Investing in energy efficiency to strengthen the cold value chain of small and medium enterprises

Part I: Project Information

GEF ID
10143

Project Type
MSP

Type of Trust Fund
GET

CBIT/NGI
- ☐ CBIT
- ☐ NGI

Project Title
Investing in energy efficiency to strengthen the cold value chain of small and medium enterprises

Countries
Afghanistan

Agency(ies)
UNIDO

Other Executing Partner(s):
National Environmental Protection Agency (NEPA)

Executing Partner Type
Government

GEF Focal Area
Climate Change

Taxonomy
Focal Areas, Climate Change, Climate Change Mitigation, Gender Mainstreaming, Gender Equality, Gender results areas, Financing, Technology Transfer, Energy Efficiency, Access to benefits and services, Gender-sensitive indicators, Women groups, Beneficiaries, Sex-disaggregated indicators, Demonstrate innovative approache, Influencing models, Strengthen institutional capacity and decision-making, Financial intermediaries and market facilitators, Private Sector, Stakeholders, SMEs, Non-Governmental Organization, Civil Society, Consultation, Type of Engagement, Awareness Raising, Communications

Rio Markers
Climate Change Mitigation
Climate Change Mitigation 2

Climate Change Adaptation
Climate Change Adaptation 0

Submission Date
3/2/2020

Expected Implementation Start
6/1/2020

Expected Completion Date
5/31/2025

Duration

60In Months

Agency Fee($)

125,508

A. FOCAL/NON-FOCAL AREA ELEMENTS

Objectives/Programs	Focal Area Outcomes	Trust Fund	GEF Amount($)	Co-Fin Amount($)
CCM-1-3	Promote innovation and technology transfer for sustainable energy breakthroughs for accelerating energy efficiency adoption	GET	1,321,141	9,711,000
		Total Project Cost($)	**1,321,141**	**9,711,000**

B. Project description summary

Project Objective

The project objective is to implement energy efficiency labeling for refrigerators and air-conditioning and engage private financing to invest in energy efficiency of cold value chain operated by small and medium enterprises.

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)
1. Legal framework and energy efficiency labeling	Technical Assistance	Outcome 1. Energy demand increase is mitigated compared to the business as usual baseline with energy efficient domestic and commercial equipment promoted with energy efficiency labeling	Output 1.1 Energy efficiency standards and labeling for refrigerators and air-conditioners (RAC) adopted by governmental institutes in line with Afghanistan Energy Efficiency Policy Output 1.2 Energy efficiency standards and labeling implemented	GET	162,283	700,000

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)
2. Leveraging private finance for energy efficient and safe cold value chain	Technical Assistance	Outcome 2 Investment agreement for energy efficient & safe cold value chains including distribution channels is agreed	Output 2.1 SMEs along the cold value chains trained for energy efficiency and safe handling of flammable refrigerant charged equipment	GET	108,133	2,764,400

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)
2. Leveraging private finance for energy efficient and safe cold value chain	Investment	Outcome 2 Investment agreement for energy efficient & safe cold value chains including distribution channels is agreed	Output 2.2 SMEs along cold value chains registered on SME and ozone office database and benefited from governmental and project technical, business and financial assistance services Output 2.3 Technical and financial assistance provided specifically targeting female entrepreneurs and female local investors mainly in the dairy sector Output 2.4 Partnership established with financial institutes providing green financing opportunities for cold value chains Output 2.5 Match making facilitated between investors and SME beneficiaries Output 2.6 Agreements reached for installment of energy efficient equipment along cold value chains for SMEs (50 agreements)	GET	825,652	4,765,370

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)
3. Project monitoring and evaluation	Technical Assistance	Outcome 3 Project monitoring and evaluation	Output 3.1 Baseline set and communication strategy mainstreamed Output 3.2 Project monitored Output 3.3 Independent Mid-term Review and Terminal Evaluation conducted	GET	128,340	800,000
				Sub Total ($)	**1,224,408**	**9,029,770**
Project Management Cost (PMC)						
				GET	96,733	681,230
				Sub Total($)	**96,733**	**681,230**
				Total Project Cost($)	**1,321,141**	**9,711,000**

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

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount($)
Government	Afghan National Standard Authority (ANSA)	In-kind	Recurrent expenditures	1,725,600
Government	same as above	Grant	Investment mobilized	1,200
CSO	Afghanistan Women Chamber of Commerce and Industry (AWCCI)	In-kind	Recurrent expenditures	477,600
Government	Ministry of Agriculture, Irrigation and Livestock	In-kind	Recurrent expenditures	658,800
Government	same as above	Grant	Investment mobilized	2,850,000
Private Sector	Mido Dairy Production Co. Ltd	In-kind	Recurrent expenditures	243,600
Government	Ministry of Energy and Water	In-kind	Recurrent expenditures	874,800
Government	Ministry of Industry and Commerce	In-kind	Recurrent expenditures	874,800
Government	same as above	Grant	Investment mobilized	3,600
Government	National Environmental Protection Agency (NEPA)	In-kind	Recurrent expenditures	996,000
Government	same as above	Grant	Investment mobilized	852,000
GEF Agency	UNIDO	Grant	Investment mobilized	153,000
			Total Co-Financing($)	**9,711,000**

Describe how any "Investment Mobilized" was identified

The co-financing commitment identified for the private sector is estimated based on their contributions to the project including their time for submitting corporate and financial documents needed for the investment pre-due diligence. It is expected more co-financing contributions from all identified companies will be added in due course. The assumptions

and estimation are described in the attached excel file found in the co-financing letter files. The investment of the National Environmental Protection Agency is to be made by the vehicle maintenance cost and staff working time dedicated for training and project-related activities. The investment to be made by the Ministry of Industry and Commerce as well as the Afghan National Standard Authority is from the maintenance cost of a vehicle to be used for project-related activities. The investment by the Ministry of Agriculture, Irrigation and Livestock comes from the budget to install new cold storages across the country in the coming years.

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

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount($)	Fee($)
UNIDO	GET	Afghanistan	Climate Change	CC STAR Allocation	1,321,141	125,508
				Total Grant Resources($)	**1,321,141**	**125,508**

E. Non Grant Instrument

NON-GRANT INSTRUMENT at CEO Endorsement

Includes Non grant instruments? **No**

Includes reflow to GEF? **No**

F. Project Preparation Grant (PPG)

PPG Required

☐

PPG Amount ($)

48,000

PPG Agency Fee ($)

4,560

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount($)	Fee($)
UNIDO	GET	Afghanistan	Climate Change	CC STAR Allocation	48,000	4,560
				Total Project Costs($)	**48,000**	**4,560**

Core Indicators

Indicator 6 Greenhouse Gas Emissions Mitigated

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO_2e (direct)	0.38	1264563	0	0
Expected metric tons of CO_2e (indirect)	0.89	4554281	0	0

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

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO_2e (direct)				
Expected metric tons of CO_2e (indirect)				
Anticipated start year of accounting	2023			
Duration of accounting				

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

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO_2e (direct)	0.38	1,264,563		
Expected metric tons of CO_2e (indirect)	0.89	4,554,281		
Anticipated start year of accounting	2023	2020		
Duration of accounting		15		

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

Total Target Benefit	Energy (MJ) (At PIF)	Energy (MJ) (At CEO Endorsement)	Energy (MJ) (Achieved at MTR)	Energy (MJ) (Achieved at TE)
Target Energy Saved (MJ)		2,730,225,000.00		

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

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

Indicator 9 Reduction, disposal/destruction, phase out, elimination and avoidance of chemicals of global concern and their waste in the environment and in processes, materials and products (metric tons of toxic chemicals reduced)

Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)
0.00	0.00	0.00	0.00

Indicator 9.1 Solid and liquid Persistent Organic Pollutants (POPs) removed or disposed (POPs type)

POPs type	Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)

Indicator 9.2 Quantity of mercury reduced (metric tons)

Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)

Indicator 9.3 Hydrochloroflurocarbons (HCFC) Reduced/Phased out (metric tons)

Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)

Indicator 9.4 Number of countries with legislation and policy implemented to control chemicals and waste (Use this sub-indicator in addition to one of the sub-indicators 9.1, 9.2 and 9.3 if applicable)

Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)

Indicator 9.5 Number of low-chemical/non-chemical systems implemented, particularly in food production, manufacturing and cities (Use this sub-indicator in addition to one of the sub-indicators 9.1, 9.2 and 9.3 if applicable)

Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)

Indicator 9.6 Quantity of POPs/Mercury containing materials and products directly avoided

Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)

Indicator 11 Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment

	Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
Female	4	100		
Male	16	400		
Total	20	500	0	0

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

Indicator 6: The direct emissions have been revised to include other equipment savings besides refrigeration. The indirect emissions were increased as the calculation included the possible emission reduction from the dairy and cold storage sectors in addition to food loss which could be avoided as a result of the investment leveraged by this project. Indicator 6.1 was not indicated because this indicator is not relevant for this project which has no direct emission reduction from AFOLU. The details of the estimated global benefits are described in the GEF Tool excel file attached to this submission. Indicator 9: HCFC could be phased out for the companies (those established after 2007) which are not qualified for the MLF funding, but it can not be estimated at the time of drafting this project document. This indicator would be reported as co-benefit. Indicator 11 is defined as the number of beneficiary individuals working in SMEs operated by male or female managers. The total number of SMEs/investors operated by female and male managers are 10 and 42, respectively.

Part II. Project Justification

1a. Project Description

The major change from the original PIF is described in the following table.

Changes in CEO Endorsement Document	Justifications
1. There are now 6 outputs in Outcome 2	The two additional outputs are Output 2.2: SMEs along cold value chains registered on SME and ozone office database and benefited from governmental and project technical, business and financial assistance services This output is added to align this project's activities with another UNIDO initiative to promote impact investment on small and medium enterprises (SMEs) in emerging economies. This impact investment aims at standardizing the SME registration data in UNIDO, and requires special attention to ensure the results are aligned. Output 2.3: Technical and financial assistance provided specifically targeting female entrepreneurs and female local investors mainly in the dairy sector. The latter output is a gender-specific output supporting female entrepreneurs who face some administrative and technical barriers. This output raises the gender rating of this project from 1 to 2A according to UNIDO's Strategy for Gender Equality and the Empowerment of Women.
2.The budget allocation between outcomes has been changed from those in the PIF.	The budget for Outcome 1 is slightly increased to roll out the energy efficiency labelling in more locations than planned in the PIF. The M&E budget for Outcome 3 is increased in order to retain enough budget for the security situation which might become as deteriorated as the second half of the year 2019 (16 days of the restriction of UN staff movement since 24 Nov 2019)
3.GIZ is not involved in this project.	During the PPG, GIZ informed that its planned activities to promote energy efficiency have been taken off the priority list, and therefore GIZ is no longer in the co-financing list of this project.

4.ESCO business model will be promoted.	ESCOs are not yet introduced in Afghanistan. Despite that, UNIDO initiated a procurement process to call for expression of interest in the area of ESCO service. UNIDO received responses from 6 companies and had conference calls with all the companies. These companies' main business models are the provision of renewable energy equipment, and some do provide financial services by themselves or partner with financial intermediaries. One or two engineering companies offer energy audit and technical advice on how to improve energy efficiency mainly in residential buildings but their service fees are fixed and no performance-based fee structures are offered. With this information, UNIDO would like to re-emphasize its position that the ESCO service market does not exist in Afghanistan. The challenges of developing an ESCO market include: · Low energy price in many countries (which make up a small percentage of total customer costs) · Lack of familiarity with performance-based contracts in some areas.(For instance, the ESCO services are based on the long term agreements that usually SMEs are not familiar with) · Vague laws + unstable governments' energy policies. · Harmful economic conditions. · Lack of a reliable M&V institute that customer trust Most of the above challenges are major barriers for Afghanistan in introducing the ESCO business model. However, what the project could offer as part of Output 2.4 is to provide energy and financial service companies with ESCO business model training opportunities. Some of the energy companies have financial experts offering financial services that lower the burden of their clients. It is time for Afghanistan to develop an ESCO market under the assumption that the country will follow its predicted economic development trajectory.

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

1. The information given in the PIF is not repeated below.

2. Lower-income countries like Afghanistan, that as a primary concern seek to meet their development objectives, must at the same time urgently alleviate the increase in their power demand as their economies evolve. If not, the country will not meet its national contribution to the climate goals of the Paris Agreement.

3. Over the past forty years, armed conflict and unrest have destroyed the country's infrastructure. Under investment in the country means the population and the economy are almost entirely dependent on agricultural production, mainly subsistence farming including dairy production, which along with water and energy systems are among the most vulnerable to climate change.

4. Agriculture is both a source of income and a source of nutrition for the local population; and importantly a high potential export sector for the general economy. It is also a significant opportunity for women workers and entrepreneurs; for example, approximately 50% of milk collectors are women and often employed by SMEs. It is therefore critical to implement climate change mitigation measures and reduce energy demand in the agricultural sector, which is responsible for 64.3 percent of total greenhouse gas emissions (Land-Use Change and Forestry being 18.8 percent, and Energy 16.2 percent respectively).

Table 1. Total net emission of greenhouse gasses (GHGs for Afghanistan in 2013)

GHG	Amount of emission	Percentage of total Gg CO_2e
CO_2	20,395 Gg of CO_2	33.9
CH_4	18,684 Gg CO_2e	31.0
N_2O	21,158 Gg CO_2e	35.1
Total	**60,237 Gg CO_2e**	

Table 1: National greenhouse gas inventory (Second National Communication under the United Nations framework convention on climate change)

5. According to various studies, it is expected that the urban population in Afghanistan will double within the next 15 years. Urban areas are found to consume approximately 70 percent of the country's energy and produce nearly half of its CO2 emissions. Rapid urbanization will predictably increase demand for electricity. At the same time developing industrialization will also result in an increase of the overall emission of GHGs, mainly from fuel combustion used in different types of industry, mineral products, chemical industry, and metal production. With so much dependency on agriculture and the potential for increases in GHGs from other parts of the economy it is important to address farm to fork value chains and in particular the development of an energy efficient cold chain within Afghanistan.

6. This GEF project aims at developing energy efficient and safe cold value chains. Cold value chains could (i) avoid food loss therefore preserving agricultural water for the same economic output, (ii) prolong shelf lives of agricultural produce allowing farmers to trade for preferred market conditions, (iii) keep the nutritions of the produce intact, and (iv) boost export of the produce to neighboring countries and beyond. In fact, according to the Ministry of Agriculture, Irrigation and Livestock, the cold storages for agricultural produce with more than 33,000 tons capacities are operated by the private sector and they are expanded very rapidly in the coming years. The majority of the cold storages in the country are powered by the electricity grid system (32,000 tons) backed up by generators.

7. Most of the cold storages are being operated based on older refrigeration systems using conventional high global warming potential and ozone-depleting potential refrigerants. Upgrading existing cold storage technology to energy efficient and safe refrigeration systems as well as investing in new modern clean energy powered installation would be critically needed to avoid locking-in high greenhouse gas emissions.

8. The Afghanistan Energy Efficiency Policy (AEEP) identifies energy efficiency opportunities for cooling and refrigeration and proposes i) that "100% of all new cooling appliances and equipment manufactured or imported in Afghanistan is to meet minimum energy performance and quality standards" and ii) "100% of all new cooling domestic

appliances and equipment manufactured or imported in Afghanistan will meet and display energy efficiency labelling criteria." DABS, Da Afghanistan Breshna Sherkat is an independent and autonomous company established under the corporations and limited liabilities law. DABS objective is to provide reliable power for reasonable prices in order to facilitate national economic growth. Da Afghanistan Breshna Sherkat is responsible to manage all the revenue generated from electricity distribution throughout the country. The management, transmission and distribution and sales are the main responsibilities of Da Afghanistan Breshna Sherkat in the country. DABS has activities on the implementation of AEEP, once approved, in addition to renewable energy tasks. In this area, DABS directly reports to the Presidential Office.

9. Energy efficient cooling systems are now a national priority in urban areas such as Kabul and Herat that embrace food processing factories and cold storage businesses; to provide safe and high-quality food, both imported and exported, as indicated in AEEP.

Table 2. List of cooling related energy efficiency potentials identified in Afghanistan Energy Efficiency Policy

Process/Equipment	Efficiency improvement measures	Efficiency improvement potentials
Cooling and refrigeration in industrial processes	System optimisation	8.0%
	Improved process measuring and control	5.0%
	Improved insulation	5.0%
Space conditioning alternative technology in public buildings	Variable air volume HVAC	Up to 50%
	Building Management System	Up to 25%
	Variable Frequency drives on air handling units	Up to 30%
Space cooling alternatives in household	Air source heat pump	Up to 50%
	Advanced heat pump	Up to 70%
	High efficiency ceiling fans	Up to 20%
Whitegoods appliances	Efficient appliance	Up to 50%
	Best available technology appliance	Up to 70%

10. A “cold value chain “is defined as the specific supply chain scheme which requires that all elements of perishable product processes are carried out under prescribed low temperatures to ensure the safety and the quality of the product. As such, inefficiencies within the supply chain result in the perishable product becoming spoilt and being wasted.

For example, over 40% of all foods require cooling (Meneghetti and Monti, 2014) and according to the Rockefeller Foundation, 42% of fruits and vegetables in developing regions spoil before they can be consumed due to the absence of proper refrigeration.

11. The "Cold value chain" should function correctly serving different temperature ranges to ensure the safety and the quality of the product from farm to fork.

Table 3: Temperature ranges and products transported through cold value chains

Temperature ranges	Deep-frozen products	Frozen food	Chilled food	Low temperature	Moderate temperature	High temperature
	<-25°C	-25 < -20 °C	-20 < -1.5 °C	-1.5 < 6 °C	6 < 12 °C	12 < 16 °C
Products	Meat and seafood	Ice cream	Fresh meat, poultry and fish, dairy products	Fresh fruits and vegetables	Harder fresh fruits and vegetables	Tropical and water retaining fresh fruits and vegetables

12. Both food safety and safety of the cold value chain will over the next decade be one of the priorities as Afghanistan and its neighbouring countries economic and trade policies mature. Indeed, after ratification of the Kigali Amendment by Afghanistan, safety and efficiency will be forefront in the negotiation for funding for infrastructure and transportation projects. As such, inefficiencies, lack of safe handling/maintenance and/or disconnection within the supply chain that result in the food becoming spoilt and being wasted will be targeted.

13. The key barrier to safe and efficient cold value chains is the knowledge and substantial funding. Public funding by the international donors is available, including the Multilateral Funds (MLF) managed by UNIDO. Under the current MLF conditions, however, SMEs incorporated before 2007 are not qualified for support; leaving a challenging and counterproductive shortfall in the financial support system. Looking closer, private finance for SMEs in the cold value chain in Afghanistan is not made business friendly due to high interest rates and short financing cycles reflecting the high risks associated with Afghanistan’s political situation.

14. This GEF project is to address and enhance the safety and energy efficiency of the cold value chain by de-risking investment for private investors best suited to intervene in the market.

b. The baseline scenario and any associated baseline Programs;

Baseline scenario

15. This project is designed to identify, develop and stimulate the application of low-carbon, energy efficient refrigeration technologies and business practices for use throughout different sectors of cold chain in Afghanistan. In addition, it facilitates the establishment of partnerships with the private sector and collaboration with financing institutions for the promotion of investment and support of best available energy-efficient design technologies and practices transfer. It would be a holistic measure to build adaptability and mitigate some of the drivers of global environmental challenges in addition to building the resilience of the vulnerable economy in Afghanistan. In doing so, another value added by this project is to involve local communities of the investors. This involvement is critical to sustain the alignment of the private financing to promote low-carbon and energy efficient refrigeration technologies in the post-project period.

