (CGPI ranking criteria will be used).

Activities to be implemented:
Activity 1.2.2 a To validate selected business models, prototypes and technologies (at least 4).
Activity 1.2.2 b To provide technology verification, product development and testing facility support to the enterprises with high impact potential (minimum of 4 enterprises).
Activity 1.2.2 c To provide needs-based tipping point investment facilitation support by organizing national investment facilitation events (Investor Connect) for the Pakistan Post-accelerator enterprises in accessing additional sources of finance, market entry, identifying networking opportunities, dealing with technical and administrative issues, accessing IT services, and tax registration, etc. in order to encourage the participation of seed funding providers from the national, regional and global stages in Pakistan and to leverage on the experience and knowledge of other GCIP countries.
Complementary activities conducted under GCIP Global which can be linked to this project: ? UNIDO's connectivity and support for applications of the alumni for PFAN support.

1.2.3 Investment is mobilized to implement at least one project in each of the four city municipalities performing under CGPI (in total at least four projects)

78. At least 1 fully functional innovative cleantech solutions will be implemented in each of four city municipalities including big, medium and small cities covering 3,000 households. The CGPI ranking criteria will be used for selection of such cities. Linkage will be developed with the startup projects that are currently undergoing in the CGPI cities. Financing will be sought through investment funds and impact investment funds to support early stage cleantech businesses. In addition, the project

may support the implementation of innovative cleantech solutions through a financial incentive. Under this output, the critical funding gaps within the early stage cleantech business journey will be identified. Based on this, a sustainable funding model will be considered and designed for enhanced resource mobilization. By doing so, the project will benefit implementation of CGPI by inducing local municipalities to build its capacity and create job opportunities through private sector engagements.

79. The impact of these fully functional innovative cleantech solutions will be monitored including for the accrued GEB. The monitoring of GHG emission reductions will be aligned with the GCIP approach taken by the GEF approved program GEF ID 10408 as well as national and technology/innovation specific circumstances.

80. In addition, the project will support elaboration of the ideas in the area of circular economy on waste management systems including approaches for supply chain system involving concept of 'Circular Urban Metabolism'. One of the pillars of this approach is a 'closing the loop' where integrated waste management system will not only realize circularity of material use through e.g. material recovery, but also minimize and optimize energy use while maximizing clean energy e.g., by utilizing waste to energy and/or renewable energy technologies.

Activities to be implemented:
Activity 1.2.3 a To design and operate a financial mechanism (an early-stage development fund providing pre-seed and seed funding; or disbursement of grants from the project budget) that would enable de-risking and leveraging of public and private investment, including the process of application for the pre-seed/seed financing or grants.
Activity 1.2.3 b To implement 4 (one per municipality) innovative clean-tech solutions (through investment funds).

Component 2: Cleantech innovation and entrepreneurship ecosystem (CIEE) strengthening and connectivity enhanced

81. The policy framework and institutional sustainability are integral parts of the 'Cleantech innovation and entrepreneurship ecosystem (CIEE)', and also of strategic relevance in ensuring that the outputs and outcomes of the project are contributing to the national priorities and sustained after project closure. This component will aim to institutional capacity in key national ecosystem players, as well as regional and local institutions, to engage in cleantech acceleration and commercialization in Pakistan. The regional hubs will be capacitated for accelerating innovation and networks and connectivity will be created among the CIEE in Pakistan.

Outcome 2.1: The CIEE in Pakistan is strengthened and interconnected

82. The project aims to strengthen the national cleantech innovation ecosystem by enhancing services provided in GCIP Phase 1 in Pakistan. For that purpose, the project will strengthen national CIEE through creation of integrated platform which will, among others, provide technical support to provinces in upgrading the existing institutional framework for facilitating introduction of clean technologies while identifying the gaps and solutions for up taking clean technologies especially with a view to integrating renewable energy, energy efficiencies, and waste management.

2.1.1 National and regional institutions structural and operational capacities are strengthened considering social and gender dimensions so as to promote GEEW

83. A cleantech innovation and entrepreneurship ecosystem (CIEE) assessment will be conducted to analyze the strengths and weaknesses of Pakistan's CIEE including an expert study for identification of relevant players to be engaged and coordinated as well as provision of a framework model under the present institutional and regional institutions to strengthen the ecosystem with a view to establish the regional hubs. This will be instrumental in identifying the capacity building needs and optimal set of interventions nationally. In addition, it will aim to ensure that national, regional, local ecosystem players are supported to understand and contribute in their roles as part of the ecosystem, and will have the capacity to continue promoting national cleantech innovations and enterprises towards commercialization beyond the project.

84. Effective and innovative clean technology ecosystem will be identified and established for priority waste streams in order to guide and support local SMEs and startups on finding solutions for low carbon and circular economy integrating renewable energy, energy efficiencies, and waste management.

85. The technical guidelines and data base such as existing legislative and regulatory, database of innovative clean technologies, practical tools, benchmarking, best practices, value chains database, pool of experts, related list of institutions, etc. will be developed and disseminated. The specific consideration will also be put on potential utilization of digital technologies including robotics, artificial intelligence, internet of things, cloud computing and data analytics, which are increasingly regarded as key enabler for sustainable resource management and utilization including through improving recycling, facilitating the use of recycled by producers, enabling better purchasing and sorting decisions by consumers, and improving waste sourcing options for recyclers.

86. This output will also serve as a structured stakeholder consultation and engagement process at the start of project implementation including consideration of social and gender dimensions

so as to promote gender equality and women's empowerment (GEEW). The CIEE assessment will be updated at least once during the project period as a means to measure impact achieved through project activities on the CIEE of Pakistan.

87. Accordingly, capacity of national and regional institutions and key associations of CIEE to host and support the Cleantech programme will be built. Capacity building activities will be organized concerning technical and administrative needs according to the result of the CIEE assessment. The target will include relevant national and local governmental officials and staffs as well as other market players such as project developers, enterprise executives, startups, government officials, operators, current users of waste, waste collection and management companies etc. on integrated solution.

88. The pool of experts that can act as mentors and judges for the accelerator will be a valuable asset for building a robust national cleantech innovation ecosystem. The capacity building activities including trainings and workshops will produce a critical mass of informed actors that will trigger further clustering of the innovative thinkers as well as to create evidence-based decision making models for the responsible and key post holders in the organizations. Therefore, the project will maintain a community of mentors and judges that can positively influence the cleantech innovation initiatives of Pakistan beyond the scope and timeframe of the project. It will also seek to establish a robust network with national financial institutions and funds to raise awareness and sensitize various stakeholders on the opportunities and risks associated with cleantech products. Based on the stakeholder meetings/feedbacks, studies could be focused on measures to enhance CGPI impact through policy interventions and scale-up/replications.

89. In addition, clean technology and innovation hubs at regional levels will be established and integrated into national platform in alignment with Clean Green Pakistan Index (CGPI) while including all the key stakeholders. CGPI will provide the technical support to provinces in upgrading the existing solid waste management systems and introduction to clean technologies. The platform, by integrating the regional hubs and in alignment with CGPI, will identify the gaps and solutions for taking up clean technologies.

90. These regional hubs are assumed to sustain support to local governments on promoting clean technologies at municipal levels, even after project ends to ensure sustainability. Through the regional hubs, the workshop, showcasing, exhibitions and other related events will be conducted appropriately in the CGPI cities (CGPI ranking criteria will be used) to create ecosystem and networking.

Activities to be implemented:
Activity 2.1.1 a To conduct study & analysis of CIEE in Pakistan including technology gaps and innovation opportunities as well as localization of global framework to Pakistan (e.g. assess and adopt global policy exercises to create baselines assumptions for national project, analyze opportunities and risks based upon case studies and observed best practices, identify policies for pro-innovation and those may have conflicts, elaborate KPIs to track progresses, identify lessons learnt from global framework activities).
Activity 2.1.1 b To identify key stakeholders and establish effective and innovative clean technology ecosystems for guiding and supporting local SMEs and startups on finding solutions for low carbon and circular economy integrating renewable energy, energy efficiencies, and waste management.
Activity 2.1.1 c To develop and disseminate technical guidelines and data base such as existing legislative and regulatory, database of innovative clean technologies, practical tools, benchmarking, best practices, value chains database, pool of experts, related list of institutions, etc.
Activity 2.1.1 d To organize gender responsive multi-stakeholder dialogues and consultations to enhance engagement and develop recommendations for the cleantech innovation and entrepreneurship policy as well as identification and recommendation of best available technologies and cleantech innovation opportunities.
Activity 2.1.1 e To conduct capacity building activities/training workshops of national and regional institutions to support Cleantech programmes.
Activity 2.1.1 f To establish clean technology and innovation hubs at regional levels in line with CGPI (to integrate them into the national platform; to provide technical support to provinces; to identify gaps and solutions for taking up clean technologies).

2.1.2 Policy and regulatory recommendations to enhance the clean technology innovation and entrepreneurship ecosystem are developed at local level under consideration of gender equality

91. Policy and regulation remain as a key determinant that influences cleantech market and investment behavior. Priority will be given to assisting national government in developing policies, regulations and incentives required to promote uptake of cleantech with a view to accelerate innovations in integrating renewable energy, energy efficiencies, and waste management. In addition, policy recommendations on regulatory framework on how to enhance the clean technology innovation and entrepreneurship ecosystem will be developed and presented to local authorities.

92. For the purpose of preparing policy recommendations, multi-stakeholder policy dialogues will be facilitated by MoCC to prompt discussion and collaboration among policy makers and other cleantech ecosystem actors under consideration of gender equality, and to influence the policy that can create a conducive environment for commercialization of cleantech solutions. The dialogues will be captured and reflected in the policy recommendations as necessary and applicable which will be presented to relevant government ministries and agencies.

93. The project will also assist in reviewing the policies and regulations relating to waste management as well as the promotion of clean energy technologies, innovation and entrepreneurship. The review will be done to identify the gaps and recommendations which would result in creating enabling conditions for renewable energy, energy efficiencies, and waste management within the context of material, energy and resources sustainability and circularity.

94. The related policies and regulations will include those promoting the clean energy technologies of the selected categories in SMEs including small scale waste to energy technologies and those governing the protection of intellectual property rights, agreements on sponsorships, roles, responsibilities, and rights of different stakeholders. The review will be guided by the approach applied in the evaluation of Pakistan's national research and innovation as part of the National Solid Municipal and Industrial Waste Management and Utilization Policy.

95. Special efforts will be made to ensure that policies are formulated that would aim at involving women entrepreneurs and mentors in the Cleantech programme. For this purpose, a gender mainstreaming action plan operationalized under Output 3.2.3 will also be taken into account.

96. In addition, based on the experience gained through GCIP Phase 1 in Pakistan as well as the global GCIP framework, best practices for promoting clean technologies will be identified with specific focus on renewable energy, energy efficiencies, and waste management in the context of low carbon and circular economy to identify and establish the synergies.

97. Under the leadership of the MoCC as well as in a process of wide consultations with alumni and relevant national CIEE stakeholders, a roadmap will be prepared to guide a long-term implementation of the policy recommendations, also beyond the project timeline, especially for the effective and sustainable innovative clean technology ecosystem for low carbon and circular economy.

Activities to be implemented:
Activity 2.1.2 a To prepare a gender responsive report on technology gaps, best practices for promoting clean technologies with specific focus on accelerating innovations in integrating renewable energy, energy efficiencies, and waste management in Pakistan.
Activity 2.1.2 b To prepare Pakistan CIEE policy implementation plan for action/road map and recommendation.
Activity 2.1.2 c To conduct consultation and validation meetings with project alumni and relevant national CIEE stakeholders on the action plan/a roadmap and recommendation for guiding a long-term implementation.

Activity 2.1.2 d To develop a best practice handbook based on experiences from the project for guiding procedures on evaluation and appraisal of innovative clean-tech solutions in renewable energy, energy efficiencies, and waste management in the context of low carbon and circular economy.

2.1.3 Linkages, collaboration, and synergies across CIEEs are promoted

98. In order to support the ability of the accelerator alumni and the coaches, judges and mentors, activities to gather, share lessons learned, and realize synergies, an alumni network will be established and actively supported by the PEE. Activities will be executed in conjunction with the web-based knowledge management platform under Output 3.1.3 and establish online tools and the maintenance of the platform for the alumni network to gather, share, and correspond. National networking will further be strengthened and expanded by enabling the Pakistan's alumni network to gather with other stakeholders at national, related regional and international events.

99. Public Private Partnership Forums will be held annually for facilitating ecosystem connectivity towards raising investment and partnership with the public and private sector organizations. These forums such as Pakistan Business Council, Pakistan Innovation Fund, etc. will be approached to hold special sessions to find ways and means to support cleantech innovation activities. An innovative B2G circular economy model is to be elaborated and developed including effective measures for waste management and utilization systems of for solid municipal and industrial waste.

100. At the regional and global levels, Pakistan cleantech SMEs and key ecosystem players will be invited to participate in the events organized under the global GCIP framework, including the global GCIP Forum organized in and for GCIP partner countries around the world. The GCIP Forum will bring selected finalists of the global and national accelerators together for recognition and awards, and for opportunities to be connected with potential partners, customers, technology scouts and investors from around the world. Importantly, the GCIP Forum will also serve as a platform for innovation showcasing, and investment matching, and will be an important annual milestone for networking, advocacy, and knowledge exchange among CIEE players. The GCIP Forum will not be a stand-alone event, but it will be organized on the margins of highly visible global gatherings, such as for example the UNFCCC COP, Cleantech Group forums, etc.

101. In addition, participation at annual events such as the Cleantech Forum Asia, the Asia Clean Energy Summit and the Asia-Pacific Climate Week events will enable the Pakistan's alumni network to enhance dissemination of best practices and enhance their exposure to international investors. Furthermore, regional cooperation will be promoted and formalized between the Pakistan accelerator programme and other GCIP CIEEs in the region (e.g., with Indonesia and Cambodia).

Particular attention will be given to garnering participation of successful women entrepreneurs in the programme to promote gender equality and the empowerment of women through involvement of role models.

Activities to be implemented:
Activity 2.1.3 a To develop relevant tools for CIEE strengthening and connectivity including: stakeholder engagement strategy framework, and cleantech innovation cluster framework; and to support PEE in developing a stakeholder engagement strategy and a cleantech innovation cluster strategy (in consultation with relevant CIEE stakeholders); as well as to conduct two engagement workshops (kick-off and follow-up) to train up to 10 national facilitators.
Activity 2.1.3 b To organize 3 Corporate Public Private Partnership (PPP) forums for raising investment and partnership with private sector organizations for promoting cooperation (in particular bilateral and regional cooperation).
Activity 2.1.3 c To promote cooperation (in particular bilateral and regional cooperation) and facilitate its formalization between Pakistan with other countries` CIEEs in the region.
Complementary activities conducted under GCIP Global which can be linked to this project: ? Tools and guidelines for CIEE strengthening and connectivity ? Workshops on frameworks for capacity building, stakeholder engagement and cluster development ? The Global Cleantech Innovation Index which will enable comparisons of Pakistan?s CIEE with other countries? CIEEs ? Cleantech innovation capacity building, stakeholder engagement and cluster development frameworks ? The Global Forum ? Network for Global Innovation

Outcome 2.2: Gender equality is supported and strengthened by the CIEE in Pakistan

102. The project aims to strengthen gender equality within the Pakistan`s CIEE with the intention to create more opportunities for women entrepreneurs. Drawing upon the successful practice under the GCIP Phase 1, specific efforts to include/empower women entrepreneurs will be implemented with a view to tap underutilized group?s potential to accelerate cleantech innovation while addressing the important proven linkages between achieving environmental sustainability, gender equality, and women? empowerment.

2.2.1 Women?s cleantech hub/network established to support and accelerate the formation of local innovation ecosystems in a more inclusive manner

103. In conjunction with the output 2.1.1, clean technology and innovation platforms will incorporate gender mainstreaming by establishing cleantech hub/network for women with a view to support and accelerate the formation of local innovation ecosystem in inclusive manner. With a view to reflect different needs and opportunities which are relevant to women, research and analysis will be

conducted in conjunction with gender mainstreaming action plan operationalized under Output 3.2.3. The women's hub/chapter/network platform will function as a key vehicle for promoting women's involvement into the project by identifying and facilitating relevant stakeholder groups which are invited to provide their views on implementation of clean technology solutions within the context of material, energy and resources sustainability and circularity.

Activities to be implemented:
Activity 2.2.1 a To conduct needs assessment and opportunities to promote cleantech innovation and entrepreneurship and develop a gender-responsive needs assessment/gap analysis report.
Activity 2.2.1 b To develop constitutions for establishing the women's hub /network platform including vision and mission as well as roles and responsibilities of the hub/network.
Activity 2.2.1 c To conduct stakeholder workshops to discuss and validate the constitutions and enhance networks.
Activity 2.2.1 d To operationalize women's hub/network platform for promoting women's involvement into the project and in the cleantech ecosystem as a whole.

2.2.2 Mentoring programme for women implemented

104. In conjunction with Output 1.1.2, a mentoring programme specifically targeting women will be conducted. The programme will be elaborated to engage women entrepreneurs, associations and gender focal points to participate. Therefore, the design of the programme will take into account the output of a gender- mainstreaming action plan operationalized under Output 3.2.3. Based on the action plan, specific needs of women towards including in cleantech ecosystem in Pakistan will be identified and addressed through the programme. Engagement of women-focused institutions (e.g. women chambers, women universities, etc.) will be pursued.

105. A pool of woman experts with the knowledge and connections to support cleantech innovations towards commercialization will be developed with a view to further enhance sustainability of the cleantech ecosystem in Pakistan by addressing the inclusiveness of the action.

Activities to be implemented:
Activity 2.2.2 a To develop and validate mentoring programme specifically targeting women for better engaging women entrepreneurs, associations and gender focal points.
Activity 2.2.2 b To conduct the mentoring programme specifically targeting women.
Activity 2.2.2 c To prepare and operationalize a pool of woman experts to support cleantech innovations.

2.2.3 Campaign conducted to raise awareness on roles of women in CIEE

106. In order to promote gender dimension of the project, campaign will be conducted to enhance awareness on women role models in the cleantech ecosystem. This will be based upon the successful practices of GCIP Phase 1 in Pakistan as well as the global programme where several existing role models were featured. The campaign will include, among others: development of targeted promotional material e.g. documentation, print, video and other electronic media; success stories through social media; etc.

Activities to be implemented:
Activity 2.2.3 a To develop targeted promotional material e.g. documentation, print, video and other electronic media; preparation and dissemination of success stories through social media; etc. and conduct outreach activities.
Activity 2.2.3 b To organize a national awareness campaign to promote gender dimension of the project and women role models in the cleantech ecosystem.
Complementary activities conducted under GCIP Global which can be linked to this project:
? Disseminate international best practices concerning policies and CIEE building, document lessons learned from GCIP countries, and develop gender and youth mainstreaming strategies and action plans.
? Information and data under GCIP communication and promotional activities

Component 3: Programme coordination, monitoring and coherence

107. The activities under Component 3 are aimed at ensuring that the achievements of the Pakistan accelerator programme are alignment and coherent with other GCIP country projects under the global GCIP framework. To this purpose, the project executing entity of Pakistan accelerator programme is expected to collaborate with the GCIP Global through the global GCIP project executing entities (PFAN, NGIN, CTG, UNIDO), as well as to contribute to information gathering, knowledge sharing, and dissemination efforts.

