Scaling up investment in energy efficiency in buildings through enhanced energy management information system (EMIS) and green social housing

Part I: Project Information

GEF ID
10402

Project Type
FSP

Type of Trust Fund
GET

CBIT/NGI
- ☐ CBIT
- ☐ NGI

Project Title
Scaling up investment in energy efficiency in buildings through enhanced energy management information system (EMIS) and green social housing

Countries
Azerbaijan

Agency(ies)
UNDP

Other Executing Partner(s)

Executing Partner Type

Other Executing Partner(s)
Ministry of Ecology and Natural Resources

Executing Partner Type
Government

GEF Focal Area
Climate Change

Taxonomy
Focal Areas, Climate Change Mitigation, Climate Change, Energy Efficiency, Influencing models, Demonstrate innovative approache, Convene multi-stakeholder alliances, Strengthen institutional capacity and decision-making, Stakeholders, Private Sector, Individuals/Entrepreneurs, SMEs, Civil Society, Academia, Non-Governmental Organization, Type of Engagement, Information Dissemination, Partnership, Consultation, Participation, Communications, Public Campaigns, Education, Awareness Raising, Gender Equality, Gender Mainstreaming, Sex-disaggregated indicators, Gender-sensitive indicators, Capacity, Knowledge and Research, Capacity Development, Knowledge Generation, Learning, Innovation

Rio Markers

Climate Change Mitigation
Climate Change Mitigation 2

Climate Change Adaptation
Climate Change Adaptation 0

Duration
60 In Months

Agency Fee($)
429,495

Submission Date
11/4/2019

A. Indicative Focal/Non-Focal Area Elements

Programming Directions	Trust Fund	GEF Amount($)	Co-Fin Amount($)
CCM-1-3	GET	4,521,005	66,150,000
	Total Project Cost ($)	**4,521,005**	**66,150,000**

B. Indicative Project description summary

Project Objective

to promote energy efficiency in buildings which includes implementing an intelligent Energy Management Information System (EMIS) and greening MIDA Social Housing Programme

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount($)	Co-Fin Amount($)

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount($)	Co-Fin Amount($)
Component 1. Improved enabling environment for increased energy efficiency in buildings	Technical Assistance	**Outcome 1.1** Effective policy and legal interventions in place for the effective implementation of energy efficiency in buildings	**Output 1.1.1.** Amendments to the draft National Energy Efficiency Action Plan (NEEAP) including EMIS and Net-Zero Buildings related policy interventions developed and approved **Output 1.1.2** Secondary legislation of the Law on Efficient Use of Energy Resources, and other relevant legal amendments regulating energy efficiency in buildings, developed and adopted **Output 1.1.3** Inter-ministerial Committee on Energy Efficiency established and functional **Output 1.1.4** Law on Energy Efficiency in Buildings developed and adopted	GET	250,000	400,000

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount($)	Co-Fin Amount($)
Component 2 Improved monitoring of energy consumption in buildings and leveraged financing for municipal EE investments through Energy Management Information Systems (EMIS) established at municipal level	Technical Assistance	**Outcome 2.1** Central Energy Efficiency Support Unit established and operational demonstrating Best Practice in monitoring energy consumption in buildings, as evidenced by a fully operational Energy Management Information Systems (EMIS) which is leveraging new investments in energy efficiency in buildings	**Output 2.1.1** Feasibility study on introduction of EMIS in Azerbaijan developed **Output 2.1.2** EMIS transferred to Azerbaijan set-up and functional and translated into Azeri language **Output 2.1.3** Central Energy Efficiency Support Unit established with personnel hired and available, HydroMet capacity strengthened and technical expertise for EMIS management built up within the Ministry of Ecology and Natural Resources **Output 2.1.4** Buildings Energy Consumption Database register for all public buildings in Baku City created and hosted by HydroMet Central	GET	400,000	800,000

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount($)	Co-Fin Amount($)
Component 2 Improved monitoring of energy consumption in buildings and leveraged financing for municipal EE investments through Energy Management Information Systems (EMIS) established at municipal level	Investment	**Outcome 2.2** Investment mobilized demonstrating the new Energy Management System (EMIS) in place and successfully implemented in 80 public buildings	**Output 2.2.1** Municipal Energy Management System in place (EMIS installed) in **80** selected public buildings in Baku (app.1 mil m2)	GET	400,000	500,000
Component 2 Improved monitoring of energy consumption in buildings and leveraged financing for municipal EE investments through Energy Management Information Systems (EMIS) established at municipal level	Technical Assistance	**Outcome 2.2** Investment mobilized demonstrating the new Energy Management System (EMIS) in place and successfully implemented in 80 public buildings	**Output 2.2.2.** Energy Audits for at least **30** public buildings developed, based on EMIS and recommendations for specific EE investments adopted by municipal authorities	GET	150,000	300,000

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount($)	Co-Fin Amount($)
Component 2 Improved monitoring of energy consumption in buildings and leveraged financing for municipal EE investments through Energy Management Information Systems (EMIS) established at municipal level	Investment	**Outcome 2.2** Investment mobilized demonstrating the new Energy Management System (EMIS) in place and successfully implemented in 80 public buildings	**Output 2.2.3** At least $**10 million in** investment mobilized and projects implemented for energy efficient investments in public buildings, based on the measures identified by the EMIS	GET	750,000	10,000,000
Component 3 Norms and Standards on sustainable energy consumption in buildings embedded in the National Social Housing Strategy	Technical Assistance	**Outcome 3.1** MIDA Charter amended to include new EE norms and standards	**Output 3.1.1** MIDA social housing architectural design based on the newly approved EE standards and norms and increased ambition	GET	10,000	100,000
Component 3 Norms and Standards on sustainable energy consumption in buildings embedded in the National Social Housing Strategy	Technical Assistance	**Outcome 3.2** Demonstration of best practices in EE architectural design and construction in social buildings	**Output 3.2.1** Detailed feasibility studies/business plans for schools and kindergartens in green social housing	GET	190,000	500,000

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount($)	Co-Fin Amount($)
Component 3 Norms and Standards on sustainable energy consumption in buildings embedded in the National Social Housing Strategy	Investment	**Outcome 3.2** Demonstration of best practices in EE architectural design and construction in social buildings	**Output 3.2.2** Investments mobilized in **21** social facilities (app.140,000 m2) demonstration projects	GET	1,005,719	49,000,000
Component 4 Training, Public Awareness, Monitoring and Evaluation	Technical Assistance	**Outcome 4.1** Enhanced capacities for Energy Efficiency in Buildings and EMIS implementation	**Output 4.1.1** Training delivered and skills strengthened on EE and EMIS for at least **400** people (municipal officials energy auditors, architects, builders and engineers)	GET	500,000	1,000,000

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount($)	Co-Fin Amount($)
Component 4 Training, Public Awareness, Monitoring and Evaluation	Technical Assistance	**Outcome 4.2** Monitored and evaluated overall results of the project and lessons learnt with compiled KM materials and recommendations for the removal of the barriers and identified root causes, including institutional and regulatory improvements and related public outreach and TA to scale up the project results	**Output 4.2.1** Green housing architecture design contests organized in Baku, promoting the concept of Net-Zero Carbon Buildings **Output 4.2.2** A comprehensive on-line, website and regularly update open data, knowledge management and networking platform set up and functional **Output 4.2.3** Municipal Energy Efficiency Charter signed by 30 municipalities in Azerbaijan	GET	150,000	450,000

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount($)	Co-Fin Amount($)
Component 4 Training, Public Awareness, Monitoring and Evaluation	Investment	**Outcome 4.2** Monitored and evaluated overall results of the project and lessons learnt with compiled KM materials and recommendations for the removal of the barriers and identified root causes, including institutional and regulatory improvements and related public outreach and TA to scale up the project results	**Output 4.2.4** Energy Efficiency Support Units established in 30 municipalities	GET	300,000	1,500,000

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount($)	Co-Fin Amount($)
Component 4 Training, Public Awareness, Monitoring and Evaluation	Technical Assistance	**Outcome 4.2** Monitored and evaluated overall results of the project and lessons learnt with compiled KM materials and recommendations for the removal of the barriers and identified root causes, including institutional and regulatory improvements and related public outreach and TA to scale up the project results	**Output 4.2.5** Project midterm and final evaluations and end of the project "lessons learnt", including monitored results of supported EE investments report and recommendations for upscaling **Output 4.2.6** Two international public outreach, knowledge management workshops and a final project workshop including a professional video documenting project results and presenting the project's pilot Zero Carbon Building.	GET	200,000	600,000
				Sub Total ($)	**4,305,719**	**65,150,000**

Project Management Cost (PMC)			
	GET	215,286	1,000,000
	Sub Total($)	**215,286**	**1,000,000**
	Total Project Cost($)	**4,521,005**	**66,150,000**

C. Indicative 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($)
Government	MIDA Social Housing Agency	Equity	Investment mobilized	50,350,000
Government	MIDA Social Housing Agency	In-kind	Recurrent expenditures	500,000
Government	Baku City Executive Authority	Equity	Investment mobilized	10,800,000
Government	Baku City Executive Authority	In-kind	Recurrent expenditures	500,000
Government	Other municipal authorities	Equity	Investment mobilized	1,200,000
Government	Other municipal authorities	In-kind	Recurrent expenditures	300,000
Government	Ministry of Ecology and Natural Resources	Equity	Investment mobilized	680,000
Government	Ministry of Ecology and Natural Resources	In-kind	Recurrent expenditures	500,000
Government	Ministry of Energy	Equity	Investment mobilized	400,000
Government	Ministry of Energy	In-kind	Recurrent expenditures	400,000
Donor Agency	UNDP	Grant	Investment mobilized	120,000
Donor Agency	UNDP	In-kind	Recurrent expenditures	400,000
			Total Project Cost($)	**66,150,000**

