

# GEF-7 CHILD PROJECT CONCEPT

CHILD PROJECT TYPE: Medium-sized Child Project

PROGRAM: Other Program

<b>Child Project Title:</b>	Global Cleantech Innovation Programme (GCIP) to support countries to accelerate the uptake and investment in cleantech innovations
<b>Country:</b>	Global
<b>Lead Agency</b>	UNIDO
<b>GEF Agency(ies):</b>	UNIDO (select) (select)

## INDICATIVE FOCAL/NON-FOCAL AREA ELEMENTS AND FINANCING

Programming Directions	Trust Fund	(in \$)	
		GEF Project Financing	Co-financing
CCM-1-4 (select)	GEFTF	1,784,862	21,450,000
<b>Total Project Cost</b>		<b>1,784,862</b>	<b>21,450,000</b>

## PROJECT COMPONENTS AND FINANCING

<b>Project Objective:</b> to promote coordination, ecosystems connectivity and accelerate the uptake of, and investment in, innovative cleantech solutions under the Global Cleantech Innovation Programme						
Project Components	Component Type	Project Outcomes	Project Outputs	Trust Fund	(in \$)	
					GEF Project Financing	Co-financing
<b>Pillar 1. Transforming early-stage innovative cleantech solutions into commercial enterprises</b>	TA	1.1 Acceleration of early-stage cleantech innovations into enterprises	<p>1.1.1 Methodologies, guidelines, tools and training systems for cleantech innovation and entrepreneurship accelerators developed and disseminated to GCIP partner countries</p> <p>1.1.2 Methodology for training and certifying cleantech innovation and entrepreneurship experts (coaches, mentors and judges) developed and disseminated to GCIP partners countries</p> <p>1.1.3 Four cycles of the global cleantech innovation and entrepreneurship competition-based accelerator</p> <p>1.1.5 Four global innovation and entrepreneurship forums to showcase GCIP enterprises and link to investors organized</p>	GEFTF	470,000	2,100,000

	INV	1.2 SMEs access innovative financing opportunities to grow and scale their business	1.2.1 Investment facilitation support provided to high impact cleantech enterprises in the growth and expansion stages 1.2.2 Mentorship and partnership support provided to cleantech enterprises for cross-border market expansion  1.2.3 SMEs leverage funding to grow and scale-up their enterprises	GEFTF	345,300	17,000,000
<b>Pillar 2. Cleantech ecosystem strengthening and connectivity</b> Synergistic partnerships and knowledge exchange among cleantech ecosystems and actors	TA	2.1 Cleantech innovation and entrepreneurship ecosystems strengthened at national levels and connected at the global level	2.1.1 Tools and guidelines for national capacity building for technology innovation and entrepreneurship institutions, industry associations and business platforms developed and disseminated 2.1.2 Policy recommendations and strategies for cleantech innovation and entrepreneurship developed and disseminated at national and global levels 2.1.3 Knowledge creation, exchange and dissemination across GCIP countries to promote learning	GEFTF	300,000	1,200,000
<b>Pillar 3. Programme coordination and coherence</b> Strategic guidance for efficiency and effectiveness in achieving impact among GCIP countries	TA	3.1 Standards and programmatic coherence to improve efficiency and sustainability of GCIP interventions	3.1.1 Program level internal guidelines and standards developed and implemented for programmatic coherence across countries 3.1.2 Program level, communication and advocacy strategy developed, implemented across GCIP countries 3.1.3 Web platform established and operated to coordinate and consolidate GCIP operations at national and global levels and disseminate knowledge products	GEFTF	300,000	500,000

		3.2 Impact of GCIP tracked and reported at national and global levels	3.2.1 Methodologies of estimating global environmental benefits of GCIP ( including GHG emissions) established, applied, and disseminated across GCIP countries 3.2.2 Impact performance of GCIP tracked and reported regularly 3.2.3 Program monitoring and evaluation framework developed and applied across GCIP countries	GEFTF	200,000	350,000
Subtotal				GEFTF	1,615,300	21,150,000
Project Management Cost (PMC)				GEFTF	169,562	300,000
<b>Total Project Cost</b>					1,784,862	21,450,000

For multi-trust fund projects, provide the total amount of PMC in Table B, and indicate the split of PMC among the different trust funds here: ( )

#### INDICATIVE SOURCES OF CO-FINANCING FOR THE PROJECT BY NAME AND BY TYPE, IF AVAILABLE

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount (\$)
GEF Agency	UNIDO	Grant	Investment Mobilized	60,000
GEF Agency	UNIDO	In-kind	Recurrent expenditure	150,000
Private sector	NGIN	In-kind	Recurrent expenditure	1,540,000
Private sector	Cleantech Scandinavia	In-kind	Recurrent expenditure	700,000
Private sector	PFAN – Private Finance Advisory Network	Equity investment	Investment Mobilized	17,000,000
Private Sector	To be determined	Equity investment	Investment Mobilized	2,000,000
<b>Total Co-financing</b>				21,450,000

Investment mobilized was identified through discussions with the potential co-financiers.

#### TRUST FUND RESOURCES REQUESTED BY AGENCY (IES), COUNTRY (IES), FOCAL AREA AND THE PROGRAMMING OF FUNDS

GEF Agency	Trust Fund	Country/Regional / Global	Focal Area	Programming of Funds	(in \$)		
					GEF Project Financing (a)	Agency Fee (b)	Total (c)=a+b
UNIDO	GEFTF	Global	Climate Change	CC Global Regional Set-As	1,784,862	160,638	1,945,500
<b>Total GEF Resources</b>							

#### PROJECT PREPARATION GRANT (PPG)

Is Project Preparation Grant requested?

- Yes ☒ If yes, PPG funds **have to be requested via the Portal** once the PFD is approved  
 No ☐ If no, skip this item.

**PPG AMOUNT REQUESTED BY AGENCY(IES), TRUST FUND, COUNTRY(IES) AND THE PROGRAMMING OF FUNDS**

GEF Agency	Trust Fund	Country/ Regional/Global	Focal Area	Programming of Funds	(in \$)		
					PPG (a)	Agency Fee (b)	Total c = a + b
UNIDO	GEF TF	Global	Climate Change	CC Global Regional	50,000	4,500	54,500
<b>Total PPG Amount</b>					50,000	4,500	54,500

**PROJECT'S TARGET CONTRIBUTIONS TO GEF 7 CORE INDICATORS**

Provide the relevant sub-indicator values for this project using the methodologies indicated in the Core Indicator Worksheet provided in Annex B and aggregating them in the table below. Progress in programming against these targets is updated at the time of CEO endorsement, at midterm evaluation, and at terminal evaluation. Achieved targets will be aggregated and reported at anytime during the replenishment period. There is no need to complete this table for climate adaptation projects financed solely through LDCF and SCCF.

Project Core Indicators		Expected at PIF
6	<b>Greenhouse Gas Emissions Mitigated</b> (metric tons of CO <sub>2</sub> e)	Indicative expected results of 180,000 to 360,000 tCO <sub>2</sub> e of direct GHG emission savings and 900,000 to 1,800,000 tCO <sub>2</sub> e of indirect GHG emission savings at the end of project implementation
11	Number of <b>direct beneficiaries disaggregated by gender</b> as co-benefit of GEF investment	1200 beneficiaries (at least 35% female) consisting of: - 100 enterprises accelerated - 50 cleantech experts (judges, mentors and coaches) trained and certified - 1050 participants sensitized

A ten year horizon has been selected to calculate the emission reductions from this global child project. Calculations were based on previous GCIP alumni. The calculation has been split into a) reductions relating to the Global Competition and Challenges and b) those relating to support for GCIP alumni and ecosystem connectivity and synergies. This global child project will enhance GHG emissions reduction of GCIP alumni through the following:

- identifying and supporting new innovations to commercialize through the global challenges and accelerators
- linking ecosystems across countries will ensure that GCIP alumni can leverage market opportunities for their innovation in new countries and hence be able to create more GEBs;
- providing follow-up support to GCIP alumni ensures that more are able to commercialize and hence be able to produce more products and services that reduce carbon emissions;
- increasing investor outreach will ensure that GCIP alumni are able to secure investments to commercialize and transition into large-scale deployment; and
- coordinating the activities of country level projects ensure that synergies are identified and adequately leveraged to create a groundswell of support and investments into GCIP activities and alumni.

In addition to the substantial CO<sub>2</sub> emissions mitigation, it is expected that other environmental co-benefits will result from this project. In the same way that this project will increase the GHG emission reductions from GCIP alumni, other environmental co-benefits will also increase as well as those attributable to the Global Competition and Challenge. These are likely to include reduction in waste in the environment, reduction in air pollutants (eg. NO<sub>x</sub>, SO<sub>x</sub>, PM and CO), improved water quality and reductions in material use.



# PROJECT DESCRIPTION

## 1 Country Context

Describe the country's relevant environmental challenges and strategic positioning relative to the systems transformation proposed for the program, including relevant existing policies, commitments, and investment frameworks. How are these aligned with the proposed approach to foster impactful outcomes with global environmental benefits?

Climate change is one of the biggest global challenges of our times<sup>1</sup>. As such, climate change requires collective actions coordinated at supranational level. The adoption of climate and clean energy technology and business model innovations (cleantech) is one of the key means to meet international climate and environmental commitments, including the Paris Climate Agreement, and the Sustainable Development Goals. As such, cleantech innovation is providing affordable, scalable solutions to enable countries to leapfrog to low-carbon, cleaner and low emissions economies. Promoting home-grown innovative cleantech solutions allows local innovators and entrepreneurs to participate and eventually drive this transition. The development, commercialization and large-scale deployment of innovative cleantech solutions improves productivity, reduces consumption of natural resources and waste generation and supports the development of new markets for green growth. This ultimately creates new green industries and sustainable jobs and sustainable job creation.

With entrepreneurs, start-ups and small and medium-scale enterprises (SMEs) being the mainstay of economies in developing countries and economies in transition, and given the reach and operations of SMEs across various economic sectors, they are well placed to identify opportunities and develop appropriate and scalable cleantech innovations and solutions which could result in GHG emission reductions. There is a strong business and environmental case in identifying and accelerating fast-growing cleantech SMEs and helping them transform into viable business entities that create new green jobs and economic prosperity while reducing GHG emissions and protecting the environment.

However SMEs in developing and emerging economies face a number of technical, financial and policy barriers that limit their innovation and development. Innovation ecosystems rely on a strong base of local know-how and talent pools, and beyond that national innovation ecosystems need to be embedded in a truly globalized, interconnected and collaborative network. With limited or no access to international expertise and exposure to global innovation trends, markets and potential partners outside their country, opportunities to expand these business to global markets are missed.

On the global level the cleantech innovation ecosystem consists of a number of disparate systems and missing supra-structure to coordinate the highly fragmented efforts resulting in discrepancy in quality and availability of support services, misinformed investors and a lack of efficiency in global efforts. This means that opportunities to develop and grow cleantech businesses providing global environmental benefits are largely untapped and unexplored. Ultimately, the global and national innovation ecosystems are weak and SMEs are not given the opportunity to transform their cleantech innovations into viable enterprises that can attract investment at local and global levels, which in turn would allow them to scale and to deliver transformational economic, social and environmental impacts.

GCIP has been designed to create the much needed framework to link and support national cleantech innovation ecosystems and SMEs whilst transforming cleantech innovations into commercial global enterprises.

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<sup>1</sup> According to IPCC, human-induced warming reached approximately 1°C above pre-industrial levels in 2017, and an expected increase of 0.2°C per decade

## 2 Project Overview and Approach

- a) Provide a brief description of the geographical target(s), including details of systemic challenges, and the specific environmental threats and associated drivers that must be addressed;

The Global Child project is global in its reach. The project activities will focus on enhancing the national child projects' impacts (in 20 different countries) as well as running Global Commons Competitions and Challenges. Since there is a strong case to attract global innovators as long as they have technologies that would also have huge replication potential in GCIP countries and increase chances of climate mitigation impacts, these competitions will be open to all countries with emerging, developing or transition economies. Therefore, by its nature, the target geographical targets are not yet known.

In addition to general national challenges to the development of cleantech innovations and entrepreneurs (such as, inter alia, absence of supportive policy, limited access to matched finance, limited commercial skills etc.) there are clear systemic challenges at a global level which limit the potential growth and impact of these new businesses. These include:

- market failures in providing innovative solutions for low carbon development pathways
- mismatch between local action and global environmental problems
- lack of public awareness of potential of clean low carbon technology
- lack of coordination between ecosystems meaning missed opportunities and inefficiencies in the system
- limited learning or collaboration between ecosystem players limiting support to foster cleantech SMEs to develop new innovations and commercialise their products and services;
- limited or no knowledge of potential international finance opportunities;
- few global competitions in the sector
- limited standardization and methodologies between countries.

This global child project aims to address these challenges.

- b) Describe the existing or planned baseline investments, including current institutional framework and processes for stakeholder engagement and gender integration;

The project will build on the experience gained from the previous GCIP projects as well as the independent evaluation and stakeholder feedback. At a country level GCIP has been very successful. However the independent evaluation concluded that there is potential to increase impact and that effectiveness of the approach through programmatic delivery. In addition, and pertinent to this child project, opportunities were identified to improve efficiencies and enhance the outcomes at a national level by linking ecosystems across countries to identify more investment and market opportunities, to share experiences and to develop common platforms, advocacy, outreach and knowledge products. This global child project aims to do this and to really create *global* transformational impacts and environmental benefits

In addition the project will build on the work of other international organizations working in this space. Where there are synergies GCIP will work with initiatives with a view to provide a platform that is truly global and brings stakeholders together. In particular the project will build on past experience through partnering, with *NGIN* and the *Cleantech Group* as well as working with financiers such as the *Global Innovation Fund* and the *Private Finance Advisory Network (PFAN)*. An example of how the global project will build on current investments is through PFAN. PFAN is a UNIDO hosted initiative. It provides institutional financing for scaling up of clean technologies at large scale for positive environmental impact. While PFAN traditionally facilitates investment in mature technologies, a 2018 pilot initiative for GCIP alumni was used to assess the appetite by institutional investors in new technology innovations. Based on the results and lessons learned from the pilot exercise, more systematic and institutional mechanisms to facilitate PFAN and other financing for scaling will be developed.

UNIDO will be responsible for **stakeholder engagement**. Many stakeholder consultations have taken place during the design period and further stakeholder consultations will reach out to government agencies, multilateral organizations, development agencies, academia, private sector, financial institutions and civil society organizations. Stakeholders identified so far, and their potential engagement, are shown in the table below.

Stakeholder	Role / Engagement
NGIN – Network for Global Innovation	NGIN will be a technology and knowledge partner in running the acceleration programme in some countries and will be a partner in connecting innovation ecosystems across GCIP countries
Cleantech Group	Potential to be a knowledge partner in developing the cleantech innovation index (GCII). Furthermore GCIP alumni will be showcased at events organized by Cleantech Group
Cleantech Scandinavia	Potential to be a technology and knowledge partner in running the acceleration programme in some countries and will be a partner in connecting innovation ecosystems across GCIP countries and also linkages with Scandinavian ecosystems.
Climate Technology Centre and Network (CTCN)	Will be consulted to ensure that the technology solutions, capacity building and advice on policy, legal and regulatory frameworks are specifically tailored to the needs of individual countries
Global Innovation Fund	Potential partner for investment for high impact innovations
National Project Management Units	Support the coordination of activities between the Coordination Project and national GCIP projects
Private Finance Advisory Network (PFAN)	Will be a partner in supporting successful innovators in scaling up their ventures by helping them to link to investors.

UNIDO recognizes that **gender** equality and the empowerment of women have a significant positive impact on sustained economic growth and inclusive industrial development. Female entrepreneurship is considered a key tool in enabling women's empowerment. A guiding principle of the global GCIP project will be to ensure that both women and men are provided equal opportunities to access, participate in and benefit from the project, particularly in the global challenges and competition as well as the post-accelerator support. A Gender Action Plan will be developed and the project log-frame will be developed to reflect key gender dimensions of the respective outputs, activities, indicators and targets. GCIP has already shown higher levels of women's participation than other accelerator and incubator programmes with 25% of the 860 alumni supported to date being women led enterprises. This project hopes to continue this trend and even to increase this proportion.

- c) Describe how the integrated approach proposed for the child project responds to and reflects the Program's Theory of Change, and as such is an appropriate and suitable option for tackling the systemic challenges, and to achieve the desired transformation with multiple global environmental benefits;

The Global Child Project is integral to the GCIP Program, as well as to the national child projects, in addressing challenges and in meaningfully enhancing the overall program's climate change mitigation, green growth and job creation impact. It achieves this through the promotion of coordination and ecosystems connectivity which will improve the performance of the national child GCIP projects as well as reducing duplication and cutting costs. Global competitions and challenges will result in widening the reach of GCIP and so result in greater global environmental benefits. The global child project will enhance and accelerate the uptake, commercialization and investment in cleantech innovation and entrepreneurship at a global level and will be a conduit for increased private sector engagement and partnerships which, in turn, will scale up climate change mitigation benefits of GCIP start-ups from national projects.

Under project pillar 3, a standard GCIP methodology for calculating, tracking and monitoring environmental impact is developed during the inception phase of the Global Child project, and thereafter regularly assessed

and updated under project pillar 3, in order to achieve coordination and coherence in the calculation, tracking and monitoring of the impact achieved through GCIP at national and global levels.

The validation of the proposed target approach for GHG emission reduction potential will be conducted during the inception phase. The suggested benchmark approach for the estimated GEB potential of the cleantech innovations during the application stage of the accelerator will ensure that the cleantech solution supported under the programme have high-impact potential for GEBs, and that all solutions will cumulatively meet the target set for GCIP at the programmatic level.

The following figure shows the Theory of Change (ToC) for the global child project showing its path from challenges to impact; how the the global child project will result in accelerated uptake and investment in cleantech innovations so that innovative SME-driven cleantech products and services are available to international actors that meaningfully contribute to climate change mitigation, green growth and job creation.

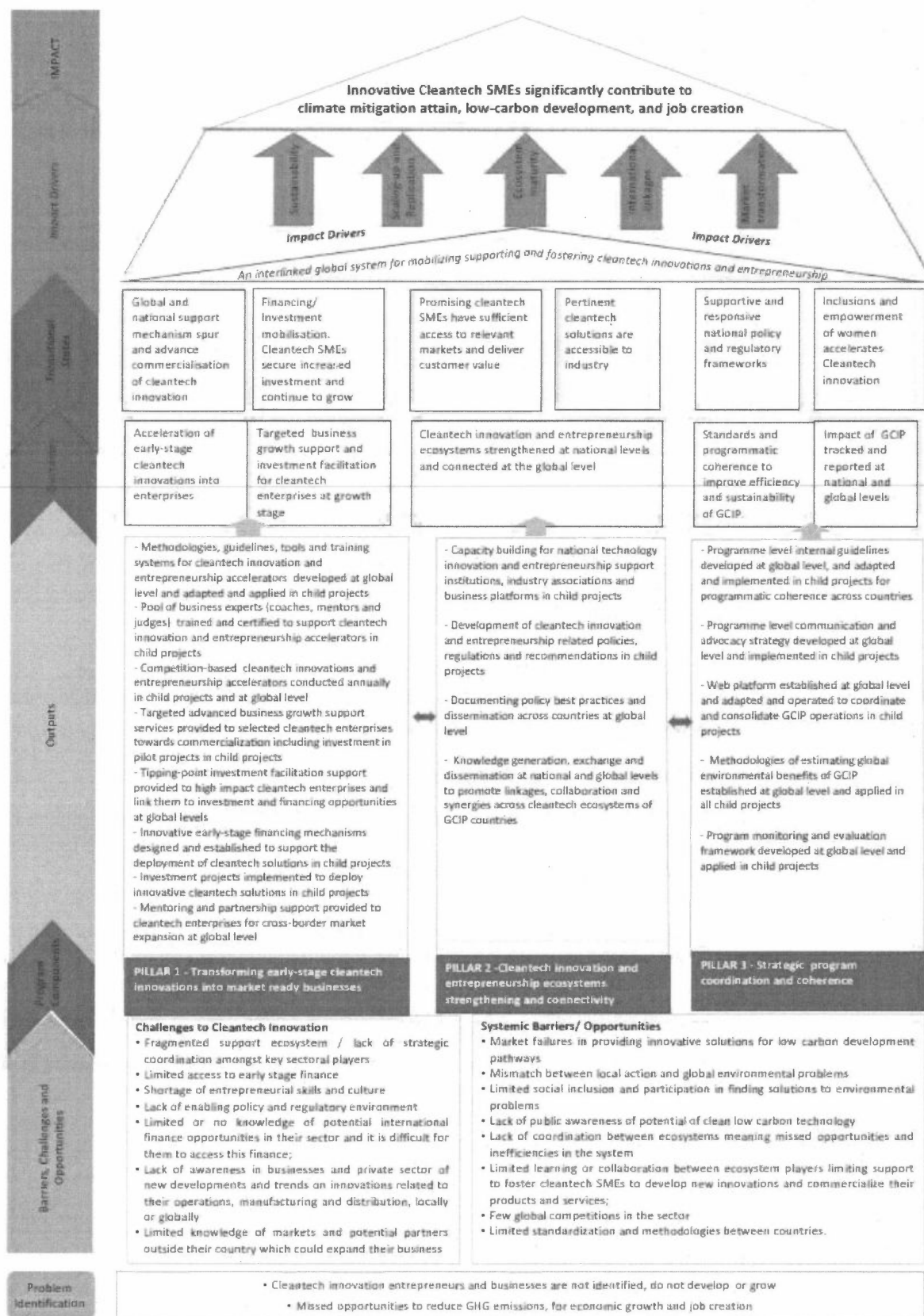


Figure 1 – Theory of Change

- d) Describe the project's incremental reasoning for GEF financing under the program, including the results framework and components.

Incremental cost reasoning is based on multi-level factors based on the overall effect of this global child project in fostering the following:

- The project will ensure that GCIP Alumni from the national child projects can truly mature and be able to harness global market opportunities brought about by dedicated support and ecosystems connectivity provided by this project.
- GCIP alumni will have higher chances of commercializing their innovations and of getting connected to investors and the private sector through the global innovations challenges, international mentoring for global expansions and linkages to other sources of financing that include impact investors and crowdfunding platforms.
- Enhanced communication, advocacy and outreach about the GCIP will galvanise partners and players to value the brand of GCIP and promote it further.
- Enhanced knowledge generation and management from the global GCIP project will ensure that the rich knowledge generated across GCIP countries is effectively managed and disseminated thereby increasing the leverage of GCIP in influencing decision making processes across the cleantech innovation and entrepreneurship ecosystems
- Coherence and standards in the GCIP project will bring about consistency and trust in the GCIP brand and will ensure that high quality SMEs are supported to the highest level thereby increasing their chances of scaling up their innovations.

These factors, seen together, present a compelling case for the incremental reasoning of the global GCIP project. Without GEF funds there will be lost opportunities to nurture entrepreneurs to scale, to further reduce emissions and to strengthen private sector partnerships.

### **3 Engagement with the Global / Regional Framework**

Describe how the project will align with the global / regional framework for the program to foster knowledge sharing, learning, and synthesis of experiences. How will the proposed approach scale-up from the local and national level to maximize engagement by all relevant stakeholders and/or actors?

The global child project has been specifically designed to support and integrate the Global Framework and the national child projects through its core activities building synergies, knowledge management and coherence and in supporting GCIP alumni from the whole program. The Global Child Project's aim is to scale-up and enhance the outputs and outcomes from the national child projects through increased engagement. The project will enhance and contextualize the support that will be provided to SME applicants so that they get training and mentorship that is relevant to their countries and circumstances. This project will focus on knowledge management and development of tools that will ensure that counterparts of the GCIP are able to own the programs and have the knowledge to run the programs on their own. Moreover, knowledge management will also focus on assessing the impact of the program and generating knowledge to influence the discussions on policy and regulations to promote climate and clean energy technology innovation and entrepreneurship. The project will focus on outreach to investors by developing models of partnerships with the private sector at a global level. In sum, this project is designed to make GCIP a truly globally coordinated program and harness synergies from connecting ecosystems across different GCIP countries. Demonstrating this the specific objectives of the Global GCIP Child project are to:

- enhance access to financing support for early deployment and commercialization of solutions with highly transformational impact potential for the global commons

- build a global community of ecosystem players and form strategic partnerships with key influencers that can lead and guide policy and business decisions in the cleantech space;
- implement a demand driven global technology challenge and accelerator and provide associated mentoring, training and support;
- promote knowledge exchange and transfer to inform cleantech innovation policy regulations development across various countries;
- enhance visibility and credibility of identified solutions to the international investor and financing community
- enhance coordination and cooperation among GCIP national execution partners for knowledge and experience sharing and facilitate the connectivity of ecosystems and greater scaling-up of innovations across different countries;
- promote systematic networking among GCIP supported SMEs and startups, mentors and judges at the global level; and
- increase impact tracking and monitoring of GCIP supported SMEs and start-up, ecosystems, national institutions at the global level.

Engagement with the national child projects is shown in the figure below.

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## GCIP: Program Framework Components

### Pillar 1. Transforming early-stage innovative cleantech solutions into commercial enterprises

#### 1.1 Acceleration of early-stage cleantech innovations into enterprises

- Methodologies, guidelines, tools and training systems for cleantech innovation and entrepreneurship accelerators developed and implemented
- Pool of business innovation and entrepreneurship experts (coaches, mentors and judges) trained and certified to support cleantech innovation and entrepreneurship accelerators at national and global levels
- Competition-based cleantech innovations and entrepreneurship accelerators conducted annually at national and global levels

#### 1.2 Targeted business growth support and investment facilitation for cleantech enterprises at growth stage

- Targeted advanced business growth support services provided to selected cleantech enterprises towards commercialization
- Investment facilitation support provided to high impact cleantech enterprises
- Mentorship and partnership support provided to cleantech enterprises for cross-border market expansion.
- Investment project implemented

### Pillar 2. Cleantech innovation and entrepreneurship ecosystems strengthened at national levels and connected at the global level

- Capacity building for national technology innovation and entrepreneurship support institutions, industry associations and business platforms
- Development and dissemination of cleantech innovation and entrepreneurship related policy recommendations and strategies at national and global levels
- Knowledge creation, exchange and dissemination at national and global levels to promote linkages, collaboration and synergies across cleantech ecosystems of GCIP countries

### Pillar 3. Strategic program coordination and coherence

#### 3.1 Standards and programmatic coherence to improve efficiency and sustainability of GCIP

##### Outputs:

- Program level internal guidelines developed and implemented for programmatic coherence across countries
- Program level knowledge management, communication and advocacy strategy developed and implemented
- Web platform established and operated to coordinate and consolidate GCIP operations at national and global levels and generate and disseminate knowledge products

#### 3.2 Impact of GCIP tracked and reported at national and global levels

- Methodologies of estimating environmental impact of GCIP (including GHG emissions) established and applied across the program
- Program monitoring and evaluation framework developed and applied

## Global Child project components

### Component 1. Acceleration of early-stage cleantech innovations into enterprises

- 1.1.1 Methodologies, guidelines, tools and training systems for cleantech innovation and entrepreneurship accelerators developed and disseminated to GCIP partner countries
- 1.1.2 Methodology for training and certifying cleantech innovation and entrepreneurship experts (coaches, mentors and judges) developed and disseminated to GCIP partner countries
- 1.1.3 Four cycles of the global cleantech innovation and entrepreneurship competition-based accelerator
- 1.1.5 Four global innovation and entrepreneurship forums to showcase GCIP enterprises and link to investors organized
- 1.2.1 Investment facilitation support provided to high impact cleantech enterprises in the growth and expansion stages
- 1.2.2 Mentorship and partnership support provided to cleantech enterprises for cross-border market expansion
- 1.2.3 SMEs leverage funding to grow and scale-up their enterprises

### Component 2. Cleantech innovation and entrepreneurship ecosystems strengthened at national levels and connected at the global level

- 2.1.1 Tools and guidelines for national capacity building for technology innovation and entrepreneurship institutions, industry associations and business platforms developed and disseminated
- 2.1.2 Policy recommendations and strategies for cleantech innovation and entrepreneurship developed and disseminated at national and global levels
- 2.1.3 Knowledge creation, exchange and dissemination across GCIP countries to promote learning

### Component 3.1. Standards and programmatic coherence to improve efficiency and sustainability of GCIP interventions

- 3.1.1 Program level internal guidelines and standards developed and implemented for programmatic coherence across countries
- 3.1.2 Program level, communication and advocacy strategy developed, implemented across GCIP countries
- 3.1.3 Web platform established and operated to coordinate and consolidate GCIP operations at national and global levels and disseminate knowledge products
- Component 3.2 Impact of GCIP tracked and reported at national and global levels
- 3.2.1 Methodologies of estimating global environmental benefits of GCIP (including GHG emissions) established, applied, and disseminated across GCIP countries
- 3.2.2 Impact performance of GCIP tracked and reported regularly
- 3.2.3 Program monitoring and evaluation framework developed and applied across GCIP countries



## GEF 7 Core Indicator Worksheet

Use this Worksheet to compute those indicator values as required in Part I, item F to the extent applicable to your proposed project. Progress in programming against these targets for the project will be aggregated and reported at anytime during the replenishment period. There is no need to complete this table for climate adaptation projects financed solely through LDCF and SCCF.

Core Indicator 6	Greenhouse gas emission mitigated					(Tons)
		Tons (6.1+6.2)				
		Entered			Entered	
		PIF stage	Endorsement	MTR	TE	
	Expected CO2e (direct)	180,000				
	Expected CO2e (indirect)	900,000				
Indicator 6.2	Emissions avoided					
		Hectares				
		Expected			Achieved	
		PIF stage	Endorsement	MTR	TE	
	Expected CO2e (direct)	180,000				
	Expected CO2e (indirect)	900,000				
	Anticipated Year	2030				
Core Indicator 11	Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment					(Number)
		Number				
		Expected			Achieved	
		PIF stage	Endorsement	MTR	TE	
	Female	420				
	Male	780				
	Total	1200				



## GEF-7 CHILD PROJECT CONCEPT

**CHILD PROJECT TYPE: Medium-sized Child Project**

**PROGRAM: Other Program**

<b>Child Project Title:</b>	Global Cleantech Innovation Programme: Accelerating cleantech innovation and entrepreneurship in start-ups and SMEs in Cambodia
<b>Country:</b>	Cambodia
<b>Lead Agency</b>	UNIDO
<b>GEF Agency(ies):</b>	UNIDO

### INDICATIVE FOCAL/NON-FOCAL AREA ELEMENTS AND FINANCING

Programming Directions	Trust Fund	(in \$)	
		GEF Project Financing	Co-financing
CCM 1-4 Promote innovation and technology transfer for sustainable energy breakthroughs for cleantech innovation	GEFTF	1,417,890	5,671,560
<b>Total Project Cost</b>		<b>1,417,890</b>	<b>5,671,560</b>

### PROJECT COMPONENTS AND FINANCING

<b>Project Objective:</b> To accelerate the uptake of, and investment in, cleantech innovation and entrepreneurship, and promote the coordination and connectivity of ecosystems under the Global Cleantech Innovation Programme						
Project Components	Component Type	Project Outcomes	Project Outputs	Trust Fund	(in \$)	
					GEF Project Financing	Co-financing
1. Acceleration of clean technology innovations and business models and advanced post-accelerator support on investment and investment facilitation.	TA	1.1 Acceleration of clean technology innovations and business models	1.1.1 Three annual GCIP accelerator rounds organized  1.1.2 Technology verifications, product development and market entry support provided	GEFTF	687,890	1,751,560
	TA	1.2. GCIP innovators and entrepreneurs a reach the market and have access to adequate financial mechanisms	1.2.1. Investment facilitation services provided to successful SMEs	GEFTF	200,000	1,000,000
	INV		1.2.3 Innovative early stage financing mechanism stabled to GCIP alumni to leverage funding	GEFTF	250,000	1,800,000

2. Cleantech innovation ecosystem building	TA	2.1 Policy and institutional framework strengthened to promote clean technology innovation and entrepreneurship	2.1.1 National expertise and institutional strengthening to support and sustain the accelerator 2.1.2 National policy and regulations that promote clean technology innovation and entrepreneurship developed 2.1.3. Establishment of Alumni Network to allow peer-learning and foster partnerships  2.1.4 GCIP community established and national innovation ecosystem building	GEFTF	100,000	400,000
3. Project management, monitoring & evaluation (M&E)	TA	3.1 Adequate project management and monitoring of all project indicators together with regular evaluations to ensure successful project implementation	3.1.1. Project management 3.1.2. Project monitoring 3.1.3. Terminal project evaluation	GEFTF	100,000	400,000
Subtotal					1,337,890	5,351,560
Project Management Cost (PMC)				GEFTF	80,000	320,000
<b>Total Project Cost</b>					<b>1,417,890</b>	<b>5,671,560</b>

**INDICATIVE SOURCES OF CO-FINANCING FOR THE PROJECT BY NAME AND BY TYPE, IF AVAILABLE**

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount (\$)
GEF Agency	UNIDO	Grant	Investment mobilized	30,000
GEF Agency	UNIDO	In-kind	Recurrent expenditures	175,000
Recipient Country Government	Techo Startup Center	In-kind	Recurrent expenditures	500,000
Recipient Country Government	Ministry of Economy and Finance	In-kind	Recurrent expenditures	500,000
Beneficiaries	Selected start-ups and SMEs	Equity Investment	Investment mobilized	1,250,000
Private Sector	Various investors	Equity Investment	Investment mobilized	3,216,560
<b>Total Co-financing</b>				<b>5,671,560</b>

Investment mobilized was identified through discussions with the potential co-financiers.

**TRUST FUND RESOURCES REQUESTED BY AGENCY (IES), COUNTRY (IES), FOCAL AREA AND THE PROGRAMMING OF FUNDS**

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Programming of Funds	(in \$)		
					GEF Project Financing (a)	Agency Fee (b)	Total (c)=a+b
UNIDO	GEFTF	Cambodia	Climate Change	CC STAR Allocation	1,417,890	127,610	1,545,500
<b>Total GEF Resources</b>					1,417,890	127,610	1,545,500

**PROJECT PREPARATION GRANT (PPG)**

Is Project Preparation Grant requested?

Yes ☒ If yes, PPG funds **have to be requested via the Portal** once the PFD is approved

No ☐ If no, skip this item.

**PPG AMOUNT REQUESTED BY AGENCY(IES), TRUST FUND, COUNTRY(IES) AND THE PROGRAMMING OF FUNDS**

GEF Agency	Trust Fund	Country/ Regional/Global	Focal Area	Programming of Funds	(in \$)		
					PPG (a)	Agency Fee (b)	Total (c) = a + b
UNIDO	GEF TF	Cambodia	Climate Change	CC STAR Allocation	50,000	4,500	54,500
<b>Total PPG Amount</b>					50,000	4,500	54,500

**PROJECT'S TARGET CONTRIBUTIONS TO GEF 7 CORE INDICATORS**

Provide the relevant sub-indicator values for this project using the methodologies indicated in the Core Indicator Worksheet provided in Annex B and aggregating them in the table below. Progress in programming against these targets is updated at the time of CEO endorsement, at midterm evaluation, and at terminal evaluation. Achieved targets will be aggregated and reported at any time during the replenishment period. There is no need to complete this table for climate adaptation projects financed solely through LDCF and SCCF.

Project Core Indicators		Expected at PIF
6	<b>Greenhouse Gas Emissions Mitigated</b> (metric tons of CO <sub>2</sub> e)	Indicative expected results of 126,000 to 252,000tCO <sub>2</sub> eq of direct GHG emission savings and 630,000 to 1,260,000 tCO <sub>2</sub> eq of indirect GHG emission savings at the end of project implementation
11	Number of <b>direct beneficiaries disaggregated by gender</b> as co-benefit of GEF investment	800 beneficiaries (at least 35% female) consisting of: <ul style="list-style-type: none"> <li>- 70 enterprises accelerated</li> <li>- 30 cleantech experts (judges, mentors and coaches) trained and certified</li> <li>- 700 participants sensitized</li> </ul>

# PROJECT DESCRIPTION

## 1. Country Context

Cambodia is highly vulnerable to the effects of climate change, in particular from floods, droughts, windstorms, and seawater intrusion. The agriculture, infrastructure, forestry, human health, and coastal zones are most affected.

Cambodia's main national development priority, enshrined in the National Strategic Development Plan (NSDP) for 2014-2018, is to reduce poverty while fostering economic growth at a steady rate of 7-8% per year. Cambodia aims to progress from least-developed country (LDC) status towards a low and high middle-income developing country by 2018 and 2030 respectively. The Royal Government of Cambodia designed a comprehensive strategic framework (including Rectangular Strategy, National Strategic Development Plan, Sectorial Development Strategies, Industrial Development Policy, and other policy documents) which should enable achievement of this goal, mainly by diversifying the economy, including through industrialisation and the development of physical infrastructure.

In Cambodia, SMEs account for 98% of total enterprises, 36.7% of total employment and 24% of total GDP, thus playing a significant role in the country's development. Despite recognition by the Cambodian government of the important roles played by SMEs and innovation for economic growth and stability, administrative hurdles and lack of access to finance continue to hinder entrepreneurship.

With a very young population, more people in Cambodia are devoting themselves to freelancing or they contribute to the buoyant digital economy. However, various challenges like access to entrepreneurial networks, lacking business technical skills and difficulties in accessing funding are issues that continue to limit the real potential of the start-ups in Cambodia.

Moreover, although in the recent years new startup hubs and incubators have been founded in Cambodia, there is still a limited number of incubators or accelerator programs for mid-stage startups, particularly post-seed and pre-venture start-ups. Further on, there is a lack of cooperation and knowledge exchange inbetween both local start-ups as well as inbetween potential funders and local entrepreneurs. This offers the opportunity for the Cleantech programme to utilize these established services, while improving on their capacity, reach and visibility.

In terms of investment in innovation, Cambodia allocates around 0.118% of its GDP for R&D investment, which is below the average of the ASEAN but above performances in Indonesia, Myanmar and Lao PDR. The need for Cambodia to improve the innovation and research has been highlighted in the Global Innovation Index (98 of 141), the Knowledge Economy Index (131 of 144) and the Global Competitiveness Index (94 of 144).

In 2018, the Ministry of Economy and Finance established a Techo Startup Center in order to create, incubate, and accelerate startups to become successful business ventures through the provision of mentoring and advisory services, co-working spaces, research and development, market trend and consumer behavior analysis, cooperation with relevant institutions and initiatives. The Center is currently at infancy stage and would benefit from support and exposure to global good-practices in order to fulfill its mission as catalyst for innovation.

## 2. Project Overview and Approach

- a) Provide a brief description of the geographical target(s), including details of systemic challenges, and the specific environmental threats and associated drivers that must be addressed

While no industry sectors will be excluded from the project scope, it is suggested – subject to guidance by the project Steering Committee – that in line with the UNIDO Programme for Country Partnership (PCP) it will focus on the following activities:

- i. Development of sustainable tourism value chains, with upstream linkages to related agro- and creative-industries value chains.

Tourism, as a transversal sector strongly interacting with other economic sectors, can contribute significantly to the overall shift towards a more sustainable, cleaner and low-carbon economic growth. In support of the efforts to develop sustainable tourism in Cambodia, innovation and entrepreneurship will be promoted in that sector. This includes supporting the development and deployment of technologies spurring resources efficiency (of non-renewable and renewable raw materials, including water), encouraging the use of sustainable energy in tourism, reducing waste (as e.g. tourism generates large amounts of plastic waste, both water bottles and other products, which ultimately often end up in seas and oceans), as well as promoting sustainable mobility, etc.

This also entails upstream linkages in relevant value chains to reduce the carbon footprint whilst catalyzing local business opportunities and employment.

Importantly for tourism, which is a labor-intensive industry, the innovation to improve its environmental performance is not only about clean technologies. Non-technological innovation, such as introduction of environmental management systems and new business models, preventing forest logging aimed at making space for new hotels, and stopping the subsequent loss of natural habitat, plays an increasingly important role in the transition to a low-carbon green economy. In this context, the government of Cambodia will be a key player in fostering a regulatory/policy framework that is conducive to climate change mitigation in tourism.<sup>1</sup>

- ii. Development of competitive agro- and creative-industries value chains.

With the view to capture value-addition and enhance livelihood through low-carbon development, post-harvest processing offers significant opportunities for innovation and entrepreneurship in Cambodia. Globally, agriculture is currently responsible for 25 percent of GHG emissions, for 70 percent of all water used, and is the main cause of deforestation.<sup>2</sup> Moreover, changing dietary patterns further add to these pressures, as fewer cereals and more fruits, vegetables, meat, and processed food are consumed,<sup>3</sup> production of which is currently relatively more resource and emission intensive. Therefore, there is a need to prevent food waste, to enhance nutritional value of food, to extend its shelf life, as well as to produce “more with less”, all of which in turn will strengthen the competitiveness of markets domestically, regionally and globally.

It has to be noted that farming not only affects, but also is affected by climate change. Higher temperatures have a negative effect on yields for all crops in almost all locations.<sup>4</sup> Unexpected and extensive droughts, floods, and other extreme weather events are further causes of lower

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<sup>1</sup> [http://www.mlit.go.jp/kankocho/naratourismstatisticsweek/statistical/pdf/2013\\_OECD\\_Tourism\\_Papers.pdf](http://www.mlit.go.jp/kankocho/naratourismstatisticsweek/statistical/pdf/2013_OECD_Tourism_Papers.pdf).

<sup>2</sup> <https://af.reuters.com/article/africaTech/idAFL8N1G54LN>.

<sup>3</sup> <http://www.fao.org/news/story/en/item/471169/icode/>.

<sup>4</sup> <https://www.nature.com/articles/s41467-017-01792-x>.

output – both in terms of food quantity and financial profit. Therefore, there is a need to support development and deployment of tailored technologies that would help entrepreneurs in Cambodia adapt to the changing climate.

The biomass in Cambodia is the main source of energy for cooking and heating, but not for power generation (it accounted for 0.5% of the total power generation in 2015).<sup>5</sup> At the same time, only around 60% of the population have access to electricity, and Cambodia's biomass generation potential is estimated to be 18,852 GWh per year, but currently less than 23 MW is operational.<sup>6</sup> In this context, the agroindustry could play a crucial role in providing fuel for power generation, unless the biomass could be used for other productive uses (leading to a higher economic value-addition) in line with the low-carbon circular economy principles.

Cambodia has one of the largest and most diverse freshwater fisheries in the world. Its marine fisheries are less developed, but they have also increased in stock in the past 20 years.

Taking fisheries as illustrative example, it is crucial to support the development and strengthen SMEs and startups in the value chain, so as to efficiently utilize the natural fishery resources and limit the environmental burden. In this context, cleantech innovation is a key driver which catalyzes opportunities for new and sustainable business models and technology innovations, which at the same time fosters economic growth, create jobs, and improves the livelihoods of the rural community. It will support entrepreneurs across the fisheries value chain to develop demand-driven ideas and green technology solution for both climate change mitigation and adaptation.

The traditional fishing practices are strongly challenged by climate change. For example, global warming affects the distribution of some marine fish species.<sup>7</sup> They are moving toward the poles and it is expected that by 2055 the fish catch potential will be 30–70% higher in high-latitude regions and around 40% lower in the tropics.<sup>8</sup> The redistribution of fish species is also influenced by other factors associated with climate change, including rainfall patterns, ocean circulation, waves and storm systems, salinity content, oxygen concentration, and acidification, etc.<sup>9</sup> These changes can have an enormous impact on small-scale fishers using traditional methods.<sup>10</sup> Therefore, there is a need for more resilient and innovative fishing gear, as well as for new technological solutions enabling an easy identification of fish shoals. In addition, the role of aquaculture as an alternative to ocean fishing is becoming more prominent. The aquaculture is currently the fastest-growing animal food production sector in the world.<sup>11</sup> Other relevant fishing technologies to adapt to climate change include e.g. deep vision systems, smart weighting systems, acoustic methods, etc.

For some years, the development of creative industries in Cambodia has been constrained by a range of inter-related factors, including e.g. insufficient productive skills and technical knowledge, limited access to support networks and technology; poor transportation, high-cost communication and infrastructure.<sup>12</sup> Adoption of clean technologies and innovative business models may enable the recovering creative industry in Cambodia to leapfrog certain stages of development that are environmentally, socially and economically harmful or unproductive. For example, there is a potential to develop low-carbon solutions for sustainable transport, sharing

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<sup>5</sup> EDC (2015): Annual Report 2015, Phnom Penh: Electricité du Cambodge.