16. Cooling systems are a substantial part of the market and according to the economic models, it is forecasted to grow rapidly during the next years. According to a new econometric model developed by the Economist Intelligence Unit (EIU) that has been commissioned by the Kigali Cooling Efficiency Program (K-CEP) total market value of cooling equipment could reach almost US$170bn in 2030, up from $135bn in 2018 in the world. This globally growing pattern is also subject to Afghanistan as an underdeveloped country. In addition to the temperature and heatwaves which are natural consequences of climate change in the world, an increase in electricity access, urbanization, and income are the most influential drivers of cooling demand in Afghanistan.

17. Reviewing the national development plans and comparing it with the similar developing countries in the reign is indicating that the country is in a transition way to establish infrastructures that simultaneously could have global and national environmental and socio-economic consequences. Comparison of the electricity consumption in Afghanistan and European countries shows that in spite of rapid growth that has been reported during the last decade, some necessary infrastructures are not developed yet.

Table 4. Energy consumption in Afghanistan

Electricity	Total	Afghanistan per capita	Compared to Europe per capita
Own consumption	5.53 bn kWh	148.66 kWh	5,510.65 kWh
Production	1.21 bn kWh	32.58 kWh	5,924.84 kWh
Import	4.40 bn kWh	118.37 kWh	729.88 kWh

18. Most cooling systems are powered by electricity, so increased usage increases demand on power grids. Meeting the growing demand for cooling services without compromising climate change goals, not only needs to develop more efficient and less carbon-intensive forms of power, but also require substantial investments in energy-efficient cooling solutions that are affordable and accessible for all stakeholders. In the other words, sustainable cooling is a fundamental part of the energy transition.

19. At the moment in Afghanistan, there is no master plan for developing the cold chain, synchronized into multi-sector and multi-stakeholder development strategies and fostering cooperation within the value chain. To support the current cooling gap and meet future demand without dramatically increasing emissions, this project is seeking a multi-dimensional strategy to combine efficient technologies, shift to lower-impact gases, and smarter use of design through different mechanisms of standard-setting and labelling, capacity building and investment promotion modalities.

20. In a small survey conducted during the PPG phase, no energy efficiency labels were found on any of the 15 air conditioners which were manufactured by major manufactures imported from more than 4 countries. Whilst for refrigerators among the 31 refrigerators, 7 refrigerators imported from Turkey had EU/Iran-type energy efficiency labels. An additional 6 refrigerators had UAE type energy efficiency labels on the equipment imported from the United Arab Emirates and Thailand. In total o% of the imported air-conditioners and 42% of the imported refrigerators had energy efficiency labels following foreign energy efficiency standards.

Baseline projects

21. In addition to those identified in the PIF, the following baseline projects have been updated or assessed for synergies with this GEF project.

Ministry of Agriculture Irrigation and Livestock

22. Under the oversight of the Afghan Ministry of Agriculture, Irrigation, and Livestock (MAIL), there are more than 30 cold storages operated by the private sector for the purpose of storing vegetables, fruits and chicken meats. The majority of the storages are powered by the power grid/generators. In the next two years, MAIL plans to build 248 cold storage facilities in Afghanistan worth approximately 40 million US dollars. The ministry’s development budget funds the program, and the cold storage capacity will reach up to 50, 000 metric tons. 20% of these facilities would be built in key provinces of Kandahar, Kunduz, Balkh, Herat, and Nangarhar. According to the information by MAIL, around USD 700mn is needed to establish cold storage facilities with a total storing capacity of 260,000 to meet the countrywide need for these facilities. At the same time, the Academy of Sciences of Afghanistan requested the government to build the facilities according to international norms and standards. MAIL will align its cold storage operation and new installment with this GEF project's goals and activities.

USAID - The Commercial Horticulture and Agricultural Marketing Program (CHAMP)

23. The total value of the project (2010-2019) is $71 million. It Facilitated 92,000 metric tons of fresh and dried fruits and nuts exports, estimated at $125 million since 2010. Some 38,400 households got benefits from the Establishment of commercial orchards and export high-quality produce. Furthermore, 19500 farmers have been supported to plant nearly 2.9 million fruit saplings, pomegranates, and grapes-rooted cuttings and converted 6,170 hectares of land previously for cereal crops to fruit orchards and vineyards. Approximately 2,900 farmers increased yields more than 100 percent after trellising 600-hectares of existing vineyards in Kabul, Parwan, Logar, Ghazni, Zabul, Helmand, and Kapisa Provinces. In partnership with farmers, established more than 230 improved raisin-drying facilities and cold rooms for apples. This GEF project will work with the cold storage and transportation companies in terms of using energy-efficient equipment and capacity building of people who are responsible for maintenance.

UNIDO - Investment and Trade Promotion Office in Bahrain

24. UNIDO ITPO Bahrain through its Arab International Center for Entrepreneurship & Investment attempts to institutionalize an Enterprise Development & Investment Promotion (EDIP) Center in cooperation with UNIDO country office and the Ministry of Trade & Commerce in Kabul, Afghanistan. The EDIP follows a package approach aiming at developing entrepreneurial capabilities of MSMEs including start-ups and existing entrepreneurs. Its main function is to promote and facilitate domestic investments, thus creating the foundation for growing foreign direct investments and the prerequisites for flourishing trade and economic growth. A special focus of the EDIP Program will be laid on the enabling young and female entrepreneurs in expanding their businesses. It will undertake a series of capacity building programs including business development support in order to strengthen MSMEs competitiveness. The implementation of the programs will be ensured by qualified trainers who will be trained on the mechanisms of the EDIP in order to realize latent potentials among MSMEs. Among the trainers, Business Counselors will be equipped with the necessary know-how to counsel and monitor the MSMEs, thus to ensure performance improvement and enterprise growth. With technical and technological capacities of MSMEs developed by this UNIDO ITPO Bahrain project in the refrigeration sector into the training while simultaneously stimulating their entrepreneurial capabilities, more private finance can be leveraged towards the energy efficient and safe cold value chains.

Group for the Environment, Renewable Energy and Solidarity (GERES)

Project: Energy-saving solutions in rural Afghanistan

25. GERES, in 2014 with the support of the French development agency, launched this project in Bamyan, where the temperature sometimes falls up to -20 Celsius in winter (GERES). GERES target aims for the project to Increase the interest in Energy Saving Solutions (ESS) through awareness and campaigns at the community and school level. GERES, through the project, was focusing on Strengthening small entrepreneurs in the private sector by providing technical, business management, and marketing support. Furthermore, GERES was Identifying the vulnerability and resilience capacities of communities to climate change. Additionally, GERES Started links between governmental and non-governmental stakeholders through providing and transferring knowledge, experience-sharing, awareness-raising, and institutional dialogue. This GEF project will invite beneficiaries through this network and reflect the lessons learned from this project into the GEF project's activities.

Regional Agricultural development Program (RADP East)

26. The Regional Agricultural Development Program – East (RADP-E) is a USAID funded program for five years (2016-2021). The design of this program aims to address the demand for agricultural goods and services through a partnership with the private sector. And to develop inclusively, growth-oriented Apricot, Dairy, Poultry, and Tomato value chains in the central and eastern provinces of Ghazni, Kapisa, Laghman, Logar, Nangahar, Parwan, Wardak, and Kabul. RADP-E will provide technical services to increase the competitiveness of selected value chains, expand the number of enterprises that can compete and upgrade products and services in selected markets and improve relationships and linkages between those firms and other market participants throughout the value chain, to boost agricultural-led economic growth in targeted provinces and value chains. This GEF project will circulate the project's announcement targeting female individual business owners through the network of this project for Output 2.3.

Building up cold vaccine chain in Afghanistan

27. Medical Systems refrigerator is a refrigerator designed by B Medical Systems to store large quantities of life-saving vaccines in optimal conditions even in the most off-grid areas of the world. Within its immunization campaign, the Afghan Ministry of Public Health has purchased a total of 450 TCW 2043 SDD under the Expanded Program on Immunization of UNICEF. B Medical Systems' local partner – Quraishi Group – collaborates with the Ministry, the national EPI representatives, and the health facilities to coordinate the delivery and the installation of the vaccine refrigerators. The technicians also provide on-site training and carry out the maintenance of the vaccine cold chain equipment. This GEF project will identify SMEs servicing for the cold value chain in the health sector as beneficiaries of this project.

USAID project, "Agricultural Credit Enhancement Phase-II (ACE-II)

28. The project supported the Agricultural development fund with the amount of over $50 in lending to the agricultural sector. As of the end of March 2019, 11,026 beneficiaries have been supported to gain access to agricultural lending products. This GEF project will identify SMEs servicing for the cold value chains.

c. The proposed alternative scenario with a brief description of expected outcomes and components of the project;

29. Building on the baseline scenario and baseline projects, this GEF project will carry out the following project activities aiming at putting the national energy efficiency policy and labelling in place. In updating the work plan at the beginning of every year, the logframe is reviewed by referring to the GEF STAP's THEORY OF CHANGE PRIMER published in December 2019. The theory of change is "an iterative part of intervention design, implementation and evaluation" Please see the reference for more details.

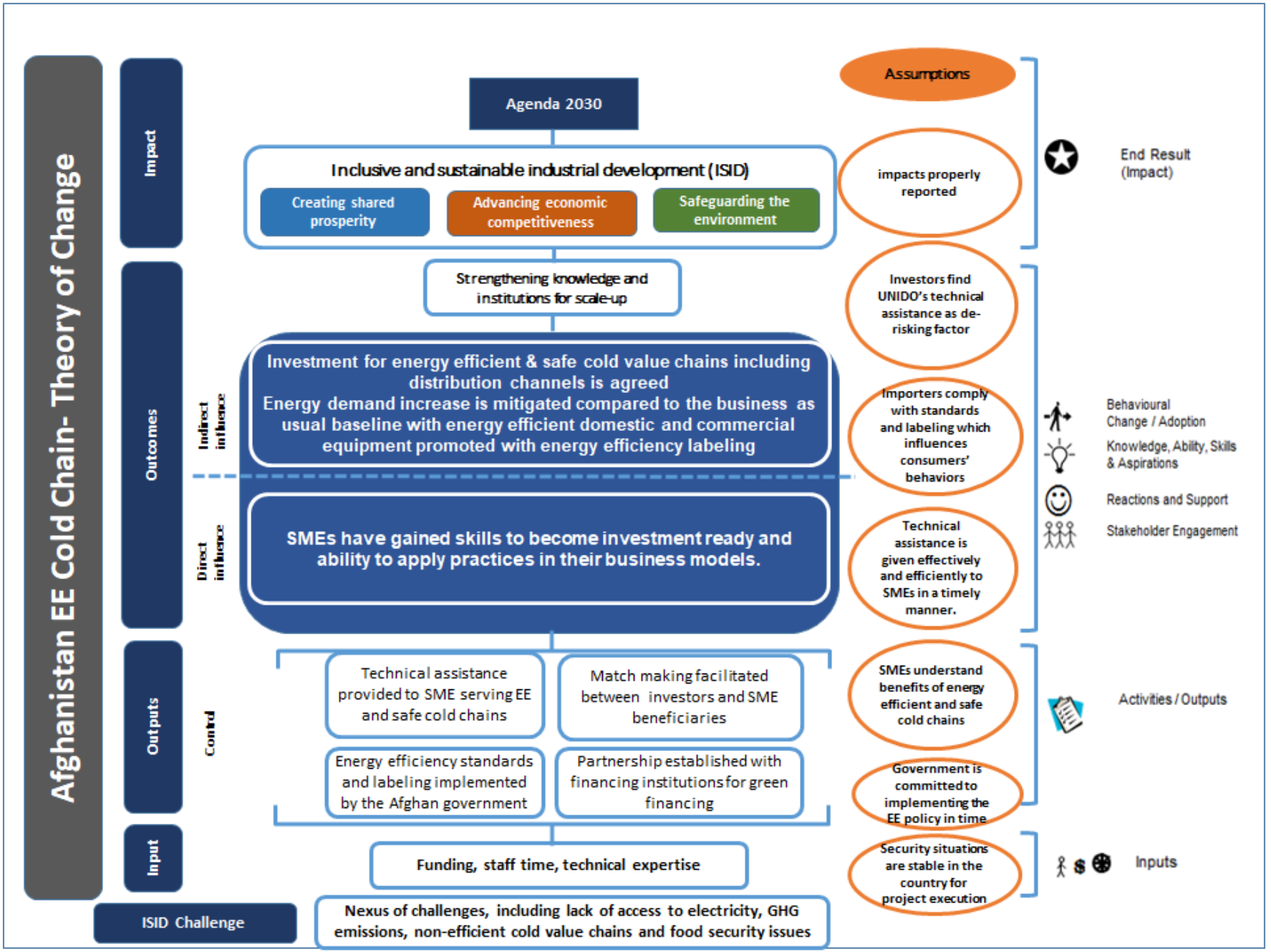

Afghanistan EE Cold Chain- Theory of Change
Impact
Outcomes
Outputs
Input
Indirect influence
Direct influence
Control
ISID Challenge
Agenda 2030
Inclusive and sustainable industrial development (ISID)
Creating shared prosperity
Advancing economic competitiveness
Safeguarding the environment
Strengthening knowledge and institutions for scale-up
Investment for energy efficient & safe cold value chains including distribution channels is agreed
Energy demand increase is mitigated compared to the business as usual baseline with energy efficient domestic and commercial equipment promoted with energy efficiency labeling
SMEs have gained skills to become investment ready and ability to apply practices in their business models.
Technical assistance provided to SME serving EE and safe cold chains
Match making facilitated between investors and SME beneficiaries
Energy efficiency standards and labeling implemented by the Afghan government
Partnership established with financing institutions for green financing
Funding, staff time, technical expertise
Nexus of challenges, including lack of access to electricity, GHG emissions, non-efficient cold value chains and food security issues
Assumptions
impacts properly reported
Investors find UNIDO's technical assistance as de-risking factor
Importers comply with standards and labeling which influences consumers' behaviors
Technical assistance is given effectively and efficiently to SMEs in a timely manner.
SMEs understand benefits of energy efficient and safe cold chains
Government is committed to implementing the EE policy in time
Security situations are stable in the country for project execution
End Result (Impact)
Behavioural Change / Adoption
Knowledge, Ability, Skills & Aspirations
Reactions and Support
Stakeholder Engagement
Activities / Outputs
Inputs

Figure 1. Theory of Change structure of this project

Inception phase

30. An inception workshop will be organized in collaboration with NEPA and key stakeholders ensuring high level political participation is committed. The main objective of the inception workshop will be to assist the project team to disseminate the project objectives and identify the stakeholders as well as to finalize the preparation of the project's first annual work plan incorporating the stakeholder's co-financing activities. The inception workshop will also provide an opportunity for all parties to understand their roles, functions, and responsibilities within the project's decision-making structures, including reporting and communicating lines and conflict-resolution mechanisms. The workshop agenda will take into consideration the gender balance of the presenters.

31. An inception workshop report will be prepared after the inception workshop. It will include a detailed first year's annual work plan divided into quarterly time frames, which articulates the activities and progress indicators that will guide the execution during the first year phase of the project.

32. During the inception phase, the project execution modality will be set up as described in the institutional coordination and arrangement section. A national execution entity will be established, while UNIDO will keep the budget for the independent mid-term review and terminal evaluation. The Steering Committee will endorse the project operation and monitoring setup. The project team will set the baseline of the selected indicators and communication strategy.

Outcome 1: Energy demand increase is mitigated compared to the business as usual baseline with energy efficient domestic and commercial equipment promoted with energy efficiency labelling:

33. This component will drive the use of energy efficient appliances through the use of labelling which clearly identifies which products are more efficient vs. baseline products. All products on the market including imported products will be required to comply with standards and regulations set out by the Government in such a way as to influence consumer behaviour.

34. The project activities of this GEF project will be guided by the United for Efficiency (U4E) programme and described in the U4E Policy Guide series for refrigerators and air conditioners (www.united4efficiency.org). These are based on the following market transformation pillars:

- Adopt international test protocols to measure the energy efficiency, to avoid non-tariff barriers to trade and reduce cost of compliance to manufacturers (and indirectly to consumers)
- Adopt minimum energy performance standards (MEPS) to phase-out the most inefficient appliances, and increase this level over time
- Adopt supporting policies to drive the market towards the most efficient appliances, including energy efficiency (EE) labelling, consumer awareness campaigns, fiscal incentives
- Adopt an effective Monitoring, Verification and Enforcement (MV&E) framework to ensure the highest level of compliance with the MEPS and EE labelling

Output 1.1: Energy efficiency standards and labelling for refrigerators and air-conditioners (RAC) adopted by governmental institutes in line with Afghanistan Energy Efficiency Policy

35. This output will assist in the planning of energy labelling on appliances. Government officials are committed to ensuring that the labelling systems will be adopted, budgeted, used and enforced in a timely manner. High level authorities are to be informed and adequately trained about the energy labelling system.

36. The overall labeling and standard operating procedures of the project will follow Energy Efficiency Labeling and Standard - A Guidebook for Appliances, Equipment and Lighting, https://www.osti.gov/biblio/877316-energy-efficiency-labels-standards-guidebook-forappliances-equipment-lighting-edition.

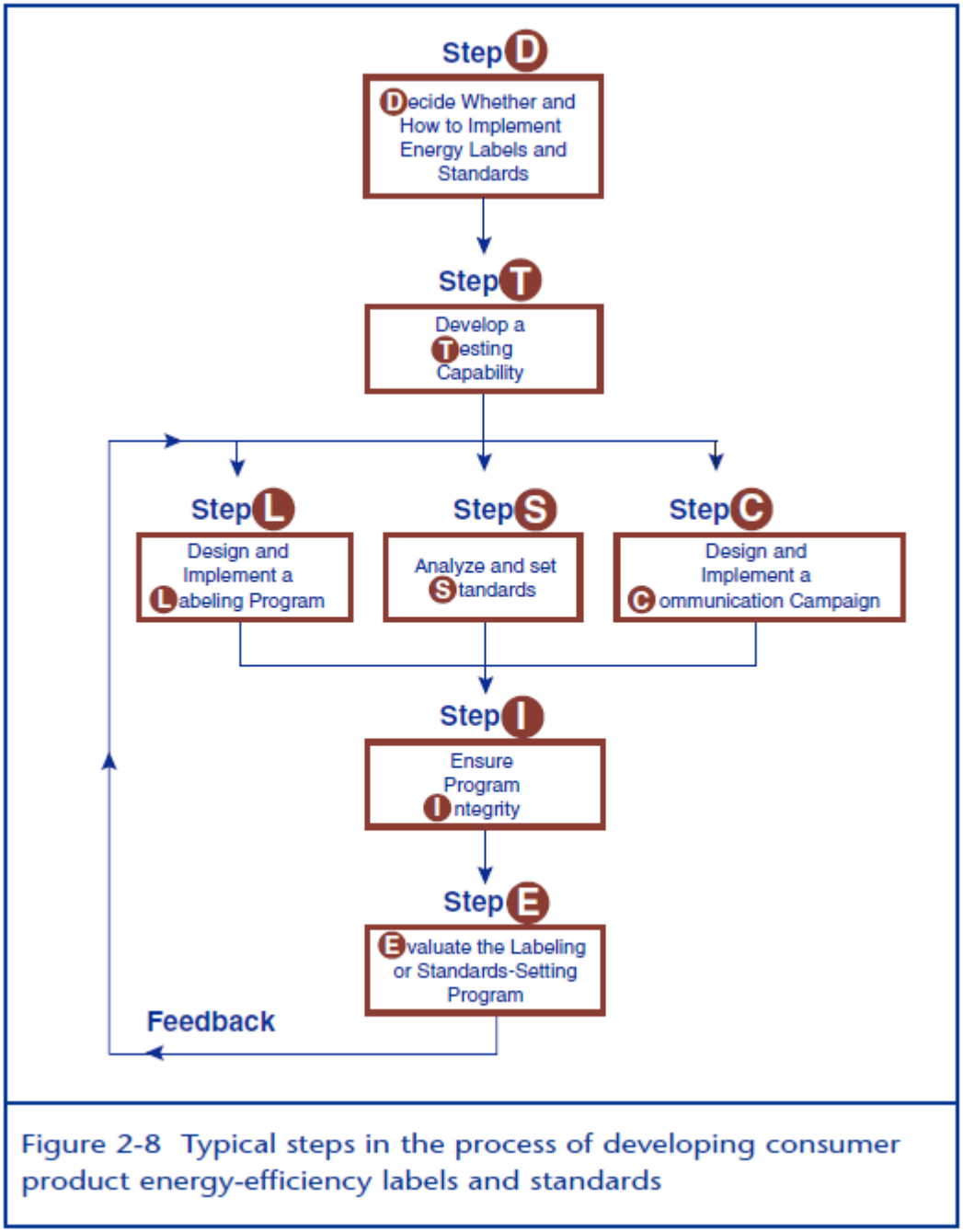


Figure 2-8 Typical steps in the process of developing consumer product energy-efficiency labels and standards

Figure 2. Typical steps for the energy efficiency standard setting and labelling

37. Energy performance standards are based on energy efficiency metrics that must be developed. Such metrics will defined thresholds, or energy efficiency levels, and will be used to increase the level of energy efficiency required over time. The MEPS shall be defined at a certain level and increased over time, according to a pre-defined schedule, usually five years, to allow for manufactures and importers to adjust their sales and give time to the market to adapt itself. MEPS are mandatory and therefore no appliance below the MEPS level could be sold on the market. Higher energy performance standards (HEPS) correspond to the highest level in the efficiency metrics.