Describe how any "Investment Mobilized" was identified

The major source of project co-financing and investment mobilized is represented by MIDA’s Social Housing Programme, investments in public facilities (kindergarten and schools), feasibility studies and project knowledge management, of $50,850,000 for the entire project implementation period (5 years)(ii) Co-financing amounting to $11,300,000 comes from

Baku Executive Authority, and represents investment mobilized for the implementation of EE measures based on EMIS data and co-financing energy audits, and project knowledge management (ii) The co-financing from the Ministry of Ecology and Natural Resources in the amount of $ 1,800,000 represents mobilized investments and in-kind expenditures for the Hydromet buildings EE refurbishment, Energy Efficiency Unit (including cofinancing of EMIS) cofinancing project's capacity building, project management and awareness activities (iii) Co-financing from the Ministry of Energy represents $ 800,000 in-kind and investments, cofinancing legal and policy work, capacity building activities and knowledge management activities of the project for the entire duration (iv) Cofinancing from UNDP amounts to 520,000 representing cash and in-kind expenditures for project management and knowledge management; (v) cofinancing from other municipalities are also reflected as a lump sum, and will be further clarified and broken down for each municipality at PPG stage when all the letters of endorsement will be agreed with project partners and will accompany the project document.

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

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount($)	Fee($)	Total($)
UNDP	GET	Azerbaijan	Climate Change	CC STAR Allocation	4,521,005	429,495	4,950,500
				Total GEF Resources($)	**4,521,005**	**429,495**	**4,950,500**

E. Project Preparation Grant (PPG)

PPG Amount ($)
100,000

PPG Agency Fee ($)
9,500

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount($)	Fee($)	Total($)
UNDP	GET	Azerbaijan	Climate Change	CC STAR Allocation	100,000	9,500	**109,500**
				Total Project Costs($)	**100,000**	**9,500**	**109,500**

Core Indicators

Indicator 3 Area of land restored

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
0.00	0.00	0.00	0.00

Indicator 3.1 Area of degraded agricultural land restored

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

Indicator 3.2 Area of Forest and Forest Land restored

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

Indicator 3.3 Area of natural grass and shrublands restored

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

Indicator 3.4 Area of wetlands (incl. estuaries, mangroves) restored

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

Indicator 4 Area of landscapes under improved practices (hectares; excluding protected areas)

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
0.00	0.00	0.00	0.00

Indicator 4.1 Area of landscapes under improved management to benefit biodiversity (hectares, qualitative assessment, non-certified)

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

Indicator 4.2 Area of landscapes that meets national or international third party certification that incorporates biodiversity considerations (hectares)

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

Type/Name of Third Party Certification

Indicator 4.3 Area of landscapes under sustainable land management in production systems

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

Indicator 4.4 Area of High Conservation Value Forest (HCVF) loss avoided

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

Documents (Please upload document(s) that justifies the HCVF)

Title	Submitted

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)	183068	0	0	0
Expected metric tons of CO_2e (indirect)	2814000	0	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				
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)

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO_2e (direct)	183,068			
Expected metric tons of CO_2e (indirect)	2,814,000			
Anticipated start year of accounting				
Duration of accounting				

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)	6,012,136			

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

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

Indicator 11 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	1,000,000			
Male	1,000,000			
Total	2000000	0	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

Clarifications: 6. At the PIF stage, the estimated direct emission reductions are about 183,068 tonnes CO2 eq. per lifetime of investment. Indirect emissions are estimated at 2,814,000 tonnes CO2 eq. Calculations will be adjusted at PPG stage.

Part II. Project Justification

1a. Project Description

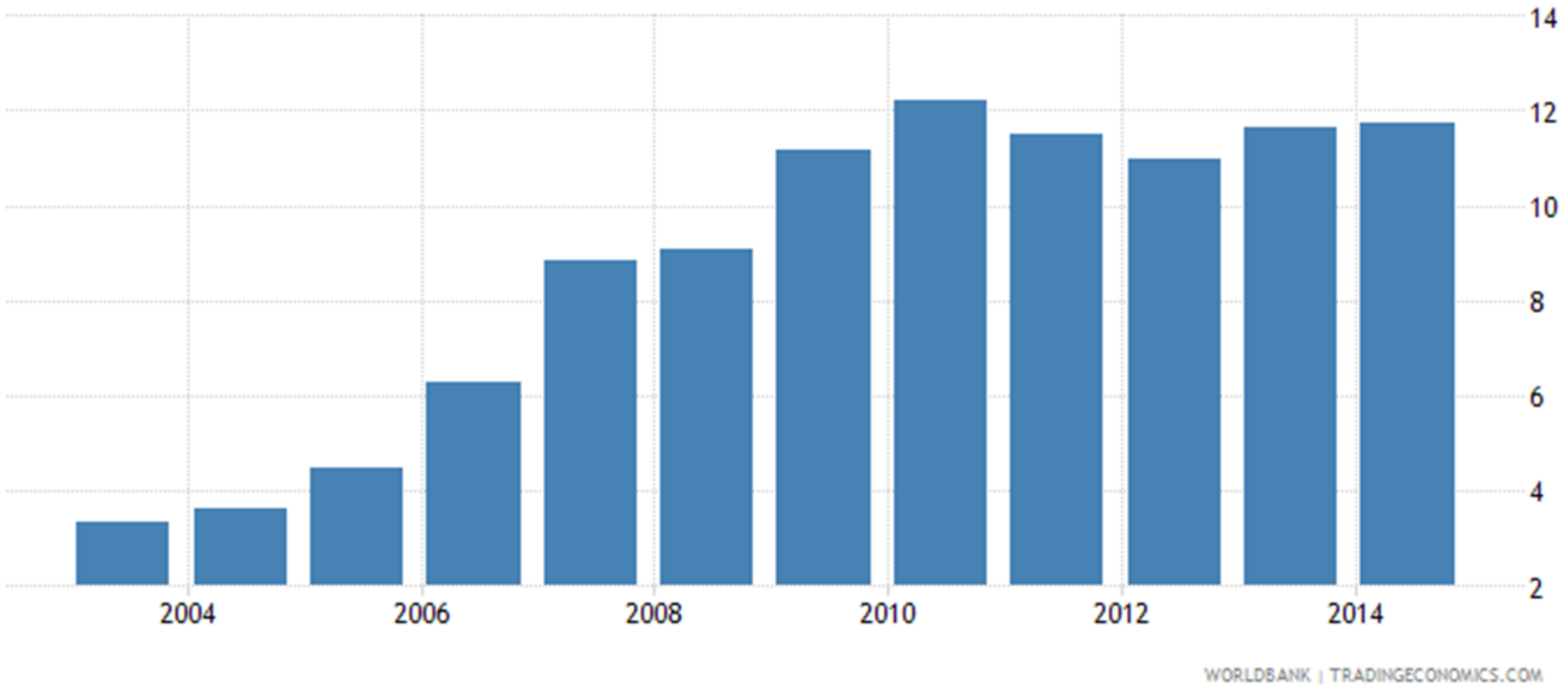
1.a.1.The global environmental and/or adaptation problems, root causes and barriers that need to be addressed (systems description)

1 . Industrialization and urbanization grew in tandem in Azerbaijan during the 20th century and the beginning of the 21st century, so much so that by end 2018, 5.5 million people or more than half of the total population of the country (9,972,377 people) lived in urban areas, including the capital Baku, compared to 300,000 people (out of 1.8 million people) at the beginning of the 20th century, and almost 3.8 million people (out of 7.2 million) prior to Azerbaijan's independence in 1991. Azerbaijan, a country with an ancient history, located on the shores of the Caspian Sea, is rich in natural resources, especially oil. The development of the oil industry had started in the middle of the 19th century and has been one of the main drivers of urbanization in Baku Area. According to UNECE[1][1], the lack of forward-looking approach to urban planning has led to challenges in harmonizing development of urban areas and planning sustainably Organizing sound land management that promotes economic, social and environmental sustainability is still a challenge.

2. Baku, with its administrative territory including 12 administrative districts and 5 settlements, covering 2,200 square km. It is located on the southern shore of the Absheron Peninsula, alongside the Bay of Baku. The Second Biennial Update Report (SBUR) underlines that the city alone is responsible for 30 percent of all energy-related CO_2 emission in the country and is also a large source of CH_4 emissions coming from many illegal landfills on the Absheron peninsula, as well as from abandoned oil and gas wells, a legacy of over a century of oil and gas development in the Greater Baku area. Urbanization influenced the drastic increase in overall number of buildings in Azerbaijan (Annex E), which is on an ascending trend since 1995, attributable mainly to private buildings while the number of buildings in the public sector has been constant.

3. The energy intensity in Azerbaijan decreased rapidly after 1994, through the country's economic transition and increased again after 2004. GDP per unit of energy use (PPP$ per kg of oil equivalent) in Azerbaijan was reported at 11.72 in 2014 (according to the WB).