<sup>6</sup> WWF (2016): [http://d2ouvy59p0dg6k.cloudfront.net/downloads/cambodia\\_power\\_sector\\_scenarios\\_final.pdf](http://d2ouvy59p0dg6k.cloudfront.net/downloads/cambodia_power_sector_scenarios_final.pdf).

<sup>7</sup> <http://www.fao.org/resources/infographics/infographics-details/en/c/471471/>.

<sup>8</sup> <https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1365-2486.2009.01995>.

<sup>9</sup> <http://www.ipcc.ch/report/ar5/wg1/>.

<sup>10</sup> <http://www.fao.org/resources/infographics/infographics-details/en/c/471471/>.

<sup>11</sup> <http://ag.alltech.com/en/blog/8-digital-technologies-disrupting-aquaculture>.

<sup>12</sup> <http://mdgfund.org/sites/default/files/Cambodia%20-%20Culture%20-%20Signed%20JP.pdf>.



economy (e.g. using a common working space, and thus reducing the overhead costs and optimizing the use of lighting/electricity), or upcycling/downcycling/recycling of products which are no longer used. The potential beneficiaries are not only the artisan entrepreneurs themselves, but also all actors along the value chain, including e.g. distributors and retailers who might come from indigenous minority communities.

iii. Industrial diversification, in particular development of Special Economic Zones (SEZ).

There are significant opportunities for developing and deploying clean technologies and business model innovations in industrial clusters and special economic zones. For example, the industrial symbiosis can involve co-using of industrial machines in the spirit of sharing economy, and as a result it can lead to reduced environmental impacts compared to private ownership of machines (especially for machines that consume energy during the non-use phase). It also enables to close the material loops by using someone else's waste as a raw material for own industrial production processes in accordance with the basic circular economy idea. This results in a lower input of virgin raw materials (and associated avoided environmental impacts along the raw material value chain, including e.g. extraction, processing transport) and reduction of waste disposed. In addition, cooperation in industrial clusters and/or special economic zones spurs eco-innovation, which in turn leads to increased efficiency of processes, lowered costs, and enhanced competitiveness, whilst lessening environmental impact.

In the effort to capitalize on Cambodia's rapid information and communication technology (ICT) development, the project will focus on promoting and supporting ICT solutions for climate and clean energy projects across all industrial sectors, including e.g. smart metering and smart grids, sustainable transport (including real time navigation and e-logistics), e-commerce, etc. It is in this framework that industry 4.0 and circular economy (e.g. dematerialization) approaches will be mainstreamed, leading to decoupling of the raw materials use from economic growth, and thus reducing the negative environmental impacts of industry. This would in turn enable Cambodia to embark on a fast track to low-carbon sustainable and innovative future.

The objective of the project is to accelerate clean technology innovation and entrepreneurship in strategic priority areas of Cambodia. Another expected outcome is the support for products and services validation and access to markets, alongside financing facilitation. Finally, it is expected that the policy and institutional framework will be strengthened to spur clean technology innovation in Cambodia.

b) Describe the existing or planned baseline investments, including current institutional framework and processes for stakeholder engagement and gender integration;

The 6-year USAID funded Development Innovations (DI) project aims to help social enterprises and young innovators to design and use information and communications technology (ICT) solutions and employ innovative processes to tackle Cambodia's development challenges. Within its framework, it supports Cambodians to learn new tech-related skills, boost entrepreneurial capacity, and employ innovative practices to get results. The activities range from digital skills courses to business incubators and accelerators, and social media campaigns to youth professional development programs.

The proposed project will build on, complement and bring forward the achievements of the USAID project, by focusing more on supporting the development of clean and environmentally-conscious entrepreneurship, which will strengthen and add value to the cleantech business ecosystem within the country.

Another similar project called TEKHub is jointly developed by the Asia Foundation and the local co-working space Impact Hub Phnom, having recently received the support of Smart Axiata. TEKHub aims

to foster innovation and creativity in Cambodia through supporting technology startups for positive social impact. In addition to offering physical office space, TEKHub provides networking and mentoring opportunities as well as business management coaching.

Incorporating similar components, the proposed project envisions also a business accelerator, as well a set of mentoring, coaching and networking activities, which will complement and move onwards the generalized purpose of the TEKHub by aiming specifically to support certain startups which were identified as offering innovative clean technological ideas for addressing environmental issues.

These initiatives are closely in line with those of the proposed project, and could be considered as a good base on which the proposed activities could be established to further consolidate and develop the clean tech-startup scene in Cambodia.

In the framework of proposed project a special attention will be given to address the gender issues: (i) recruitment of women trainers, mentors, judges; (ii) specific training and mentoring to promote women innovators, entrepreneurs, startups; and (iii) design of specific prizes and follow-up support programmes for innovative startups that will have a significant impact on women's entrepreneurial development and green job creation and other related.

- c) Describe how the integrated approach proposed for the child project responds to and reflects the Program's Theory of Change, and as such is an appropriate and suitable option for tackling the systemic challenges, and to achieve the desired transformation with multiple global environmental benefits;

The proposed project is fully aligned with the GEF-7 Climate Change Focal Area Strategy, and in particular with *Objective 1. Promote innovation and technology transfer for sustainable energy breakthroughs*. The Strategy stipulates that "*Technology is key area for the UNFCCC and in Article 10 of the Paris Agreement, and is one of the key means to reduce, or slow the growth in GHG emissions, and to stabilize their concentrations. To that end, technology innovation with the private sector can help create or expand markets for products and services, generating jobs and supporting economic growth. Supportive policies and strategies are fundamental to catalyze innovation and technology transfer for mitigation and enhance private sector investment*". The proposed project directly aims at supporting the deployment of innovative clean technologies and business models that would abate GHG emissions. The proposed project will purposely engage the private sector in spurring innovation and unlock clean technology markets.

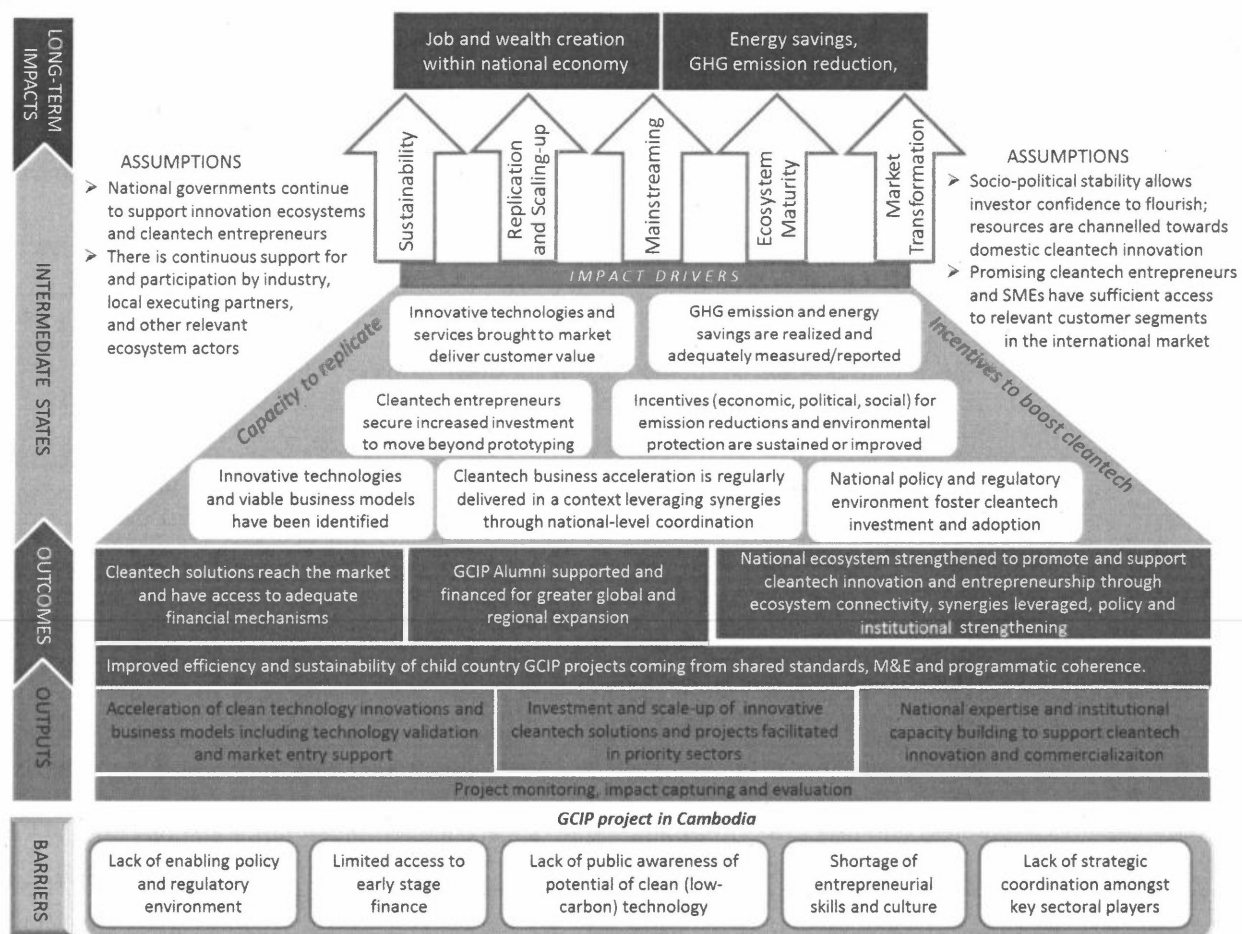


Figure 1 – Theory of Change

- d) Describe the project's incremental reasoning for GEF financing under the program, including the results framework and components

While the current business environment for cleantech SMEs and start-ups in Cambodia is improving, and the launch of the Techo Startup Center is a clear testimony, long-term and effective impact is being hindered by the limited connection between the support available and the one required for a conducive environment for cleantech innovation and entrepreneurship. As such, the focus of the project is to support Cambodian innovators and entrepreneurs to commercialize their products and services to transform the nascent cleantech market into a dynamic and vibrant one which will have a long-lasting positive effect in the national economy and the global environment. In order to achieve this goal, GEF funding is being requested to remove the present barriers that are currently hindering the local cleantech market for SMEs and start-ups.

Without GEF's support, it is very likely that promising clean technology innovations will remain off the market as innovators and entrepreneurs lack the business and technical skills as well as financial means to fully develop and commercialize their products. Consequently, many opportunities to: (i) reduce GHG emissions; (ii) strengthen partnerships with the private and financial sector interested in clean technologies; and (iii) establish commercial ventures by cleantech entrepreneurs and innovators will not be materialized.

Regarding co-financing, the project will receive in-kind and cash support from different public and private institutions highlighting the high level of ownership and interest from national stakeholders.

Even though the GEF contribution will act as a trigger for the technology innovation and entrepreneurship in Cambodia, the additional co-financing is essential to successfully reach the project objectives.

### 3. Engagement with the Global / Regional Framework

The national child project will benefit from the methodologies, decision support tools, training systems, learning and access to investors. Engagement with the global framework is integrated into all components of the project and will include all stakeholders. It includes the following main activities

- **Methodologies, guidelines, tools for acceleration, and training systems:** These will be developed and harmonized at the global level and the national project will focus on adapting these to the national circumstances. Experiences in applying the tools and systems across child project will be used to improve the tools. The global accelerators and global forums will help national enterprises to bring their innovations to the global stage and link with entrepreneurs and from other countries to explore opportunities for joint co-innovation, joint ventures and mobilizing investments.
- **Enterprises growth support, investment facilitation and cross border growth support:** Through global project, national cleantech SMEs will be supported to expand their businesses to other countries. In addition, the global framework will provide investment facilitation services to national enterprises so that they can be linked to investors (impact, venture, angels, and commercial) at regional and global levels. Furthermore, the global framework will provide support to the national child project in establishing market enabling frameworks to promote investments in cleantech.
- **Targeted training, innovation policy support, knowledge management, and peer-to-peer networking and learning:** The global framework will provide methodologies for training national institutions, development of policies on cleantech innovation and entrepreneurship, and document best-practices. By linking policy makers, institutions, financiers and entrepreneurs across countries, the global framework will facilitate knowledge exchange and documentation of best-practices and peer-to-peer networking and learning.
- **Program standards, communication and advocacy, and monitoring and evaluation:** to promote coherence and coordination across all GCIP countries, the global framework will develop program guidelines that will be applied by the countries. Through the global web platform that will be developed by the global framework, communications and advocacy will be promoted across countries. In addition, the global framework will develop methodologies for impact tracking and monitoring and evaluation that will then be applied across countries.

The national child project will engage with the global framework to ensure synergies, knowledge sharing, learning, consistency and efficiency as well as additional support to enable national SMEs to scale globally. The outputs and outcomes from the national child project will contribute to the overall project impact through the number of cleantech innovations, entrepreneurs and SMEs supported, finance mobilized and the resulting green growth, jobs created and GHG emission reductions. The following figure shows how the Global programme will support the child project and how the national child project will feed into the global programme.

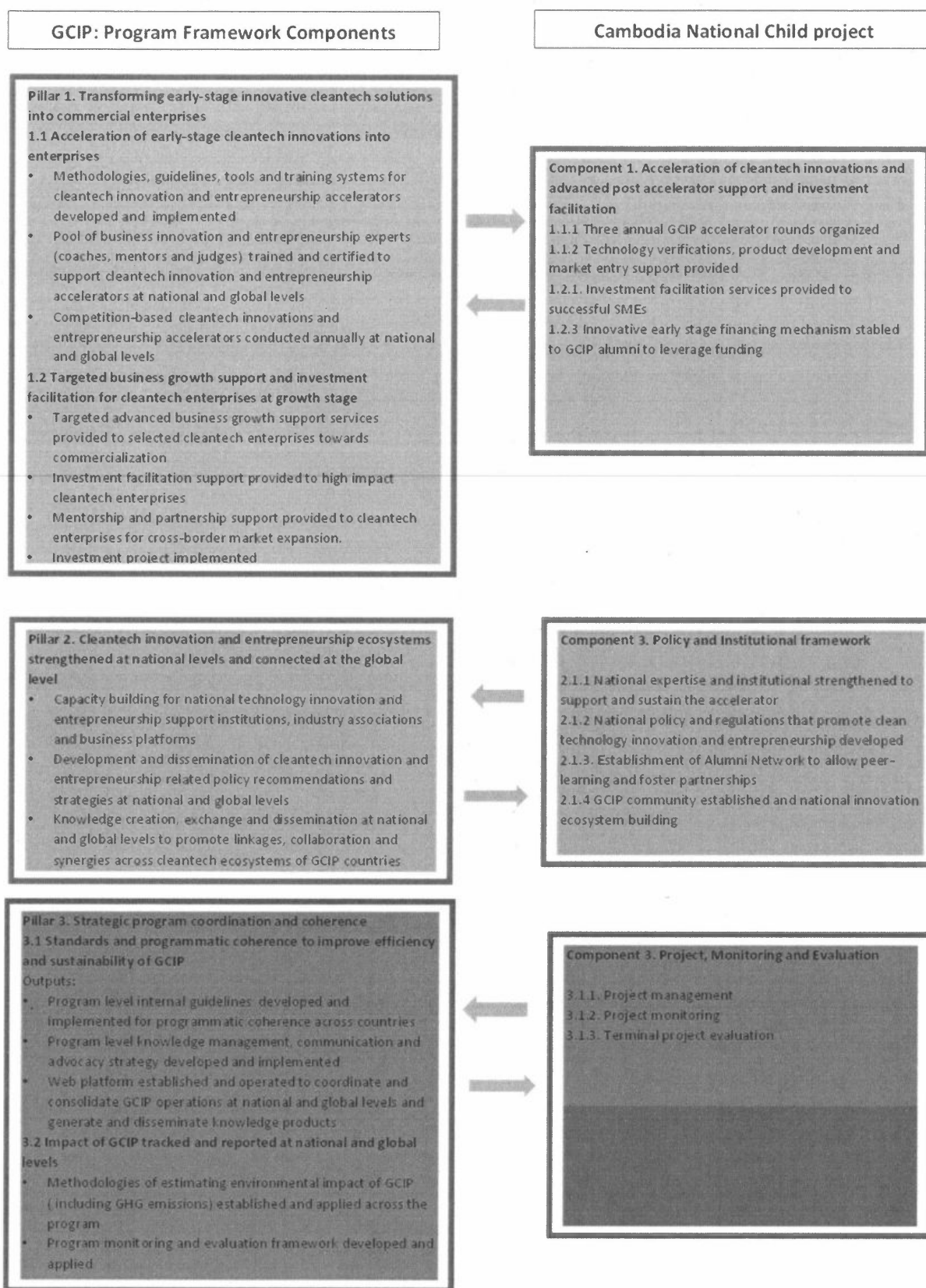


Figure 2 – Engagement between the global program and child project

## GEF 7 Core Indicator Worksheet

Core Indicator 6	Greenhouse gas emission mitigated				(Tons)	
		Tons (6.1+6.2)				
		Entered		Entered		
		PIF stage	Endorsement	MTR	TE	
	Expected CO2e (direct)	126,000				
	Expected CO2e (indirect)	630,000				
Indicator 6.2	Emissions avoided					
		Hectares				
		Expected		Achieved		
		PIF stage	Endorsement	MTR	TE	
	Expected CO2e (direct)	126,000				
	Expected CO2e (indirect)	630,000				
Core Indicator 11	Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment				(Number)	
		Expected		Number Achieved		
		PIF stage	Endorsement	MTR	TE	
	Female	280				
	Male	520				
	Total	800				

# GEF-7 CHILD PROJECT CONCEPT

CHILD PROJECT TYPE: Medium-sized Child Project

PROGRAM: Other Program

1.

<b>Child Project Title:</b>	Accelerating cleantech innovation and entrepreneurship in start-ups and SMEs in Indonesia
<b>Country:</b>	Indonesia
<b>Lead Agency</b>	UNIDO
<b>GEF Agency(ies):</b>	UNIDO (select) (select)

## INDICATIVE FOCAL/NON-FOCAL AREA ELEMENTS AND FINANCING

Programming Directions	Trust Fund	(in \$)	
		GEF Project Financing	Co-financing
CCM-1-4 Promote innovation and technology transfer for sustainable energy breakthroughs for cleantech innovation	GEFTF	1,776,484	16,500,000
<b>Total Project Cost</b>		1,776,484	16,500,000

## PROJECT COMPONENTS AND FINANCING

<b>Project Objective:</b> Support low-carbon economic growth by promoting clean technology innovations and entrepreneurship through a Cleantech innovation platform and accelerator programme						
Project Components	Component Type	Project Outcomes	Project Outputs	Trust Fund	(in \$)	
					GEF Project Financing	Co-financing
1. Finding, fostering and developing cleantech innovations and businesses in Indonesia	TA	1.1 National level platform/ coordinating mechanism established to promote clean technology innovations and entrepreneurship	1.1.1 National level Cleantech Coordinating platform and mechanism established (including adaptation of methodologies and guidelines for the accelerator)  1.1.2 Indonesian Cleantech Community and Network established (incl. associations promoting gender equality and youth groups)	GEFTF	200,000	2,000,000
	TA	1.2 Clean technology entrepreneurs identified, coached and promoted during and beyond Cleantech accelerator	1.2.1 Three Annual Cleantech competition-based accelerators conducted across selected SME clusters (including National Innovation Challenges for clean technology challenges)  1.2.2 At least 2 entrepreneurship training programmes per year on	GEFTF	700,000	6,000,000



			<p>business models and innovation for clean technologies organized for students from local universities and youth</p> <p>1.2.3 Post-accelerator support provided for start-ups and SMEs to access finance and reach market entry</p> <p>1.2.4 National pool of mentors (45+) and judges (15+) identified, created and trained</p> <p>1.2.5 Extensive advocacy and outreach activities organized at the national and regional level; Public private partnership forums held and knowledge/best practice shared</p>			
	INV		1.2.6 Innovative early-stage financial mechanism to help GCIP alumni leverage funding established	GEFTF	397,618	2,500,000
2. Building national capacity to support and promote clean energy technology innovations	TA	2.1 National institutional capacity built to support and organize the Cleantech accelerator during and beyond the project duration	2.1.1 Capacity of national institutions and industry associations to host, support and sustain the Cleantech programme built	GEFTF	105,000	2,000,000
	TA	2.2 Policy and institutional framework strengthened to promote clean technology innovations in Indonesia	2.2.1. Policy and regulations to promote cleantech innovation developed and policy analysis report on best practice policies, regulations and incentives and policy recommendations (gender-responsive) on how to enhance clean technology innovation and entrepreneurship ecosystems developed (with special focus on gender dimensions)	GEFTF	150,000	3,000,000



			2.2.2 Roadmap for the creation of an Indonesian innovation ecosystem in place (inclusive and sustainable, considering gender dimensions)			
3. Programme Coherence and Coordination including Project Monitoring & Evaluation	TA	3.1 Adequate monitoring of all project indicators to ensure successful project implementation and evaluation	3.1.1 Periodic reviews and independent terminal evaluation (TE) conducted  3.1.2 National impact monitoring established and linked to Global GCIP	GEFTF	62,367	500,000
Subtotal				GEFTF	1,614,985	16,000,000
Project Management Cost (PMC)				GEFTF	161,499	500,000
<b>Total Project Cost</b>					1,776,484	16,500,000

**INDICATIVE SOURCES OF CO-FINANCING FOR THE PROJECT BY NAME AND BY TYPE, IF AVAILABLE**

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount (\$)
GEF Agency	UNIDO	Grant	Investment mobilized	50,000
GEF Agency	UNIDO	In-kind	Recurrent expenditures	150,000
Recipient Government	Agency for the Assessment and Application of Technology (BPPT)	Grant	Investment mobilized	2,000,000
Recipient Government	Agency for the Assessment and Application of Technology (BPPT)	In-kind	Recurrent expenditures	2,700,000
Recipient Government	Ministry of Research and Technology and Higher Education (RISTEKDIKTI)	Grant	Investment mobilized	2,500,000
Recipient Government	Ministry of Research and Technology and Higher Education (RISTEKDIKTI)	In-kind	Recurrent expenditures	2,000,000
University	University of Indonesia (UI)	Grant	Investment mobilized	500,000
University	University of Indonesia (UI)	In-kind	Recurrent expenditures	500,000
Private sector	Private sector companies	Grant	Investment mobilized	1,500,000
Recipient Government	Ministry of Cooperative and SMEs Lembaga pendanaan bergulir	Grant	Investment mobilized	500,000
Recipient Government	Ministry of Finance – agency fiscal policy	Grant	Investment mobilized	500,000
Recipient Government	Agency for Creative Economy (BEKRAF)	In-kind	Recurrent expenditures	1,000,000
Recipient Government	Ministry of State Owned Enterprises	Grant	Investment mobilized	1,000,000
Recipient Government	Ministry of Energy and Mineral Resources	In-kind	Recurrent expenditures	1,000,000

Recipient Government	Indonesian center for cleaner production (ICPC) Chamber of Commerce & Industry (KADIN),	In-kind	Recurrent expenditures	600,000
<b>Total Co-financing</b>				<b>16,500,000</b>

“**INVESTMENT MOBILIZED**” is defined as all kind of monetary and abstract support that an entity receives for operating, starting or expanding their business on clean technologies/ products/services. It can be grants, funds, soft loan, loan, joint venture capital, investment capital, tax incentives & tax exemption measures, bank guarantee, startup voucher, Innovation coupon, GAP fund, R&D fund, Self-investment, technical assistant, consultancy services, etc.

**TRUST FUND RESOURCES REQUESTED BY AGENCY (IES), COUNTRY (IES), FOCAL AREA AND THE PROGRAMMING OF FUNDS**

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Programming of Funds	(in \$)		
					GEF Project Financing (a)	Agency Fee (b)	Total (c)=a+b
UNIDO	GEFTF	Indonesia	Climate Change	(select as applicable)	1,776,484	159,883	1,936,367
<b>Total GEF Resources</b>					<b>1,776,484</b>	<b>159,883</b>	<b>1,936,367</b>

**PROJECT PREPARATION GRANT (PPG)**

Is Project Preparation Grant requested?

- Yes ☒ If yes, PPG funds **have to be requested via the Portal** once the PFD is approved  
No ☐ If no, skip this item.

**PPG AMOUNT REQUESTED BY AGENCY(IES), TRUST FUND, COUNTRY(IES) AND THE PROGRAMMING OF FUNDS**

GEF Agency	Trust Fund	Country/ Regional/Global	Focal Area	Programming of Funds	(in \$)		
					PPG (a)	Agency Fee (b)	Total c = a + b
UNIDO	GEF TF	Indonesia	Climate Change	CC STAR Allocation	50,000	4,500	54,500
<b>Total PPG Amount</b>					<b>50,000</b>	<b>4,500</b>	<b>54,500</b>

## PROJECT'S TARGET CONTRIBUTIONS TO GEF 7 CORE INDICATORS

Provide the relevant sub-indicator values for this project using the methodologies indicated in the Core Indicator Worksheet provided in Annex B and aggregating them in the table below. Progress in programming against these targets is updated at the time of CEO endorsement, at midterm evaluation, and at terminal evaluation. Achieved targets will be aggregated and reported at anytime during the replenishment period. There is no need to complete this table for climate adaptation projects financed solely through LDCF and SCCF.

Project Core Indicators		Expected at PIF
1	<b>Terrestrial protected areas</b> created or under improved management for conservation and sustainable use (Hectares)	
2	<b>Marine protected areas</b> created or under improved management for conservation and sustainable use (Hectares)	
3	Area of <b>land restored</b> (Hectares)	
4	Area of <b>landscapes under improved practices</b> (excluding protected areas) (Hectares)	
5	Area of <b>marine habitat under improved practices</b> (excluding protected areas) (Hectares)	
6	<b>Greenhouse Gas Emissions Mitigated</b> (metric tons of CO <sub>2</sub> e)	Indicative expected results of 144,000 to 288,000 tCO <sub>2</sub> e of direct GHG emission savings and 720,000 to 1,440,000 tCO <sub>2</sub> e of indirect GHG emission savings at the end of project implementation
7	<b>Number of shared water ecosystems</b> (fresh or marine) under new or improved cooperative management	_____
8	Globally over-exploited <b>marine fisheries</b> moved to more sustainable levels (metric tons)	_____
9	<b>Reduction, disposal/destruction, phase out, elimination</b> and avoidance of <b>chemicals of global concern</b> and their waste in the environment and in processes, materials and products (metric tons of toxic chemicals reduced)	
10	Reduction, avoidance of emissions of <b>POPs to air</b> from point and non-point sources (grams of toxic equivalent gTEQ)	
11	Number of <b>direct beneficiaries disaggregated by gender</b> as co-benefit of GEF investment	830 beneficiaries (at least 35% female) consisting of: <ul style="list-style-type: none"> <li>- 80 enterprises accelerated</li> <li>- 40 cleantech experts ( judges, mentors and coaches) trained and certified</li> <li>- 710 Participants sensitized</li> </ul>

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

# PROJECT DESCRIPTION

## 1. Country Context

Indonesia's importance is underscored by its sizeable population of 250 million people – the fourth-largest in the world – and its significant role as a major producer and consumer of energy in regional and international markets. Indonesia is also the largest economy in ASEAN.

Indonesia is one of the world's largest emitters of greenhouse gases (GHG). Currently, the land-use and energy sector contribute to 80% of GHG in Indonesia.<sup>1</sup> Indonesia's First Biennial Update Report (BUR) to the UNFCCC, submitted in 2015, includes a GHG inventory for the period 2000 to 2012 which shows LULUCF as the greatest source of emissions (65.5%), followed by energy (32.6%), agriculture (8%) and waste (6%).<sup>2</sup> The national government has committed to unconditionally reducing GHG emissions by 29% against a 2030 business-as-usual case and up to 41% with international assistance.

Indonesia remains a net energy exporter: This resource-rich archipelagic nation is the world's fourth-largest producer of coal and a top coal exporter and Southeast Asia's biggest gas supplier (45% of its production). However, its imports of oil and oil products have been rapidly increasing in recent years. In terms of renewable energy, Indonesia is the largest producer of biofuels in the world, and is increasingly scaling up efforts to exploit its extensive renewable energy potential, particularly in geothermal power (all data is as of 2014).<sup>3</sup> Renewable energy, particularly hydro and geothermal have a share of 6%, but statistics do not cover the traditional use of biomass as energy for cooking, lighting and process heat in rural areas.

In 2013 electricity was generated from fossil fuels (88%), hydro (8%) and geothermal (5%). Generation capacity growth in Indonesia has been lower than growth in electricity demand, leading to power shortages and a low electrification ratio. Insufficient power generation is due to several issues including inadequate supporting infrastructure, difficulty obtaining land-use permits, subsidized tariffs, and an uncertain regulatory environment all contribute to.<sup>4</sup> With the energy sector projected to dominate Indonesia's greenhouse gas emissions by 2026–27, promoting renewable energy source and energy conservation offers significant emissions abatement potential.

Under the Paris Agreement, Indonesia has made the commitment to reduce its Green House Gas (GHG) Emissions by 29% by 2030 against business as-usual (BAU) baseline scenario and up to 41% subject to international assistance and support. This national determined contribution (NDC) of Indonesia includes mitigation activities in the areas of energy, waste, IPPU/ Industry and Agriculture, and Forestry. The energy sector shall contribute with a mitigation target of 314 tons of CO<sub>2</sub> by 2030.

Indonesia's *National Action Plan for Greenhouse Gas Reduction* (RAN-GRK) sets forth a wide range of mitigation activities and emission-reduction targets across major sectors.<sup>5</sup> It sets out the different sectors in which Indonesia will make emissions reductions, namely Forestry and Peat land, Agriculture, Energy and Transportation, Industry and Waste Management. In addition, a new report<sup>6</sup> from the Indonesian government's Low Carbon Development Initiative found that less carbon-intensive, more efficient energy

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<sup>1</sup> <http://wri-indonesia.org/en/publication/how-can-indonesia-achieve-its-climate-change-mitigation-goal>

<sup>2</sup> <https://unfccc.int/resource/docs/natc/indnbur1.pdf>

<sup>3</sup> <https://www.iea.org/countries/Indonesia/>

<sup>4</sup> <https://www.eia.gov/beta/international/analysis.php?iso=IDN>

<sup>5</sup> <https://www.iea.org/policiesandmeasures/pams/indonesia/name-42667-en.php>

<sup>6</sup> <https://www.bappenas.go.id/id/berita-dan-siaran-pers/pembangunan-rendah-karbon-pergeseranparadigma-menuju-ekonomi-hijau-di-indonesia/>

systems can deliver an average of 6 percent GDP growth per year until 2045—even more economic growth than the business-as-usual path, with continued gains in employment generation, increased incomes and poverty reduction. This strategy would cut the country's greenhouse gas emissions nearly 43 percent by 2030, exceeding Indonesia's international climate target. The government is now feeding findings from this new report directly into its next five-year development plan, which will cover 2020-2024.

Finally, Indonesia, like many South-East Asian countries, faces a number of threats associated with climate change and as a result has a lot to gain from innovative clean technologies that support climate change mitigation, as well as economic growth and industrialization.

This child project will be implemented in alignment with the key national priorities of Indonesia to set the trajectory for Indonesia's low emissions development targets and will specifically focus on the identification and commercialization of clean technology innovations contributing to the transition towards low-carbon infrastructure in Indonesia and will simultaneously achieve significant GHG emission reduction.

## 2. Project Overview and Approach

### **a) Provide a brief description of the geographical target(s), including details of systemic challenges, and the specific environmental threats and associated drivers that must be addressed;**

This project will be implement across all Indonesia.

SMEs create jobs and are essential for the overall development of the economy, globally accounting for 99% of business numbers<sup>7</sup>. In Indonesia, SMEs account for 99.9% of total enterprises and 97.2% of total employment, thus playing a significant role in the country's development. Furthermore, as SMEs account for 58% of total GDP, their growth is key to the health of the larger Indonesian economy.<sup>8</sup> Despite recognition by the Indonesian government of the important roles played by SMEs and innovation for economic growth and stability, a cumbersome business registration process and lack of policy cohesion continues to hinder entrepreneurship.<sup>9</sup> Further SME development in green economy remains relatively low.

In terms of investment in innovation, Indonesia allocates less than 0.08% of its GDP for R&D investment, which is below 1/10 the average of the BRIC economies.<sup>10</sup> Indonesia is the second among the ASEAN countries by means of annual foreign direct investments (FDI) inflows and inward stock (after Singapore). During the last five years FDI inflows have increased, before a noticeable fall in 2015. Indonesia's FDI inward stock doubled between 2000 and 2015, leaving behind Thailand and staying above Vietnam and Malaysia, which are the other major FDI recipients among the ASEAN countries<sup>11</sup>. However, capital stemming from Foreign Direct Investment (FDI) is also modest considering the size and potential of Indonesia, and tends to be highly volatile thus increasing risk.

The need for Indonesia to improve innovation and research has been highlighted in the Global Innovation Index (100 of 141), the Knowledge Economy Index (108 of 143) and the Global Competitiveness Index

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<sup>7</sup> [www.internationalentrepreneurship.com](http://www.internationalentrepreneurship.com)

<sup>8</sup> OECD, <http://www.oecd.org/globalrelations/regionalapproaches/ASEAN%20SME%20Book%20to%20Bali%20Final.pdf>

<sup>9</sup> OECD, <http://www.oecd.org/globalrelations/regionalapproaches/ASEAN%20SME%20Book%20to%20Bali%20Final.pdf>

<sup>10</sup> World Bank 2012, Knowledge Economy Index

<sup>11</sup> UNCTAD 2016, [https://unctad.org/en/PublicationChapters/wir2016\\_AnnexTables\\_en.pdf](https://unctad.org/en/PublicationChapters/wir2016_AnnexTables_en.pdf)

(50 of 144).<sup>12</sup> While recent years have seen the establishment of around 30 incubators (mostly in universities) and science parks, these remain at the nascent stage with limited scope or capacity. This offers the opportunity for the Cleantech programme to utilize these established services, while improving on their capacity, reach and visibility.

In summary, following key barriers have been identified that must be addressed:

- i. Lack of institutional coordination
- ii. Poor dialogue between universities/research institutes and the industrial sector
- iii. Limited access to finance
- iv. Lacking institutional and human capacity to provide adequate services for SME development
- v. Lack of supportive business environment to foster the aspired market transformation
- vi. Lack of market access promotion to support business growth opportunities
- vii. Insignificant R&D expenditures

Ultimately, there is a weak innovation ecosystem providing systemic support to SMEs in transforming cleantech innovations into viable enterprises that can attract investment at local and global levels, which in turn would allow them to scale and to deliver transformational economic, social and environmental impacts. The project will contribute, through its activities and continual engagements with the national government, universities, the private sector and other relevant stakeholders to mitigating barriers in a holistic manner, promoting the development and deployment of clean technology innovations particularly in the field of renewable energy and energy efficient and innovative business models for the deployment of these technologies.

**b) Describe the existing or planned baseline investments, including current institutional framework and processes for stakeholder engagement and gender integration;**

SMEs create jobs and are essential for the overall development of the economy, globally accounting for 99% of business numbers<sup>13</sup>. In Indonesia, SMEs account for 99.9% of total enterprises and 97.2% of total employment, thus playing a significant role in the country's development. Furthermore, as SMEs account for 58% of total GDP, their growth is key to the health of the larger Indonesian economy.<sup>14</sup> Despite recognition by the Indonesian government of the important roles played by SMEs and innovation for economic growth and stability, a cumbersome business registration process and lack of policy cohesion continues to hinder entrepreneurship.<sup>15</sup>

UNIDO is the GEF implementing agency of the project, and is accountable to the GEF grant, and other funding resources to be provided by the Government and private sector. The Agency for the Assessment and Application of Technology (BPPT) is the main executing agency of the projects. During the PPG phase partnerships will be elaborated in more detail and additional interaction can be envisaged with financial institutions such as banks and others as co-financing partners. The project will be developed on existing government initiatives platform and will cooperate with major partners including The Ministry of Research, Technology and Higher Education (RISTEKDIKTI), Fiscal Policy Agency of Ministry of Finance (MoF), Agency for Creative Economy (BEKRAF), Ministry of Cooperative and SMEs (KEMENKOPUKM), Ministry of Energy and Mineral Resources (MEMR), Ministry of State Owned Enterprises (MSOE) and relevant national agencies on renewable energy, innovation and entrepreneurship, as well as industry

<sup>12</sup> The Global Innovation Index 2012, INSEAD; World Bank 2012, Knowledge Economy Index; Schwab K (2012) The Global Competitiveness Report 2012-2013, World Economic Forum.

<sup>13</sup> [www.internationalentrepreneurship.com](http://www.internationalentrepreneurship.com)

<sup>14</sup> OECD, <http://www.oecd.org/globalrelations/regionalapproaches/ASEAN%20SME%20Book%20to%20Bali%20Final.pdf>

<sup>15</sup> OECD, <http://www.oecd.org/globalrelations/regionalapproaches/ASEAN%20SME%20Book%20to%20Bali%20Final.pdf>

associations and academic institutions. Through their close involvement, a knowledge sharing and best practices will be enhanced and thus contribute to the cleantech startups towards climate change mitigation. It is envisaged that BPPT will take the lead executing agency in sustaining development of entrepreneurship and enhancing competitiveness of SMEs.

Stakeholders will form a comprehensive integrated structure to enhance a synergy among the project partners and serve as the knowledge source of new clean technologies, emerging entrepreneurs, knowledge network, applied research collaboration and additional team members. Furthermore, the gender mainstreaming approach will be apply in the form that early involvement of designated women entrepreneurs, associations and gender focal points will take part in all project activities. This will be in line with the GEF Policy on Stakeholder Engagement <sup>16</sup> that that sets out the core principles and mandatory requirements for stakeholder's involvement.

	Stakeholder	Role in the project
Executing Agency	Agency for the Assessment and Application of Technology (BPPT)	<p>BPPT is the Agency for the Assessment and Application of Technology (BPPT) is an Indonesian government research institute, which has the tasks of carrying out government duties in the field of assessment and application of technology, and prioritizes the partnership through maximum utilization of technology and engineering outputs.</p> <p>BPPT has vision to be the center of leading technology, which prioritizing innovation and technology services to achieve national independence, increased competitiveness and improvement of public services.</p> <p>BPPT has mission to carry out an assessment and application of technology in the fields of agro-industry, biotechnology, information technology, energy, industrial design, engineering, natural resources, including policy to produce innovation and technology services through assessment, intermediation, solutions, clearing house, and technology audit. Moreover, BPPT has to implement good governance through bureaucratic reform in order to create innovation and technology services sustainably.</p> <p><b>Role in the Project</b></p> <p>BPPT is the main executing agency for the project. It will execute the project on behalf of the Government of Indonesia (GoI), and act as chair of project steering committee aactively involved throughout the project execution period and take the role of sustaining and expanding the Cleantech Competition and Accelerator programme after the completion of the present project.</p>

<sup>16</sup> The following principles constitute the foundation for Stakeholder Engagement across GEF governance and operations: (a) Constructive, responsive, accountable and transparent Stakeholder Engagement is critical to the success of all GEF-Financed Activities. Including activities funded through all GEF-managed trust funds, unless decided otherwise by the LDCF/SCCF Council in response to guidance from the Conference of the Parties of the United Nations Framework Convention on Climate Change. (b) Stakeholder Engagement in the GEF supports fair, balanced, and inclusive participation in GEF governance and operations. (c) Stakeholder Engagement applies to all GEF-Financed Activities, irrespective of the level of potential social and environmental risks and impacts. (d) In order to be effective and meaningful, Stakeholder Engagement requires sustained commitment and action, including the appropriate allocation of resources, throughout the identification, design, implementation, monitoring and evaluation of GEF-Financed Activities. (e) Effective Stakeholder Engagement in GEF governance and operations is supported by appropriate documentation and easy and timely access to relevant information.



Counterpart and stakeholder	Ministry of Research, Technology and Higher Education (RISTEKDIKTI)	<p>RISTEKDIKTI has the responsibility to assist the President of the Republic of Indonesia in formulating national policies and implementing coordination in the field of research, science and technology. The Ministry has create a Research and innovation fund (around \$40 million).</p> <p><b>Role in the Project</b></p> <p>It is envisaged that RISTEKDIKTI will be a project partner, for instance the project will work with the ministry on innovation policies and also analyze how there could be mutual benefits between the project and the research and innovation fund.</p>
Counterpart and stakeholder	Ministry of Finance	<p>Fiscal Policy Agency – Ministry of Finance is responsible for perform fiscal policy analysis in Indonesia, and directed by the Minister of Finance.</p> <p><b>Role in the Project</b></p> <p>The Agency will be a project partner for the policy of government on incentive disbursement for start-ups and SMEs.</p>
Counterpart and stakeholder	Ministry of Cooperative and SMEs (KEMENKOPUKM)	<p>KEMENKOPUKM has the responsibility to assist the President of Republic Indonesia in formulating national policies on cooperative and SMEs, as well as monitoring the implementation the operation to comply the regulation on cooperative and SMEs.</p> <p><b>Role in the Project</b></p> <p>The Ministry will be a project partner for coordination and synchronization of the national policy on SMEs.</p>
Counterpart and stakeholder	Ministry of Creative Economy (BEKRAF)	<p>BEKRAF has the responsibility to assist the President of the Republic of Indonesia in formulating national policies and implementing the creative economy, stimulate to nurture startup business and SMEs.</p> <p><b>Role in the Project</b></p> <p>The agency will be a project partner for utilizing their environment of creative business, startups community and financial access to SMEs and startups.</p>
Counterpart and stakeholder	State Minister of State Owned Enterprises (KEMENEG BUMN)	<p>KEMENEG BUMN has the responsibility to assist the President of the Republic of Indonesia on organizing the government-linked companies and oversee the development of state owned enterprises.</p> <p><b>Role in the Project</b></p> <p>The Ministry will be a project partner and foster the startups and SMEs to fit in to companies under their coordination.</p>
Counterpart and stakeholder	Ministry of Energy and Mineral Resources (ESDM)	<p>ESDM has the responsibility to assist the President of the Republic of Indonesia on government affairs in the field of energy and mineral resources.</p>



		<p><b>Role in the Project</b></p> <p>The Ministry will be a project partner on directing the clean technology policy and technical assessment of the proposal from potential candidates.</p>
Counterpart and stakeholder	Indonesian center for cleaner production (ICPC) under Chamber of Commerce & Industry (KADIN),	<p>ICPC aims at facilitating, promoting and catalyzing Cleaner Production implementation in Indonesia. In other words, it stimulates and encourages the CP market in Indonesia.</p> <p><b>Role in the Project</b></p> <p>ICPC is the project partner who stimulates and encourages the Cleantech market in Indonesia.</p>
Counterpart and stakeholder	<b>Industrial Associations</b>	Relevant Industrial Associations will be invited to participate, where relevant, during project implementation e.g. Chamber of Commerce and Industry
Counterpart and stakeholder	<b>Private sector</b>	Private Sector Enterprises will be identified in the PPG phase of the project to support, and benefit from project activities. In particular, they could be involved in defining and sponsoring the technology challenge awards.
Counterpart and stakeholder	<b>Other Universities and/or academic and R&amp;D institutions</b>	Additional universities and academic institutions may be identified during project execution to take part in project activities and provide technical expertise. This could include the Indonesian Academy of Sciences (IAS), the National Innovation Committee (NIC), the National Research Council (NRC) and the Provincial Research Council (PRC)
Counterpart and stakeholder	<b>Associations, Networks and startup assistance organizations (SAOs)</b>	<p>In Indonesia there are currently more than 50 startup assistance organisations (SAOs) – incubators, accelerators, ecosystem builders such as hubs and coworking spaces, as well as other activities such as startup competitions and bootcamps – operating.</p> <p>For instance, the Angel Investment Network Indonesia (<a href="https://angin.id/">https://angin.id/</a>) is Indonesia's First and Largest Investment Network Committed to Building Indonesia's Entrepreneurial Ecosystem</p> <p>In addition, there is the Clean Energy Investment Accelerator (CEIA). CEIA is an innovative public-private partnership jointly led by Allotrope Partners, World Resources Institute, and the U.S. National Renewable Energy Laboratory.<sup>17</sup></p> <p><b>Role in the Project</b></p> <p>It is envisaged that the project will actively involve relevant players and create a common network focusing on clean technology innovations.</p>
Counterpart and stakeholder	<b>Associations promoting gender equality and women's empowerment, and Gender Experts</b>	Relevant women entrepreneurs, associations and gender focal points will be involved in all activities of the project. The project will deliberately mobilize interest from women entrepreneurs by targeting the involvement of their associations in the project process. This will be done by taking into consideration the cultural context that exists in Indonesia. That way, the project would adequately address the gender

<sup>17</sup> <https://www.cleanenergyinvest.org/>

		imbalances in SMEs and provide a solid basis for gender mainstreaming in clean technology innovations. Associations could include for instance, Angel Investment Network Indonesia (ANGIN) and Sasakawa Peace Foundation.
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Efforts to ensure that women and men are given equal opportunity to contribute to and benefit from the project. Special attention will be given to address gender issues through gender mainstreaming activities, such as:

- (i) Gender balance of trainers, mentors, judges and accelerator participants.
- (ii) Gender responsiveness of outreach, knowledge and training material.
- (iii) Raising awareness on Gender equality and the empowerment of women.
- (iv) The project will foster to empower women empowerment through specific training and mentoring and the design of specific prizes and follow-up support programmes for innovative startups that will have a significant impact on women's entrepreneurial development and job creation, etc.
- (v) To mainstream gender into this project, a gender baseline analysis and action plan is will be developed during PPG phase.