38. EE labelling is used to educate consumers on the benefits of energy efficiency, to encourage them to purchase the most efficient appliances. In this regard, there are two (2) types of labels: endorsement labels and comparative labels.

39. Endorsement labels, such as the Energy Star, only indicate that the product meets a certain requirement, but does not allow to compare appliances against each other. Comparative labels are now widely used for appliances such as refrigerators and ACs and allow for comparing the efficiency levels of different appliances. A wide range of comparative labels are used, and information such as average annual electricity cost can also be provided. Comparative labels are by far the most efficient means of communication in terms of labelling.

40. The definition and design of the label depends on cultures and understanding of certain symbols and vary from country to country. Below is a snapshot of different comparative labels used in Europe (which is also used in Iran), Thailand, and the United Arab Emirates.

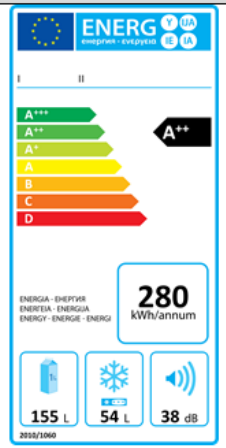
Europe/Iran	Thailand	UAE
		

Figure 3. Energy Efficiency Labelling of the countries from which home appliances are imported to Afghanistan

41. The guidebook recommends "In some countries where most of all of the units of a particular appliance are imported from foreign manufacturers, it may be cost effective to rely on existing test facilities are from the country of origin.

Consumer's awareness

42. While MEPS will prevent the most inefficient appliances to enter the market, purchasing the most efficient appliances will be left to the consumer’s decision. Needless to say, more efficient products cost more and consumers must understand the economic benefits of the most efficient appliances to purchase them. Consumer education becomes critical in order to influence consumer’s purchasing decisions in favor of the most efficient products. The consumer awareness campaigns will promote the EE label and convey messages advocating for the most efficient appliances. Key messages should be developed and put forward what appears to be the most important criteria for Afghani consumers when it comes to purchasing a more expensive appliance; this could include environmental friendliness, monetary benefits.

43. The design of the consumer awareness campaign is critical as it needs to maximize its outreach to the consumers, and such exercise could prove very expensive. With anticipated limited financial resources, the consumer awareness campaign should be based on existing networks (consumer groups), communication means (radio, TV), but also on the following:

- Most efficient appliances are more expensive and usually generate a higher profit margin: importers, distributors and resellers should be interested to participate in the consumer education campaign
- Consumers usually rely on advices from sales persons, so they constitute a privileged channel to reach out to consumer at the point of sale

A group assembling key stakeholders from the groups mentioned above should be constituted to design an effective consumer awareness campaign.

Fiscal and financial incentives

44. Since all appliances are imported in Afghanistan, it is suggested to introduce import duty reduction to the government for the most efficient appliances. This has been adopted by several countries with a good success rate. Once the efficiency metrics has been adopted and the highest level of efficiency determined with HEPS, it is recommended to work with the ministry of finance to calculate the financial benefits of reduced import duties versus financial benefits related to the corresponding amount of HEPS appliances in terms of reduced electricity consumption (which means reduced electricity imports). With the endorsement of the Project Steering Committee, the project will set up a working committee to be headed by the ministry of finance to study the opportunity of fiscal incentives in the form of reduced import duties.

45. A sustainable financing mechanism to sustain the energy efficiency labelling system will be established to support the administration and energy efficiency labeling update in the future as determined by the Project Steering Committee.

46. All recommended activities are described in detail in the Annex O, “Report on Energy Efficiency Labelling”, which is a part of this project document.

Deliverables:

47. (1) Copies of draft regulations and policies, (2) copies of the standards, (3) copies of the energy efficiency labelling, (4) copies of other documents required for institutional setup for a sustainable energy efficiency policy implementation scheme, (5) a copy of the market research report on the energy efficiency trends of imported RAC equipment (energy efficiency roadmap), (6) copies of the training materials, (7) copies of the energy efficiency labelling guidance, (8) the training workshop reports and sex-disaggregated participant lists, (9) a copy of the research report on MEPS and energy efficiency label design which are already in place in neighboring major import countries, (10) copies of reports, documents, and other evidence that ANSA and its accredited partners promote the energy efficiency policy, MEPS and labelling (11) All EE Action deliverables, 1.1.1.A, 1.1.1.B, 1.1.1.C, 1.1.2.A, 1.1.2.B, 1.1.2.C, 1.1.3.A, and 1.1.3.B, (12) a copy of the report on the financial incentives to promote the energy efficiency labelling

	Year 1				Year 2			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Outcome 1: Outcome 1: Energy demand increase is mitigated compared to the business as usual baseline with energy efficient domestic and commercial equipment promoted with energy efficiency labeling								
Output 1.1: Output 1.1: Energy efficiency standards and labeling for refrigerators and air-conditioners (RAC) adopted by governmental institutes in line with Afghanistan Energy Efficiency Policy								
ACTIVITY 1.1.1: Afghan National Standards Authority (ANSA) sets minimum energy performance standards in RAC products, and ANSA accredits certification bodies which ensures RAC products meet the energy performance standards								
EE Action 1.1.1.A: Conduct detailed market assessment								
EE Action 1.1.1.B: Adopt testing standards								
EE Action 1.1.1.C: Adopt MEPS								
Activity 1.1.2: Energy efficiency road map is finalized after a market research, and energy efficiency labelling is designed that adheres to the energy efficiency standards set out for each RAC product category								
EE Action 1.1.2.A Develop national EE label								
EE Action 1.1.2.B: Review fiscal and financial options incentives								
EE Action 1.1.2.C: Design of the MV&E framework								
Activity 1.1.3: Accredited entities train their staff on the standards and promote them through community engagement (main objective is consumer awareness raising) as well as integration of new standards into importers business models and customs offices								
EE Action 1.1.3.A: Design of the consumer awareness campaign								
EE Action 1.1.3.B: Adopt the EES&L program								

Output 1.2: Energy efficiency standards and labelling implemented

48. This output implements the standards and labelling scheme set out in Output 1.1. Implementation will focus on imported and locally manufactured appliances. In line with the AEEP (funded by national Government and international aid) a smooth transition to the market will be made through awareness raising campaigns, interactions with key stakeholders, including international manufacturers, importers and retailers. Along with a nationwide inspection and control system enforced in the market and at the border or other points of entry into the country. Government officials are equally committed to enforcing energy efficiency regulations and policies so that importers and local manufacturers comply with standards and labelling.

49. Complying with the MEPS regulations and affixing the EE label require manufacturers (or importers) to test the products accordingly. However, there are no local manufacturers of refrigerators or air conditioners in Afghanistan, all products are imported, and there is no testing laboratory in Afghanistan. Recognizing the relatively small size of the market, it is to be anticipated that most products are imported from resellers or distributors from neighbouring countries, and not from manufacturers directly. Imposing testing of products against the Afghani standards would be cost-prohibitive and may result in a very low level of compliance. To minimize the cost of compliance for importers and therefore maximize the compliance rate, it is proposed as follows:

- The project will analyze the EE label of major countries of origin for refrigerators and air-conditioners, and prepare a table showing the correspondence between the different levels of EE as shown on those labels with the Afghanistan's EE metrics to be developed during the project.
- The level of MEPS decided by the Afghanistan government during the project will correspond to specific levels in other countries' EE labelling system: for example, B level in the Iran label, 2-star in the UAE label, etc.
- This information will be made publicly available and provided to importers, distributors and resellers. Importers will then be able to select the products to be imported that meet the Afghani MEPS.
- This information will also be part of the training of custom officers, who will be responsible for checking compliance with the Afghani MEPS and EE labelling regulations.
- Importers or distributors will have the responsibility to then affix the Afghani label according to the EE information available from the EE label of the country of origin.

50. All recommended activities are described in detail in the Annex O, "Report on Energy Efficiency Labelling", which is a part of this project document.

51. Deliverables: (1) copies of the announcements of the energy efficiency labelling roll out schedule, (2) copies of the agenda and event reports of the awareness events including sex-disaggregated participant lists, (3) copies of the training workshops and sex-disaggregated participant lists, (4) copies of communication materials posted on public media (5) All EE Action deliverables for 1.2.1A, 1.2.2.A, 1.2.2.B, 1.2.2.C, 1.2.2.D, and 1.2.3.A.

	Year 3				Year 4				Year 5			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Output 1.2: Energy efficiency standards and labeling implemented												
Activity 1.2.1: Legal, financial, and institutional setup to roll out the energy efficiency labeling by relevant Ministries, governmental institutes, manufacturers, importers, customs office, non-profit organizations and retail stores												
EE Action 1.2.1.A: Stakeholders' mobilization including legal, financial and institutional set up												
Activity 1.2.2: Awareness raising and official announcement on the energy efficiency roll out to all stakeholders including manufactures of RAC products												
EE Action 1.2.2.A: Preparation of communication tools												
EE Action 1.2.2.B: Organize EE awareness days												
EE Action 1.2.2.C: Training of custom officers												
EE Action 1.2.2.D: Consumer awareness campaigns												
Activity 1.2.3: Initiation and sustainable operation of the energy efficiency labeling												
EE Action 1.2.3.A: Roll out and monitoring of EES&L program effectiveness												

Outcome 2: Investment agreement for energy efficient & safe cold value chains including distribution channels is agreed

52. This component will provide SMEs which contribute to serving for and maintaining the cold value chain with technical, business and financial assistance. This assistance will improve the investability of the beneficiary SMEs.

Output 2.1: SMEs along the cold value chains trained for energy efficiency and safe handling of flammable refrigerant charged equipment

53. The training sessions will be hosted by PEE and its international and national experts. The involvement of all stakeholders in the training sessions under this output is highly desirable.

54. This output will strengthen the capacities of SMEs to install and maintain cold value chains in an efficient and safe manner. A priority is given to dairy products, cold storages for agricultural produce and medical products, and refrigerated trucks. All SMEs which are interested in benefiting from the project need to be registered on the project investment database. The definition of the SMEs will follow the government's new definition of the SMEs with an exception of the female entrepreneurs in Output 2.3. SMEs will be requested to submit the know your customer (KYC) and customer pre-due diligence (CDD) documents required to be registered on our investment database. Energy consumption related proposals and evidence will be requested for the submission by the SMEs. The energy consumption of the selected manufacturing and processing companies will be monitored before and after the project intervention.

55. For the dairy sector, there are more than 15 companies in operation in the country. The possible energy efficiency gains are estimated in the dairy sector. The total production capacity is estimated more than 120 kilo litres a day. The production of dairy products such as milk, yoghurt and butter requires equipment such as water treatment units, cool tanks, boilers, chillers, pasterurizers, homogenizers, packaging, cold storages and incubators. A majority of the equipment imported from neighboring and European countries are to be upgraded. The SMEs registered will receive training and advice on energy efficient options in upgrading their technologies and adopt the best environmental practices for energy efficiency. The training will be organized by the project experts with the support of international consultants. The priorities are given to the companies in Kabul and Herat due to the security concern.

56. The installation and maintenance of energy efficient and safe cold value chains hinge on the competence and commitment of refrigeration technicians. In Afghanistan, the Afghan Korean Institute is the main vocational institute offering its refrigeration and air-conditioning course. Each year, about 30 students are enrolled in this course. However, no female students have been enrolled. It was agreed that this project provides small stipends to encourage female students to join the course.

57. Deliverables: (1) Copies of training materials, (2) The workshop reports with sex-disaggregated participant lists, photos, social media posts and a list of participants who received stipends, (3) A list of SMEs who receive technical assistance, (4) The technical assessment reports, (5) Copies of reports from AKI and female students who received stipends

	Year 1				Year 2				Year 3			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Outcome 2: Investment agreement for energy efficient & safe cold value chains including distribution channels is agreed												
Output 2.1: SMEs along the cold value chains trained for energy efficiency and safe handling of flammable refrigerant charged equipment												
Activity 2.1.1: Training materials are developed in English and the local language												
Activity 2.1.2: Training workshops on safe and energy efficient cold chains provided to SMEs in the sectors, dairy, cold storage, trucks, retail and medical sectors												
Activity 2.1.3: Technical options on safe and energy efficient cold chains recommended by experts and assessed by SMEs												

Output 2.2: SMEs along cold value chains registered on SME and ozone office database and benefited from governmental and project technical, business and financial assistance services

58. The SMEs registered on Output 2.1 will benefit from the project's assistance services. Benefits to join the project are to be communicated through co-financing partners network. The KYC, CDD and energy efficiency potentials will be assessed and the quality of the information will need to be improved. The registered SMEs will pass through multiple stages while an investment database will be updated including energy efficiency assessment for the duration of the the projects assistance. The illustration below is an example of such stages SMEs could experience as a part the iterated technical, business and financial assistance services to be provided by the project.

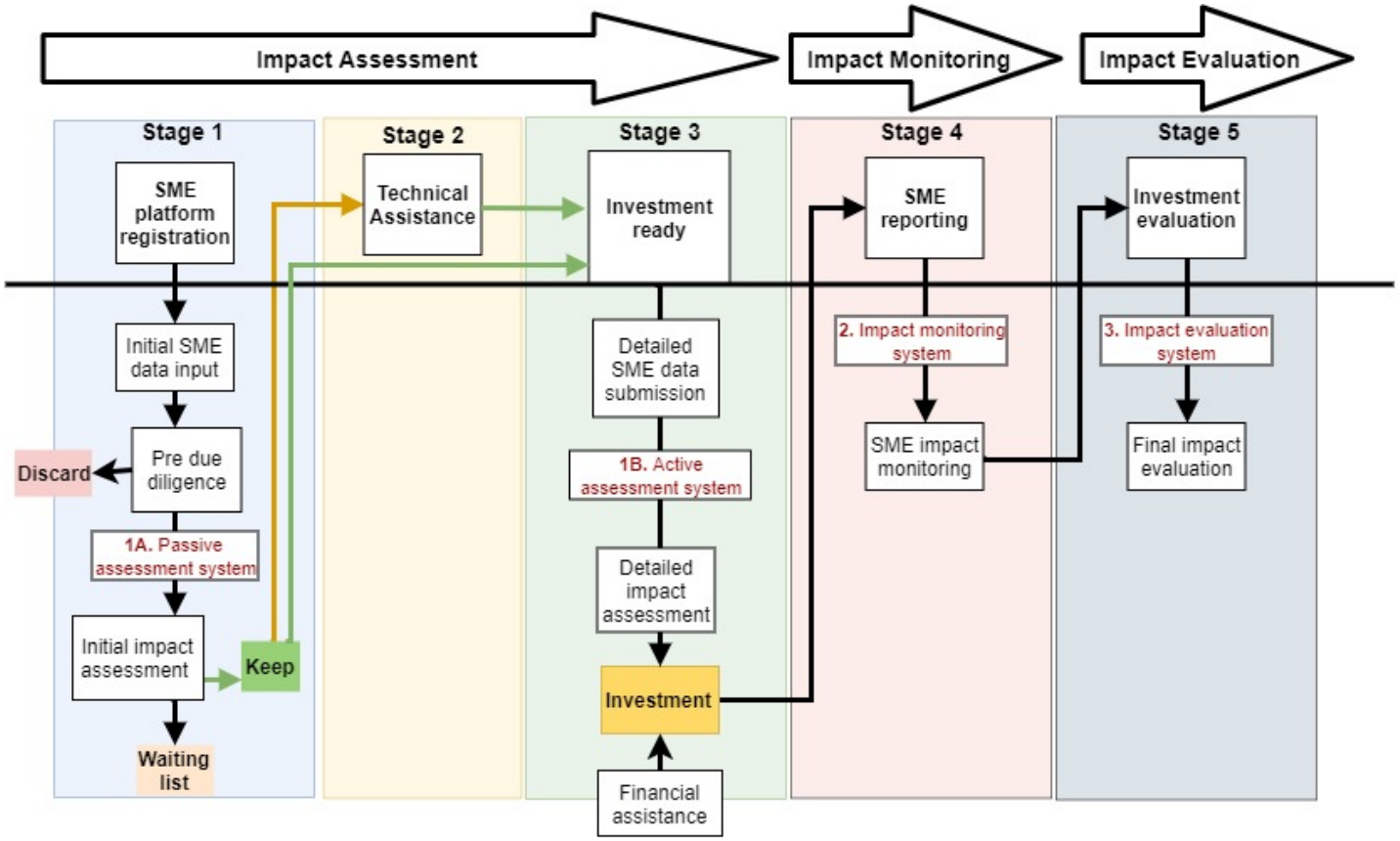


Figure 4 Technical, business and financial assistance steps SMEs will go through during this project

59. Technical assistance consists of technical advice on technology choices to improve energy efficiency, training workshops where experts provide knowledge and exercises on energy efficient best practice options, site visits and follow up consultations. Business proposal assistance will include reviewing financial statements and cash flows, business pitch preparations, and consultations with possible investors. Financial assistance will be provided as part of Output 2.4. The SMEs that are assessed as investable will be presented to investors who meet the criteria and registered on the project database.