Outcome 3.1: Efficiency and sustainability of the CIEE in Pakistan is ensured

108. The Pakistan accelerator programme will be implemented in coherence with the global GCIP framework. As such, it will link the CIEE of Pakistan to the global network of CIEEs in other GCIP partner countries, as well as it will receive support from the GCIP Global programme. In alignment with the under the global GCIP framework, efforts are streamlined and reflected in common impacts (cumulative GHG emission reductions, investment mobilized, and other environmental and socio-economic impacts achieved). Therefore, mutual benefits will be created between the GCIP global framework and individual country's efforts based on sound coordination and coherence mechanisms among the countries involved.

3.1.1 The internal guidelines for project management teams are adapted for Pakistan's country context and implemented

109. To maintain coherence of the approach across multiple countries, the internal guidelines for project management teams will be developed and disseminated by UNIDO, including 1) operational guidelines for the Project Management Unit (PMU) to be established within MoCC, 2) a sustainability and exit strategy framework to be developed in the first year of project implementation, and subsequently shared with the national PEEs for review and adaptation, i.e. for development of the sustainability and exit strategy. The operational guidelines will cover: a general introduction to the framework, including explanation of organizational roles; description of communication channels between Pakistan and the GCIP Global; information on risk management and data protection; a list of foreseen support activities to be available from the GCIP Global; introduction to the IT management of the web platform; environmental/social management principles, as well as gender mainstreaming and ESSPP principles to be applied by the PMU in the course of project management. In addition, annual meetings for national PEE representatives will be organized to offer a platform for training and exchange of experiences/insights related to the implementation of the internal guidelines.

Activities to be implemented:
Activity 3.1.1 a To develop and implement internal operational guidelines for project management teams integrating standardized methodologies and other best practices from the global programme.
Activity 3.1.1 b To develop a sustainability and exit strategy.
Complementary activities provided under GCIP Global which can be linked to this project: ? UNIDO to develop and disseminate internal guidelines for project management teams, including a) operational guidelines for the PMU to be established within PEE, b) a sustainability and exit strategy framework. ? UNIDO to organize annual meetings for GCIP global program to provide a platform for training and exchange of experiences/insights. ? UNIDO to provide online trainings to PEE employees and their Project Management Unit (PMU), with focus on the operational and managerial efficiency and effectiveness required to successfully execute the project in Pakistan.

3.1.2 Programme-level knowledge management, communication and advocacy strategy is adapted for Pakistan's country context and implemented

110. To facilitate this exchange, a knowledge management, communication, and advocacy strategy framework will be developed by UNIDO with a particular focus on: 1) Promoting visibility of accelerator programme and communicating its impacts achieved at national and global levels aligned

with GCIP Global framework; 2) Increasing awareness of the catalytic role of cleantech in addressing climate change and environmental issues; 3) Showcasing cleantech innovations from the alumni and enhancing their visibility and credibility.

111. The knowledge management, communication, and advocacy strategy framework will be shared with the national executing entity for review and adaptation to the needs of the country. As a result, the knowledge management, communication, and advocacy strategy of the Pakistan accelerator programme will be developed.

112. In line with the knowledge management, communication, and advocacy strategy framework, the national executing entity is expected to provide briefing sessions, press releases, social media presence and advertising, all of which will be targeted at different audience groups, with a special attention to the needs of women and youth. These activities will be supported by partners, including local entrepreneurs, celebrities, alumni, relevant service providers (e.g. patent attorneys, accountants), university departments and societies (e.g. engineering, entrepreneurship and energy clubs), organizations that are in frequent contact with cleantech entrepreneurs (e.g. trade groups, entrepreneur groups), and investors (e.g. venture capital funds, angel networks).

Activities to be implemented:
Activity 3.1.2 a To adapt knowledge management, advocacy and communication strategy for Pakistan from best practice and lessons learned from Global GCIP.
Activity 3.1.2 b To conduct all communication and promotional activities in line with the guidelines including national and regional cleantech stakeholder meetings, public-private partnership forums, women targeted cleantech events, youth targeted cleantech events, press releases, social media activity, attendance at events and advertising.
Activity 3.1.2 c To capture knowledge gathered by the Pakistan project through policy briefs, impact reports, brochures webinars, and other types of promotional materials, and to disseminate this knowledge through briefing, press releases, social media presence and advertising, etc. (in line with the knowledge management, communication, and advocacy strategy framework).
Complementary activities provided under GCIP Global which can be linked to this project: ? UNIDO to develop a knowledge management, communication, and advocacy strategy framework. ? UNIDO to seek partnerships that would support implementation of the knowledge management, communication, and advocacy strategy (e.g., with local entrepreneurs, celebrities, GCIP alumni, relevant service providers, university departments and societies, organizations that are in frequent contact with cleantech entrepreneurs, investors, etc.)

3.1.3 The web platform is operated for the project to maintain the cleantech community

113. A web based knowledge platform will be established and maintained which will act a one-point solution for all the information as well as progress of different cleantech projects. This platform will act as the cluster helping desk on clean technologies, to make a robust interacting and interactive vehicle for all actors to share the information on technical resources and financial/investment opportunities for cleantech innovation with the following key functions:

- For internal management and operations. Guidelines, tools and other knowledge products developed will be disseminated through the web platform.
- For execution of annual accelerators to be used from the beginning of the accelerator cycle (e.g. call for application and receipt of applications), and during the accelerator (e.g. webinars, submission of assignments, etc.)
- For connecting national ecosystem players. All alumni enterprises, as well as certified mentors and coaches will be invited to join the online community as a networking tool. Profiles and impact potential of each supported cleantech solution will be showcased through the web platform. Therefore, it will serve as a gateway for potential investors and customers to collect information on alumni enterprises.

114. The web platform will capture policy briefs, impact reports, brochures, webinars, and other types of promotional materials Information will be disseminated through events, social media channels, trainings, workshops, etc. as appropriate.

115. In addition, the website will be connected to the global web platform to connect Pakistan to the broader cleantech community globally. The web platform for the project will be designed and developed in conjunction with the guidelines and templates aligned with the GCIP global framework, to reap benefits of the plug-and-play approach of GCIP and to maximize synergies and efficiencies of linking with other GCIP partner countries.

Activities to be implemented:
Activity 3.1.3 a To establish online tools and maintain the web-based knowledge platform to act as one-point solution for all cleantech related information for the alumni network.
Activity 3.1.3 b To link the Pakistan platform with the Global GCIP Platform and to create and maintain a section of Pakistan on the global GCIP web platform.
Complementary activities provided under GCIP Global which can be linked to this project: ? UNIDO to provide international GCIP web platform with country sections, and programmatic level information, related guidelines, templates and online trainings for its maintenance and updating.

Outcome 3.2: Impacts and progress of all the project activities and indicators are adequately monitored and reported

116. The monitoring of project impacts and progress is essential for the adequate and timely delivery of results. This project component covers project monitoring and oversight by UNIDO in close coordination other relevant stakeholders. Initial activities under this component include the definition of progress and impact indicators and the design of a detailed monitoring plan and methodology.

3.2.1 National impact monitoring established in coordination with MoCC

117. The project will incorporate general approaches hired under the global GCIP framework project (10408) where the methodology for impact assessment will be developed. The methodology will ensure a shared understanding of cleantech associated terminology amongst all involved stakeholders and will allow for extrapolation and comparison. It will also ensure that the project's impact is clearly understood and can be used for programme and management decision making. As a minimum, tracking will include global environmental benefits (GEBs), energy saved, additional renewable capacity installed, job creation and investment leveraged. Data will be gender- disaggregated where appropriate and data on youth participation will also be recorded. This common methodology will be used to monitor the project impact in Pakistan.

118. PEE and its partners will receive online training on the use of the methodology from UNIDO and subsequently they will train all semi-finalists across the programme (as part of the Accelerators) to provide GEB estimations of their innovations, using the training module developed. This will further allow the programme to show impact on a global level.

119. Dedicated resources will be assigned to track and monitor the business growth, social and environmental impact of the alumni enterprises in Pakistan. Alumni will be expected to periodically provide relevant data to the national organization for a period into the future, when the impacts will be primarily felt, and can be quantified and verified. The data will be used to create a Pakistan project impact report and content for promotion and advocacy purposes (news articles, social media posts, brochure and leaflets, videos etc.) that are tailored to diverse types of audiences (investors, national government agencies, donors, students). This will benefit the alumni enterprises by providing increased credibility and visibility. Monitoring data will be shared with the global GCIP framework project (10408), to consider consolidated impact of cleantech accelerator approaches as a global initiative.

Activities to be implemented:
Activity 3.2.1 a To review the methodology for impact assessment (including the accompanying tools) under the Global GCIP program and to participate in the training on its use provided by UNIDO.
Activity 3.2.1 b To validate and consolidate the Pakistan enterprise impact data, and to develop and publish a project impact report.

3.2.2 Project effectively monitored including monitoring and reporting on the ESMP and risks

120. The monitoring of project progress is essential for the adequate and timely delivery of results. A detailed monitoring plan for tracking and reporting on project time-bound milestones will be prepared by UNIDO in collaboration with PEE and project partners at the beginning of project implementation and then periodically updated. This will include capacity needs assessment and identification of possible areas of improvement of NEE for effective and efficient execution of the project. Based on the identified gaps UNIDO will provide capacity building activities (e.g. providing guiding materials as well as on-site and/or remote trainings) to ensure national execution. NEE will prepare progress review reports every six months. Environmental and Social Safeguards Policy and Procedures, global environmental benefits (GEBs), energy saved and increase in installed renewable energy capacity, job creation, as well as gender dimensions and baselines for gender related targets (to be outlined in and aligned with the Gender Mainstreaming Action Plan operationalized under Output 3.2.3), will be captured appropriately in the M&E plan and reported on in the progress review reports and PIRs, and in the collection and assessment of relevant data. Further details of the M&E are provided, along with a budget, in the Section of 'Monitoring and Evaluation' below.

Activities to be implemented:
Activity 3.2.2 a To prepare and operationalize M&E Plan for tracking and reporting on project time-bound milestones.
Activity 3.2.2 b To prepare PIRs including the status of operationalization of the gender mainstreaming action plan.
Activity 3.2.2 c To execute annual financial and technical audits.

3.2.3 Gender mainstreaming action plan operationalized, monitored and gendered impact evaluated

121. In order to mainstream the gender dimensions, detailed gender analysis including gap analysis was conducted during the PPG phase based on which a detailed gender action plan will be developed and operationalized throughout the project implementation to support project contribution for enhancing gender equality and women's empowerment (GEEW). Efforts will be made to ensure that voices of both women and men are considered when discussions are held. As necessary, gender-disaggregated focus group meetings will be organized so that both men and women can lead, shape, participate in, contribute to and benefit from the project through mutual knowledge sharing. The operationalization of the action plan will be monitored and evaluated according to data and indicators incorporating gender dimensions including sex-disaggregated data collection, performing gender analysis, etc.

Activities to be implemented:
Activity 3.2.3 a To conduct elaboration of detailed gender assessment, including gap analysis and preparation of a gender mainstreaming action plan.
Activity 3.2.3 b To operationalize the gender mainstreaming action plan including evaluation on GEEW through the project intervention-bound milestones.

3.2.4 External mid-term review and independent terminal evaluation conducted

122. An external mid-term review will be conducted halfway through the project implementation period. An independent terminal evaluation will be conducted six months prior to the terminal review meeting. The final evaluation will look at the impact and sustainability of results, including the contribution to the capacity development and the achievement of global environmental benefits. An independent terminal evaluation will also provide recommendations for follow-up activities.

123. The project monitoring will support MoCC in evaluating the performance and progress of cleantech accelerator competition itself on the project level and to enhance the project impact during scale-up/replications activities.

Activities to be implemented:
Activity 3.2.4 a Preparation of external MTR.
Activity 3.2.4 b Preparation of terminal evaluation.
Complementary activities provided under GCIP Global which can be linked to this project:
? UNIDO to develop and provide the GCIP methodologies (and the related online training to all SC) for impact calculation and associated tools for its operationalization.
? UNIDO to provide the GCIP M&E framework.

4) Alignment with GEF focal area and/or Impact Program strategies

124. This project is firmly aligned with the objectives of the GEF-7 Climate Change Focal Area Strategy CCM 1-4, ?Promoting innovation and technology transfer for sustainable energy breakthrough?. This project seeks to foster private sector engagement in accelerating the uptake and investments in innovative cleantech solutions at scale. The project prioritizes cleantech innovations in the domains that are fully aligned with GEF 7 priorities i.e., electric drive technologies and electric mobility, accelerating energy efficiency, decentralized renewable energy power with energy storage, and cleantech innovations related sustainable cities and sustainable food systems. Therefore, the project is a transversal intervention that supports all priorities of GEF 7's Climate change focal area.

125. The proposed project supports cleantech innovation and entrepreneurship in Pakistan so that they commercialize and scale-up their operations thereby delivering climate and sustainable solutions that reduce GHG emissions while accruing other benefits. By fostering commercially viable solutions, the project will have lasting positive effects on the global environment, as well as on development of a dynamic and vibrant markets for clean technologies creating new industries and green jobs locally and globally. This will be done through provision of much needed and best available catalytic technical assistance to cleantech SMEs. The project will ultimately promote establishment of sustainable innovation ecosystems for small and medium-scale enterprises and startups in the country.

126. By strengthening partnerships with the private sector interested in investing in clean technologies and contributing towards upscaling missed opportunities for green economic growth and green jobs, the project seeks to address existing barriers for entrepreneurs to fully commercialize their innovative products and exploit untapped potential especially in promoting clean technologies within the context of material, energy and resources sustainability and circularity. The potential scope of interventions will include waste recovery and waste to energy in major cities of Pakistan as well as the sustainable use of natural resources while reducing GHG emissions.

5) Incremental/additional cost reasoning and expected contributions from the baseline, the GEFTF, LDCF, SCCF, and co-financing

127. The private sector is key to the creation and expansion of the market for cleantech products and services, achieving GEBs, generating jobs, and supporting economic growth. In Pakistan, a clear government prioritization is given to promote innovations and start-ups/SMEs and to put the necessary policies and strategies in place. However, significant barriers still exist for cleantech enterprises, leading to their very low success rate. In essence, the CIEE in Pakistan is weak, and if the GEF funding is not provided, it is very likely that cleantech innovations will not be adequately developed in Pakistan in the near future. This will result in many unrealized opportunities in reducing GHG emissions, in strengthening partnerships with the private sector keen on investing in cleantech, in commercialization of cleantech enterprises, and ultimately in missed momentum for green economic growth and jobs.

128. This project aims to go beyond the current baseline. As discussed in the baseline section includes SMEs with breakthrough cleantech innovations in developing markets having a very low success rate due to lack of key skills and capacities to transform their innovations into viable, scalable, and fast-growing enterprises. Furthermore, the innovation and entrepreneurship ecosystem Pakistan can be hostile and initiatives to support these SMEs remain disjointed and uncoordinated. This project has

been designed to learn from GCIP supported under GEF 5 & 6, to create opportunities for greater impact through providing greater commercialization support and investment facilitation services to expand opportunities for market expansion. This project is designed to provide catalytic and effective interventions that galvanize private sector interest and investments in the cleantech innovation and entrepreneurship space and also strengthen the national cleantech innovation and entrepreneurship ecosystem and connect it at a global level. These interventions, create a critical mass of interest in the cleantech sector, drive the transformation cleantech markets and result in more cleantech SMEs contributing to climate change mitigation and low-emission development.

129. Building on the baseline, including GCIP under GEF 5 & 6, the project will:

- a) adapt and institutionalize methodologies, guidelines, tools and training systems for the accelerator, advanced accelerator, and post-accelerator support and for mentors, judges, trainers to be trained and certified in Pakistan. This will ensure that the country will continue to run the accelerators long after the GEF project has ended.
- b) provide post acceleration support and investment facilitation services so that cleantech innovators from this will be able to commercialize their innovation and mobilize funding for scaling-up.
- c) increase focus on developing policy and regulations on cleantech innovations at national level
- d) participate in global events around the global competition-based accelerator such as dialogues, investor networks to promote networking and learning
- e) create bigger market opportunities for cleantech innovators to expand their businesses and hence increase their success rates and reduction of more GHG emissions.

130. Furthermore, the link to the UNIDO/GEF program 10408, Pakistan's cleantech ecosystem will benefit from cross-border connectivity and synergies with ecosystems of other GCIP partner countries, leading to bigger market opportunities for Pakistani cleantech SMEs to expand their businesses and hence increase their success rates and results in greater GHG emission mitigation efforts. One of the many incremental services that the project provides (through its linkages to the global framework) is access to global investors. As an estimate, evidence from GCIP under GEF 5& 6 shows that some GCIP alumni were able to mobilize global funding and expand their operations. From Turkey, Episome Biotech (2017 semi-finalist) raised ?1.7million in investment through 3 rounds from Diffusion Capital Partners based in The Netherlands; Seyisco raised USD 100,000 and B-Preg and Solter Vision also raised foreign capital. Actual figures are not yet available as to the level of increased GHG emission reductions achieved as a result of the international funding, but the global funding allowed B-Preg (bio-composite parcel shelves) to expand internationally and they now estimate annual

emission reductions of 4180 tCO₂e/year and growing. Similarly, Solter Vision (remote PV plant analysis) now estimates annual emission reductions of 15,300 tCO₂/yr and Seyisco (efficient pot hole filling) already estimates 826k tCO₂e per year saved. Episome (biotech) has the potential to reduce GHG emissions by 40 million tons/year once expanded globally. Therefore, SMEs with innovative cleantech solution can rapidly expand their businesses by accessing international financing opportunities and simultaneously rapidly expand global environmental benefits.

131. The GEF funding of 1.77 million US\$ is estimated to catalyze co-financing of 10 million US\$ from both public and private sectors which are interested in promoting clean technologies within the context of material, energy and resources sustainability and circularity, which contribute to GHG emission reductions. The project activities are regarded as opportunities for growth in the sector. The GEF resources will be used to bring best practices and international expertise to capacity development efforts. The project will support at least 85 entrepreneurs among which at least 12 solutions will receive investment facilitation services, so that they reach financial closure and market expansion; none of which would be achieved without the project. In addition, through national ecosystem strengthening activities, the project will create basis for enhancing awareness and visibility of business and investment opportunities in the cleantech sector, thereby prompting further interest and financial flows.

132. The MoCC is responsible for fostering implementation of country's climate change mitigation actions. In addition, the project will work with already existing funds, institutions and programme as mentioned in the baseline section and develop targeted capacity building activities to which GEF will bring experiences from cases from other regions. By channeling with the regional hubs through NICs the project will enhance outreach of its activities throughout the country including women and youth.

133. Pakistan is requesting GEF funding to help address the barriers to cleantech innovation, which will lead to positive socio-economic (economic growth, green job creation, attraction of foreign and domestic investment, etc.) and environmental (contribution to the reduction of GHG emissions and to global environmental sustainability, etc.) impacts. What is more, these impacts will be amplified through opportunities for coordination and connectivity with other GCIP partner countries, and thus for global cleantech innovation scale-up.

134. Pakistan requires further incremental technical and financial assistance from GEF in strengthening the local innovation ecosystems through establishment of local hubs in selected regions in Pakistan. Targeted support will aim at strengthening the local institutional capacities, supporting the formation of local innovation ecosystems around priority sectors and industries related to renewable energy, energy efficiencies, and waste management, promoting innovative cleantech solutions for long

lasting positive effects on environment and socio-economic benefits by enhancing economic green growth.