**c) Describe how the integrated approach proposed for the child project responds to and reflects the Program's Theory of Change, and as such is an appropriate and suitable option for tackling the systemic challenges, and to achieve the desired transformation with multiple global environmental benefits;**

The Indonesia Cleantech and Innovation Programme is firmly aligned with the GEF Climate Change Focal Area in its focus on innovation and technology transfer for sustainable energy breakthroughs and therefore fully contributes to the overall impact of the program as shown in the theory of change in the below diagram. The GEF-7 Climate Change Focal Area Strategy aims to support developing countries to make transformational shifts towards low emission and climate-resilient development pathways. This project directly supports this aim by enhancing the support for cleantech SMEs and start-ups, helping them to commercialize and scale, to contribute to a low emission development pathway nationally and globally.

Through the GEF funding, the Child Project for Indonesia seeks to address existing barriers for entrepreneurs to fully commercialize their innovative products and exploit untapped potential in reducing GHG emissions, in strengthened partnerships with the private sector interested in investing in clean technologies and missed opportunities for green economic growth and jobs.

A focus of this project is to support Indonesian innovators and entrepreneurs to link to markets and financiers to commercialize their products and services, and in turn transform the nascent cleantech market into a dynamic and vibrant one, which will have a long-lasting positive effect in the national economy and the global environment. Entrepreneurs with good cleantech innovations shall be able to follow a continuum of support to scale and commercialization whilst being part of a cleantech community. In parallel, the Indonesian project will work with the Global project to ensure synergies through joint learning, coherence and coordination as well as additional support to enable Indonesian SMEs to scale globally. In this way, the outputs and outcomes from this child project will contribute to the overall impact of the program. The theory of change is shown in Figure 1 below.

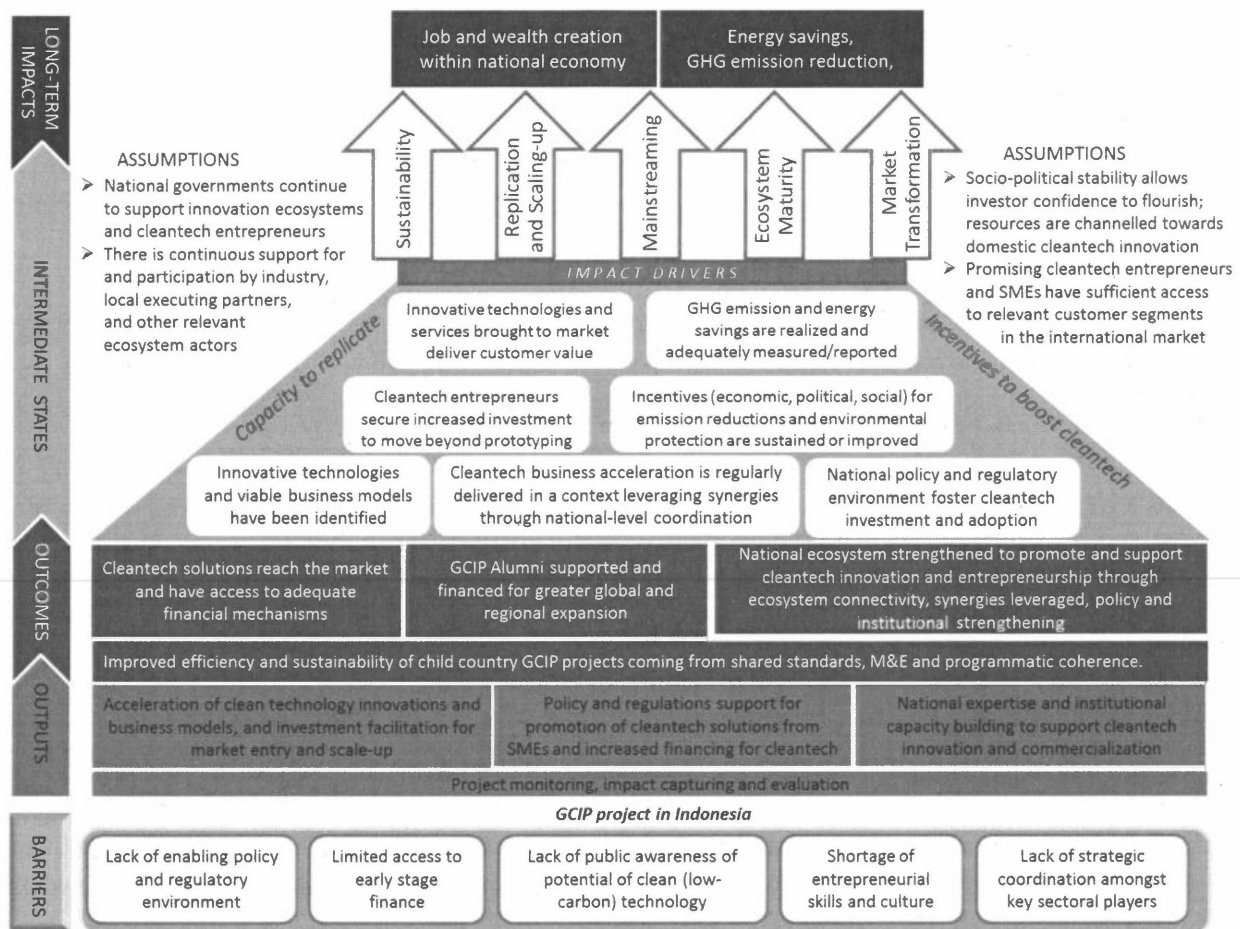


Figure 1 – Theory of Change

**d) Describe the project's incremental reasoning for GEF financing under the program, including the results framework and components.**

Clear government prioritization is given to promote innovations and SMEs in Indonesia and to put the necessary policies and strategies in place. However, significant barriers still exist, including a lack of linkages between the support services required to facilitate innovation and entrepreneurship. Indonesia is therefore requesting GEF funding to help address its barriers to cleantech innovation by strengthening its innovation ecosystem through building institutional capacities and promoting clean technology innovations.

Through a systematic approach, the project will address the main barriers through focusing on three interrelated components, namely:

- i) Finding, fostering and developing cleantech innovations and businesses in Indonesia
  - a. Establishment of National platform to promote clean technology innovations and businesses;
  - b. Clean technology entrepreneurs identified, coached and promoted during and beyond Cleantech accelerator;

- ii) Building national capacity to support and promote clean energy technology innovations
  - a. National institutional capacity built to support and organize the Cleantech accelerator during and beyond the project duration
  - b. Policy and regulatory framework strengthened for the creation of a nurturing local innovation ecosystem
- iii) Programme Coherence and Coordination including (Project Monitoring & Evaluation)
  - a. Adequate monitoring of all project indicators to ensure successful project implementation and evaluation
  - b. National impact monitoring established and linked to Global GCIP

This will lead to a long-term shift in cleantech innovation and entrepreneurship, which will create green jobs while contributing to GHG emission reduction and global environmental sustainability. This assistance is essential to encourage and ensure the required stable co-financing, particularly in attracting foreign and domestic investment in cleantech in Indonesia.

Indonesia requires further incremental technical and financial assistance from GEF in strengthening of its institutional capacities and promoting clean energy technology innovations for long lasting positive effects on environment and socio-economic benefits by enhancing economic green growth. This assistance is essential to encourage and ensure the required stable co-financing particularly by attracting foreign and domestic investments for employing advanced technologies with all related benefits.

Furthermore, in case that the GEF funding will not be provided to assist Indonesia in these areas, it is very likely that clean technology innovations will be adequately developed at the market (or at very low level distributed at the national level). There will be still constraints for entrepreneurs lacking the business skills and supporting mechanisms to fully commercialize their innovative products. This will result in many unrealized opportunities in reducing GHG emissions, strengthening partnerships with the private sector interested in investing in clean energy technologies, and providing support to entrepreneurs and innovators seeking to establish commercial ventures in clean energy technologies.

In this regard, with a relatively minimal GEF grant and through the creation of a Cleantech knowledge platform, this project will support mobilization of investment to support and accelerate start-up entrepreneurs towards development and commercialization of their innovations.<sup>18</sup>

### 3. Engagement with the Global / Regional Framework (*maximum 500 words*)

The national child project will benefit from the methodologies, decision support tools, training systems, learning and access to investors. Engagement with the global framework is integrated into all components of the project and will include all stakeholders. It includes the following main activities

- **Methodologies, guidelines, tools for acceleration, and training systems:** These will be developed and harmonized at the global level and the national project will focus on adapting these to the national circumstances. Experiences in applying the tools and systems across child project will be used to improve the tools. The global accelerators and global forums will help national enterprises to bring their innovations to the global stage and link with entrepreneurs and from other countries to explore opportunities for joint co-innovation, joint ventures and mobilizing investments.
- **Enterprises growth support, investment facilitation and cross border growth support:** Through global project, national cleantech SMEs will be supported to expand their businesses to other countries.

<sup>18</sup> According to the Global Cleantech Innovation Index 2012 Report, innovations, specifically innovation entrepreneurs, are identified as, “companies introducing incremental innovations; those transferring technological applications from one industry or geography to another; and those presenting business model innovations.”

In addition, the global framework will provide investment facilitation services to national enterprises so that they can be linked to investors (impact, venture, angels, and commercial) at regional and global levels. Furthermore, the global framework will provide support to the national child project in establishing a market enabling frameworks to promote investments in cleantech.

- **Targeted training, innovation policy support, knowledge management, and peer-to-peer networking and learning:** The global framework will provide methodologies for training national institutions, development of policies on cleantech innovation and entrepreneurship, and document best practices. By linking policy makers, institutions, financiers and entrepreneurs across countries, the global framework will facilitate knowledge exchange and documentation of best practices and peer-to-peer networking and learning.
- **Program standards, communication and advocacy, and monitoring and evaluation:** to promote coherence and coordination across all GCIP countries, the global framework will develop program guidelines that will be applied by the countries. Through the global web platform that will be developed by the global framework, communications and advocacy will be promoted across countries. In addition, the global framework will develop methodologies for impact tracking, monitoring, and evaluation that will then be applied across countries.

The national child project will engage with the global framework to ensure synergies, knowledge sharing, learning, consistence and efficiency as well as additional support to enable national SMEs to scale globally. The outputs and outcomes from the national child project will contribute to the overall project impact through the number of cleantech innovations, entrepreneurs and SMEs supported, finance mobilized and the resulting green growth, jobs created and GHG emission reductions. The following figure shows how the Global programme will support the child project and how the national child project will feed into the global programme.

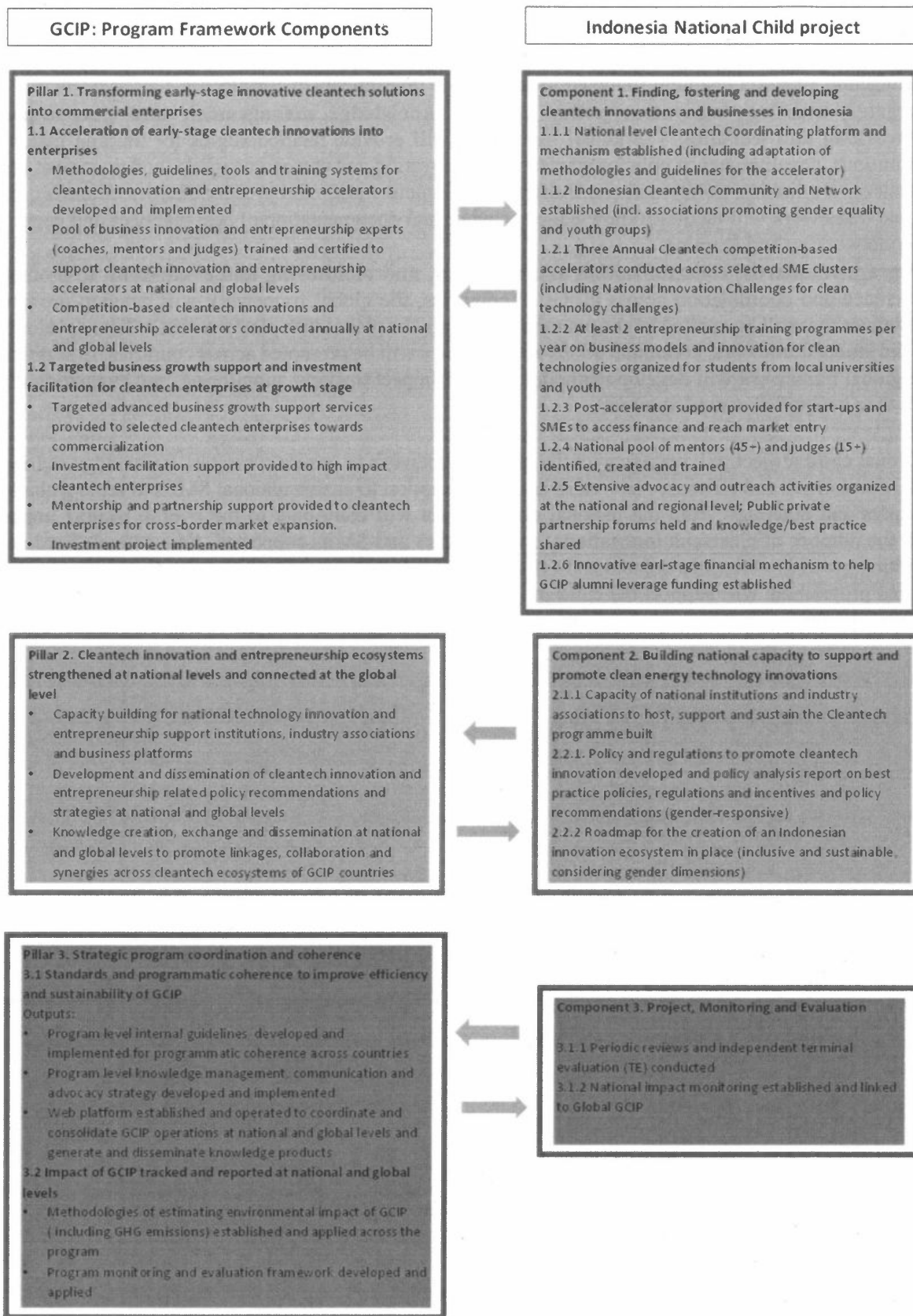


Figure 2 – Engagement between the global program and child projects

## GEF 7 Core Indicator Worksheet

Use this Worksheet to compute those indicator values as required in Part I, item F to the extent applicable to your proposed project. Progress in programming against these targets for the project will be aggregated and reported at any time during the replenishment period. There is no need to complete this table for climate adaptation projects financed solely through LDCF and SCCF.

<b>Core Indicator 6</b>	<b>Greenhouse gas emission mitigated</b>					<i>(Metric tons of CO<sub>2</sub>e)</i>
		Expected metric tons of CO <sub>2</sub> e (6.1+6.2)				
		PIF stage	Endorsement	MTR	TE	
	Expected CO <sub>2</sub> e (direct)	144,000				
	Expected CO <sub>2</sub> e (indirect)	720,000				
<b>Indicator 6.2</b>	<b>Emissions avoided</b>					
		Expected metric tons of CO <sub>2</sub> e				
		Expected		Achieved		
		PIF stage	Endorsement	MTR	TE	
	Expected CO <sub>2</sub> e (direct)	144,000				
	Expected CO <sub>2</sub> e (indirect)	720,000				
<b>Core Indicator 11</b>	<b>Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment</b>					<i>(Number)</i>
		Number				
		Expected		Achieved		
		PIF stage	Endorsement	MTR	TE	
	Female	290				
	Male	540				
	Total	830				





# GEF-7 CHILD PROJECT CONCEPT

CHILD PROJECT TYPE: Medium-sized Child Project

PROGRAM: Other Program

<b>Child Project Title:</b>	Global Cleantech Innovation Programme in Kazakhstan - Promoting cleantech innovation and entrepreneurship in SMEs for green jobs in Kazakhstan
<b>Country:</b>	Republic of Kazakhstan
<b>Lead Agency</b>	UNIDO
<b>GEF Agency(ies):</b>	UNIDO (select) (select)

## INDICATIVE FOCAL/NON-FOCAL AREA ELEMENTS AND FINANCING

Programming Directions	Trust Fund	(in \$)	
		GEF Project Financing	Co-financing
CCM-1-4 (select) Promote innovation and technology transfer for sustainable energy breakthroughs for cleantech innovation	GEFTF	1,775,000	8,850,000
<b>Total Project Cost</b>		<b>1,775,000</b>	<b>8,850,000</b>

## PROJECT COMPONENTS AND FINANCING

<b>Project Objective:</b> To accelerate the uptake of, and investment in, cleantech innovation and entrepreneurship, and promote the coordination and connectivity of ecosystems under the Global Cleantech Innovation Programme						
Project Components	Component Type	Project Outcomes	Project Outputs	Trust Fund	(in \$)	
					GEF Project Financing	Co-financing
1. Identification and acceleration of cleantech innovations and businesses for commercialization, market access, and scale-up	TA	1.1 Cleantech solutions with high-impact potential for climate energy are supported to reach commercialization	<p>1.1.1 Mapping of cleantech solutions is conducted and appropriate actions are identified and prioritized in accordance with national strategies for climate change and energy</p> <p>1.1.2 Three annual competition-based GCIP Accelerators are organized</p> <p>1.1.3 Post-accelerator support for start-ups and SMEs to access finance and reach market entry is provided</p> <p>1.1.4 Cross-border investment facilitation and market expansion support is provided for selected enterprises at regional and global levels</p> <p>1.1.6 At least 30 national experts are trained and qualified through trainer-the-trainers and coaching sessions</p>	GEF TF	820,000	2,300,000

	INV		1.1.5 Innovative financial mechanism to help SMEs leverage funding established	GEF TF	200,000	2,170,000
2. Strengthening of the national cleantech innovation and entrepreneurship ecosystem	TA	2.1 Policy and regulatory frameworks and financial mechanisms are strengthened for the development and deployment of innovative cleantech solutions	<p>2.1.1 Evidence-based and systematic analysis of the national cleantech innovation and entrepreneurship ecosystem (CIEE) is conducted</p> <p>2.1.2 Policies and regulations required for enhancing the Kazakhstan's cleantech innovation and entrepreneurship ecosystem developed</p> <p>2.1.4 An inter-ministerial technical working group is established to advice and provide support to start-ups/SMEs on compliance issues associated with their cleantech innovations</p> <p>2.1.5 Advocacy and outreach activities for cleantech solutions are organized at the national and regional level</p>	GEF TF	243,636	1,830,000
3. Institutional capacity building, networking and knowledge sharing for cleantech innovation and entrepreneurship	TA	<p>3.1 National partner institutions have the capacity to provide systematic and holistic support to cleantech enterprises and their innovations for acceleration and commercialization</p> <p>3.2 Kazakhstan cleantech ecosystem players are better connected to regional and international cleantech ecosystems and benefit from synergies and knowledge exchange</p>	<p>3.1.1 Capacity of national institutions and cleantech ecosystem players is strengthened to conduct the GCIP Accelerator</p> <p>3.2.1 Participation of Kazakhstan ecosystem players (partner institutions, investors etc.) at national, regional and international events for knowledge exchange is facilitated</p>	GEF TF	250,000	2,000,000

4. Programme coherence, monitoring and evaluation	TA	4.1 Adequate regular monitoring of project's performance and indicators together with regular evaluations to ensure successful project implementation and achievement of set objectives	4.1.1 GCIP guidelines and methodologies adapted and applied for Kazakhstan  4.1.2 Regular monitoring exercises conducted, PIRs prepared; tracking tools prepared according to UNIDO and GEF requirements  4.1.3 Mid-term review conducted  4.1.4 Independent final evaluation conducted	GEF TF	100,000	250,000
Subtotal				GEF TF	1,613,636	8,550,000
Project Management Cost (PMC)				GEF TF	161,364	300,000
<b>Total Project Cost</b>					<b>1,775,000</b>	<b>8,850,000</b>

For multi-trust fund projects, provide the total amount of PMC in Table B, and indicate the split of PMC among the different trust funds here: ( )

**INDICATIVE SOURCES OF CO-FINANCING FOR THE PROJECT BY NAME AND BY TYPE, IF AVAILABLE**

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount (\$)
GEF Agency	UNIDO	Grant	Investment mobilized	60,000
GEF Agency	UNIDO	In-kind	Recurrent expenditures	90,000
Recipient Government	JSC "International Green Technologies and Investments Center"	Grant	Investment mobilized	2,000,000
Recipient Government	JSC "Kazakhstan center for modernization and development for housing and communal services"	In-kind	Recurrent expenditures	2,050,000
Recipient Government	LLP "Kazakhstan science and technology center for housing and utilities development"	In-kind	Recurrent expenditures	950,000
Recipient Government	LLP "Kazakhstan science and technology center for housing and utilities development"	Grant	Investment mobilized	2,700,000
Private Sector	Beneficiaries (SMEs)	Equity	Investment mobilized	1,000,000
<b>Total Co-financing</b>				<b>8,850,000</b>

"INVESTMENT MOBILIZED" is defined as all kind of monetary and abstract support that an entity receives for operating, starting or expanding their business on clean technologies/ products/services. It can be grants, funds, soft loan, loan, joint venture capital, investment capital, tax incentives & tax exemption measures, bank guarantee, startup voucher, Innovation coupon, GAP fund, R&D fund, Self-investment, technical assistant, consultancy services, etc.

**TRUST FUND RESOURCES REQUESTED BY AGENCY (IES), COUNTRY (IES), FOCAL AREA AND THE PROGRAMMING OF FUNDS**

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Programming of Funds	(in \$)		
					GEF Project Financing (a)	Agency Fee (b)*	Total (c)=a+b
UNIDO	GEFTF	Kazakhstan	Climate Change	CC STAR Allocation	1,775,000	159,750	1,934,750
<b>Total GEF Resources</b>					<b>1,775,000</b>	<b>159,750</b>	<b>1,934,750</b>

#### PROJECT PREPARATION GRANT (PPG)

Is Project Preparation Grant requested?

Yes ☒ If yes, PPG funds **have to be requested via the Portal** once the PFD is approved

No ☐ If no, skip this item.

#### PPG AMOUNT REQUESTED BY AGENCY (IES), TRUST FUND, COUNTRY (IES) AND THE PROGRAMMING OF FUNDS

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Programming of Funds	(in \$)		
					PPG (a)	Agency Fee (b)	Total c = a + b
UNIDO	GEFTF	Kazakhstan	CCM	CC STAR Allocation	50,000	4,500	54,500
<b>Total PPG Amount</b>					<b>50,000</b>	<b>4,500</b>	<b>54,500</b>

#### PROJECT'S TARGET CONTRIBUTIONS TO GEF 7 CORE INDICATORS

Provide the relevant sub-indicator values for this project using the methodologies indicated in the Core Indicator Worksheet provided in Annex B and aggregating them in the table below. Progress in programming against these targets is updated at the time of CEO endorsement, at midterm evaluation, and at terminal evaluation. Achieved targets will be aggregated and reported at any time during the replenishment period. There is no need to complete this table for climate adaptation projects financed solely through LDCF and SCCF.

Project Core Indicators		Expected at PIF
1	<b>Terrestrial protected areas</b> created or under improved management for conservation and sustainable use (Hectares)	
2	<b>Marine protected areas</b> created or under improved management for conservation and sustainable use (Hectares)	
3	Area of <b>land restored</b> (Hectares)	
4	Area of <b>landscapes under improved practices</b> (excluding protected areas) (Hectares)	
5	Area of <b>marine habitat under improved practices</b> (excluding protected areas) (Hectares)	
6	<b>Greenhouse Gas Emissions Mitigated</b> (metric tons of CO <sub>2</sub> e)	Indicative expected results of 135,000 to 270,000 tCO <sub>2</sub> e of direct GHG emission savings and 675,000 to 1,350,000 tCO <sub>2</sub> e of indirect GHG emission savings at the end of project implementation
7	<b>Number of shared water ecosystems</b> (fresh or marine) under new or improved cooperative management	

8	Globally over-exploited <b>marine fisheries</b> moved to more sustainable levels (metric tons)	_____
9	<b>Reduction</b> , disposal/destruction, phase out, <b>elimination</b> and avoidance of <b>chemicals of global concern</b> and their waste in the environment and in processes, materials and products (metric tons of toxic chemicals reduced)	
10	Reduction, avoidance of emissions of <b>POPs to air</b> from point and non-point sources (grams of toxic equivalent gTEQ)	
11	Number of <b>direct beneficiaries disaggregated by gender</b> as co-benefit of GEF investment	1105 beneficiaries (at least 35% female) consisting of: <ul style="list-style-type: none"> <li>- 75 enterprises accelerated</li> <li>- 30 cleantech experts (judges, mentors and coaches) trained and certified</li> <li>- 1000 participants sensitized</li> </ul>

## PROJECT DESCRIPTION

### 1. Country Context

The economy of the Republic of Kazakhstan (hereinafter Kazakhstan) is mostly dependent on the extraction, processing and production of natural resources. Despite the substantial progress made over the last decade on many fronts, its main industries continue to remain technologically underdeveloped, leading to one of the most energy and GHG intensive economies in the world. Kazakhstan's extensive mining and extraction operations causes the emission and release of local and global pollutants, such as harmful emissions generated from lead and zinc smelters, uranium-processing mills and other heavy industries in the eastern part of the country.

Recently Kazakhstan has taken a strong course of actions towards promoting technology innovation and renovation in all branches of its economy, including housing, utilities, industry among others. The country has ratified the Paris Climate Change Agreement and its Nationally Determined Contribution (NDC) contains an unconditional target to reduce GHG emissions by 15% below 1990 levels by 2030, and a conditional target of reducing emissions by 25% below 1990 levels by 2030. In order to operationalize the commitments, the majority of government programs are aimed towards development and deployment of energy and resource efficient technologies, digitalization of housing and utilities, waste recycling and many others.

In order to support the government in its commitment towards the transition to a low-carbon and sustainable development trajectory, technology innovations in the climate and clean energy sector will play a crucial and catalytic role, as referred to in Article 10 of the Paris Agreement. Technological innovation is also a key component of the Sustainable Development Goals, particularly goal 7 on energy, goal 8 on decent work and economic growth, and goal 9 on industry, innovation and infrastructure. Therefore this child project will address the existing barriers and obstacles to fostering and scaling-up of innovative cleantech solutions in Kazakhstan.

The promotion and adoption of innovative cleantech solutions will have lasting positive effects for the global environment as it will allow tackling of environmental problems at the source by simultaneously avoiding or reducing pollutant emissions and ensuring better use of natural resources and energy. By

focusing on the adoption and scale-up of cleantech solutions in the market, and across all sectors of the economy, the project will further contribute to generate substantive and long-term benefits to the local and global environment, driving increased green economy activities and reduced energy consumption and CO<sub>2</sub> emissions in Kazakhstan as well as in the CIS region and beyond. The project will provide stronger momentum and greater visibility to clean energy technologies and innovations, reinforcing and multiplying the impact of government programmes in terms of faster-paced technological modernization of Kazakhstan industry, housing, commercial, utilities and transport sectors, contributing to allow striking a balance between growing economic activity and its global environmental impact.

## 2. Project Overview and Approach

### a) Provide a brief description of the geographical target(s), including details of systemic challenges, and the specific environmental threats and associated drivers that must be addressed;

The interventions envisioned under the child project are relevant at a national scale, in order to foster and scale-up the adoption of innovative cleantech solutions. In many developing countries including Kazakhstan, innovative cleantech solutions with potential to address environmental challenges already exist. In particular, SMEs and start-ups are often developers of solutions to the locally experienced climate and energy challenges as their agility allows them to recognize local market needs and respond with innovative solutions. However, these innovations are not systematically identified, accelerated and fostered. The cleantech sector is a nascent industry in many countries, and therefore systematic support from a healthy innovation ecosystem is crucial for enterprises to transform their cleantech solutions into commercially viable business models that attract investments at local and global levels, and for their cleantech solutions to achieve environmental impact.

The existing barriers and obstacles to greater fostering and acceleration of clean technologies innovation and penetration in Kazakhstan economy include:

- Limited institutional and private sector capacities for supporting and driving clean technology innovation and deployment, including underdeveloped enabling conditions and ecosystems
  - Limited knowledge and awareness of the clean technologies market and its specific needs
  - Limited cleantech-specific policies and support schemes
  - Inadequate cleantech entrepreneur support services
- Lack of a comprehensive framework of long-term reforms in taxation, land usage, urbanization, subsidies, public procurement, green banking and standards development needed to ensure the successful country transition towards “clean technologies”
- A traditionally resource-based industry and business mindset, with extremely high energy intensity of the economy and a weak innovation infrastructure
- SMEs and businesses with insufficient interest and/or inner potential for innovation, also due to an economy and industry’s structure dominated by sub-sectors with low “science intensity” and still high profit margins
- Inadequate allocation of public resources to scientific research and development, only 0.2% of annual GDP
- High subsidies for production and consumption of energy from traditional fossil fuels, which when combined with very limited availability of long-term financing and patient investors, drastically weaken the business case for clean energy technologies, be it deployment or innovation

There remains a need for further support in the field of funding and incubation, national networking within the complex ecosystem, commercialization with market and finance linkages, in increasing the geographical reach and support to national partners. These interventions are required to further strengthen the resilience of the entrepreneurial economy to operate within the global market and also to result in economic growth, global environmental benefits and job creation.

**b) Describe the existing or planned baseline investments, including current institutional framework and processes for stakeholder engagement and gender integration;**

In recent years, the government of Kazakhstan has undertaken a number of strong actions and policies to promote and accelerate clean energy technology innovation and renovation in all sectors of its economy, and demonstrated strong commitment and leadership towards a new development path hinged on the deployment of energy and resource efficient technologies, digitalization in all sectors, waste recycling and circular economy.

The child project aims to build on and synergize with national initiatives and programmes such as:

The “Concept on the transition of the Republic of Kazakhstan to Green economy”

This Concept lays the foundation for deep system transformations with a view to transition to a “green economy” by improving the welfare, quality of life of the population Kazakhstan and the country's entry into the top 30 most developed countries of the world while minimizing the load on the environment and the degradation of natural resources. The concept aims to raise the share of renewable energy sources (RES) in the total energy balance of the country to 3% by 2020 and 50% by 2050, which will result in greenhouse gas (GHG) emissions reduction in the energy sector. The main sectors of focus are water resources, agriculture, energy efficiency, power engineering, air pollution, waste recycling.

Kazakhstan 2050 Strategy

One of the key plan for widespread economic, social and political reforms to position Kazakhstan among the top 30 global economies by 2050. Its objectives include use of alternative and green energy technologies for generation of up to 50% of all consumed energy by 2050.

Strategic Development Plan of the Republic of Kazakhstan until 2025

In order to achieve Kazakhstan's commitment under the Paris Agreement on Climate Change and to secure country's smooth transition to a green economy, the International Green Technologies and Investments Center (IGTIC) was created based on EXPO. Along with the expansion of definitions related to the "green" economy, the concept of transition to a "green" economy will also be aligned with the Paris Agreement. Directions for the development of a green economy will help mitigate and adapt to climate change to achieve the commitments made to reduce greenhouse gas emissions through the use of green technologies.

The “Concept on the transition to the Best Available Technologies”

The Concept aims to lay the legal basis for a systematic transition of nature users of Kazakhstan to the principles of BAT with the necessary and diverse stimulating measures of the state in accordance with the best practices of the OECD, the EU, Russia and other countries, and also to make recommendations for updating the Environmental Code and other regulatory documents. The transition to the principles of BAT is expected to optimize the activities of industrial enterprises and other organizations by meeting the requirements and indicators established by national regulatory authorities and complying with relevant international quality standards.

The “Nurly Zhol” program for infrastructure development



This program aims to modernize the existing residential buildings stock and relevant utilities with innovative technologies. The key objectives of the program relevant to the child project include: creation of an effective transport and logistics infrastructure; strengthening the energy infrastructure in the framework of the Unified Electric Power System; modernization (reconstruction and construction) of the infrastructure of housing and communal services and heat, water and wastewater systems; increasing the competitiveness of business entities; support of domestic engineering; export support.

#### The “Digital Kazakhstan” program

The goal of the program is to accelerate the pace of economic development of the republic and improve the quality of life of the population through the use of digital technologies in the medium term, as well as creating conditions for the transition of Kazakhstan’s economy to a fundamentally new development trajectory ensuring the creation of a digital economy of the future in the long term. Program objectives are: digitalization of industry and electricity; digitalization of transport and logistics; digitization of agriculture; the development of electronic commerce; the development of financial technology and non-cash payments; “smart” cities; expanded coverage of communication networks and ICT infrastructure.

#### The “Business roadmap 2020” program

Created in 2010 this program provides credit support to SMEs with the objective to increase their competitiveness, especially in export-oriented sectors, and to create jobs in the regions. The credit support is subject to a number of criteria, one of which is to do business in the country priority fields for innovation and industrial development. In 2018 Kazakhstan’s President Nursultan Nazarbayev extended the Business roadmap program until 2025.

UNIDO will be responsible for stakeholder engagement. Many stakeholder consultations have taken place during the design period and further stakeholder consultations will reach out to government agencies, multilateral organizations, development agencies, academia, private sector, financial institutions and civil society organizations. The stakeholders identified so far include:

- JSC “International center for green technologies” (IGTIC), which will co-lead the execution of the proposed project. The IGTIC is a non-profit joint-stock company that serves as the main platform for international cooperation, a center of excellence and investment, resources and knowledge in the field of green technologies. The main directions of the international center: energy saving and energy efficiency; sustainable use of water resources; electric power industry development; ecosystem conservation and management; development of sustainable and high performance agriculture; air pollution reduction.
- JSC «Kazakhstan Center for Modernization and Development for Housing and Communal Services» (KazCenter), which will co-lead the execution of the proposed project. KazCenter ZhKH” with support of Kazakhstan Science and Technology Centre of Housing and Utilities Modernization and Development Subsidiary will be the co-executive of the proposed project, and will support the project directly through its ongoing innovation and entrepreneurship development support programmes.
- Astana Hub
- Astana Business Campus
- Almaty TechGarden

UNIDO recognizes that gender equality and the empowerment of women have a significant positive impact on sustained economic growth and inclusive industrial development. Female entrepreneurship is considered a key tool in enabling women’s empowerment. A guiding principle of the project will be

to ensure that both women and men are provided equal opportunities to access, participate in and benefit from the project, particularly in the global challenges and competition as well as the post-accelerator support. Special efforts will be made to promote equal participation of women and men, both at managerial and technical levels, as consultants, participants, entrepreneurs, mentors, etc. in all stages of project implementation. A Gender Action Plan will be developed and the project log-frame will be developed to reflect key gender dimensions of the respective outputs, activities, indicators and targets. GCIP has already shown higher levels of women's participation than other accelerator and incubator programmes with 25% of the 860 alumni supported to date being women led enterprises. This project hopes to continue this trend and even to increase this proportion.

**c) Describe how the integrated approach proposed for the child project responds to and reflects the Program's Theory of Change, and as such is an appropriate and suitable option for tackling the systemic challenges, and to achieve the desired transformation with multiple global environmental benefits;**

The GEF-7 Climate Change Focal Area Strategy aims to support developing countries to make transformational shifts towards low emission and climate-resilient development pathways. This child project is fully aligned with the priorities of the GEF Climate Change Focal Area (CCM 1-4) in its focus on innovation and technology transfer for sustainable energy breakthroughs, and therefore contributes to the overall impact of the program as shown in the theory of change in the below diagram.

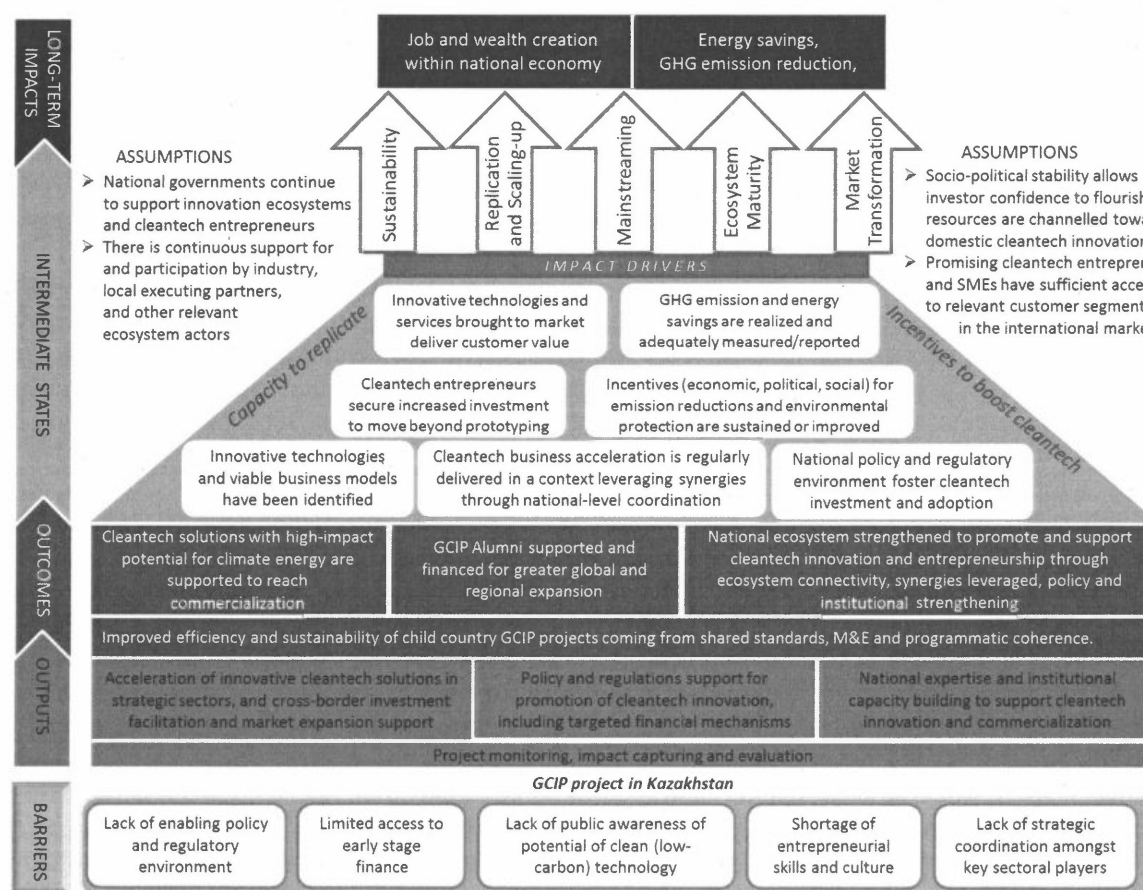


Figure 1 – Theory of Change

The child project directly supports this aim by enhancing the support for cleantech SMEs and start-ups, helping them to commercialize and scale, to contribute to a low emission development pathway nationally and globally.

Through the GEF funding, the child project for Kazakhstan seeks to address existing barriers for entrepreneurs to fully commercialize their innovative cleantech solutions, and leverages untapped potential in reducing GHG emissions, in strengthened partnerships with the private sector interested in investing in clean technologies and missed opportunities for green economic growth and jobs.

**d) Describe the project's incremental reasoning for GEF financing under the program, including the results framework and components.**

Clear government prioritization is given to promote innovations and SMEs in Kazakhstan, and to develop and implement necessary policies and strategies. However, significant barriers still exist, including a lack of linkages between the support services required to facilitate innovation and entrepreneurship. Kazakhstan is therefore requesting GEF funding to help address its barriers to cleantech innovation by strengthening its innovation ecosystem through building institutional capacities and promoting clean technology innovations.

Through a systematic approach the project will address the main barriers through focusing on four interrelated components, namely: i) Strengthening of the national cleantech innovation and entrepreneurship for commercialization of cleantech innovations; ii) Building national capacity to support and promote clean energy technology innovations; iii) Policy and regulatory framework strengthened for the creation of a nurturing local innovation ecosystem iv) Project Monitoring & Evaluation and linkage to Global GCIP. This will lead to a long-term shift in cleantech innovation and entrepreneurship which will create green jobs while contributing to GHG emission reduction and global environmental sustainability. This assistance is essential to encourage and ensure the required stable co-financing, particularly in attracting foreign and domestic investment in cleantech in Indonesia.

Kazakhstan requires further incremental technical and financial assistance from GEF in strengthening of its institutional capacities and promoting clean energy technology innovations for long lasting positive effects on environment and socio-economic benefits by enhancing economic green growth. This assistance is essential to encourage and ensure the required stable co-financing particularly by attracting foreign and domestic investments for employing advanced technologies with all related benefits.

Furthermore, in case that the GEF funding will not be provided to assist Kazakhstan in these areas, it is very unlikely that clean technology innovations will be adequately developed at the market (or at very low level distributed at the national level). There will be still constraints for entrepreneurs lacking the business skills and supporting mechanisms to fully commercialize their innovative products. This will result in many unrealized opportunities in reducing GHG emissions, strengthening partnerships with the private sector interested in investing in clean energy technologies, and providing support to entrepreneurs and innovators seeking to establish commercial ventures in clean energy technologies.

GEF support will lead to a long-term shift in cleantech innovation and entrepreneurship which will create green jobs while contributing to GHG emission reduction and global environmental sustainability. This assistance is essential to encourage and ensure the required stable co-financing, particularly in attracting foreign and domestic investment in cleantech in Kazakhstan.

### **3. Engagement with the Global / Regional Framework (*maximum 500 words*)**

Each GCIP Child Project is designed to contribute to the strengthening of a national cleantech innovation and entrepreneurship ecosystem of the country, and to catalyze transformational technology solutions to address environmental challenges.

The GCIP methodology is already proven as being successful in strengthening the cleantech innovative ecosystems in the partner countries, and this approach will be maintained as the core building block of GEF 7 GCIP, with some adaptations to take into account the feedback received in the Evaluation Report of the GEF Independent Evaluation Office. National context and priorities will be fully considered in refining the approach and methodology of the GCIP for Kazakhstan, in order to ensure that the child project maintains coherence with other GCIP child projects at the global level, and at the same time offer optimal interventions to achieve the priorities of Kazakhstan.

In order to maximize the strength of GCIP's "plug & play" methodology, national components will be modularized as core building blocks to ensure that the GCIP programme can support each GCIP partner country. This will ensure coherence and standard maintenance across countries with the proven GCIP methodology. The national child project will benefit from the methodologies, decision support tools, training systems, learning and access to investors. Engagement with the global framework is integrated into all components of the project and will include all stakeholders. It includes the following main activities

- **Methodologies, guidelines, tools for acceleration, and training systems:** These will be developed and harmonized at the global level and the national project will focus on adapting these to the national circumstances. Experiences in applying the tools and systems across child project will be used to improve the tools. The global accelerators and global forums will help national enterprises to bring their innovations to the global stage and link with entrepreneurs and from other countries to explore opportunities for joint co-innovation, joint ventures and mobilizing investments.
- **Enterprises growth support, investment facilitation and cross border growth support:** Through global project, national cleantech SMEs will be supported to expand their businesses to other countries. In addition, the global framework will provide investment facilitation services to national enterprises so that they can be linked to investors (impact, venture, angels, and commercial) at regional and global levels. Furthermore, the global framework will provide support to the national child project in establishing market enabling frameworks to promote investments in cleantech.
- **Targeted training, innovation policy support, knowledge management, and peer-to-peer networking and learning:** The global framework will provide methodologies for training national institutions, development of policies on cleantech innovation and entrepreneurship, and document best-practices. By linking policy makers, institutions, financiers and entrepreneurs across countries, the global framework will facilitate knowledge exchange and documentation of best-practices and peer-to-peer networking and learning.
- **Program standards, communication and advocacy, and monitoring and evaluation:** to promote coherence and coordination across all GCIP countries, the global framework will develop program guidelines that will be applied by the countries. Through the global web platform that will be developed by the global framework, communications and advocacy will be promoted across countries. In addition, the global framework will develop methodologies for impact tracking and monitoring and evaluation that will then be applied across countries.