60. Deliverables: (1) List of types and criteria of pre-due diligence documents to be submitted by SMEs when registering the database, (2) Copies of the technical assistance / investment database with registered SMEs meeting the target numbers, (3) Promotion materials in English and the local language circulated to target SMEs, (4) A list of the registered SMEs and submitted revised pre-due diligence documents based on feedback received from the project's investment expert and potential investors (5) Estimated possible energy efficiency gains and recommended investment amounts/business proposals for the registered SMEs (6) Copies of the reports on technical and business assistance provided to the registered SMEs

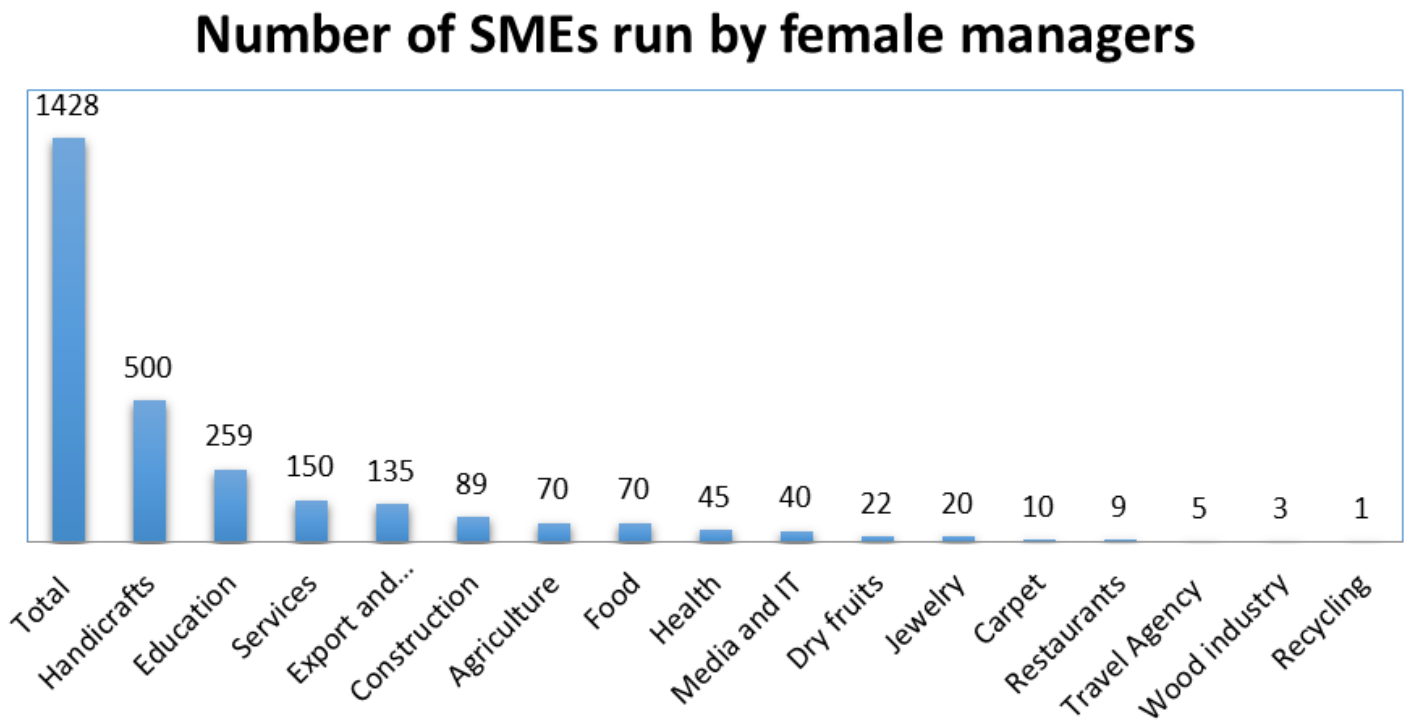
	Year 1				Year 2				Year 3				Year 4				Year 5			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Output 2.2: SMEs along cold value chains registered on SME and ozone office database set up to benefit from governmental and project technical assistance services																				
Activity 2.2.1: Development of SME client database and information collected for know your customer (KYC) and client pre-due diligence (CDD)																				
Activity 2.2.2: SME's KYC and CDD results are ready to be shared with potential investors who meet qualification criteria and are registered in the investor's database with KYC assessed and improved																				

Output 2.3: Technical and financial assistance provided specifically targeting female entrepreneurs and female local investors mainly in the dairy sector

61. Gender equality is still a major challenge in Afghanistan. Thus integrating gender and social dimensions into energy efficiency interventions is an urgent priority in the country. Traditionally, women have an active role in the households and have a better voice in terms of using electricity, food storage, usage of refrigerators and when there is no electricity, especially in the rural areas, using other resources, e.g. cold water under/around the raw or cooked food materials for cooling the food and avoid food spoiling. If women can have access to modern technology especially in terms of cold chain usage, they can innovate better ways and bring about better ideas.

62. There are many responsible agencies identified under the AEEP on energy efficiency initiatives. However, there is no indication of gender mainstreaming under the AEEP. In addition, women comprise a marginal number in the labor force under the energy sector. The number of women specifically in the decision making position is meager. There are 7986 male and 287 female employees at Kabul Municipality (KM), 2485 male and 189 female employees at the ministry of energy and water (MoEW), 7208 male and 207 female employees in the ministry of agriculture, irrigation and livestock (MAIL). There are 1826 male and 139 female employees at the ministry of rural rehabilitation and development (MRRD) and 628 male and 71 female staff in the National Environment Protection Agency of Afghanistan (NEPA). Except for a few positions in the energy sector, the female staff mainly works in the administrative level. According to National Statistics and Information Authority (NSIA), there is a lack of political well and the existence of bureaucracy in the government which limits the active role of women in the energy sector (NSIA, 2019).

63. Women, however, have a leading role under the private sector, particularly in Small and Medium-sized Enterprises (SME). According to NSIA, there are more than 1600 women owned and led businesses in Afghanistan. 1428 of the women's businesses are Small and Medium Enterprises (AWCCI, 2019). Women in the Private Sector outnumber 9.6 percent of the working women which is very much close to the 10.3 percent of women working in the government entities (NSIA, 2019). 20 percent of women work for the Civil Society Organizations (CSO) but they are much more equipped with trainings and facilities compared to women in the government and also in the private sector. The number of SMEs run by female managers in different sectors is summarized in the below chart.



64. Women perform the main duties in the agriculture and livestock sectors. Ninety eight percent of the money earned in the livestock sector is in the control of women (MAIL, 2019) and women perform 66-70% of the labor under the agriculture sector (MAIL, 2019).

65. Women participate in the formal economy as entrepreneurs, business owners, and employees. Most of their businesses have 1 to 10 employees but together women SMEs have created 81,828 employments and the employees' earnings are above average. Although women are key players in the food sector, most of them do not have access to cold chain facilities. Strengthening the infrastructure of the cold chain could bring several benefits for them.

66. SMEs are very effective for job creation and promoting economic growth. Women SMEs as other working areas have challenges that need to be addressed. Access to finance is a major challenge and it is exacerbated by social limitations. Their gender makes access to financial sources and markets more complicated. Illiteracy and lack of capacity are also crucial issues. Economic policymaking is dominated by men and women are not represented in decision making trade institutions, such as the Chamber of Commerce and Industry and the Afghanistan Investment Support Agency. "While women's participation in the value chain of the Afghan economy is comparable to men's, their role in leading businesses remains marginal" (AWCCI, 2019).

67. The main challenges identified through a study done by AWCCI are considered as below:

 Infrastructure (utilities and transportation networks)

 Business environment (legal and regulatory)

 Access to finance (investors and commercial/microfinance lenders)

 Access to high-quality training and educational programs

 Access to markets and linkages for long term business relations

 Conservative socio-cultural views on women's activities outside the household.

68. Lack of proper infrastructure affects businesses in Afghanistan. Since women businesses are small, the lack of good infrastructure affect them more since they do not have the necessary resources to pay for workarounds (e.g. back up electricity generators). "Costly and erratic electricity supply is the main barrier for women-owned businesses that are often based in the home and cannot afford a backup generator. As a concern, when there is a cut in the Government-supplied electricity, production is halted at many micro and small Afghan businesses" (AWCCI, 2019).

69. There are around eight microfinance institutions and micro lending banks in Afghanistan. Unfortunately, their loan packages do not meet the range of financing needs for small and medium sized businesses owned by women. Compared to their male-owned counterparts, Afghan women-owned businesses are oftentimes significantly smaller. As such, they cannot afford the interest and/or muster the collateral for a commercial bank loan (EPD, 2015). The interest rates at the commercial banks are between 12-17%, and between 17-25% at the microfinance institutions (LEAD, 2016). Women-owned businesses are oftentimes overlooked during the procurement processes of Government agencies and donor institutions. This can be attributed to corruption, not having the right connections, and a basic lack of trust in women to deliver products and services (LEAD, 2016).

70. Based on the interviews, the food sector is considered to be the most relevant segment in the usage of cold chain facilities by women SMEs and under the food sector; the dairy production is the prevalent area to assess the cold chain application. All the recommended actions for this output are described in detail in the report "Gender Assessment and Action Plan" attached to this project as an Annex I.

71, Deliverables: (1) All deliverables listed in Output 2.2, (2) Copies of contracts issued to the identified partners, (3) Workshop agenda and copies of training materials in English and the local language, (4) Copies of circulated invitations (5) A list of invited SMEs and their contact info, (6) Copies of workshop event articles on social media and other public media, (7) Workshop reports with sex-disaggregated participant lists, photos, lists of participants who received stipends

	Year 1				Year 2				Year 3			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Output 2.3 Technical and financial assistance provided specifically targeting female entrepreneurs and female local investors mainly in the dairy sector												
Activity 2.3.1 Promotion of the registration of SMEs operated by female entrepreneurs mainly in the dairy sector												
Activity 2.3.2 Investment proposal improved for selected SMEs and business pitches generated for SMEs operated by female entrepreneurs												

Output 2.4: Partnership established with financial institutes providing green financing opportunities for cold value chains

72. Partnership agreements will be arranged with financing institutes. The project's financial assistance leverages private finance. Technical and business proposal assistance provide under Output 2.2 will be considered as de-risking factors by possible investors who are interested in investing the SMEs receiving the project's assistance.

73. International investors, international financing institutes and the local bank sector will offer suitable financial options to SMEs (low rate of the cost of finance) with the project's financing support. The local bank sector will also offer effective green finance training to cold value SMEs. The Project Steering Committee will be prompted to nurture the investment promotion environment, which will encourage the local financial sector to engage SMEs through workshops and training.

74. The project will promote the investment in SMEs, which contribute to servicing for and maintaining the cold value chains at existing investment for a and the project's investment promotion events in close cooperation with the Ministry of Industry and Commerce and industrial associations. Where relevant, energy saving company (ESCO) business models will be promoted. During the project preparation period, a call for expression of interest has been circulated. In total 6 companies (5 energy equipment providers and one financial intermediary) have expressed their interests in the business models. None of the companies has offered an ESCO service, and there is no market developed for ESCO business models. However, some energy equipment companies offered financial services to their clients in installing renewable energy equipment or others work with financial intermediaries for larger initial investments. For those companies, offering ESCO services is not impossible. What needs to be additionally done in offering the ESCO service is to incorporate energy audits and performance-based fee structures into their current business model. To facilitate this new market development, the project will provide capacity building opportunities on ESCO business models (two workshops) with financial intermediaries and energy and engineering companies.

75. According to the Afghanistan International Bank (AIB) the financing conditions for SMEs AIB offers are described as follows. Its interest rates are 7% and 4.5% for SMEs, comparatively lower than other banks for a period of one to two years. A loan longer than that would have higher interest rates. The minimum loan amount is in the Afghan currency the equivalent to US$ 100,000. Another loan condition is that SMEs should present a house/land deed (according to Sharia law) document. It is preferred that SMEs invest their resources as well.

76. The project's financing assistance for SMEs is to de-risk investments, leverage additional financing, lowering financing barriers, improve fiscal discipline, and provide more favorable terms with respect to pricing, maturity and/or collateral requirements. The financing institute as the financial intermediary under this agreement plays an intermediary role and/or co-investors. The project's financial assistance is to be provided to SMEs which are cleared for investment on the SME/Investor database by the project's investment

expert after they go through due diligence steps and technical and business assistance steps for companies. After the investors registered on the Investor database enter the negotiation phase with SMEs, the financial assistance could be given by the financial intermediary in the form of grants, credits, risk-sharing loans, revolving funds, guarantees in a preferred condition for SMEs

77. Deliverables: (1) Terms of reference on the financial modality including ESCO services, (2) Presentations given at the existing investment events, (3) Agenda and invitation list of the proposed investment promotion events, (4) Copies of circulated promotion materials, (5) Presentation materials presented at the investment promotion events, (6) Copies of signed agreements with financial institutions and agreed terms of reference, (7) Copies of calls for interest announcing the signed financial assessment modalities targeting registered SMEs and other SMEs, (8) Agenda, invitation list, presentation materials, and workshop reports of two training workshops on ESCO

	Year 1				Year 2				Year 3				Year 4				Year 5			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Output 2.4: Partnership established with financial institutes providing green financing opportunities for cold value chains																				
Activity 2.4.1: Financial assistance of UNIDO is designed in partnership with financial institutes and potential investors																				
Activity 2.4.2: Financial assistance of financial institutes and potential investors negotiated and agreements are signed																				

Output 2.5: Match making facilitated between investors and SME beneficiaries

78. The project oversees its match making efforts on the market place established by the project for the registered investors and investable SMEs. Investors are committed to investing in SMEs in the cold value chain sector. SMEs will be committed to improving the energy efficiency and their business proposals whilst the Project Steering Committee will provide an enabling environment for match making. In this Output, the multiple stages described in Output 2.2 will be iterated until registered investable SMEs find the investment. The SMEs and investors registered on the project's investment will be rated based on the criteria set.

79. It is critical to demonstrate to local investors that the cold value chain is a foundation needed to boost economic development. International investors consider the commitment of local investors as a de-risking indicator. Similarly, the local banks prefer to co-invest in the SMEs where the owners invest their own resources.

80. For the dairy sector, the possible energy efficiency gains/CO2 reduction potentials as well as investment opportunities in the dairy sector (14 companies in total) have been estimated. The annual total production and consumption of energy in the dairy industry in Afghanistan are estimated as 38,000 tons and 5.3 GWh (9,300 GJ). The current 'Reference Specific Energy Consumption' is estimated to be 0.497 (GJ/tons) which slightly higher than 0.460 in Iran. We assume that the actual 'Reference Specific Energy Consumption' might be higher since 10 of the 15 dairy plants have daily processing capacity lower than 10,000 and the lower the capacity the less efficient the production process will be which means the savings by intervention will be even higher. The total energy saving in the dairy sector could be as much as 760 Mwh/10kL-production corresponds to 1Gwh. The total investment opportunity is US$ 4.8 million. The details are described in the attached report.

81. Deliverables: (1) A list of registered investors and financial institutions with a copy of pre-set criteria including a community of local investors, (2) Copies of shared bankable SMEs technical and business proposals, (3) Records of technical, business and financial assistance repeatedly provided to SMEs with higher ratings, (4) Copies of communications with registered SMEs, possible investors, and financial institutions

	Year 1				Year 2				Year 3				Year 4				Year 5			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Output 2.5: Match making facilitated between investors and SME beneficiaries																				
Activity 2.5.1: SMEs were assisted to develop their business pitches and present them at investment forums																				
Activity 2.5.2: Feedback are received from investors and reflected into revised business pitches and business models																				

Output 2.6: Agreements reached for installment of energy efficient equipment along cold value chains for SMEs

82. The project's technical and financial assistance will generate enough bankable business proposals to strengthen energy efficient and safe cold value chains at scale. The project will engage UNIDO's experts in business development to support investment deals. The project will monitor the interactions and communications between the registered investors and investable SMEs. Financial assistance will be provided to facilitate the investment agreements. This financial assistance can function as incentives for SMEs to report their business status relevant to the project's indicators. The establishment and strengthening of the local investor/SME communities to be promoted in Output 2.5 could facilitate mutual learning from existing investment cases, leverage spill-over effect to scale up demonstrated successful investments, and advocate for positive socio-economic effects of energy efficient and safe cold value chains.

83. Deliverables: (1) Reports on the interventions by the projects for each bankable SMEs, (2) Copies of communications between bankable SMEs and registered investors/financial institutions (local/international and male/female), (3) Record of financial assistance provided to de-risk possible investment agreements, (4) Copies of signed agreements or notices on the agreed investment deals from registered SMEs and investors/financial institutions

	Year 1				Year 2				Year 3				Year 4				Year 5			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Output 2.6 Agreements reached for installment of energy efficient equipment along cold value chains for SMEs																				
Activity 2.6.1: Investors received pre-due diligence documents and information																				
Activity 2.6.2: Agreements are reached between investors and SMEs																				

d. Alignment with GEF focal area and/or Impact Program strategies;

84. The programming directions of CCM-1-3 has been chosen for this project. This GEF project both expands the availability of energy efficient technologies/proven approaches and the adoption and up-scale of the energy efficient technologies in prescribing technical options suited for the local market conditions. As prioritized in the GEF 7 Programming

Directions, this project focuses on creating an enabling environment for energy efficient equipment and appliances with UNIDO's technical assistance and abundant experiences in this area. The outputs are designed to address to introduce the labelling, providing technical assistance and awareness and financing for scaling up to accelerate the technology transfer process which is the government's priority clearly indicated in AEEP.

e. Incremental/additional cost reasoning and expected contributions from the baseline, the GEFTF, LDCF, SCCF, and co-financing;

85. In addition to what was described in the PIF, the GEF project (GEFTF) will further build its activities on baseline projects listed in the above. The energy efficiency labelling is a priority for the Afghan government. This GEF project expedites the implementation of the Afghan Energy Efficiency Policy (AEEP). The incremental cost of GEFTF requested in this project will support the country's prioritized policies to ensure the energy demand will stay within its power generation capacity.

86. The cost effectiveness of this GEF project is about US$ 1/tons-CO2 (US$ 1.3million / US1.3 million Metric Tons of CO2). The baseline and co-financing of this GEF project will enable the project activities funded by the GEFTF. With the co-financing by the key governmental institutes, the cost effectiveness will increase by more than 5 times. In other words, the cost effectiveness of US$ 1/tons-CO2 is possible due to the cost quantified as co-financing contributions by the co-financing governmental institutes such as NEPA, MEW, DABS, MOIC, ANSA, and MAIL. With the co-financing of the investment, the cost effectiveness would be lower, as the investment seeks to maximize returns, not CO2 emission reduction.

f. Global environmental benefits (GEFTF) and/or adaptation benefits (LDCF/SCCF);

87. To support the current cooling gap and meet future demand in Afghanistan while mitigating emissions, this project is planning to promote energy efficiency standard setting and labeling and investment promotion. It is expected that CO2 emission will be reduced by 1.26 million Metric Tons (direct) and 9.1 million Metric Tons (indirect). This amount is calculated according to a developed methodology for estimating GHG savings in GEF projects.

88. This direct emission is calculated according to the GEF's tool (see attached). The energy demands of existing equipment available at the market were estimated based on a small survey at retail stores in Kabul. The default power demands were set as 200 W and 2200 W for domestic refrigerators and air conditioners, respectively. The effect of MEPS and energy efficiency labels was estimated as 7% based on a range between 3.2 and 7.8% given by the United for Efficiency Programme as the effect of energy efficiency labeling on that equipment.

Direct emission reduction

89. Direct emission reductions are calculated by assessing the fuel savings attributable to the investments and standard setting made during the project's implementation period. These are then projected for, and totaled over, the respective lifetime of the investments both during and post implementation.

As a result of these activities in Outcome 1 during the project implementation period of 5 years, direct greenhouse gas emission reductions totaling 361,000 tonnes of CO2 equivalent will be achieved over the lifetime of the investments of 10 years after the project ends. In the non-GEF case, these energy needs would not be satisfied. Currently in Afghanistan there is no standard for cold chain equipment.

Direct Post-project Emission Reductions

90. Direct post-project greenhouse gas emission reductions of the above-mentioned activities is about 904,000 tonnes of CO2.

91. For the indirect emission, reducing the food loss is one opportunity that the above mechanism provides to close the gap on food loss and carbon emissions, since spoilage could be avoided if proper refrigeration infrastructure were in place. Improving the logistic management of the cold chain and investment on energy efficient systems in different steps such as farm and community level cooling, refrigeration technologies and processing technologies can extend shelf life.

92. The carbon footprint of food loss and waste is estimated to be 3.3 Gtones of CO2 equivalent (FAO). In other words, food loss and waste would rank as the third top GHG emitter after USA and China. Such level of inefficiency has serious economic, social and environmental consequences.

93. It should be considered that the expansion of cold chains does not come without its own environmental consequences, the Global Food Cold Chain Council with support from United Technologies commissioned modelling analysis to evaluate if the net GHG emission will be reduced through the development of cold chain? All the modeling scenarios absolutely confirm that carbon footprint saving due to the food loss reduction, is mor than the newly created emission by a factor of ten approximately (GFCCC,2015). In the current project also, the emission reduction due to food loss reduction is calculated according to these models.