135. The GEF grant will stimulate the formation of local innovation ecosystems and will leverage additional sources of funding by private sector sponsorship, existing institutional resources, and funding mechanisms. The identification of local cleantech solutions through the operation of regional accelerator programs will provide tailored services for local environmental benefits with global GHG emission savings benefits. These locally identified solutions will be scaled across Pakistan through the national platform and linked to global markets through the Global Cleantech Platform to leverage allocated funding sources and maximize global environmental and climate mitigation benefits. This project will seek to catalyze systemic transformation in the cleantech sector by providing post-acceleration support services so that more cleantech SMEs commercialize their innovation and scale-up their operations. By employing an ecosystems-based approach, the project will stimulate cleantech ecosystems at provincial levels that will provide support to cleantech SMEs in the long-term. The project will build capacity of regional institutions and train a cadre of cleantech experts who will continue to support cleantech start-ups.

136. If GEF funding is not provided, it is very likely that clean technology innovations for clean technology solutions will not be adequately developed in Pakistan (or only at a very low levels). Cleantech enterprises will continue to lack key skills on transforming their innovations into enterprises. Furthermore, investment will not be accrued for the cleantech enterprises for expanding their businesses. This will result in the loss of opportunities for green growth in the country where GHG emissions will continue to increase due to the economic development and increasing population is yet to be expected.

6) Global environmental benefits (GEFTF) and/or adaptation benefits (LDCF/SCCF)

137. The long-term lifetime of the cleantech innovations introduced in the market and a strengthened and enlarged low-carbon culture will be reflected in multiple environmental benefits including, primarily, GHG emission reductions. The environmental benefits achieved through the implementation of this project will be measured and quantified on the basis of the innovations marketed and their uptake. Given the nature of the project, the low-carbon products developed and commercialized will achieve environmental benefits beyond the project life and scope.

i) Background on GCIP's target for avoided GHG emission for the GCIP Framework (GEF ID:10408) to which the proposed project will be linked with

138. In order to ensure that GCIP supports innovative cleantech solutions with high impact potential, and delivery of GEBs at the programme level, a target approach is applied. To achieve cost effectiveness of GEF funding for GEBs, a value of 5 to 10USD/tCO₂e avoided is targeted (corresponding to an overall cost per ton at programme level of USD38-76/tCO₂e). This means that, with GEF funding of almost USD 18 million, GCIP Framework aims to deliver between 1.8 million and 3.6 million ton CO₂e by 2030. As 10 countries will be a part of the overall GCIP Framework, almost 1000 semi-finalists are expected to be supported through the accelerators in all countries across the programme. Therefore, the target for the minimum projected potential of avoided GHG emissions per enterprise is between 1,800 to 3,600 tCO₂e by 2030.

139. To put this minimum target approach in context, a review of previous GCIP alumni GHG reductions was carried out. The review, looking at three sources of information, shows that the proposed avoided emission target is plausible and quite conservative. It also demonstrates the huge likely variety of emission reductions due to the different country contexts and technology innovations. The review also shows that where an innovation has real market potential, the avoided GHG emissions are very significant and that the GCIP approach has experience in successfully identifying and accelerating such companies.

a. Firstly, a survey carried out by UNIDO of 14 of its GCIP alumni showed that these companies had already generated 600,000 tCO₂e savings by 2017 and projected to generate over 4.8 million tons of GHG emission savings by 2020 (or 340,000 tCO₂e/year per company).

b. Secondly, the Independent Evaluation Office (IEO) report of eight GCIP projects included a sample of alumni in its annex with projected avoided emissions between zero (either they had not been estimated yet or the cleantech was not related to CCM) and 5 million tCO₂e per year. A median for emission reductions that were reported (which occurred only for a small proportion of the total alumni, namely 60 out of 900) is 88 tCO₂ per year. If alumni with estimated reduction are included (34) in the calculations, then the median increases to 12,200 tCO₂/year with the interquartile range from 350 tCO₂ to 81,000 tCO₂/year.

c. Thirdly, the Mission Innovation Framework for Assessing Avoided Emissions, in which a number of GCIP alumni (selected as part of Mission Innovation's 100 innovative clean energy solutions in 2019) were included, shows for example that Atomberg Technologies (which manufactures an energy efficient fan) is estimated to avoid 5 million tCO₂e/year by 2030. In turn, BEAD, an energy management AI optimization enterprise, is estimated to avoid 319 million tCO₂e/year by 2030. These two companies were also covered by the IEO report mentioned above, but Atomberg had not provided an estimate (so was assumed zero) and BEAD's estimate was 5 million tCO₂e/year

140. A ten-year horizon was selected for estimating the GHG emission savings. However, assessing a priori the GHG reduction potential of cleantech solutions (products, services) to be identified through GCIP has proven to be difficult, as by definition GCIP encourages open innovation, and the types and categories of cleantech products and services that will be supported can only be determined after the selection of semi-finalists as part of the GCIP Accelerators. Also, expected difficulties include attribution of the incremental GEBs of the cleantech solutions to the GCIP support. However, the design of past GCIP assumed abatement costs (for GEF funding) of between 0.68 USD/ton CO₂e in Turkey to 29.77 USD/ton CO₂e in Armenia. As the targets were exceeded in those countries, and as the proposed benchmarks are within the same range, they are considered realistic and conservative.

141. The target of between 5 to 10 USD/tCO₂e avoided, that is set for the GCIP Framework, translates into avoided GHG emissions per enterprise of between 1,800 to 3,600 tCO₂e. The provided target range will enable the GCIP country child projects to support a mix of technologies with different CO₂ emission reduction potentials, and in particular allow innovations into the GCIP Accelerators that a) have a relatively low CO₂ reduction potential, but a considerable demand and market growth potential (that can lead to amplification of GEBs), as well as b) that create multiple benefits (including socio-economic, such as job creation, gender mainstreaming, etc.). In addition, indirect GEBs facilitated through the CIEE strengthening are also expected. In particular, indirect GHG emission reductions could result from: strengthened capacity of institutions and human resources to support commercialization and uptake of cleantech solutions at large; investments mobilized for cleantech solutions at large due to reduced risk perceptions; as well as longer-term emission reductions from behavioral change. An estimated factor of 5 is chosen to provide a projection for indirect GEBs. Where possible, efforts will be made to verify the indirect GHG emission reductions achieved at national and global levels through terminal evaluations.

142. This target-based approach for the estimation of GHG emission reductions will be applied across all 10 child projects under the GCIP Framework (GEF ID: 10408). The approach is also shared among the other independent stand-alone projects which will be linked to the global framework to keep consistency. A GCIP methodology for the calculation and monitoring of GHG reduction potential will be developed by the GCIP Global (GEF ID: 10461) in the first year of the project implementation, as well as it will be shared with all GCIP partner countries to enable coherent approach. In order to ensure that the desired GEBs are cumulatively delivered by the GCIP Framework, appropriate measures will be applied across the programme. They will entail placing a benchmark for the estimated GEB to be delivered by the cleantech innovations at the GCIP Accelerator application stage, so that only solutions with sufficient impact potential are supported. If the projected GHG emission reduction does not meet the minimum requirement set, the innovation will not be accepted into the GCIP Accelerators.

ii) Estimation of Global Environmental Benefits of Pakistan Accelerator project (GEF ID: 10885)

143. The three cycles of the Pakistan multi-track accelerators are expected to support at least 85 enterprises (semi-finalists). Using the above benchmark avoided direct GHG emissions over a ten-year horizon are estimated at between 153,000 to 306,000 tCO₂e and between 765,000 tCO₂e to 1,530,000 tCO₂e of indirect GHG emission savings are estimated (based on an estimated factor of 5). The lower range has been used as input to the GEF corporate core GHG indicator target (indicator 6) as a conservative estimation.

144. To facilitate the achievement of GEBs, there will be awareness raising and promotional activities during the call for applications to the Pakistan Accelerators, and the applicants will also be supported in calculating the GHG emission reduction potential of their innovations. Additional training on GHG monitoring and calculation will be provided to all semi-finalists. In addition to the substantial CO₂ emissions mitigation, it is expected that other environmental co-benefits will result from this project, in particular because of its focus on a circular economy. These are likely to include reduction in waste in the environment and reductions in material use. In addition environmental co-benefits will include a reduction in air pollutants (e.g., NO_x, SO_x, PM and CO) and improved water quality. Examples from previous GCIP alumni include: waste-to-energy technology which diverts waste from landfill; a hot water (geyser) sleeve that helps households to conserve, reuse and improve water heating; a solar veranda that not only provides solar heat but also collects rain water so reducing need for water; a recyclable roof tile; biodegradable sanitary pads; and an artificial wetland providing a natural, sustainable way to improve water quality in poor communities. The environmental co-benefits from this GCIP SA will be monitored and reported (e.g. ton of waste diverted from landfill, liters of water saved) along with renewable energy capacity installed and energy savings.

7) Innovation, sustainability and potential for scaling up

Innovation:

145. The project is unique in its approach of fostering the expansion of SMEs and startups into cleantech products and markets. From the assessment of the current policy framework and the identification of innovative technologies to their development and commercialization, the project supports entrepreneurs across the whole innovation value chain to develop demand-driven and investment-ready climate solutions integrating renewable energy, energy efficiencies, and waste management within the context of material, energy and resources sustainability and circularity, that will have a real impact in Pakistan and for global markets. In contrast to other accelerators and incubator programmes, the project not only promotes innovation per se but also uses an innovative approach that is cross-sectoral and multi-tiered to strengthen the national innovation and entrepreneurship ecosystem by building capacity in national institutions, creating strong linkages between the most relevant ecosystem players and by raising awareness among them.

Sustainability:

146. The impact pathways of the project are carefully selected to address key barriers and galvanize continued actions by ecosystem players so as to achieve transformation impact in terms of GHG emissions reductions and job and wealth creation in Pakistan. The mainstreaming of cleantech innovations that will continue beyond this project will ultimately result in the decoupling of economic growth from GHG emission increase.

147. The sustainability of this project is ensured by involving public and private sector institutions and by building their capacity to make sure that the activities under the different components can be carried out by them after project closure.

148. Besides, the comprehensive trainings conducted for participants, judges and mentors will create a critical mass of technicians with sound business skills in different regions of the country. This knowledge can be easily transferred to create a virtuous cycle of enhancing the cleantech ecosystem to identify and support innovations through business growth and towards commercialization.

149. Knowledge management is seen as a key enabler for ensuring sustainability of the project. Among others, the project will create opportunities for strengthening the knowledge sharing through organization of series of trainings, workshops, roundtables, expert group meetings, printing materials and through the Cleantech platform. These activities are conducted in conjunction with a set of outreach activities to enhance their impact within the country and beyond. Moreover, the project will develop a knowledge management, advocacy and communication strategy. The strategy is to support the creation of strong networks and the effective communication channels among the cleantech ecosystem actors, and their sustained interactions and networking post project closure.

150. The project will closely work with the proposed executing partner and associated agencies to strengthen its institutional capacity in order to effectively absorb the knowledge and technical capacity created by created by the project activities.

151. Strengthening the capacity within the project executing entity (PEE) to conduct the national accelerator with public and private funding post project closure will ensure sustainability of the project's impacts, as shown through previous GCIP partner countries. Sustainability and exit strategies will be provided by GCIP as a template and guideline, which will then be reviewed and adapted for Pakistan, learning from previous and existing relevant activities. The sustainability of the project is reinforced by the following:

- During and post the Pakistan accelerator the cleantech SMEs will be guided through the development process of the concepts to ensure that their innovative concepts are sustainable and will have a real impact on the Pakistani market. To ensure that this intensive mentoring approach is sustained beyond the project implementation period, the project will conduct capacity building activities for the national counterpart institutions, mentors and judges in the country.
- Through investment facilitation, cleantech SMEs will be able to mobilize funding and investments from angels, impact investors and other sources of finance.
-
- By generating and using methodologies, guidelines, tools and training materials for competition-based accelerators, the project will ensure that institutions and industry associations engaged in running the accelerators will have adequate resource materials to use in running such accelerators beyond the life of the programme.
-
- By linking cleantech innovation ecosystems across countries, the project will create a business environment and incentives for cleantech SMEs, policymakers, and industry associations to work across countries. This will be sustained through these stakeholders investing their own resources in these activities beyond the life of the programme.
-
- Through the establishment of a web platform, where cleantech SMEs alumni and stakeholders will continue to update and use as a market place where global technology innovation ecosystem players will continue to post innovations, investors will continue to scout for new innovations, policy makers and regulators will continue to use to learn about policy and regulatory innovations. In fact, the web platform, will catalyze continued connectivity of innovation ecosystems from different countries.
- The management of knowledge generated from the project in terms of fact sheets, guidebooks, tools and reports on accelerating cleantech innovation. This will ensure that stakeholders will be provided with an continuous access to these tools and apply them to sustain the project approach.
-
- Strengthening national institutional capacity to ensure that the skills and experience are there to sustain the cleantech innovation platforms and run the accelerators beyond the GEF funding.
-
- Supporting the maintenance of standards in terms of accelerator processes and practices so as to ensure adherence to the highest quality of norms. Such norms will guarantee that the project will transform to a recognized brand, securing long-term sustainability.
-
- Development of long-term partnerships with the private sector which will form part of national exit strategy and guarantee continued funding of the programme.

Scaling Up:

152. While the Pakistan cleantech project is not a GCIP child project per se, it is implemented in alignment with the GCIP child projects under the global GCIP Framework (GEF ID: 10408). This will enable the country project to bear a considerable potential for local and regional expansion in terms of cooperation and networking, as well as sectoral expansion through close relationship with the GCIP child project countries in the region and across the globe. The stakeholders involved in the Pakistan accelerator programme are enabled to form international partnerships and to enter foreign markets. Through continuous expansion of countries connected, these opportunities are continuously augmenting.

153. The project will enhance the traditional cleantech accelerator approach according to identified limitations by including post-competition services like investment facilitation and

commercialization services as well as by expanding to challenge based competitions, focusing on categories with higher environmental impact including sustainable cities, low-carbon energy systems while building up of resilience against emerging challenges such as COVID-19.

154. The commercialization services aim at complementing the training provided during the acceleration process to maximize the ability of each supported alumni to reach the commercialization stage. By providing support to alumni and other eligible cleantech innovators, the project is expected to effectively increase job creation, competitiveness, wealth generation and GHG emission reductions. It is also expected that the project will serve as a catalytic force to advance the cleantech innovation and entrepreneurship ecosystem in Pakistan as well as to coordinate and maximize the synergies with national and international relevant players.

155. The private sector, in their attempts to address existing energy challenges, will play an instrumental role in driving and sustaining innovation integrating renewable energy, energy efficiencies, and waste management. The project approach is premised on mobilizing economic interest by stakeholders who will sustain the interventions of the project beyond the life of the project.

156. In addition, the Pakistan cleantech project is expected to set building blocks for the country to advance its actions, under the current GEF replenishment cycle, especially in terms of integrating circularity concept into the policies, planning and actions which can deliver multiple environmental benefits across climate, biodiversity and chemicals and waste^[50].

[1] IPCC (2018) Global Warming of 1.5°C: IPCC special report on the impacts of global warming, available at <http://www.ipcc.ch/report/sr15/>

[2] UNFCCC (2018) Pakistan's Second National Communication on Climate Change, available at <https://unfccc.int/documents/199292>

[3] ADB (2017) Climate Change Profile of Pakistan, available at <https://www.adb.org/publications/climate-change-profile-pakistan>

[4] UNFCCC (2019) Pakistan Second National Communication on Climate Change, available at <https://unfccc.int/documents/199292>

- [6] WBG (2019) Population of Pakistan, available at <https://data.worldbank.org/indicator/SP.POP.TOTL?end=2019&locations=PK&start=1960&view=chart>
- [7] Ashraf et al. (2018) Solid waste management practices under public and private sector in Lahore, Pakistan.
- [8] WBG: WB Country and Lending Groups, available at <https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups>
- [9] WGB Pakistan Profile, available at <https://www.worldbank.org/en/country/pakistan>
- [10] WGB Pakistan Profile, available at <https://www.worldbank.org/en/country/pakistan/overview>
- [11] Institute of Business Management Karachi, Pakistan (2017) Small and medium-size enterprises in Pakistan: definition and critical Issues, available at <https://core.ac.uk/download/pdf/268591284.pdf>
- [12] GoP: Small and Medium Enterprises Development Authority Pakistan (SMEDA): State of SMEs in Pakistan, available at https://smeda.org/index.php?option=com_content&view=article&id=7:state-of-smes-inpakistan
- [13] The Global Innovation Index (GII) 2020, available at <https://www.globalinnovationindex.org/Home>
- [14] Knowledge and Economy Index 2020, available at <https://knoema.com/atlas/topics/World-Rankings/World-Rankings/Knowledge-economy-index>
- [15] Global Competitiveness Index 2019, available at http://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2019.pdf
- [16] ADB (2021) Public-Private Partnership Monitor Pakistan available at <https://www.adb.org/sites/default/files/publication/720491/public-private-partnership-monitor-pakistan.pdf>
- [17] UNFCCC (2018) Pakistan's Second National Communication on Climate Change, available at https://unfccc.int/sites/default/files/resource/183625_Pakistan-NC2-1-Pakistan%20-%20Second%20National%20Communication%20on%20Climate%20Change%202018.pdf
- [18] NEPRA Press Release (2018) from 15 January, available at <https://nepra.org.pk/Admission%20Notices/2018/July/PRESS%20RELEASE-%20Solid%20Waste.pdf>
- [19] NEPRA Press Release (2018).
- [20] GoP (2020) Alternative and Renewable Energy Policy (ARE) 2019.

[21] Clean Green Pakistan Movement (CGPM) is a national campaign which underpins behavioral change and institutional strengthening while envisaging the need to address five components: plantation, solid waste management, liquid waste management. Hygiene, total sanitation, and safe drinking water with specific focus on empowering the citizens. Information adapted from <https://cleangreen.gov.pk/>

[22] CGPI is a city/tehsil and neighborhood-level index which aims to rank cities/tehsils and neighborhoods according to their cleanliness and greenery. Information adapted from <http://www.cgpi.pk/implementation-approach>

[23] Information adapted from <http://www.cgpi.pk/implementation-approach>

[24] Clean Green Champion Program (CGCP), available at <https://cleangreen.gov.pk/eng/clean-green-champion-program>

[25] Pakistan Council for Science and Technology, available at <http://www.pcst.org.pk/index.php>

[26] The National Incubation Center Pakistan, available at <https://nicpakistan.pk>

[27] IGNITE, available at <https://ignite.org.pk/>

[28] Jazz xlr8?s, available at <https://jazzxlr8.com.pk/>

[29] National Productivity Organization (NPO), available at <http://npo.gov.pk/>

[30] Pakistan Institute of Management (PIM), available at <https://www.pim.com.pk/>

[31] The Small and Medium Enterprises Development Authority (SMEDA), available at <https://smeda.org/>

[32] Pakistan Credit Guarantee Company (PCGC), available at <https://www.pcgpc.com.pk/>

[33] Pakistan Innovation Foundation (PIF), available at <https://pif.org.pk/>

[34] PAKImpactInvest, available at <https://impactinvest.pk/>

[35] Plan 9, available at <https://www.plan9.pitb.gov.pk/>

[36] National Solutions Convention (NasCon), available at <https://www.facebook.com/fast.nascon/>

[37] News article about NaSCon ?19 opens on high note, 13 April 2019, available at

<https://www.thenews.com.pk/print/457208-nascon-19-opens-on-high-note>

[38] Pakistan Startup Cup, available at <https://pakistan.startupcup.com/>

[39] LUMS Entrepreneurial Society (LES), available at <https://les.lums.edu.pk/>

[40] The Indus Entrepreneurs (TiE), available at <https://lahore.tie.org/mission-vision/>

[41] News article: US Embassy and TIE organized the 7th edition of Pakistan Startup Cup competition,

30 June 2021, available at <https://pk.mashable.com/tech/10477/us-embassy-and-tie-organized-the-7th->

[edition-of-pakistan-startup-cup-competition](https://pk.mashable.com/tech/10477/us-embassy-and-tie-organized-the-7th-edition-of-pakistan-startup-cup-competition)

[42] UNIDO (2018) Cleantech program evaluation, available at https://www.thegef.org/sites/default/files/council-meeting-documents/EN_GEF.ME_C.55.inf_03_GEF-UNIDO_Cleantech_program_evaluation_2018.pdf.