Figure 1. Azerbaijan- GDP per unit of energy use



[1] https://www.unece.org/fileadmin/DAM/hlm/prgm/cph/countries/azerbaijan/CPAzerbaijan.chapter2.pdf

4. According to the Third National Communication (TNC) to UNFCCC, Azerbaijan's annual GHG emissions were 51.8 tCO2e/year, with the energy sector accounting for the largest share of domestic emissions, more than 50% or 39.3 million tCO2. The decline in industrial activities led to a decrease of GHG from stationary and mobile sources, from 55.1 million tons of CO2 in 1990 to 26.8 million tonnes in 2011, and an increase again to 31.41 million tonnes CO2 in 2016. (source: IEA,2016). Buildings sector is a major consumer of electricity and heat, households are the largest end energy consumers in the country.[2] Consumption of electricity in households has the highest share- 6699.3 million kWt hour (Source: State Statistical Committee).The high energy efficiency potential- not quantified at national level- in buildings (both residential and public) sector is mainly due to the bad thermal condition of buildings and windows.

5. Many public buildings were built 40 or 50 years ago. In most cases thermal properties of the building envelope are poor. Typically, heat generation systems in public buildings are outdated and inefficient without automatization and controlling units and indoor heating installations provide no possibility for indoor temperature regulation. In the last decade, energy consumption in buildings increased significantly. Energy efficiency standards in buildings are outdated and the development of the legislation in the energy sector rests with the Ministry of Energy. The TNC has highlighted that under an improved EE legislation, a better buildings insulation in 20% of urban residential buildings by 2050 will halve heat losses, leading to a cumulative GHG emission reductions of 70.36 million metric tonnes CO2eq.

6. Energy consumption data and energy savings potential in public and municipal buildings is not readily available, although a few pilots have demonstrated the energy saving potential in buildings Energy metering and energy consumption monitoring are not regulated, there is no energy management information system in place for public buildings and there are no standards or norms to support the implementation of energy management systems at the local/municipal level in order to monitor energy consumption in public and municipal buildings. Although construction activities in Azerbaijan have increased recently and many national projects have been carried out to develop the country's infrastructure, the housing and in general construction sector still faces significant problems. Housing and construction related issues are regulated by several outdated normative acts, and current legislation is unclear and incomplete regarding minimum energy performance requirements.

7. For example, the Housing Code (HC) of the Republic of Azerbaijan was adopted in 2009, however no major requirements regarding minimum energy efficiency standards have been introduced so far. Furthermore, the Urban and Construction Code of the Republic of Azerbaijan, 2012-is enforced by the State Committee on Architecture and City Building and by the Ministry of Emergency Situations. Art. 57 of this Code refers to constructions and states that these should comply with energy savings and energy efficiency requirements however it does not provide for further norms and standard. The compliance rate for building codes is low, and capacities and regulations for building codes enforcement is weak. Institutional capacities to assess energy performance of buildings are lacking, and there are no regulations for energy management and energy service providers as well as guidelines and minimum criteria for energy audits.

8. UNDP project on Nationally Appropriate Mitigation Actions (NAMA) for low carbon end-use sectors in Azerbaijan has implemented (among other activities) the first energy efficiency demonstration projects showcasing the energy savings potential in buildings. The energy efficiency building refurbishments were designed as pilot activities, and (in-line with GEF mission) these pilot projects have served to gain hands-on experience with energy audits pre- and post-investments in four public buildings. The MTR has acknowledged that "Energy efficiency, including building insulation, implemented in reconstructed SOCAR buildings in pilot projects represent a unique and probably the first demonstration of building envelope insulation of reconstructed buildings in Azerbaijan on such a large scale. The expertise generated by this pilot projects create a unique opportunity for SOCAR for replication on a large scale across the whole country ". Some lessons learned were taken up and reflected in this PIF and others will be explored at PPG stage, for example: (i) lack of capacities to implement EE standards in constructions and insufficient capacities to carry out energy audits (ii) lack of general awareness at all levels (decision makers, public etc.) of energy efficiency in buildings (iii) lack of incentives for private sector engagement in energy efficiency in buildings investments. The latter will be explored at PPG stage, and the project will investigate possibility of amending legislation to introduce fiscal incentives for private sector investments in green energy and energy efficiency as well as possibility to support the Ministry of Energy to develop ESCO related legislation (e.g. either a new law or other legal amendments).

9. NAMA Project was however designed to assist SOCAR, a major corporation in Azerbaijan and the project design did not foresee activities through which the identified policy/regulatory barriers (specifically in energy efficiency and renewable energy) should be overcome. Therefore, the Mid Term Review (MTR) report has recommended that subsequent Energy Efficiency projects should focus on the legal and policy barriers, including the lack of incentives for private sector involvement (due to inadequate legislation to incentivize private sector investments in green alternative energy) and due to fuel subsidies and the lack of institutional capacity for assessing energy saving potential in buildings, recommending therefore that future GEF projects be addressing these issues, in order to maximize GEF interventions.

Table 1. Energy consumption in building sector (Source: State Statistical Committee)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Natural gas (mil m3)	3.083,7	2.798,4	2.877,9	2.907,0	2.389,2	2.307,0	2.576,0	2.750,7	3.186,9	2.826,5	3.055,4
Heat, thsd. Gcal	291,3	309,7	327,5	485,8	581,9	699,2	938,3	1.018,6	1.151,6	1.130,3	1.206,4
Electricity, mln kWt hour	7.443,7	5.847,3	5 755,3	5 916,4	6 501,0	6.715,5	7.292,0	7.937,9	8.071,5	7.134,6	6.699,3
Wood, thsd ton	130,8	106,4	144,9	152,6	155,1	136,7	110,1	98,3	23,0	26,4	22,4

Policy and legal framework aspects:

10. Azerbaijan ratified both the Energy Charter Treaty and the Protocol on Energy Efficiency and Related Environmental Aspects (PEEREA) in 1997. By ratifying PEEREA, countries commit to implementing policies to improve energy efficiency (EE) and reduce the environmental impacts of the energy cycle.

11. Relevant legislation for the building sector:

1. Constitution of Azerbaijan Republic
2. In June 29, 2012 the new Urban Planning and Construction Code (UPCC) of the Republic of Azerbaijan was adopted and it came into force on January 1, 2013.
3. The official website of The State Committee for Standardization, Metrology and Patent of the Republic of Azerbaijan (http://azstand.gov.az/?id=29&sub_id=47&lang=1) contains a large number of national standards (AZS) applicable in different sectors of construction activity. The list of valid construction normative documents in the Republic of Azerbaijan can be downloaded from the official website of The State Committee of Urban Planning and Architecture of the Republic of Azerbaijan (http://www.arxkom.gov.az/?/az/content/257/).
4. The Housing Code (HC) of the Republic of Azerbaijan was adopted in June 30, 2009. In accordance with the Law on Approval, Coming into Force of Housing Code of Azerbaijani Republic and Connected Issues of Legal Regulation, the Code came into force on October 1, 2009

12. The Urban and Construction Code of the Republic of Azerbaijan, 2012-is enforced by the State Committee on Architecture and City Building. Art. 57 of this Code refers to constructions and states that these should comply with energy savings and energy efficiency requirements however it does not provide for further norms and standards. In the country, the Soviet standard SNIP II-3-79 "Civil Heating Engineering" that provides heat resistance values for buildings is still used, but it does not classify buildings by efficiency levels as done by the European and Russian standards.[3] Similarly, the Housing Code (HC) of Azerbaijan does not have major requirements regarding minimum energy efficiency standards.

13. The Law "On the Use of Energy Resources", adopted on May 30, 1996, is currently in force, and it defines the legal, economic and social foundations of state policy in the use of energy resources, as well as the general measures in policy implementation. References to buildings are made only under art. 26 (regarding the registration of energy resources utilization in) and art 22 (concerning heating norms to be embedded in construction norms.). Minimum energy performance in buildings, energy audit, energy management systems are not addressed.

14. Different new laws are currently under preparation, led by the Ministry of Energy: (I) Law on Efficient Use of Energy Resources (ii) Law on Alternative Energy (iii) Law on Electric Energy (iv) Law on Energy. The first three draft laws are in different stages of stakeholder consultations whereas the last one is in an incipient development stage. The relevant law for the energy efficiency in buildings is the first draft law (Law on Efficient Use of Energy Resources- further elaborated on under the Baseline Scenario). No subsequent secondary legislation, standards and norms have been developed for the operationalization of this Law on Efficient Use of Energy Resources, after its approval.

15. The first National Energy Efficiency Action Plan (NEEAP) is being currently developed (this aspect is further elaborated under the Baseline Scenario). Other countries' (e.g. Serbia) experience in the implementation of National Energy Efficiency Action Plan, is pointing at difficulties in the implementation of the foreseen actions and programmes of the NEEAP, chiefly among them being that the monitoring and verification of achieved savings remain a challenge, and the absence of statistical data available to determine aggregated energy efficiency indicators for the targeted end-use sectors. These, and other challenges (such as absence of energy management information system which could provide data on energy consumption in buildings and savings potential) are likely difficulties that would be faced by Azerbaijan in the future implementation of their NEEAP.