Indirect GHG emission reduction

94. There are two different approaches for estimating indirect effects, "bottom-up" which is more relevant to the effectiveness of a project's demonstration and triggering effects and the other. The second or "top-down" approach assesses indirect impacts by estimating the combined technical and economic market potential for the technology within the 10 years after the project's lifetime.

The second outcome of the project is dedicated to investment promotion on energy efficient technologies for cold chain.
Besides, it is expected that the development of cold chain technologies resulted from installment of energy efficient equipment along cold value chains, reduces the food loss and waste.

95. Using the GEF top-down methodology, indirect emission reductions attributable to the above-mentioned outputs of the project are 4.5 million tonnes of CO2 equivalent.

96. The details can be found in the attached GEF EE Tool v1.0. excel sheet.

g. Innovativeness, sustainability and potential for scaling up.

97. Innovativeness

In addition to what was mentioned in the PIF, the innovativeness and scale-up potential comes from the main objective of this project to encourage private financing for energy efficient and safe cold value chains. While the country has taken several policy measures towards promoting private sector investment in energy efficiency and cold value chains, the implementation of such measures is still lagging behind. As indicated in the Agricultural Roadmap of Afghanistan as well as via the co-financing made available by the Ministry of Agriculture, Irrigation and Livestock (MAIL), the country is aiming to strengthen its cold value chain through the investment of public funding. However, this has not yet translated to attracting private financing – a challenge that remains and is also described in the Agricultural Roadmap. Moreover, the Afghan Energy Efficiency Policy has been elaborated but still awaits implementation; unlike in the case of renewable energy, where investments are already underway in the country. The above challenges are addressed through the technical assistance provided by the project, by which all efforts will be made to de-risk investments and structure projects in a way that will attract private finance for energy efficiency and cold value chains. In this way, the implementation of the Agricultural Roadmap is to be supported as well as the implementation of energy efficiency policy by the government fast-tracked.
Such efforts will be aided by recent developments in the area of public and private partnership (PPP): Under Strategic Priority 3 of the Private Sector Development of the National Priority Programme (NPP) for Agriculture, the government plans to leverage private investment and has passed a PPP Law. In addition, the PPP department is working for the Ministry of Finance coordinating projects with line ministries and the private sector and undertaking market assessments to prioritize PPP projects. Encouraging private finance for the semi-public infrastructure such as cold storages is aligned with the NPP’s strategic priority.

Concurrently, UNIDO has developed a concept of the SDG Impact Investment Programme (SIIP). The concept has been launched during the General Conference of UNIDO held in Abu Dhabi in November. In the SIIP, Know Your Customer (KYC) and Customer pre-Due Diligence (CDD) information will be collected from the small and medium enterprises (SMEs) which seek the investment to upgrade and newly install energy efficient and safe cold value chains. The information on SMEs which receive technical, business and financial assistance of this project will be shared with the project's investors and other UNIDO's investment programmes.

98. Sustainability

For the sustainability of Outcome 1, the energy efficiency labels will need to be updated every 5 years or so in order to ensure that the market leads the improvement in energy efficiency of the imported refrigeration and air conditioning (RAC) equipment. A sustainable financing mechanism to sustain the energy efficiency labelling system will be established. This sustainable financing mechanism to sustain the energy efficiency labelling system - a priority of the government for this project – will be established in close collaboration with the Ministry of Energy and ANSA. The Ministry of Energy will plan for and make available budgeted funds within a government account for project related activities to promote energy efficiency labelling. The actual sustainable financing mechanism will be established and managed by ANSA. This funding will support the update of MEPS and labelling criteria by reviewing the equipment offered at the market in the future as determined by the PSC. Furthermore, ANSA as part of its mandate, will safeguard labelling standards review capacity and governmental function after the project ends.
For anchoring the sustainability of the investment component of Outcome 2, the involvement of local investors is key to the lasting effect of the project's intervention to promote investment in the cold value chain. Awareness raising on the positive socio-economic effect of the cold value chains cannot be emphasized more than enough, as consumers could take it granted for being able to buy any fresh produce they can buy in retail stores or vaccination they can benefit from in medical clinic. It is critical to demonstrate to local investors that the cold value chain is a foundation needed to boost economic development. In addition, the financial intermediary identified for Output 2.4 maintains the funds received from UNIDO as the capital for the financial assistance. An agreement will be reached with the financing intermediary partner on how to transfer the financial assistance resource upon the completion of the project.

99. Potential for Scale up

Another scale up opportunity could come from the replication of the demonstrated results by the Ministry of Agriculture, Irrigation and Livestock (MAIL). MAIL is currently strengthening the cold storages to promote the agricultural produce trade and export in line with the national export strategy. Therefore the results of the investment in energy efficient and safe cold value chains to be demonstrated by this project would be scaled up assuming that the project could demonstrate examples of the investment replicable by

the private finance on competitive conditions. MAIL has several policies to strengthen the cold storages such as the National Priority Programme (NPP) for Agriculture, the new Agricultural Roadmap, and the National Export Strategy. The NPP for Agriculture focuses on infrastructure and market development under Strategic Priority 3 by providing incentives to the private sector for investing in cold storage, and the MAIL has allocated a budget of 25 million USD to the establishment of cold storages in collaboration with farmer associations and the private sector. The project will work with the Ministry to ensure efficient and safe cold-storage equipment and energy efficient mechanisms are introduced.

100. Additional reference as Annex:
Annex F: Project Budget
Annex G: Project work plan
Annex H: Environmental and Social Management Plan
Annex I: Gender Assessment
Annex J: Project cover page
Annex K: Co-financing Letters
Annex L: Terms of Reference for AWCCI
Annex M: GEF EE Tool
Annex N: CO2 Indirect Estimation
Annex O: Report on Energy Efficiency Labelling
Annex P: Meeting Minutes

1b. Project Map and Coordinates

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

101. The project's Outcome 1 will roll out the energy efficiency labels in 5 cities.

102. The project's Component 2 will focus on Kabul and Herat. Kabul (34.5553° N, 69.2075° E) is not only a financial/industrial hub but also logistical hub for cold value chains due to trade air corridors being strengthened. Herat (34.3529° N, 62.2040° E) is the third largest city of the country and is one of the agricultural production hubs in the country. There are also some agricultural processing factories in the city.

1c. Child Project?

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

N/A

2. Stakeholders

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

Civil Society Organizations Yes

Indigenous Peoples and Local Communities

Private Sector Entities Yes

If none of the above,please explain why:

103. During the project preparation phase, the project's representatives visited the following potential co-financing stakeholders and other key stakeholders. GIZ has downsized its operation and the energy efficiency is not its priority for the coming years.

104. The following five governmental institutes are the main stakeholders and the Project Steering Committee members: (i) National Environmental Protection Agency, (ii) Ministry of Energy and Water, (iii) DABS Da Afghanistan Breshna Sherkat, (iv) Ministry of Industry and Commerce, (v) Ministry of Agriculture, Irrigation, and Livestock (MAIL), and (vi) Afghan National Standard Authority

105. Other stakeholders consulted include (vii) Ministry of Health, (viii) Afghan Women Chamber of Commerce, (ix) Afghan Dairy Producers Association (ADPA)

106. The following UN Agencies have been consulted: UNDP, UN Women, and FAO.

107. Banking sector as financial intermediary: FINCA, OXUS, IIFC and FMFB. Other companies which have been contacted so far also include energy equipment providers, namely, YGES, Vista Solar, Amiri CES, DCS, Zularistan, and RPC. They are potential ESCO service providers. Two manufacturing companies of insulation materials such as expanded polystyrene foams have also expressed their interests in the investment promotion activities of the project, namely, Olympic Asia Foam and Skyscraper ATI Foam Production Company.

Please provide the Stakeholder Engagement Plan or equivalent assessment.

108. During the PPG phase, the following stakeholder engagement plan has been discussed. The responsibilities of the stakeholders and co-financing activities of the stakeholders are described in the following table.

Outputs	Responsibilities and stakeholders (project funds)	Co-financing contributions (including stakeholders who did not sign co-financing letters)
Output 1.1: Energy efficiency standards and labelling for refrigerators and air-conditioners (RAC) adopted by governmental institutes in line with Afghanistan Energy Efficiency Policy	National Execution and activities of this output: National Environmental Protection Agency (NEPA)	Providing basic political and administrative support as an governmental organization: NEPA Advising to realign energy efficiency policies, labelling, and related legal framework: Ministry of Eenrgy and Water (MEW) and DABS Joining the work related to drafting legislative documents, labelling documents and related coordination: MEW and DABS Review/drafting/initiating the approval process of existing standards and drafting new ones, if needed: Afghan National Standards Authority (ANSA) Provision of inputs/feedback on energy efficiency policies from gender mainstreaming and civil organization viewpoints: Afghanistan Women Chamber of Commerce and Industry (AWCCI) or Equity for Peace and Democracy (EPD) Joining awareness raising events and training workshops: NEPA, MEW, DABS, ANSA, Ministry of Industry and Commerce (MOIC), AWCCI, EPD, and other stakeholders

Output 1.2: Energy efficiency standards and labelling implemented	National Execution including activities of this output: NEPA Organizing aawareness raising of energy efficiency labelling particularly among consumers and female end users: ACCI, AWCCI or EPD	Providing basic political and administrative support as an governmental organization: NEPA Providing nation-wide reach out, roll-out and enforcement of energy efficiency labelling: Customs Office, NEPA, MEW, DABS, ANSA, MOIC Establishment, publication, and disseminating of new energy efficiency related standards and labels: ANSA Ensuring the cold storages are operated with best available energy efficient options and practices: NEPA and the Ministry of Agriculture, Irrigation, and Livestock (MAIL)
Output 2.1SMEs along the cold value chains trained for energy efficiency and safe handling of flammable refrigerant charged equipment	National Execution including activities of this output: NEPA	Providing basic political and administrative support: NEPA Providing training resources on energy efficiency: DABS Promoting energy efficiency and safe handling of flammable refrigerants: EPA, MEW, DABS, MAIL, ANSA, Afghan-Korean Institute, Mido Dairy Product Engaging SMEs in taking advantage of the project resources: MOIC, ACCI, AWCCI Energy efficiency policies promoted and the implementation of AEEP reported: DABS, ANSA Awareness raising and coordination among stakeholders along the identified cold value chains: MOIC, Afghanistan Chamber of Commerce and Industries (ACCI) and AWCCI
Output 2.2 SMEs along cold value chains registered on SME and ozone office database and benefited from governmental and project technical, business and financial assistance services	National Execution including activities of this output: NEPA Awareness raising on benefits to join the project and coordination among stakeholders along the identified cold value chains: MOIC, Afghanistan Chamber of Commerce and Industries (ACCI) and AWCCI A subcontractor for technical and business proposal assistance	Providing basic political and administrative support as an governmental organization: NEPA Encouraging SMEs to be registered on the project database: MOIC, ACCI, AWCCI

Output 2.3 Technical and financial assistance provided specifically targeting female entrepreneurs and female local investors mainly in the dairy sector	National Execution including activities of this output: NEPA Awareness raising and coordination among SMEs operated by female managers and stakeholders along the identified cold value chains: AWCCI	Providing basic political and administrative support as an governmental organization: NEPA Encourage female owned/operated SMEs to take advantage of the project opportunities and resources: Ministry of Women Affairs, MOIC, AWCCI, MAIL, Afghan Dairy Producers Association (ADPA), Mido Dairy Product Co. Ltd.
Output 2.4 Partnership established with financial institutes providing green financing opportunities for cold value chains	National Execution including activities of this output: NEPA Provision of financial assistance: Microfinance Investment Support Facility for Afghanistan (MISFA)	Providing basic political and administrative support as an governmental organization: NEPA Providing existing successful cases promoting energy efficiency and coordination with financial institutes and stakeholders including the Ministry of Finance: DABS Coordination with financing institutions and investors to support SMEs: Ministry of Finance, MOIC Financial assessment and identification of bankable projects: International and local financing institutes
Output 2.5 Match making facilitated between investors and SME beneficiaries	National Execution including activities of this output: NEPA	Providing basic political and administrative support as an governmental organization: NEPA Providing existing cases and coordination with financial institutes and stakeholders including the Ministry of Finance: DABS Providing match making platforms and coordination among stakeholders along the identified cold value chains: Financing institutes, ACCI and AWCCI Supporting an enabling environment to promote investments for small and medium enterprises (SMEs): MOIC, ACCI, AWCCI
Output 2.6 Agreements reached for installment of energy efficient equipment along cold value chains for SMEs	National Execution including activities of this output: NEPA	Providing basic political and administrative support as an governmental organization: NEPA Supporting an enabling environment to promote investments for small and medium enterprises (SMEs): MOIC, ACCI, AWCCI

Output 3.1 Baseline set and communication strategy mainstreamed.	National Execution including activities of this output: NEPA	Providing basic political and administrative support as an governmental organization: NEPA Sharing requested data for setting baseline indicators: NEPA, MEW, DABS, MOIC, MAIL, ANSA, , and other project steering committee member institutions
Output 3.2 Project monitored.	National Execution including activities of this output: NEPA	Providing basic political and administrative support as an governmental organization: NEPA Organizing and participating in Project Steering Committees: NEPA, MEW, DABS, MOIC, MAIL, ANSA, and other project steering committee member institutions
Output 3.3 Independent Mid-term Review and Terminal Evaluation conducted	UNIDO	Providing basic political and administrative support as a governmental organization: NEPA Making available for interviews with evaluators and sharing requested documents: NEPA, MEW, DABS, MOIC, MAIL, ANSA, and other project steering committee member institutions

109. NEPA (National Environmental Protection Agency) will be responsible for the full execution of the project under a contractual agreement with UNIDO as the implementing agency. In addition to the execution role, NEPA will carry out administration processes as its co-financing contribution when having legal framework and policies updated.

110. MEW (Ministry of Energy and Water): As the chair of the Project Steering Committee, MEW is expected to jointly oversee the entire operation of the project with NEPA. As the government entity in charge of energy related policies, MEW is to ensure the alignment of the project strategy with the national energy policy priorities, introduce relevant stakeholders and competent experts for project activities, and develop its own capacity by learning from training sessions and international experts. DABS Da Afghanistan Breshna Sherkat is the government institute with its mission to provide safe and reliable power and reasonable rates to facilitate national economic growth with integrity, transparency and efficiency. DABS will be the major government counterpart for energy efficiency and daily project related coordination directly reporting its progress to the Presidential Office on renewable energy and energy efficiency, while the Ministry is the focal point for energy related regulations and legal framework.

111. ANSA (Afghanistan National Standard Authority): As the government stakeholder responsible for developing and maintaining the standards, ANSA will lead the development of the minimum energy performance standards (MEPS) and energy efficiency labelling with support from international experts. ANSA will follow its protocol to do so. ANSA will monitor the smooth operation of the certification system. This co-financing activity is related to the project activities in Outcome 1.

112. MOIC (Ministry of Industry and Commerce): MOIC is responsible for promoting an enabling environment for SMEs to thrive by accessing affordable technology options and financing opportunities. MOIC will help the project encourage SMEs in being registered on the project's investment database by submitting the pre-due diligence documents and business proposals, benefiting from technical, business and financial assistance to be provided in Outcome 2.

113. MAIL (Ministry of Agriculture, Irrigation and Livestock): MAIL oversees more than 30 cold storages for agricultural produce all over the country. Most of them are operated by the private sector. MAIL plans to have new cold storages to boost the trade and export quality products. MAIL encourages cold storage operators to benefit from the project's training opportunities by releasing their technicians for such opportunities. The cold storages owned by the private sector could be the project's investment target to improve their energy efficiencies by upgrading technologies and improving best practices. These co-financing activities contribute to Outcome 2.

114. ACCI (Afghanistan Chamber of Commerce): ACCI represents over 90% of the total Afghan work force with 65,000 companies and 255 business unions, associations and cooperatives as its members. ACCI could help identify SMEs along the cold value chain and promote the investment in energy efficiency and improve the production. In addition, ACCI could support an enabling environment to promote investments for small and medium enterprises. It joins the project to raise awareness on benefits to join the project and coordination among stakeholders along the identified cold value chains.

115. AKI (Afghan Korean Vocational Training Center): AKI is a governmental vocational center overseen by the Ministry of Labor and Social Affairs. It offers a refrigeration and air-conditioning (RAC) course generating about 30 RAC technicians annually. AKI has recently modified its facility to enable safe handling of flammable refrigerants that are increasingly used in refrigerating appliances. UNIDO's MLF-funded projects equipped the classrooms with RAC servicing equipment designed for flammable substances. AKI would encourage female students to join by offering stipends. AKI could incorporate energy efficiency modules in the RAC course during this project.

116. MISFA (Microfinance Investment Support Facility for Afghanistan: MISFA's mission is to be a strong and efficient organization contributing to Afghanistan's economic growth by developing a viable, inclusive financial sector for the poor, and the underserved small and medium enterprises. MISFA helps deliver the project's financial assistance as a subcontractor of this project. The specification of the financial assistance to be provided by the project is to be finalized before it is offered to qualified SMEs.

117. Mido Dairy Production Co. Ltd. is the dairy production company with the largest production of dairy products in the country. As a co-financing partner, the company would release its employees for training opportunities on the energy efficient and safe cold value chains hosted by the project. The company could advise PEE on how to encourage SMEs in the dairy sector to take advantage of the project opportunities so as to promote the investment promotion environment in the dairy sector in Afghanistan. The company could provide consultation to PEE in providing business and technical assistance to other beneficiary SMEs in the dairy sector. As a beneficiary, the company could be registered as SMEs and investors on the project's investment database.

118. Please see below for AWCCI and EPD.

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

119. The key stakeholders (NEPA, MEW, DABS, ANSA, MOIC, and MAIL) will monitor the project execution as the members of the Project Steering Committee which will be held twice a year at least. The meeting minutes will be circulated and endorsed every time the meeting is held. The meeting minutes will be submitted to UNIDO as part of the

Project Execution Entity's deliverables. Except NEPA, which will receive the execution contract, other key stakeholders are to contribute to the project as their co-fiancing contributions.

120. Other key stakeholders such as the Ministry of Women's Affairs and the Ministry of Health will be included in a wider communication list and invited to awareness raising workshops and training opportunities.

121. Some NGOs such as AWCCI and EPD will receive subcontracts, subject to the endorsement of the Project Steering Committee, for organizing awareness raising events and training workshops.

122. SMEs are invited to be registered on the project's investment database. The registered SMEs are to go through the technical, business, and financial assistance steps to be guided by the project.

123. Micro financing institutes contacted by the project are FINCA, OXUS, IIFC and FMFB. For Output 2.2, SMEs supported by the project may require a higher range of funding compared to female owned micro businesses to be supported by Output 2.4. For these different beneficiaries, two different financial intermediaries might be needed as subcontractors. The Terms of Reference has been revised and will be consulted with the Project Steering Committee and National Project Execution Entity for its endorsement before contact(s) will be issued. For both Outputs, the financial intermediary's tasks include capacity building of SMEs as well as assessment of how to best optimize the allocation of financial resources between loans, guarantees and grants based on the SME's capacities, market assessment and private finance requirements. With that assessment results, resources to be allocated for financial intermediary will be finalized with the endorsement of the Project Steering Committee.

Select what role civil society will play in the project:

Consulted only;

Member of Advisory Body; Contractor; Yes

Co-financier;

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

Executor or co-executor;

Other (Please explain)

124. Civil society organizations (CSOs) help bring attention to daily challenges and needs on the ground by communicating voices collected from their individual beneficiaries. In this project, some CSO and industrial associations will be engaged as co-financing partners, contractors, and collaborators in various aspects of the project activities. Particular emphasis will be given to incorporate recommendations given by the CSO into the project activities with the support of these CSOs.