The national child project will engage with the global framework to ensure synergies, knowledge sharing, learning, consistence and efficiency as well as additional support to enable national SMEs to scale globally. The outputs and outcomes from the national child project will contribute to the overall project impact

through the number of cleantech innovations, entrepreneurs and SMEs supported, finance mobilized and the resulting green growth, jobs created and GHG emission reductions. The following figure shows how the Global programme will support the child project and how the national child project will feed into the global programme.



Figure 2 – Engagement between the global program and child projects

## GEF 7 Core Indicator Worksheet

Core Indicator 6	Greenhouse gas emission mitigated					(Tons)
		Tons (6.1+6.2)				
		Entered			Entered	
		PIF stage	Endorsement	MTR	TE	
	Expected CO2e (direct)	135,000				
	Expected CO2e (indirect)	675,000				
Indicator 6.2	Emissions avoided					
		Hectares				
		Expcted			Achieved	
		PIF stage	Endorsement	MTR	TE	
	Expected CO2e (direct)	135,000				
	Expected CO2e (indirect)	675,000				
Core Indicator 11	Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment					(Number)
		Expected			Number Achieved	
		PIF stage	Endorsement	MTR	TE	
		Female	387			
		Male	718			
		Total	1105			



## GEF-7 CHILD PROJECT CONCEPT

**CHILD PROJECT TYPE: Medium-sized Child Project**

**PROGRAM: (choose Program)**

<b>Child Project Title:</b>	Clean Technology Innovation Programme for SMEs and Start-ups in the Republic of Moldova
<b>Country:</b>	Republic of Moldova
<b>Lead Agency</b>	UNIDO
<b>GEF Agency(ies):</b>	UNIDO (select) (select)

### INDICATIVE FOCAL/NON-FOCAL AREA ELEMENTS AND FINANCING

Programming Directions	Trust Fund	(in \$)	
		GEF Project Financing	Co-financing
CCM-1-4 (select) Promote innovation and technology transfer for sustainable energy breakthroughs for cleantech innovation	GEFTF	855,000	8,325,000
<b>Total Project Cost</b>		<b>855,000</b>	<b>8,325,000</b>

### PROJECT COMPONENTS AND FINANCING

Project Objective: Promote the acceleration of high-impact clean technology innovation for large-scale deployment and green job creation						
Project Components	Component Type	Project Outcomes	Project Outputs	Trust Fund	(in \$)	
					GEF Project Financing	Co-financing
1. Acceleration, commercialization and investment facilitation for selected cleantech innovations and businesses.	TA	1.1 National Platform established to conduct Annual Cleantech Accelerator to identify and accelerate promising cleantech innovations	1.1.1 National Platform to run annual cleantech accelerator competition established  1.1.2 Promising cleantech innovations are identified through annual cleantech accelerator and supported by National platform  1.1.3 National pool of mentors and judges identified, trained and certified	GEFTF	300,680	3,078,642
	TA	1.2 Start-ups and SMEs are supported through advanced business growth and investment facilitation services.	1.2.1. Advanced technical, business advisory and commercialization support for selected SMEs provided for large scale deployment of clean technology solutions  1.2.2 Corporate and Public Private Partnership Forums held	GEFTF	100,000	2,000,000

			1.2.3 Investment facilitation and support for selected start-ups and SMEs			
	INV		1.2.4 Innovative financing mechanism to help SMEs leverage funding established	GEFTF	101,000	2,000,000
2. Policy and institutional framework strengthened to foster national cleantech innovation ecosystem	TA	2.1 Policy and institutional framework strengthened to promote and support clean energy technology innovations and entrepreneurship	<p>2.1.1 Capacity of national institutions and industrial associations to host and support the Cleantech programme built</p> <p>2.1.2. Stakeholder meetings held with EU countries to promote exchange and cooperation and to foster partnerships with other start-up programs, leading institutions, agencies and universities</p> <p>2.1.3 Policy and regulations to promote clean technology innovations in SMEs developed</p> <p>2.1.4 Roadmap for the creation and maintaining of an innovation ecosystem in Moldova prepared</p>	GEFTF	192,860	361,740
3. Project coordination, monitoring and coherence	TA	<p>3.1 Project coordination, coherence strengthened</p> <p>3.2 Project monitoring and evaluation system established</p>	<p>3.1.1 National impact monitoring established and linked to Global GCIP</p> <p>3.1.2 GCIP community and network maintained, extensive advocacy and outreach activities organized and linkages to global forums established</p> <p>3.2.1 Regular monitoring and evaluation of project activities</p>	GEFTF	82,733	127,800
Subtotal				GEFTF	777,273	7,568,182
Project Management Cost (PMC)				GEFTF	77,727	756,818
<b>Total Project Cost</b>					855,000	<b>8,325,000</b>

For multi-trust fund projects, provide the total amount of PMC in Table B, and indicate the split of PMC among the different trust funds here: ( )

**INDICATIVE SOURCES OF CO-FINANCING FOR THE PROJECT BY NAME AND BY TYPE, IF AVAILABLE**

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount (\$)
GEF Agency	UNIDO	Grant	Investment mobilized	30,000
GEF Agency	UNIDO	In-Kind	Recurrent expenditures	100,000
Recipient Country Government	Energy Efficiency Agency	Grant	Investment mobilized	450,000
Recipient Country Government	Energy Efficiency Agency	In-kind	Recurrent expenditures	800,000
Recipient Country Government	Ministry of Economy	Grant	Investment mobilized	4,300,000
Donor Agency	UNIDO/ EU4 Environment programme	In-kind	Recurrent expenditures	620,000
Private Sector	Private Sector	Equity	Investment mobilized	2,000,000
Private Sector	Insomnia	Grant	Investment mobilized	25,000
<b>Total Co-financing</b>				<b>8,325,000</b>

Describe how any "Investment Mobilized" was identified. Through discussions with the potential co-financiers.

**TRUST FUND RESOURCES REQUESTED BY AGENCY (IES), COUNTRY (IES), FOCAL AREA AND THE PROGRAMMING OF FUNDS**

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Programming of Funds	(in \$)		
					GEF Project Financing (a)	Agency Fee (b)	Total (c)=a+b
UNIDO	GEFTF	Moldova	Climate Change	CC STAR Allocation	855,000	76,950	931,950
<b>Total GEF Resources</b>					<b>855,000</b>	<b>76,950</b>	<b>931,950</b>

**PROJECT PREPARATION GRANT (PPG)**

Is Project Preparation Grant requested?

Yes ☒ If yes, PPG funds have to be requested via the Portal once the PFD is approved  
 No ☐ If no, skip this item.

**PPG AMOUNT REQUESTED BY AGENCY(IES), TRUST FUND, COUNTRY(IES) AND THE PROGRAMMING OF FUNDS**

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Programming of Funds	(in \$)		
					PPG (a)	Agency Fee (b)	Total c = a + b

UNIDO	GEFTF	Moldova	CCM	CC STAR Allocation	50,000	4,500	54,500
<b>Total PPG Amount</b>					<b>50,000</b>	<b>4,500</b>	<b>54,500</b>

#### PROJECT'S TARGET CONTRIBUTIONS TO GEF 7 CORE INDICATORS

Provide the relevant sub-indicator values for this project using the methodologies indicated in the Core Indicator Worksheet provided in Annex B and aggregating them in the table below. Progress in programming against these targets is updated at the time of CEO endorsement, at midterm evaluation, and at terminal evaluation. Achieved targets will be aggregated and reported at anytime during the replenishment period. There is no need to complete this table for climate adaptation projects financed solely through LDCF and SCCF.

Project Core Indicators		Expected at PIF
1	<b>Terrestrial protected areas</b> created or under improved management for conservation and sustainable use (Hectares)	
2	<b>Marine protected areas</b> created or under improved management for conservation and sustainable use (Hectares)	
3	Area of <b>land restored</b> (Hectares)	
4	Area of <b>landscapes under improved practices</b> (excluding protected areas) (Hectares)	
5	Area of <b>marine habitat under improved practices</b> (excluding protected areas) (Hectares)	
6	<b>Greenhouse Gas Emissions Mitigated</b> (metric tons of CO <sub>2</sub> e)	Indicative expected results of 63,000 to 126,000 tCO <sub>2</sub> e of direct emission savings and of 315,000 to 630,000 tCO <sub>2</sub> e of indirect emission savings <sup>1</sup>
7	<b>Number of shared water ecosystems</b> (fresh or marine) under new or improved cooperative management	—
8	Globally over-exploited <b>marine fisheries</b> moved to more sustainable levels (metric tons)	—
9	<b>Reduction</b> , disposal/destruction, phase out, <b>elimination</b> and avoidance of <b>chemicals of global concern</b> and their waste in the environment and in processes, materials and products (metric tons of toxic chemicals reduced)	
10	Reduction, avoidance of emissions of <b>POPs to air</b> from point and non-point sources (grams of toxic equivalent gTEQ)	
11	Number of <b>direct beneficiaries disaggregated by gender</b> as co-benefit of GEF investment	Target of 185 participants (with at least 35% women) : <ul style="list-style-type: none"> <li>- 35 enterprises</li> <li>- 40 cleantech experts ( mentors, judges) trained and certified</li> <li>- 110 participants sensitized</li> </ul>

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

<sup>1</sup> Range of estimated direct and indirect CO2e emission savings based on anticipated impact by identified and accelerator GCIP businesses

<sup>2</sup> Each competition will consist of approximately 30 to 60 applicants (at least 90 for 3 cycles), and among them, the panel of judges will select around 35 semi-finalists to receive support through the accelerator programme. In addition, mentors (25+), judges (15+), and government representatives (approx. 20) will benefit through capacity.

## **PROJECT DESCRIPTION**

### **1. Country Context**

According to the World Resources Institute, Moldova's GHG emissions are primarily traced to activities in the energy sector (74.6%) including electricity and heat generation and transportation contributing 58% of energy emissions. Moldova's First Biennial Update Report (BUR) to the UNFCCC, submitted in 2016, includes a GHG inventory for the period 1990 to 2013 which shows energy as the greatest source of emissions (65.5%), followed by agriculture (16.6%) and waste (12.2%).

With few natural energy resources, Moldova currently imports almost all of its energy supplies, mainly natural gas from Russia, Ukraine and Romania. Not only has this made Moldova vulnerable in terms of energy security it has also resulted in increasing domestic energy prices and national debt. In 2017, Moldova exported \$2.96B and imported \$5.07B, resulting in a negative trade balance of \$2.11B. Due to high gas and electricity costs, forests, which cover 11 percent of the land in Moldova, provide the majority of fuelwood for heating and hot water in rural communities. Electricity is generated from a few CHP plants and its interconnections with Ukraine are used to ensure the necessary system reserves and balancing energy. The issue is compounded by the fact that, on the supply side, the energy infrastructure relies on aging inefficient technology, equipment and networks which result in high losses, whilst on the demand side there is limited energy efficiency.

Moldova is one of the most energy intensive economies in the region with energy consumption double the EU average and with limited uptake of renewables and energy efficiency. The residential sector accounts for about 50% of the final energy consumption due to a small industrial sector (accounting for only 8% of final energy consumption). Consequently the supply of reliable and affordable electricity, and heat, is a key concern for businesses and citizens alike, and negatively affects investment decisions and economic growth.

Moldova's overarching strategy relating to climate change mitigation, and clean technology, falls within Moldova's Low Emission Development Strategy 2030 (LEDS) which provides a sector development approach that sets the country's long-term climate change mitigation objectives and strategy. As such the LEDS strengthens the objectives related to GHG emissions reductions stipulated in other national legal acts such as the National Development Strategy Moldova 2030 and the Energy Strategy 2030. The Moldovan Energy Strategy envisages the diversification of energy supply sources towards renewables. The National Program on Energy Efficiency 2011-2020 stipulates targets in achieving 20% of improved efficiency in energy consumption by 2020, an increase of renewables in the total energy mix by 20% by 2020.

This child project will work closely with the National Energy Efficiency Agency to set the trajectory for Moldova's low emissions development targets and will specifically focus on the identification and commercialization of clean technology innovations contributing to the transition towards low-carbon infrastructure in Moldova and will simultaneously achieve significant GHG emission reduction.

### **2. Project Overview and Approach**

**a) Provide a brief description of the geographical target(s), including details of systemic challenges, and the specific environmental threats and associated drivers that must be addressed;**

Several reforms carried out in recent years have positively impacted the economy, including the energy sector. These reforms have contributed to a process of gradual integration with European Union (EU) structures, with this process remaining a priority for the country. Despite recent progress, with the economy growing annually by an average 4% (between 2011 and 2017), Moldova remains one of the poorest countries in Europe with a GDP per capita of USD 2,290 (2017).

SMEs in Moldova make up about 97.7% of the total number of enterprises and make an important contribution to the Moldovan economy, accounting for about 31.8% of GDP in 2017. They are a major employer representing 61 % of the total workforce. Moldova's Small and Medium Enterprise Sector Development Strategy emphasizes the special importance of SMEs for the economic development of the Republic of Moldova. The Strategy outlines that competitiveness of the SMEs sector is substantially determined by the level of innovative and creative activities. SMEs operate locally and hence they significantly influence decisions and choices by society. As such, SMEs can effectively lead the transition towards low-carbon and climate resilient economies by actively driving the development and adoption of innovation and cleantech across all sectors of societies.

According to the OECD Small Business Act (SBA) country profile, progress has been made since 2012 to provide support to raise SME competitiveness, and Moldova has risen from 83rd (of 185) in 2013 to 47th (of 190) in 2018 in the World Bank's Doing Business rankings. Despite these efforts, public support for SMEs innovating and greening remains limited. Access to banking and non-banking finance is still limited and business support services have declined. The innovation index has reached a relatively low score. Although the Republic of Moldova has formulated the Innovation Strategy for 2013-2020, with a vision that 25% of GDP will be generated from innovation activities by 2020, the innovation ecosystem remains weak. According to the OECD survey only 11% of small enterprises and 15% of medium-sized enterprises introduced one new or significant improved good to the market. Average SME investment in R&D remains low, at 2% of SME annual turnover. Further SME development in green economy remains relatively low, although the Government of Moldova has declared green economic development to be a top priority.

In summary, following key barriers have been identified that must be addressed:

- i.* Lack of institutional coordination
- ii.* Poor dialogue between universities/research institutes and the industrial sector
- iii.* Limited access to finance
- iv.* Lacking institutional and human capacity to provide adequate services for SME development
- v.* Lack of supportive business environment to foster the aspired market transformation
- vi.* Lack of market access promotion to support business growth opportunities

Ultimately, there is a weak innovation ecosystem providing systemic support to SMEs in transforming cleantech innovations into viable enterprises that can attract investment at local and global levels, which in turn would allow them to scale and to deliver transformational economic, social and environmental impacts. The project will contribute, through its activities and continual engagements with the national government, universities, the private sector and other relevant stakeholders to mitigating barriers in a holistic manner, promoting the development and deployment of clean technology innovations particularly in the field of renewable energy and energy efficient and innovative business models for the deployment of these technologies.

**b) Describe the existing or planned baseline investments, including current institutional framework and processes for stakeholder engagement and gender integration;**

In 2015, the EU launched the EU4Business initiative under which the European Investment Bank lent the national banks 120 million € to increase the competitiveness of national SMEs and actively promote EU market access. Another 130 million USD was provided by the European Bank for Reconstruction and Development (EBRD) to support the private sector and develop infrastructure. Although significant funding has been made available to boost Moldova's economy, starting a business remains difficult and early stage start-ups with proof-of-concept technologies face challenges to access these sources of finance due to restricted capacity and lack of maturity in generating the required revenues and profits.

The development and implementation of energy policies is undertaken by the Ministry of Economy and Infrastructure (MEI) whilst the Energy Efficiency Agency (AEE), an institution under the MEI, implements the National Energy Efficiency Action Plan (NEEAP 2016-2020). The AEE also implements energy efficiency and renewable energy grant funded projects (Moldovan and international). The AEE will be the leading national executing agency and will chair the Project Steering Committee. Further the AEE has confirmed 1.45 million USD in project co-financing. The Ministry of Economy and Infrastructure has confirmed participation in the PSC and project co-financing to support the scaling-up and deployment of promising Cleantech solutions.

The National SME Agency (ODIMM) supported with EU funding, has established the National business incubator network including 8 incubators. ODIMM has confirmed interest in collaborating with the Cleantech program in creating a dedicated window for "green" startups.

Further, this child project will collaborate with the EU4Environment Programme in Moldova, which is partly implemented by UNIDO, applying UNIDO's approach on Resource Efficiency and Cleaner Production (RECP) for Industry.

Special attention will be given to address gender issues through gender mainstreaming activities, such as: (i) recruitment of women trainers, mentors, judges and involvement of women and men in the design; (ii) efforts to ensure that women and men are given equal opportunity to access, participate in and benefit from the project; and (iii) raising awareness of GEEW, for instance in training content and project documents. The project will also ensure women empowerment through (i) specific training and mentoring to promote women innovators, entrepreneurs, startups;; and (ii) the design of specific prizes and follow-up support programmes for innovative startups that will have a significant impact on women's entrepreneurial development and job creation, etc.

**c) Describe how the integrated approach proposed for the child project responds to and reflects the Program's Theory of Change, and as such is an appropriate and suitable option for tackling the systemic challenges, and to achieve the desired transformation with multiple global environmental benefits;**

The Moldova Cleantech and Innovation Programme is firmly aligned with the GEF Climate Change Focal Area in its focus on innovation and technology transfer for sustainable energy breakthroughs and therefore fully contributes to the overall impact of the program as shown in the theory of change in the below diagram. The GEF-7 Climate Change Focal Area Strategy aims to support developing countries to make transformational shifts towards low emission and climate-resilient development pathways. This project directly supports this aim by enhancing the support for cleantech SMEs and start-ups, helping them to commercialize and scale, to contribute to a low emission development pathway nationally and globally.

Through the GEF funding, the Child Project for Moldova seeks to address existing barriers for entrepreneurs to fully commercialize their innovative products and exploit untapped potential in reducing



GHG emissions, in strengthened partnerships with the private sector interested in investing in clean technologies and missed opportunities for green economic growth and jobs.

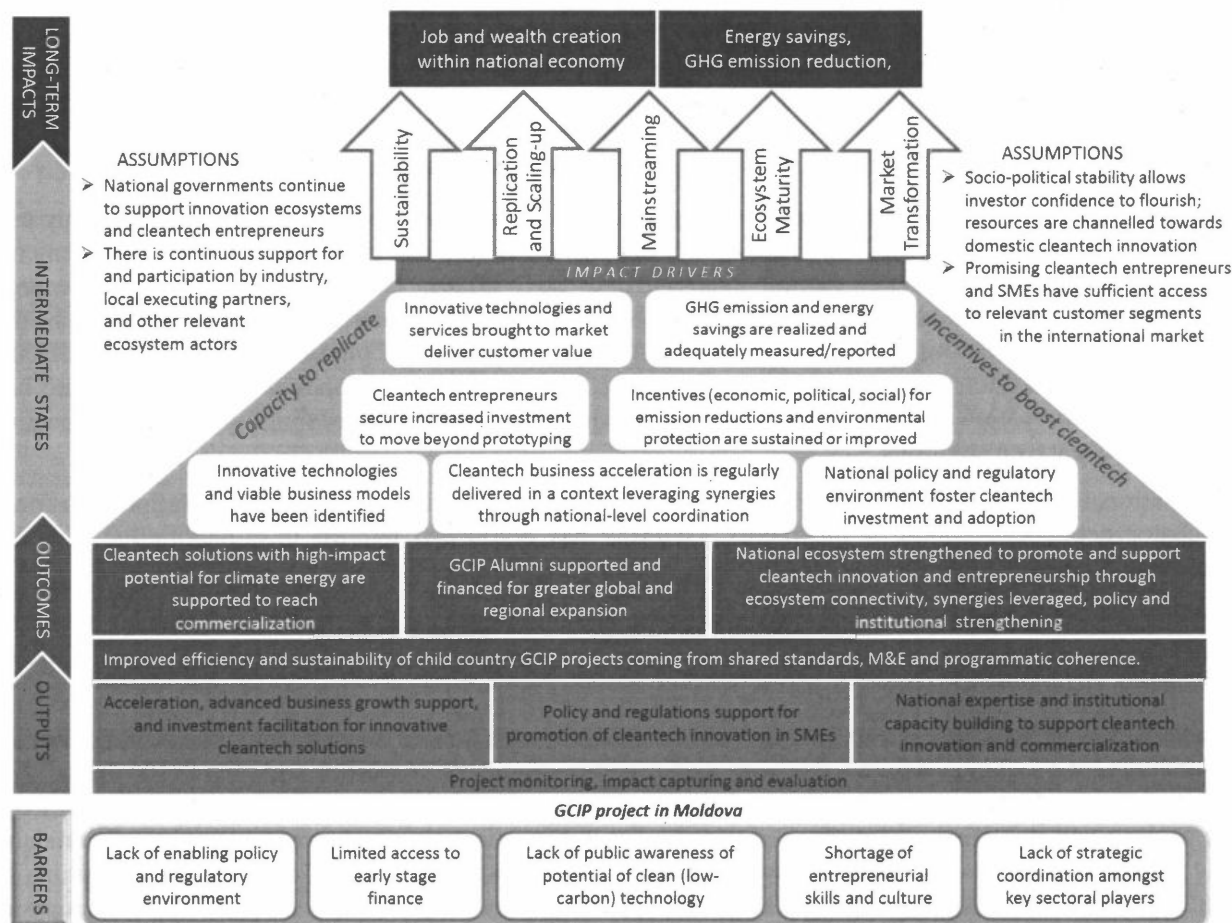


Figure 1 – Theory of Change

**d) Describe the project's incremental reasoning for GEF financing under the program, including the results framework and components.**

Clear government prioritization is given to promote innovations and SMEs in Moldova and to put the necessary policies and strategies in place. However, significant barriers still exist, including a lack of linkages between the support services required to facilitate innovation and entrepreneurship. Moldova is therefore requesting GEF funding to help address its barriers to cleantech innovation by strengthening its innovation ecosystem through building institutional capacities and promoting clean technology innovations. Through a systematic approach the project will address the main barriers through focusing on three interrelated components, namely: i) Establishment of National platform to promote clean technology innovations and businesses through acceleration, business growth and investment support; ii) Policy and institutional framework strengthened to foster national cleantech innovation ecosystem iii) Project coordination, monitoring and coherence. This will lead to a long-term shift in cleantech innovation and entrepreneurship which will create green jobs while contributing to GHG emission reduction and global

environmental sustainability. This assistance is essential to encourage and ensure the required stable co-financing, particularly in attracting foreign and domestic investment in cleantech in Moldova.

### 3. Engagement with the Global / Regional Framework

The national child project will benefit from the methodologies, decision support tools, training systems, learning and access to investors. Engagement with the global framework is integrated into all components of the project and will include all stakeholders. It includes the following main activities

- **Methodologies, guidelines, tools for acceleration, and training systems:** These will be developed and harmonized at the global level and the national project will focus on adapting these to the national circumstances. Experiences in applying the tools and systems across child project will be used to improve the tools. The global accelerators and global forums will help national enterprises to bring their innovations to the global stage and link with entrepreneurs and from other countries to explore opportunities for joint co-innovation, joint ventures and mobilizing investments.
- **Enterprises growth support, investment facilitation and cross border growth support:** Through global project, national cleantech SMEs will be supported to expand their businesses to other countries. In addition, the global framework will provide investment facilitation services to national enterprises so that they can be linked to investors (impact, venture, angels, and commercial) in EU and global levels. Furthermore, the global framework will provide support to the national child project in establishing market enabling frameworks to promote investments in cleantech.
- **Targeted training, innovation policy support, knowledge management, and peer-to-peer networking and learning:** The global framework will provide methodologies for training national institutions, development of policies on cleantech innovation and entrepreneurship, and document best-practices. By linking policy makers, institutions, financiers and entrepreneurs across countries, the global framework will facilitate knowledge exchange and documentation of best-practices and peer-to-peer networking and learning.
- **Program standards, communication and advocacy, and monitoring and evaluation:** to promote coherence and coordination across all GCIP countries, the global framework will develop program guidelines that will be applied by the countries. Through the global web platform that will be developed by the global framework, communications and advocacy will be promoted across countries. In addition, the global framework will develop methodologies for impact tracking and monitoring and evaluation that will then be applied across countries.

The national child project will engage with the global framework to ensure synergies, knowledge sharing, learning, consistence and efficiency as well as additional support to enable national SMEs to scale globally. The outputs and outcomes from the national child project will contribute to the overall project impact through the number of cleantech innovations, entrepreneurs and SMEs supported, finance mobilized and the resulting green growth, jobs created and GHG emission reductions. The following figure shows how the Global programme will support the child project and how the national child project will feed into the global programme.



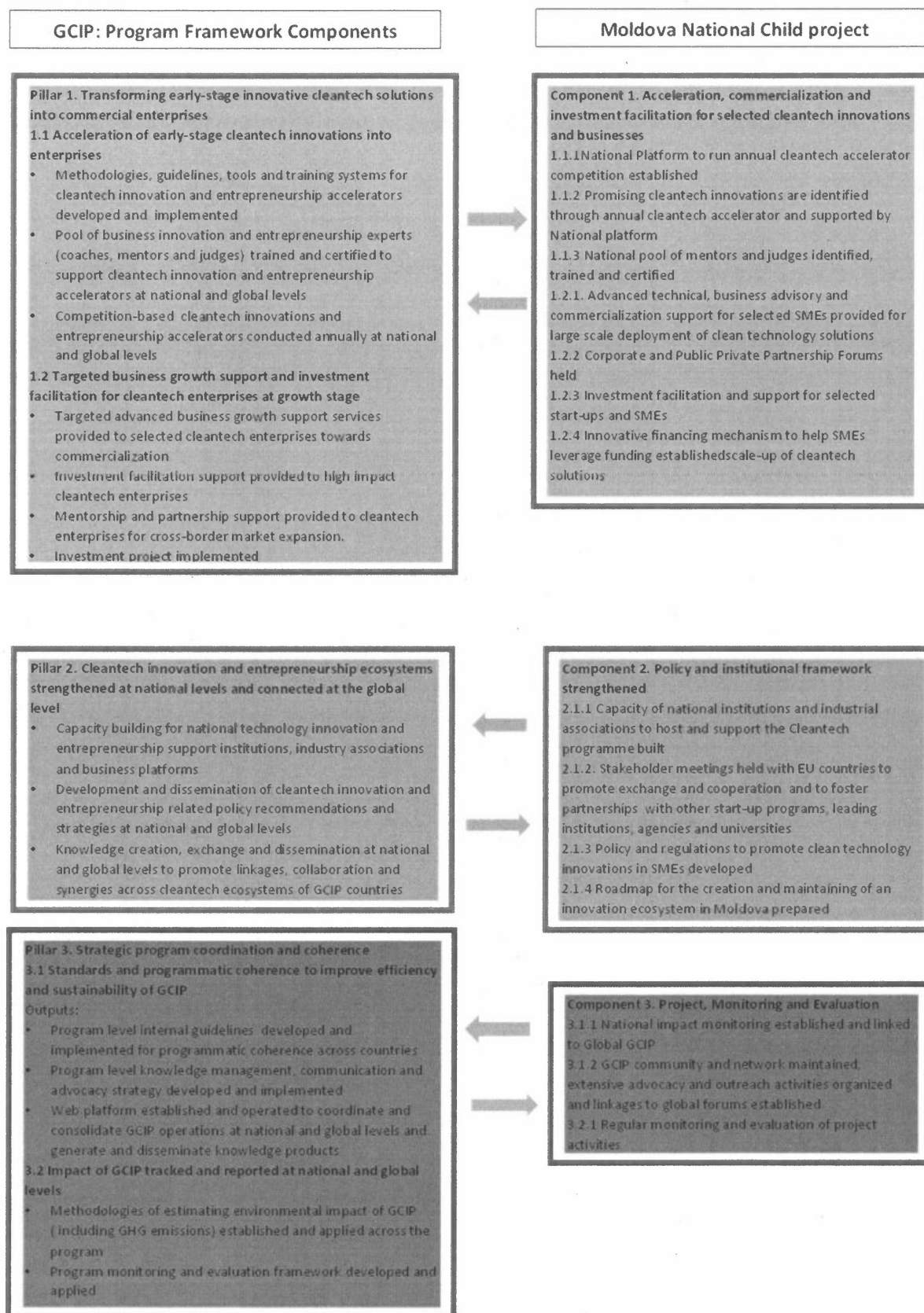


Figure 2 – Engagement between the global program and child projects

## GEF 7 Core Indicator Worksheet

Use this Worksheet to compute those indicator values as required in Part I, item F to the extent applicable to your proposed project. Progress in programming against these targets for the project will be aggregated and reported at any time during the replenishment period. There is no need to complete this table for climate adaptation projects financed solely through LDCF and SCCF.

<b>Core Indicator 6</b>	<b>Greenhouse gas emission mitigated</b>					<b>(Metric tons of CO<sub>2</sub>e)</b>
		Expected metric tons of CO <sub>2</sub> e (6.1+6.2)				
		PIF stage	Endorsement	MTR	TE	
	Expected CO <sub>2</sub> e (direct)	63,000				
	Expected CO <sub>2</sub> e (indirect)	315,000				
<b>Indicator 6.2</b>	<b>Emissions avoided Outside AFOLU</b>					
		Expected metric tons of CO <sub>2</sub> e				
		Expected		Achieved		
		PIF stage	Endorsement	MTR	TE	
	Expected CO <sub>2</sub> e (direct)	63,000				
	Expected CO <sub>2</sub> e (indirect)	315,000				
<b>Core Indicator 11</b>	<b>Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment</b>					<b>(Number)</b>
		Number				
		Expected		Achieved		
		PIF stage	Endorsement	MTR	TE	
	Female	65				
	Male	120				
	Total	185				

# GEF-7 CHILD PROJECT CONCEPT

CHILD PROJECT TYPE: Medium-sized Child Project

PROGRAM: Other Program

a)

<b>Child Project Title:</b>	Programme for cleantech innovation and green jobs in Morocco - Phase 2
<b>Country:</b>	Morocco
<b>Lead Agency</b>	UNIDO
<b>GEF Agency(ies):</b>	UNIDO (select) (select)

## INDICATIVE FOCAL/NON-FOCAL AREA ELEMENTS AND FINANCING

Programming Directions	Trust Fund	(in \$)	
		GEF Project Financing	Co-financing
CCM-1-4 (select) Promote innovation and technology transfer for sustainable energy breakthroughs for cleantech innovation	GEFTF	913,242	6,309,050
<b>Total Project Cost</b>		913,242	6,309,050

## PROJECT COMPONENTS AND FINANCING

Project Objective: Support sustainable and inclusive economic growth by strengthening regional innovation ecosystems that promote clean technology innovations and entrepreneurship in start-ups and SMEs						
Project Components	Component Type	Project Outcomes	Project Outputs	Trust Fund	(in \$)	
					GEF Project Financing	Co-financing
1. Regional hubs integrated in national platform to accelerate cleantech innovations at provincial and national levels	TA	1.1 <b>Regional hubs established and strengthened under national platform to identify and support promising cleantech innovations across the regions</b>	1.1.1 Regional hubs established under national platform to support the formation of local innovation ecosystems  1.1.2 Annual cleantech business competition-based accelerator established under the regional hubs to identify and support high-impact technologies and business model innovation into market ready businesses  1.1.3 Organization of advanced annual accelerator under national platform for most promising SMEs and start-ups identified through regional hubs	GEF TF	272,602	2,000,000
	TA	1.2 Systems and coordination support in place	1.2.1 Support on using methodologies and guidelines for the national and regional competition provided 1.2.2 Development of overall communication strategy and mainstreamed across regions	GEF TF	80,000	310,000

2. Advanced investment and commercialization support through enhanced private sector partnerships	TA	2.1: Start-ups and SMEs supported through advanced business support services and investment facilitation for growth post-Accelerator	2.1.1 Advanced technical, business advisory and commercialization support for selected SMEs provided for large scale deployment of clean technology solutions  2.1.2 Corporate and Public Private Partnership Forums held  2.1.3 Investment facilitation and support for selected start-ups and SMEs	GEF TF	110,000	875,000
	INV	2.2 Business growth support and tipping point investment facilitation services provided to growth-stage cleantech SMEs to commercialize	2.2.1 Innovative early-stage financing mechanisms designed and established to support the deployment and scale-up of cleantech solutions	GEF TF	200,000	1,000,000
3. Policy and institutional framework strengthening to develop and strengthen the national and regional ecosystems	TA	3.1 Policy and the institutional framework have been strengthened to promote clean technology innovation and entrepreneurship	3.1.1 Capacity of national and regional institutions and industrial associations to host and support the Cleantech programme built  3.1.2 Regional Entrepreneurship Train-the-Trainer Training Programmes organized for local universities  3.1.3 Recommendations on the best practice policies, regulations and incentives required for the promotion of clean technology innovations in SMEs throughout the regions developed  3.1.4 GCIP community and network maintained and extensive advocacy and outreach activities organized through a national coordination platform	GEF TF	97,518	800,000
4. Monitoring and Evaluation (M & E) (transversal activity)	TA	4.1 Regular monitoring of project indicators and periodic evaluation have been used to align project implementation, enhance project performance, and identify relevant lessons to improve	4.1.1 National impact monitoring established and linked to Global GCIP  4.1.2 Regular monitoring and evaluation of project activities  4.1.3 Mid-term and terminal project evaluation	GEF TF	70,100	750,500

		future project design and implementation				
			Subtotal	GEFTI	830,220	5,735,500
			Project Management Cost (PMC)	GEFTI	83,022	573,550
			<b>Total Project Cost</b>		913,242	6,309,050

(\*USD 1 million cash from SEDD; USD 4,670,500 cash and in-kind from SEDD and other actors in Morocco)

For multi-trust fund projects, provide the total amount of PMC in Table B, and indicate the split of PMC among the different trust funds here: ( )

**INDICATIVE SOURCES OF CO-FINANCING FOR THE PROJECT BY NAME AND BY TYPE, IF AVAILABLE**

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount (\$)
GEF Agency	UNIDO	Grant	Investment Mobilized	30,000
GEF	UNIDO	In-kind	Recurrent expenditures	100,000
Recipient Government	Secretariat of State Responsible for Sustainable Development – Ministry of Energy, Mines and Sustainable Development	Grant	Investment Mobilized	1,000,000
Recipient Government	Secretariat of State Responsible for Sustainable Development – Ministry of Energy, Mines and Sustainable Development	In-kind	Recurrent expenditures	2,000,000
Recipient Government	Regional Provinces and Universities	In-kind	Recurrent Expenditures	500,000
Private sector	Private Companies	Loan	Investment Mobilized	2,679,050
<b>Total Co-financing</b>				6,309,050

Describe how any “Investment Mobilized” was identified: Investment mobilized was identified through discussions with the potential co-financiers.

**TRUST FUND RESOURCES REQUESTED BY AGENCY (IES), COUNTRY (IES), FOCAL AREA AND THE PROGRAMMING OF FUNDS**

GEF Agency	Trust Fund	Country/Regional/Global	Focal Area	Programming of Funds	(in \$)		
					GEF Project Financing (a)	Agency Fee (b)	Total (c)=a+b
UNIDO	GEFTF	Morocco	Climate Change	CC STAR Allocation	913,242	82,192	995,434
<b>Total GEF Resources</b>					913,242	82,192	995,434

**PROJECT PREPARATION GRANT (PPG)**

Is Project Preparation Grant requested?

Yes If yes, PPG funds have to be requested via the Portal once the PFD is approved

No X If no, skip this item.



**PPG AMOUNT REQUESTED BY AGENCY(IES), TRUST FUND, COUNTRY(IES) AND THE PROGRAMMING OF FUNDS**

GEF Agency	Trust Fund	Country/ Regional/Global	Focal Area	Programming of Funds	(in \$)		
					PPG (a)	Agency Fee (b)	Total c = a + b
Total PPG Amount							

**PROJECT'S TARGET CONTRIBUTIONS TO GEF 7 CORE INDICATORS**

Provide the relevant sub-indicator values for this project using the methodologies indicated in the Core Indicator Worksheet provided in Annex B and aggregating them in the table below. Progress in programming against these targets is updated at the time of CEO endorsement, at midterm evaluation, and at terminal evaluation. Achieved targets will be aggregated and reported at any time during the replenishment period. There is no need to complete this table for climate adaptation projects financed solely through LDCF and SCCF.

Project Core Indicators		Expected at PIF
1	<b>Terrestrial protected areas</b> created or under improved management for conservation and sustainable use (Hectares)	
2	<b>Marine protected areas</b> created or under improved management for conservation and sustainable use (Hectares)	
3	Area of <b>land restored</b> (Hectares)	
4	Area of <b>landscapes under improved practices</b> (excluding protected areas) (Hectares)	
5	Area of <b>marine habitat under improved practices</b> (excluding protected areas) (Hectares)	
6	<b>Greenhouse Gas Emissions Mitigated</b> (metric tons of CO <sub>2</sub> e)	Indicative expected results of 135,000 to 270,000 tCO <sub>2</sub> e of direct GHG emission savings and 675,000 to 1,350,000 tCO <sub>2</sub> e of indirect GHG emission savings
7	<b>Number of shared water ecosystems</b> (fresh or marine) under new or improved cooperative management	—
8	Globally over-exploited <b>marine fisheries</b> moved to more sustainable levels (metric tons)	—
9	<b>Reduction</b> , disposal/destruction, phase out, <b>elimination</b> and avoidance of <b>chemicals of global concern</b> and their waste in the environment and in processes, materials and products (metric tons of toxic chemicals reduced)	
10	Reduction, avoidance of emissions of <b>POPs to air</b> from point and non-point sources (grams of toxic equivalent gTEQ)	
11	Number of <b>direct beneficiaries disaggregated by gender</b> as co-benefit of GEF investment	1500 participants beneficiaries (at least 40% female) consisting of: - 75 enterprises accelerated - 25 Cleantech experts (Mentors, Judges, Coaches) trained and certified - 1400 participants sensitized

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

# PROJECT DESCRIPTION

## 1. Country Context

Morocco relies mostly on fossil fuels to meet its domestic energy demand. Fossil fuels account for about 68% of installed capacity in Morocco with renewable accounting for the rest. Population growth, increasing industrialization and urbanization, improved living conditions, growing population, and a rural electricity supply drive are steadily increasing the demand for electricity. With increasing energy demand, the use of fossil fuel may increase in the near to medium term and hence the Morocco is pushing for more renewable energy power generation and a general drive to shift to a low-carbon economy. The government has continued to heavily invest on renewables as part of efforts to diversify the energy mix and reduce energy imports. Morocco offers excellent climatic conditions for the use of renewable (solar and wind) energy. By using these primary energy sources, CO2 emissions can be significantly reduced. There is also great potential in the field of energy efficiency, particularly through savings in the construction, transport and industrial sectors. Today, Morocco is classified as a 'middle income country' and is largely agrarian: the agricultural sector employs about 45% of the workforce. Unemployment (especially amongst young people, women, and disadvantaged groups), as well as a lack of vocational skills, remain the biggest challenges for the government.

More than 92% of all Moroccan businesses are classified as SMEs, and are responsible for 90% of the country's GDP. Morocco benefits from having one of the most diverse economies in the Middle East/North Africa (MENA) region, with a multitude of industries, a vibrant services sector and modern, knowledge-driven sectors, such as Information and Communications Technology (ICT) and film-making. In 2017, Morocco ranked 123 out of 187 countries surveyed in UNDP's Human Development Index (HDI). The Government of Morocco has implemented many measures to foster innovation and support SMEs since 2010, yet there is still a clear need to develop further incentives to promote and strengthen cooperation between the academic, public and private sectors.

The Moroccan government has committed itself to a socially-oriented market economy and a stability-oriented monetary, fiscal, and exchange rate policy. Sustainable economic growth is key to promoting employment. Central sectoral policies have made impressive achievements over the last 10-15 years, e.g. power supply for 98% and access to drinking water for 93% of the population. Despite the successes, there are still major inequalities in terms of access to employment, social services, and information for women and people with disabilities. The Secretariat of State Responsible for Sustainable Development (SEDD) – Ministry of Energy, Mines and Sustainable Development is responsible for developing, and implementing, and monitoring government policy in the area of environment and sustainable development. Responsibility for energy policy and implementation of Morocco's national energy strategy lies with the Ministry of Energy, Mines, Water and Environment (MEMEE).

Increased promotion and adoption of innovative cleantech solutions will bring about multiple positive economic and social benefits through the promotion and support of entrepreneurs and innovation, significantly contribute to climate change mitigation and general transformation towards a low-carbon and inclusive economy. Large-scale adoption of innovative cleantech solutions will help the country address challenges that include: rising energy demand; scarcity of raw materials; widespread dependence on imported primary and secondary energy; steadily declining, overused and increasingly polluted water resources and high unemployment, especially among the youth.

## 2. Project Overview and Approach

- a) Provide a brief description of the geographical target(s), including details of systemic challenges, and the specific environmental threats and associated drivers that must be addressed;**

In order to identify opportunities around different regions and industries across Morocco, as well as support the strengthening of regional economies, the project will apply a regional approach leveraging the existing national GCIP platform. As such, 4 to 8 zones will operate regional accelerators, to identify most suitable and adequate innovations applicable for the regional sector and industries. The regional accelerator programmes will then funnel successful innovators into a national competition providing more advanced business support and national outreach. The child project will be anchored under the SEDD's regional directorates.

The following barriers have been identified as key hindrances to the introduction and adoption of innovative clean technologies in Morocco and SME development and growth:

- *Lack of institutional coordination* – While various initiatives in Morocco support entrepreneurs and startups (e.g. Ministry of Energy, Mining, Water and Environment, CISE, Global Entrepreneurship Network, Startup Maroc, MEDREP, SwitchMed), there is a significant lack of coordination, and collaboration amongst these actors, which limits their effectiveness in achieving their respective and mutual objectives. A mapping of the current cleantech startups in the country, the enablers (e.g. incubators, etc.), and the pipelines (e.g. universities, etc.) would set the stage for establishing a well-coordinated national platform where various stakeholders and players can their efforts to coalesce and strengthen the country's entrepreneurial ecosystem
- *Lack of supportive policies and business environment* – Fostering of innovation and entrepreneurial spirit requires supportive policies and a business environment that encourages investment. Although it is becoming much easier to start a business and a special tax free rate status exists for early stage entrepreneurs (which has been a major driver of more startups being formed), the business environment is still fraught with obstacles (high tax rates, shortage of skilled labor) that limit their development and investment.
- *Limited access to financing* – According to the Financing Technology Entrepreneurs and SMEs in Developing Countries: Challenges and Opportunities – Morocco Country Study (2008), the financing gap in Morocco is caused by a misallocation of resources, rather than by an absolute lack of funds<sup>1</sup>. Although Morocco hosts what will be the largest concentrated solar power plant in the world, there are few home-grown and active cleantech ventures in this field which could provide services and technologies to industry. The complexity of starting a business venture in Morocco, low rates of technology commercialization from universities, and low rates of cleantech entrepreneurship training are key factors. Existing venture capital funds could be incentivized to consider small-scale investment typically sought by SMEs. Access to financing is also limited by the fact that many entrepreneurs lack the ability to prepare and present adequate business plans and financial statements, and loan/grant officers lack the skills to properly evaluate the value and potential of innovative technologies. As bank financing is the main source of capital for SMEs and startups, they still require assistance in the establishment of credit guarantee schemes and increased awareness of existing credit information systems, etc.
- *Lack of trained experts and information about technology* – A potential barrier to the cleantech innovation and acceleration programmes for SMEs and start-ups in Morocco is the lack of trained experts for mentoring start-ups and entrepreneurs involved in cleantech innovations and also a lack of information about technology options, best practices, and benchmarks within SMEs.
- *Weak linkages between universities/research institutes and the industrial sector* – Morocco's private sector still accounts for a very small share of R&D expenditure; there is a perceived disconnect between the outputs of R&D centers and investors with the funds required to bring these products to the markets. In

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<sup>1</sup> InfoDev (2008), Financing Technology Entrepreneurs & SMEs in Developing Countries: Challenges and Opportunities – Morocco Country Study, [https://www.infodev.org/infodev-files/resource/InfodevDocuments\\_542.pdf](https://www.infodev.org/infodev-files/resource/InfodevDocuments_542.pdf)

order to tackle these barriers, the project aims to stimulate new ideas from the business sector and universities, while also providing hands-on help to strengthen existing businesses.