16. The Government of Azerbaijan has ratified the Paris Agreement on Oct 28th, 2016 and is taking a proactive approach in tackling climate change issues, through its Nationally Determined Contribution (NDC) by taking a voluntary obligation to reduce its GHG emissions by 35% by 2030 and adjusting energy policy framework. Effective implementation will however require not only increased institutional capacity, but also public awareness and a behaviour change that could be achieved only by targeted awareness raising. For example, even though EE issues are known by constructors in Azerbaijan, they are generally not applied as they make the projects more expensive. Here a behavioral change is needed, at a larger scale, starting with an appropriate regulatory framework and a deep understanding of the effects of GHG emissions on climate change and the potential for large-scale residential and other buildings reconstruction (schools, nurseries, health clinics, office buildings). The necessity to build up a critical mass of awareness and capacity prior to deploying tools, methodologies and financial instruments are highlighted in the Lesson Learnt report of the GEF Energy Efficiency Buildings in Croatia and referenced and taken up by the similar GEF funded EMIS project in Serbia. Some recommendations for project preparation phase and designing activities are listed as follows: "It is important not just to recognize and describe the symptoms, but to understand the underlying causes of the detected problems. Key interventions should be directed towards institutional and professional capacity and competence building. There is no point in providing free energy audits prior to developing capacities to implement EE measures. There is also no point in providing financial instruments prior to developing demand for EE loans through a public promotion and awareness campaign etc."; " provisions for knowledge management, scaling up, and exit strategy and sustainability must be included and elaborated in the project preparatory stage"; " to achieve true capacity development outcomes takes time, for strategic change project it makes no sense to programme for a period less than five years".

Table 2. Key barriers to energy efficiency in buildings and integrated green urban and peri-urban development

Barriers	Barrier Explained	Means of Overcoming Barrier

Legal & Regulatory Barriers	Current energy standards in buildings are outdated, there are no mandatory energy efficiency standards in buildings. The draft new Law on Efficient Use of Energy Resources is expected to be approved by mid-2020. It is not specifically focused on energy efficiency in buildings, but it includes key elements relevant to EE in buildings (as explained under Baseline Scenario). However, the secondary legislation needed to operationalize the law is not developed. No donor support is planned for development of the secondary legislation of this law. The National Energy Efficiency Action Plan is currently being developed, expected to be finalized by mid-2020. It is unlikely to include actions related to energy management information system (EMIS) and prioritization of EE measures in public and municipal buildings based on energy consumption monitoring data.	Assistance with putting in place - relevant regulations and by laws which support the implementation of the new Law on the Efficient Use of Energy Resources, - development of the draft Law on Energy Efficiency in Buildings - amendment of the NEEAP, to include actions related to energy management system (EMIS) and policy interventions to a gradual transition to Net-Zero Carbon Buildings.
Information & Data Barriers	There is a lack of data concerning energy consumption and energy potential especially in the public and municipal sectors which makes it more difficult to ascertain where the best energy-efficiency investments can be made without proper systems in place to collect, monitor, and manage data.	Detailed surveys on energy consumption will be undertaken and municipal energy management information system-which will be setup and operationalized, continuously developed, strengthened, and updated, will assist greatly with removing information and data barriers. The transfer of UNDP knowledge on EMIS from Croatia and Serbia and a focus on related training in the project will also remove these barriers.
Institutional capacity Barriers	Municipalities have a responsibility to implement energy efficiency measures, but this is difficult to achieve when in most cases, they lack resources for this purpose and some unclarity over different institutional mandates on the building's management regime are persisting. There is insufficient technical expertise on energy efficiency in buildings among builders/engineers/architects, a lack of understanding of how to undertake basic energy audits of buildings, lack of concern over energy efficiency in buildings among constructors.	The Ministry of Ecology and Natural Resources with its Hydromet department, will put in place an Energy Efficiency and EMIS Unit to focus on the support of implementation of energy management information systems. In addition, under the guidance of this ministry and in close collaboration with the Ministry of Energy, Baku Executive Office and MIDA Social Housing Agency, a series of trainings will be organized and at least 400 energy auditors, engineers, architects, municipal and relevant officials, builders etc. will be trained in energy management systems and other relevant energy efficiency norms and standards to be aligned with the new legal framework.

Financial Barriers	There is a lack of financial resources to invest specifically in energy-efficiency in the municipal sector. Municipalities are not fully able to determine which investments are mostly needed, due to a lack of reliable information and data.	The implementation of Energy Management Information System (EMIS) is a strong tool to provide data and information about the best energy-efficiency investments, which have the shortest payback periods and save the most energy. By implementing EMIS effectively it will contribute towards financing energy-efficiency projects in the municipal sector where these investments are needed the most and make it easier for municipalities to plan and allocate additional budgetary resources, thereby making it easier to overcome this barrier.
Awareness & Knowledge Barriers	There is a lack of experience, awareness and knowledge among municipal staff and other official employees on energy efficiency in buildings, lack of a minimal awareness on energy efficiency benefits.	Awareness raising events and online interactive platforms will complement trainings. In addition, compiled analysis of the experiences and lessons learnt during the project will be available, including practical recommendations for mainstreaming and scaling up through further adoption of EMIS and mainstreaming financial resources for targeted EE in buildings.

[2] file:///D:/Downloads/OeEB-Study-Energy-Efficiency-Finance-Azerbaijan%20(1).pdf

[3]file:///D:/Downloads/OeEB-Study-Energy-Efficiency-Finance-Azerbaijan%20(1).pdf

1.a.2 Baseline scenario and any associated baseline projects

17. In the baseline scenario, within the framework of the EU funded "EU4Energy Programme" a draft Law on Efficient Use of Energy Resources was developed, and it is in an advance stage of inter-ministerial consultation. The Law defines "the legal, organizational and economic basis of the state policy in the field of the efficient use of energy resources and energy efficiency and regulates the activities and relations of individuals and legal entities in this area".

18. The new Law is expected to be approved mid-2020 and it will replace the current Law "On the Use of Energy Resources"(1996). The new Law adds key elements on energy efficiency and energy use, some of them relevant for buildings sector. However, no subsequent, secondary legislation (norms and regulations) is developed in order to implement the new Law. In the baseline scenario, no donor support to the Ministry of Energy is planned for the development of the secondary legislation which will operationalize the new Law.

19. The draft new Law is not focused on the buildings sector exclusively; however, it covers provisions for some relevant aspects to energy efficiency in buildings. For example: (i) under Art. 7 it includes provisions for the development of the National Energy Efficiency Action Plan and for setting energy savings targets; (ii) under Art. 5 it provides general legal provisions for introducing minimum energy performance requirements for buildings and facilities, equipment, household electrical appliances (iii) Articles 8, 9 and 10 include general legal provisions concerning energy audits including in buildings (iv) Art. 14 include provisions concerning energy metering in new buildings and replacement of old ones in existing buildings (v) article 21 provides specific provisions for the development of other policy measures for : a) minimum energy performance requirements, b) energy performance certification of buildings; c) energy labeling etc.

20. Furthermore, the new Law mandates subsequent laws and normative acts to be developed and adopted after its entry into force. Importantly, the new Law is explicitly mandating the development of specific regulations and norms. For example, one of the new laws to be developed is the Law on Energy Efficiency in Buildings. Other normative acts to be developed, as mandated, are for example: The National Energy Efficiency Action Plan; guidelines on Energy Audit Accreditation; guidelines for conducting energy audits; energy management system standard; guidelines and requirements for energy managers and energy service providers etc.

21. In the baseline scenario, the National Energy Efficiency Action Plan (NEEAP) is currently being developed with the support of EU4Energy Programme, expected to be finalized by mid-2020. As stated in the draft new Law on Efficient Use of Energy Resources, NEEAP will provide a framework for "energy efficiency improvement measures, expected or obtained energy savings levels including measures in energy production, transmission, distribution and final energy consumption".

22. It is envisaged that the first 5 year- NEAP will be "based on estimated data and will include:

- a detailed analysis and evaluation based on the final findings on the implementation of the energy savings goals set out in the preceding National Action Plan;
- plans for the additional corrective actions and information on their anticipated impacts to address any existing or expected shortcomings on targets;
- gradually increasing the use of performance indicators and criteria adapted for the anticipated effects of the measures to be taken and to be implemented based on the implemented measures;
- a current data completed with the predictions".

23. The current structure of the NEEAP is not finalized now of this PIF writing, however it will be unlikely to include municipal energy management and energy management information systems (EMIS) related actions and prioritized financing of energy efficiency measures in public and municipal buildings.

24. In the baseline scenario MIDA Social Housing Strategy implements a massive affordable house construction programme. However, MIDA is unlikely (under baseline scenario) to "green" its strategy to include energy efficiency, renewable energy and energy certification standards to be applied to their residential and social buildings (starting from their architectural design stage) and will not include energy management information systems in their public facilities.

25. Similarly, in the baseline scenario Baku Executive Authority implements refurbishment programmes every year, but there is no data on the energy savings potential of the buildings. Prioritized financing for energy-efficiency measures in public and municipal buildings does not take place.

A list of main baseline projects is provided below:

26. EU4Energy Programme: this is a 21 million EU energy programme funded by the European Union and targeting countries of the Eastern Partnership (EaP) and Central Asia, currently under implementation until mid-2020. It builds on the previous INNOGATE Programme and aims to : (i) improve energy data access and use in policy design (ii) enhance data collection and monitoring (iii) contribute to improved evidence-based energy policy design (iv) provide technical assistance for legal and regulatory framework In Azerbaijan, The project is supporting the Ministry of Energy, in cooperation with the Energy Charter Secretariat, to improve legislation in the energy sector. So far, a draft Law on Efficient Use of Energy Resources and Energy Efficiency was developed with the support of this project and currently, the first National Energy Efficiency Plan of Azerbaijan is being developed, aiming at mid-2020 finalization and approval.