[43] UNIDO (2019) Independent Terminal Evaluation GEF UNIDO Cleantech Programme for Small and Medium Enterprises (SMEs) in Pakistan, available at https://www.unido.org/sites/default/files/files/2019-05/GEF%20ID-5553_GFPAK-130063_TE-2018.pdf

[44] UNIDO (2021) Launch of the Pakistan Private Sector Energy Project cooperation between USAID and UNIDO, available at

<https://pfan.net/news/launch-of-the-pakistan-private-sector-energy-project-cooperation-between-usaid-and-unido>

[45] ClimateLaunchpad Pakistan, available at <https://climatelaunchpad.org/countries/pakistan/>

[46] The Global Entrepreneurship Network (GEN), available at <https://www.genglobal.org/>

[47] Google for Startups Accelerator: Southeast Asia, available at <https://startup.google.com/accelerator/southeast-asia/>

[48] Digital Pakistan, available at <http://digitalpakistan.pk/home.html#Digital-Pakistan>

[49] UNIDO (2019) Independent Terminal Evaluation GEF UNIDO Cleantech Programme for Small and Medium Enterprises (SMEs) in Pakistan, available at https://www.unido.org/sites/default/files/files/2019-05/GEF%20ID-5553_GFPAK-130063_TE-2018.pdf

[50] GEF (2022) GEF-8 Programming Directions, available at https://www.thegef.org/sites/default/files/documents/2022-01/GEF_R.08_17_GEF-8_Programming_Directions.pdf

1b. Project Map and Coordinates

Please provide geo-referenced information and map where the project interventions will take place.

157. While the project is targeted at beneficiaries (entrepreneurs and all relevant CIEE stakeholders, such as universities, policy makers, financiers, and R&D institutions) from all over the country, the main project events will be conducted in the capital city of Islamabad. In addition, some outreaching and capacity building events will be held in specific provincial hubs at Lahore, Quetta, Karachi and Peshawar, that will anchor project activities around existing platforms and networks. The project boundary will not overlap any other country's territory. The geo-coordinates and location are as following:

- 1) Islamabad 33.68992° S, 73.04510° E
- 2) Lahore 31.53736° S, 74.34555° E
- 3) Quetta 30.18684° S, 66.98436° E
- 4) Karachi 24.97904° S, 67.04886° E
- 5) Peshawar 34.18858° S, 71.50045° E



Islamabad:
main project
activities/events

Quetta:
location of the
regional hub for
outreaching and
capacity building
activities

Karachi:
location of the
regional hub for
outreaching and
capacity building
activities

Pesh
locat
regio
outre
capa
activ

La
loc
reg
ou
ca
ac

Source: United Nations (DPKP)[1]

[1] UNDPK (2004) Pakistan map, available at <https://www.un.org/Depts/Cartographic/map/profile/pakistan.pdf>

1c. Child Project?

If this is a child project under a program, describe how the components contribute to the overall program impact.

N.A.

2. Stakeholders

Select the stakeholders that have participated in consultations during the project identification phase:

Civil Society Organizations Yes

Indigenous Peoples and Local Communities

Private Sector Entities Yes

If none of the above, please explain why:

158. In alignment with the GEF Public Involvement Policy and the GEF Guidelines for the Implementation of the Policy on Stakeholder Engagement, the Stakeholder Engagement Plan (Annex J) was developed to outline the strategy for engaging with stakeholders, including a range of activities and approaches, from information sharing and consultation, to participation, negotiation, and partnerships. The SEP also sets out resources and responsibilities as well as any related monitoring and reporting requirements.

159. The ongoing impacts of the COVID-19 pandemic (as of October 2021) poses a low threat to stakeholder engagement, however possible re-instatement of COVID-19 containment measures may limit travel and/or group meetings and reduce available capacity or effectiveness of project execution/ implementation. In order to mitigate these risks, the project will focus on strengthening the capacity of stakeholders, and especially the beneficiaries, for remote work and online interactions by securing access to commercially available conferencing systems.

160. An overview of all the crucial and relevant stakeholders as well as their foreseen roles and engagement modalities in the project is included in the table below.

Main Partner	Brief Intro and Role	Envisaged role in the project
---------------------	-----------------------------	--------------------------------------

<p>Ministry of Climate Change (MoCC)</p>	<p>The Ministry of Climate Change is a Cabinet-level Ministry of the Government of Pakistan tasked with climate change issues. It is the GEF Focal Point of the country. The project will take advantage of the Provincial Departments under the Ministry to reach out to private sector (Chambers of Commerce and Industry, big corporations, trade associations, etc.) as well as financial institutions (national banks, funds, etc.) allowing the project to actively engage with more ecosystem players in different regions.</p>	<p>MoCC will guide the overall strategic direction of the project execution. MoCC will be the secretariat of the Project Steering Committee (PSC) which will be established under the Chairmanship of the GEF Focal Point of the Ministry. MoCC will ensure the segregation of the function between chairmanship and secretariat within the Ministry.</p>
<p>IGNITE (Formerly National ICT R&D Fund)</p>	<p>The government of Pakistan has mandated that a certain percentage of gross revenue generated by all telecom service providers is to be allocated to development and research of information and communication technologies. The collected financial resources are managed by IGNITE which is mandated to transform Pakistan into a knowledge based economy by promoting efficient, sustainable and effective ICT initiatives.</p>	<p>IGNITE will be a member of the PSC and will incorporate the projects approach in its service portfolio after project completion guaranteeing the programme's sustainability.</p>
<p>National Productivity Organization (NPO)</p>	<p>NPO is the sole government body undertaking productivity with quality initiatives in Pakistan. NPO fosters a productivity culture in public and private sector organizations by providing training, seminars, workshops, consultancy, release of index surveys, qualification certification, promotion of a comprehensive understanding of energy and the environment, research on productivities.</p>	<p>NPO under its Green Productivity Center will technically support the project activities to actively promote green productivity in the industrial sector such as training, seminars, workshops, consultancy, release of index surveys, qualification certification, promotion of a comprehensive understanding of energy and the environment, research on productivities. NPO will provide co-financing in the form of in-kind support for activities in mutual interests in enhancing productivity and quality as well as for developing a knowledge based economy promoting green practices. Representative of NPO will be a member of the PSC.</p>

Pakistan Council for Science and Technology (PCST)	The Council is an autonomous organization working under the umbrella of the Ministry of Science and Technology. The Council is responsible for advising the government on ST&I policies, evaluating scientific research planning, conducting futuristic studies and promoting R&D. As one of the executing partners, PCST will provide technical support to the policy component of the project.	The project will cooperate with PCST for determining the policies and direction of science and technology issues in Pakistan. The representative of PCST will be a member of the PSC.
Pakistan Institute of Management (PIM)	PIM was established by the Government of Pakistan to promote management development in the country. It functions under the Ministry of Industries & Production with an autonomous Board of Governors appointed by the Federal Government. PIM is a non-profit organization, and its financial requirements are derived from course fees, contributions from member organizations and government grants. It has been a recipient of technical assistance from many international organizations and is widely recognized as the country's leading management development institute.	As one of the executing partners, PIM will support the project to build capacity of the public and private sector with its fully equipped training centers and faculty. Representative of PIM will be a member of the PSC.
Islamabad Chamber of Commerce and Industries (ICCI)	Islamabad Chamber of Commerce & Industry (ICCI) has representation in government advisory committees and boards. Representatives of ICCI give recommendations to policymakers on various policy related matters for business development to increase local and foreign investment, to expand tax net, increase exports, etc. High government officials are invited at Chamber to discuss with them local issues of businessmen and to find solutions of highlighted matters with mutual coordination and collaboration.	As ICCI with national and international linkages, shall continue to enhance its leadership role by being proactive and providing quality services to its members and to act as a catalyst for rapid economic development in this region through the promotion of trade, industry, services and development of youth entrepreneurship culture. Representative of ICCI will be the PSC member.

Rawalpindi Chamber of Commerce & Industry (RCCI)	RCCI is a prestigious business association of Pakistan established in 1952 which facilitates the business community and plays the role in keeping economic activity alive. Besides conventional activities, one of core objectives is to promote startups and small businesses. RCCI has taken the initiative to be a part of global entrepreneurship week and business competition plan to facilitate youth in networking, developing stronger linkages with academia, assist innovators and support the idea of entrepreneurship as a career opportunity. Moreover, RCCI is assisting small businesses by providing business development support services including capacity building, trainings, networking and mentorship.	This project will be fully integrated with the Clean and Green Pakistan Programme (CGPM) initiative of Government of Pakistan. The representative of RCCI will be a member of PSC committee and support the project activities such as incubation, networking, mentoring, trainings and others.
National Incubation Center (NIC)	NIC is the Pakistan's largest tech incubator. It's a public private partnership between MOITT, Ignite, and Jazz & Teamup. In 4 years since its inception, NIC has incubated over 220 startups creating an impact of over 10,000 jobs and over PKR 3 billion in revenues and investments committed to startups.	The representative of NIC will be a member of PSC and support in terms of mentors, judges, facility, etc. for the execution of the project. It has hubs in Islamabad, Lahore, Peshawar, Karachi and Quetta and project which will be utilized to enhance the outreach of the project. It will provide co-financing in the form of in-kind support by providing mentors, judges, facilities etc.
Technology Development Fund (TDF)- Higher Education Commission (HEC)	HEC aims to facilitate the role of the institutions of higher learning in Pakistan to serve as engine of socio-economic development. One of its main functions is to support the development of linkages between higher education institutions, industry and national and international organizations that fund research.	Under its plethora of ongoing projects, HEC will support the project by funding its innovators' applied research projects, for prototype development and industrial value addition for technology development, through its Technology Development Fund. Representative of HEC will be a member of the PSC.
National Rural Support Programme (NRSP)	NRSP has been operating in Pakistan since 1991, as a 'not for profit' company. Its mandate is to alleviate poverty by harnessing people's potential and undertake development activities in Pakistan. It has a presence in 72 districts in all Provinces through Regional offices and field offices.	NRSP envisages to provide co-financing in the form of grant though its mobilize its investment through its initiative 'Renewable Energy Micro-credit facility' for rural communities particularly women entrepreneurs.

Innovators Garage (IG)	IG is a global management consulting firm which serves for world's leading businesses, governments, and institutions to unlock growth through Innovation & Startup Ecosystems. Its mission is to make Pakistan a Top-50 Innovative Nation with \$500 Billion Innovation Economy by 2030.	IG will provide co-financing both in the form of in-kind and investment mobilized as in a grant. In kind co-financing will be made through linking Zindigi Prize: Pakistan's largest Social Entrepreneurship Program for 100 Universities. Investment mobilized will be channeled through Pakistan National Investor Portal (PNIP).
Dr. Akhter Hameed Khan Memorial Trust (AHKMT)	AHKMT is a non-profit organization registered February 2000 as Trust Act 1882. Since its origination, AHKMT has been working on sanitation and solid waste management areas across Pakistan.	AHKMT will implements several projects which can be linked to the project in several regions within the country. It will provide co-financing in the form of in-kind support in the area of better waste management technologies and practices.
Innovators/ Entrepreneurs	Innovators/entrepreneurs will be the most important stakeholders and will be the main beneficiaries from the project's activities.	It is expected that alumni will keep actively collaborating in the project either by taking advantage of the post-competition services offered or by serving as mentors and ambassadors. Currently, there is a huge pool of national innovators available from the first GCIP project.
GCIP Global Executing Entities (PEEs) ? NGIN, Cleantech Group, PFAN	Execution of the GCIP Global Child Project	Under the global GCIP framework there will be significant two-way interaction with the PEEs of the GCIP Global Child Project. This will cover the development of methodologies and guidelines for local adaptation, training material and capacity building, global advocacy, tools for coordination and coherence, international forums, support for Pakistan project alumni, knowledge products and advice. Impact monitoring will be done in coherence among national and global projects while taking into account the specific country context.

<p>Organizations which promote GEEW and gender focal points</p>	<p>HBL is a Pakistan's largest bank and was the first commercial bank to be established in Pakistan in 1947. Over the years, HBL has grown its branch network and maintained its position as the largest private sector bank in Pakistan with over 1,650+ branches and 2,100+ ATMs globally, serving 23 million+ customers worldwide. The Bank is a leading full-service commercial bank. The key areas of operation are Branch Banking, Corporate & Investment Banking, Treasury, SME & Rural Banking, Financial Institutions & Global Trade Services, Transaction Banking and Islamic Banking.</p> <p>Katalyst Labs is a technology accelerator and innovation hub, founded by Jehan Ara who along with her team has played a key role in building the entrepreneurship ecosystem of Pakistan.</p> <p>Recently HBL and Katalyst Labs established a partnership on startup acceleration and women leadership enablement to build and strengthen the entrepreneurial ecosystem of the country.</p> <p>Other stakeholders will also include relevant gender focal points and experts, as well as local and international associations and/ or agencies promoting gender equality and women's empowerment, in particular those focusing on the nexus between gender, energy needs and entrepreneurship such as the Women Business Growth Centre (WBGC).</p>	<p>Relevant women entrepreneurs/innovators, CSOs and NGOs focusing on gender equality issues and advocating women's empowerment, and gender experts/focal points will be invited to participate in and contribute to all activities of the project.</p> <p>The project will deliberately mobilize interest from women entrepreneurs by targeting the involvement of their associations in the project process (for instance by reaching out to both qualified women and men equally). This will be done by taking into consideration the cultural context that exists in Pakistan. That way, the project would adequately address the gender imbalances in SMEs and provide a solid basis to empower women in clean technology innovations.</p>
<p>Other International Agencies e.g., USAID, JICA, GIZ</p>	<p>Development cooperation</p>	<p>Relevant International agencies will be invited to participate and consulted, where relevant, during project implementation. They will be recipients of the project outreach and advocacy activities.</p>

Please provide the Stakeholder Engagement Plan or equivalent assessment.

Please find the attached Annex J.

In addition, provide a summary on how stakeholders will be consulted in project execution, the means and timing of engagement, how information will be disseminated, and an explanation of any resource requirements throughout the project/program cycle to ensure proper and meaningful stakeholder engagement

Please find the attached Annex J.

Select what role civil society will play in the project:

Consulted only; Yes

Member of Advisory Body; Contractor;

Co-financier; Yes

Member of project steering committee or equivalent decision-making body; Yes

Executor or co-executor;

Other (Please explain)

N.A.

3. Gender Equality and Women's Empowerment

Provide the gender analysis or equivalent socio-economic assesment.

161. Gender equality is a fundamental human right. While some progress has been achieved towards gender equality and women's empowerment globally, women continue to suffer from discrimination and violence in some parts of the world. Gender issues need to be addressed by creating equal employment and capacity building opportunities, as well as social infrastructure and safe working conditions responding to the specific needs of women. The importance of gender equality and women's empowerment, particularly women's economic empowerment, is at the core of UNIDO's mandate. Commitment of UNIDO towards gender equality and women's empowerment is demonstrated in its policy on Gender Equality and the Empowerment of Women (2019), and the UNIDO Strategy for Gender Equality and the Empowerment of Women (2020-2023). UNIDO has also developed an operational energy-gender guide to support gender mainstreaming within its sustainable energy initiatives.

162. Gender equality enhances economic growth, reduces household poverty, and enables human development. Women's entrepreneurship, that can directly contribute to the economic empowerment of women, is often seen as crucial for increasing the quality of life of women in the developing world, as well as a trigger for changes of the status-quo of women and for re-addressing the balance of power within the family.

163. In this regard, although efforts to promote gender equality are apparent within Pakistan's Vision 2025, there is still more to be done to improve the realities for women and girls across the country. The most recent Global Gender Gap Index of the World Economic Forum (2021) ranks Pakistan as the fourth lowest country (153 out of 156) in the world for gender equality. Accordingly, Pakistani women are still denied access to the same education levels as men, leaving a gender gap of 15% in primary education enrolment. As a consequence, few women participate in the labor force (22.6%) and even fewer are in managerial positions (4.9%), leaving female underrepresentation in the labor market as one of the most important sources of inequality between Pakistan men and women.[1]

164. Based on these findings, the Pakistan accelerator project objects to address these gaps and as a guiding principle aims to ensure that both women and men are provided with equal opportunities to access, participate and benefit from the project (UNIDO Gender Policy 2019). The previous GCIP Phase 1 in Pakistan proved great success in promoting gender mainstreaming activities with the intention to create more opportunities for women entrepreneurs. For example, during the implementation period from 2015-2017, the record showed that women held 25% to 40% team leader positions, linked to extensive advocacy & mobilization efforts undertaken, the targeted social media strategy, support under its Women in Green Industry initiative, and the introduction of the Most Promising Woman-led Team award from 2015 onwards. All in all, the project contributed to women entrepreneurial development and job creation for women by establishing a special category award and setting targets for female participants entering the Competition, participating in networking events, and being trained to organize Competition- accelerator activities.

165. Duplicating the successful track record of GCIP Phase 1 in Pakistan and to further improve women's employment opportunities in the country, the Pakistan project's Pre-accelerator, accelerator, Advanced accelerator and Post-accelerator, will equally streamline gender-responsive activities to ensure the achievement of this goal. Special efforts will be made to promote equal participation of women and men, both at managerial and technical levels and to demonstrate via the project how companies and investors can tap into an underutilized pool of female talents. A particular attention will also be paid to showcase female role models, that can contribute to breaking stereotypes around traditional roles in the workplace and society and may inspire other women to step forward. Previous GCIP projects have already shown higher levels of women's participation than other acceleration and incubation programmes, with 25% of the 900 alumni supported to date being women-led enterprises.

The Pakistan accelerator project aims at continuation of this trend and even at an increase of the proportion of women beneficiaries (with a target of at least 35% women beneficiaries).

166. UNIDO's Guide on Gender Mainstreaming Energy and Climate Change Projects will be used as a framework and guided the gender analysis of the project in order to ensure that the project is in line with both UNIDO and GEF requirements. Based on these guidelines, attention will be paid to:

- ? Gender-sensitive recruitment at all levels where possible, especially in selection of project staff.
- ? Gender responsive TORs will be used to mainstream gender in the activities of consultants and experts.
- ? In cases where the project does not have direct influence, gender-sensitive recruitment will be encouraged.
- ? Furthermore, whenever possible existing staff will be trained and their awareness enhanced regarding gender issues and to sensitize cultural shifts on perceiving this change as beneficial for women, men and the enterprises as a whole.
- ? Gender dimensions will be considered in all decision-making processes (this will consider but will not be limited to efforts to achieve gender balance/ representation in such processes).
- ? Collect sex-disaggregated data whenever possible.
- ? Relevant women associations and gender focal points will be involved and consulted with in all project activities.
- ? The differentiated needs and roles of women and men are identified with respect to the capacity building interventions of the project. For these purposes, women's groups and associations, gender experts and/or other stakeholder concerned with gender and energy will be consulted. In that connection, the tools and guides developed will be gender responsive.
- ? Raise awareness on gender and disseminate information about gender dimensions and gender mainstreaming in the sector.