Civil Society Organization	Role and recommendations
Afghan Dairy Producers Association (ADPA) ADPA has partnered working with UNFAO and Ministry of Agriculture and have come up with a list of organizations that are working under one association. At the beginning it had 28 members and is active since 2006. There are 5 producing cooperatives, 11 process factories, and 8 agencies and some other auxiliary businesses under the Association. In each factory, there are between 3-5 women working. For some of them, the number is bigger, for example for Dehqhan e roz Dairy Company, there are 11 women working for the factory. 51% of milk collectors are women. However, women are not trained well on how to milk the cows properly and also how to store the milk in the approved manner. Women are not assigned to the heavy work load, and their salaries are very low. The main equipment needed for the women working under the dairy businesses, is milk chiller to maintain milk under a defined temperature. However, they do not have access to it. Traditionally women are trained to put the milk vessel in another container filled with cold water, or to tie a cloth immersed in very cold water around the pots that have milk inside in order to preserve it. Milk can be spoiled within 4-5 hours, and if boiled and put in the refrigerator, it can stay fresh for up to 12 hours.	1. Cold storages and milk chillers are needed for the women SMEs in the dairy sector. 2. Women need to be trained throughout workshops; encourage women participate in the trainings. Women who get the proper training can start their own businesses, with the support of government and donors. 3. There is a need to train 3-5 SMEs in each province, and they can be provided with facilities. ADPA can coordinate this activity. 4. Gender mainstreaming can be done under the SMEs that are already identified under the projects. 5. Study tours can benefit both women and the project to increase women SMEs capacity and knowledge. 6. Improving the infrastructure of the cold chain at different level can help women start their own businesses and strengthen the dairy association activities.
AWCCI and EPD are expected to contribute to the project as subcontractors for Outcome 2 and Outcome 1, respectively, to ensure the training sessions targeting female stakeholders are smoothly held incorporating the trainees' needs.	

Afghan Women's Chamber of Commerce and Industries (AWCCI) Leading Entrepreneurs for Afghanistan's Development (LEAD) was established in 2013 and officially launched on January 22, 2014. LEAD's name change to AWCCI was approved by the High Economic Council of the Afghan government on March 12, 2017. AWCCI is a non-profit organization promoting an enabling business environment for businesswomen in Afghanistan. AWCCI has initiated the development of the Made by Afghan Women (MBAW) labelling initiative to draw attention to the work of Afghan women who have invested their time, energy, and often limited capital to develop a product and introduce it to the market.	Based on a Study done by AWCCI about Women's SMEs challenges in Afghanistan, the following recommendations are provided: 1. Development projects should expand to the provinces and districts. At present, there is the perception that development support is only reaching the major urban centers. 2. More long-term and hands-on workshops and training programs, especially in the areas of marketing and product development. The women business owners are interested in training in computer skills, and how to use new technologies (and internet resources) to improve their business. 2. Long term support in the form of exhibitions and trade shows, 3. The development of training programs in the below-listed areas: • Operations management (to assist women business owners in understanding standardized production procedures and supply chain management) • Product development • Pricing strategy and techniques • Marketing management (looking at both domestic and international sales) Growth planning • Contract development (to include business negotiations) 4. Long-term coaching and mentorship should be provided. 5. The Afghan Government should consider incentives provided in laws, regulations, policies, and development programs that support women-owned businesses and investment by women in various sectors. 6. Further research investigating growth factors for women-owned businesses 7. Additional research is necessary to identify potential markets for the products of women-owned businesses, and potential sectors for women to consider for investment. "In Afghanistan, with an economy in transition and continued insecurity, growth prospects for businesses are difficult to assess. There are certainly a plethora of external factors that constrain the growth of businesses in Afghanistan, most of which affect women-owned businesses more severely than their male peers" (AWCCI, 2019).

Equality for Peace and Democracy (EPD) Civil Society organizations can play a major role in terms of advocacy and training under the concept of cold chain usage among women SMEs and households. Equality for Peace and Democracy (EPD) has been active since 2009. It works in three parts: 1) Peace and Security, 2) Good Governance, and 3) Human Rights. The EPD organization's Deputy, Ms. Frozan Rasuli stated that this organization' focus is on peace; however they are very active in the Women's Economic Empowerment area. They do not work with the SMEs; however they can reach the households and can promote energy efficiency activities in terms of consulting households on the usage of better options of cold chain appliances. Skilled training and awareness raising on processing and packaging of food products can be done through the 22 active EPD offices in all over Afghanistan. EPD's staff needs to discuss the real needs on the ground with households and based on the consultations, necessary support can be provided.	N/A

3. Gender Equality and Women's Empowerment

Provide the gender analysis or equivalent socio-economic assesment.

125. The link between gender and poverty has been widely discussed in many development strategies. However a very important element which has hardly been tackled is about women's access to energy. Access to energy has a direct impact on the women's time, income, businesses, health and gender- strategic interests. Men and women use energy measures, differently, based on their roles and responsibilities in the house, market and communities. Their access to energy scheme differs so the impact of it (WB and ESMAP, 2019). For women as the disadvantaged group in the society, energy access is linked to improved literacy and school attendance by saving time at the house and attending school, women's empowerment through access to information via television and radio, increased employment outside the home through networking facilities, raised incomes in the formal sector, improved productivity, energy efficient cooking, food processing and storing that are safer and more time efficient (Oxfam, 2017).

126. The supply chain and logistics space have always been a male-dominated industry, even though there are many opportunities for women to play a role. A gender sensitive approach to this multidisciplinary sector could strengthen the cold chain. Specifically, in the dairy sector in Afghanistan, women traditionally have an important role and are involved in the collection, processing, and marketing of dairy products. Much of their labor is non-monetized, and this needs to be addressed. Dairy provides multiple resources to low-income families, such as food, fertilizer, fuel, cash, and savings. Usually, women decide on household food and nutrition choices; however, dairy farming and distribution also empowers women by providing additional important, even if modest amounts of regular cash income.

127. Women entrepreneurs also face barriers, such as lack of access to information about new technologies and opportunities, education and training on business management and lack of access to finance credit and other financial services necessary to startup businesses. Moreover, in Afghanistan, gender stereotypes in the labor market have reinforced the notion that modern energy technology businesses are “men’s work”, while women are expected to operate in more traditional, and less proficient, businesses.

128. One such barrier which can be addressed by this project is that Afghan women can hardly get national identity cards (known as Tazkira). Tazkira is necessary to own property, but also access to have basic services, such as medical care and education, open a bank account, get employment and vote. Social restrictions discourage women to claim property and the related documents in order to maintain their social inclusion. According to the property law, female children can inherit half of the property, but in practice, male children most of the time, inherit all of the property. Men won property twice as women. Four in five men have a house on their name and the rate among women is only two in five. Two out of four men own land, while only one in four women do. Only about 2 in 10 Afghan women have any right to land. The 2004 constitution gave women the right to vote but many are blocked from voting by their families and communities. Also, women have limited access to information about how elections work.

129. Acknowledging the situation and in order to make women’s work participation more visible and effective, this project includes an explicit gender equality related output backed by gender-specific indicators. Supporting women’s business and their contribution in this sector has two main interrelated impacts:

- Facilitating women’s access to productive resources such as equipment, networks and financial services;
- Increasing women’s capabilities

130. Institutional capacity building and mainstreaming gender policy within the project, will empower women’s groups and by engaging them in decision making it will further help achieve longer-lasting results for women in cold chain industries.

131. In this project, Output 2.3 is specifically targeting female operated SMEs or female-led microbusinesses in the dairy sector, which was identified as the most prominent business sector where female entrepreneurs could benefit most from the cold value chains. Outcome 2 will nurture SMEs serving the cold value chains, while Output 2.3 will apply the same procedures by arranging much smaller microcredits fit to the business needs of those SMEs and microbusinesses operated by female managers mainly collecting milk and distributing dairy products.

132. Please refer to the attached gender assessment report for more details.

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

Yes

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

Improving women's participation and decision making Yes

Generating socio-economic benefits or services or women Yes

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

Yes

4. Private sector engagement

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

133. For UNIDO, SDG9 - Industry, Innovation and Infrastructure - remains the primary focus. SDG 9 underpins many of the other SDGs and as such, UNIDO has the potential to significantly impact development areas outside of its immediate focus.

134. Women have a leading role under the private sector, particularly in Small and Medium-sized Enterprise (SME). According to NSIA, there are more than 1600 women owned and led businesses in Afghanistan. 1428 of the women's businesses are Small and Medium Enterprises (AWCCI, 2019). Women in the Private Sector outnumber 9.6 percent of the working women which is very much close to the 10.3 percent of women working in the government entities (NSIA, 2019). 20 percent of women work for the Civil Society Organizations (CSO) but they are much more equipped with trainings and facilities compared to women in the government and also in the private sector. The number of women SMEs in different sectors is summarized in the chart found in Output 2.3.

135. Based on the number of SMEs illustrated, 70 SMEs are in the agriculture, 70 SMEs are in the food sector and 22 SMEs working with dry fruits products are using energy sources and deal with food processing and storage (AWCCI, 2019). However, these SMEs do not have full access to energy efficiency and cold storage facilities (AWCCI, 2016). The main question of this assessment, therefore, is how to give importance to the notion of gender within energy efficiency projects while the government policies merely highlight it. The objective of this assessment paper is to investigate the role of women in SME in their access to the cold chain and refrigeration facilities and to empower their role in the application of cold chain in their small and medium enterprises.

136. The involvement of the private sector as beneficiaries and investors is key to the successful scale up of this project under Outcome 2. This project aims at setting up a financing/investment support scheme to leverage private investment to support the operation and maintenance of energy efficient and safe cold chains by the small and medium enterprises (SMEs). The financing and investment support scheme will receive know-your-customer(KYC) and customer pre-due diligence (CDD) documents from the SMEs.

Technical and business assistance will be provided to the SMEs qualified for the assistance. Financial assistance will be provided through partnerships with financing institutes. Registered investors have access to the SMEs whose business proposals are considered as bankable in line with criteria set for the SMEs in Afghanistan.

137. Some SMEs and related associations in the following sectors have been contacted, namely, (i) retail stores of refrigerators and air-conditioners, (ii) dairy sector, (iii) cold storage sector, (iv) manufacturing companies of insulation materials such as expanded polystyrene foams, and (iv) refrigerator trucks.

138. Cold chain in the dairy sector involves several steps including the production of fresh milk, milk reception and cooling and storage systems, milk processing and packaging, transportation and storing. There are more than 15 dairy companies in Afghanistan with capacities from 400 to 20,000 liter/day raw milk. Some of these factories are in areas without access to the grid and are using power generators. Also, in milk production and collecting many small business and households are involved without access to required cooling facilities. Considering that access to the reliable source of power in Afghanistan is a barrier in rural areas, in addition to upgrading the technologies and operations in use, most of these factories and facilities are good candidates for off-grid renewable energy.

139. In order to increase the energy efficiency in the dairy processing, the whole chain should be considered in an integrated approach and involve all the SMEs that are active in this sector and it is not possible without engaging the private sector.

140. The training for the ESCO business model will be designed to encourage the companies to expand its current renewable energy and financing service business model by offering energy efficiency audits and, only if the companies are ready, performances based fee structure. With this approach, the companies can organically adopt new business services one by one.

141. This project is trying to address some of the main barriers that are mentioned among the private sector challenges for engagement with public sector such as delayed decision-making by the Public Sector and policy frameworks, standards, and changes which are not shared in a timely fashion with the private sector. This project in the framework of Outcome 2, provides below services for both SMEs and suppliers in the private sector:

- Organizing training and awareness raising workshops for SMEs to learn about the ESCO business model and energy efficient approaches in different process and operation
- Collection and verification of data relating to proposals for dairy factories and new required services for provision of cooling in the milk collection centers;
- Supporting beneficiaries in providing bankable proposals;
- Developing a trade related portfolio of available potentials for investments;
- Systematic research of interested suppliers and investors;
- Organization of business delegations to trade fairs;
- Organization of business to business meetings;

- Assistance in negotiations;

The same approaches will be taken for SMEs in other sectors.

Local financing conditions

142. The Project Execution Entity and UNIDO will select a financing intermediary to provide the financial assistance as a project stakeholder.

5. Risks

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

Risk	Rating	Mitigation Measures
Security risk The security situation in the country might be worsened and there might be more white cities movement restrictions instructed by the UN Security team	P=4 I=4	UNIDO's Afghanistan office monitors the security situation in close communication with the UN Country Security team, and share the information with the government counterpart and the selected project execution entity to make contingency plans and carry out project activities by involving local staff in a coordinated manner.
Energy efficiency effect risk Energy demand increase might not be mitigated compared to the business as a usual baseline for domestic and commercial equipment.	P=3 I=3	The Government will be made aware of the importance of meeting its climate goals for the country and for wider credibility amongst international donors and funding institutes.
Policy priority risk Energy efficiency standards and labelling for refrigerators and air-conditioners (RAC) may not be adopted by governmental institutes in line with Afghanistan Energy Efficiency at the speed and scale necessary to mitigate increased energy use.	P=3 I=4	Government institutes benefiting from this project will be made aware of the importance of supporting the Afghanistan Energy Efficiency Policy goals and timelines.
Investment and financing shortage risk Investment and financing agreements for energy efficient & safe cold value chains including distribution channels fall short of the desired level particularly as many SMEs may not receive the necessary finance.	P=2 I=4	Resources will be placed to assist and encourage SMEs to produce bankable business proposals that through technical and financial means are successful in finding investors.

SME's capacity risk SMEs along the cold value chains might not be fully trained for energy efficiency and safe handling of flammable refrigerant charged equipment, as budgets, capacities and enforcement are too weak	P=3 I=2	A MLF-UNIDO project tackling safe use of refrigerants will run in parallel to this project. Synergies between the projects will counter the risk. Monitoring and reporting of training goals and their importance will be highlighted to the steering committee of the project.
Climate change risk The Climate Change risk might adversely affect the cold value chain resulting in produce being spoiled before being able to be placed on the market.	P=2 I=4	Project sites and SMEs will be selected based on resilience to climate risks and where possible the cold value chain infrastructure will be prioritized for critical response and reinforcement.
Female entrepreneur specific risk Technical and financial assistance might not be tailored specifically to be accepted by target female entrepreneurs and female local investors mainly in the dairy sector	P=3 I=3	Relevant international and national stakeholders promoting female empowerments will be engaged to ensure all on-going project resources are made available to the female entrepreneurs and female entrepreneurs that have equal opportunities to register their companies and have access to resources as male peers.

P = Probability, I=Impact, and the higher the numbers (1-5), the larger the probabilities or impacts.

6. Institutional Arrangement and Coordination

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

143. In principle, UNIDO, as GEF implementing Agency for the Project, will play an overarching coordination and liaison role with the executing partners, and with the GEF Secretariat. UNIDO will also be responsible for technical oversight, all enquiries regarding the project implementation progress, mid-term review as well as terminal evaluation and, final project completion and the achievement of higher level of the project's impacts on the global environment. UNIDO keeps the budget for the independent mid-term review and terminal evaluation. All other activities including monitoring activities will be delegated to a project execution entity under a contractual agreement.

144. The National Afghanistan Environmental Protection Agency (NEPA) is designated as Project Execution Entity (PEE). An institutional assessment of NEPA as project execution entity finalised by KPMG Advisory GmbH shows that there are various required processes in place in NEPA implying its qualification as project execution entity.

145. To establish the institutional arrangement, an agreement with the Afghan Government will be signed, where NEPA would be assigned as PEE.

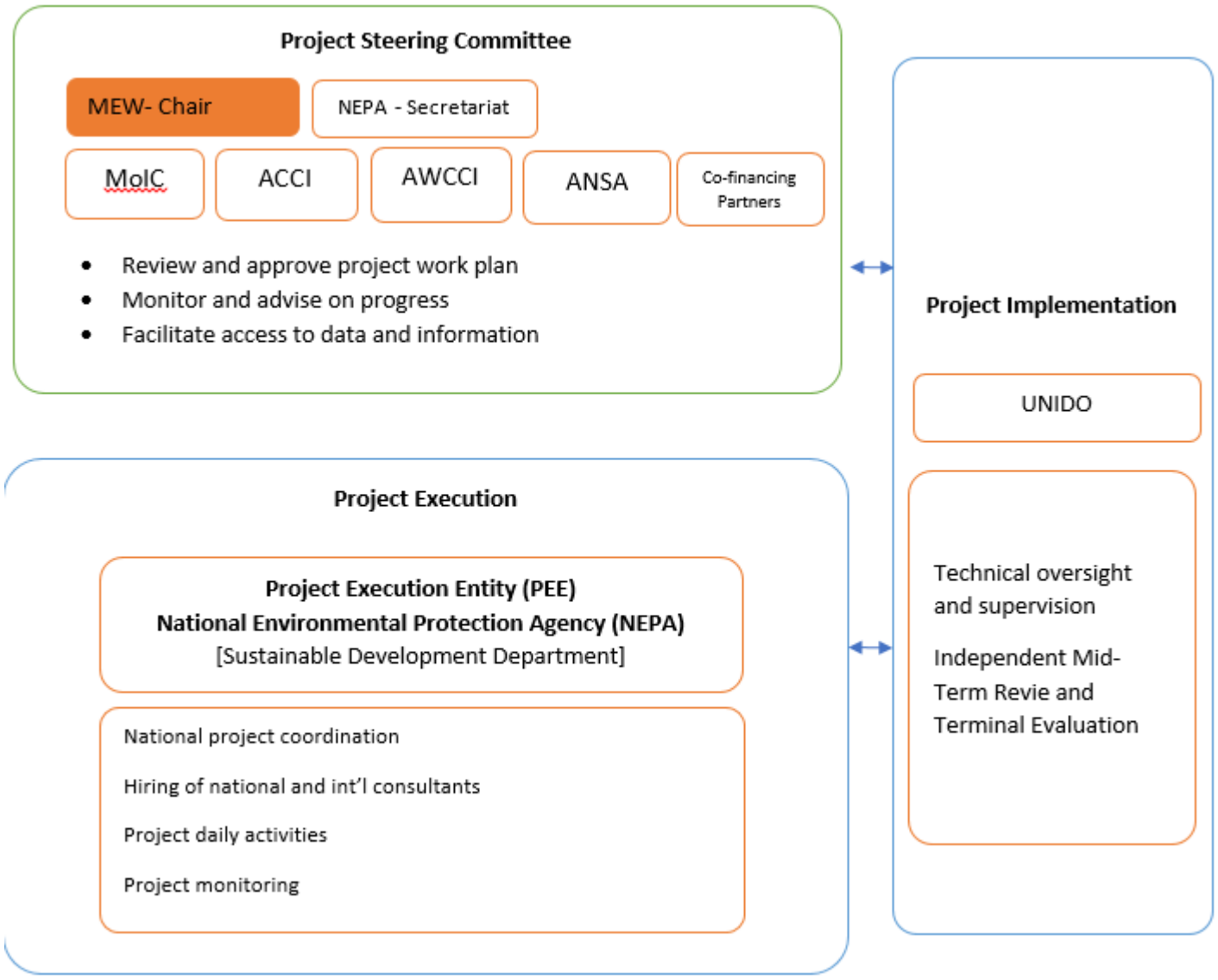
146. Execution generally includes the management and administration of project activities, in addition to managing the delivery of project outputs (funded by the GEF project financing and respective co-financing). This is in accordance with specific project requirements outlined in the approved Project Document and the agreement with the GEF Agency

responsible for implementation. Execution implies accountability for intended and appropriate use of funds, for procurement and contracting of goods and services, and for timely delivery of inputs and outputs.

147. PEE is to establish a Project Management Unit (PMU) consisting of Project Focal Point in NEPA, National Project Coordinator, Cold Chain Expert, Project Assistant in full time, and Investment Expert (part time), and other technical assistance for the tasks described in the project document (such as legal experts and business proposal pitch consultants) or ad-hoc short term experts as needed in consultation with UNIDO.