The proposed project will contribute, through its activities and continual engagements with the national government, regional institutions, the private sector, and other relevant stakeholders to mitigate the above mentioned barriers in a holistic manner, promoting the development of needed individual, organizational, and institutional capacities that will facilitate and accelerate the development, deployment and adoption of clean technology innovations. It will also create a platform capable of linking Moroccan entrepreneurs with investors, business, and commercial partners, potentially resulting in the eventual commercialization of new products, manufacturers, services and job creation, ultimately supporting Morocco's economic growth while fostering dynamism and socio-economic resilience.

**b) Describe the existing or planned baseline investments, including current institutional framework and processes for stakeholder engagement and gender integration;**

The point of reference, or baseline scenario, for introducing regional GCIP accelerators across selected zones in Morocco is the established national cleantech platform and accelerator programme under GEF 6. The GCIP child project for Morocco seeks to apply a regional approach to foster the formation of local innovation ecosystem, which seeks to stimulate local economic activities and will be more focused towards reducing environmental impact, including water management as well as youth employment which are both priorities for Morocco. In particular, this project will have an increased focus on post-accelerator support services to ensure that more cleantech SMEs are able to commercialize their innovations and mobilize investment. Furthermore, this project will link GCIP alumni with corporate private and public sector entities in the country to promote joint ventures and co-innovation.

By adopting a more regional approach, this project will build on the achievement of the GEF 6 GCIP project to achieve the following:

- strengthening of a national cleantech platform and annual accelerator programme;
- Trainings on Cleantech entrepreneurship and innovations delivered to over 600 students across 10 universities ;
- Total of 800 applications received (about 200 per annual cycle) with an average of 22% female participants;
- 24 high-impact clean technology innovations identified and supported through comprehensive business models formulation and successful grant allocation for proto-typing and (first) customer acquisition;
- Delivery of post-competition services in collaboration with National incubator in Morocco (NUMA)
- Advanced investment facilitation through Investor Connect events and participation at Global Forums which has helped start-up's to reach financial closure to finance next growth stage;
- Networking facilitation for successful GCIP start-up's through national cluster such as solar cluster, industry cluster for environmental services and energy efficiency for buildings cluster.

To ensure the sustainability of the Child project and ensure the scaling up of the success of GEF 6 GCIP in Morocco, the Government of Morocco, Secretariat of State Responsible for Sustainable Development (SEDD) has confirmed the contribution of 1,000,000 US Dollar as co-financing in form of grant. Additional 2,500,000 US Dollar in in-kind contributions have been confirmed by regional institutions, universities as well as other lead ministries including the Ministry of Energy. This will allow to foster regional hubs for innovation, strengthening local ownership and identify innovations around local industries and markets.

Gender will be systematically integrated in this project through various means that include systematically reaching out to women universities, enterprises and business associations. Furthermore, the project will engage the Ministry of Family, Solidarity, Equality and Social Development in the project design and implementation. In addition, the GCIP process will recognize best women-led enterprises at both regional and national levels.

- c) Describe how the integrated approach proposed for the child project responds to and reflects the Program's Theory of Change, and as such is an appropriate and suitable option for tackling the systemic challenges, and to achieve the desired transformation with multiple global environmental benefits; and**

Cleantech innovations that are adopted not just in their domestic market, but globally, and are supported by a formal, policy-driven and informal social media-driven low-carbon culture advocated will trigger a variety of environmental benefits including 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 GHG emission reduction that will scale up beyond the project's life and scope.

Some high impact areas under the project include:

- i) Smart agriculture and food systems which aim to avoid further land degradation as well as to restore that which is already degraded along with climate change adaptation and food security measures. This will be achieved through reducing agricultural GHG emissions, and other benefits in rural, peri-urban and urban areas.
- ii) Low-carbon energy systems which seek to introduce and disseminate energy efficient technologies and renewable energy sources to lower the energy demand while maximizing the use of available and sustainable energy resources and e-mobility.
- iii) Urban design and sustainable cities which targets to support the appropriate management tools and technologies for resilient, inclusive and resource-efficient cities that contribute to local livability and global public goods and e-mobility.

The Theory of Change of the project is in diagram below.

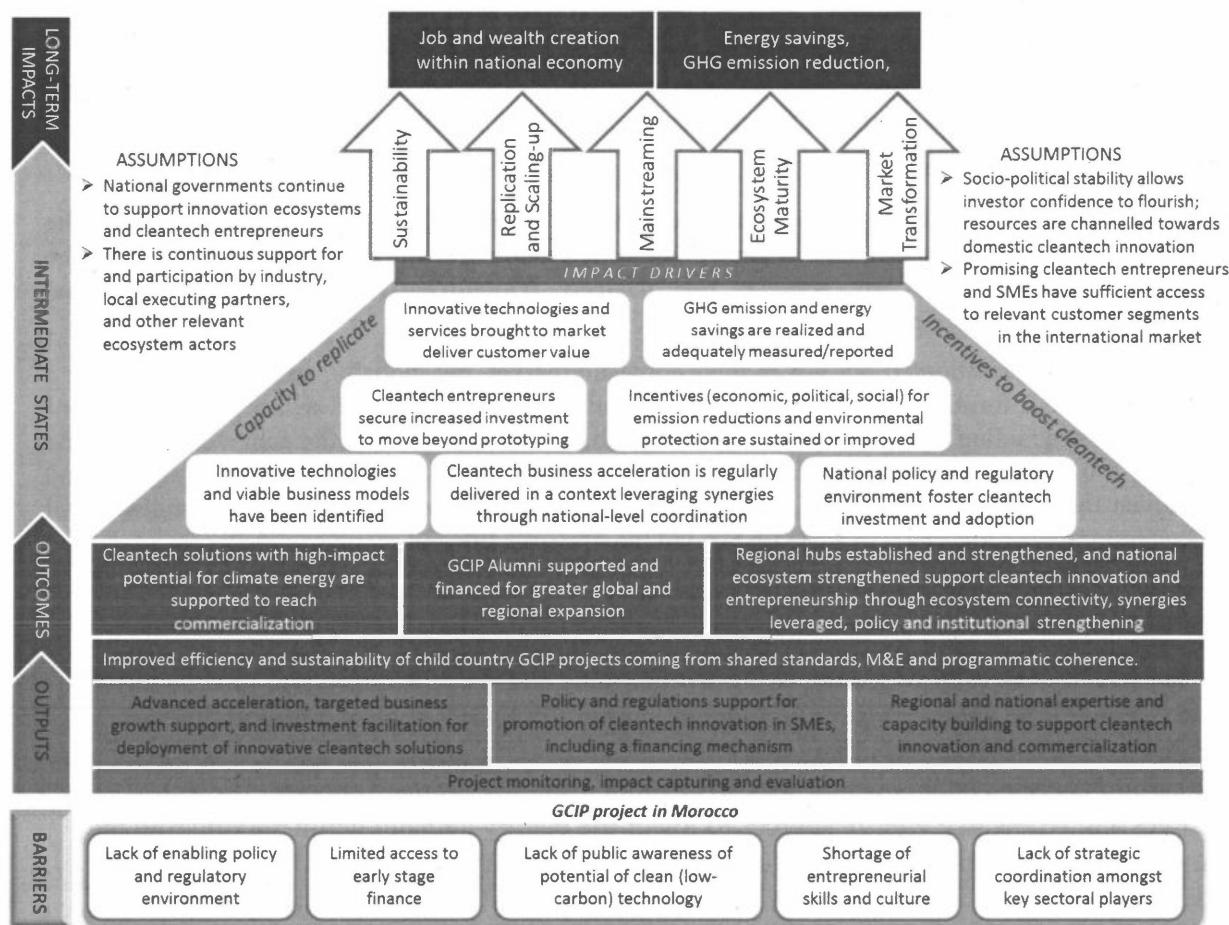


Figure 1 – Theory of Change

**d) Describe the project's incremental reasoning for GEF financing under the program, including the results framework and components.**

Morocco requires further incremental technical and financial assistance from GEF in establishing the Cleantech programme through a regional approach in selected zones in Morocco. Targeted support will aim at strengthening national and regional institutional capacities, supporting the formation of regional innovation ecosystems around priority sectors and industries and promoting innovative cleantech solutions for long lasting positive effects on environment and socio-economic benefits by enhancing economic green growth.

The GEF grant will stimulate the formation of regional 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 and will be scaled across Morocco 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 having and 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.



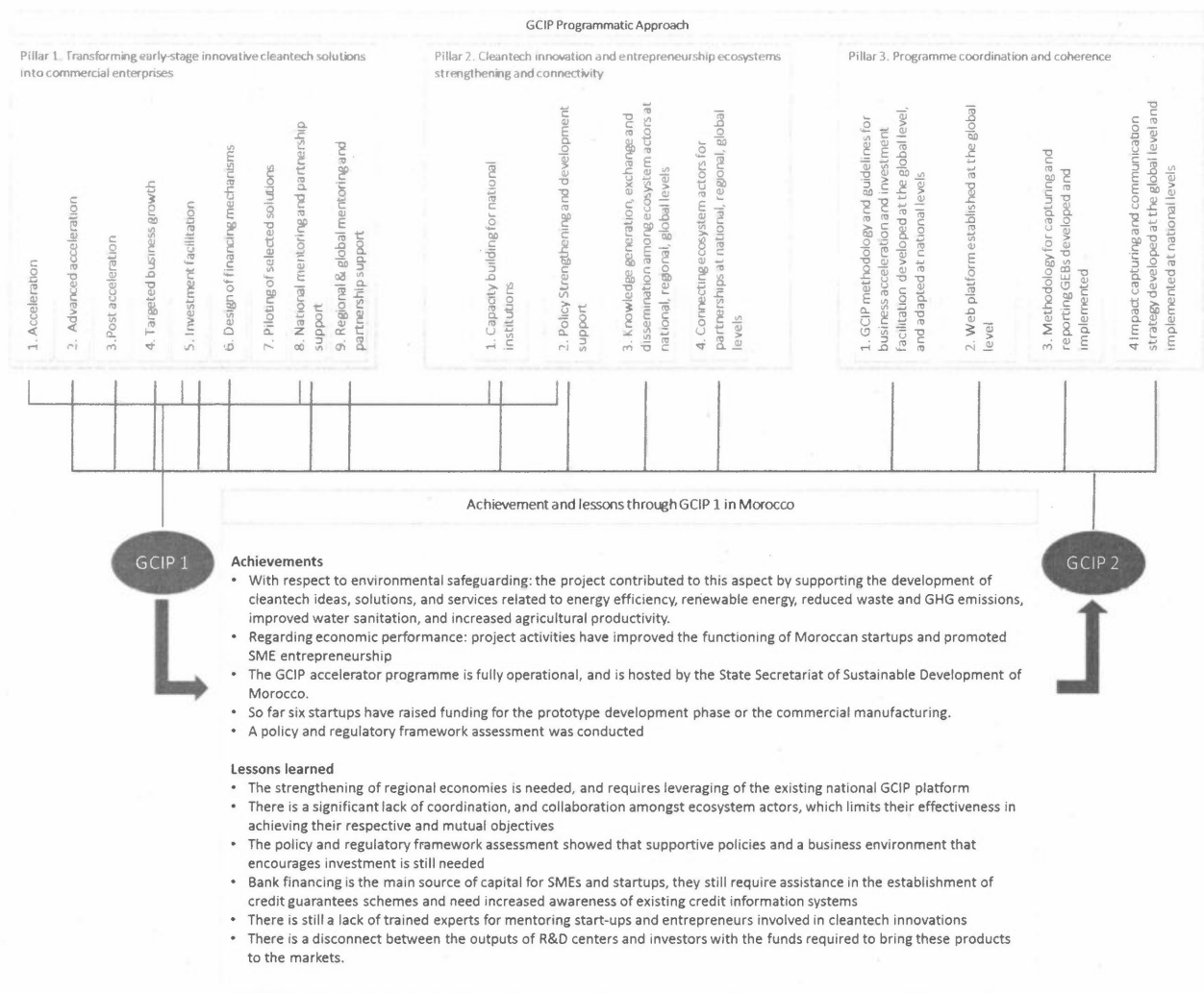


Figure 2 – Linkages from GCIP-1 to GCIP-2

### 3. Engagement with the Global / Regional Framework

The national child project will benefit from the methodologies, decision support tools, training systems, learning and access to investors. Engagement with the global framework is integrated into all components of the project and will include all stakeholders. It includes the following main activities

- **Methodologies, guidelines, tools for acceleration, and training systems:** These will be developed and harmonized at the global level and the national project will focus on adapting these to the national circumstances. Experiences in applying the tools and systems across child project will be used to improve the tools. The global accelerators and global forums will help national enterprises to bring their innovations to the global stage and link with entrepreneurs and from other countries to explore opportunities for joint co-innovation, joint ventures and mobilizing investments.
- **Enterprises growth support, investment facilitation and cross border growth support:** Through global project, national cleantech SMEs will be supported to expand their businesses to other countries. In addition, the global framework will provide investment facilitation services to national enterprises so that they can be linked to investors (impact, venture, angels, and commercial) at regional and global levels.



Furthermore, the global framework will provide support to the national child project in establishing market enabling frameworks to promote investments in cleantech.

- **Targeted training, innovation policy support, knowledge management, and peer-to-peer networking and learning:** The global framework will provide methodologies for training national institutions, development of policies on cleantech innovation and entrepreneurship, and document best-practices. By linking policy makers, institutions, financiers and entrepreneurs across countries, the global framework will facilitate knowledge exchange and documentation of best-practices and peer-to-peer networking and learning.
- **Program standards, communication and advocacy, and monitoring and evaluation:** to promote coherence and coordination across all GCIP countries, the global framework will develop program guidelines that will be applied by the countries. Through the global web platform that will be developed by the global framework, communications and advocacy will be promoted across countries. In addition, the global framework will develop methodologies for impact tracking and monitoring and evaluation that will then be applied across countries.

The national child project will engage with the global framework to ensure synergies, knowledge sharing, learning, consistence and efficiency as well as additional support to enable Moroccan SMEs to scale globally. The outputs and outcomes from the national child project will contribute to the overall project impact through the number of cleantech innovations, entrepreneurs and SMEs supported, finance mobilized and the resulting green growth, jobs created and GHG emission reductions. The following figure shows how the Global programme will support the child project and how the national child project will feed into the global programme.



Figure 3 – Engagement between the global program and child project

## GEF 7 Core Indicator Worksheet

Use this Worksheet to compute those indicator values as required in Part I, item F to the extent applicable to your proposed project. Progress in programming against these targets for the project will be aggregated and reported at any time during the replenishment period. There is no need to complete this table for climate adaptation projects financed solely through LDCF and SCCF.

<b>Core Indicator 6</b>	<b>Greenhouse gas emission mitigated</b>				<b>(Metric tons of CO<sub>2</sub>e)</b>	
		Expected metric tons of CO <sub>2</sub> e (6.1+6.2)				
		PIF stage	Endorsement	MTR	TE	
	Expected CO <sub>2</sub> e (direct)	135,000				
	Expected CO <sub>2</sub> e (indirect)	675,000				
<b>Indicator 6.2</b>	<b>Emissions avoided Outside AFOLU</b>					
		Expected metric tons of CO <sub>2</sub> e				
		Expected		Achieved		
		PIF stage	Endorsement	MTR	TE	
	Expected CO <sub>2</sub> e (direct)	135,000				
	Expected CO <sub>2</sub> e (indirect)	675,000				
<b>Core Indicator 11</b>	<b>Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment</b>				<b>(Number)</b>	
		Number				
		Expected		Achieved		
		PIF stage	Endorsement	MTR	TE	
	Female	600				
	Male	900				
	Total	1500				

# GEF-7 CHILD PROJECT CONCEPT

**CHILD PROJECT TYPE:** Full-sized Child Project

**PROGRAM:** Other Program

<b>Child Project Title:</b>	Promoting clean energy technologies for sustainable start-ups and small medium enterprises development in Nigeria
<b>Country:</b>	Nigeria
<b>Lead Agency</b>	UNIDO
<b>GEF Agency(ies):</b>	UNIDO (select) (select)

## INDICATIVE FOCAL/NON-FOCAL AREA ELEMENTS AND FINANCING

Programming Directions	Trust Fund	(in \$)	
		GEF Project Financing	Co-financing
CCM-1-4 (select) Promote innovation and technology transfer for sustainable energy breakthroughs for cleantech innovation	GEFTF	1,826,484	12,004,500
<b>Total Project Cost</b>		1,826,484	12,004,500

## PROJECT COMPONENTS AND FINANCING

**Project Objective:** To promote innovative approach for switching to clean energy technologies and solutions in small and medium enterprises (SMEs) and startups through a strengthened cleantech ecosystem in Nigeria

Project Components	Component Type	Project Outcomes	Project Outputs	Trust Fund	(in \$)	
					GEF Project Financing	Co-financing
1. Acceleration, investment and commercialization support for selected start-ups and SMEs	Technical Assistance	1.1 Identification, growth acceleration and advanced support for start-ups and SMEs for access to finance and market entry	1.1.1 Three clean technology accelerators conducted  1.1.2 Support for technology and product development, for selected innovative cleantech solutions, start-ups and SMEs  1.1.3 Support for investment facilitation and market entry for selected innovative cleantech solutions, start-ups and SMEs	GEF	700,000	3,200,000
	INV	1.2 Clean energy solutions deployed for energy intensive SMEs and HH in underserved regions	1.2.1 Innovative financing mechanism established to help SMEs leverage funding	GEF	640,000	6,000,000
2. Review of existing policy and regulatory framework for a strengthened	Technical Assistance	2.1 National Science Technology and Innovation policy and institutional framework strengthened to promote and support	2.1.1 National and regional (sub-national) level partnerships developed with leading institutions,	GEF	200,000	500,000

national cleantech innovation and entrepreneurship ecosystem		clean energy technology innovations and entrepreneurship	agencies and universities  2.1.2 Policy recommendations on strengthening clean technology innovation and entrepreneurship ecosystems developed  2.1.3 Networking and knowledge exchange among Global Cleantech Innovation Programme partner countries			
3. Project monitoring and evaluation	Technical As	3.1 National coordinating mechanism established to promote clean energy technology innovations and entrepreneurship  3.2 Adequate monitoring of all project indicators together with regular evaluations to ensure successful project implementation	3.1.1 National Project Management Unit established, and GCIP guidelines and methodologies adapted for Nigeria  3.2.1 Project impact monitored, captured and reported  3.2.2 Lessons learnt and best practices documented and disseminated  3.2.3 Terminal project evaluation conducted	GEF	120,440	1,213,182
Subtotal				GEF	1,660,440	10,913,182
Project Management Cost (PMC)				GEF	166,044	1,091,318
<b>Total Project Cost</b>					<b>1,826,484</b>	<b>12,004,500</b>

For multi-trust fund projects, provide the total amount of PMC in Table B, and indicate the split of PMC among the different trust funds here: ( )

**INDICATIVE SOURCES OF CO-FINANCING FOR THE PROJECT BY NAME AND BY TYPE, IF AVAILABLE**

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount (\$)
GEF Agency	UNIDO	Grant	Investment mobilized	30,000
GEF Agency	UNIDO	In-kind	Recurrent expenditures	150,000
Recipient Country Govern	Federal Ministry of Science and Technology (FMST)	In-kind	Recurrent expenditures	3,000,000
Recipient Country Govern	Federal Ministry of Science and Technology (FMST)	Grant	Investment mobilized	5,500,000
Recipient Country Govern	Federal Ministry of Environment (FEMNV)	In-kind	Recurrent expenditures	500,000

Recipient Country Government	Small and Medium Enterprises Development Agency of Nigeria (SMEDAN)	In-kind	Recurrent expenditures	1,000,000
Private Sector	National financing sector/companies	Loan	Investment mobilized	1,824,500
<b>Total Co-financing</b>				<b>12,004,500</b>

Describe how any "Investment Mobilized" was identified.

#### TRUST FUND RESOURCES REQUESTED BY AGENCY (IES), COUNTRY (IES), FOCAL AREA AND THE PROGRAMMING OF FUNDS

GEF Agency	Trust Fund	Country/Regional/Global	Focal Area	Programming of Funds	(in \$)		
					GEF Project Financing (a)	Agency Fee (b)	Total (c)= a+b
UNIDO	GEFTF	Nigeria	Climate Change	CC STAR Allocation	1,826,484	164,384	1,990,868
<b>Total GEF Resources</b>					<b>1,826,484</b>	<b>164,384</b>	<b>1,990,868</b>

#### PROJECT PREPARATION GRANT (PPG)

Is Project Preparation Grant requested?

- Yes ☐ If yes, PPG funds **have to be requested via the Portal** once the PFD is approved  
 No ☒ If no, skip this item.

#### PPG AMOUNT REQUESTED BY AGENCY(IES), TRUST FUND, COUNTRY(IES) AND THE PROGRAMMING OF FUNDS

GEF Agency	Trust Fund	Country/Regional/Global	Focal Area	Programming of Funds	(in \$)		
					PPG (a)	Agency Fee (b)	Total c = a + b
(select)	(select)		(select)	(select as applicable)			
<b>Total PPG Amount</b>							

#### PROJECT'S TARGET CONTRIBUTIONS TO GEF 7 CORE INDICATORS

Provide the relevant sub-indicator values for this project using the methodologies indicated in the Core Indicator Worksheet provided in Annex B and aggregating them in the table below. Progress in programming against these targets is updated at the time of CEO endorsement, at midterm evaluation, and at terminal evaluation. Achieved targets will be aggregated and reported at any time during the replenishment period. There is no need to complete this table for climate adaptation projects financed solely through LDCF and SCCF.

Project Core Indicators		Expected at PIF
1	<b>Terrestrial protected areas</b> created or under improved management for conservation and sustainable use (Hectares)	
2	<b>Marine protected areas</b> created or under improved management for conservation and sustainable use (Hectares)	
3	Area of <b>land restored</b> (Hectares)	
4	Area of <b>landscapes under improved practices</b> (excluding protected areas) (Hectares)	

5	Area of <b>marine habitat under improved practices</b> (excluding protected areas) (Hectares)	
6	<b>Greenhouse Gas Emissions Mitigated</b> (metric tons of CO <sub>2</sub> e)	Indicative expected results of 135,000 to 270,000 tCO <sub>2</sub> e of direct GHG emission savings and 675,000 to 1,350,000 tCO <sub>2</sub> e of indirect GHG emission savings at the end of project implementation
7	<b>Number of shared water ecosystems</b> (fresh or marine) under new or improved cooperative management	_____
8	Globally over-exploited <b>marine fisheries</b> moved to more sustainable levels (metric tons)	_____
9	<b>Reduction, disposal/destruction, phase out, elimination</b> and avoidance of <b>chemicals of global concern</b> and their waste in the environment and in processes, materials and products (metric tons of toxic chemicals reduced)	
10	Reduction, avoidance of emissions of <b>POPs to air</b> from point and non-point sources (grams of toxic equivalent gTEQ)	
11	Number of <b>direct beneficiaries disaggregated by gender</b> as co-benefit of GEF investment	1605 beneficiaries (at least 35% female) consisting of: <ul style="list-style-type: none"> <li>- 75 enterprises accelerated</li> <li>- 30 cleantech experts ( judges, mentors and coaches) trained and certified</li> <li>- 1500 participants sensitized</li> </ul>

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

# PROJECT DESCRIPTION

## 1. Country Context

As of 2018, Nigeria's population was approximately 196 million people and growing at 2.6% per annum<sup>1</sup>. Nigeria's population is projected to double and reach about 400 million people within the next 25 years. Nigeria is a lower middle-income developing country with a GDP per capita of \$2,082<sup>2</sup>. Lack of access to modern energy services remains the principal constraints to economic development. It is worth noting that the energy sector contributes over 70% revenue to Nigeria's economy.

### Energy sector

Nigeria is endowed with various types of energy resources ranging from fossil fuel (oil, natural gas and coal) to non-fossil fuel (bioenergy, solar, wind, hydro-power, ocean thermal energy, geothermal and reasonable amount of tidal energy) yet, these resources are not fully utilized, in particular non-fossil fuel sources<sup>3</sup>. To date, Nigeria has relied on its fossil fuel resources especially for its electricity sector in which the country is yet to meet its electricity demand and constantly in short of supply<sup>4</sup>. The estimated suppressed energy demand in the country is about 20,000 MW with supply capacity of about 7,000 MW and available capacity of hovering around 3,500-5,000 MW. As a result of this shortfall in supply and demand management, most households, small and medium enterprises (SMEs), industries have to resort to private fossil fuel generating sets to meet their energy demand. An estimated 50% of electricity consumed in the country is currently produced off-grid by fossil fuel generators.

### Economy sector

In 2014, Nigeria became the largest economy in sub-Saharan Africa, with an economy growing at an average of 7% per annum between 2010 and 2015 which contracted to -1.6% in 2016. Due to the over reliance on crude oil as the main source of earnings for the government and continuous decline in crude oil price during mid-2014 - 2015, the country went into recession in the third quarter of 2016. However, the government has formulated an Economic Recovery and Growth Plan ((ERGP) (2017-2020) which focuses on three strategic objectives: Restoring growth, investing in the citizens, and building a competitive economy in order to diversify the economy. Viable SMEs and start-ups can create jobs and are essential for the overall development and diversification of the country's economy. Well-managed and financially stable SMEs and start-ups can play a major role in Nigeria's economy, but suffer from a number of challenges which the proposed cleantech project will address. The project will contribute, through its activities and continual engagements with the National Government, the private sector and other relevant stakeholders, to address the barriers in a holistic manner, promoting the development and deployment of clean energy technology innovations.

## 2. Project Overview and Approach

- a) Provide a brief description of the geographical target(s), including details of systemic challenges, and the specific environmental threats and associated drivers that must be addressed;

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<sup>1</sup> World Development Indicator, 2016. Total population and population growth. Online. Available at: <http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators>

<sup>2</sup> World Development Indicator, 2016. GDP per capita. Online. Available at: <http://databank.worldbank.org/data/reports.aspx?source=2&country=NGA>

<sup>3</sup> ALIYU A., RAMLI, A. and SALEH, M., 2013. Nigeria electricity crisis: power generation capacity expansion and environmental ramifications. *Energy*, 61, pp354–67.

<sup>4</sup> OSENI, M. O., 2011. An analysis of the power sector performance in Nigeria. *Renewable and Sustainable Energy Review* 15, pp 4765–4839.



The project will create an enabling policy environment and institutional capacity, will also assist the country in the establishment of a supportive innovation ecosystem through the organization of three annual accelerator cycles. These will initially focus on energy intensive regions before expanding to include other states/regions. The accelerator will focus at a the national and sub-national regions (states) level in Year 2, with activities focused on areas with the highest concentration of cleantech start-ups focusing on low carbon technologies e.g. clean cooking and accelerating energy access solutions. As the project progresses, the project may expand the competition activities into sub-national regions (states). Typically, the first cycle will begin with clean energy technology under Clean Cooking Solutions such as Energy Efficiency, Renewable Energy, Waste Beneficiation, Resources Efficiency based on national needs and advantages.

The project will also link the innovation ecosystem of Nigeria to the global network of ecosystems in other GCIP partner countries, and also to a network of renowned innovation incubators and accelerator networks in Nigeria.

The project will primarily aim to strengthen the national innovation and entrepreneurship ecosystem of Nigeria by:

- (i) Identifying and supporting cleantech innovators and entrepreneurs;
- (ii) Building capacity within national institutions and partner organizations for the successful implementation of the and accelerator approach and sustainability of the cleantech ecosystem; and
- (iii) Supporting and working with national policy makers to strengthen the policy framework to catalyse and support cleantech innovations business models.

Through this approach, the project will actively support cleantech start-ups and SMEs to develop cleantech innovations into commercial businesses, thereby promoting the emergence and growth of a cleantech industry in Nigeria

- b) Describe the existing or planned baseline investments, including current institutional framework and processes for stakeholder engagement and gender integration;

The importance of clean technology innovations in filling the current gap between energy supply and energy demand has been recognized by the government of Nigeria, and many initiatives to encourage such innovations have been launched. The Federal Ministry of Environment (FEMNV) has actively involved itself in this field, providing support for projects aimed at promoting the use of alternative and renewable energy in Nigeria. For instance, the FEM is currently supporting the Nigeria Clean Energy Access Program (NCEAP), a project aiming to distribute millions of energy efficient light bulbs, fluorescent tubes and solar inverter systems throughout the country. The Federal Ministry of Science and Technology (FMST) has recognized that a resilient and effective innovative system which caters for all the diversities in the country requires the right conditions for innovation and entrepreneurship development where people have the motivation, resources, creativity and timing to absorb, generate and apply new ideas that have value. Hence, FMST is drafting a framework for National System of Innovation (NSI), for promoting successful innovation, and its implementation and diffusion in the country. This NSI framework aims to create a strategy for fostering innovations at the National, Sectoral, Regional, State, and Local levels by focusing on five key parameters: Platform, Inclusion, Ecosystem, Drivers and Discourse. This is targeted at redefining innovations to go beyond formal research and development parameters; facilitate platforms of innovative solutions that lead to inclusive growth for the people and by the people; foster an innovation eco-system across domains and sectors to strengthen entrepreneurship; focus on key drivers to ensure green growth, multidisciplinary approach, sustainability, durability and quality and expand the space for dialogue and discourse on innovation.

- c) Describe how the integrated approach proposed for the child project responds to and reflects the Program's Theory of Change, and as such is an appropriate and suitable option for tackling the

systemic challenges, and to achieve the desired transformation with multiple global environmental benefits;

The Nigeria child project is firmly aligned with the GEF Climate Change Focal Area in its focus on innovation and technology transfer for sustainable energy breakthroughs and therefore fully contributes to the overall impact of the program as shown in the theory of change in the below diagram. The GEF-7 Climate Change Focal Area Strategy aims to support developing countries to make transformational shifts towards low emission and climate-resilient development pathways. This project directly supports this aim by enhancing the support for cleantech SMEs and start-ups, helping them to commercialize and scale, to contribute to a low emission development pathway nationally and globally.

Through the GEF funding, the child project for Nigeria seeks to address existing barriers for entrepreneurs to fully commercialize their innovative products and exploit untapped potential in reducing GHG emissions, in strengthened partnerships with the private sector interested in investing in clean technologies and missed opportunities for green economic growth and jobs.

A focus of this project is to support Nigerian innovators and entrepreneurs to link to markets and financiers to commercialize their products and services, and in turn transform the nascent cleantech market into a dynamic and vibrant one which will have a long-lasting positive effect in the national economy and the global environment. Entrepreneurs with good cleantech innovations shall be able to follow a continuum of support to scale and commercialization whilst being part of a cleantech community. In parallel the Nigerian project will work with the global child project to ensure synergies through joint learning, coherence and coordination as well as additional support to enable Nigerian SMEs to scale globally. In this way the outputs and outcomes from this child project will contribute to the overall impact of the program. The theory of change is shown in Figure 1 below.

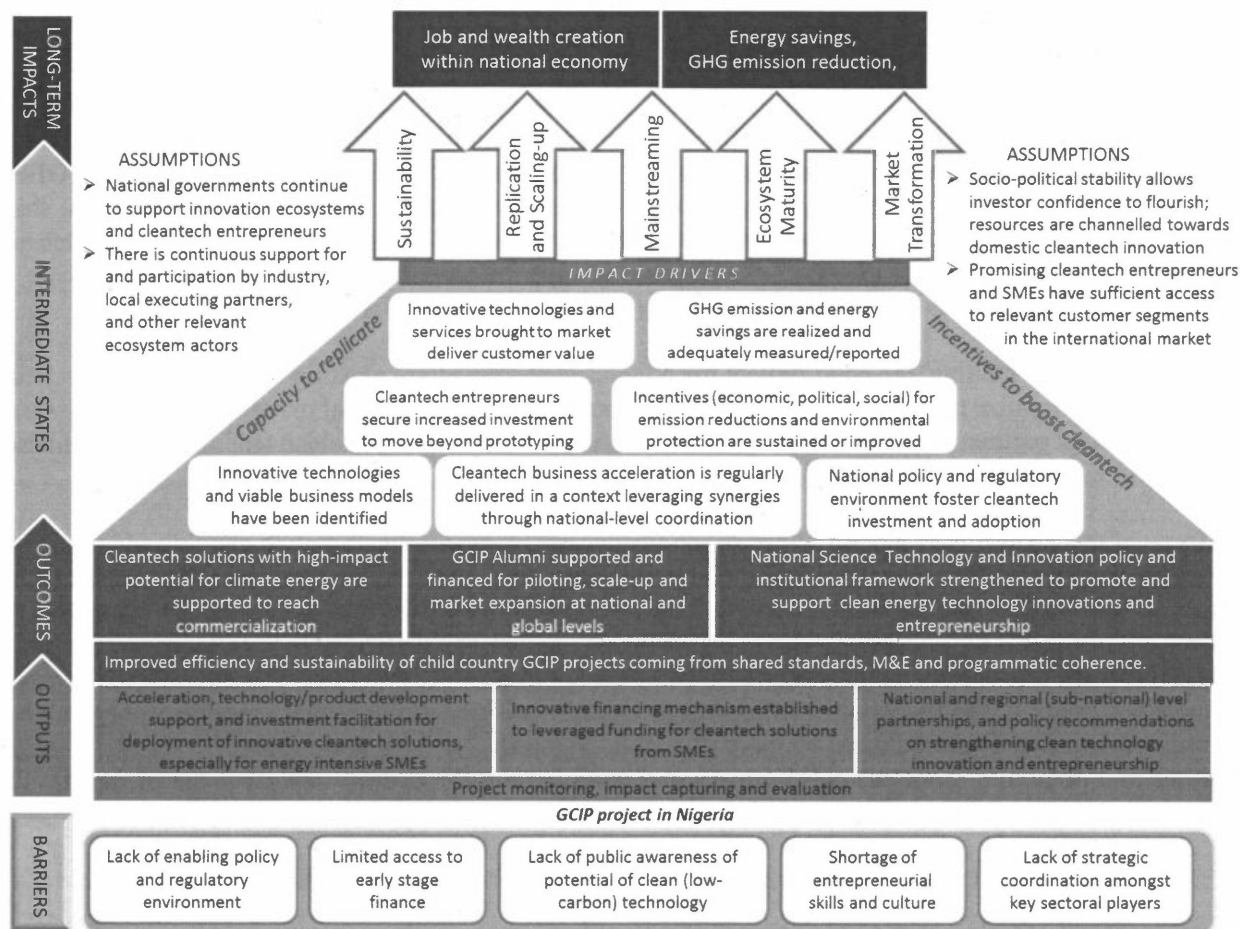


Figure 1 – Theory of Change

- d) Describe the project's incremental reasoning for GEF financing under the program, including the results framework and components.

The proposed project will actively incorporate the lessons learned from the ongoing projects under the GCIP for SMEs. To ensure sustainable impact, the project is closely aligned with national priorities and will actively seek to coordinate with ongoing initiatives. While the current business environment for SMEs in Nigeria is rich in policies and strategies, long-term and effective impact is being hindered by a lack of linkages between the support services required to support innovation and entrepreneurship. For this reason, GEF funding is being requested to remove the barriers currently present in the market to stimulate a long-term shift in SMEs and innovation towards clean energy technologies. The GEF funding will be used to stimulate clean technology innovation in SMEs and facilitate the deployment of these innovative technologies. The GEF grant provided is approximately 15% of total incremental cost of around USD 12 million needed for the clean innovative technology development. Part of the co-financing contribution from FMST will come as in-kind contribution through the hosting of the PMU in NBTI and the staff time executing the activities of the project in the country.

The focus of the project on the promotion of commercially viable clean energy technology innovations in Nigeria will have lasting positive effects on the global environment, as well as the development of a dynamic and vibrant local market for clean technologies. As a result, the promotion of clean energy

technology innovations will allow a balance to be struck between growing economic activity and its global environmental impact.

In the case of no support from the GEF to assist Nigeria in removing the above-mentioned barriers, it is very likely that clean technology innovations will remain off the market; with entrepreneurs lacking the skills and support mechanisms to fully commercialize their products. Consequently, many opportunities to reduce GHG emissions, strengthen partnerships with the private sector interested in investing in clean energy technologies, and provide support to entrepreneurs and innovators seeking to establish commercial ventures in clean energy technologies would go unrealized.

### 3. Engagement with the Global / Regional Framework

The national child project will benefit from the methodologies, decision support tools, training systems, learning and access to investors. Engagement with the global framework is integrated into all components of the project and will include all stakeholders. It includes the following main activities

- **Methodologies, guidelines, tools for acceleration, and training systems:** These will be developed and harmonized at the global level and the national project will focus on adapting these to the national circumstances. Experiences in applying the tools and systems across child project will be used to improve the tools. The global accelerators and global forums will help national enterprises to bring their innovations to the global stage and link with entrepreneurs and from other countries to explore opportunities for joint co-innovation, joint ventures and mobilizing investments.
- **Enterprises growth support, investment facilitation and cross border growth support:** Through global project, national cleantech SMEs will be supported to expand their businesses to other countries. In addition, the global framework will provide investment facilitation services to national enterprises so that they can be linked to investors (impact, venture, angels, and commercial) at regional and global levels. Furthermore, the global framework will provide support to the national child project in establishing market enabling frameworks to promote investments in cleantech.
- **Targeted training, innovation policy support, knowledge management, and peer-to-peer networking and learning:** The global framework will provide methodologies for training national institutions, development of policies on cleantech innovation and entrepreneurship, and document best-practices. By linking policy makers, institutions, financiers and entrepreneurs across countries, the global framework will facilitate knowledge exchange and documentation of best-practices and peer-to-peer networking and learning.
- **Program standards, communication and advocacy, and monitoring and evaluation:** to promote coherence and coordination across all GCIP countries, the global framework will develop program guidelines that will be applied by the countries. Through the global web platform that will be developed by the global framework, communications and advocacy will be promoted across countries. In addition, the global framework will develop methodologies for impact tracking and monitoring and evaluation that will then be applied across countries.

The national child project will engage with the global framework to ensure synergies, knowledge sharing, learning, consistence and efficiency as well as additional support to enable Nigerian SMEs to scale globally. The outputs and outcomes from the national child project will contribute to the overall project impact through the number of cleantech innovations, entrepreneurs and SMEs supported, finance mobilized and the resulting green growth, jobs created and GHG emission reductions. The following figure shows how the Global programme will support the child project and how the national child project will feed into the global programme.



Figure 2 – Engagement between the global program and child project

## GEF 7 Core Indicator Worksheet

Core Indicator 6	Greenhouse gas emission mitigated				(Metric tons of CO <sub>2</sub> e)
		Expected metric tons of CO <sub>2</sub> e (6.1+6.2)			
		PIF stage	Endorsement	MTR	TE
	Expected CO <sub>2</sub> e (direct)	135,000			
	Expected CO <sub>2</sub> e (indirect)	675,000			
Indicator 6.2	Emissions avoided Outside AFOLU				
		Expected metric tons of CO <sub>2</sub> e			
		Expected		Achieved	
		PIF stage	Endorsement	MTR	TE
	Expected CO <sub>2</sub> e (direct)	135,000			
	Expected CO <sub>2</sub> e (indirect)	675,000			

Core Indicator 11	Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment				(Number)
			Number		
			Expected		Achieved
			PIF stage	Endorsement	MTR TE
		Female	562		
		Male	1043		
		Total	1605		



## GEF-7 CHILD PROJECT CONCEPT

CHILD PROJECT TYPE: Full-sized Child Project

PROGRAM: Other Program

<b>Child Project Title:</b>	Accelerating cleantech innovation and entrepreneurship in SMEs to support the transition towards circular economy and create green jobs
<b>Country:</b>	South Africa
<b>Lead Agency</b>	UNIDO
<b>GEF Agency(ies):</b>	UNIDO (select) (select)

### INDICATIVE FOCAL/NON-FOCAL AREA ELEMENTS AND FINANCING

Programming Directions	Trust Fund	(in \$)	
		GEF Project Financing	Co-financing
CCM-1-4 (select) Promote innovation and technology transfer for sustainable energy breakthroughs for cleantech innovation	GEFTF	3,236,525	20,000,000
<b>Total Project Cost</b>		3,236,525	20,000,000

### PROJECT COMPONENTS AND FINANCING

<b>Project Objective:</b> Support sustainable and inclusive economic growth by promoting clean technology innovations and entrepreneurship in start-ups and SMEs						
Project Components	Component Type	Project Outcomes	Project Outputs	Trust Fund	(in \$)	
					GEF Project Financing	Co-financing
1 Identifying, fostering and developing cleantech innovations and businesses	TA	1.1 Promising cleantech innovators are identified and supported by established National Platform, Accelerators and Challenges	1.1.1 National level platform and coordinating mechanisms for ecosystem stakeholders established  1.1.2 Feedback, ideation and concept validation support provided  1.1.4 National Industrial Innovation Challenges held  1.1.5 Methodologies and guidelines for the competition and accelerator adapted  1.1.6 National pool of mentors and judges created and trained	GEFTF	958,520	5,000,000
	TA	1.2 Advanced investment and commercialization support for cleantech innovation and businesses	1.2.1 GCIP alumni support services delivered (technology verification, product development, advanced business support, connecting to markets etc.)	GEFTF	500,000	1,000,000



			<p>1.2.2 GCIP alumni linked to impact investors and support provided to establish and operate impact investment/seed fund</p> <p>1.2.3 Mentorship and partnership support provided to GCIP alumni with innovations that can grow into other countries, regions and globally</p>			
	INV		1.2.4 Innovative early-stage financing mechanisms designed and established to support the deployment and scale-up of cleantech solutions	GEFTF	1,000,000	9,000,000
2. Ecosystem connectivity, policy and institutional framework strengthening	TA	2.1 National ecosystem strengthened to promote and support cleantech innovation and entrepreneurship through ecosystem connectivity, synergies leveraged, policy and institutional strengthening	<p>2.1.1 Capacity built in national institutions and industrial associations</p> <p>2.1.2 Communication, advocacy and outreach activities including GCIP alumni participation in selected global events implemented</p> <p>2.1.3 GCIP community and network facilitated</p> <p>2.1.4 Policy support provided relating to intellectual property rights, green procurement and strengthening ecosystem</p> <p>2.1.5 Knowledge products developed and disseminated</p>	GEFTF	513,473	3,650,000
3. Monitoring and evaluation	TA	3.1 Effective project implementation	<p>3.1.1 Impact performance monitored</p> <p>3.1.2 Project effectively monitored</p> <p>3.1.3 Project midterm and Terminal evaluations carried out</p>	GEFTF	126,640	600,000
Subtotal				GEFTF	3,098,633	19,250,000
Project Management Cost (PMC)				GEFTF	137,892	750,000

<b>Total Project Cost</b>	3,236,525	20,000,000
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For multi-trust fund projects, provide the total amount of PMC in Table B, and indicate the split of PMC among the different trust funds here: ( )

**INDICATIVE SOURCES OF CO-FINANCING FOR THE PROJECT BY NAME AND BY TYPE, IF AVAILABLE**

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount (\$)
GEF Agency	UNIDO	Grant	Investment mobilized	50,000
GEF Agency	UNIDO	In-kind	Recurrent expenditures	200,000
Recipient Government	TIA	In-kind	Recurrent expenditures	500,000
Recipient Government	TIA	Grant	Investment mobilized	4,000,000
Recipient Government	SEDA and national ministries	In-kind	Recurrent expenditures	2,000,000
Private sector	National financing sector	Equity	Investment mobilized	6,000,000
Private sector	National financing sector	Grant	Investment mobilized	7,250,000
<b>Total Co-financing</b>				20,000,000

Indicative investment mobilized was identified through discussions with the potential co-financiers.

**TRUST FUND RESOURCES REQUESTED BY AGENCY (IES), COUNTRY (IES), FOCAL AREA AND THE PROGRAMMING OF FUNDS**

GEF Agency	Trust Fund	Country/Regional/Global	Focal Area	Programming of Funds	(in \$)		
					GEF Project Financing (a)	Agency Fee (b)	Total (c)=a+b
UNIDO	GEFTF	South Africa	Climate Change	CC STAR Allocation	3,236,525	291,287	3,527,812
<b>Total GEF Resources</b>					3,236,525	291,287	3,527,812

**PROJECT PREPARATION GRANT (PPG)**

Is Project Preparation Grant requested?

Yes ☒ If yes, PPG funds **have to be requested via the Portal** once the PFD is approved

No ☐ If no, skip this item.