167. The gender mainstreaming analysis and action plan developed in the framework of this project (Annex K) during the preparatory phase (PPG) has identified gender specific targets to be monitored and evaluated throughout the project implementation period. Upon the start of project implementation, MoCC will review and validate the Gender Mainstreaming Action Plan included therein and incorporate it into its annual work plans. A summary of those integrated approaches to gender mainstreaming is shown in the table below:

Project phase/Activity	Gender equality measure
<p>Targeted outreach</p> <p>(While the target groups would be both men and women engineers and business persons, the project incorporated a specific outcome of ?2.2 Gender equality is supported and strengthened by the CIEE in Pakistan)</p>	<p>? Establishment of a hub/chapter/network platform for women to engage in CIEE in Pakistan;</p> <p>? Implementation of a special mentoring programme for women cleantech entrepreneurs;</p> <p>? The project design will acknowledge the differences between women and men considering distribution of economic activities and social roles in the cleantech innovation space, in line with GEF 7 Programming Strategy.</p>
<p>Project Execution</p>	<p>? Conduct ?Gender sensitization workshops? for all stakeholders involved in the project in Pakistan;</p> <p>? A gender training package (material for national capacity building on gender awareness) will be adapted for Pakistan from the training package developed by the GCIP Global;</p> <p>? Gender focal point will be nominated within MoCC;</p> <p>? Gender mainstreaming targets will be included in the ToR for the national PEE and international contractors.</p>
<p>Training of project consultants and experts</p>	<p>? Consultants/experts will be required to complete the ?I know gender? UN course;</p> <p>? Mentors and judges will be provided with training on awareness raising on women`s role and engagement in cleantech ecosystem and gender-bias;</p> <p>? Consultants will be expected to provide evidence on how gender equality is addressed in the materials they develop.</p>

<p>Development of guidebooks</p>	<p>? Guidebooks will highlight the need to make special effort to encourage women to apply for the Pakistan project acceleration support, including targeted outreach and gender specific communications material (e.g., videos, success stories of women role models & winners) and explicit statements that the project encourages applications from women;</p> <p>? Training materials for entrepreneurs will include topics on gender awareness;</p> <p>? Gender equality will be addressed in the curricula and content of all training materials developed for experts.</p>
<p>Application state for the Pakistan accelerator (Challenge and Competitions)</p>	<p>? Collection of gender disaggregated data in application forms;</p> <p>? Skype sessions with interested women applicants;</p> <p>? Setting a target on the % of women-led enterprise applications and % of women in the applying team as one of the indicators to track the progress of gender equality in cleantech innovation.</p>

<p>Selection of project finalists and recruitment of experts</p>	<p>? Stringent selection criteria will be defined that provide equal opportunities for both women and men;</p> <p>? Involve women in the mentoring process so that more role models can be created (thus mitigating the impact of inequality in the future);</p> <p>? Targeted additional and women inclusive training could be made available to train women mentors and judges;</p> <p>? Setting a target: % of women-led enterprise semi-finalists, # of women mentors and judges;</p> <p>? Special support will be provided to women to prepare for the competition (e.g. women could receive the possibility to select their slot, so it does not overlap with their household responsibilities or could be offered safe transport to the competition venue);</p> <p>? Evaluation methodology for selection of semi-finalists will consider the gender balance within entrepreneur's management teams and beneficiaries, as well as gender-responsive policies.</p>
<p>Special awards</p>	<p>? Special consideration will be given to the creation of a gender related prize (e.g. a prize for the women's entrepreneur of the year and/or a special award for the team with the product/service with the highest gender equality impact potential). Such a prize was offered in a number of previous GCIPs, which led to an increase in the number of women-led innovators applying for support (e.g., in South Africa and Morocco the number of applications from women entrepreneurs was between 35% and 40%).</p>

<p>Provision of support to entrepreneurs participating in the Pakistan accelerator, Advanced accelerator and Post accelerator</p>	<p>? Where considered necessary, the project will seek to remove barriers to ensure inclusion of women (e.g., segregated financial training might be offered);</p> <p>? Specific training module foreseen as part of the Pakistan accelerator curriculum to address gender-related challenges and barriers;</p> <p>? The training material will be gender-responsive (e.g., stereotypes will be avoided);</p> <p>? Trainings will be organized at times suitable for both women and men, and recordings will be provided.</p>
<p>Forums/events</p>	<p>? Women participants will be encouraged to attend the forums/events through focused outreach activities;</p> <p>? It will be ensured that topics of interest to women entrepreneurs are included in the forum/event agendas;</p> <p>? There will be a targeted event or panel to discuss women's entrepreneurship;</p> <p>? Participant data will be disaggregated.</p>
<p>Investment facilitation</p>	<p>? Gender lens investing principles will be applied in all of investment decision making processes;</p> <p>? Specific training materials and guidelines on gender lens investment will be developed for financiers and other stakeholders.</p>
<p>Capacity building</p>	<p>? Capacity building on gender equality will be mainstreamed throughout the project implementation and with regard to all stakeholders;</p> <p>? A gender sensitization training for relevant stakeholders will be organized.</p>
<p>Policy support</p>	<p>? Gender and youth empowerment policy framework will be developed.</p>

Supporting Youth

168. In addition to gender dimensions, GCIP phase 1 was also able to support youth entrepreneurship and employment as an added benefit in the countries involved. The project's main goal is to strengthen the cleantech innovation ecosystem of our partner countries, and it supports cleantech startups by providing business and entrepreneurship training and mentoring. As cleantech is a relatively new industry sector worldwide, and at nascent stages in the country, the entry barrier for youths is low compared to other more established markets where lack of experience in that sector may prove to be a (both actual and perceived) disadvantage. Defining the product market, sales tactics, financing options for commercialization etc. for cleantech businesses are not transferrable from other industries and therefore experience in other sectors may not necessarily be an advantage. This means youth entrepreneurs are on a level playing field with older/more experienced entrepreneurs. Through the training and mentoring curriculum offered by the project, youth entrepreneurs develop necessary business skills specific to the cleantech sector, and are placed on an equal footing with older generations in the cleantech space.

169. Youths are more likely to be interested in mission/impact driven business models, as opposed to profit driven business models. This means the goals of the project are more attractive to youths that seek to establish businesses that offer environmental solutions. Therefore, interest from youths to participate in the project is higher. For example, in Pakistan the average age of innovators involved in the GCIP phase 1 was between 25 and 35 years and in South Africa 33% of the GCIP semifinalists over five years have been younger than 35 years old.

170. It is important to engage youths in the cleantech sector, as youths experience environmental problems differently due to behavioral and lifestyle differences compared to other generations. Many cleantech solutions are developed based on personal experiences, and therefore fully engaging the youth will be important in addressing environmental challenges comprehensively. To promote application from early-stage R&D cleantech solutions, GCIP Phase 1 focused on engaging universities and students. This has the added benefit that youths are naturally the target group of communications and advocacy efforts. The project is also indirectly impacting the entrepreneurial culture of the country, through its communications efforts. The main message is that solutions to environmental and social challenges can be profitable business models. Also, in promotion efforts for the supported SMEs, many youth entrepreneurs are showcased, and the public is exposed to success stories of young entrepreneurs. Seeing peers as entrepreneurs may indirectly influence other youths to also consider entrepreneurship as an option.

[1] WEF (2021) The Global Gender Gap Report 2021, available at <https://www.weforum.org/reports/ab6795a1-960c-42b2-b3d5-587eccda6023>

Does the project expect to include any gender-responsive measures to address gender gaps or promote gender equality and women empowerment?

Yes

Closing gender gaps in access to and control over natural resources;

Improving women's participation and decision making Yes

Generating socio-economic benefits or services or women Yes

Does the project's results framework or logical framework include gender-sensitive indicators?

Yes

4. Private sector engagement

Elaborate on the private sector's engagement in the project, if any.

171. This project focuses on start-ups and SMEs, aiming at strengthening partnerships with the private sector interested in investing in clean technologies and innovation, and provides support to entrepreneurs and innovators seeking to establish commercial ventures in clean technologies. It is expected that at least 40 private sector entrepreneurs, SMEs, corporates, investors and associations will take active part in this project, so the private sector engagement will be crucial part of and success factor for the project.

172. The private sector engagement is key for the success of this project and its engagement in the project will further be confirmed during the PPG phase. The project foresees several areas of interaction with the private sector:

a. There will be direct interactions with and support for entrepreneurs (SMEs and start-ups) offering innovative cleantech solutions. The entrepreneurs are considered as agents of change that bear the potential of instigating a market transformation. The SMEs and start-ups will be supported in the framework of the project Pakistan cleantech ecosystem including accelerator, advanced accelerator, and post-accelerator supports. It is expected that at least 40 entrepreneurs will take part in this project, so the private sector engagement will be crucial part of the project. In addition, there will be active involvement of private investors, banks and other institutions that will be led by the Chamber of Commerce and Industry to ensure promotion and stimulation of clean energy technology innovations in targeted industrial sectors.

b. The private sector companies' intention to provide, and support access to, private equity investment to selected enterprises supported by the project is in general expected. The project will continuously engage with the private sector including financial institutions for identifying and nurturing potential synergies, partnerships and financing opportunities to maximize its impact.

c. Corporate partnerships will be formed to connect the project participants with various companies with the aim to create joint venture opportunities across borders, to facilitate market expansion and product co-development. This has already been successfully piloted with the Korean Financing Technology Corporation (KOTEC) with collaborations established between Korean SMEs and GCIP alumni from Morocco, Pakistan, Thailand and Turkey. Similar partnerships are expected under this project.

d. The project will also partner with corporations that seek to identify and invest in innovative cleantech.

e. Moreover, the project will target financing institutions, venture capitalists, and angel investors in its communications and outreach activities that seek to raise awareness and strengthen the knowledge of opportunities and risks associated with investments in cleantech. In addition, Investor Connect events will be organized to connect potential financiers with entrepreneurs and to facilitate investments.

f. The project will also cooperate with industry and business associations to leverage their know-how, capital and interest in cleantech innovations, as well as to build their capacity.

g. In addition, industry experts will be engaged as mentors, trainers, judges, and Executive in Residence (EIR) to support the accelerator, Advanced accelerator, and Post-accelerator.

h. In line with GEF strategy on private sector engagement, the project capitalizes on the growing interest by national and international private actors in the sustainability agenda and creates the conditions for SME driven creation and transformation of cleantech markets. This ultimately harnesses the ingenuity and creativity of SMEs and 'crowds-in' private sector investments to deliver environmental benefits beyond business as usual.

5. Risks to Achieving Project Objectives

Elaborate on indicated risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and, if possible, the proposed measures that address these risks at the time of project implementation.(table format acceptable):

General risk analysis

Risk	Rating	Mitigation
Institutional Risk ? Lack of absorptive capacity by the national counterpart	Low	Capacity building of the national counterpart will be an ongoing process throughout the project implementation period to ensure that staff are comprehensively trained, and sustainability of the programme is ensured.
Institutional Risk ? Insufficient administrative and organizational capacity of the project executing entity (PEE) for successful execution of the project	Low/Medium	An organizational assessment (a micro assessment under the Harmonized Approach to Cash Transfers framework) was conducted by another UN agency in February 2022 and evaluated potential execution risks. The results showed the risks to be low to moderate in all areas under consideration.
Institutional Risk ? Insufficient technical capacity of PEE for successful execution of the project	Low	PEE was nominated by the GEF OFP in consultation with key stakeholders as the most appropriate national agency to execute the project, and as a technology incubator agency with a strong track record in cleantech therefore it is assumed that it has the pertinent mandate and technical capacity for successful achievement of the project objective and associated outputs and activities.
Institutional Risk ? Lack of effective coordination between various project partners	Low	Proper coordination will be ensured through the establishment of the Project Steering Committee (PSC) and ad-hoc working groups will be formed if necessary.
Operational Risk ? On-going global restrictions due to global shocks (e.g. COVID-19)	Medium/high	In case of travel and/or group meeting restrictions, the trainings and meetings/events will be organized on-line.
Sustainability Risk ? Lack of ownership of project results and inability to source funding to continue the activities in the medium and long term	Low	A sustainability and exit strategy will be developed based on a framework delivered by the GCIP Global, and it will among other include specific considerations related to a formal project handover process and the point in time when UNIDO's exit takes place based on targets achieved by the project.

Political Risk ? Lack of political support to mainstream innovative cleantech	Low	The project is supported by the Government of Pakistan, and different ministries will be involved in the design of the project.
Market Risk ? Failure of businesses supported by the project in Pakistan	Medium	The guidebooks (for accelerator, Advanced accelerator, and Post-accelerator) will be comprehensive documents that articulate the project approach to promoting cleantech innovation and entrepreneurship aligned with the GCIP Global. As such, they will help ensure that the businesses supported have real market potential. In particular, the methodologies, guidelines, tools will define eligibility requirements and selection criteria for the participants.
Finance risk - Incentive and financial support system are insufficient	Low	The outreach and communications activities will be targeted at, among others, financing institutions, venture capitalists, and angel investors. Moreover, the project will be aligned with strong GCIP brand, and the ongoing activities, knowledge and lessons under the GCIP global, are expected to build confidence of national and international financiers. The PSC will include at least one representative of a financing institution or an investor.
Coordination Risk: Lack of effective coordination between various project partners/stakeholders	Low	A proper coordination will be sought through the PSC and the established working groups.

Climate Change Risk	Medium	<p>According to the Second National Communication, estimated temperature rise in the country ranges from 2 to 3°C by 2050s and 3 to 5 °C to 2080s. The projected warming is higher in the northern parts of the country. The most prominent aspect of climate change risks in Pakistan is an increase in frequency and intensity of extreme climate events such as floods, draughts, cyclonic activities, extreme precipitation events, etc. For example, following the hugely devastating flood of 2010, Pakistan occasionally experienced floods every year during 2011-2015. There is a strong likelihood that with increased global warming in the coming decades, thus the incidences of such extreme events will increase further. Such extreme events, especially floods, may have physical impacts on the project physical settings including the regional hubs. According to the flood map in Pakistan[1], Lahore is identified as a place where floods experienced intermittently among the location of regional hubs. On the other hand, in terms of cleantech innovation, the climate change it is not likely to have severe impacts, with an exception for cleantech innovation dependent on water supplies.</p> <p>To safeguard against climate change risks, following measures are taken:</p> <p>1) Types of floods prone to happen in Pakistan include a) monsoon floods, b) flash floods and c) flood wall failures[2]. In order to mitigate the impact of flood, several measures can be taken including establishing and operationalizing early warning system, flood forecasting and dissemination of updated information and support. The PEE and hubs will regularly monitor the climatic conditions will prepare for the possible hazards in cooperation with Flood Forecasting Division (FFD), Lahore which a specialized unit for (i) Flood forecasting, (ii) River stream flow forecasting, (iii) Water availability forecast for dams and (iv) Water management assistance at dams. In addition, following appropriate house building codes, infrastructure building practices, and adequate spatial planning[3] are important factor to mitigate physical risks of the flood. In developing the hubs, the PEE will coordinate with local authorities to confirm such practices to reduce the exposure to the risk of flood.</p> <p>2) The screening of technologies to be supported by the project will include an assessment of the climate risks with a time horizon of 30 years, and where a risk is identified, it will be necessary for the entrepreneur to propose suitable adaptation or management measures. The GIZ's Climate Expert Tool could be used as a tool available to entrepreneurs in that context.</p>
---------------------	--------	---

Environmental Risks	Low	It is recognized that some technologies that could potentially be supported by the project, such as ICT could lead to GHG emissions, unless powered entirely by renewable energy. Similarly, technologies related to energy storage can have harmful environmental impacts if not managed effectively. Therefore, any cleantech innovation supported by the project will need to meet strict environmental screening criteria. In addition, an Environmental and Social Management Plan (ESMP) was prepared (Annex L) to mitigate the environmental (and social) risks.
Social/Gender Risk:	Low	To ensure gender inclusiveness of all project activities, UNIDO methodology for gender assessment and gender responsive communication showing the benefits of gender equality for both women and men will be applied. To mainstream women and youth entrepreneurship, an adequate gender responsive communication strategy will be implemented, and sensitization workshops will be organized. A full gender analysis was carried out and its recommendations were incorporated into the project design.

COVID-19 risk analysis

Risk	Rating	Mitigation
Technical expertise is not readily available due to the pandemic	Low	Necessary efforts will be made to identify alternative technical experts in case it is required. Whenever possible and as appropriate, use of remote communication tools are considered to compensate possible travel or movement restrictions. Planning will be flexible enough to reschedule activities onsite that require specific expertise.

Possible re-instatement of COVID-19 containment measures limits available capacity or effectiveness of project execution/ implementation	Medium	The capacity of stakeholders, and especially the beneficiaries, for remote-work and online interactions will be strengthened by securing access to commercially available conferencing systems. The current design of the curriculum for entrepreneurs is based on online interactions and deliverables, using webinars and web platforms, and therefore COVID-19 is not expected to pose a significant risk to the conduct of the acceleration cycles. The project team will regularly monitor possible development of possible pandemic by COVID-19 or alike and prepare business continuity plan in case of possible occurrence of containment measures.
Some project supporters, co-financiers or beneficiaries may not be able to continue with project execution/implementation	Low	The situation will be closely monitored in order to find alternate supporters or co-financiers, or to readjust the list of beneficiaries if needed. The project team will prepare business continuity plan in case of possible occurrence of containment measures in close consultation with GEF Operational Focal Point in Pakistan.
Price increases for procurement of goods/services	Medium	The project team will undertake efforts needed to find alternative providers and make sure that competitive pricing is obtained. Partnership and cooperation will be pursued as necessary and as appropriate to substitute certain portion of work which can lead to reduce the needs for good/services.
Technical expertise is not readily available due to the pandemic	Low	Necessary efforts will be made to identify alternative technical experts in case it is required. Whenever possible and as appropriate, use of remote communication tools are considered to compensate possible travel or movement restrictions. Planning will be flexible enough to reschedule activities onsite that require specific expertise.

COVID-19 opportunity analysis

Opportunity	Opportunity level	Opportunity optimization measures
-------------	-------------------	-----------------------------------

New business opportunities created in response to COVID-19 related restrictions and measures	High	Response to COVID-19 restrictions, such as remote working arrangements and no-contact business modalities will require solutions that can be turned into new business models. These opportunities will be analyzed at the national level and shared with the entrepreneurs. Examples of former GCIP alumni responding to new business opportunities by providing innovative solutions during the pandemic are summarized here: https://www.unido.org/stories/cleantech-innovators-take-covid-19 .
New business opportunities to build back better for business continuity and economic recovery post-COVID-19	High	By design, the project engages private sector to promote and scale up cleantech products and services, and business models with resilience to climate change (e.g. wastes management, waste recovery, and waste to energy including its business models). Information on relevant new business opportunities as well as policy/regulations will be added to the project curriculum so that the entrepreneurs are fully informed of the market and policy trends.