148. Project Management Unit (PMU) and project staff

- A Project Management Unit (PMU) will be established and manned by
  - Project Focal Point in NEPA (NEPA Co-financing) – NEPA Staff
  - National Project Coordinator (NPC, full time) – PEE Hired
  - Finance and Procurement Assistant (full time) – PEE Hired
  - Energy Efficiency Cold Chain Expert (full time) – PEE Hired
  - Investment Expert (part time) – PEE Hired
  - other technical assistance as needed (such as legal expert and business proposal pitch consultants) – PEE Hired
- The Project Focal Point in NEPA, who will not receive fees from the project, will be nominated by PEE and will ensure that the project activities will be smoothly conducted within the government by ensuring the project is politically supported by the government and aligned with the government priorities.
- The National Project Coordinator is expected to be responsible for the project deliverables in close consultation with the Project Focal Point, the Director General of NEPA, Project Steering Committee (PSC), and UNIDO.
- Finance and Procurement Assistant will assist the National Project Coordinator to handle the project's daily operations particularly focusing on administrative procedures related to bookkeeping, accounting, banking, procurement and other financial tasks to be performed.


Project Steering Committee
MEW- Chair
NEPA - Secretariat
MoIC
ACCI
AWCCI
ANSA
Co-financing Partners
Review and approve project work plan
Monitor and advise on progress
Facilitate access to data and information
Project Implementation
UNIDO
Technical oversight and supervision
Independent Mid-Term Revie and Terminal Evaluation
Project Execution
Project Execution Entity (PEE)
National Environmental Protection Agency (NEPA)
[Sustainable Development Department]
National project coordination
Hiring of national and int'l consultants
Project daily activities
Project monitoring

149. There is a UNIDO GEF project "Minamata Initial Assessment and National Action Plan in the Artisanal and Small Scale Gold Mining Sector in Afghanistan" in the pipeline. The execution entity will be likely the same institute, NEPA. The common administration process could be done by the same team/personnel receiving the project training on rules and regulations to execute GEF projects so as to gain operational efficiency. Technical capacities and personnel from both projects could share knowledge on how to draft terms of reference and technical specifications as well as investment opportunities which are commonly needed in institutional, legal and technical activities of both projects.

7. Consistency with National Priorities

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

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

150. For the cold chain, there are four key national documents; the Intended Nationally Determined Contribution (INDC, 2015), Second National Communication (NC, 2017), HCFC Phase-out Management Plan (HPMP, 2011) and the Afghanistan Energy Efficiency Policy (AEEP, 2016). These documents impact on the cold value chain, whilst HPMP tackles solely the phase out of HCFCs; INDC and AEEP tackle energy efficiency in the cold chain as one of the top national priorities of the government in order to achieve the sustainable development of Afghanistan and its 2030 goals. NC refers to the fact that urban areas are prime contributors to climate change as they consume some 70 percent of the country's energy and produce nearly half of its CO_2 emissions. The main sources of these gases in urban areas are energy generation, vehicles and transportation, and biomass combustion for heating.

151. The Second NC lists priority actions such as policies, research and observation, education and awareness raising, and technology transfer needs. The areas of mitigation measures identified as relevant for this project include (i) building codes and standards on appliances and equipment, (ii) renewable energy, entry costs support, access to capital, and subsidies, (iii) technical industrial capacity to link basic industry with climate sector experts. The estimated budget for all the listed actions are US$ 662 million per year. This GEF project could contribute to leverage private finance aligned with the financial need.

152. NEPA with high-level government officials tasked this project to tackle energy efficiency labelling. The National Priority Program (NPP) outlines energy efficiency as a priority area, emphasizing the need to raise awareness and promote energy efficiency related policy actions. Low emission development strategies (LEDS) follow the overall framework provided by NPP, as well as the Afghanistan National Development Strategy. It is designed to promote economic development while keeping GHG emissions lower than in the business-as-usual scenario. NPP clearly aims at enabling the economic growth on a low emissions trajectory. The National Export Strategy (NES 2018-2022) continues to encourage national efforts to increase trade competitiveness. It aims at bringing policy convergence, institutional alignment and strategic private sector support. This GEF project will align its activities with the stakeholders of NES. At present, Afghan exports of fruits and vegetables are concentrated in a few regional markets, namely India and Pakistan. This leaves the sector with many opportunities to expand its export reach into countries such as Korea and Iran, alongside additional regions in India and Pakistan. However, this can only be accomplished with a concerted effort to develop a consistent brand and address quality-control and food safety issues. A weak national cold chain infrastructure and lack of refrigerated trucks have been identified as bottle necks in the strategic objectives 2 and 3 of NES, "Reclaim prominent global reputation through improved packaging and sound

market insertion strategies" and "Reduce post-harvest losses across the value chain by addressing technical and non-technical issues" respectively. The investment in cold chain infrastructure is highly encouraged. This project has the potential to address these issues

153. Regarding women's active participation in the economic sector, the Women's Economic Empowerment National Priority Program was launched in 2017. The National Priority Program on Women's Economic Empowerment (WEE NPP) builds poor women's capacity to strengthen the economy of their households, communities, and the entire nation. It provides start-up technical and financial support to women-owned businesses, job skills, and financial literacy. The program also improves women's economic enabling environment through policy and planning reforms that will remove legal barriers to women's economic participation. The 4th principle is "4. The government must reduce bureaucratic hurdles to women's participation in the economy, such as by eliminating barriers to women's access to credit and by adopting legal frameworks that create an enabling environment for women to start their own businesses." The WEE's Action Plan Component 5 part c) Establish Specialized Women's Markets: This sub-component completes the value chain for the first two sub-components and ensures that women can earn higher profits from their agricultural and livestock products. In the absence of special women markets and cold storage, women producers, under the pressure of finding market for their products quickly after harvesting, agree to lower prices and thus do not make the profit that they are entitled to. With women's special markets, pressure for survival would be reduced and women's ability and talent for creativity in the area could be harnessed. This is in addition to the opportunity of pocketing higher profits. Under this sub-component, MAIL will establish regional and gradually provincial level special women markets, as per the following procedure:

• Identify feasible locations for women's markets for their agricultural and livestock products;
• Establish women's markets and connect them to national and international markets, with the aim of expanding women's activities and helping their businesses grow;
• Promote and support women's active role in these markets and help them improve their agricultural and livestock products;
• Support women in having an appropriate and secure location for agricultural and livestock markets; and
• Include cold-storage facilities to enable off-season sales that can yield higher returns.

8. Knowledge Management

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

154. The project will set up different levels of knowledge management schemes. The project will set up a knowledge depository in the NEPA to maintain the institutional memory critical for sustaining the energy efficiency labelling implementation scheme in particular.

155. At the project level, the technical assistance and investment database is expected to be the knowledge depository. While the project results are to be openly shared to disseminate energy efficiency and cold chain related knowledge, the pre-due diligence and investment related information must be treated as confidential. Therefore, PEE needs to establish the knowledge management system at the project level to clearly indicate which data are to be proactively disseminated (PUBLIC DATA) and which data are to be dealt with as CONFIDENTIAL DATA.

156. For all the public data, NEPA are expected to disseminate them through inter-ministerial coordination mechanism, NEPA website, social media, and public media. Such public data should be communicated targeting specific audiences in a different format and content. International and national days such as World Refrigeration Day (26 June), International Day for the Preservation of the Ozone Layer (16 Sep), one day before the summer season should be taken as opportunities to disseminate the project's public data.

157. Considering the cultural background and acceptable practices in local communities, public data and knowledge needs to be disseminated in the local languages on the public media using more illustrations where relevant.

158. The report results will be also shared with co-financing partners and stakeholders at project steering committees and other occasions. The results will need to be disseminated through

(i) NEPA and inter-ministerial official announcements

(ii) A project website to be set up on the NEPA website

(iii) NEPA's social media

(iv) The co-financing partners' communication channels

(v) Public media such as newspaper, radio and TV

159. The confidential data including pre-due diligence data of the registered SMEs should be shared only with the registered investors and financing partners with the project's agreement signed. All stakeholders who will have access to the confidential data must sign non-disclosure agreements, if UNIDO agrees, before they have access to the data.

9. Monitoring and Evaluation

Describe the budgeted M and E plan

160. Monitoring and evaluation will facilitate tracking execution progress toward the objectives and outcome. Likewise, it will facilitate learning, feedback, and knowledge sharing on results and lessons among the primary stakeholders to improve knowledge and performance. The Project Results Framework provides performance and impact indicators for project execution along with their corresponding means of verification. This section of the project document presents a concrete monitoring and evaluation of the project.

161. PEE is responsible for conducting project monitoring in accordance with established UNIDO and GEF procedures.

Baseline and communication strategies

162. A baseline will be set and communication strategy made mainstream. Project and institutional indicators will be measured at onset of the project as baseline based on recorded data including the number of pre-project survey responses received from stakeholders (ENV 7), the number of success stories published on conventional and/or online media, the

number of post-project survey responses received from sstakeholders collected and reported, any supporting statements by beneficiaries made to stakeholders who respond to the survey. Indicators will meet SMART indicator criteria. Beneficiaries will be well informed of the project progress, so stakeholders recognise the importance of the survey.

Deliverables: (1) List of indicators whose baselines are assessed, (2) communication strategies including a work plan and budget

Project monitoring

163. The project monitoring will be part of the project office set up by NEPA as PEE. Records will be kept including: project steering committee minutes and sex-segregated participant lists, biannual progress reports, Ministries participating in the Steering Committee that have released their staff to attend meetings, new project staff that are given relevant and motivational training opportunities and Governmental counterparts show understanding of the benefits of joining the Steering Committee meetings

Deliverables: (1) official announcement of the Project Steering Committee, (2) copies of posted job descriptions, (3) copies of contracts, (4) copies of work plans, (5) meeting minutes of the project management calls, (6) copies of proposed agenda, the list and meeting minutes of Project Steering Committee members, (7) the progress reports and deliverables highlighting any possible delays and preempting the issues that could become what could hamper smooth execution of the project, (8) submit all other requested documents

Independent Mid-term Review and Terminal Evaluation conducted

164. This project will be evaluated at the mid-term and completion of the project (called Mid-Term Reivew and Terminal evaluation, respectively).

165. The project evaluation will be carried out following the evaluation process of UNIDO in line with the GEF's evaluation policy, evaluation reports, recognizing the need for a good safety and security system to be in place and evaluators were able to safely visit project sites.

Deliverables: (1) Itineraries of evaluators, (2) copies of meeting minutes, (3) data collected for the evaluations, (4) copies of mid-term review and terminal evaluation report

	Year 1				Year 2				Year 3				Year 4				Year 5			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Outcome 3: Project monitoring and evaluation																				
Output 3.1 Baseline set and communication strategy mainstreamed																				
Activity 3.1.1: Information on indicators is collected and the baseline is set																				
Activity 3.1.2: Communication materials are collected and shared on media																				
Activity 3.1.3: Information on indicators is collected and annual achievements are summarized																				
Output 3.2: Project monitored																				
Activity 3.2.1: Project steering committee is established and held regularly at least once a year																				
Activity 3.2.2: Project management unit is established and in function																				
Output 3.3: Project evaluated																				

166. Meeting records and monitoring reports will be used to keep Government officials and stakeholders up to date, engaged and benefiting from participation in the project and or the Project Steering Committee. The Project Steering Committee will review the latest activities, endorse planned activities and provide meeting minutes signed by the Secretary to UNIDO.

167. During the project implementation, the project implementation reports (PIRs) will be prepared to monitor the progress achieved since the start of the project or previous reporting periods. Finally, two evaluations are foreseen during the project period: mid-term review and terminal evaluation. The preparations of Terms of Reference for these will be led by the UNIDO Evaluation Team located in Vienna, Austria and will be undertaken in accordance with UNIDO and GEF guidance. UNIDO will recruit evaluators in consultation with PEE. The final evaluation will focus on the delivery of the project's results as initially planned and at impact and sustainability of results, including the contribution to capacity development and the achievement of global environmental benefits/goals.

168. Terminal Evaluation (TE) - The Project will undergo an independent TE 58th months before the closure of project activities. The TE will focus on the delivery of the project's results as initially planned (and as corrected after the mid-term evaluation, if any such correction took place). It will examine the project's performance with respect to the planning and adaptive management requirements of both UNIDO and the GEF. It will determine progress made toward the achievement of project's outputs and outcomes. The TOR for this evaluation will be prepared by the UNIDO Project Manager based on guidance from the UNIDO evaluation group.

169. The TE will also provide recommendations for follow-up activities and requires a management response.

Legal Context
170. The Government of the Islamic Republic of Afghanistan agrees to apply to the present project, mutatis mutandis, the provisions of the New Standard Technical Assistance Agreements between the United Nations and the Government on 10 May 1956.

Ownership of the equipment to be purchased by the project budget by PEE

171. Assets procured under the Agreement between UNIDO and PEE funded from the GEF shall be under the ownership of PEE until such time an asset is transferred to the final recipient. PEE shall coordinate with UNIDO on when the asset is transferred and shall provide a comprehensive inventory list of all assets procured and thereafter transferred.

10. Benefits

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

171. In order to evaluate the real value of energy efficiency policy, especially for the developing countries, where substantial economic growth and related energy demand increase are expected, the multiple benefits approach should be applied. This approach seeks to expand the perspectives of energy efficiency beyond the traditional measures of reduced energy demand and lowered CO2 emissions by identifying and measuring its impacts across many different spheres.

172. Investments in energy efficiency support economic growth by reducing industrial energy consumption, as well as improving industrial productivity and, hence, increasing the sustainability and competitiveness of local businesses. While energy efficiency standards and labelling promote better market conditions for those businesses which produce good-quality efficient products. These impacts are likely to lead to the employment rate growth in the country.

173. Improved energy efficiency helps developing countries with a low energy access rates to expand access to electricity, enabling them to supply power to more people through existing or expanding energy infrastructure. Energy efficiency measures also have the potential to reduce the country's dependence on imports of oil and other fossil fuels, thereby improving their balance of trade and lowering exposure to associated price volatility.

174. Energy efficiency standards and labelling provide consumers with the opportunity to choose more energy efficient appliances, leading to reductions of the per-unit cost of lightning, heating, refrigeration and other services, which contributes to poverty alleviation.

175. Energy efficiency policy can help reduce local air pollution which, hence, leads to human health benefits.

176. In today's global farm to fork marketplace, refrigeration plays a huge role in terms of preserving nutrition, food (and medicine) safety, food waste and export opportunities. Perishable foods, including fruits, vegetables, dairy products and meats products, need to be kept in a chilled or frozen state along the entire supply chain. The benefits, in reality, go beyond just hunger-reduction and cold chain economics. Producing food that is spoiled or wasted, also wastes land, water, labor and other valuable resources. Food waste is a significant source of greenhouse gases, mostly in the form of methane, a pollutant at least 25 times more potent than carbon dioxide with a direct effect on the climate.

177. Development of the cold chain helps meet market requirements for quality and safety, and improves food production and food security. Reliable and efficient cold chains contribute not only to reducing losses but also to enhancing the technical and operational efficiency of the food supply chain.

178. The cold chain enables the country to take part in the global perishable products market either as producers or as consumers. On the one hand, the cold chain contributes to the local and regional market of temperature-controlled logistics which contributes to the economic benefit of the country. On the other hand, the growth in revenue is associated with a higher tendency to consume more fruits, vegetables, fish and meat products. Increasing income levels create a change in the diet and lead to a growing demand for fresh fruit and higher value foodstuffs such as meat and fish.

179. From a geographical perspective, the cold chain has the following impacts on the market:

· Local. Timely distribution to the final consumer of perishables, namely grocery stores, and restaurants. In addition guarantees access to temperature sensitive health care products in all different parts of the country.

· Regional. It can support the specialization of production and economies of scale in distribution. This could involve sizeable investment in cold storage facilities servicing regional grocery markets or specialized laboratories exchanging temperature sensitive pharmaceutical components. In addition, specialization of agricultural functions permits the transport of temperature-sensitive food products to distant markets

180. In the absence of refrigeration, high temperatures are not merely uncomfortable; they directly affect human health, national productivity and societal well-being in diverse and under-appreciated ways. Scaling up affordable access to cooling will thus be critical if countries are to meet the Sustainable Development Goals (SDGs), particularly in the areas of food security, health, education, employee productivity, and inequality

181. People of different ages and gender experience different thresholds of thermal comfort. Lack of sufficient refrigeration and exceeding the comfort threshold affects people's health and the quality of life in different ways. Improper cooling may lead to a person becoming critically unwell or even death.

182. Thermal conditions affect people’s ability to function in their different individual and social activities. Studies show that children’s cognitive skills are affected negatively by high temperatures. A lack of air conditioning in schools can lead to temporary closures resulting in student absence and consequential underperformance.

183. In a similar way, thermal conditions affect employees’ work performance and productivity directly, by impacting cognition, engagement, mood, and comfort, as well as indirectly, through absenteeism.

184. In addition, cold chains facilitate the access to healthcare products and services. The WHO estimates that more than half of freeze-dried vaccines, and 25% of liquid vaccines, are wasted every year due to intermittent power supplies and a lack of effective cooling. Like vaccines, most medications are temperature sensitive. Some medicines can only handle a fluctuation of 2 to 8 degrees; others can’t be exposed to heat over 25 degrees Celsius. Many hospitals receive pharmaceutical shipments in coolers, which depending on the drug, can be safe for 24 to 48 hours without refrigeration; others must be used immediately. Promoting investment in technologies and services to guarantee the quality and efficacy of temperature sensitive health care products, including medicines, vaccines, insulins, blood products etc, during their transportation and distribution around the country improves the welfare of society.