**PPG AMOUNT REQUESTED BY AGENCY(IES), TRUST FUND, COUNTRY(IES) AND THE PROGRAMMING OF FUNDS**

GEF Agency	Trust Fund	Country/Regional/Global	Focal Area	Programming of Funds	(in \$)		
					PPG (a)	Agency Fee (b)	Total c = a + b
UNIDO	GEF TF	South Africa	Climate Change	CC STAR Allocation	90,000	8,100	98,100
<b>Total PPG Amount</b>					90,000	8,100	98,100

### PROJECT'S TARGET CONTRIBUTIONS TO GEF 7 CORE INDICATORS

Provide the relevant sub-indicator values for this project using the methodologies indicated in the Core Indicator Worksheet provided in Annex B and aggregating them in the table below. Progress in programming against these targets is updated at the time of CEO endorsement, at midterm evaluation, and at terminal evaluation. Achieved targets will be aggregated and reported at any time during the replenishment period. There is no need to complete this table for climate adaptation projects financed solely through LDCF and SCCF.

Project Core Indicators		Expected at PIF
1	<b>Terrestrial protected areas</b> created or under improved management for conservation and sustainable use (Hectares)	
2	<b>Marine protected areas</b> created or under improved management for conservation and sustainable use (Hectares)	
3	Area of <b>land restored</b> (Hectares)	
4	Area of <b>landscapes under improved practices</b> (excluding protected areas) (Hectares)	
5	Area of <b>marine habitat under improved practices</b> (excluding protected areas) (Hectares)	
6	<b>Greenhouse Gas Emissions Mitigated</b> (metric tons of CO <sub>2</sub> e)	Indicative expected results of 360,000 to 720,000 tCO <sub>2</sub> e of direct GHG emission savings and 1,800,000 to 3,600,000 tCO <sub>2</sub> e of indirect GHG emission savings at the end of project implementation
7	<b>Number of shared water ecosystems</b> (fresh or marine) under new or improved cooperative management	
8	Globally over-exploited <b>marine fisheries</b> moved to more sustainable levels (metric tons)	
9	<b>Reduction</b> , disposal/destruction, phase out, <b>elimination</b> and avoidance of <b>chemicals of global concern</b> and their waste in the environment and in processes, materials and products (metric tons of toxic chemicals reduced)	
10	Reduction, avoidance of emissions of <b>POPs to air</b> from point and non-point sources (grams of toxic equivalent gTEQ)	
11	Number of <b>direct beneficiaries disaggregated by gender</b> as co-benefit of GEF investment	Total of 2250 ( at least 35% female) being: - 200 enterprises supported - 50 cleantech experts (mentors, judges and coaches) trained and qualified - 2000 participants sensitized

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

A ten year horizon has been selected to calculate the emission reductions from this global child project. Calculations were based on previous Global Cleantech Innovation Programme (GCIP) alumni estimates.

In addition to the substantial CO<sub>2</sub> emissions mitigation, for the chemicals and waste components, the project will result in reduction in waste in the environment, in air pollutants (eg. NO<sub>x</sub>, SO<sub>x</sub>, PM and CO) and in chemicals of global concern (mercury and POPs), as well as contribution to improved water quality and sustainable management of natural resources broadly

# PROJECT DESCRIPTION

## 1. Country Context

The South African economy holds significant potential in terms of economic growth and technology innovation. However in recent years, economic development has been hindered by a steep decline in prices of key mineral exports, leading to reduced foreign investment and higher unemployment rates. The South African Government recognizes the value of adopting a more sustainable development path through green technologies or innovative cleantech solutions, as they have the potential to not only mitigate environmental risks, but also to stimulate economic growth and job creation, thereby reducing social inequalities. The development and large-scale adoption of innovative cleantech solutions is central in meeting international commitments, in particular the Paris Agreement. The national GHG inventory supplied by the Department of Environmental Affairs (DEA) of South Africa, based on 2000 data<sup>1</sup>, states that the percentage contribution to CO<sub>2</sub> emissions is: energy supply and consumption, 78.9%; industrial processes, 14.1%; agriculture, 4.9%; and waste, 2.1%. These areas provide opportunities for mitigation through technological innovations and behavioral interventions. The findings of a 2011 report also demonstrate that direct jobs associated with natural resource management are expected to be around 43,000 in the short term and rise to over 230,000 in the long term. Since job creation is a top priority of the government and features prominently in the National Development Plan, the sector presents considerable opportunities in employment.

Given these factors' importance, it is essential to identify and overcome the barriers that impede the development and large-scale deployment of innovative cleantech solutions. Some of the possible interventions from the Academy of Science of South Africa report on "The State of Green Technologies in South Africa" (Nov 2014) include, amongst others:

- Encouraging investment in green technology innovation across the various stages of development, from R&D to commercialization.
- Promoting green technologies amongst consumers and encouraging a shift in behavior patterns.
- Streamlining bureaucratic processes to fast-track green innovation and project implementation.
- Facilitating public-private partnerships to pool resources.
- Supporting localization.
- Providing adequate financial instruments.
- Providing greater business support to emerging and established green enterprises.
- Building skills and capacity to foster innovation and facilitate a greater uptake of green technologies.

This child project aims to support the identification, fostering and growth of innovative cleantech solutions by SMES helping them to scale within South Africa and, through the global program, to scale internationally through the provision of commercialization support and links to markets and finance. Working within the global program will ensure that the child project is more efficient and impactful through knowledge sharing, leveraging of synergies across national ecosystems, avoidance of duplication, global linkages and coordination. In particular, linking South Africa SMEs with innovative cleantech solution related to both climate change can access global investors and expand and scale-up their business. This will result in greater economic growth, global environmental benefits and job creation, in line with government priorities and contributing to the overall program impact. By working to promote the commercialization and scaling up of innovative cleantech solutions related to both climate change this project will foster a transition towards circularity that is hinged on innovation and create new green jobs.

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<sup>1</sup> DEAT, 2001

## 2. Project Overview and Approach

### **a) Provide a brief description of the geographical target(s), including details of systemic challenges, and the specific environmental threats and associated drivers that must be addressed;**

The project will cover all of South Africa. Small and medium-scale enterprises, entrepreneurs and start-ups (herein referred to as SMEs) underpin the South African economy, and given the reach and operations of SMEs across various economic sectors, they are well placed to identify opportunities and develop appropriate and scalable green technologies, cleantech innovations and solutions which could result in the reduction of GHG emission and chemical pollution. However, despite a number of initiatives, and the general recognition of the positive impacts of fostering innovation and commercializing innovative cleantech solutions, a number of challenges remain that limit from having transformative impact in South Africa. These have been identified by stakeholders and during the terminal evaluation of GCIP 1 and include:

- A fragmented cleantech ecosystem with limited connection between the support available.
- Limited knowledge and awareness of the clean technologies market and its specific needs, particularly in the case of financing for innovative projects and end-users.
- Finance is limited and slow at particular points of the entrepreneur's journey.
- Lacking business acumen amongst innovators in terms of business model development, market research, management, legal requirements, etc.
- A lack of clear links between innovators and the markets for their products intended use.
- Limited commercialization support and support to scale, through linkages to markets and finance.
- Support is focused in a few centers and previously disadvantaged groups have not been adequately supported or represented.
- Complex business and innovation regulations, i.e. patent registration.

There remains a need for further support in the field of advanced commercialization support, further incubation, 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 South African innovation and entrepreneurial economy to operate within the global market and also to result in economic growth, global environmental benefits and job creation. This will, in the end, create economic opportunities support a shift towards circularity in the national economy.

### **b) Describe the existing or planned baseline investments, including current institutional framework and processes for stakeholder engagement and gender integration;**

The South Africa government has made several efforts to support the transition towards a green economy as part of efforts to promote sustainable, inclusive and equitable growth. In addition South Africa's commitment to innovation as a key pillar for advancing its national priorities is evidenced in the President's plans to strengthen the country's capacity to take full advantage of rapid technological change. The President voiced the urgent need for the government of South Africa to increase support to foster science, technology and innovation.<sup>2</sup> This project will build on the achievements and lessons from Global Cleantech Innovation Programme Phase 1, that was running in South Africa and will build on, and complement, the following relevant government support by filling identified gaps and providing linkages:

- The Technology Innovation Agency's (TIA) support. TIA runs support programmes and provides seed funding for entrepreneurs. TIA hosted GCIP I and continues to run the accelerator following the end of the GEF supported project. This project will work with TIA on boosting that program in commercialization support, in supporting entrepreneurs before and after the accelerator and extending support services in the country.
- The Small Enterprise Development Agency's (SEDA) network of incubation services only one of which is within the cleantech space. The project will build up its capacity in the cleantech sector.

<sup>2</sup> <https://www.forbes.com/sites/tobyshapshak/2018/02/19/new-president-cyril-ramaphosa-promises-to-revitalize-south-africas-digital-economy/#11e6e0a258d9>

- The Department of Trade and Industry's programmes to encourage new SMEs.
- Industrial Development Corporation's (IDC) funding schemes offering support to SMEs and startups.
- Department of Environmental Affairs, Department of Trade and Industry, Department of Science and Innovation

Support available to South African entrepreneurs and start-ups has increased significantly in recent years with at least 11 competitions and 15 entrepreneurship and incubation platforms, however there are almost none that are specifically focused in the cleantech space. In addition there are a number of private sector mechanisms, but support across the ecosystem remains dis-jointed and sometimes at cross purposes, some services are extremely limited and there is little support to really commercialize and scale innovative cleantech solution. This project will not duplicate existing initiatives but will rather attempt to create links amongst them, leverage the existing ecosystem, and provide significant support to strengthen the commercialization and scale-up of cleantech businesses. In particular, this project will have strong emphasis on supporting the commercialization of innovative cleantech solutions and linking to financing. These are key interventions that will ensure that enterprises supported from this and other projects will commercialize quickly and achieve global environmental benefits at scale. Furthermore, the project will act as a truly national hub so as to bring together various related initiatives and promote synergies and complementarity. Furthermore, this project will address the issue of access to early stage financing for cleantech enterprises by providing technical assistance in designing financing mechanisms. These interventions, seen together will result in transformational change.

In implementing this project UNIDO will engage numerous stakeholders. A full stakeholder engagement plan will be developed during the project preparatory phase. Identified stakeholders and their potential engagement are shown below:

Stakeholder	Engagement
Technology Innovation Agency	Responsible for operating the annual GCIP competitions.
Small Enterprise Development Agency	Member of Project Steering Committee incubation strengthening and implementation for rural/provincial hubs.
Department of Trade and Industry	Co-Chair of the PSC and will participate in the incubation strengthening activities of the project.
Department of Science and Technology	Co-Chair of PSC and participate in incubation strengthening activities of the project.
Department of Environmental Affairs	Member of PSC and participate in the incubation strengthening and regional expansion activities of the project. Advise on waste. GEF Focal Point.
Department of Energy	Member of PSC and advises the project on technology issues related to its mandate.
National Cleaner Production Center	Support and advise the project where necessary.
Research – The Council for Scientific and Industrial Research and Water Research Council	Assist in the implementation of the project, also providing facilities, venues and expertise as required.
Private sector: Eskom, Growthpoint, Greencape	Technical expertise and challenge partners.
Finance institutions: DBSA, IDC, SEFA, Standard Bank, etc.	Venture capital, grants and loans.

Civil Society Organizations (CSOs), Sector Associations and Industrial/Commercial Partners:	To be identified in the PPG phase of the project and will be invited to participate during project implementation.
Universities & Incubators	Will be identified in the PPG phase of the project to support, and benefit from, project activities.

Female entrepreneurs are expected to contribute to and benefit from all the project components and activities, participate and facilitate in post accelerator support, as well as in successful competition and acceleration programmes, thus fostering the empowerment of women. A guiding principle of the project will be to ensure that both women and men are provided equal opportunities to access, participate in and benefit from the project. GCIP has already shown higher levels of women's participation than other accelerator and incubator programmes with 25% of the 860 alumni supported to date being women led enterprises. To mainstream gender and favor the empowerment of women in this project, a baseline gender analysis and action plan are planned during the project preparatory phase.

**c) Describe how the integrated approach proposed for the child project responds to and reflects the Program's Theory of Change, and as such is an appropriate and suitable option for tackling the systemic challenges, and to achieve the desired transformation with multiple global environmental benefits;**

The premise of the project is built upon stakeholder consultations and the conclusions and recommendations from the Terminal Evaluation of the first GCIP project in South Africa, and so focuses specifically on identified areas for additional support, linkages and scaling up that will support transformational changes. The project will boost the identification and development of innovative cleantech SMEs by providing support to the entrepreneurs and SMEs at concept phases through the regional hubs. The project will support South African innovators and entrepreneurs on the next step (post-accelerator) to link to markets and financiers to commercialize their products and services, and in turn transform the nascent cleantech market into a dynamic and vibrant one which will have a long-lasting positive effect in the national economy and the global environment. This will ensure that entrepreneurs with economically viable and transformative cleantech innovations are able to follow a continuum of support to commercialization and scale-up whilst being part of a cleantech community.

The theory of change is shown in the following diagram:



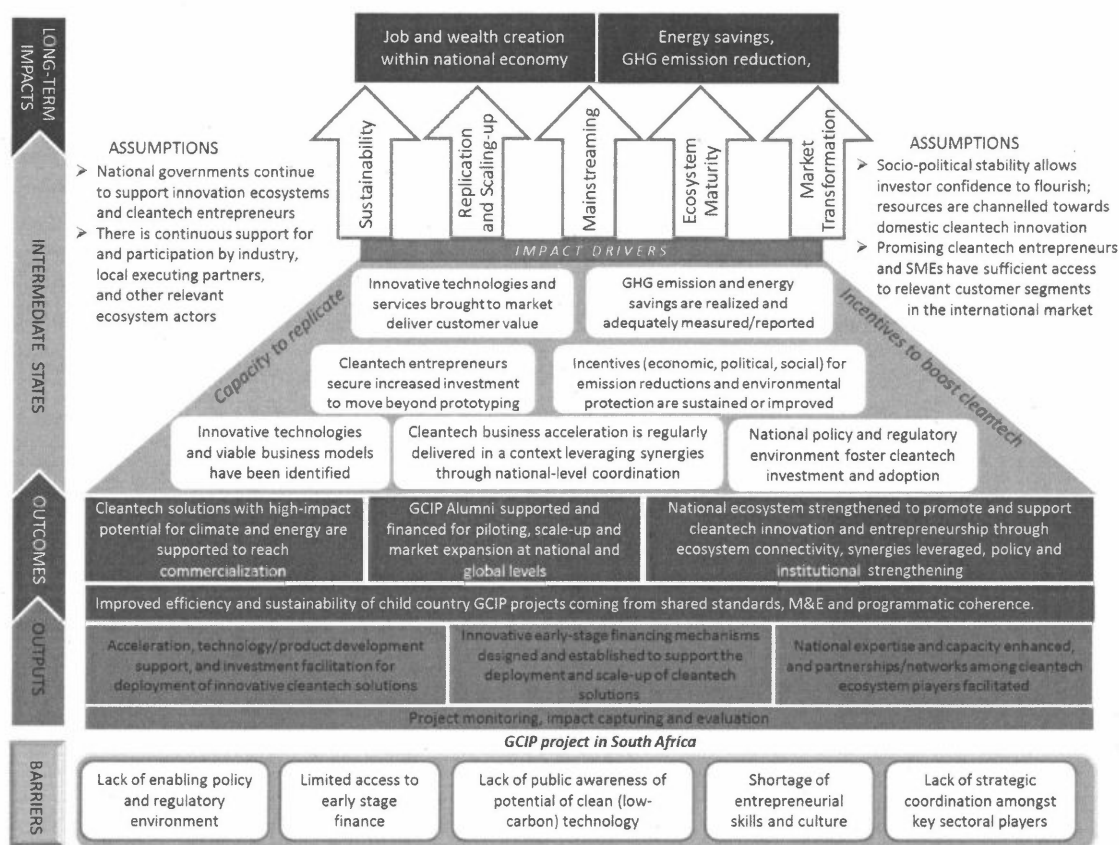


Figure 1 – Theory of Change

**d) Describe the project's incremental reasoning for GEF financing under the program, including the results framework and components.**

While the current business environment for cleantech SMEs and start-ups in South Africa has developed through GCIP Phase 1, and related initiatives, long-term and effective impact is being hindered by the limited connection between the support available and limited commercialization support and linkages to market and finance. As such, the focus of this project is to support South African innovators and entrepreneurs to commercialize their products and services. In order to achieve this goal, GEF funding is being requested to remove the present barriers that are currently hindering the local cleantech market for SMEs and startups, in particular post-acceleration support, commercialization support and access to financing. In particular, the project will link the enterprises innovative cleantech solutions related to chemical and waste with industry associations, industry hubs and industrial parks that will support systematic scaling up and large-scale deployment of the solutions. The project will help to strengthen South Africa's innovation and entrepreneurship ecosystem further through building institutional capacities, expanding the reach of support services, linking to investors and finance and acting as a national hub to create greater connectivity amongst ecosystem players. This will lead to more cleantech enterprises commercializing and scaling-up their operations and hence long-term shift in cleantech innovation and entrepreneurship that will create green jobs while contributing to the reduction in GHG emissions.

Without GEF's support, it is very likely that promising clean technology innovations will remain off the market as innovators and entrepreneurs lack the business and technical skills as well as connections and financial means to fully develop, commercialize their products and scale-up their businesses. Consequently, many opportunities related to: (i) reduce GHG emissions; (ii) strengthen partnerships with the private and financial sector interested in clean technologies; and (iii) establish commercial



ventures by cleantech entrepreneurs and innovators will not materialize. GCIP Phase 1 supported, promoted and “de-risked” the participating SMEs and startups, and connected them to potential investors, customers, and partners. The success achieved to date provides a running setup and sound knowledge base, pool of innovators, lessons learned and established partnerships as valuable inputs to be capitalized. However feedback from GCIP Phase 1 showed that more needs to be done to grow and commercialize the supported SMEs and further support is needed to provide cohesion in the ecosystem. As today’s innovations will shape the economy, its competitiveness and the job market, more needs to be done to foster the expansion of SMEs and startups into environmentally responsible products, practices and services. As such, the new project will have a strong focus on providing post-competition services to maximize the support given to the GCIP alumni having a bigger impact in a very cost-effective way.

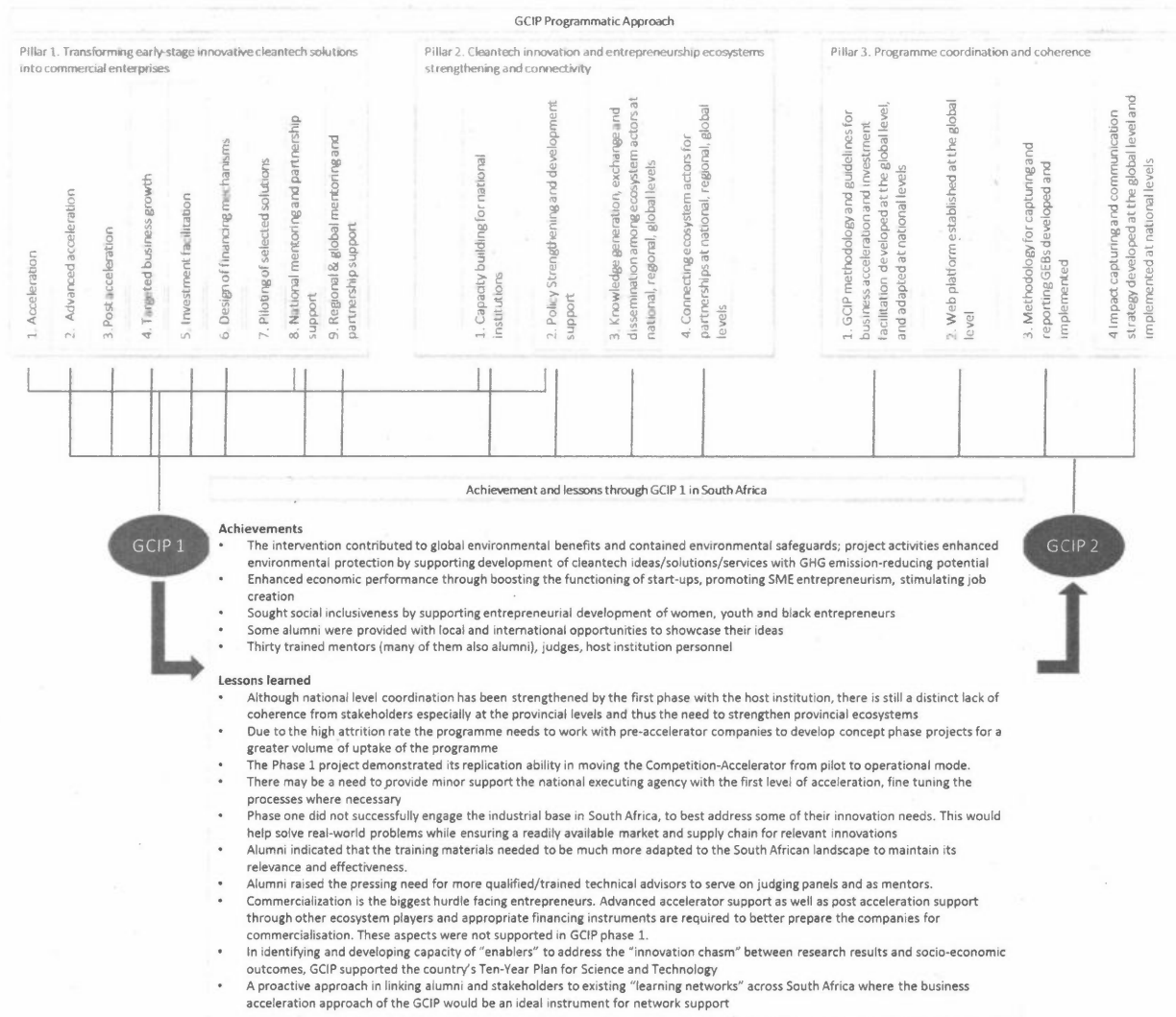


Figure 2 – Linkages from GCIP-1 to GCIP-2

### 3. Engagement with the Global / Regional Framework

The national child project will benefit from the methodologies, decision support tools, training systems, learning and access to global investors. Engagement with the global framework is integrated into all components of the project and will include all stakeholders. It includes the following main activities

- **Methodologies, guidelines, tools for acceleration, and training systems:** These will be developed and harmonized at the global level and the national project will focus on adapting these to the national circumstances. Experiences in applying the tools and systems across child project will be used to improve the tools. The global accelerators and global forums will help national enterprises to bring their innovations to the global stage and link with entrepreneurs and from other countries to explore opportunities for joint co-innovation, joint ventures and mobilizing investments.
- **Enterprises growth support, investment facilitation and cross border growth support:** Through global project, national cleantech SMEs will be supported to expand their businesses to other countries. In addition, the global framework will provide investment facilitation services to national enterprises so that they can be linked to investors (impact, venture, angels, and commercial) at regional and global levels. Furthermore, the global framework will provide support to the national child project in establishing market enabling frameworks to promote investments in cleantech.
- **Targeted training, innovation policy support, knowledge management, and peer-to-peer networking and learning:** The global framework will provide methodologies for training national institutions, development of policies on cleantech innovation and entrepreneurship, and document best-practices. By linking policy makers, institutions, financiers and entrepreneurs across countries, the global framework will facilitate knowledge exchange and documentation of best-practices and peer-to-peer networking and learning.
- **Program standards, communication and advocacy, and monitoring and evaluation:** to promote coherence and coordination across all GCIP countries, the global framework will develop program guidelines that will be applied by the countries. Through the global web platform that will be developed by the global framework, communications and advocacy will be promoted across countries. In addition, the global framework will develop methodologies for impact tracking and monitoring and evaluation that will then be applied across countries.

The national child project will engage with the global framework to ensure synergies, knowledge sharing, learning, consistence and efficiency as well as additional support to enable South African SMEs to scale globally. SMEs with innovative cleantech solutions will equally benefit from the global framework in terms of commercialization and scale-up support, linking to investors etc. The outputs and outcomes from the national child project will contribute to the overall project impact through the number of cleantech innovations, entrepreneurs and SMEs supported, finance mobilized and the resulting green growth, jobs created and GHG emission reductions. The following figure shows how the Global programme will support the child project and how the national child project will feed into the global programme.

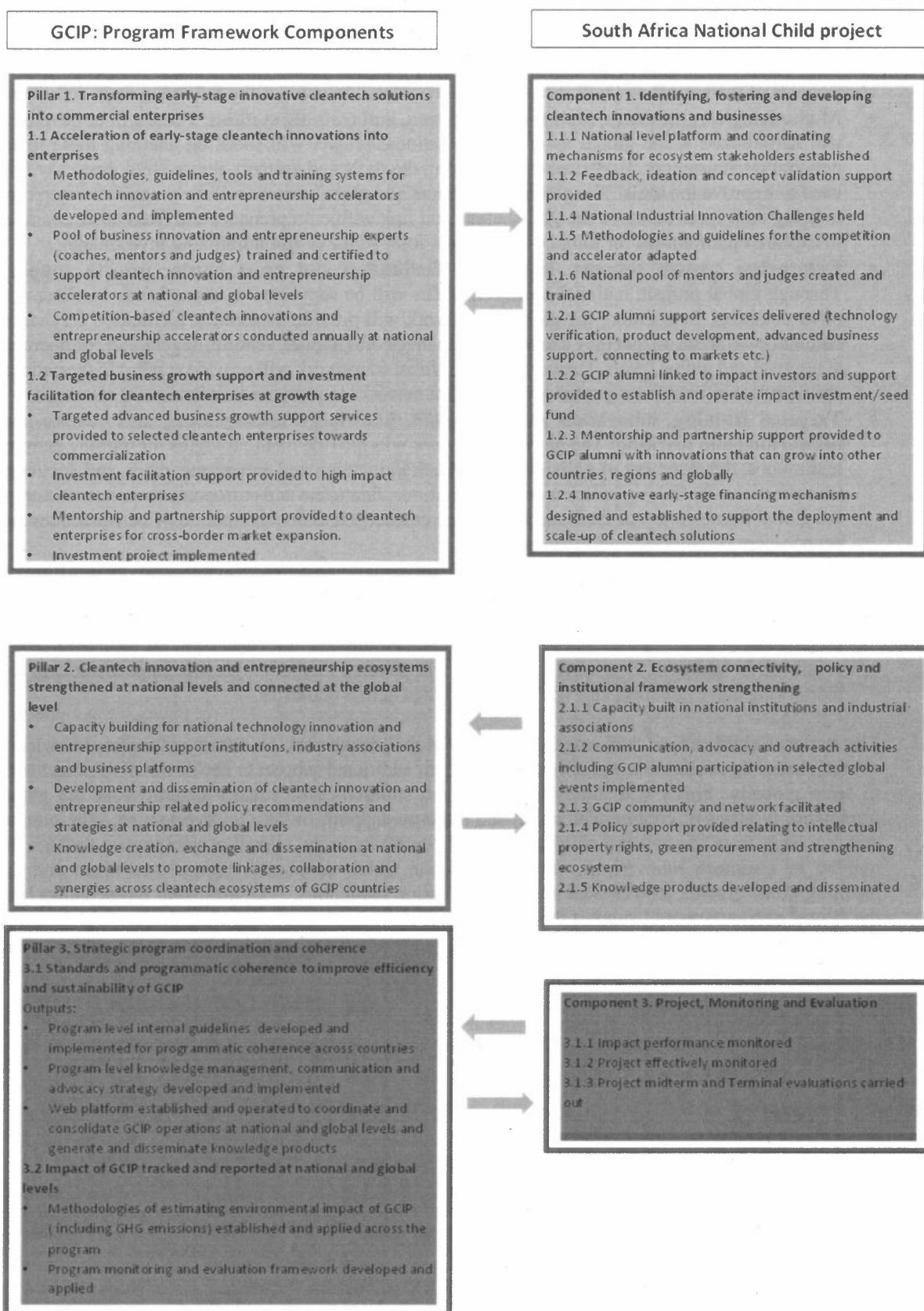


Figure 3 – Engagement between the global program and child project

## GEF 7 Core Indicator Worksheet

Use this Worksheet to compute those indicator values as required in Part I, item F to the extent applicable to your proposed project. Progress in programming against these targets for the project will be aggregated and reported at anytime during the replenishment period. There is no need to complete this table for climate adaptation projects financed solely through LDCF and SCCF.

Core Indicator 6	Greenhouse gas emission mitigated				(Metric tons of CO <sub>2</sub> e )
		Expected metric tons of CO <sub>2</sub> e (6.1+6.2)			
		PIF stage	Endorsement	MTR	TE
	Expected CO <sub>2</sub> e (direct)	360,000			
	Expected CO <sub>2</sub> e (indirect)	1,800,000			
Indicator 6.2	Emissions avoided				
		Expected metric tons of CO <sub>2</sub> e			
		PIF stage	Endorsement	MTR	TE
	Expected CO <sub>2</sub> e (direct)	360,000			
	Expected CO <sub>2</sub> e (indirect)	1,800,000			
Core Indicator 11	Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment				(Number)
		Number			
		Expected		Achieved	
		PIF stage	Endorsement	MTR	TE
	Female	788			
	Male	1462			
	Total	2250			



## GEF-7 CHILD PROJECT CONCEPT

**CHILD PROJECT TYPE: Medium-sized Child Project**

**PROGRAM: Other Program**

<b>Child Project Title:</b>	Innovative Clean Technology Enterprise Development – Institutionalisation and Expansion of the Global Cleantech Innovation Programme for SMEs in Turkey
<b>Country:</b>	Turkey
<b>Lead Agency</b>	UNIDO
<b>GEF Agency(ies):</b>	UNIDO

### INDICATIVE FOCAL/NON-FOCAL AREA ELEMENTS AND FINANCING

Programming Directions	Trust Fund	(in \$)	
		GEF Project Financing	Co-financing
CCM-1-4 Promote innovation and technology transfer for sustainable energy breakthroughs for cleantech innovation	GEFTF	1,776,484	10,750,000
<b>Total Project Cost</b>		<b>1,776,484</b>	<b>10,750,000</b>

### PROJECT COMPONENTS AND FINANCING

<b>Project Objective: To accelerate the uptake and investments in innovative cleantech solutions by SMEs in Turkey</b>						
Project Components/ Programs	Component Type	Project Outcomes	Project Outputs	Trust Fund	(in \$)	
					GEF Project Financing	Confirmed Co-financing
Component 1: Promotion of cleantech innovation and businesses (through national and global accelerators and challenges)	TA	Outcome 1.1 Promising cleantech innovators are identified and supported by established Global and the National Platform and Accelerator, and Challenges	Output 1.1.1. Established national level platform to facilitate peer-learning, information exchange and collaboration Output 1.1.2. Annual National cleantech competition-based accelerator is held Output 1.1.3. Capacity of national incubation service providers enhanced	GEFTF	731,484	3,281,543
	TA	Outcome 1.2 Business growth support and tipping point	Output 1.2.1. Advanced national post-accelerator	GEFTF	396,000	4,957,340

		investment facilitation services provided to growth-stage cleantech SMEs to commercialize	support services delivered (Technology verification, product development and market entry support provided) Output 1.2.2. Support for investment facilitation is provided			
	INV		Output 1.2.3 Innovative early-stage financing mechanisms designed and established to support the deployment and scale-up of cleantech solutions	GEFTF	200,000	1,000,000
Component 2: National policy and institutional frameworks strengthening	TA	Outcome 2.1. Policy and market environment analysed	Output 2.1.1. Policy support provided and roadmaps developed	GEFTF	130,000	310,000
Component 3: Synergetic Partnerships, Knowledge Management and Programmatic Coherence	TA	Outcome 3.1. Improved efficiency and sustainability of child country GCIP ecosystems and projects coming from programmatic coherence, knowledge management, connected innovation ecosystems and synergies leveraged	Output 3.1.1. Joint activities across GCIP countries that promote linkages among ecosystems, learning and collaboration carried out	GEFTF	174,000	380,000
Component 4: Monitoring and evaluation	TA	Outcome 4.1 Adequate M&E	Output 4.1.1 Tracking mechanisms developed and utilised for SMEs supported	GEFTF	57,000	322,784

			Output 4.1.2 Terminal Evaluation			
Subtotal				GEFTF	1,688,484	10,251,667
Project Management Cost (PMC)				GEFTF	88,000	498,333
<b>Total project costs</b>					<b>1,776,484</b>	<b>10,750,000</b>

For multi-trust fund projects, provide the total amount of PMC in Table B, and indicate the split of PMC among the different trust funds here: ( )

**INDICATIVE SOURCES OF CO-FINANCING FOR THE PROJECT BY NAME AND BY TYPE, IF AVAILABLE**

Sources of Co-financing	Name of Co-financier	Type of Cofinancing	Investment Mobilized	Amount (\$)
GEF Agency	UNIDO	Grant	Investment mobilized	50,000
GEF Agency	UNIDO	In-kind	Recurrent expenditures	150,000
Recipient Country Government	TUBITAK	Grant	Investment mobilized	1,000,000
Recipient Country Government	TUBITAK	In-kind	Recurrent expenditures	1,000,000
Recipient Country Government	MoIT	In-kind	Recurrent expenditures	1,000,000
Recipient Country Government	MoEU	In-kind	Recurrent expenditures	1,000,000
Recipient Country Government	MENR	In-kind	Recurrent expenditures	1,000,000
Recipient Country Government	MoAF	In-kind	Recurrent expenditures	1,000,000
Private Sector	OSTIM	In-kind	Recurrent expenditures	830,000
Private Sector	OSTIM	Grant	Investment mobilized	30,000
Private Sector	Arçelik A.Ş	Equity	Investment mobilized	1,000,000
Civil Society Organization	DCUBE	In-kind	Recurrent expenditures	1,000,000
Other	METU	In-kind	Recurrent expenditures	1,690,000
<b>Total Co-financing</b>				<b>10,750,000</b>

Investment mobilized was identified through discussions with the potential co-financiers.

**TRUST FUND RESOURCES REQUESTED BY AGENCY (IES), COUNTRY (IES), FOCAL AREA AND THE PROGRAMMING OF FUNDS**

GEF Agency	Trust Fund	Country Name/Global	Focal Area	Programming of Funds	(in \$)		
					GEF Project Financing (a)	Agency Fee (b)	Total (c)=a+b
UNIDO	GEF TF	Turkey	Climate Change	(select as applicable)	1,776,484	159,884	1,936,368
<b>Total GEF Resources</b>					<b>1,776,484</b>	<b>159,884</b>	<b>1,936,368</b>



**PROJECT PREPARATION GRANT (PPG)**

Is Project Preparation Grant requested?

Yes ☒ If yes, PPG funds **have to be requested via the Portal** once the PFD is approvedNo ☐ If no, skip this item.**PPG AMOUNT REQUESTED BY AGENCY (IES), TRUST FUND, COUNTRY (IES) AND THE PROGRAMMING OF FUNDS**

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Programming of Funds	(in \$)		
					PPG (a)	Agency Fee (b)	Total c = a + b
UNIDO	GEFTF	Turkey	CCM	CC STAR Allocation	50,000	4,500	54,500
<b>Total PPG Amount</b>					<b>50,000</b>	<b>4,500</b>	<b>54,500</b>

**PROJECT'S TARGET CONTRIBUTIONS TO GEF 7 CORE INDICATORS**

Provide the relevant sub-indicator values for this project using the methodologies indicated in the Core Indicator Worksheet provided in Annex B and aggregating them in the table below. Progress in programming against these targets is updated at the time of CEO endorsement, and at terminal evaluation. Achieved targets will be aggregated and reported at any time during the replenishment period. There is no need to complete this table for climate adaptation projects financed solely through LDCF and SCCF.

Project Core Indicators		Expected at CEO Endorsement
6	<b>Greenhouse Gas Emissions Mitigated</b> (Million metric tons of CO <sub>2</sub> e)	Indicative expected results of 180,000 to 360,000 tCO <sub>2</sub> e of direct GHG emission savings and 900,000 to 1,800,000 tCO <sub>2</sub> e of indirect GHG emission savings at the end of project implementation
11	Number of <b>direct beneficiaries disaggregated by gender</b> as co-benefit of GEF investment	1730 beneficiaries (at least 35% female) consisting of: <ul style="list-style-type: none"> <li>• <b>100 enterprises</b></li> <li>• <b>30 cleantech experts (judges, mentors and coaches) trained and qualified</b></li> <li>• <b>1600 participants sensitized</b></li> </ul>

# PROJECT DESCRIPTION

## 1. Country Context

In recent years, due to population and economic growth (with a cumulative GDP growth in 2005-2015 of 65%), Turkey has recorded the fastest increase in electricity demand among OECD members (annual growth rate of 5.5% since 2002). Turkey is now 21<sup>st</sup> on the global energy consumption list. Its installed electricity generation capacity exceeded 88 GW as of January 2019, which represents a threefold increase in 15 years.<sup>1</sup> What is more, Turkey's energy use is expected to grow by 50% over the next decade.

In 2016, the share of fossil fuels in total primary energy supply was 87.3%. This is related to a range of environmental challenges such as climate change, desertification, deforestation, water scarcity, nature degradation and marine pollution.

According to the National Energy Efficiency Action Plan 2017-2023, improvement in industrial energy efficiency offers significant opportunities to reduce energy consumption, to upgrade technology development levels, and reduce GHG emissions. Investments in the energy efficiency, particularly in new innovative technologies could save up to 20% of energy on the country level.

What is more, Turkey aims to build a competitive agricultural sector which requires effective use of its physical potential, efficient energy and resource use, regulation and aggregation of lands, scale up of the utilisation of modern and efficient agricultural machinery, and use renewable energy resources in the sector.<sup>2</sup> Since 1990 there has been a significant decline of agricultural land in Turkey. The country had 23.7 million ha of arable land in 2016, compared to 27.9 million ha in 1990. There are 921 different agricultural basins, disaggregated by rainfall, temperature and topographical characteristics. Of the total arable land, 67% is cropland, 17% is fallow land and the rest is utilised for horticulture, vegetable production, vineyards and olive gardens<sup>3</sup>. Furthermore, a significant share of forests in Turkey is degraded or damaged mainly due to climate factors, mostly forest fires followed by anthropogenic influence - illegal logging being the main issue.

According to its Intended National Determined Contributors (INDC), Turkey aims to achieve up to 21% reduction in GHG emissions compared to the BAU level by 2030. This will enable Turkey to step on low-carbon development pathways compatible with the long-term objective of limiting the increase in global temperature below 2°C.<sup>4</sup>

At the same time, small and medium-sized enterprises (SMEs) play an important role in the Turkish economy. There are 3.5 million SMEs which account for 99.9% of all businesses (97.5% of which are micro-enterprises), provide 76% of jobs, and produce 53% of the value added to the national economy.

Turkey ranks 33rd in the Global Cleantech Index. Its clear strength lies within general innovation drivers, scoring high in entrepreneurial culture indicators and giving evidence of an active early-stage ecosystem. For cleantech-specific drivers on the other hand, Turkey lacks strength across all constituent indicators, from a cleantech-supportive policy environment to access to private finance. This is reflected in Turkey scoring third worst in evidence of emerging cleantech SMEs.<sup>5</sup>

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<sup>1</sup> <http://www.mfa.gov.tr/turkeys-energy-strategy.en.mfa>

<sup>2</sup> [http://www.yegm.gov.tr/document/20180102M1\\_2018\\_eng.pdf](http://www.yegm.gov.tr/document/20180102M1_2018_eng.pdf)

<sup>3</sup> [https://unfccc.int/sites/default/files/resource/496715\\_Turkey-NC7-1-7th%20National%20Communication%20of%20Turkey.pdf](https://unfccc.int/sites/default/files/resource/496715_Turkey-NC7-1-7th%20National%20Communication%20of%20Turkey.pdf)

<sup>4</sup>

[https://www4.unfccc.int/sites/submissions/INDC/Published%20Documents/Turkey/1/The\\_INDC\\_of\\_TURKEY\\_v.15.19.30.pdf](https://www4.unfccc.int/sites/submissions/INDC/Published%20Documents/Turkey/1/The_INDC_of_TURKEY_v.15.19.30.pdf)

<sup>5</sup> [https://www.unido.org/sites/default/files/files/2017-11/GCII\\_GCIP\\_report\\_2017.pdf](https://www.unido.org/sites/default/files/files/2017-11/GCII_GCIP_report_2017.pdf)

## 2. Project Overview and Approach

a) Provide a brief description of the geographical target(s), including details of systemic challenges, and the specific environmental threats and associated drivers that must be addressed;

### Environmental concerns

Turkey is a major economy which straddles Europe and Asia. It is the world's 20th largest emitter of greenhouse gases (GHGs). Turkey is a middle-income country with low historic emissions, but it is also among the club of generally developed countries which form the OECD (Organisation for Economic Co-operation and Development). Turkey's emissions are set to rise significantly.<sup>6</sup> In 2016, the share of fossil fuels in total primary energy supply was 87.3%. The industrial sector accounted for 32%, residential, commercial and institutional sector 32%, transportation 25%, and agriculture 4% of Turkey's final energy consumption. Turkey's energy use is expected to increase by 50% over the next decade.<sup>7</sup> The level of consumption and the level of increase result in inevitable pressure on the environment. These pressures translate into a range of environmental challenges such as climate change, desertification, deforestation, water scarcity, nature degradation and marine pollution.

### Startup-up and SME environment in Turkey

Turkey has numerous early stage innovation nurturing programmes that have proven to be quite effective. Even still, the amount of early-stage finance is relatively low. It is indicative that despite its extensive research network, Turkey has low environmental patent activity. There are only a few successful Turkish cleantech start-ups that have advanced past the early-stage funding. No Turkish companies were included in CTG's Global Cleantech 100 shortlist over the past three years. Despite the relatively high presence of venture capital firms, the amount invested in cleantech start-ups, compared to the GDP, remains low.

The Turkish start-up/SME sector related to cleantech still faces numerous barriers, including:

Financial barriers: The limited access to capital for technological investments, infrastructure, research and development in cleantech is considered a number one problem for SMEs in Turkey. R&D has been stated as the phase most requiring finance. The market potential of the clean tech solutions has not yet been substantially recognised by the seed funding sector. On the other hand, Turkish private equity sector is in the nascent stage.

Informational and awareness barriers: There is a limited knowledge and awareness of the cleantech market and its specific needs. There is a lack of clarity over the available options, requirements and procedures to access technical assistance, finance and seed funding for clean tech innovators at the national and international level. Furthermore, there is a weak link between innovators and other relevant stakeholders at the global level. Also, there is a lack of awareness in businesses and private sector of new developments and products related to the clean tech sector.

Capacity barriers: There are limited skills in developing the concept, identifying market needs, developing business plans, conducting R&D etc. It is difficult to concentrate on one specific area of technology for tech-based organizations. New technologies emerge continuously, and technology management gets more and more complicated every day. Many products die even before maturity.

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<sup>6</sup> <https://www.carbonbrief.org/carbon-brief-profile-turkey>

<sup>7</sup> <http://www.mfa.gov.tr/turkeys-energy-strategy.en.mfa>

*Policy and regulatory barriers:* The absence of the clean tech specific policy and regulation is evident. There is a need to analyse and assess enabling policy environment.

**b) Describe the existing or planned baseline investments, including current institutional framework and processes for stakeholder engagement and gender integration;**

The first GCIP was launched in Turkey in 2013 for 36 months<sup>8</sup> with the aim of removing, or at least mitigating, the above-mentioned barriers, in order to facilitate the development of an enabling innovation ecosystem and to encourage SMEs to contribute towards climate change mitigation and adaptation. The main outcome of GCIP 1.0 may be summarized as “the mechanisms are starting to work”. The final evaluation concluded that the successful regular operation of the Competition-Accelerator of the intervention is well-anchored and has moved from conceptualization mode to operational mode.

The current innovation ecosystem in Turkey consists of a number of actors and initiatives operating at the national level. While this means that SMEs and start-ups have a rich and broad spectrum of support programmes to choose from in general, there remains a lack of resources for cleantech specific innovations.

The Scientific and Technological Research Council of Turkey (TUBITAK) is responsible for the management of a series of Research and Development (R&D), Innovation and Entrepreneurship Grant Programmes. The Programmes with specific relevance to the proposed project, namely those that support innovative SMEs and start-ups, are outlined below: SME Research, Development & Innovation (RDI) Grant Programme (TUBITAK 1507 Initiative) Entrepreneurship Multi-Phase Programme (TUBITAK 1512 Initiative) Technology Transfer Offices Grant Programme (TUBITAK 1513 Initiative) Capacity Building for Innovation and Entrepreneurship Grant Programme (TUBITAK 1601 Initiative) Tech-InvesTR Venture Capital Support Program (TUBITAK 1514 Initiative)

Support to innovative entrepreneurs is also provided by the Ministry of Science, Industry and Technology through the Technical Entrepreneurship Capital Support programme which provides grants of up to TRY 100,000 (USD 37,600) with the aim to steer entrepreneurship towards technology and innovation-based enterprises. Furthermore, the Directorate of Entrepreneurship within the Small and Medium Enterprises Development Organization of Turkey (KOSGEB) provides the following services to SMEs:

- entrepreneurship training;
- business incubators;
- start-up capital; and
- business plan awards.