27. The Strategic Roadmap for Development of Affordable Housing in the Republic of Azerbaijan- a vision to respond to housing needs in the country- set up by the Decree of the President of the Republic of Azerbaijan no 858/11 April 2016, establishes MIDA State Housing Construction Agency (MIDA) to develop affordable housing projects (the approximative budget 2019-2020 is $200 million USD). MIDA's Charter further details the agency's activity, its projects and main objective, which is "ensuring construction of apartment houses in a modern architectural style, meeting the environmental and energy-saving requirements, in order to meet the needs of the citizens for a living space by purchasing them on preferential terms, and improve their living conditions, by efficiently using land plots placed at its disposal, acquired under civil and legal agreements and those being a result of its activity, as well as other property"[4]

28. Reference to energy efficiency standards in social housing are not embedded in the Strategic Roadmap other than the fact that MIDA is mandated to "construct environmentally friendly and power efficient multistory residential buildings". MIDA Charter is not addressing explicit energy efficiency standards in buildings either, but as they are a State-owned company, the legal norms and standards apply. Therefore, once the proposed project will improve the legal framework which will then address explicit energy performance in buildings, MIDA constructions will apply the regulations in force. In addition, MIDA's participation in the proposed project will enable the project to make amendments to MIDA Charter, to explore measures to go above and beyond the legal norms in force. The PIF development phase entailed consultations with MIDA partners and subsequent confirmation on flexibility to amend their Charter and willingness to go above and beyond any energy efficiency legal norms and show case more ambition.

29. Baku Executive Office social buildings refurbishment programme, manages approximately 10,000 public buildings including schools and kindergartens and it allocates around $14 million yearly for the refurbishment programmes (kindergarten and schools included).

30. UNDP Nationally Appropriate Mitigation Actions (NAMA) for low carbon end-use sectors in Azerbaijan- a GEF funded project, with a budget of $3.57 million (total allocated resources $35.47 million) implemented during 2015-2020 by UNDP in partnership with SOCAR- State Oil Company of Azerbaijan Republic. Its main objective is to support SOCAR in the implementation of its Climate Change Mitigation Strategy by promoting and upscaling GHG mitigation measures through a programmatic NAMA approach in the low-carbon end-use sectors.

31. The activities of the Nationally Appropriate Mitigation Actions (NAMAs) for low-carbon end-use sectors in Azerbaijan project started in 05 March of 2015 focused on addressing on the one hand the existing potential to improve the energy performance of main end-use sectors on the Azeri market, namely buildings (new and existing residential, service and public buildings) and transportation (passenger cars, trucks, buses, special purpose vehicles). At the same time, oil & gas production sector being one of the main sources for GHG emissions in Azerbaijan, the project has implemented mitigation activities which indirectly benefit the energy end-use in the country through capturing of associated gases evaporating from existing on-shore oil and gas fields and utilizing the gas as a fuel source for nearby residential areas that are otherwise affected by large-scale deforestation activities.

32. Notably, NAMA project has refurbished the first buildings in Azerbaijan, demonstrating the benefits of energy efficiency measures and the importance of energy audits for measuring energy efficiency improvements in buildings. The project has refurbished five office buildings of the state oil company SOCAR in Sumgayit in 2017. Their energy consumption was reduced by 30-40% (e.g. in the Ecopark administrative building of SOCAR, a relatively new building, the annual energy consumption was reduced from 363.7 kWh/m2 to 158 KWh/m2; in the Ethylene-Polyethylene Plant, an old building, the energy consumption was reduced from 236.4 Kwh/m2 to 140.1 KWh pe m2).

33. Demonstrating savings in energy mean direct savings in the municipality budget and a focus on energy-efficiency in public buildings represents a good entry point for the transformation of the entire building sector. NAMA project has worked for the first time with private sector construction companies and promoted energy efficiency measures in buildings and generated some lessons learned that the proposed project will take up (the highlights related to buildings, are briefly explained under Section 1.a.1 paragraph 9).

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[4] https://mida.gov.az/mmc/?/en/about/regulations/

1.a.3 Proposed alternative scenario with a brief description of expected outcomes and components of the project

34. In the proposed alternative scenario, we expect effective upscaling of investments in the energy efficiency in buildings, through the project's policy and legislative work as evidenced by EMIS and Net-Zero policy interventions, through installation of EMIS in public and municipal buildings, and strengthened institutional and individual capacities necessary for effective implementation of energy efficiency in buildings in Azerbaijan and by "greening" social housing constructions and piloting Net-Zero Buildings. Newly installed EMIS is expected to enable direct GHG reductions through intelligent energy consumption monitoring and prioritized EE investments based on reliable data (i.e. on energy savings potential data in public and municipal buildings).

35. Considering the successful EMIS introduction in other countries (e.g. Croatia and Serbia), UNDP is ideally placed to build on these best practices and assist the Government of Azerbaijan with the development and implementation of an energy management information system for Baku with the potential to be replicated in other cities. In Croatia for instance, a National Energy Management System was launched in 2007 following a successful pilot project Now, 9,450 of 11,000 total public objects operate according to the national energy management system.

36. Component 1 of the project is at the core of triggering a transformational change of the energy intensity in the building sector at national level. At the PIF writing stage, several outputs are clearly envisaged under the proposed policy and legal/regulatory work. (i) Amendments to the draft National Energy Efficiency Action Plan (NEEAP) which is currently developed by EU4Energy, aiming at introducing explicit actions related to the Energy Management Information System (EMIS) and development of the necessary legal documents (e.g. gov decrees; minister orders) regulating NEEAP implementation and monitoring and verification of implementation (which will not be developed by the EU4Energy project). As indicated in Section 1.a.1, some of the difficulties of NEEAP implementation in other countries' experience is that the monitoring and verification of achieved savings remain a challenge, and the absence of statistical data available to determine aggregated energy efficiency indicators for the targeted end-use sectors is difficult, and these lessons learnt will be taken into consideration when designing activities under this output. Azerbaijan is in the process of reforming its energy legislation and the proposed project will use this momentum to amend the NEEAP to also include more ambition and specific actions related to Net-Zero Carbon Buildings (for example: agreed national definition of Net-Zero Carbon Building; intermediate targets for improving the energy performance of new buildings transitioning to Net-Zero Carbon buildings; policy interventions and financing to promote zero carbon buildings by 2050 etc.). Tapping into technical expertise and establishing cooperation with similar GEF funded initiatives such as Building Efficiency Accelerator [5] and Zero Carbon Buildings for All[6][2] will be initiated during the PPG phase. (ii) Secondly, the proposed project will support the implementation of the new (draft) Law on Efficient Use of Energy Resources, which was developed already by the EU4Energy Programme. The new Law includes general provisions, but it needs to be operationalized after its adoption, through several normative acts and standards which are not developed, and which cannot be developed as the Ministry of Energy does not have enough institutional capacity. Furthermore, at the PPG stage, a brief legal review should be conducted to identify if there is even the need for necessary amendments to the new Law, in order to make EMIS implementation mandatory (for example: introduction of specific articles on EMIS definition; article on obligations of designated organization with regard to energy data collection and input into EMIS; article on enforcement of EMIS) . In addition, the proposed project will develop the main normative acts (mandated by the new Law) for example: the guidelines for conducting energy audits and content of energy audit report, guidelines for energy managers and for providing energy services (art. 8 of the Law). In addition, the project will explore in more detail during the PPG phase the (what other) necessary bylaws (needs) to be developed, as per art. 21 of the new Law. For example, art 21 of the Law contains provisions for amending other policies and laws, and the project could therefore support these

amendments (e.g. for the implementation of the minimum energy performance requirements for buildings and regulations and standards for energy performance certification of buildings). Art 14 of the Law refers to general provisions on energy metering. Art 11 refers to Energy Management System and so on. The proposed project will support the Ministry of Energy to develop norms and legal acts, to implement these provisions, mentioned under the articles of the law given as example. Furthermore, the project will amend the existing legislation relevant to the building sector in order to include mandatory energy efficiency standards in building codes and minimum energy performance norms in buildings (iii) Thirdly, as the new Law is mandating the development of the Law on Energy Efficiency in Buildings, the project will support the Ministry of Energy and will develop this particular law which will exclusively address the project's main focus which is the energy efficiency in buildings. Close consultations with the Ministry of Energy have taken place during the PIF preparation phase and they have revealed the need for technical assistance for the development of this specific Law on Energy Efficiency in Buildings. No other donor will support the Ministry of Energy in the development of the Law on Energy Efficiency in Buildings and according to the representatives of the Ministry, there is a lack of institutional capacity for the development of this Law. The development of the Law on Energy Efficiency in Buildings will be based on a comprehensive policy, legal and institutional analysis to be conducted by the project, as the legal provisions of this future law are not clear at the PIF writing stage (only the technical assistance need was identified) however it should build on the best practices available in EU member states or other EU Eastern Partnership (EaP) countries. At the PPG stage, the project will investigate opportunities to develop a law on ESCO (Energy Service Companies) and to operate legislative amendments to introduce fiscal incentives in order to stimulate private sector investments into green energy and energy efficiency. This topic will be based on a brief legal, fiscal, policy analysis at PPG stage. (iv) Finally, the project will support the setup of working groups on the future legislative work and ultimately the creation of an Inter-ministerial Committee on Energy Efficiency, to further implement the legal and policy work including (not limited to) energy efficiency in buildings and implementation of EMIS at municipal level in the country.