[1] U.S. Department of State (2010) Area Maps of Pakistan Flooding, available at <https://2009-2017.state.gov/p/sca/ci/pk/flood/maps/index.htm>

[2] New World Hope Organization: Pakistan Flood Maps, available at <https://www.newworldhope.org/pakfloodmaps.html>

[3] Atiq Muhammad et al. (2012) Floods and flood management in Pakistan, available at https://www.researchgate.net/profile/Muhammad-Tariq-117/publication/251679596_Floods_and_flood_management_in_Pakistan/links/56a16d0308ae27f7de266d6a/Floods-and-flood-management-in-Pakistan.pdf?origin=publication_detail

6. Institutional Arrangement and Coordination

Describe the institutional arrangement for project implementation. Elaborate on the planned coordination with other relevant GEF-financed projects and other initiatives.

Implementation

173. UNIDO as the GEF Agency will be responsible for the implementation of the project, which entails oversight of project execution to ensure that the project is being carried out in accordance with agreed standards and requirements. UNIDO as the GEF Agency will also be accountable to the GEF

Council for the GEF-financed activities, as well as it will be responsible for project cycle management services and corporate activities

Execution

174. MoCC was nominated by the GEF OFP in Pakistan to be the national PEE. MoCC was assessed by another UN agency in February 2022 using the HACT methodology. The outcome of the assessment provided UNIDO an understanding how MoCC operates and an appropriate agreement shall be established. MoCC will designate internally or recruit externally project management personnel to form the project management unit (PMU). The PMU will consist of the National Project Coordinator (NPC) and a Project Assistant (PA).

175. The PEE will designate internally, or recruit directly, project management personnel to form the Project Management Unit (PMU) to execute the activities of the national project. As a minimum, the PMU will consist of the National Project Coordinator (NPC) and a Project Assistant (PA). The PMU will be responsible for the day-to-day management of the project execution, monitoring and evaluation of project activities as in the agreed project work plan. The PMU will coordinate all project activities being carried out by project national experts and partners. Through the procurement processes in the execution entity, the project will sub-contract qualified service providers for the execution of certain activities as they are needed.

Project Steering Committee (PSC)

176. In addition, a Project Steering Committee (PSC) will be established under the Chairmanship of GEF Operational Focal Point in MoCC. As MoCC is nominated as the PEE of the project, segregation will be ensured between the function of project team and chairmanship of the PSC within the Ministry. Representatives from relevant institutions such as such as IGNITE, National Productivity Organization (NPO), Pakistan Council for Science and Technology (PCST), Pakistan Institute of Management (PIM), Islamabad Chamber of Commerce and Industries (ICCI), Rawalpindi Chamber of Commerce & Industry (RCCI), National Incubation Center (NIC), Technology Development Fund (TDF) - Higher Education Commission (HEC) Ministry of Energy (MoE) as well as UNIDO will be the member of the PSC. PMU will be the secretariat of the PSC and will report to the PSC Chair. The PSC will meet twice per year to review the project implementation and execution progress and confirm the work plan for the subsequent year and any changes in the six months. Any changes/amendments proposed to the project and/or to the workplans and budgets by the PSC are conducted in accordance with the approved project document, the GEF policy, and UNIDO rules and regulations. Minutes of meetings are signed by UNIDO and the PSC Chairperson(s).

177. A schematic representation of the project implementation arrangement is shown in Figure 7 below.

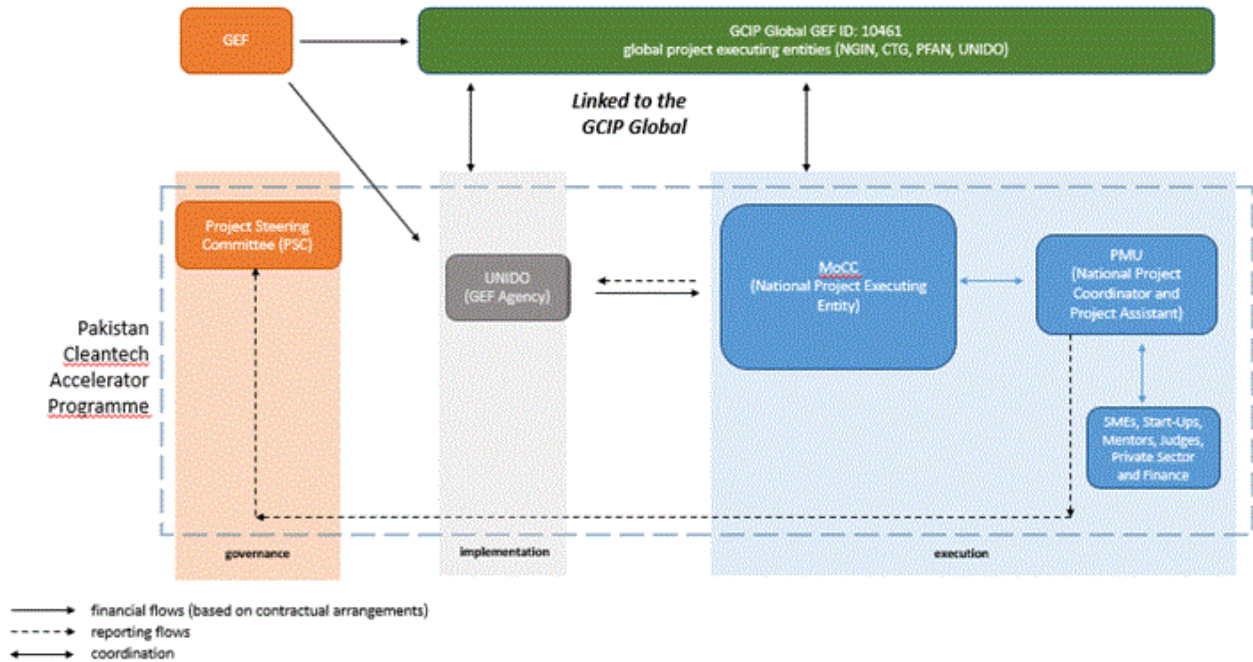


Figure 7: Implementation arrangement for Pakistan accelerator project

Coordination with other relevant GEF-financed projects and other initiatives

178. The project is in line with, UNDAF, SDGs and One UN Framework in Pakistan. Regarding the latter, the project actively contributes to the objectives of the One-UN Programme within the thematic areas of environmental sustainability and poverty reduction through productive uses. UNIDO has already a concluding GEF-4 -funded project on the development of gasification in SMEs in Pakistan entitled "Promoting Sustainable Energy Production and Use from Biomass" which provides important linkages that would be useful to accelerate initiatives for cleantech innovation in the context of low carbon and circular economy. Another GEF 5 Project, titled "Sustainable Energy Initiative for Industries in Pakistan" is underway, to promote Renewable Energy Technologies in Pakistan with which synergies can be developed. An important project named "Climate Change Adaptation through Water Resource Management Project in Leather Industry of Sialkot" has been launched to relocate the tannery industry from congested city and residential areas to a designated tannery zone, and to provide facilities of combined waste water treatment and solid waste management. Besides the project will introduce cleaner production techniques coupled with Chrome recovery and water reuse and conservation technique to ensure the availability of quality water to industry, local population as well as for agriculture use. Waste

generated from tannery effluent plants operated under this project could be scrutinized and utilized as a source of fuel stock for the Waste to Energy systems as well.

179. The project will be linked to the UNIDO/GEF program 10408 to which UNIDO is a project executing entity. Coherence in the approaches including methodologies, guidelines, tools and training systems will be pursued between the project and the GCIP child projects through the global framework program. Knowledge will correctively be managed and shared among the countries involved. This will enhance cross-border connectivity and synergies. In addition, Pakistani cleantech SMEs accelerated under the project will be provided wider opportunities to expand their businesses and hence increase their success rates and results in greater GHG emission mitigation efforts.

180. The project will also seek to collaborate with the UNFCCC Climate Technology Centres Network (CTCN) and the Private Financing and Advisory Network (PFAN), which are UNIDO hosted initiatives with expertise in supporting the technology innovation value chain. For example, by sharing the common vision of accelerating clean technology dissemination and effort for tackling climate change, the project will seek for cooperation with PFAN e.g. offering workshops, introducing PFAN and its systematic interventions at the series of events held under the project, exchange of advisors and experts in order to facilitate cross-fertilization between the project and PFAN. Since PFAN will collaborate with GCIP also under the GCIP Global framework this will help increase conformity among the countries involved and create synergies among them.

181. In addition, similar national, regional and international initiatives in the country will be identified and cooperation envisaged. For example, the project will specifically create mutual benefits with national programme under Clean Green Pakistan Movement (CGPM). Under CGPM, city municipalities are responsible for clearing sustainable cities including enhanced waste management. The project will harmonize its intervention of selecting and promoting clean technologies with these national and local initiatives for creating clean and green cities. Particular efforts will be made to engage other potential financiers and the private sector in general, and link them to cleantech SMEs supported by the project.

Legal Context

182. The Islamic Republic of Pakistan agrees to apply to the present project, mutatis mutandis, the provisions of the Revised Standard Technical Assistance Agreement concluded between the United Nations and the Specialized Agencies and the Government on 2 July 1956.

Transfer of assets

183. Full or partial title and ownership of equipment purchased under the project may be transferred to national counterparts and/or project beneficiaries during the project implementation as deemed appropriate by the UNIDO Project Manager in consultation with project stakeholders

7. Consistency with National Priorities

Describe the consistency of the project with national strategies and plans or reports and assessments under relevant conventions from below:

NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, INDCs, etc.

184. Pakistan ratified the Paris Agreement and submitted its INDC on 11th November 2016. In it, Pakistan declares its intention to reduce up to 20% of its 2030 projected GHG emissions subject to availability of international grants. The INDC highlights that sustained economic growth will remain a major challenge if the prevailing energy crisis and environmental vulnerabilities are not overcome in the near future. As such, the project will directly support the INDC objectives by promoting Waste to Energy Project which will ultimately result in the lesser emissions of carbon also it will result in the development of professionals in the field of climate change and the facilitation of financial national and international support.

185. Pakistan Climate Change Act, which has been approved by the Cabinet envisages an overarching Pakistan Climate Change Council headed by the Prime Minister of Pakistan and Pakistan Climate Change Fund which will mobilize resources from both domestic and international sources for providing finances to support mitigation and adaptation initiatives in the country.

186. National Climate Change Policy 2012 has the objective to achieve sustained economic growth while appropriately addressing climate change challenges. It offers recommendations on mitigation and adaptation technologies and capacity building of relevant stakeholders. The project is aligned with this policy as it seeks to build national institutional capacity and awareness raising among the relevant players on environmental challenges.

187. National Power Policy 2013 highlights the importance of energy conservation and efficiency as well identification of alternate resources of power generation. The project intervention will

contribute for this objective by promoting clean technologies integrating renewable energy, energy efficiencies, and waste management.

188. As per the National Environment policy 2005, following two clauses i.e. "Encourage reduction, recycling and reuse of municipal and industrial solid and liquid wastes" and "Develop and implement strategies for integrated management of municipal, industrial, hazardous and other waste at national, provincial and local levels". This proposed project of cleantech innovation integrating renewable energy, energy efficiencies, and waste management within the context of material, energy and resources sustainability and circularity is directly consistent with the above two clauses of National Environment policy 2005.

189. In line with its efforts to promote renewable and indigenous resources for power generation, Pakistan's National Electric Power Regulatory Authority (NEPRA) has approved the generation licenses to a few waste to energy plant along with appropriate tariffs. This is an encouraging sign and will pave the way for future such projects and also indicates Government of Pakistan's commitment to promote W2E projects.

8. Knowledge Management

Elaborate the "Knowledge Management Approach" for the project, including a budget, key deliverables and a timeline, and explain how it will contribute to the project's overall impact.

190. A knowledge base will be developed in terms of information management, sharing best practices and lessons learned, as well as engagement in effective information exchange among the countries involved under the global GCIP framework. The proposed project will share the results and knowledge, to be disseminated through participation in regional meetings, conferences and Cleantech platform. As the project progresses and implementation results become tangible and demonstrable, the knowledge management system will be used to develop benchmarks for clean tech innovations in Pakistan and to develop case-studies for promotional activities. Therefore, the knowledge management postulates main framework of this programme and facilitates to capture findings, institutionalizing learning and knowledge sharing across participant countries by making the structure of the programme accessible and replicable, as well as bringing selected finalists from around the world to showcase their innovations at the Global Cleantech Forum. This facilitates the transfer, innovation and dissemination of low carbon technologies, a key challenge under the Framework Convention on Climate Change.

191. A key aspect in knowledge management will be the creation of a national pool of mentors and judges, by the "training the mentors" approach, to enhance the sharing of best practices and business skills among participants and stakeholders in a structured manner. The national pool of mentors/judges will be created and trained to provide entrepreneurs required skills to enable their participation in this programme,

and ultimately to bring their innovations to be commercialized at the market. Mentors and judges will broaden the impact of the programme by providing one-on-one training for entrepreneurs and alumni of the programme. The PMU will be established and be responsible for including various stakeholders to ensure that the selection process for entrepreneurs is inclusive and impactful in identifying the right candidates for the programme.

192. This is in line with the one of key government's goals, to expand innovative activities to ensure sustainable economic development and support scientific potential and innovative activity that is crucial for a knowledge-based economy. In order to support innovative entrepreneurship and developing new activity types and products in clean energy technology innovations, the government measures will be taken to establish industrial parks and innovation zones applying advanced technologies and designing knowledge intensive products and technologies in Pakistan.

193. In light of the above, the continuation of accelerator programme will be further build upon the experiences and lessons learned under the global GCIP framework. This will contribute to creating a vibrant platform and network members. It can represent a key partner for the implementation and delivery of this programme and also facilitates the transfer, innovation and dissemination of green technologies, a key challenge under the Framework Convention on Climate Change. The new trends in innovation cleantech areas and integration of lessons learned, based on completed and ongoing GCIP projects, will be incorporated. Through organization of trainings, workshops, roundtables, expert group meetings, printing materials and through the Cleantech platform, the knowledge sharing will be strengthened as the programme expands into new countries and cleantech areas. These combined set of outreach activities will ensure recognition of and support for the programme beyond the competition cycle. In order to ensure sustainability of this project beyond project duration and to attract more interest, the national coordinators will be tasked to ensure the visibility of the programme and accessibility of key findings through the Cleantech Platform. This will provide the opportunity to reach out to future entrepreneurs and investors, while raising public awareness on clean energy technologies and ultimately contribute to the climate change mitigation. A number of regional and international events to bring project teams and semi-finalists together will be organized, as stated in the outputs. The project will strive to create a vibrant and sustainable Cleantech ecosystem through partnerships with various stakeholders, holding expert meetings with partners and SME associations to review successes in the various competition cycles and establish commitments to moving forward.

194. For its sustainability and further innovation fostering in the region, the inclusive and sustainable methods will be also discussed, in order to identify and apply tangible solutions to existing challenges in the country. These results will be made accessible to the public through the Cleantech platform and accelerator programme.

195. All project reports will be shared with the relevant counterparts and disseminated through their institutional websites and UNIDO's open data platform. All knowledge management material will be gender mainstreamed. For instance, gender responsive training and advocacy material will not perpetuate gender stereotypes through presenting women only in their traditional roles.

196. A knowledge management, communication, and advocacy strategy framework will be developed by UNIDO with a particular focus on a) Promoting visibility of the project and communicating its impacts achieved at national and global levels; b) Increasing awareness of the catalytic role of cleantech in addressing climate change and environmental issues; c) Showcasing cleantech innovations from the project's alumni and enhancing their visibility and credibility.

197. The knowledge management, communication, and advocacy strategy will specify the exact knowledge products to be delivered along with relevant timelines and milestones. The table below provides a general overview of deliverables relevant for knowledge management.

198. The project's knowledge management, communication, and advocacy strategy will specify the exact knowledge products to be delivered along with relevant timelines and milestones. The budget allocated for these activities include 1) Establishing online tools and maintain web-based knowledge platform to act as one-point solution for all cleantech related information for the alumni network as well as linking Pakistan platform with Global GCIP Platform and to create and maintain a section of Pakistan on the global GCIP web platform (Activity 3.1.3 a & 3.1.3.b) at USD 15,000. In addition, series of events are included in under the Component 2 budget which amount to USD 115,986. Others are vested in the budget of hiring consultants which is estimated to be USD 80,000. The table below provides a general overview of deliverables relevant for knowledge management.

Deliverable	Timeline
A pool of experts (trainers, mentors, judges) created	By the 6 th month of project implementation/execution with regular updates after every half a year
The knowledge management, communication, and advocacy strategy framework reviewed and adapted to the project (Output 3.1.2)	By the 6 th month of project implementation/execution with regular updates each year

Policy briefs, impact reports, brochures, webinars and other types of promotional materials distributed through briefing sessions, press releases, social media presence, advertising, etc. ? in line with the project?s knowledge management, communication, and advocacy strategy	From the 6 th month of project implementation/execution and according to the timeline as to be specified from the project?s knowledge management, communication, and advocacy strategy
The project?s web platform created and operationalized (Output 3.1.3), including a special section for the alumni network	By the 6 th month of project implementation/execution
National Forum and GCIP Global Forum, as well as Investor Connect and regional technology brokerage events organized	Annually/bi-annually

9. Monitoring and Evaluation

Describe the budgeted M and E plan

199. The monitoring and evaluation (M&E) will be conducted in accordance with established UNIDO and GEF procedures. The overall objective of the M&E is to ensure successful and quality implementation of the project by: i) tracking and reviewing project activities execution and actual accomplishments; ii) providing visibility into progress as the project proceeds so that the implementation team can take early corrective action if performance deviates significantly from original plans; and iii) adjusting and updating project strategy and implementation plans to reject possible changes on the ground, results achieved and corrective actions taken.

200. According to the M&E policy of the GEF and UNIDO, follow-up studies like Country Portfolio Evaluations and Thematic Evaluations can be initiated and conducted. All project partners and contractors are obliged to (i) make available studies, reports and other documentation related to the project and (ii) facilitate interviews with staff involved in the project activities.

201. The Project Result Framework (Annex A) provides performance and impact indicators for project implementation/execution along with their corresponding means of verification. The actual progress will be reported against the workplan approved by the PSC. In case there are significant deviations between the forecasted workplan and actual implementation, corrective measures will need to be taken.

202. There will be a M&E framework provided by the GCIP Global, based on which MoCC will prepare a Pakistan M&E plan, including time-bound milestones and deliverables. MoCC will also draft progress review reports every six months. There will be an external mid-term review of the project conducted halfway through project implementation. The ESSPP considerations, as well as gender dimensions and baseline for gender related targets will be appropriately captured in the project's M&E plan, in the progress review reports, as well as in the collection and assessment of relevant data. The M&E plan will encompass monitoring of the Environmental and Social Management Plan, the Stakeholder Engagement Plan, the Gender Analysis Report, and a risk analysis.

203. The methodology for impact assessment will be developed by the GCIP Global and shared with the project for review and application. This will ensure a common understanding of estimation, tracking, and reporting approaches amongst all involved stakeholders, and will allow for data aggregation, comparisons, and extrapolation, not only on the national, but also on the global programme level. The methodology will enable assessment of social, economic, and environmental impacts, and at a minimum, it will account for global environmental benefits (GEBs), job creation, gender mainstreaming, and investment leveraged. The data will be sex-disaggregated and gender-sensitive, and youth participation will also be recorded.