Other institutions active in the field of entrepreneurship promotion in Turkey include Technology Development Foundation of Turkey (TTGV), as well as the Ministry of Industry and Technology.

In spite of a wide spectrum of institutions and programmes fostering entrepreneurship and innovation in Turkey, currently there is a lack of initiatives specifically tailored at empowering Turkish entrepreneurs to proactively and profitably develop and deploy clean technologies and business models, back to back with their scale-up efforts. Building up on the success of GCIP Accelerator delivered by GCIP 1.0, GCIP 2.0 aims to fill this gap, while simultaneously seeking synergies with the above-mentioned existing programmes. The aim of GCIP 2.0 is to provide suite of services that address the specific needs of national cleantech SMEs and entrepreneurs, including facilitation of market entry, access to information, and financing for the private sector, as well as to offer important tools for policy makers to measure and improve domestic cleantech innovation activities at the same time.

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<sup>8</sup> Amended with the no-cost extension of additional 24 months.

The project will pay special attention to encourage women to participate in the programme. To this end, gender disaggregated indicators will be developed at the project inception phase, including for example percentage of women participating in various trainings/events, percentage of women applicants. In addition, a gender analysis will be conducted. Based on its outcomes, gender mainstreaming, notably in awareness raising and capacity building, will take place.

**c) Describe how the integrated approach proposed for the child project responds to and reflects the Program's Theory of Change, and as such is an appropriate and suitable option for tackling the systemic challenges, and to achieve the desired transformation with multiple global environmental benefits;**

The following figure shows the Theory of Change (ToC) for the project which is entirely consistent with the Program's ToC - showing its path from project outcomes to impact; how the Global Cleantech Innovation Programme will result in accelerated uptake and investment in cleantech innovations so that innovative SME-driven cleantech products and services are available that meaningfully contribute to climate change mitigation, green growth and job creation.

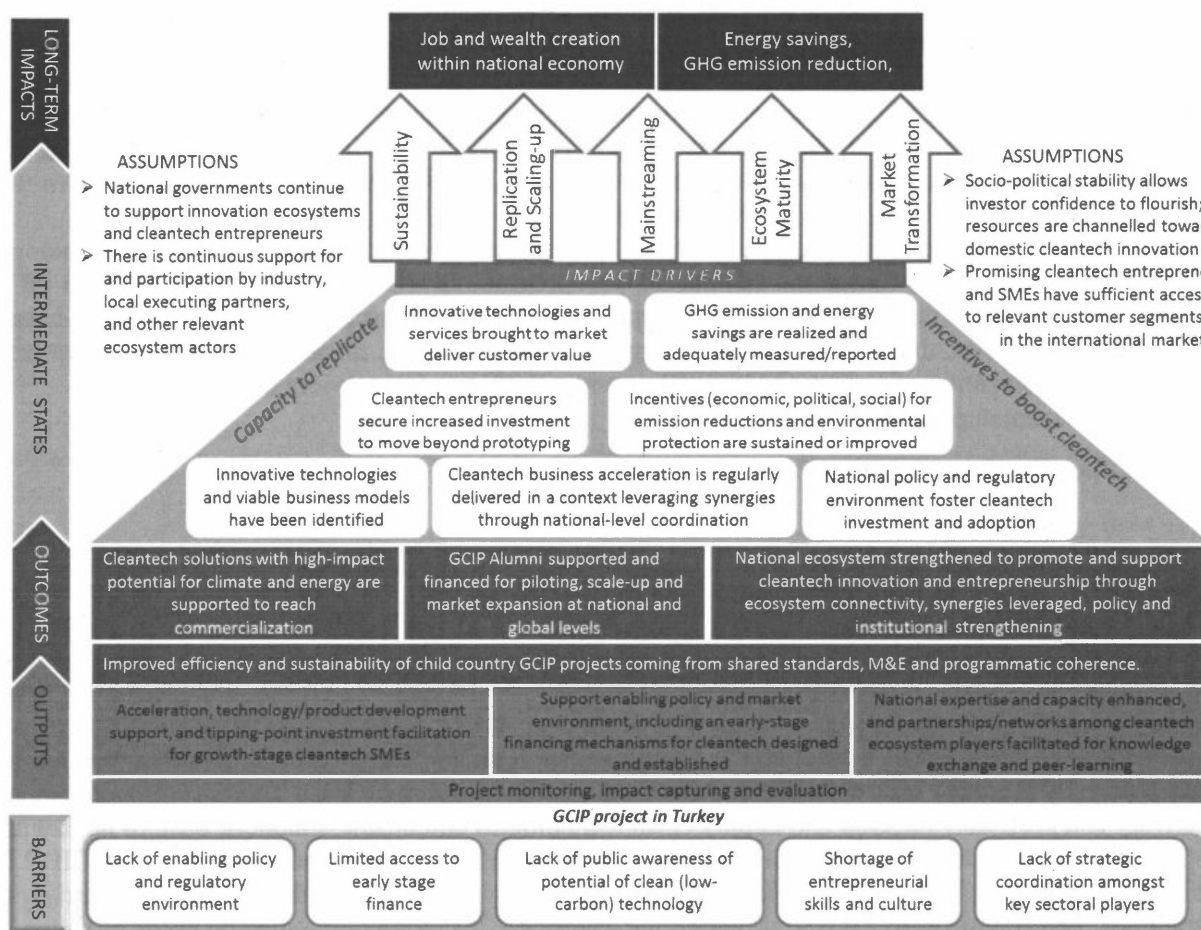


Figure 1 – Theory of Change

The child project is aligned with the Global GCIP Programme. The child project will mirror the Global GCIP Programme structure in its entire logic framework.

Technology and innovation are key enablers of high-tech entrepreneurship and together with low-carbon economy are becoming a high priority for the Turkish government. Through the development of a supportive innovation ecosystem, the key objective of the child project will be to accelerate the promotion and commercialisation of innovative clean technology products. To do so, the project adopts an innovative approach not yet seen in Turkey outside of the previous GCIP for SMEs and aims to institutionalize GCIP approach within the Turkish innovation ecosystem. Through this approach the child project will shift Turkish innovation sector towards low carbon and sustainable development in general. The envisaged global coordination will ensure effective and efficient sound knowledge and technology transfer in and out of the country. This practice will substantially increase the opportunity for the SME's and other innovators to reach the market and more importantly to be recognised by the local and global private sector.

The proposed project is fully aligned with the GEF-7 Climate Change Focal Area Strategy, especially with the *Objective 1. Promote innovation and technology transfer for sustainable energy breakthroughs*. According to the Strategy, “*Technology is key area for the UNFCCC and in Article 10 of the Paris Agreement, and is one of the key means to reduce, or slow the growth in GHG emissions, and to stabilize their concentrations*”. The proposed project directly aims at the technologies that would reduce or slow down the growth of GHG emissions. Furthermore, the proposed project will provide participants and alumni with technical assistance, ultimately trying to secure private sector financing.

**d) Describe the project's incremental reasoning for GEF financing under the program, including the results framework and components.**

It is expected that without GEF support the continuation of proven and successful practices will cease. Lack of post-competition support would drastically decrease opportunities for local innovators to develop their ideas and take the share in the market. Consequently, many opportunities would be lost to: (i) reduce GHG emissions, (ii) establish commercial ventures by clean tech entrepreneurs, (iii) transfer of state of the art and comprehensive knowledge, (iv) link between innovators with the private sector and other relevant innovators worldwide. Finally, policy and market gaps would not be identified in a comprehensive resulting in lack of understanding the market for policy-makers to act upon. The incremental reasoning lies in the provision of the support on the development of state-of-the-art low carbon and sustainable land innovative technologies, through best international and national acceleration and post acceleration practices. Ultimately, without GEF's support, it is very likely that promising clean technology innovations will remain off the market, as innovators and entrepreneurs lack the business and technical skills as well as financial means to fully develop and commercialize their products. As a result, the transition to low carbon economy and reduction of GHG emissions in Turkey may be slower.

The Competition-Accelerator established in Turkey in the framework of GCIP 1.0 has already proven its effectiveness and value in identifying, coaching, and developing cleantech innovators. However, experience from GCIP 1.0 implementation has shown that after successful completion of the GCIP Accelerator, startups and SMEs required further support in accessing additional sources of finance and to break into the market. In order to overcome they “valley of death”, i.e. to move from the early stage through maturity to commercialization, complementary assistance needs to be provided.

Moreover, in the framework of GCIP 1.0 it was recognized that all actors operating in the innovation system play a relevant role. The consideration of entire national cleantech innovation ecosystem has therefore turned out to be crucial for identifying where the GCIP could be best positioned to leverage its recognized catalytic role and assure the vigorous implementation of larger baseline programmes.

With cleantech innovation pipelines, hubs, and institutional relationships defined and coordinated to move startups along a supported path (under the existing direct public support programmes), it is also important to attract/stimulate the development of private sector investment. Although there are few, if any instances, where there is a total absence of public support to ensure that startups survive “the valley of death”, this is a window of opportunity to strike partnerships with business angels and develop the home-grown seed/early



stage/late stage venture capital and private equity markets to enable and encourage startups to undertake the needed customer validation, mature into established companies, and reach commercialization. Angel investors/venture capitalists offer valuable opportunities for partnership under the GCIP framework, although care must be taken to assure options are available for a variety of actors who could usefully contribute.

Therefore, in order to build a coherent journey for cleantech innovators to get the support they need in the subsequent development phases, as well as to facilitate the design of a supportive ecosystem for this journey, and to stimulate investments, the GCIP 2.0 has been designed.

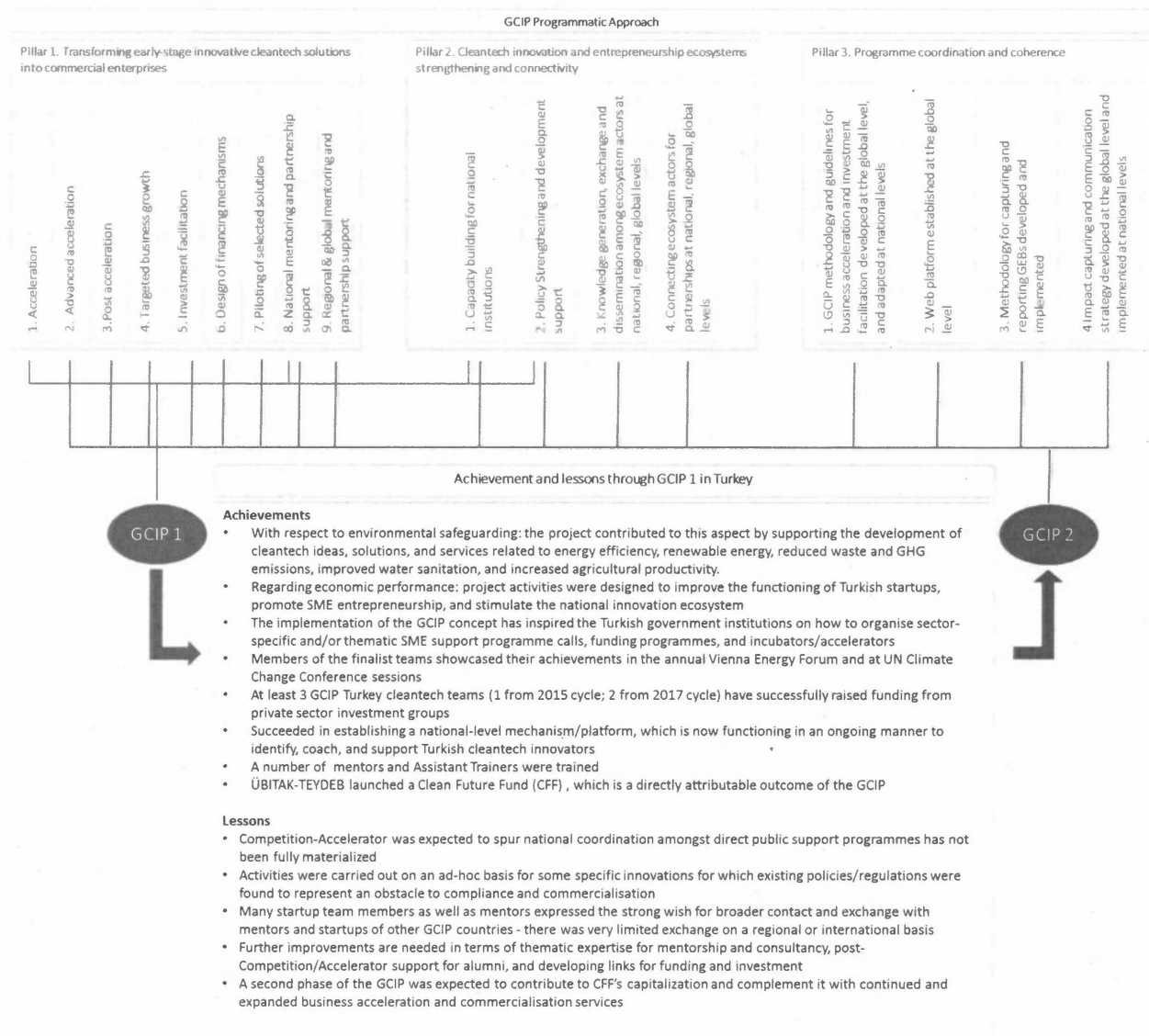


Figure 2 – Linkages from GCIP-1 to GCIP-2

Ultimately, GCIP 2.0 is going to strengthen the national-level coordinating function that it was set up to fulfil, as well as to serve to build country ownership and anchor the project's results and benefits. As a result, the policy interventions will become more systematic, structured, and integrated.

### 3. Engagement with the Global / Regional Framework (*maximum 500 words*)

**Describe how the project will align with the global / regional framework for the program to foster knowledge sharing, learning, and synthesis of experiences. How will the proposed approach scale-up from the local and national level to maximize engagement by all relevant stakeholders and/or actors?**

The national child project will benefit from the methodologies, decision support tools, training systems, learning and access to investors. Engagement with the global framework is integrated into all components of the project and will include all stakeholders. It includes the following main activities

- **Methodologies, guidelines, tools for acceleration, and training systems:** These will be developed and harmonized at the global level and the national project will focus on adapting these to the national circumstances. Experiences in applying the tools and systems across child project will be used to improve the tools. The global accelerators and global forums will help national enterprises to bring their innovations to the global stage and link with entrepreneurs and from other countries to explore opportunities for joint co-innovation, joint ventures and mobilizing investments.
- **Enterprises growth support, investment facilitation and cross border growth support:** Through global project, national cleantech SMEs will be supported to expand their businesses to other countries. In addition, the global framework will provide investment facilitation services to national enterprises so that they can be linked to investors (impact, venture, angels, and commercial) at regional and global levels. Furthermore, the global framework will provide support to the national child project in establishing market enabling frameworks to promote investments in cleantech.
- **Targeted training, innovation policy support, knowledge management, and peer-to-peer networking and learning:** The global framework will provide methodologies for training national institutions, development of policies on cleantech innovation and entrepreneurship, and document best-practices. By linking policy makers, institutions, financiers and entrepreneurs across countries, the global framework will facilitate knowledge exchange and documentation of best-practices and peer-to-peer networking and learning.
- **Program standards, communication and advocacy, and monitoring and evaluation:** to promote coherence and coordination across all GCIP countries, the global framework will develop program guidelines that will be applied by the countries. Through the global web platform that will be developed by the global framework, communications and advocacy will be promoted across countries. In addition, the global framework will develop methodologies for impact tracking and monitoring and evaluation that will then be applied across countries.

The national child project will engage with the global framework to ensure synergies, knowledge sharing, learning, consistence and efficiency as well as additional support to enable Turkish SMEs to scale globally. The outputs and outcomes from the national child project will contribute to the overall project impact through the number of cleantech innovations, entrepreneurs and SMEs supported, finance mobilized and the resulting green growth, jobs created and GHG emission reductions. The following figure shows how the Global programme will support the child project and how the national child project will feed into the global programme.



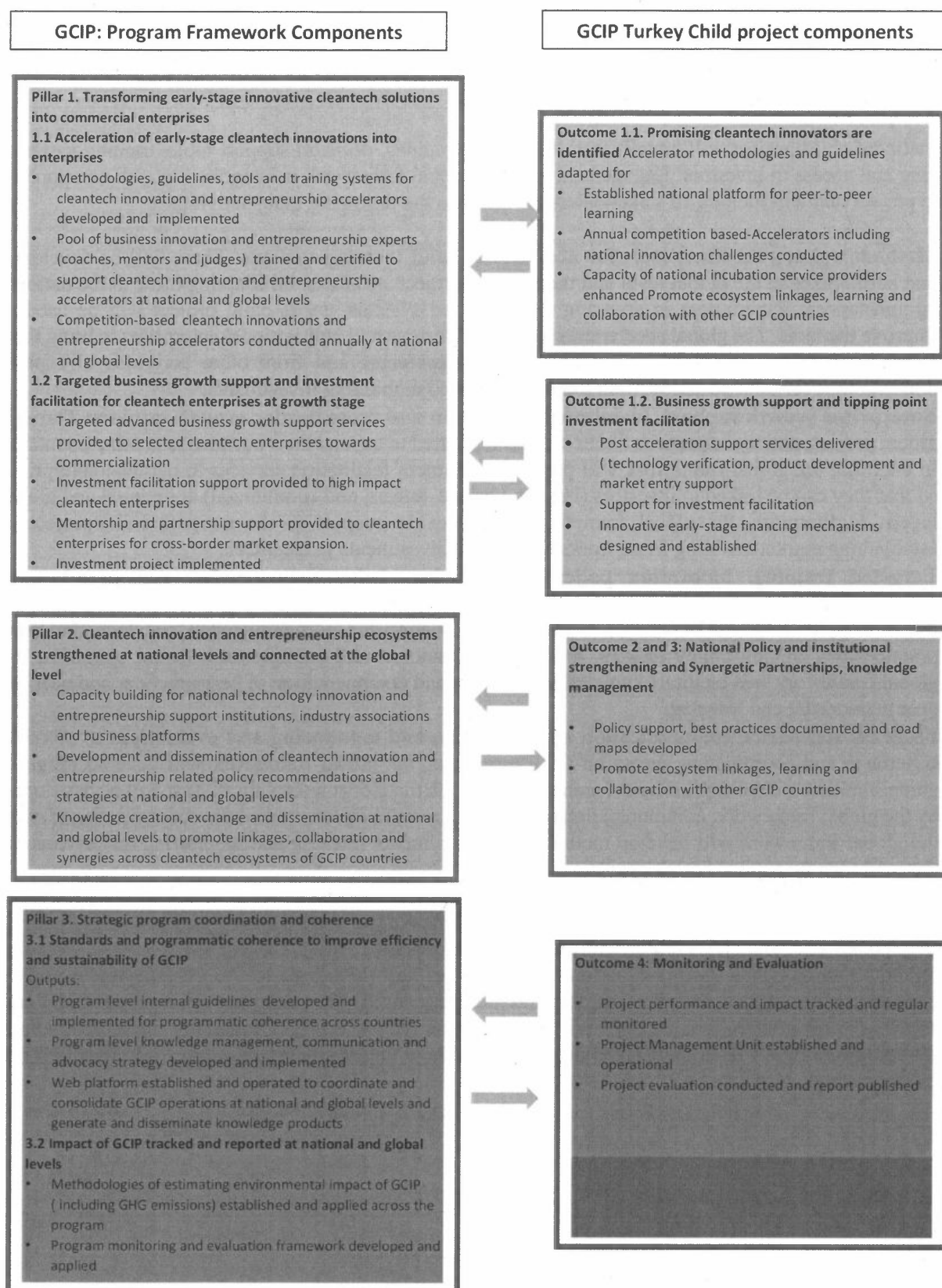


Figure 3 – Engagement between the global program and child project

## GEF 7 Core Indicator Worksheet

Use this Worksheet to compute those indicator values as required in Part I, item F to the extent applicable to your proposed project. Progress in programming against these targets for the project will be aggregated and reported at any time during the replenishment period. There is no need to complete this table for climate adaptation projects financed solely through LDCF and SCCF.

Core Indicator 6	Greenhouse gas emission mitigated				(Metric tons of CO <sub>2</sub> e)
		Expected metric tons of CO <sub>2</sub> e (6.1+6.2)			
		PIF stage	Endorsement	MTR	TE
	Expected CO <sub>2</sub> e (direct)	180,000			
	Expected CO <sub>2</sub> e (indirect)	900,000			
Indicator 6.2	Emissions avoided	Expected metric tons of CO <sub>2</sub> e			
		PIF stage	Endorsement	MTR	TE
	Expected CO <sub>2</sub> e (direct)	180,000			
	Expected CO <sub>2</sub> e (indirect)	900,000			

Core Indicator 11	Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment				(Number)
		Number			
		Expected		Achieved	
		PIF stage	Endorsement	MTR	TE
	Female	606			
	Male	1124			
	Total	1730			



# GEF-7 CHILD PROJECT CONCEPT

**CHILD PROJECT TYPE:** Full-sized Child Project

**PROGRAM:** Other Program

<b>Child Project Title:</b>	Low-carbon economy of Ukraine for climate change prevention: Facilitating investment for scale-up of innovative cleantech solutions for low-carbon economy and climate action		
<b>Country:</b>	Ukraine		
<b>Lead Agency</b>	UNIDO		
<b>GEF Agency(ies):</b>	UNIDO	(select)	(select)

## INDICATIVE FOCAL/NON-FOCAL AREA ELEMENTS AND FINANCING

Programming Directions	Trust Fund	(In \$)	
		GEF Project Financing	Co-financing
CCM-1-4 Promote innovation and technology transfer for sustainable energy breakthroughs for cleantech innovation	GEFTF	1,307,500	12,850,000
<b>Total Project Cost</b>		<b>1,307,500</b>	<b>12,850,000</b>

## PROJECT COMPONENTS AND FINANCING

Project Objective: To accelerate investments in and uptake of low carbon and clean technologies in Ukraine by supporting the development of innovative green financial and market mechanism for SMEs						
Project Components	Component Type	Project Outcomes	Project Outputs	Trust Fund	(In \$)	
					GEF Project Financing	Co-financing
1. Transforming early-stage innovative cleantech solutions into commercial enterprises	TA	1.1 Advanced acceleration and business growth support	1.1.1 Advanced acceleration services provided to at least 40 SMEs/start-ups with focus on enhancing readiness to access cleantech-specific financial and market mechanisms 1.1.2 Pool of cleantech financing and investment experts trained to support GCIP accelerator	GEFTF	92,588	150,000
	INV	1.2 Investment mobilized for high-impact potential cleantech SMEs for piloting and scale-up	1.2.1 At least 30 SMEs/start-ups with innovative cleantech solutions receive post-acceleration support and investment	GEFTF	670,000	11,000,000
2. Strengthening of cleantech innovation and entrepreneurship ecosystem and financial mechanisms of Ukraine	TA	2.1 Policy and regulatory framework support to stimulate investments in innovative cleantech solutions	2.1.1 Policy recommendations and strategic roadmap to accelerate investments for cleantech solutions developed for inclusion in the National Energy and 2030 Climate Plan (NECP)	GEFTF	60,000	275,000

			2.1.2 Financial instrument tailored for investments in cleantech solutions and low carbon projects designed and validated, including a detailed strategy for mobilizing and deploying of first 10 mil EUR investment.		60,000	275,000
	TA	2.2 Building national capacity of key ecosystem players (local public and private stakeholders) for managing the financing of clean and low carbon technologies	2.2.1 Capacity of national institutions strengthened to coordinate, streamline, and accelerate investments into cleantech solutions	GEFTF	106,048	150,000
3. Knowledge management, project monitoring and evaluation	TA	3.1 Increased awareness and strengthened partnerships for replication and scale-up of cleantech solutions in Ukraine	3.1.1 Knowledge management and communication strategy for impact capturing and monitoring developed and implemented, including a knowledge repository (web-based interactive platform, social media pages, etc.) in place  3.1.2 Awareness raising initiatives conducted including two "Low Carbon Economy" annual forums  3.1.3 Knowledge exchange facilitated among ecosystem actors at regional and global levels	GEFTF	140,000	550,000
		3.2 Facilitating smooth and successful project implementation and achievement of project results	3.2.1 Project monitoring and mid-term review conducted  3.2.2 Project terminal evaluation conducted	GEFTF	60,000	350,000
Subtotal				GEFTF	1,188,636	12,750,000
Project Management Cost (PMC)				GEFTF	118,864	100,000
<b>Total Project Cost</b>					<b>1,307,500</b>	<b>12,850,000</b>

For multi-trust fund projects, provide the total amount of PMC in Table B, and indicate the split of PMC among the different trust funds here: ( )

**INDICATIVE SOURCES OF CO-FINANCING FOR THE PROJECT BY NAME AND BY TYPE, IF AVAILABLE**

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount (\$)
GEF Agency	UNIDO	Grant	Investment mobilized	50,000
GEF Agency	UNIDO	In-kind	Recurrent expenditures	50,000
Recipient Country Government	National Ministries (e.g. Ministry of Ecology and Natural Resources, Ministry of Economy)	In-kind	Recurrent expenditures	200,000
Recipient Country Government	State Finance Institution for Innovations (Ministry of Economic Development and Trade of Ukraine)	In-kind	Recurrent expenditures	2,300,000
Civil Society Organization	Institute of Renewable Energy of NAS of Ukraine	In-kind	Recurrent expenditures	250,000
Private Sector	National financing sector and international investors through the financing mechanism to be established	Loan	Investment mobilized	10,000,000
<b>Total Co-financing</b>				<b>12,850,000</b>

**“INVESTMENT MOBILIZED”**

UNIDO AND BENEFICIARY WILL MOBILIZE CO-FINANCING FROM NATIONAL FINANCING INSTITUTIONS AND INTERNATIONAL INVESTORS THROUGH THE FINANCING MECHANISM TO BE ESTABLISHED IN UKRAINE. COMPLETE LIST TO BE CONFIRMED IN DETAIL DURING THE PPG PHASE.

**TRUST FUND RESOURCES REQUESTED BY AGENCY (IES), COUNTRY (IES), FOCAL AREA AND THE PROGRAMMING OF FUNDS**

GEF Agency	Trust Fund	Country/Regional/Global	Focal Area	Programming of Funds	(in \$)		
					GEF Project Financing (a)	Agency Fee (b)*	Total (c)=a+b
UNIDO	GEFTF	Ukraine	CCM	CC STAR allocation	1,307,500	117,675	1,425,175
<b>Total GEF Resources</b>					<b>1,307,500</b>	<b>117,675</b>	<b>1,425,175</b>

\*Agency fee of 9% is applied, as the total budget of the GCIP is over 10 mil USD.

**PROJECT PREPARATION GRANT (PPG)**

Is Project Preparation Grant requested?

- Yes ☒ If yes, PPG funds have to be requested via the Portal once the PFD is approved  
 No ☐ If no, skip this item.

**PPG AMOUNT REQUESTED BY AGENCY(IES), TRUST FUND, COUNTRY(IES) AND THE PROGRAMMING OF FUNDS**

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Programming of Funds	(in \$)		
					PPG (a)	Agency Fee (b)	Total c = a + b
UNIDO	GEFTF	Ukraine	CCM	CC STAR Allocation	50,000	4,500	54,500
<b>Total PPG Amount</b>					<b>50,000</b>	<b>4,500</b>	<b>54,500</b>

\*Agency fee of 9% is applied, as the total budget of the GCIP is over 10 mil USD.

#### PROJECT'S TARGET CONTRIBUTIONS TO GEF 7 CORE INDICATORS

Provide the relevant sub-indicator values for this project using the methodologies indicated in the Core Indicator Worksheet provided in Annex B and aggregating them in the table below. Progress in programming against these targets is updated at the time of CEO endorsement, at midterm evaluation, and at terminal evaluation. Achieved targets will be aggregated and reported at any time during the replenishment period. There is no need to complete this table for climate adaptation projects financed solely through LDCF and SCCF.

Project Core Indicators		Expected at PIF
1	<b>Terrestrial protected areas</b> created or under improved management for conservation and sustainable use (Hectares)	
2	<b>Marine protected areas</b> created or under improved management for conservation and sustainable use (Hectares)	
3	Area of <b>land restored</b> (Hectares)	
4	Area of <b>landscapes under improved practices</b> (excluding protected areas) (Hectares)	
5	Area of <b>marine habitat under improved practices</b> (excluding protected areas) (Hectares)	
6	<b>Greenhouse Gas Emissions Mitigated</b> (metric tons of CO <sub>2</sub> e)	Indicative expected results of 126,000 to 252,000 tCO <sub>2</sub> e of direct GHG emission savings and 630,000 to 1,260,000 tCO <sub>2</sub> e of indirect GHG emission savings over 10 years
7	<b>Number of shared water ecosystems</b> (fresh or marine) under new or improved cooperative management	—
8	Globally over-exploited <b>marine fisheries</b> moved to more sustainable levels (metric tons)	—
9	<b>Reduction</b> , disposal/destruction, phase out, <b>elimination</b> and avoidance of <b>chemicals of global concern</b> and their waste in the environment and in processes, materials and products (metric tons of toxic chemicals reduced)	
10	Reduction, avoidance of emissions of <b>POPs to air</b> from point and non-point sources (grams of toxic equivalent gTEQ)	
11	Number of <b>direct beneficiaries disaggregated by gender</b> as co-benefit of GEF investment	420 beneficiaries (at least 35% female consisting of: - 70 enterprises accelerated - 50 cleantech experts (judges, mentors)

		and coaches) trained and certified - 300 participants sensitized
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Provide additional explanation on targets, other methodologies used, and other focal area specifics (i.e., Aichi targets in BD) including justification where core indicators targets are not provided.



# PROJECT DESCRIPTION

## 1. Country Context

Ukraine is one of the most carbon-intensive countries in the Eastern European region (US EIA, 2014 Statistics), mainly due to its obsolete technology in the power generation and industrial facilities inherited from Soviet times. The country emitted about 323.36 million tCO<sub>2</sub>e, excluding Land Use, Land Use Change and Forestry (LULUCF), of greenhouse gas (GHG) in 2015 (UKRAINE 2050 LEDS, 2017), which is about 0.77% of the global GHG emissions. Ukraine ratified the Paris Agreement on 14 July 2016 and defined the target in its INDC with regards to the level of GHG emissions, by staying below 60% of 1990 level in 2030 (Ukraine INDC, 2016).

Ukraine's current energy strategy is laid out in the "Energy Strategy of Ukraine to 2035" (approved by Cabinet of Ministers of Ukraine Resolution of 6 June 2018, № 497-r), which has a core focus on mobilizing investments, increasing competitive markets, creating a more supportive investment climate for energy investments and the harmonization of Ukrainian legislation with a number of EU Directives. The strategy estimates that such a shift requires an investment of approximately USD 20 billion. Pursuant to this, the State Agency for Energy Efficiency jointly with other government bodies has to set up conditions for the implementation of a green bond market in Ukraine as an instrument for attracting investments into energy efficiency projects and submit respective legal regulation to the Government by 2019.

However, a step-by-step implementation plan for the strategy has not yet been developed and the Government needs further support to accelerate the transition to and mainstreaming of green finance. In spite of the growing interest, Ukraine has shown in the, the Ukrainian Government lacks the capacity to coordinate and scale-up the necessary efforts to achieve the foreseen goals. Ukraine has to address the institutional co-ordination issues that have hampered effective establishment, management and implementation of policies and regulations to support the development of clean energy markets. Likewise, the Ukrainian Government must build their capacity to create awareness on existing international best practices and the benefits of the green financing mechanisms among potential investors.

The challenges in the macro-economic situation after the 2014 recession have fed through into the financial sector and created significant headwinds for scaling up green investment. Banks have been unable to capitalize on the market opportunity and to build a sustained position in the green lending market. The restricted lending capacity of Ukrainian financing institutions has resulted in a mismatch between the available financial mechanisms and the needs of SMEs developing green project. The short to medium-time horizon of the available financial instruments clashes with the long-term nature of low carbon and clean technology projects. As a result, the level of non-performing loans in the country is very high (approximately 57% across the Ukrainian banking sector as a whole). Local banks often do not have the technical expertise to appraise low penetration climate technology projects that usually have high upfront investment costs. The perceived level of risk and credit default of these projects often results in higher interest rates and unfavorable investment conditions for project developers. Market penetration of low carbon and clean technologies in Ukraine remains to be typically low due to this and other awareness, financial, technical, legal and regulatory barriers.

## 2. Project Overview and Approach

- a) **Provide a brief description of the geographical target(s), including details of systemic challenges, and the specific environmental threats and associated drivers that must be addressed;**

Interventions under the project will target Ukraine at the national level. Ukraine has made some progress in the development of national environmental legislation and strategies, such as the Energy Strategy of Ukraine 2035, Ukraine 2050 Low Emission Development Strategy (LEDS), Action Plan on the Execution of the Concept of Implementation of State Climate Change Policy until 2030, Law "On Environmental Impact Assessment", efforts are still insufficient with limited effect. Some pieces of legislation remain in draft form or lack the necessary technical sub-regulations and implementing arrangements to make them effective. As a result, Ukraine did not achieve deployment of renewable energy targets by 5 times, achieving only 2% against 10.4% planned in 2018. Policy-makers should further develop the necessary primary and secondary regulations underpinning sustainable energy investment, particularly in relation to the Energy Strategy. Relevant EU Directives could be transposed and clear institutional arrangements should be introduced in order to improve the legal and business environment for international private capital.

The lack of awareness and understanding of the potential benefits of green financing represents one of the main barriers among potential borrowers and investors, who are often unaware of the actual payback periods associated with such investments and have a limited understanding of the co-benefits in terms of improved quality and productivity. Investment in low carbon and clean technologies may often be regarded as an opportunity cost at the expense of increasing production or new product development. Financial institutions are likewise initially risk-averse as they lack familiarity with the technologies, innovative financing schemes for SMEs (i.e. SME securitization) and processes being financed or are not aware of the types of projects in their wider lending portfolio that may be suitable for green finance.

In addition, analysis of 500 companies in the industrial and commercial sectors in Ukraine has revealed that access to finance, including high upfront investment costs of energy efficiency technologies and lack of capital, remains to be among the strongest barriers to deployment of energy efficiency technologies (World Bank 2014). The cost of finance remains to be high, mainly due to the foreign exchange loans exposed to the local currency risk and higher transaction costs, necessary for energy audits, monitoring, and feasibility studies. All of these features significantly contribute to reducing the attractiveness of green investments to many investors, generating a financial gap and reducing the overall funds available for low carbon and clean technology projects, especially in SMEs.

Similarly, the length of finance maturities available in Ukraine (on average, below 20 months) is too short for the potential payback periods for capital investment on clean energy solutions. It is commonly the case that collateral requirements for borrowers in Ukraine is up to 200 %, making it difficult for SMEs to access financing. In addition, a substantial part of the low carbon and clean technology projects that could benefit from green classification tend to be stand-alone projects of small to medium-scale (often below 1 million euro) whilst an average investment size project is not below 5 million euro.

To achieve the ambitious goals outlined in the Energy Strategy of Ukraine 2035, innovations and significant changes in public and private investment will be required in addition to the IFI funds, climate finance and donor programs. Commercial banks in Ukraine, unfortunately hardly manage to provide a robust financial mechanism that would improve the deployment of clean technology solutions to the desired level. Given the creditworthiness concerns of sectors such as communal housing, public building and municipal infrastructure, and many others, it is crucial to pool together the national and international funds to create financing market mechanisms that would be transformative in their size and scope. The summary of the barriers for SMEs are stated in table 1.

Table 1: Summary and description of barrier analysis.

Barrier	Description
<b>Policy, legal and regulatory barriers</b>	<p>The current policy and regulatory frameworks <u>neither support the demand for sustainable energy finance, nor cover innovative market mechanisms particularly suiting the needs of the SME sector</u> risk mitigation and management schemes that could increase and accelerate financing as well as incentivize low carbon and clean technology uptake; nor as the enforcement of renewable energy actions that would ultimately support the demand for sustainable energy finance. Among others, the current regulatory framework lacks the explicit potential incentives to support and stimulate market growth through both supply and demand side measures, including mechanisms to regulate additional cost of external verification, enhanced disclosure (in the case of green or low carbon bonds) and the participation of institutional investors and the capital market to indirectly stimulate demand, as well as credit enhancement for non-investment grade issuers. Furthermore, there is <u>need to align some of the green and low carbon investment instruments to international standards</u> (i.e. EU Green Bond Standard)<sup>1</sup>.</p>
<b>Capacity and technical barriers</b>	<p>At the institutional level, there remain significant weaknesses in the organization and capacity around sustainable energy planning in Ukraine. Government entities have limited national capacity to manage the planned energy transition and to mobilize finance at the necessary scale. <u>The absence of a platform to efficiently operationalize and leverage the various available green and low carbon financial instruments</u> hurdle their mainstreaming. National Actors like SFII, Ministry of Ecology, and Ministry of Finance are not fully aligned and coordinated along the green financing cycle. Furthermore, <u>private and public sector lack experience, knowledge and skills in clean technologies, low carbon projects and available market mechanisms</u>. In addition, organizations and SMEs lack expertise in identifying and developing bankable low carbon, energy efficiency, and clean technology projects and lack perception of the investment needs to make them risk profile manageable. The limited technical capacity makes it difficult for SMEs to apply for, and report on, green investments.</p>
<b>Financial barriers</b>	<p>Despite the large array of financial mechanisms, there are significant constraints for the uptake of clean technology and low carbon projects in the country. <u>Access of SMEs to green finance remains limited</u> mainly due to (i) the high cost of finance associate with the foreign exchange loans exposed to currency risk, (ii) very short length of finance maturities for clean energy technologies and (iii) high collateral requirements for borrowers. Therefore, traditional financing sources that are available today are insufficient, as a result, interest rates are higher and additional barriers are introduced. In general, there is <u>lack of innovative financing schemes for SMEs</u> that could help to leverage existing instruments as well as limited transparency in the conditions and the disbursements of the 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.</p>
<b>Awareness and knowledge barriers</b>	<p>There exists a <u>lack of awareness</u> in government sector about the potential of financial innovations and market mechanisms in accelerating low carbon economy development, along with a limited knowledge and awareness among project developers about the potential benefits from investments in cleantech solutions and low carbon projects. Similarly, there is a <u>lack of supportive sectoral and cross-sectoral cooperation and partnership</u> among SMEs, academia, finance and policy-making entities.</p> <p>SMEs lack knowledge of financing options and are often not up to date about the green facilities that they can access. This makes that new green financing products, for which there is a demand, may not succeed as the information does not reach the relevant target beneficiaries.</p>

<sup>1</sup> [https://ec.europa.eu/info/sites/info/files/business\\_economy\\_euro/banking\\_and\\_finance/documents/190306-sustainable-finance-teg-interim-report-green-bond-standard\\_en\\_0.pdf](https://ec.europa.eu/info/sites/info/files/business_economy_euro/banking_and_finance/documents/190306-sustainable-finance-teg-interim-report-green-bond-standard_en_0.pdf)

**b) Describe the existing or planned baseline investments, including current institutional framework and processes for stakeholder engagement and gender integration;**

To support Ukraine with its energy transition, several development projects are currently being implemented in the area of sustainable energy and low carbon economy.

In particular, the proposed project will be implemented in close coordination and collaboration with the ongoing Global Cleantech Innovation Programme (GCIP) in Ukraine under GEF 6, which is establishing and strengthening the cleantech innovation ecosystem in Ukraine by: (i) identifying and nurturing Cleantech innovators and entrepreneurs; (ii) building capacity within national institutions and partner organizations for the sustainable implementation of the Cleantech ecosystem and accelerator approach; and (iii) supporting and working with national and sub-regional policy makers to strengthen the supportive policy framework for SMEs and entrepreneurs through south-south collaboration. The Global Cleantech Innovation Index 2017 report included cleantech oriented financing mechanisms such as green bonds as an indication of inputs to innovation, representing a government policy supporting clean technology innovations. The proposed project will explore synergies with the GCIP Ukraine project during the PPG phase by matching innovative financing mechanisms with GCIP Ukraine finalists.

In addition, potential collaboration with the below-listed projects would be investigated during the PPG phase of the proposed project.

1. Resource Efficiency and Cleaner Production Center (RECPC): established in January 2013 with financial support from Switzerland and Austria, and technical assistance from UNIDO. This center is a registered NGO and in 2017 it was certified according to ISO 9001: 2015. RECPC contributes to the green modernization of Ukrainian economy through the introduction of a resource-efficient and cleaner production concept (RECP) at industrial enterprises. The Centre can provide technical advice for SMEs to help them increase economic efficiency, reducing industrial risks for people and negative footprint on the environment – all that due to technical solutions implementation.

2. Ukraine Sustainable Energy Lending Facility (USELF): (<http://www.uself.com.ua>) is an investment facility of up to EUR 140 million established by the EBRD in October 2010 for fostering renewable energy projects in Ukraine. USELF is structured to provide debt financing (loans) directly from the EBRD for small and medium projects with a simplified and rapid approval process, so reducing transaction costs. The program has received 200 project applications for renewable energy and by the end of March 2018 had signed loans comprising EUR 136.65 million. Nonetheless, the entry conditions of the facility are not feasible for SMEs. The provided loan scheme starts from 1.5 million euro and requires the potential applicants to prove track record and sound credit history, making it not suitable for small scale projects and start-ups. Developers have likewise to contribute not less than 30% of the investment needs themselves. The present proposal supplements the existing USELF facility by creating a financing mechanism tailored for cleantech solutions and low carbon technology projects, which will target a larger pool of investors and allow for longer payback periods in comparison to USELF loans.

3. The Energy Efficiency Fund of Ukraine (EEF) was founded in 2018 by the Government of Ukraine, European Union, Germany and International Finance Corporation. The Fund will be financing the implementation of projects for thermic modernization, implementation of effective monitoring and management systems, installation of effective heating and cooling systems and equipment as well as the replacement of existing systems for more effective ones. EU and Ukraine signed a EUR 50 million agreement to support pilot projects covering 15 homeowners' associations from 9 regions of Ukraine. Germany will additionally contribute EUR 15 million to the programme, while the Ukrainian government has also committed close to EUR 50 million to the Ukrainian Energy Efficiency Fund in 2018. Nonetheless, the instrument only provides funding for energy-efficiency measures in the

Ukrainian residential sector. Synergies between EEF and the present proposal will be sought during the PPG phase by joining efforts to raise awareness and support the introduction of the necessary energy efficiency standards and regulations.

4. Private Financing Advisory Network (PFAN): established in 2006, PFAN advises low-carbon, climate resilient business in developing countries, and matches projects to appropriate private financing. Since 2016, PFAN is hosted by UNIDO and REEEP. It has leveraged investment of over 1.46 billion USD, closed 102 projects, which annually mitigate over 3 million tCO<sub>2</sub>eq emissions. In 2019, UkrGasBank and Biogas Association in Ukraine became partners of PFAN. This partnership will allow members and clients to receive free coaching and investor matchmaking services in climate adaptation and clean energy projects. As of June 2019, PFAN program portfolio in Ukraine is 1 project in the amount up to 11.0 million Euros. The proposed project will seek synergies and close cooperation opportunities with PFAN during PPG phase in the implementation of Component 2.

5. Low Carbon Ukraine (LCU): the project is part of the International Climate Initiative (IKI) and implemented by the Berlin Economics. It is funded by the government of Germany to support the Ukrainian government with analysis and policy proposals to promote the transition towards a low-carbon economy and support the coordination of the Energy Strategy 2035 implementation. The initiative also provides support for the necessary preparatory work on the policy, analytical and technical aspects of the National Energy and Climate Plan. The proposed project will seek cooperation with LCU project in the implementation of Component 1 and the provision of inputs for the NECP, particularly in regard to the uptake of low carbon and clean technologies and the assessment of investments needs.