37. Component 2 is introducing EMIS for the first time in Azerbaijan, building on the highly successful GEF funded EMIS projects in Croatia, Serbia. EMIS is a web application for monitoring and analysis of energy and water consumption data in public sector buildings and it provides a transparent overview and control of energy consumption in all public sector buildings- which is a very useful tool for Energy Management System in the public sector. EMIS collects energy data, necessary for key energy performance calculations, analysis and continuous overview and control of energy use, being therefore a key tool for monitoring the progress towards energy savings targets set by the NEEAP. This leads to an easier identification of potential measures of energy efficiency improvements, development of local energy efficiency improvement plans, implementation of projects that deliver energy and financial savings and at the end to monitoring and verification of achieved results. For each building of the public sector experts responsible for energy management gather and enter relevant data and information in EMIS. Once the data is in the system, EMIS application enables easy access by login from any computer with Internet access by typing own username and password. The proposed alternative scenario under Component 2 will install EMIS in Baku and implement energy efficiency based on EMIS data measures in three phases: (i) Phase 1: EMIS will be installed initially in 80 public and municipal buildings (approx. 1 million square meters floor space) under Baku Executive Authority management, as a demonstration of a valuable tool for energy monitoring and prioritization of energy efficiency investments. It is expected that EMIS will generate reliable gender disaggregated data on energy consumption in these public and municipal buildings, based on which 30 buildings will be selected for the implementation of energy efficiency measures. The project will also consider the social dimension and will select schools, kindergartens, elderly homes etc. to ensure that investments are not only cost effective but that the leveraged co-financing will also be directed where needed the most. (ii) The second phase will entail energy audits of at least 30 selected public and municipal buildings. This phase will identify all feasible refurbishment measures and only the cost-optimal combination of energy efficiency improvements will be selected. (iii) The third phase will consist of the implementation of energy efficiency measures in the selected buildings, based on the previous steps. The project is aiming

at mobilizing at least $10 million from Baku Executive Authority, for the implementation of these EE measures on approx..150,000 square meters of floor. The exact number of buildings covered by this mobilized investment, and the type of EE measures applied will be elaborated at the PPG stage, however, it is expected that they will include: wall repairs, insulations, window repair or replacement where appropriate, roof repairs and thermal insulation etc. and where appropriate installation of solar panels and solar powered heat pumps. The proposed project will work with Baku City Executive Authority to show case the benefits of energy saving potential gained through EMIS piloting in Baku, which are expected to stimulate the participation of other major cities in Azerbaijan in the project. Furthermore, the proposed project will support Baku City Executive Authority and other participating municipalities' (Ganja, Sumgayit, Mingechevir, Sheki, Guba, Ismayilli, Gabala and others) collaboration with global programmes, tapping into global energy efficiency in buildings at municipal level repository of knowledge, such as the UN led Building Efficiency Accelerator.

38. A feasibility study on EMIS should be conducted by the project in order to analyze the proposed hosting arrangements and identify best options for coordination mechanism (e.g. between Ministry of Ecology and Ministry of Energy and other national stakeholders), EMIS Management Unit status, staffing, trainings, needed budgetary allocations etc. Central EMIS Support Unit is envisaged to be set up and operationalized within the Ministry of Ecology and Natural Resources Hydromet department- which has the capacity to host EMIS (which will be strengthened to include EMIS specificities) and will cooperate with key partners e.g. with the Ministry of Energy, Baku Executive Office and other municipal representatives. EMIS will be an important tool for measuring energy consumption for prioritizing investments in EE in buildings and generating reliable data to be used for quantification of GHG savings in building sector, therefore supporting greater transparency and reliable GHG reporting under UNFCCC (the Head of Hydromet position cumulates the functions of UNFCCC focal point, hence the interest in hosting EMIS). The project will support the refurbishment of Hydromet Building by applying a set of EE measures to complement Ministry's efforts to transform the building into a model of sustainable and green municipal building. An energy consumption Buildings registry will be developed, EMIS will be installed, customized and translated in Azeri language, and a series of trainings for EMIS unit and EMIS users and energy managers will follow.

39. Component 3 of the project focuses on greening MIDA's National Social Housing Strategy, by amending MIDA Charter to include new energy efficiency standards in their constructions of social buildings, starting at the building architectural design stage. MIDA (state-owned construction company) has an annual construction programmes of approximately $ 100 million (estimate). The residential complexes constructed by MIDA vary in size (they can cover from 18 residential buildings and 3 public facilities to 60 or 70 residential buildings and approximately 10 public facilities) and are covering the entire country. Beside projects in Baku, recent construction projects have been implemented in Ganja, Hovsan and Yasamal. MIDA is following the standard building codes which are currently valid, therefore the legal amendments to the building codes proposed by the project will automatically be up taken by MIDA. The project will further invest into incremental energy efficiency measures in 21 schools and kindergartens in MIDA constructed residential complexes, demonstrating best practices in energy efficiency and renewable energy technology in public buildings and direct GHG reduction from energy efficiency of approx. 140,000 square meters floor space. Close consultations with MIDA partners during the PIF preparation stage are indicating willingness to increase ambition and showcase best practices in energy performance in buildings and use of renewable energy sources but also flexibility to amend their charter and introduce standards for future Net-Zero or Near-Zero construction practices. MIDA is well positioned to demonstrate best practices and take up approaches for piloting Net-Zero or Near-Zero Carbon Buildings, given the

fact that they are dynamic on the construction market. During the PPG stage the approaches for the construction of one Net-Zero public building (a school or kindergarten) will be identified and agreed with MIDA. Together with MIDA, the project will organize a series of seminars with architects and engineers to demonstrate the benefits of integrating energy efficiency and energy consumption norms and standards into architectural design. Seminars on "green" architectural design will be part of awareness raising activities to promote Net-Zero or Near-Zero Buildings.

40. Component 4 of the project focuses on training, public awareness, capacity building and will deliver valuable project and lessons learnt with compiled knowledge materials and recommendations for the removal of the identified barriers, including institutional and regulatory improvements and related public outreach and technical assistance to scale up, replicate and mainstream the project results. Project communication and knowledge management plans will be developed. The proposed project is building on best practices in introducing EMIS generated by GEF projects on energy efficiency in buildings in the region (Serbia, Croatia, Bosnia and Herzegovina) and on lessons learnt from UNDP GEF NAMA project in Azerbaijan. Under this component the proposed project will train 400 municipal officials, architects, engineers, energy auditors, energy managers and construction builders in several areas, chiefly in EMIS, energy audit and minimum EE standards and energy performance in buildings. Recommendations of the Mid Term Review of GEF funded project in Serbia "Removing Barriers to Promote and Support Energy Management Systems in Municipalities throughout Serbia" has highlighted for example the importance of ensuring adequate capacities of EMIS unit and energy managers to transition gradually from monitoring energy savings data to energy management ("start using data to manage energy consumption") through trainings and specific guideline documents and ongoing assistance. Furthermore, the project will build on UNDP NAMA lessons learned and recommendations to develop energy audit capacities through dedicated training sessions and guidelines. Together with MIDA, a partner which could become the proposed project's Champion, Green Housing Architectural contests will be organized to promote the energy efficiency in buildings (starting from the early design stage) and the concept of Net Zero Building for the first time in Azerbaijan. The project's results and best practices will be collected, analyzed and codified into valuable knowledge products made available and disseminated through a comprehensive on-line and regularly updated open data and a networking platform and clearing house, workshops and seminars. The project will support development of knowledge networks promoting collaboration and mutual support among professional peers (e.g. energy auditors; energy managers) and moderated on-line forums providing a basis for project's public outreach, community engagement and institutional cooperation mechanism at municipal and national levels. At least two international public outreach, knowledge management workshops and seminars will showcase the experience of EMIS and will promote Net-Zero Carbon Buildings and show case the Net Zero Carbon social housing MIDA pilot. A project dedicated website and the trainings and awareness raising events will increase the understanding of the EMIS role and awareness and perception on the importance of sustainable energy consumption and energy efficiency in buildings and familiarity with Net Zero Carbon Buildings. The project will work closely with Baku Executive Authority, and with at least 30 other municipalities in Azerbaijan (for example Ganja, Sumgayit, Mingechevir, Sheki, Guba, Ismayilli, Gabala and others) aiming at raising awareness about EMIS and understanding on energy efficiency in public and municipal buildings and. Part of the outreach efforts will be expected to lead to an Energy Charter signed by all 30 municipalities which will identify voluntary targets for energy efficiency and will outline specific activities and measures to achieve these targets, including setup of Energy Efficiency Units in their respective cities and replication of EMIS.

[5] http://buildingefficiencyaccelerator.org/

[6] https://wrirosscities.org/ZeroCarbonBuildings

1.a.4. Alignment with the GEF focal area and/or Impact Program strategies

41. The project is aligned with the GEF-7 Climate Change Mitigation (CCM) Strategic Objective 1.3 "Promote innovation and technology transfer for sustainable energy breakthroughs- Accelerating energy efficiency adoption". 183,068 tonnes CO2 eq. avoided (direct emissions) contributing to the achievement of targets for the GEF indicators 6 "Greenhouse gas emissions mitigated" demonstration projects will be accompanied by legislative and policy amendments that will convert results into larger scale impact.