204. The core M&E activities under the project is preparation of M&E plan reflecting country contexts as well as periodical reporting and review including progress report, mid-term review and terminal evaluation. During the execution phase, the PEE under the supervision by UNIDO will ensure the timely and quality preparation of M&E plan and associated reporting. These are also based on day to day monitoring of project activities as well as progress and deliverables from them, according to Pakistan M&E plan. As mentioned above, the project will benefit from M&E tools provided by the GCIP Global framework which will ensure coherence of the project to the global program while enabling effective aggregation of data and impact at the program level. Based on the M&E tools developed under the GCIP Global framework, the detailed Pakistan M&E plan will be developed in conjunction with the Project Execution Agreement to be signed with the PEEs. An overview of indicative costs of M&E activities is provided in the table below.

M&E activities	Timeframe	GEF Budget (USD)	In-kind co-financing (USD)	Responsible Parties
M&E plan	First 3 months after implementation start	2,000	40,000	MoCC
Periodic progress reports	6-monthly	8,000	40,000	MoCC

Mid-term review	At 1.5 years	15,000	60,000	External evaluator, submission to UNIDO
External terminal evaluation	Started six months prior to the expected completion date of the project	35,000	60,000	External evaluator, submission to UNIDO
Total		60,000	200,000	

10. Benefits

Describe the socioeconomic benefits to be delivered by the project at the national and local levels, as appropriate. How do these benefits translate in supporting the achievement of global environment benefits (GEF Trust Fund) or adaptation benefits (LDCE/SCCF)?

205. The project is expected to result in more cleantech start-ups and SMEs being identified and supported, thus acting as a catalyst for entrepreneurship development and cleantech investment in Pakistan. The accelerator project Pakistan, as a dedicated national platform for promoting and supporting cleantech innovation, will result in an enhancement of human capital, thereby leading to job creation and poverty reduction as well as to an increased women participation in the entire value chain of technology development. New job opportunities in the country will in turn contribute to further reduce the current brain drain of Pakistan, which according to the brain drain index, in 2021 ranks 72 out of 173 countries[1]. The clean technologies deployed will contribute to the reduction of GHG emissions focusing around the priority sectors and industries related to renewable energy, energy efficiencies and waste management, by promoting innovative cleantech solutions for long lasting positive effects on environment and socio-economic benefits by enhancing economic green growth. These include solutions of waste to energy for the improvement of resource efficiency and energy access, resulting in environmental improvements, and consequently reducing health risks, in particular for women and children.

206. The project will provide added value by bridging the gap between cleantech innovators and investors, thereby paving the way for the creation of new businesses opportunities resulting in a value added for the domestic economy. At the same time, through engaging all relevant stakeholders in the national CIEE, and encouraging their cooperation, as well as through linking different CIEEs across countries, the project will provide opportunities for international business scale-up and exchange of knowledge.

207. It is expected that special attention will be given to address gender issues as described above; therefore, the project will contribute to the promotion of women entrepreneurial development and job creation for women in Pakistan.

208. In summary, the project yields the following socioeconomic benefits as a result of supporting and introducing new cleaner technologies into the market, strengthening national institutional capabilities, enhancing the availability of financial instruments, and encouraging inclusivity in the entrepreneurial and job markets. Specifically, these interventions lead to:

1) Enhancement of human capital

Entrepreneurial, environmental and technological skills development and awareness raising have the effect of a larger number of cleantech products being commercialized and entering the market. Better decisions are made by entrepreneurs regarding the sustainability and life cycle approach to the products and businesses.

2) Local product development and production with job creation, generating more income

Fostering new local technologies lowers costs benefiting both the technology developer and end-user and encourages consumers to buy more efficient products and have a great benefits from this technological change.

3) An enriched innovation ecosystem

The high-quality institutions attract the build confidence in local and foreign investors as well as the small business community in an economy due to low volume of transactions costs that result in the advancement of environment friendly technologies.

4) Improved energy access for people living in rural areas

Investing in energy access, electrification and renewables are well known to contribute to the decarbonization of the economy. Also, the move away from traditional cooking and heating methods reduces health risks. In addition, in cases on waste to energy, the associated improved waste management practices will enhance quality of environment which will lead to better health and productivities.

5) Promotion of women and youth entrepreneurial development and job creation

The promotion of gender and youth inclusion and mainstreaming in a country tends to be productive, innovative and creative for problem solution so it is an advantage to obtain environmental targets. Mainstreaming diversity will encourage the cooperation and cohesion of people in advocating for environmentally beneficial practices and products.

[1] The Global Economy (2021) Human flight and brain drain index ? country rankings, available at

https://www.theglobaleconomy.com/rankings/human_flight_brain_drain_index/

11. Environmental and Social Safeguard (ESS) Risks

Provide information on the identified environmental and social risks and potential impacts associated with the project/program based on your organization's ESS systems and procedures

Overall Project/Program Risk Classification*

PIF	CEO Endorsement/Approval	MTR	TE
Medium/Moderate	Medium/Moderate		

Measures to address identified risks and impacts

Elaborate on the types and risk classifications/ratings of any identified environmental and social risks and impacts (considering the GEF ESS Minimum Standards) and any measures undertaken as well as planned management measures to address these risks during implementation.

The project has been categorized as Category B as per the UNIDO ESSPP (Environmental and Social Safeguards Policies and Procedures) based on an analysis of the environmental and social risks, i.e. there are few likely adverse impacts which will be site-specific, and few if any will be irreversible. In most cases the negative impacts can be readily avoided or mitigated with appropriate mitigation measures or through incorporating internationally recognized design criteria and standards.

Supporting Documents

Upload available ESS supporting documents.

Title	Module	Submitted
10885_ESMP_Pakistan	CEO Endorsement ESS	
5_ES screening- Pakistan_signed	Project PIF ESS	

ANNEX A: PROJECT RESULTS FRAMEWORK (either copy and paste here the framework from the Agency document, or provide reference to the page in the project document where the framework could be found).

Project Strategy	KPIs/SDG and ISID Indicators	Base - line	Target (for the entire project duration)	Means of Verification	Assumptions
Objective Promote high-impact clean technology innovation for scale up climate action and creation of green jobs, especially in integrated waste value chain in Pakistan	ENV1: Cumulative reduction of CO2eq emissions (directly and indirectly) in tons	0	at least 153,000 (directly) and at least 765,000 (indirectly)	Project progress reports	Continuous support from the Government of Pakistan and national partner institutions Commitment by CIEE stakeholders Interest by cleantech entrepreneurs and investors
	ECO1: Number of new firms/enterprises with economic gains (cumulative)	0	85 (at least 35 % woman led)	Project evaluation reports	
	SOC1: Number of additional jobs created or retained	0	255 (at least 35 % women)	Project impact reports	
	Number of direct beneficiaries disaggregated by gender as a co-benefit of GEF investment	0	2,640 (at least 35 % women)	GEF Tracking tools	
	Investment leveraged (million USD)	0	2	Database and records maintained during and after project completion	
Component 1 - Transforming early-stage innovative cleantech solutions into scalable enterprises					

Outcome 1.1 Early-stage cleantech innovations are accelerated	TEC.1: Number of new technologies developed or adapted (firms towards commercialization)	0	85 (at least 35 % woman led)	Project progress reports	Continuous support from the Government of Pakistan and national partner institutions Commitment by CIEE stakeholders Interest by cleantech entrepreneurs
	REA.2: Number of actors (people) engaged[1] (in fora/workshops/EGM/side events/ investment facilitations/ investor forums organized at partner cooperation?s and government agencies)	0	440 (at least 35 % women)	Meeting attendance Meeting Notes	
	KASA2.: Number of actors (people) gaining skills on UNIDO knowledge areas (in public and private investments gaps and opportunities, innovative financial instruments in cleantech sector)	0	440 (at least 35 % women)	Training Attendance records	
Output 1.1.1 The Cleantech accelerator operational guidelines including methodologies, guidelines, tools and training systems are developed and adopted in alignment with Clean Green Pakistan Index (CGPI)	TCO.3: Number of toolkits and guidelines produced (guidebooks reflecting Pakistan?s ecosystem context) produced	0	3 versions of guidebooks 1 on acceleration; 1 on advanced acceleration; 1 on post-acceleration support	Project progress reports	Continuous
	Number of consultation sessions held with relevant CIEE stakeholders on the Pakistan Guidebooks	0	2	Attendance records from consultation meetings and events	
	TCO.3: Number of toolkits and guidelines, produced and disseminated (cleantech innovation accelerator training kits e.g. methodologies, tools and training materials and certification system, including integration of the gender mainstreaming approach)	0	1	Meeting Notes	

<p>Output 1.1.2</p> <p>Pool of cleantech innovation and entrepreneurship experts (trainers, mentors, and judges) is trained through regional training programs in cooperation with local universities and institutions</p>	<p>TCO.1: Number of capacity building activities provided (for experts)</p>	0	<p>4 Expert Trainings for Cleantech innovation mentors, judges and coaches</p> <p>2 Entrepreneurship training programmes for universities/institutions</p>	<p>Project progress reports</p> <p>Project evaluation reports</p>	<p>support from the Government of Pakistan and national partner institutions</p> <p>Commitment by CIEE stakeholders</p> <p>Interest by cleantech entrepreneurs</p>
	<p>Number of experts evaluated and certified</p>	0	100	<p>Training Attendance Record</p>	
	<p>Share of experts completing the 'I know gender?' training (or similar if not available)</p>	0	100%		
<p>Output 1.1.3</p> <p>Three cycles of the annual competition-based accelerator are conducted in alignment with the national initiative of 'Clean Green Pakistan Movement' (at least 85 enterprises)</p>	<p>TCO.1: Number of annual cycles of the Pakistan accelerator delivered</p>	0	3	<p>Project progress reports</p>	
	<p>Number of participants receiving support through the Pakistan Pre-Acceleration phase (sex-disaggregated by team leader)</p>	0	85 (at least 35% women-led)	<p>Training Attendance Record</p> <p>Meeting Attendance records</p>	
	<p>Number of applicants to the Mongolia Cleantech accelerator (sex-disaggregated per team leader)</p>	0	250 firms (at least 35% women-led)	<p>Meeting minutes</p>	

Outcome 1.2 Start-ups and SMEs are supported through advanced and gender-responsive business growth and investment facilitation services	INV.1: Number of investment-ready proposals elaborated (enhanced business plans and investment proposals from firms)	0	12 (finalists) (at least 35% woman-led)	Project progress reports Meeting Attendance records	Continuous support from the Government of Pakistan and national partner institutions Commitment by CIEE stakeholders Interest by cleantech entrepreneurs
	INV.2: Number of projects/businesses financed	0	4 (at least 35% woman-led)	Meeting minutes	
	INV.3: Value of new investment leveraged (USD)	0	4 (million)		
	REA.2: Number of actors (firms) engaged (in fora/workshops/EGM/side events/ investment facilitations/ investor forums organized at partner cooperation?s and government agencies)	0	12 (finalists) (at least 35% woman-led)		
	KASA.2.: Number of actors (firms) gaining skills on UNIDO knowledge areas (in public and private investments gaps and opportunities, innovative financial instruments in cleantech sector)	0	12 (finalists) (at least 35% woman led)		
Output 1.2.1 Advanced technical, business advisory and commercialization support for the selected start-ups and SMEs provided (for at least 12 start-ups and SMEs)	Number of enterprises provided with Advanced Accelerator support (sex-disaggregated per team leader) TCO.1: Number of capacity building activities provided (needs based specific training sessions associated with business growth support delivered to the selected entrepreneurs)	0 0	12 (at least 35% woman-led) 8	Project progress reports Training Attendance records Meeting minutes	Continuous support from the Government of Pakistan and

Output 1.2.2 Enterprises are connected to financing opportunities and provided with tipping-point investment facilitation support and/or finances for piloting (for at least 4 of the selected 12 startups and SMEs)	Number of business cases validated, including technology verification, product development and testing facility support to the enterprises	0	4	Project progress reports	national partner institutions
	Number of enterprises provided with Post Accelerator support (sex-disaggregated per team leader)	0	4 (at least 35% woman-led)	Training Attendance records	Commitment by CIEE stakeholders
	CPO.1: Number of global fora, workshops/EGM/side events organized (Investor connect)	0	3	Meeting minutes	Interest by cleantech entrepreneurs
Output 1.2.3 Investment is mobilized to implement at least one project in each of the four city municipalities performing under CGPI (in total at least four projects)	TCO.4: Number of business plans developed (innovative cleantech solutions supported by the financial mechanism)	0	4 (one project per municipality) (at least 35% woman-led)	Project progress reports Project evaluation reports Project impact reports	
Component 2 - Cleantech innovation and entrepreneurship ecosystem (CIEE) strengthening and connectivity enhanced					
Outcome 2.1 The CIEE in Pakistan is strengthened and interconnected	POL.3: Number of guidelines adopted by relevant actors (new or revised strategies and action plans endorsed by government bodies)	0	1	Project progress reports Project evaluation reports	Continuous support from the Government of Pakistan and national partner
	REA.1: Number of actors (people) reached[2] (in international Forums, GCIP Forum, UNFCCC COP, Cleantech forums, Asia Pacific Climate Week)	0	2,200 (at least 35% women)	Project impact	

	KASA1.: Number of actors (people) gaining awareness and knowledge on UNIDO knowledge areas (in public and private investments gaps and opportunities, innovative financial instruments in cleantech sector)	0	2,200 (at least 35% women)	reports	institutions
	REA.2: Number of actors engaged	0	30 (at least 35% women)	Meeting Attendance records	Commitment by CIEE stakeholders
	KASA2.: Number of actors (people) gaining skills on UNIDO knowledge areas (in public and private investments gaps and opportunities, innovative financial instruments in cleantech sector)	0	30 (at least 35% women)	Meeting Minutes	Interest by cleantech entrepreneurs
Output 2.1.1 National and regional institutions structural and operational capacities are strengthened considering social and gender dimensions so as to promote GEEW	TCO.3: Number of toolkits and guidelines produced and disseminated (gender responsive report on Pakistan's technology gaps and innovation opportunities in priority sectors)	0	1	Project progress reports	Continuous support from the Government of Pakistan and national
	TCO.1: Number of capacity building activities provided (for national and regional institutions concerning technical and administrative needs to support Cleantech programmes)	0	3	Project evaluation reports	
	CPO.1: Number of global fora, workshops/EGM/side events organized (multi-stakeholder policy dialogues and consultations on best available technologies and cleantech innovation)	0	3	Project impact reports	
	Number of clean technology and innovation hubs established at regional levels in line with CGPI	0	4	Meeting Attendance records	
				Meeting Minutes	

Output 2.1.2 Policy and regulatory recommendations to enhance the clean technology innovation and entrepreneurship ecosystem are developed at local level under consideration of gender equality	PAO.1: Number industrial strategies and policy documents produced (CIEE assessment and roadmap of long-term implementation and annual updates)	0	1	Project progress reports	partner institutions Commitment by CIEE stakeholders Interest by cleantech entrepreneurs
	CPO.1: Number of global fora, workshops/EGM/side events organized (multi-stakeholder policy dialogues with alumni and relevant national CIEE stakeholders on CIEE assessment, action plan/roadmap)	0	3	Meeting attendance records Meeting minutes	
	Number of analytical publication (Handbook based on experiences from evaluation and appraisal of innovative cleantech solutions)	0	1		
Output 2.1.3 Linkages, collaboration, and synergies across CIEEs are promoted	TCO.3: Number of toolkits and guidelines produced (gender responsive stakeholder engagement strategies and cleantech innovation cluster strategies)	0	2 (1 for stakeholder engagement and 1 for innovation cluster)	Project progress reports Project evaluation reports	
	Number of national facilitators trained	0	10 (at least 35% women)		
	Share of national facilitators completing the 'I know gender?' training (or similar if not available)	0	100%	Training Attendance records	
	CPO.1: Number of global fora, workshops/EGM/side events/ organized (Annual PPP forum)	0	3	Meeting Minutes	
Outcome 2.2 Gender equality is supported and strengthened by the CIEE in Pakistan	POL.3: Number of guidelines adopted by relevant actors (new or revised policies, guidelines for supporting and strengthening gender equality in CIEE in Pakistan)	0	1	Project progress reports Project evaluation	Continuous support from the Government of Pakistan and national partner

	REA.1: Number of actors (people) reached (in national, regional and international forums (GCIP forum, UNFCCC COP, Cleantech forum, Asia Pacific Week)	0	100 (at least 35% women)	reports	institutions
	KASA1.: Number of actors (people) gaining awareness and knowledge on UNIDO knowledge areas (in public and private investments gaps and opportunities, innovative financial instruments in cleantech sector)	0	100 (at least 35% women)	Project impact reports	Commitment by CIEE stakeholders
	REA.2: Numbers of actors engaged (relevant firms or institutions to support/strengthen gender equality)	0	5 (at least 35% women)	Meeting Notes	Interest by cleantech entrepreneurs
	KASA2.: Number of actors gaining skills on UNIDO knowledge areas (relevant firms or institution to support/strengthen gender equality and the empowerment of women in cleantech sector)	0	5 (at least 35% women)	Training Attendance records	
	GOV.2: Number of actors participating in enhanced collaboration settings (women`s hub/chapter/network platform for promoting women`s involvement into the project)	0	5 (at least 35% women)		
Output 2.2.1 Women?s cleantech hub/network established to support and accelerate the formation of local	TCO.3: Number of toolkits and guidelines produced and disseminated (gender responsive needs assessment to promote cleantech innovation and entrepreneurship)	0	1	Project progress reports	
				Project	

innovation ecosystems in a more inclusive manner	CPO.1: Number of global fora, workshops/EGM/side events organized (multi-stakeholder policy dialogues and consultations validating the constitutions and to enhance networks)	0	1	evaluation reports Project impact reports	
Output 2.2.2 Mentoring programme for women implemented	TCO.1: Number of capacity building activities provided (Mentoring programme specifically targeting women entrepreneurs, associations and gender focal points, pool of women experts)	0	4	Project progress reports Training attendance records	Continuous support from the Government of Pakistan and national partner institutions
	Number of women cleantech experts trained	0	35		
Output 2.2.3 Campaign conducted to raise awareness on roles of women in CIEE	TCO.3: Number of toolkits, technical guidelines, best practices produced and disseminated (campaign/awareness materials)	0	1	Project progress reports Project evaluation reports	Commitment by CIEE stakeholders Interest by cleantech entrepreneurs
	CPO.1: Number of global fora, workshops/EGM/side events organized (awareness raising campaigns to promote gender dimension of the project and women role models in the cleantech ecosystem)	0	1	Meeting Minutes	
Component 3 - Programme coordination, monitoring and coherence					
Outcome 3.1 Efficiency and sustainability of the CIEE in Pakistan is ensured	GOV.2: Number of actors participating in enhanced collaboration settings (key government stakeholders interacting/ partnering with GCIP Global and gaining skills on GCIP approaches)	0	2	Project progress reports Project evaluation	Continuous support from the Government of Pakistan and national partner institutions