6. Finance and Technology Transfer Centre for Climate Change (FINTECC) in Ukraine: established in 2015 by EBRD, FINTECC Ukraine framework combines project financing, technical assistance, policy dialogue, and technical and incentive grants to support the development of an enabling environment for technology transfer. At the national level, the project addresses country-specific policy, financial, technical, and institutional barriers to technology transfer to create the conditions necessary for successful investment and technology deployment. As a result of FINTECC Ukraine, the Eco-labeling regulations for some types of equipment and associated green procurement rules were introduced in Ukraine. Similarly, the project piloted a GEF-funded performance-based ex-post incentive grant that was blended with EBRD direct bank financing and supported 10 pilot climate technology projects. Nonetheless, concessional finance and investment grants might lead to market distortion and do not provide a financial scheme that is sustainable in the long-term. Also, the EBRD procedures are complicated especially for SMEs. So only a small part of the enterprises can take advantage of the program capabilities. Furthermore, FINTECC project only provides incentive grants to the private sector to complement EBRD financing, often financing project preparation costs (energy audits, feasibility studies, etc.).

7. Climate Innovation Vouchers Program: (<http://innovoucher.com.ua>) financed by EU Neighborhood Facility, and implemented by EBRD and Greencubator, a 1 million Euro program that provides Ukrainian companies with an opportunity to receive grant funding for projects related to reducing energy use, greenhouse gas emissions, and intensity of production. The program provides grants in the amount of up to EUR 50,000 with a minimum 25% of co-financing. The program targets to support 50 SMEs companies by the end of 2019 in executing small scale clean technology innovations but does not address sustainably the barriers of access to green financing.

8. Competitive Energy Markets Program: a five-year USAID program started in August 2018 that aims to increase the resilience of energy supplies in Ukraine and to improve the legal and regulatory environment of the energy sector. The program will provide technical services to support private sector-



led energy investments to increase renewable energy generation in Ukraine. Specific tasks will include completing renewable generation energy assessments and developing financial incentives to facilitate private sector investment in renewable energy production.

9. Energy efficiency in companies: a five-year GIZ program started in 2017 that aims to initiate energy-saving modernization measures in Ukrainian companies. The project provides advice for companies on energy efficiency, (2) piloting energy efficiency measures, demonstrating the technical and economic feasibility of the solutions, (3) advises ministries and government sector on designing the incentive structures to enhance energy efficiency in companies. While GIZ project targets energy efficiency measures in companies, the proposed UNIDO project will provide support to SMEs with clean technology innovation and low carbon projects. During the PPG phase, the UNIDO project team will seek areas of cooperation with this project in designing the financing mechanism.

The above-mentioned projects and programmes will complement the activities of the proposed project; however, they lack specific mechanisms to promote SME green financing and specific measures necessary to create enabling environments and systematically address policy, institutional, financial, and technical and awareness barriers to encourage investment in low carbon and clean technologies.

In addition, UNIDO recognizes that gender equality and the empowerment of women have a significant positive impact on sustained economic growth and inclusive industrial development. Female entrepreneurship is considered a key tool in enabling women's empowerment. A guiding principle of the project will be to ensure that both women and men are provided equal opportunities to access, participate in and benefit from the project, particularly in the global challenges and competition as well as the post-accelerator support. Special efforts will be made to promote equal participation of women and men, both at managerial and technical levels, as consultants, participants, entrepreneurs, mentors, etc. in all stages of project implementation. A Gender Action Plan will be developed and the project log-frame will be developed to reflect key gender dimensions of the respective outputs, activities, indicators and targets. GCIP has already shown higher levels of women's participation than other accelerator and incubator programmes with 25% of the 860 alumni supported to date being women led enterprises. This project hopes to continue this trend and even to increase this proportion.

**c) Describe how the integrated approach proposed for the child project responds to and reflects the Program's Theory of Change, and as such is an appropriate and suitable option for tackling the systemic challenges, and to achieve the desired transformation with multiple global environmental benefits;**

The premise of the project is built upon stakeholder consultations and the conclusions and recommendations from the independent evaluation of GCIP projects by the GEO IEO, and so focuses specifically on identified areas for additional support, linkages and scaling up that will support transformational changes. The project will boost the identification and development of innovative cleantech SMEs by providing support to the entrepreneurs and SMEs at concept. The project will support Ukrainian innovators and entrepreneurs on the next step (post-accelerator) to link to financing to commercialize their products and services, and in turn transform the nascent cleantech market into a dynamic and vibrant one which will have a long-lasting positive effect in the national economy and the global environment. This will ensure that entrepreneurs with economically viable and transformative cleantech innovations are able to follow a continuum of support to commercialization and scale-up whilst being part of a cleantech community.

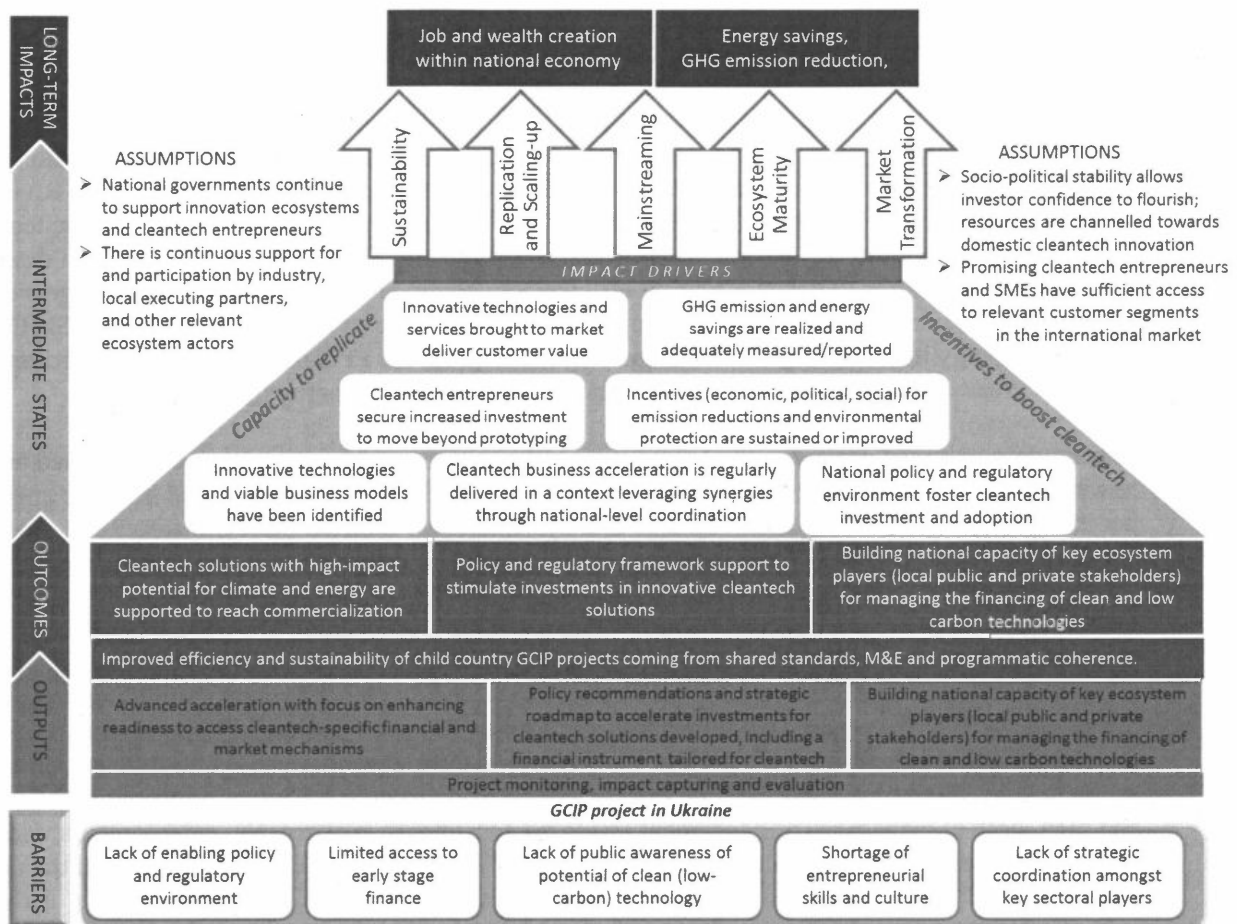


Figure 1 – Theory of Change

**d) Describe the project's incremental reasoning for GEF financing under the program, including the results framework and components.**

The project will play a critical and vital role in attracting innovative financing and accelerating the adoption of low carbon and clean technologies in Ukraine. In absence of the requested GEF support, the development of a low-carbon economy in Ukraine will be impeded by the presence of the barriers outlined above, particularly access to investments in low carbon and clean technologies. The finances, without innovative market mechanisms, necessary for investment in low-carbon development as defined in the Low Carbon Development Strategy of Ukraine, would not be tapped into efficiently within a reasonable timeframe. Moreover, SMEs access to green financing will remain hampered by the lack of capacities and suitable green financial instruments catering to the needs of low carbon and clean technology project developers.

The proposed project will jump-start innovative green finance mechanisms and strengthen local capacities in low carbon economy and PPP, thus stimulating low-carbon development growth. New low-carbon market mechanism innovations will be facilitated through targeted policy dialogue, dedicated technical assistance and training programme, backed by information outreach and knowledge exchange to improve investor confidence and reduce perceived risks associated with low-carbon projects. The project will provide grant funding to establish the designed green financial mechanisms, providing longer maturity periods and supporting 10 projects in the prioritized sectors and regions on a pilot basis. SFII, in its position within the new Low Carbon Green Fund Directorate, will provide co-financing and support the scale-up of

pilots upon their success. The ultimate result will be accelerated the transition towards a low-carbon economy in Ukraine, thereby contributing to the economic and social development of the regions, national energy transformation, and climate change mitigation efforts.

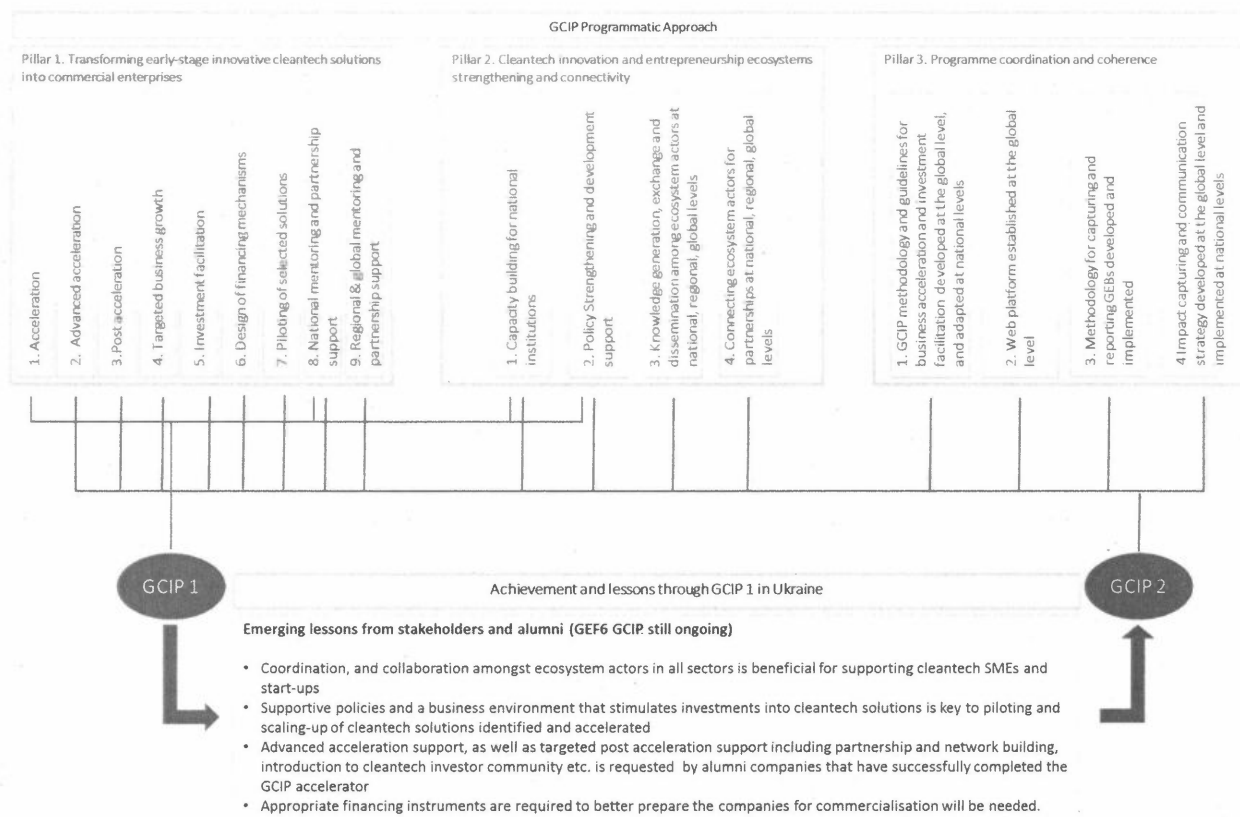


Figure 2 – Linkages from GCIP-1 to GCIP-2

Consistent with the UNIDO's mandate promoting inclusive and sustainable industrial development, the proposed project will introduce new market mechanisms that would lead to low-carbon economic growth in the country. These will contribute to increasing the competitiveness of the local industry and significant social-economic benefits across the country, as well as assist in future-proofing these against climate change risks through both investments in sustainable growth and the awareness these will raise about the importance of climate change mitigation.

### 3. Engagement with the Global / Regional Framework

Each GCIP Child Project is designed to contribute to the strengthening of a national cleantech innovation and entrepreneurship ecosystem of the country, and to catalyze transformational technology solutions to address environmental challenges.

The GCIP methodology is already proven as being successful in strengthening the cleantech innovative ecosystems in the partner countries, and this approach will be maintained as the core building block of GEF 7 GCIP, with some adaptations to take into account the feedback received in the Evaluation Report of the GEF Independent Evaluation Office. National context and priorities will be fully considered in refining the approach and methodology of Ukraine, in order to ensure that the child project maintains coherence with other GCIP child projects at the global level, and at the same time offer optimal interventions to achieve the priorities of Ukraine., especially by addressing the environmental barriers in agriculture and scaling up specific agro value chains.



In order to maximize the strength of GCIP's "plug & play" methodology, national components will be modularized as core building blocks to ensure that the GCIP can support each GCIP partner country. This will ensure coherence and standard maintenance across countries with the proven GCIP methodology.

Engagement with the global framework is integrated into all components of the project and will include all stakeholders. It includes the following main activities:

- **Methodologies, tools, guidelines and training systems:** These will be developed and harmonized at the global level and the Ukraine child project will focus on adapting these to the national circumstances.
- **Enterprise growth support, investment facilitation and cross border growth support:** Through global project, Ukraine enterprises specializing in renewable energy mini-grids with storage will be supported to expand their businesses to other countries. In addition, the global framework will provide investment facilitation services to Indonesia enterprises so that they can be linked to investors (impact, venture, angels, and commercial) at regional and global levels. Furthermore, the global framework will provide support to the Ukraine child project in establishing market enabling frameworks to support investments.
- **Targeted training, innovation policy support, knowledge management, and peer-to-peer networking and learning:** The global framework will provide methodologies for training national institutions, development of policies on cleantech innovation and entrepreneurship, and document best-practices. By linking policy makers, institutions, financiers and entrepreneurs across countries, the global framework will facilitate knowledge and best-practices and peer-to-peer networking and learning.
- **Program standards, communication and advocacy, and monitoring and evaluation:** to promote coherence and coordination across all GCIP countries, the global framework will develop program guidelines that will be applied by the countries. Through the global web platform that will be developed by the global framework, communications and advocacy will be promoted across countries. In addition, the global framework will develop methodologies for impact tracking and monitoring and evaluation that will then be applied across countries.

The outputs and outcomes from this child project will contribute to the overall project impact through the number of cleantech innovations, entrepreneurs and SMEs supported, value chain activities, finance mobilized and the resulting green growth, jobs created and GHG emission reductions. The following figure shows how the Global framework will support the child project and how the Ukraine project will feed into the global programme.



Figure 3 – Engagement between the global program and child project

## GEF 7 Core Indicator Worksheet

Use this Worksheet to compute those indicator values as required in Part I, item F to the extent applicable to your proposed project. Progress in programming against these targets for the project will be aggregated and reported at any time during the replenishment period. There is no need to complete this table for climate adaptation projects financed solely through LDCF and SCCF.

<b>Core Indicator 6</b>	<b>Greenhouse gas emission mitigated</b>					<b>(Tons)</b>
Indicator 6.2	Emissions avoided					
			Hectares			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
	Expected CO <sub>2</sub> e (direct)		126,000			
	Expected CO <sub>2</sub> e (indirect)		630,000			
	Anticipated Year		2030			
<b>Core Indicator 11</b>	<b>Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment</b>					<b>(Number)</b>
			Expected		Expected	
			PIF stage	PIF stage	MTR	TE
		Female	147			
		Male	273			
		Total	420			

# GEF-7 CHILD PROJECT CONCEPT

**CHILD PROJECT TYPE:** Full-sized Child Project

**PROGRAM:** Other Program

<b>Child Project Title:</b>	Promoting the transition to a circular economy in Uruguay through cleantech innovations
<b>Country:</b>	Uruguay
<b>Lead Agency</b>	UNIDO
<b>GEF Agency(ies):</b>	UNIDO (select) (select)

## INDICATIVE FOCAL/NON-FOCAL AREA ELEMENTS AND FINANCING

Programming Directions	Trust Fund	(in \$)	
		GEF Project Financing	Co-financing
CCM-1-4 Promote innovation and technology transfer for sustainable energy breakthroughs for cleantech innovation	GEFTF	1,303,162	15,250,000
<b>Total Project Cost</b>	GEFTF	<b>1,303,162</b>	<b>15,250,000</b>

## PROJECT COMPONENTS AND FINANCING

### Project Objective:

To accelerate the uptake of innovative cleantech solutions for climate action and sustainable and inclusive green value chains especially agriculture

Project Components	Component Type	Project Outcomes	Project Outputs	Trust Fund	(in \$)	
					GEF Project Financing	Co-financing
Component 1: Policy and regulatory framework strengthened	TA	1.1 Policy framework to promote cleantech solutions for low-carbon and circular economy in priority sectors (e.g. food systems, energy) strengthened.	1.1.1 Indicators to evaluate performance of circular and low GHG emission technologies are defined  1.1.2 Evidence based policy instruments developed on: (i) regulation to promote circular economy schemes and low-emission technology implementation in prioritized sectors; (ii) promotion of social and environmental responsibility within the target sectors; and (iii) the development of market opportunities  1.1.3 Policies for financial incentives developed and	GEF TF	75,288	1,000,000

			<p>guidelines for non-grant instruments established</p> <p>1.1.4 Financial mechanisms designed to promote investments in circular economy and low carbon technologies</p>			
Component 2: Cleantech innovation and commercialization capacities strengthened	TA	2.1 Investment and scale-up of innovative cleantech solutions and projects facilitated in priority sectors	<p>2.1.1 Innovative technology solutions for circular economy identified through GCIP Accelerator (priority sectors: food systems, agro-industrial waste, renewable energy, industry 4.0)</p> <p>2.1.2 Capacity needs assessment conducted for systematic promotion and acceleration of cleantech commercialization, including training and certification of cleantech experts</p> <p>2.1.3 Business plans for innovative cleantech solutions for circular economy developed/refined</p>	GEF TF	250,000	1,150,000
Component 3: Financing and demonstration of cleantech solutions for circular economy	TA	3.1 Innovative cleantech solutions for circular economy demonstrated in full-size scale in food system sector	3.1.1 Technical and financial feasibility studies conducted and business cases validated for piloting at least five cleantech solutions	GEF TF	285,000	4,000,000
	INV		3.1.2 Financing mobilized and at least two fully functional cleantech solutions implemented/commissioned	GEF TF	140,000	2,000,000

	TA	3.2 Innovative cleantech solutions for circular economy demonstrated in the renewable energy sector in full-size scale	3.2.1 Technical and financial feasibility studies conducted and business cases validated for piloting at least three cleantech solutions	GEF TF	205,000	4,000,000
	INV		3.2.2 Financing mobilized and at least two fully functional Power-to-X <sup>1</sup> plants commissioned	GEF TF	120,000	2,000,000
Component 4: Project monitoring, impact capturing and evaluation	TA	4.1 Project results and impacts captured and communicated  4.2 Project management, monitoring and evaluation	4.1.1 Awareness raising campaign conducted for circular economy concepts and tools, including the promotion of new and smart cleantech solutions and business models opportunities. 4.1.2 A web-based knowledge management platform created for the exchange of know-how and expertise on cleantech solutions for circular economy  4.2.1. Project efficiently and effectively managed, and evaluations conducted	GEF TF	109,405	1,000,000
Sub Total				GEF TF	1,184,693	15,150,000
Project Management Cost (PMC)				GEF TF	118,469	100,000
<b>Total Project Cost</b>					<b>1,303,162</b>	<b>15,250,000</b>

For multi-trust fund projects, provide the total amount of PMC in Table B, and indicate the split of PMC among the different trust funds here: ( )

#### INDICATIVE SOURCES OF CO-FINANCING FOR THE PROJECT BY NAME AND BY TYPE, IF AVAILABLE

<sup>1</sup> Power-to-X refers to solutions such as power- to-hydrogen and power-to-heat, which are able to address the short-term variability of renewable energy generation and also can help address seasonal variability, providing the option to store energy over longer periods of time. The process of converting the power generated from solar and wind sources to different types of energy carriers for use across multiple sectors, or to be reconverted back into power, has the potential to greatly increase the flexibility of the power grid.(IRENA, 07 November 2019, <https://www.irena.org/innovation/Solutions-for-a-Renewable-Powered-Future/Solution-XI-Power-to-X-solutions>).

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount (\$)
GEF Agency	UNIDO	Grant	Investment mobilized	50,000
GEF Agency	UNIDO	In-kind	Recurrent expenditures	150,000
Recipient Country Government	MIEM	In-kind	Recurrent expenditures	150,000
Recipient Country Government	MIEM	Grant	Investment mobilized	400,000
Donor Agency	MGAP Loan	Loan	Investment mobilized	3,000,000
Private sector	Industries (Power to X)	In-Kind	Recurrent expenditures	1,500,000
Others	Public Utility - UTE	In-kind	Recurrent expenditures	5,000,000
Others	National Oil Company - ANCAP	Grant	Investment mobilized	5,000,000
<b>Total Co-financing</b>				<b>15,250,000</b>

"INVESTMENT MOBILIZED" is defined as all kind of monetary and abstract support that an entity receives for operating, starting or expanding their business on clean technologies/ products/services. It can be grants, funds, soft loan, loan, joint venture capital, investment capital, tax incentives & tax exemption measures, bank guarantee, startup voucher, Innovation coupon, GAP fund, R&D fund, Self-investment, technical assistant, consultancy services, etc.

#### TRUST FUND RESOURCES REQUESTED BY AGENCY (IES), COUNTRY (IES), FOCAL AREA AND THE PROGRAMMING OF FUNDS

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Programming of Funds	(in \$)		
					GEF Project Financing (a)	Agency Fee (b)*	Total (c)=a+b
UNIDO	GEFTF	Uruguay	CCM	CC STAR ALLOCATION	1,303,162	117,284	1,420,446
<b>Total GEF Resources</b>					<b>1,303,162</b>	<b>117,284</b>	<b>1,420,446</b>

\*Agency fee of 9% is applied, as the total budget of the GCIP is over 10 mil USD.

#### PROJECT PREPARATION GRANT (PPG)

Is Project Preparation Grant requested?

Yes ☒ If yes, PPG funds **have to be requested via the Portal** once the PFD is approved

No ☐ If no, skip this item.

#### PPG AMOUNT REQUESTED BY AGENCY(IES), TRUST FUND, COUNTRY(IES) AND THE PROGRAMMING OF FUNDS

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Programming of Funds	(in \$)		
					PPG (a)	Agency Fee (b)	Total c = a + b
UNIDO	GEFTF	Uruguay	CCM	CC STAR Allocation	50,000	4,500	54,500
<b>Total PPG Amount</b>					<b>50,000</b>	<b>4,500</b>	<b>54,500</b>

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\*Agency fee of 9% is applied, as the total budget of the GCIP is over 10 mil USD.

#### PROJECT'S TARGET CONTRIBUTIONS TO GEF 7 CORE INDICATORS

Provide the relevant sub-indicator values for this project using the methodologies indicated in the Core Indicator Worksheet provided in Annex B and aggregating them in the table below. Progress in programming against these targets is updated at the time of CEO endorsement, at midterm evaluation, and at terminal evaluation. Achieved targets will be aggregated and reported at any time during the replenishment period. There is no need to complete this table for climate adaptation projects financed solely through LDCF and SCCF.

Project Core Indicators		Expected at PIF
1	<b>Terrestrial protected areas</b> created or under improved management for conservation and sustainable use (Hectares)	
2	<b>Marine protected areas</b> created or under improved management for conservation and sustainable use (Hectares)	
3	Area of <b>land restored</b> (Hectares)	
4	Area of <b>landscapes under improved practices</b> (excluding protected areas) (Hectares)	
5	Area of <b>marine habitat under improved practices</b> (excluding protected areas) (Hectares)	
6	<b>Greenhouse Gas Emissions Mitigated</b> (metric tons of CO <sub>2</sub> e)	Indicative expected results of 135,000 to 270,000 tCO <sub>2</sub> e of direct GHG emission savings and 675,000 to 1,350,000 tCO <sub>2</sub> e of indirect GHG emission savings at the end of project implementation
7	<b>Number of shared water ecosystems</b> (fresh or marine) under new or improved cooperative management	—
8	Globally over-exploited <b>marine fisheries</b> moved to more sustainable levels (metric tons)	—
9	<b>Reduction</b> , disposal/destruction, phase out, <b>elimination</b> and avoidance of <b>chemicals of global concern</b> and their waste in the environment and in processes, materials and products (metric tons of toxic chemicals reduced)	
10	Reduction, avoidance of emissions of <b>POPs to air</b> from point and non-point sources (grams of toxic equivalent gTEQ)	
11	Number of <b>direct beneficiaries disaggregated by gender</b> as co-benefit of GEF investment	600 beneficiaries (at least 35% female) consisting of: <ul style="list-style-type: none"> <li>- 75 enterprises accelerated and supported and</li> <li>- 25 cleantech experts (judges, mentors and coaches) trained and certified</li> <li>- 500 participants sensitized</li> </ul>



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

# PROJECT DESCRIPTION

## 1. Country Context

The National Climate Change Policy (PNCC), an instrument approved in 2016, which provides a long-term strategic framework to guide Uruguay's transformations to face the challenges of climate change and variability, and the National Environmental Plan for Sustainable Development identified the country's main environmental challenges in three dimensions:

- A healthy environment for a good quality of life: with a focus on environmental systems and the conservation of ecosystems
- Sustainable economic and productive activity: with a focus on productive processes and their link in the use and management of natural resources and their environmental impacts
- Environmental management and citizenship, with a focus on the generation of awareness and appreciation of the environment and nature, deepening educational and cultural transformations

One particular emphasis within the plan's framework, inspired by the 2030 Sustainable Development Agenda, is the promotion of an inclusive and sustainable economy for climate change mitigation. This principle will be achieved by promoting areas that align with the circular economy concept such as, clean energies, as well as preserving ecosystems and biodiversity, promoting sustainable use of land and resources, including the adoption of lifestyles in harmony with nature; and promoting sustainable production and consumption patterns.

Uruguay's emissions levels are strongly related to food production: using the metric GWP100 AR2, 79% of the total emissions in 2014<sup>2</sup> corresponded to the agricultural sector. In this sense, the reduction of emissions from food and beef production are priorities. Specifically, the NDCs establish under conditional to additional means of implementation the reduction of methane emissions in at least 75 % of dairy farms, through the utilization of technologies that eliminate discharges to water flows, the applications of good effluent treatments and/or by the adoption of nutrient recuperation systems.

Energy and transport are also among the NDCs' main priorities. On conditional specific means of implementation, a reduction of 29% in CO<sub>2</sub> emissions intensity per GDP unit in the Energy sector, including transport, and industrial processes, has been proposed. The National Energy Policy, adopted in 2005, promoted an important focus with regards to renewable energy. The incorporation of installed capacity of wind, biomass and photovoltaic solar energy along with hydropower, has reached almost all the national electrical power generation. This is expected to generate surpluses of approximately 2,000 GWh/year during the next 10 years. Therefore, there is an enormous opportunity to continue decarbonizing productive processes by using the renewable energy surplus the country has. Special attention will be given when studying synergies between food systems and the renewable energy surplus mentioned, allowing to reduce food system's fossil fuel consumption.

In this sense, and considering the root cause previously stated, this project will consider the following activities to decrease GHG emissions:

- Food Systems: The activities that will be prioritized are the production of value-added products from food systems' waste, the adoption of nutrient circularity, and the redesign of processes and products that aim to reduce wastes generation.

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<sup>2</sup> Retrieved from: Inventario Nacional de Gases de Efecto Invernadero 2014

- Renewable energy surplus application: This energy could allow for the decarbonization of other industrial processes. Special attention will be given to food systems, considering the impact that this productive value chain has in the country's GHG emissions.

## 2. Project Overview and Approach

- Provide a brief description of the geographical target(s), including details of systemic challenges, and the specific environmental threats and associated drivers that must be addressed;**

Barriers to accelerating action in the prioritized sectors can be categorized as below:

### Technical barriers

- Lack of specific technological options to consider innovative activities for creating value added products from waste or by-products from the agro-industrial chains. Traditionally, agro-industrial processes discard by-products and waste to landfill or treat them in a conventional effluent treatment system rather than transforming them into added value products. As a consequence, the in-country knowledge and development capacities in sustainable technological alternatives for these materials are limited.
- The in-country development capacities in sustainable technological alternatives for using the renewable energy surplus are limited. Innovative solutions for the integration of renewable energy surplus are still being explored, some technologies require significant technological transfer. Therefore, specific pre-feasibility studies are needed to adopt the best alternative.

### Capacity barriers

- There is a need to identify a portfolio of recoverable products with high added value and to acquire the knowledge for adopting technologies for viable opportunities. There are only a few studies with respect to by-products valorization because of the lack of alternative viable uses, destinations and market opportunities identified. With respect to the renewable energy surplus usage (Power to X), there are also opportunities to develop further studies to assess the technology that best could be capitalized. The necessity to discover the missing link in the productive chains and the capacities to promote the adoption of upcycling processes and Power to X technology also exists.
- There is a need to strengthen the relationship with university research centers, entrepreneurs and private sector financing, and to build awareness of nutrient waste circularity, byproducts valorization and to promote new technology implementation related to Industry 4.0.

### Policy and regulatory barrier

- There is a lack of adequate environmental indicators and regulations that favor alternative market destinations for by-products. The “Integral Waste Management Law”, recently approved, establishes a new regulatory framework regarding waste management. This new law will push agro-industrial food waste reduction, seeking to minimize the generation of waste at source, through the search for the efficiency of production processes, the application of best available technologies and the criteria of sustainable production and consumption. In this context, the development of a specific regulatory framework that incentivizes waste valorization policies under the umbrella of this new legislation will be needed.
- There exists room to develop new innovative economic incentives to promote related circular economic activities. Incentives for waste valorization, nutrient circularity systems or mechanisms that promote the substitution of renewable energy are not fully developed.

## Financial barriers

- There is a lack of financial instruments needed to promote a circular economy. It is necessary to identify adequate financial instruments for the local reality. Funds that assist specifically the target sectors related to a circular economic approach are not developed.
- Poor competitiveness of Small and Medium Enterprises (SMEs) and access to global markets: The engagement in technical/economic feasibility studies is key to develop new business model opportunities. Additionally, as viable opportunities are implemented, other sectors will be tempted to study further opportunities taking advantage of new innovative business models.

### **b) Describe the existing or planned baseline investments, including current institutional framework and processes for stakeholder engagement and gender integration;**

In order to increase productivity in a sustainable and inclusive manner, Uruguay has developed the National System of Productive Transformation and Competitiveness: “Transforma Uruguay” created in December 2016, through Law 19,472. The principal objective is promoting economic, productive and innovative development, with sustainability, social equity, environmental and territorial balance.

The country's overarching program is integrated by the Ministerial Cabinet of Productive Transformation and Competitiveness (8 Ministries: Foreign Affairs; Economy and Finance; Education and Culture; Industry, Energy and Mining (MIEM); Labor and Social Security; Livestock, Agriculture and Fisheries (MGAP); Tourism; Housing, Land Administration and the Environment (MVOTMA); and the Director of the Office of Planning and Budget (OPP), with ministerial status), the Secretariat of Productive Transformation and Competitiveness, and the Consultative Councils with the participation of 9 public agencies (ANDE, ANII, URUGUAY XXI, INEFOP, INACOOOP, CND, INIA, LATU, SNRCC). This institutional arrangement coordinates and monitors the actions promoted by the different state organizations. To achieve and guide its objectives, “Transforma Uruguay” developed a National Plan for Productive Transformation and Competitiveness (“Plan Nacional de Transformación Productiva y Competitividad”) for the period 2017-2021.

The Plan has integrated Circular Economy as a priority given its potential to generate new businesses and jobs by addressing climate change risks. Within the framework of this plan, and in line with the economic sectors prioritized by the Office of Planning and Budget (OPP), interdisciplinary work is carried out by the public, private and academic sectors, identifying early actions related to Circular Economy in the following areas: i) meat sector, ii) dairy sector, iii) forestry sector, iv) valorization of materials, v) product as a service and vi) food waste and packaging. Additionally, the Circular Economy Action Plan has been developed, which focuses on seven main axes: 1) Public procurement of food and packaging with a sustainable perspective, 2) Industrial transition towards a Circular Economy, 3) Design development of the Bioeconomy Technology Center, 4) Electric vehicles for the public sector, 5) Dairy farms’ nutrient circularity, 6) Strengthening of CE’s capacities, 7) Valorization of materials

Throughout the identification phase of the project, consultations were held with various stakeholders, such as the National Meat Institute (INAC), Chamber of the Chemical Industry, Plastic Technology Center (CTPlast), Chamber of the Construction Industry, Ministry of Housing, Land Use Regulation & Environment – National Environment Directorate (MVOTMA – DINAMA), Ministry of Livestock, Agriculture and Fisheries - Development and Adaptation to Climate Change Project (MGAP – DACC), Ministry of Industry, Energy and Mining - National Energy Directorate and National Industry Directorate (MIEM- DNE - DNI), Office of Planning and Budget (OPP), working group in Circular Economy of “Transforma Uruguay” (public, private and academic sector), University of the Republic (UDELAR),

Uruguayan Information Technology Chamber (CUTI), National Oil Company (ANCAP), Public Utility (UTE), Uruguayan Wind Power Association, National Development Agency (ANDE) and the National Institute of Statistics (INE).

Uruguay has been developing an institutional framework on gender in recent years. Through Law No. 18.104 of March 2017, the National Women' Institute was created as the governing body for gender policies in Uruguay, and the National Gender Council as a space for defining the strategic lines of public gender policies, integrating the State, the Academy and civil society.

Likewise, gender mechanisms have been created and strengthened at different levels of government. Commissions, divisions, gender secretariats or similar mechanisms have been created in Ministries, Public Entities and departmental governments. Some examples are the National Plan to Combat Gender-Based Violence and the Equity Quality Program as well as specific laws (Domestic Work Law, the Sexual Harassment Law, the Law of Parental Licenses and subsidies for care).

- c) Describe how the integrated approach proposed for the child project responds to and reflects the Program's Theory of Change, and as such is an appropriate and suitable option for tackling the systemic challenges, and to achieve the desired transformation with multiple global environmental benefits;**

The GEF-7 Climate Change Focal Area Strategy aims to support developing countries to make transformational shifts towards low emission and climate-resilient development pathways. This child project is fully aligned with the priorities of the GEF Climate Change Focal Area in its focus on innovation and technology transfer for sustainable energy breakthroughs, and therefore contributes to the overall impact of the program as shown in the theory of change in the below diagram.

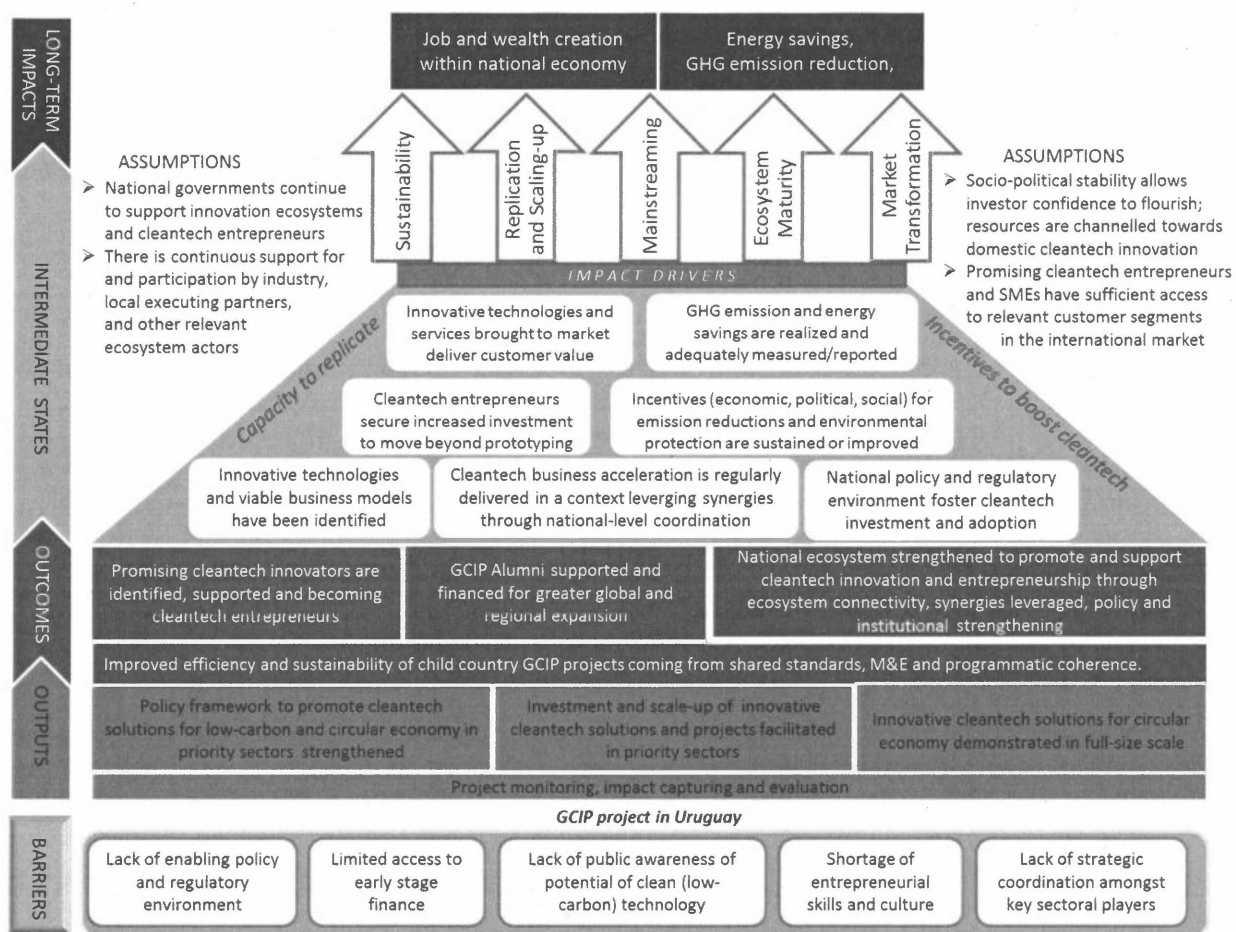


Figure 1 – Theory of Change

The child project directly supports this aim by enhancing the support for cleantech solutions, helping them to commercialize and scale, to contribute to a low emission development pathway nationally and globally.

Through the GEF funding, the child project for Uruguay seeks to address existing barriers for cleantech solutions to fully commercialize, and leverages untapped potential in reducing GHG emissions, in strengthened partnerships with the private sector interested in investing in clean technologies and missed opportunities for green economic growth and jobs.

**d) Describe the project's incremental reasoning for GEF financing under the program, including the results framework and components.**

The proposed child project will support the Government of Uruguay in its efforts to mitigate the emissions of greenhouse gases related to the food systems and energy sector into the environment. The project will demonstrate the feasibility for innovative cleantech solutions in priority sectors such as renewable energy, circularity in food systems etc.

Engaging in agro-industrial value-added processes will promote innovative schemes in the Uruguayan value chains. These processes, are not currently considered because of missing capabilities in the technological, knowledge and financing areas, barriers that this project aims to overcome. Undoubtedly, the synergy between an opportunity that already exists in the country of the renewable energy surplus and

the food sector, will boost sustainability. Moreover, symbiosis between Industry 4.0 and Circular Economy will be studied as a main priority, not only to improve efficiency on the productive value chains but also, to create new business models.

The focus of the project on the promotion of commercially viable clean energy technology innovations in Uruguay will have lasting positive effects on the global environment, as well as the development of a dynamic and vibrant local market for clean technologies. As a result, the promotion of clean energy technology innovations will allow a balance to be struck between growing economic activity and its global environmental impact.

In the case of no support from the GEF to assist Uruguay in removing the above-mentioned barriers, it is very likely that clean technology innovations will remain off the market; with entrepreneurs lacking the skills and support mechanisms to fully commercialize their products. Consequently, many opportunities to reduce GHG emissions, strengthen partnerships with the private sector interested in investing in clean energy technologies, and provide support to entrepreneurs and innovators seeking to establish commercial ventures in clean energy technologies would go unrealized.

### **3. Engagement with the Global / Regional Framework**

Each GCIP Child Project is designed to contribute to the strengthening of a national cleantech innovation and entrepreneurship ecosystem of the country, and to catalyze transformational technology solutions to address environmental challenges.

The GCIP methodology is already proven as being successful in strengthening the cleantech innovative ecosystems in the partner countries, and this approach will be maintained as the core building block of GEF 7 GCIP, with some adaptations to take into account the feedback received in the Evaluation Report of the GEF Independent Evaluation Office. National context and priorities will be fully considered in refining the approach and methodology of the GCIP for Uruguay, in order to ensure that the child project maintains coherence with other GCIP child projects at the global level, and at the same time offer optimal interventions to achieve the priorities of Uruguay, especially by addressing the environmental barriers in agriculture and scaling up specific agro value chains.

In order to maximize the strength of GCIP's "plug & play" methodology, national components will be modularized as core building blocks to ensure that the GCIP can support each GCIP partner country. This will ensure coherence and standard maintenance across countries with the proven GCIP methodology.

Engagement with the global framework is integrated into all components of the project and will include all stakeholders. It includes the following main activities:

- **Methodologies, tools, guidelines and training systems:** These will be developed and harmonized at the global level and the Uruguay child project will focus on adapting these to the national circumstances.
- **Enterprise growth support, investment facilitation and cross border growth support:** Through global project, Uruguay enterprises specializing in renewable energy mini-grids with storage will be supported to expand their businesses to other countries. In addition, the global framework will provide investment facilitation services to enterprises in Uruguay so that they can be linked to investors (impact, venture, angels, and commercial) at regional and global levels. Furthermore, the global framework will provide support to the Uruguay child project in establishing market enabling frameworks to support investments.

- **Targeted training, innovation policy support, knowledge management, and peer-to-peer networking and learning:** The global framework will provide methodologies for training national institutions, development of policies on cleantech innovation and entrepreneurship, and document best-practices. By linking policy makers, institutions, financiers and entrepreneurs across countries, the global framework will facilitate knowledge and best-practices and peer-to-peer networking and learning.
- **Program standards, communication and advocacy, and monitoring and evaluation:** to promote coherence and coordination across all GCIP countries, the global framework will develop program guidelines that will be applied by the countries. Through the global web platform that will be developed by the global framework, communications and advocacy will be promoted across countries. In addition, the global framework will develop methodologies for impact tracking and monitoring and evaluation that will then be applied across countries.

The outputs and outcomes from this child project will contribute to the overall project impact through the number of cleantech innovations, entrepreneurs and SMEs supported, value chain activities, finance mobilized and the resulting green growth, jobs created and GHG emission reductions. The following figure shows how the Global framework will support the child project and how the Uruguay project will feed into the global programme.





Figure 2 – Engagement between the global program and child project

## GEF 7 Core Indicator Worksheet

Use this Worksheet to compute those indicator values as required in Part I, item F to the extent applicable to your proposed project. Progress in programming against these targets for the project will be aggregated and reported at anytime during the replenishment period. There is no need to complete this table for climate adaptation projects financed solely through LDCF and SCCF.

Core Indicator 6	Greenhouse gas emission mitigated					(Tons)
Indicator 6.2	Emissions avoided					
			Hectares			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
	Expected CO2e (direct)		135,000			
	Expected CO2e (indirect)		675,000			
Core Indicator 11	Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment					(Number)
					Number Achieved	
			PIF stage	Endorsement	MTR	TE
				Female	210	
		Male	390			
		Total	600			