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

Interventions	Objectively Verifiable Indicators	Targets		Means of Verification	Assumptions	Mitigation Measures
		Mid-term	End of project			
Project Objective: The project objective is to implement energy efficiency labelling for refrigerators and air-conditioning and engage private financing to invest in energy efficiency of cold value chain operated by small and medium enterprises.	Cumulative reduction of CO2eq emissions (UNIDO ENV.1) Cumulative improved energy efficiency (UNIDO ENV.3) # of SME with increased inclusion in value chains (UNIDO SOC.2)		1.26 mill tCO2eq 758,396 MWh 50			
Outcome 1: Energy demand increase is mitigated compared to the business as usual baseline with energy efficient domestic and commercial equipment promoted with energy efficiency labeling	# of energy efficient domestic and commercial equipment with energy efficiency labeling put on market for sale Number of institutions strengthened (UNIDO GOV.1)	75,375 5	312,964 5	Copies of regulations, standards, and labeling newly adopted or updated by the government National statistics from NEPA	Importers comply with standards and labeling which influences consumers' behaviors The regulations and standards on energy efficiency labeling are adopted in time	Importers will be informed of the labeling requirement with enough lead time and manufacturers are also informed of the policy

	# of gender mainstreamed environment policies, strategies, laws, regulation approved/enacted (ENV 10)	5	10		Adequate methodologies for energy efficiency and demand assessment available and known to be used	A high level political support of the government is to be engaged by UNIDO through the Steering Committee
	Number of actors gaining awareness/knowledge (UNIDO KASA.1)	10	20			
Output 1.1: Energy efficiency standards and labeling for refrigerators and air-conditioners (RAC) adopted by governmental institutes in line with Afghanistan Energy Efficiency Policy	Cumulative number of new standards adopted or implemented (UNIDO POL.2)	1	2	Copies of regulations, standards, and labeling newly adopted or updated by the government	Government officials are committed to ensuring the labeling systems will be adopted, used, and enforced throughout the supply chain by allocating relevant human resources and governmental budgets	The high level authorities are informed about energy labelling systems through the Steering Committee.
	# of training and certificates with a sex disaggregated participant list	1 workshops for Kabul and 2 other major provinces	2 workshops for Kabul and 4 other major provinces	Training workshop reports with a sex disaggregated participant lists	The regulations and standards on energy efficiency labeling are adopted in time	Adequate human resources are trained to coordinate throughout the supply chain.
	# of employees involved in the labeling system in a sex disaggregated manner	2F+6M	4F+12M	Employee profile of governmental institutions involved in the labeling system	Ministries release their officers for training events	
ACTIVITY 1.1.1	# of new energy efficiency standards in place	0	1	Copies of new energy efficiency standards	The government is committed to creating new energy efficiency standards	The project identifies donors to set up the laboratory required to set up the national energy efficiency standards

Afghan National Standards Authority (ANSA) sets minimum energy performance standards in RAC products, and ANSA accredits certification bodies which ensures RAC products meet the energy performance standards	# of laboratory set up	0	1	Site visits to the laboratory	The lab equipment to be funded as co-financing is high-quality and staff are adequately trained to conduct experiments to gain optimal efficiency standards	
	# of entities that are accredited	1	3	Evaluation reports Registration log maintained to track and verify certified entities	Regular updates and monitoring of the registration log is made to ensure accurate reporting	Annual report submission
Activity 1.1.2 **Energy efficiency road map is finalized after a market research, and energy efficiency labelling is designed that adheres to the energy efficiency standards set out for each RAC product category**	# of newly designed labels in RAC products			Copies of labels	Market research on the current energy efficiency baseline will reveal a near-term trend of the energy efficiency specifications of the imported equipment which allows the label criteria to be set for the next coming years. The labels are designed for simplicity and described correctly following the guidelines	Experts will be recruited and energy efficiency trends of other countries will be referred to in consultation with importers and manufacturers
	# of guidelines			Copies of guidelines	Consensus on standards is reached to then develop them into guidelines	Transparency measures to encourage involvement of the private sector

Activity 1.1.3 **Afghan National Standard Authority trains their staff on the standards and promote them through community engagement (main objective is consumer awareness raising) as well as integration of new standards into importers business models and customs offices**	# of trainees in a sex disaggregated manner	15	60	Reports of workshops organized by accredited entities with participant lists		A sustainable financing scheme is established between the governmental institutes involve in the accreditation
	# of stakeholders involved	5	10	Copies of communication from stakeholders to their client organizations	The implementation of the MEPS and energy efficiency labeling actions are financially sustainable so that accredited organizations have capacities and resources to organize the training workshops	
	Survey – measure response and reaction from trainees (tool to measure efficacy of training)	min 75 out of 100	min 75 out of 100	Copies of received survey responses and results		Promote transparency measures of accredited entities' business models– made publicly available on company/agency website
	# of consumer reports	2	4	Copies of consumer reports		
Output 1.2: Energy efficiency standards and labeling implemented	# of energy efficient domestic and commercial equipment with energy efficiency labeling put on market for sale	75,375	312,964	Copies of energy efficiency standards	Importers and manufacturers comply with standards and labeling	Awareness campaigns on energy efficiency standards and labeling will be organized for key stakeholders including international manufacturers, importers, retail shops

	# of trainers / facilitators trained	250 (50 female, 200 male)	1000 (200 female/800 male)	Copies of energy efficiency labeling applications by manufacturing companies	Government officials are committed to carrying out inspections and enforcing energy efficiency regulations and policies	Adequate human resources will be trained to perform inspections and standard controls
	# of gender mainstreamed environment policies, strategies, laws, regulation approved/enacted (ENV 10)	0	1	Photos of equipment sold on the market	AEEP is smoothly implemented funded by the national government as well as international aids	Government co-financing partners smoothly implement the related activities accordingly.
	% of retail sector stakeholders aware of energy labels including minimum energy performance standard (MEPS) and quality standard (QS) (taken from AEEP)	20%	65%	Copies of inspection documents Government statistics provided by Central Statistics Organization and Afghan National Standard Authority		
Activity 1.2.1 Legal, financial, and institutional setup to roll out the energy efficiency labeling by relevant Ministries, governmental institutes, manufacturers, importers, customs office, non-profit organizations and retail stores	# of stakeholders involved	15	30	Copies of Steering Committee's minutes	Government officials are committed to implementing and enforcing energy efficiency regulations and policies	Awareness campaigns on energy efficiency standards and labeling will be organized for key stakeholders including international manufacturers, importers, retail shops

Activity 1.2.2 Awareness raising and official announcement on the energy efficiency roll out to all stakeholders including manufactures of RAC products	# of people receiving awareness raising communications # of official announcements	10,000 15	30,000 30	Copies of communication for awareness raising Copies of official announcements	Importers and retail stores understand the need for the labeling as a priority and are willing to learn on how energy efficiency labeling will be implemented	Benefits of the energy efficiency labeling is well explained to the importers and retail stores
Activity 1.2.3 Initiation and sustainable operation of the energy efficiency labeling	# of equipment imported or manufactured complying with energy efficiency standards	75,375	312,964	Copies of customs documents Photo of retail store displays	A sustainable implementation mechanism is set up and maintained	A financial mechanism is set up to ensure the operation receives enough resources
Outcome 2 Investment agreement for energy efficient & safe cold value chains including distribution channels is agreed	Number of projects or businesses financed (UNIDO INV.2) Value($) of new investment leveraged (UNIDO INV.3) # of cold value chains established	5 or equivalent to 10% of cofinancing 10% co-financing target 0	50 (equivalent to the total investment amount of US$ 5 million) 100% co-financing target 3	Bank certificates, loans Copies of documents confirming that a cold value chain was established as legal and physical entity	SMEs are equipped with some financial knowledge Local bank sector offers suitable financial options to SMEs (low rate) Technical capacity at local level is sufficient to support development of cold value chains	Government intervenes in promoting financial knowledge Government promotes local financial sector to engage SMEs

	Number of bankable proposals elaborated by firms as a result of UNIDO interventions (UNIDO 2.29)	20	70			Keeping beneficiary companies informed of benefits of energy efficient cold value chains
	# of companies adopting best technologies/new technologies (ENV 8)	5	50	Newly issued employee contracts	Government advertises available positions and encourages female and male candidates to apply	Adequate human resources trained to fulfill the position requirement
	# of green jobs secured/created (ENV 9)	45	120			UNIDO project effectively de-risk private finance investment
	Amount of energy consumption reduction in cold chains	962 GWH	4,814 GWh			
Output 2.1SMEs along the cold value chains trained for energy efficiency and safe handling of flammable refrigerant charged equipment	# of manufacturing and processing companies adopting project recommendations to improve energy efficiency	15	30	Energy bills from manufacturing and processing companies before and after the project intervention	Government promotes adoption energy efficiency labelled equipment	Enough resources are allocated to ensure that awareness among SMEs is raised

	# of effectively trained employees of beneficiary companies along the cold value chains to safe handle of flammable refrigerants and low-GWP refrigerant charged equipment	45	120	Copies of certificates after the training examination Training workshop reports with a sex disaggregated participant lists	Suppliers and users acknowledge the risks and benefits of flammable refrigerants and low-GWP refrigerant charged equipment	Awareness campaigns on energy efficiency standards and labeling will be organized for key stakeholders including SMEs Enough resources are allocated to ensure that awareness among SMEs is raised
Activity 2.1.1 Training materials are developed in English and the local language	# of training materials finalized and made available	1	2	Copies of training materials	Enough resources are allocated and clear target audience are set for the development of the training resources	Relevant experts are to be engaged for overseeing the quality of the training materials
Activity 2.1.2 Training workshops on safe and energy efficient cold chains provided to SMEs in 5 sectors, dairy, agriculture, cold storage, trucks, and medical sectors	# of trainees (female/male)	45 (5 female)	120 (12 female)	Copies of workshop reports Copies of sex-disaggregated participant lists	The training workshops attract trainees from the target sectors	Benefits of the workshops will be disseminated at proper occasions including investment related events
Activity 2.1.3	# of SMEs sharing info needed for technology assessment and reviewing	20	60	Copies of reports on energy efficient technology options	Awareness on benefits of adopting energy efficient technologies is high enough	Equipment suppliers are informed of energy efficient technology

Technical options on safe and energy efficient cold chains recommended by experts and assessed by SMEs	the recommended technologies				that SMEs look into the energy efficient technology options	options and ready to share such info with SMEs upon request
Output 2.2 SMEs along cold value chains registered on SME and ozone office database and benefited from governmental and project technical, business and financial assistance services	Cumulative number of firms with improved management practices (UNIDO BUS.1) Number of investment-ready proposals elaborated (UNIDO INV.1) # of targeted SMEs registered in CRM and ozone office database # of SMEs participating to governmental and project technical assistance services	20 18 18	60 63 63	Copies of registration data on the database Copies of aide memoires and sex-disaggregated participant lists of the investment promotion meeting	SMEs understand the benefits of being registered on SMEs and ozone office database by providing know-your-client (KYC) info and ozone depleting substance data	Benefits to join the project are to be better communicated through co-financing partners network Government and national ozone office take responsibility for their accounts and databases
Activity 2.2.1	# of SMEs registered	20	60	Copies of registration data on the database	SMEs understand the benefits of being registered on SMEs and ozone office database by providing know-your-client (KYC) info and ozone depleting substance data	Benefits to join the project are to be better communicated through co-financing partners network

Development of SME client database and information collected for know your customer (KYC) and client pre-due diligence (CDD)				Copies of aide memoires and sex-disaggregated participant lists of the investment promotion meeting		
Activity 2.2.2 SME's KYC and CDD results are ready to be shared with potential investors who meet qualification criteria and are registered in the investor's database with KYC assessed and improved	# of investment-ready proposals elaborated (UNIDO INV.1)	18	63	Copies of registration data on the database Copies of communications with SMEs to improve KYC data on the database	SMEs are committed to improving pre-due diligence data quality	Benefits to join the project are to be better communicated through co-financing partners network
Output 2.3 Technical and financial assistance provided specifically targeting female entrepreneurs and <u>female</u> local investors mainly in the dairy sector	Cumulative number of firms with improved management practices (UNIDO BUS.1) Number of investment-ready proposals elaborated (UNIDO INV.1) Number of Women entrepreneurs and local investors received technical and financial support (in the dairy sector)	2 2 10	7 7 30	Copies of registration data on the database Copies of aide memoires and sex-disaggregated participant lists of the investment promotion meeting	Female entrepreneurs have equal opportunities to register their companies and access to resources as male peers	Relevant international and national stakeholders promoting female empowerments are engaged to ensure all on-going project resources are made available to the female entrepreneurs

	% of improvement in the quality and quantity of women SMEs products (in the dairy sector)	10	20			
Activity 2.3.1 Promotion of the registration of SMEs operated by female entrepreneurs mainly in the dairy sector	Cumulative number of firms with improved management practices (UNIDO BUS.1)	2	7	Copies of communications with SMEs to improve KYC data on the database	Female entrepreneurs have equal opportunities to register their companies and access to resources as male peers	Relevant international and national stakeholders promoting female empowerments are engaged to ensure all on-going project resources are made available to the female entrepreneurs
Activity 2.3.2 Investment proposal improved for selected SMEs and business pitches generated for SMEs operated by female entrepreneurs	Number of investment-ready proposals elaborated (UNIDO INV.1)	2	7		Female entrepreneurs have equal opportunities to register their companies and access to resources as male peers	Relevant international and national stakeholders promoting female empowerments are engaged to ensure all on-going project resources are made available to the female entrepreneurs
Output 2.4	# of local financial institutions providing various green financing opportunities	3	6	Bank products and services brochure	Local bank sector offers suitable financial options to SMEs (low rate) with the project's financing support	Government institutes of the Project Steering Committee are prompted to intervene in promoting to nurture the investment promotion environment
Partnership established with financial institutes providing green financing opportunities for cold value chains	# of green financing workshops/training provided to cold value chain SMEs by banks	2	5	Aide memoires and participation attendance of SMEs and local financial intermediaries	Local bank sector offers effective green financing training to cold value SMEs	Government institutes of the Project Steering Committee are to promote local financial sector to engage SMEs

Activity 2.4.1 Financial assistance of UNIDO is designed in partnership with financial institutes and potential investors	# of financing institutes with better understanding of the benefits to promote energy efficient and safe cold value chains	3	6	Copies of communications and meeting minutes	Local bank sector offers suitable financial options to SMEs (low rate) with the project's financing support Local bank sector offers effective green financing training to cold value SMEs	Government institutes of the Project Steering Committee are prompted to intervene in promoting to nurture the investment promotion environment Local financing banks receive project resources to offer terms for SMEs to easily accept the financing opportunities
Activity 2.4.2 Financial assistance of financial institutes and potential investors negotiated and agreements are signed	# of agreements signed	1	2	Copies of signed agreements	Local bank sector offers suitable financial options to SMEs (low rate) with the project's financing support Local bank sector offers effective green financing training to cold value SMEs	Government institutes of the Project Steering Committee are to promote local financial sector to engage SMEs Local financing banks receive project resources to offer terms for SMEs to easily accept the financing opportunities
Output 2.5 Match making facilitated between investors and SME beneficiaries	# of events offered by local bank to encourage meetings between investors and SMEs Number of investment-ready proposals elaborated (UNIDO INV.1) # of agreements signed	2 20 5	5 70 50	Aide memoires and participation attendance of SMEs and investors Project proposals submitted by SMEs reflecting investors' feedback Bank data collection, SMEs' balance sheet	Local bank offers specific services/events to enhance match making between investor and SMEs Investors are committed to investing in SMEs SMEs are committed to improving their business proposals Government provides an enabling environment for match making	The project provides enough motivations and offers services to facilitate the match making

Activity 2.5.1 SMEs were assisted to develop their business pitches and present them at investment forums	# of business pitches presented	20	70	Copies of business pitches	Local bank offers specific services/events to enhance match making between investor and SMEs SMEs are committed to improving their business proposals	The project provides enough motivations and offers services to facilitate the match making
Activity 2.5.2	Number of technical and financial assistance provided to SMEs	20	70	Copies of communications	SMEs are willing to improve their business proposals based on advice given by business experts	The project provides technical and financial assistance to improve business proposals
Feedback are received from investors and reflected into revised business pitches and business models				Copies of technical/financial assistance documents		
Output 2.6 Agreements reached for installment of energy efficient equipment along cold value chains for SMEs	Value($) of new investment leveraged (UNIDO INV.3) # of agreements signed	10% co-financing target 5	100% co-financing target 50	Copies of business proposals Copies of signed agreements	The project's technical and financial assistance generate enough bankable business proposals	The project's engage UNIDO's experts in business development
Activity 2.6.1 Investors received pre-due diligence documents and information	# of business proposals given to investors upon request	20	70	Copies of business proposals	Investors are committed to investing in SMEs	The project provides enough motivations and offers services to facilitate the match making
Activity 2.6.2	# of agreements signed	5	50	Copies of signed agreements	Investors considers the project's technical and financial assistance as de-risking factors	The project explains the demonstrated results, shared its activities with potential investors and provides financial assistance

Agreements are reached between investors and SMEs						
Outcome 3: Project monitoring and evaluation	# of project steering committee minutes and sex-disaggregated participant lists	Once a year	Once a year	Copies of project steering committee minutes and sex-disaggregated participants lists	Project management unit is given a UN compliant, safe and functioning office space	Ensuring good coordination and working relationship exist between UNIDO and counterpart
	# of progress reports	Twice a year	Twice a year	Copies of project administration documents	New project staff are given relevant training opportunities	Project staff are motivated and receive incentives for undertaking the training
	# of project evaluation reports	Mid-term evaluation report	Final evaluation report	Project evaluation reports	Evaluators can safely visit project sites	Ensuring good safety and security system put in place
Output 3.1 Baseline set and communication strategy mainstreamed	# of project and institutional indicators measured at onset of the project as baseline	Half of the project indicators	All project indicators	Copies of reports	Stakeholders collect and report indicator related data	Ensuring indicators meeting SMART indicator criteria
	# of pre-project survey responses received from stakeholders (ENV 7)	10	50			
	# of success stories published on conventional and/or online media	1	2	Copies of responses and results	Stakeholders respond to the survey	Ensuring stakeholders acknowledge the importance of the survey
	# of post-project survey responses received from stakeholders (ENV 7)	0	50	Copies of published stories	Beneficiaries provide supporting statements	Beneficiaries are well informed of the project progress
Activity 3.1.1 Information on indicators is collected and the baseline is set	# of project and institutional indicators measured at onset of the project as baseline	Half of the project indicators	All project indicators	Copies of biannual progress reports	Stakeholders collect and report indicator related data	Ensuring indicators meeting SMART indicator criteria

				Copies of evaluation reports		
Activity 3.1.2 Communication materials are collected and shared on media Activity 3.1.3 Information on indicators is collected and annual achievements are summarized	# of communication materials # of indicators updated annually	2 Half of the project indicators	10 All project indicators	Copies of communication materials Copies of biannual progress reports Copies of evaluation reports	The project can afford to generate communication materials targeting the right audience Stakeholders collect and report indicator related data	Local investment and business associations are contracted to develop the communication materials Ensuring indicators meeting SMART indicator criteria
Output 3.2: Project monitored	# of project steering committee minutes and sex-disaggregated participant lists # of biannual progress reports	Once a year Twice a year	Once a year Twice a year	Copies of project steering committee minutes and sex-disaggregated participants lists Copies of biannual progress reports	Ministries participating in the Steering Committee release their staff to attend the meetings New project staff are given relevant training opportunities	Governmental counterparts understand the benefits of joining the Steering Committee meetings Project staffs are motivated and receive incentives for undertaking the training
Activity 3.2.1 Project steering committee is established and held regularly at least once a year	# of Steering Committee meetings	2	5	Copies of project steering committee minutes and sex-disaggregated participants lists	Ministries participating in the Steering Committee release their staff to attend the meetings	Governmental counterparts understand the benefits of joining the Steering Committee meetings
Activity 3.2.2	# of biannual progress reports	4	10	Copies of biannual progress reports	New project staff are given relevant training opportunities	Project staffs are motivated and receive incentives for undertaking the training

Project management unit is established and in function						
Output 3.3: Project evaluated	# of project evaluation reports	1	2	Project evaluation reports	Evaluators can safely visit project sites	Ensuring good safety and security system put in place

ANNEX B: RESPONSES TO PROJECT REVIEWS (from GEF Secretariat and GEF Agencies, and Responses to Comments from Council at work program inclusion and the Convention Secretariat and STAP at PIF).

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

TOTAL Budget	$ 48,000		
Budget item	Obligated	Planned	Subtotal
International consultant	$ 5,467	$ 4,464	$ 9,931
Project travel	$ -	$ -	$ -
National consultant	$ 15,457		$ 15,457
Subcontract	$ 15,012		$ 15,012
National meeting			$ -
International meeting			$ -
Miscellaneous	$ 1,107		$ 1,107
TOTAL	$ 37,043	$ 4,464	$ 41,507
		Funds Available	$ 6,493

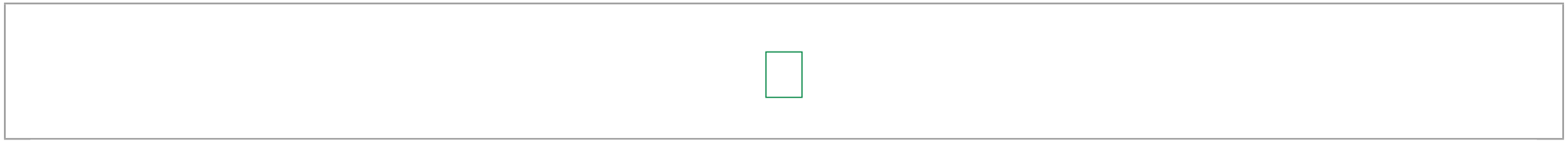
ANNEX D: CALENDAR OF EXPECTED REFLOWS (if non-grant instrument is used)

Provide a calendar of expected reflows to the GEF/LDCF/SCCF/CBIT Trust Funds or to your Agency (and/or revolving fund that will be set up)

ANNEX E: Project Map(s) and Coordinates

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

Please see main body of the document.



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