	POL.3: Number of guidelines adopted by relevant actors	0	3	reports	Commitment by CIEE stakeholders
				Meeting Notes	Interest by cleantech entrepreneurs
				Training Attendance records	
Output 3.1.1	TCO.3: Number of toolkits and guidelines produced and disseminated (operational guidelines for PMU)	0	2	Project progress reports	Continuous support from the Government of Pakistan and national partner institutions
The internal guidelines for project management teams are adapted for Pakistan's country context and implemented	TCO.3: Number of toolkits and guidelines produced and disseminated (sustainability and exit strategy)	0	1	Project evaluation reports	
	CPO.1: Number of global fora, workshops/EGM/side events organized (for national PEE representatives related to internal guidelines implementation)	0	3	Meeting Notes	
Output 3.1.2	TCO.3: Number of toolkits and guidelines produced and disseminated (gender responsive knowledge management strategy)	0	1	Project progress reports	Commitment by CIEE stakeholders
Programme-level knowledge management, communication and advocacy strategy is adapted for Pakistan's country context and implemented	Number of briefing sessions, press releases, social media posts and adverts (with special attention on needs of women & youth)	0	15 (at least 35% targeting woman)	Project evaluation reports	
				Project impact reports	Interest by

Output 3.1.3 The web platform is operated for the project to maintain the GCIP community	TCO.3: Number of toolkits and guidelines produced and disseminated (Pakistan web platform/chapter established)	0	1	Project progress reports Project evaluation reports Project impact reports	cleantech entrepreneurs
Outcome 3.2 Impacts and progress of all the project activities and indicators are adequately monitored and reported	POL.3: Number of guidelines adopted by relevant actors (impact monitoring methodology adopted by government bodies)	0	1	Project progress reports	Continuous support from the Government of Pakistan and national partner institutions
	REA.1: Number of actors reached (in impact tracking of cleantech acceleration)	0	5 (at least 35% women)	Training attendance records	Commitment by CIEE stakeholders
	KASA.1: Number of actors gaining awareness/knowledge on UNIDO knowledge areas (in impact tracking of cleantech acceleration)	0	5 (at least 35% women)		Interest by cleantech entrepreneurs
Output 3.2.1 National impact monitoring established in coordination with MoCC	TCO.1: Number of capacity building activities provided (workshops for PEE and partners on the use and methodology of UNIDO impact monitoring) (organized by UNIDO)	0	1	Project progress reports Project evaluation	

	PAO.2: Number of analytical and statistical publication produced (Pakistan enterprise impact data & and project impact report) (gender responsive)	0	1	reports Project impact reports Training attendance records	
Output 3.2.2 Project effectively monitored including monitoring and reporting on the ESMP and risks	Number of analytical and statistical publications (PIRs) produced (gender responsive)	0	8	Project progress reports	Continuous support from the Government of Pakistan and national partner institutions Commitment by CIEE stakeholders
	Number of analytical publications (Pakistan M&E plans) produced and updated (gender responsive)	0	4	Project evaluation reports Project impact reports	
Output 3.2.3 Gender mainstreaming action plan operationalized, monitored and gendered impact evaluated	Number of Gender Mainstreaming action plan developed, approved by the PSC, implemented and monitored	0	1	Project progress reports Project evaluation reports Project impact reports	Interest by cleantech entrepreneurs
Output 3.2.4 External mid-term review and	Number of external mid-terminal review conducted (gender responsive)	0	1	Project progress reports	

independent terminal evaluation conducted	Number of independent terminal evaluation conducted (gender responsive)	0	1	Project evaluation reports	
				Project impact reports	

[1] **Engage** refers to more in-depth, bidirectional interactions (e.g. training sessions), which could aim to improve awareness or knowledge but also skills and capacities.

[2] **Reach** refers to interactions that have a unidirectional type of communication (e.g. event or panel session, publication, press conference, exhibition, etc.), typically aiming to improve awareness or knowledge.

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).

N.A.

ANNEX C: Status of Utilization of Project Preparation Grant (PPG). (Provide detailed funding amount of the PPG activities financing status in the table below:

The committed funds will be spent in the project start-up phase, i.e. they will be used 1) predominantly to strengthen the capacity of and provide training to the national PEE (Ministry of Climate Change) on the project execution arrangements with due consideration of the updated GEF guidelines on the project and programme cycle policy (the training of the national PEE is directly related to project/country preparation and as such its cost is eligible to be financed from the PPG), 2) as well as to fund additional relevant start-up phase activities, such as for example translation of documents in local language, etc.

<i>Project Preparation Activities Implemented</i>	<i>GETF Amount (\$)</i>
---	-------------------------

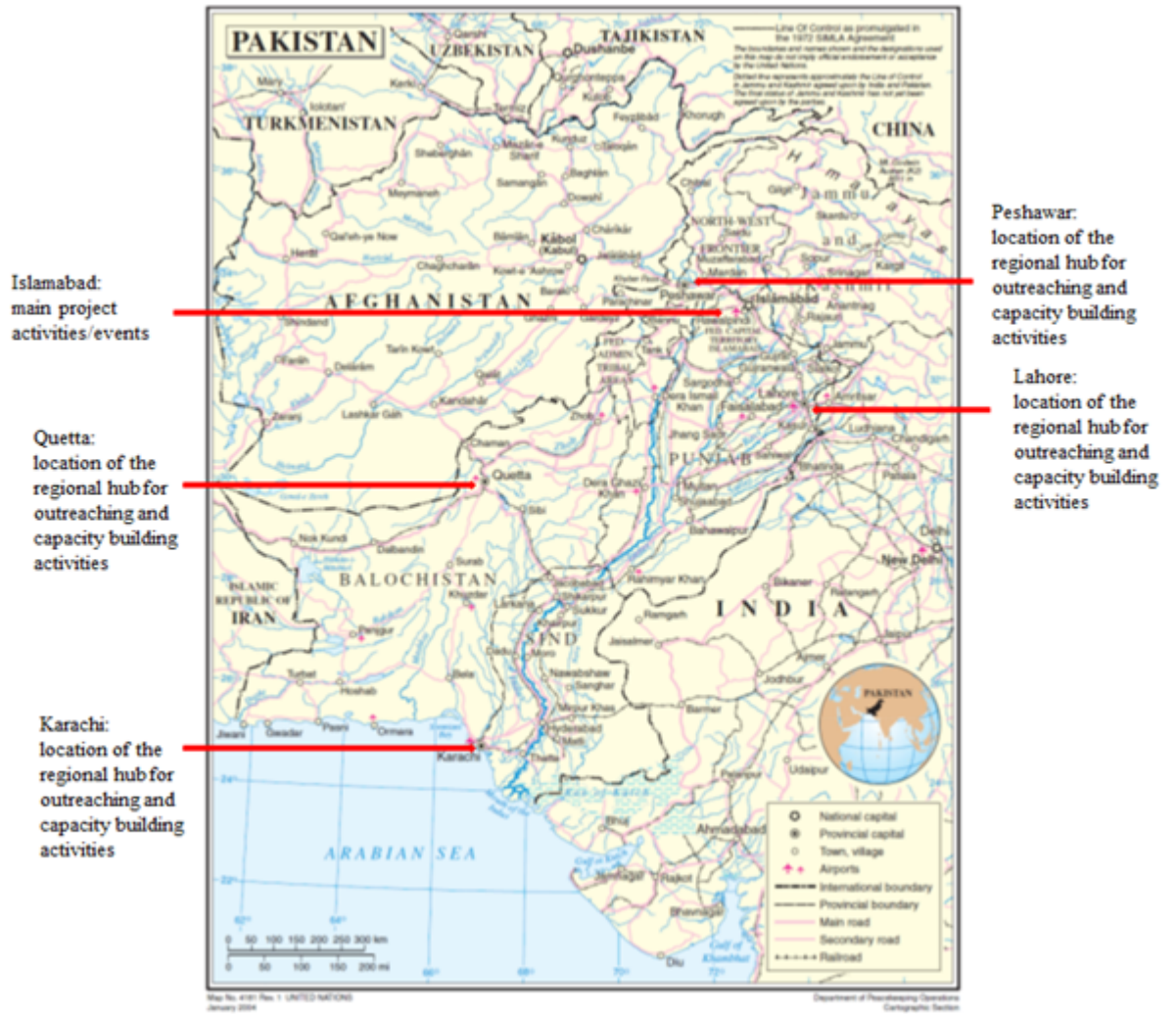
	<i>Budgeted Amount</i>	<i>Amount Spent To date</i>	<i>Amount Committed</i>
Stakeholder engagement activities during PPG (consultations, workshops, steering committee)	5,000.00	3,000.00	2,000.00
Analysis of baseline and ongoing/planned initiatives Collection of baseline data on relevant sectors/technologies	5,000.00	3,645.74	1,354.26
Selection of project executing entity/ies through UNIDO procurement process Assessment of the project execution agency/ies TOR for contractual arrangements with executing entity/ies	10,000.00	1,000.00	9,000.00
CEO endorsement request submitted to GEF Sec, with full document package including environmental and social management plan (ESMP) gender assessment GHG reduction potential calculations co-financing letters	30,000.00	16,000.00	14,000.00
Total	50,000.00	23,645.74	26,354.26

ANNEX D: Project Map(s) and Coordinates

Please attach the geographical location of the project area, if possible.

The project will include the entire country of Pakistan. While the project is targeted at beneficiaries (entrepreneurs and all relevant CIEE stakeholders, such as universities, policy makers, financiers, and R&D institutions) from all over the country, the main project events will be conducted in the capital city of Islamabad. In addition, some outreaching and capacity building events will be held in specific provincial hubs at Lahore, Quetta, Karachi and Peshawar, that will anchor project activities around existing platforms and networks. The project boundary will not overlap any other country's territory. The geo-coordinates and location are as following:

- 1) Islamabad 33.68992° S, 73.04510° E
- 2) Lahore 31.53736° S, 74.34555° E
- 3) Quetta 30.18684° S, 66.98436° E
- 4) Karachi 24.97904° S, 67.04886° E
- 5) Peshawar 34.18858° S, 71.50045° E



ANNEX E: Project Budget Table

Please attach a project budget table.

Indicative Project Budget

Accelerating low-carbon circular economy through cleantech innovation towards sustainable development in Pakistan (GEF ID 10885)

2022-09-20

Sum of Budget (USD)

Row Labels	Column Labels				
	Component 1	Component 2	Component 3	M&E	PMC
Selected PEE	940,000	574,986	40,000	10,000	161,000
Contractual Services – Company	272,000	110,000	23,000	-	40,000
Activity 1.1.1 a To review and adapt the guidebooks to reflect the context of Pakistan's CIEE, including market conditions, gender context, policy environment, development priorities, technology focus, local examples, etc.	10,000	-	-	-	-
Activity 1.1.1 c To identify criteria for cleantech mentors, judges and coaches, integrating gender-sensitivity within the approach - technical, financial, and gender consultants.	5,000	-	-	-	-
Activity 1.1.1 d To develop methodologies, tools and training materials and certification system, including integration of the gender mainstreaming approach.	8,000	-	-	-	-
Activity 1.1.2 a To provide (at least 4) capacity building/expert training as well as conduct evaluation and certification for (at least 100) Cleantech innovation mentors, judges and coaches, with inputs from Global GCIP, technical, financial and gender consultants.	20,000	-	-	-	-
Activity 1.1.2 b To organize two entrepreneurship training programmes at universities including identification of the teachers/professors, adaptation of the GCIP accelerator course, delivery of training programme and initial delivery of training to students.	15,000	-	-	-	-
Activity 1.1.3 a To provide pre-accelerator services for potential accelerator entrants, tailored to the three priority sectors of renewable energy, energy efficiencies and waste management (The Pre-Accelerator as a 10-day (7 days virtual/3 day in-person) programme for around 50 participants annually, around 6-8 weeks prior to the Accelerator application deadline for customized assistance in developing their pool of potential applications.	34,000	-	-	-	-
Activity 1.1.3 b To deliver three annual cycles of the Pakistan Accelerator.	40,000	-	-	-	-
Activity 1.2.1 a Conduct capacity needs assessment of selected entrepreneurs for systematic promotion and acceleration of cleantech commercialization (at least 12).	40,000	-	-	-	-
Activity 1.2.1 b To identify Accelerator participants that would benefit from the Advanced Accelerator support to tackle specific operational, financial, and strategic issues.	40,000	-	-	-	-
Activity 1.2.1 c To provide training and business growth support to selected cleantech entrepreneurs and SMEs through advanced acceleration services, i.e. identification of mentors, bespoke mentoring around actions, weekly calls, financial models	10,000	-	-	-	-
Activity 1.2.2 a To validate selected business models, prototypes and technologies (at least 4).	10,000	-	-	-	-
Activity 1.2.2 b To provide technology verification, product development and testing facility support to the enterprises with high impact potential (minimum of 4 enterprises).	10,000	-	-	-	-
Activity 1.2.2 c To provide needs-based tipping point needs-based investment facilitation support by organizing national investment facilitation events (Investor Connect) for the Viet Nam Post-Accelerator enterprises in accessing additional sources of finance, market entry, identifying networking opportunities, dealing with technical and administrative issues, accessing IT services, and tax registration, etc. in order to encourage the participation of seed funding providers from the national, regional and global stages in the Viet Nam and to leverage on the experience and knowledge of other GCIP countries	30,000	-	-	-	-
Activity 2.1.1 a To conduct study & analysis of CIEE in Pakistan including technology gaps and innovation opportunities as well as localization of global framework to Pakistan (e.g. assess and adopt global policy exercises to create baselines assumptions for national project, analyze opportunities and risks based upon case studies and observed best practices, identify policies for pro-innovation and those may have conflicts, elaborate KPIs to track progress, identify lessons learnt from global framework activities).	-	15,000	-	-	-
Activity 2.1.1 b To identify key stakeholders and establish effective and innovative clean technology ecosystems for guiding and supporting local SMEs and startups on finding solutions for low carbon and circular economy integrating renewable energy, energy efficiencies, and waste management.	-	15,000	-	-	-
Activity 2.1.1 c To develop and disseminate technical guidelines and data base such as existing legislative and regulatory, database of innovative clean technologies, practical tools, benchmarking, best practices, value chains database, pool of experts, related list of institutions, etc.	-	10,000	-	-	-
Activity 2.1.2 b To prepare Pakistan CIEE policy implementation plan for action/road map and recommendation.	-	20,000	-	-	-
Activity 2.1.2 d To develop a best practice handbook based on experiences from the project for guiding procedures on evaluation and appraisal of innovative clean-tech solutions in renewable energy, energy efficiencies, and waste management in the context of low carbon and circular economy.	-	25,000	-	-	-
Activity 2.1.3 a To develop relevant tools for CIEE strengthening and connectivity including: stakeholder engagement strategy framework, and cleantech innovation cluster framework; and to support PEE in developing a stakeholder engagement strategy and a cleantech innovation cluster strategy (in consultation with relevant CIEE stakeholders); as well as to conduct two engagement workshops (kick-off and follow-up) to train up to 10 national facilitators.	-	25,000	-	-	-
Activity 3.1.2 c To capture knowledge gathered by the Pakistan project through policy briefs, impact reports, brochures webinars, and other types of promotional materials, and to disseminate this knowledge through briefing, press releases, social media presence and advertising, etc. (in line with the knowledge management, communication, and advocacy strategy framework).	-	-	8,000	-	-
Activity 3.1.3 a & 3.1.3.b To establish online tools and maintain web-based knowledge platform to act as one-point solution for all cleantech related information for the alumni network & b To link Pakistan platform with Global GCIP Platform and to create and maintain a section of Pakistan on the global GCIP web platform	-	-	15,000	-	-
Activity 3.2.2 c To execute annual financial and technical audits - technical consultants	-	-	-	-	40,000
International consultants	190,000	-	-	-	-
Financial consultants (2.1.3 a & b; 2.2.2 b; 2.2.4 a)	100,000	-	-	-	-
Technical/Business consultants (2.2.1 a; 2.2.3 a & b)	90,000	-	-	-	-
Local consultants	65,000	334,000	17,000	10,000	70,000
Gender Expert	-	60,000	-	-	-
Knowledge Management and Communication Expert	-	70,000	10,000	-	-
Policy Expert	45,000	90,000	-	-	-
Environment & Social Experts	-	70,000	-	-	-
Technical Expert and Project Coordinator (NOC 7)	16,000	30,000	5,000	8,000	45,000
Project Administrative Assistant (GS 5/7)	4,000	14,000	2,000	2,000	25,000
Office supplies	-	-	-	-	31,000
Office supplies, rent, equipment, etc.	-	-	-	-	31,000
Training/workshop/meeting	73,000	115,986	-	-	-
Activity 1.1.2 a To provide (at least 4) capacity building/expert training as well as conduct evaluation and certification for (at least 100) Cleantech innovation mentors, judges and coaches, with inputs from Global GCIP, technical, financial and gender consultants.	8,000	-	-	-	-
Activity 1.1.2 b To organize two entrepreneurship training programmes at universities including identification of the teachers/professors, adaptation of the GCIP accelerator course, delivery of training programme and initial delivery of training to students.	5,000	-	-	-	-
Activity 1.1.3 a To provide pre-accelerator services for potential accelerator entrants, tailored to the three priority sectors of renewable energy, energy efficiencies and waste management (The Pre-Accelerator as a 10-day (7 days virtual/3 day in-person) programme for around 50 participants annually, around 6-8 weeks prior to the Accelerator application deadline for customized assistance in developing their pool of potential applications.	10,000	-	-	-	-
Activity 1.1.3 b To deliver three annual cycles of the Pakistan Accelerator.	35,000	-	-	-	-
Activity 1.2.1 c To provide training and business growth support to selected cleantech entrepreneurs and SMEs through advanced acceleration services, i.e. identification of mentors, bespoke mentoring around actions, weekly calls, financial models	6,000	-	-	-	-
Activity 1.2.2 c To provide needs-based tipping point needs-based investment facilitation support by organizing national investment facilitation events (Investor Connect) for the Viet Nam Post-Accelerator enterprises in accessing additional sources of finance, market entry, identifying networking opportunities, dealing with technical and administrative issues, accessing IT services, and tax registration, etc. in order to encourage the participation of seed funding providers from the national, regional and global stages in the Viet Nam and to leverage on the experience and knowledge of other GCIP countries	-	-	-	-	-

ANNEX F: (For NGI only) Termsheet

Instructions. Please submit an finalized termsheet in this section. The NGI Program Call for Proposals provided a template in Annex A of the Call for Proposals that can be used by the Agency. Agencies can use their own termsheets but must add sections on Currency Risk, Co-financing Ratio and Financial Additionality as defined in the template provided in Annex A of the Call for proposals. Termsheets submitted at CEO endorsement stage should include final terms and conditions of the financing.

N.A.

ANNEX G: (For NGI only) Reflows

Instructions. Please submit a reflows table as provided in Annex B of the NGI Program Call for Proposals and the Trustee excel sheet for reflows (as provided by the Secretariat or the Trustee) in the Document Section of the CEO endorsement. The Agency is required to quantify any expected financial return/gains/interests earned on non-grant instruments that will be transferred to the GEF Trust Fund as noted in the Guidelines on the Project and Program Cycle Policy. Partner Agencies will be required to comply with the reflows procedures established in their respective Financial Procedures Agreement with the GEF Trustee. Agencies are welcomed to provide assumptions that explain expected financial reflow schedules.

N.A.

ANNEX H: (For NGI only) Agency Capacity to generate reflows

Instructions. The GEF Agency submitting the CEO endorsement request is required to respond to any questions raised as part of the PIF review process that required clarifications on the Agency Capacity to manage reflows. This Annex seeks to demonstrate Agencies' capacity and eligibility to administer NGI resources as established in the Guidelines on the Project and Program Cycle Policy, GEF/C.52/Inf.06/Rev.01, June 9, 2017 (Annex 5).

N.A.