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

Table 3: GEF Scenario and Incremental cost reasoning and expected contribution from the baseline

Baseline	**GEF scenario and increment**
Component 1: *Improved enabling environment for increased energy efficiency in buildings*	
A draft National Energy Efficiency Action Plan (NEEAP) is currently being developed, expected to be finalized by mid-2020. It is unlikely that the plan will include EMIS related policy interventions. Bylaws for regulating the implementation and verification of implementation of NEEAP are not developed. In the baseline scenario, a new Law on Efficient Use of Energy Resources was developed and it is in an advanced stage of consultations., it is expected to be approved by mid-2020. No subsequent bylaws, norms regulations are developed and do not support is planned.	The proposed contribution from the baseline to this project is three-fold: Firstly, amendments to NEEAP and introduction of explicit actions related to EMIS implementation will prioritize policy interventions related to targeted attractive EE refurbishments in public and municipal buildings based on EMIS data. The proposed alternative scenario will increase ambition in NEEAP and include specific actions related to Net-Zero Carbon Buildings. Secondly, the project will develop key secondary legislation (norms and regulations) necessary to operationalize the new Law and will amend related building legislation to introduce energy efficiency standards in buildings. Thirdly the project will work with the Ministry of Energy to develop the Law on Energy Efficiency in Buildings. In addition, the PPG stage will explore opportunity for support to a new ESCO Law and/or other related legal amendments.
Component 2: *Improved monitoring of energy consumption in buildings and leveraged financing for municipal EE investments through Energy Management Information Systems (EMIS) established at municipal level*	

In the baseline scenario, there is no Energy Management Information System to date in Azerbaijan. Energy consumption data and energy savings potential in public and municipal buildings is not readily available, there is no energy management information system in place for public and municipal buildings and there are no standards or norms to support the implementation of energy management systems at the local/municipal level in order to monitor energy consumption.	The proposed contribution from the baseline to this project will be significant. UNDP will facilitate the transfer of EMIS from its UNDP GEF Croatia Energy Efficient project in Croatia (replicated in Serbia and other countries) to Azerbaijan, representing an in-kind contribution of $ 300,000 (cost of the energy management information system EMIS).The project will provide technical assistance to remove barriers that are impeding the realization of significant energy savings in the building sector. A centralized EMIS Support Unit will be created in the Hydromet Building and a Municipal Building Registry, under the Ministry of Ecology and Natural Resources, which has the responsibility of UNFCCC reporting. Alternative GEF scenario incrementality will be demonstrated in three phases: (i) In the first phase EMIS will be installed initially in 80 public and municipal buildings (approx. 1 million square meters floor space) under Baku Executive Authority management. It is expected that EMIS will generate reliable gender disaggregated data on energy consumption in these public and municipal buildings, based on which 30 buildings will be selected for the implementation of energy efficiency measures. The project will also consider the social dimension and will select schools, kindergartens, elderly homes etc. to ensure that investments are not only cost effective but that the leveraged co-financing will also be directed where needed the most. (ii) The second phase will entail energy audits of at least 30 selected public and municipal buildings. This phase will identify all feasible refurbishment measures and only the cost-optimal combination of energy efficiency improvements will be selected. (iii) The third phase will consist of the implementation of energy efficiency measures in the selected buildings, based on the previous steps. The project is aiming at mobilizing at least $10 million from Baku Executive Authority, for the implementation of these EE measures on approx..150,000 square meters of floor. All the initial costs associated with preparing, launching, implementing EMIS in 80 buildings can be considered as incremental cost; as well as the mobilization of at least $10 million for EE investments in at least 30 buildings based on EMIS data.
Component 3: *Norms and Standards on sustainable energy consumption in buildings embedded in the National Social Housing Strategy*	
MIDA State Housing Construction Agency (MIDA) manages massive construction programmes of social houses residential apartment buildings and other public facilities (kindergartens, schools, hospitals) in line with modern architectural design, environmental and energy efficiency requirements. MIDA strategy is however based on outdated building codes and energy requirements.	The project is targeting barriers that impedes the realization of significant energy savings in the buildings constructed under MIDA Social Housing State Programme. The project will amend MIDA's strategy and will introduce mandatory EE standards and EMIS supportive norms and will increase ambition for a gradual transition to Net-Zero Carbon Buildings. All the costs associated with the application of EE and RE measures in approximately 21 selected facilities (kindergartens, schools) and piloting at least one Net-Zero Building social facility in MIDA social housing residential complexes, can be considered incremental costs as without the GEF project, MIDA would not include the new EE standards in their Strategy, and even increase ambition to possibly graduate towards Net-Zero Carbon buildings in the future.
Component 4: Training, Public Awareness, Monitoring and Evaluation	

In the baseline scenario, there is low awareness on energy efficiency in buildings and no available information on the benefits of sustainable energy consumption, insufficient technical expertise on energy audit and energy efficiency standards in buildings;	The project's deployment of a carefully crafted awareness and trainings, project results dissemination and online platform for citizen engagement are expected to create a critical mass of awareness and knowledge about EMIS, about energy efficiency in buildings and its importance in mitigating climate change, and replication of Baku's best practices in 30 municipalities of Azerbaijan. The costs of preparing and implementing the awareness raising and training activities and tools can be considered incremental costs from the baseline.

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

42. Total direct GHG savings estimated at PIF stage (to be adjusted at PPG stage) from project's mitigation activities are: 183,068 tonnes CO2 eq per lifetime of investment (20 years). GHG reductions under Output 2.3.1 are estimated at 63,266 kWh/m2 per lifetime of investment. EMIS will be piloted on 1 million square meters floor space and it is assumed that the energy drop per square meter as a result of EMIS is a conservative 5.8% (although it may be up to 10-15%) from 270 kWh/m2 to 254 kWh/m2. Direct GHG emissions under Output 2.3.4. are estimated at: 72,720 tonnes Co2eq per lifetime of investment. The GHG savings are estimated as a result of EE measures applied to approximately 150,000 square meters public buildings, and an expected energy saving of 120 kWh/m2 was used. The natural gas emission factor of 0.000202 tone Co2 eq/kWh was considered and a total lifetime of investment of 20 years. Direct GHG emissions under Output 3.2.2 are estimated at 47,082 tonnes CO2eq per lifetime of investment. The GHG savings are estimated to be obtained after the EE measures will be applied to 21 schools and kindergartens in MIDA complexes, covering 145,677 m2 floor space. Being relatively new buildings, a saving of 80 kWh/m2 has been considered.

43. Lifetime indirect GHG reduction estimated at PIF stage is 2,814,000 tonnes CO2 eq. The Third National Communications of Azerbaijan has calculated the effect of the New Law on Energy Efficiency on CO2 reductions, concluding that it will lead to cumulative GHG emission reductions of 70.36 million metric tonnes CO2eq. This works out to approximately 2.8 million metric tonnes CO2eq per year over 25 years. Of this annual figure which is across all energy efficiency sectors, it is estimated that 20% can be attributed to energy efficiency measures in buildings. In addition, a further GEF causality factor of 20% has been applied to this figure, with the assumption that 20% of the savings will come from secondary legislation and from work being carried out by this project. This works out to 113,000 indirect tonnes CO2eq per year, which is subsequently grossed up over 25 years for a total indirect figure of 2.814 million tonnes of CO2e per year of indirect GHG emission reductions for the project. This number will be further refined during the PPG phase.

1.a.7 Innovation, sustainability and potential for scaling up.

44. The proposed project has a strong innovative dimension, given by the first time-ever major effort in Azerbaijan to introduce the on-line intelligent energy management information system (EMIS) at the municipal level. EMIS will likely to be sustainable because once the project successfully demonstrates that energy management information

systems can lead to energy savings up to 10% or more at minimal cost, it is highly likely that these systems can be introduced to the whole country. With GEF support during the project implementation, approximately 80 buildings will be targeted with a potential for replicability to 10,000 buildings under Baku Executive Authority management and under other institutions' management and potential replication in 30 other municipalities will be developed during the project's implementation. In addition, amendments to MIDA Social Housing Programme will be translated into EE standards and EMIS norms mainstreamed in the public facilities built by MIDA in the entire country and MIDA Charter will be amended to include an increased ambition beyond standard energy efficiency in buildings and promote Net-Zero Carbon buildings. MIDA will become the project's champion to showcase the first Net-Zero Carbon Building in Azerbaijan.

45. The City of Baku will lead by example and will promote these best practices to be generated under leveraged investments in energy efficiency in buildings of Baku, in 30 other municipalities (for example some of the cities are: Ganja, Sumgayit, Mingechevir, Sheki, Guba, Ismayilli, Gabala) and will lead the signature of Energy Charter, expected to be signed by 30 mayors of major cities in Azerbaijan. The Energy Charter will include voluntary energy targets and timelines, aiming at scaling up EMIS and Net-Zero Carbon Buildings in other major cities of Azerbaijan.

1b. Project Map and Coordinates

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

Map 1. Absheron Peninsula and its districts (Annex A)

2. Stakeholders

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

Indigenous Peoples and Local Communities Yes

Civil Society Organizations Yes

Private Sector Entities Yes

If none of the above,please explain why:

In addition, provide indicative information on how stakeholders, including civil society and indigenous peoples, will be engaged in the project preparation, and their respective roles and means of engagement.

Table 4. Key stakeholders and their role in the project and during PPG Phase

Stakeholder	Role
Baku City Executive Power	The project will work with Baku Executive Authority especially for the work under Component 2 Explicit opportunities to complement their public buildings refurbishment programmes (of approximately $10-12 million yearly) to promote EE in buildings and sustainable energy consumption and replicate EMIS.
Ministry of Ecology and Natural Resources (MENR)	Ministry of Ecology and Natural Resources will play a leading role in several project's components (i) LDN voluntary targets for Baku Greater area (under Component 1.1) (ii) leading the work under component 2, EMIS hosting and (iii) under Component 5 – improved management of Absheron National Park
MIDA State Housing Construction Agency	MIDA is a key project partner leading the work under Component 3 and demonstrating EE standards in buildings, as well as in organizing contests and seminars on mainstreaming EE norms and regulations into architectural designs i.e. "greening architectural design" and promoting Net Zero Carbon concept and showcasing at least one Net-Zero Carbon building constructed by MIDA.
Ministry of Energy	The project will work with the Ministry of Energy and other programmes (e.g. EU4Climate) to develop the secondary legislation of the newly drafted Energy Efficiency National Law of the Use of Energy Resources and Energy Efficiency' acts and norms related to EE in buildings, amendments to NEEAP and development of a brand-new Law on Energy Efficiency in Buildings.
NGOs	The project will include NGOs active in environment and energy fields, women associations, labor union, builders' association, energy service providers, energy auditors associations, sustainable development related organizations; architects union; academia and relevant media etc. in capacity building and awareness raising activities, in order to support the development of professional capacities (e.g. of energy auditors and energy managers; capacities of builders working in construction sector) and to create awareness on energy efficiency and EMIS and different gender priorities in energy use, energy management services.
Private sector	The project will work with construction companies, private commercial banks and investment funds (with green energy and climate change portfolios), SMEs (women led SMEs support will be prioritized) and other development partners to increase awareness and knowledge of energy efficiency financial instruments and increase capacities to develop and/or assess green energy efficiency investments in buildings.

3. Gender Equality and Women's Empowerment

Briefly include below any gender dimensions relevant to the project, and any plans to address gender in project design (e.g. gender analysis).

46. A full and comprehensive gender assessment will be conducted during the project development phase, whose results will be reflected into a project gender action plan. The Gender Action Plan will include distinct gender performance indicators and actions and timeline. Under Component 1, the project activities will be designed in such a manner as to include in as much as possible gender specific consideration in the policy and regulatory amendments. Under Component 2, the introduction of the Energy Management Information System (EMIS) will enable the collection of gender disaggregated data collection and analysis in connection with energy efficiency (and water) consumption in public and municipal buildings for the first time in Azerbaijan. This action is expected to provide the necessary data for policy makers about the future opportunities to address the needs of women and men in relation to energy service and delivery. An effective EMIS is an important tool in catalyzing additional investments in energy efficiency as it can prioritize different investments regarding different energy consumption needs. Furthermore, under this component, the project will work with Baku Executive Authority to prioritize investments in EE refurbishment of public and municipal buildings, primarily based on EMIS data; the project will EE refurbishment and support municipality to conduct energy audits of buildings, point at which the project will prioritize public buildings that are used by vulnerable groups such as retirement homes for elderly, schools for children, healthcare centers, social care centers etc. In addition, the project will work with the municipality to strengthen capacities to design attractive bankable projects with low payback period and this activity represents an opportune entry point to prioritize gender equality. Under Component 3, the project will work with MIDA aiming at “greening” the social housing in MIDA constructed public facilities, these representing activities where gender disaggregated indicators will be included to ensure that equal opportunities are in place for men and women beneficiaries of green social houses and beneficiaries of social facilities are properly reflected in MIDA Charter. Under Component 4, the project will deploy a suite of training, awareness and knowledge sharing activities, and will ensure that equal training opportunities are provided for both men and women, and that women are equally represented and supported to attend training (e.g. the project arranges for provision of professional child care services during training sessions). Awareness raising activities will involve participation and cooperation of women associations and women NGOs, to support mainstreaming of gender considerations in awareness raising and information materials, to ensure that awareness raising is developed on the different energy consumption patterns and needs of men and women and gender differentiated priorities in energy management initiatives.

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; Yes

improving women's participation and decision-making; and/or Yes

generating socio-economic benefits or services for women.

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

Yes

4. Private sector engagement

Will there be private sector engagement in the project?

Yes

Please briefly explain the rationale behind your answer.

47. The proposed project will build on the private sector experience of the EU Eastern Partnership (EaP) Green Project "Scaling Up Green Investments and Finance in Azerbaijan" and UNDP NAMA Project and will work with construction companies, private commercial banks and investment funds (with green energy and climate change portfolios), SMEs (women led SMEs support will be prioritized) and other development partners. Stakeholders expected to participate in the project, and benefit from the capacity building and awareness raising events are: The State Oil Fund of Azerbaijan; The Catalyst Fund; EBRD; ASB; national banks: Demirbank, Muganbank, FINCA; Unibank; Green Growth Fund; Accessbank Alten Group etc. Related project actions: Under Component1, the project will work with the Ministry of Energy to introduce financial incentives for energy efficiency investments into policy and regulatory framework. Under Component 2, the proposed project will support installation of EMIS and based on EMIS data, the project will support municipal capacities to develop attractive bankable projects with low pay back period. Under Component 3, the project will work with MIDA as a champion in building construction sector to stimulate interest and capacities of private building companies to invest in energy efficiency buildings. Under Component 4, a series of training sessions will be deployed and some of them will include building capacities for the development of green bankable projects in the building construction sector. Awareness raising activities will be implemented to address the lack of knowledge on available financing instruments in the EE in buildings.

5. Risks

Indicate risks, including climate change, potential social and environmental risks that might prevent the Project objectives from being achieved, and, if possible, propose measures that address these risks to be further developed during the Project design (table format acceptable)

Risk	Level	Mitigation

Risk	Level	Mitigation
Political risk Lack of political will to adopt and/or effectively enforce the required policies, and stringent energy efficiency standards, regulations and norms to enact the new Law on Efficient Use of Resources and implement EMIS at municipal level.	M	This risk is medium at the PIF stage (to be reassessed at PPG stage), as the new Law on Efficient Energy Use is not approved yet and the secondary legislation not developed. The Ministry of Energy, Ministry of Ecology and Natural Resources as well as MIDA Social Housing Agency and Baku City Authority, have already committed, in principle, to supporting greater investment in energy-efficiency at the municipal level. The risk will be mitigated by the project through on-going technical assistance to develop EE norms and regulations, further complement the legislative framework (develop the Law on Energy Efficiency in Buildings), through capacity development and trainings, communication and awareness raising to encourage political commitment and increased understanding of technical issues.
Operational risk Lack of enforcement of adopted standards.	M	The risk will be sought to be mitigated by effective legislative and policy amendments to include penalties and strengthen enforcement regulation in building construction. The risk will be further mitigated by effective training and strengthening the capacity of the building force (builders working in construction), energy auditors and representatives of building inspectors of the Ministry of Emergency Situation while raising awareness on the importance of energy efficiency standards. Close cooperation with MIDA will promote the benefits of energy efficiency standards in building.
Financial risk Municipalities do not have the financial resources to invest in energy efficiency and the project may develop a list of projects which will remain unfinanced. Furthermore, lack of fiscal incentives for private sector involvement will make investments in energy efficiency difficult.	M	Access to EMIS energy consumption data, awareness raising activities of the project to highlight direct cost of benefits of EMIS as well selected demonstration projects to illustrate these benefits in practice will mitigate the risk. During the PPG stage, an assessment of the feasibility of introducing policy amendments and financial incentives for the promotion of Energy Efficiency in Buildings will be explored and specific activities will be designed in order to further mitigate this risk.

Risk	Level	Mitigation
Technology risk Technical failures of the equipment and/or software used for EMIS and/or for the targeted follow up EE investments, affecting negatively the trust of key stakeholders and investors on EMIS and on the promoted measures .	L	The promoted technologies are technically mature technologies, so the risk of their technical failure due to the early stage of their technical development is considered low. This does not detract, however, from the importance of adequate quality control of products and installations at all stages of implementation.
Operational/financial risk EMIS Central Support Unit not sustainable. Failure to implement the new technologies supporting EMIS due to high costs and necessary technical expertise that may be effectively lacking	M	The project will develop an EMIS feasibility in order to assess feasibility and sustainability options of the proposed EMIS introduction in Azerbaijan. Furthermore, the project's GEF incremental costs will cover the initial preparation and transfer of EMIS software and database and will aim at embedding EMIS operationalization among Ministry's functions and implicitly will make provisions for annual budgetary allocation for EMIS operations. At the PPG stage, commitments (including financial) of the Ministry of Ecology will be reassessed and risk reclassified if needed. In addition, the project will have a direct focus on capacity building and training as well as establishing energy-efficiency support unit in the Ministry of Ecology and at municipal level. This will help overcome the technical expertise gap barrier.
Environmental risk The energy efficiency investments supported by the project (such as building retrofits) may generate waste, which, if not properly managed, may be disposed in an environmentally not sound matter.	M	The PPG phase will include undertaking a comprehensive ESMF (Environmental and Safeguards Management Framework) as well as SESP (social and environmental safeguards procedures) and the project will set up measures to deal with the generation of waste from building retrofits, by including specific terms regarding the environmental-safe waste disposal conditions and norms in the contractual agreement with building contractors, aligned with the national legislation.
Climate change risk The global increase in temperature will reduce demand for energy (especially in winter) and therefore reduce the rationale for increased investments in energy-efficiency.	L	This risk in terms of diminishing the rationality of the project is very low due to the fact that the municipalities do not use energy just for heating and in any case the temperature increases in the near future according to the most recent IPCC estimates even under the business as usual scenario are not expected to be so high that they would completely remove the need for heating of the building stock in Azerbaijan during the winter time. In fact, the increased variability of temperatures may make the metering and automatic control of heating even more important from both the cost and energy saving point of view.

Risk	Level	Mitigation
Social risk Project activities and approaches might not fully incorporate or reflect views of women, and ensure equitable opportunities for their involvement and benefit or it may	M	This risk will be assessed fully during PPG stage, in the gender analysis and managed through the Gender Action Plan.

6. Coordination

Outline the institutional structure of the project including monitoring and evaluation coordination at the project level. Describe possible coordination with other relevant GEF-financed projects and other initiatives.

48. The project will be Nationally Implemented (NIM), led and implemented by the Ministry of Ecology and Natural Resources (MENR) together with UNDP. A project management team will be established following the practice of UNDP with similar GEF-funded projects in Azerbaijan. The project management team is likely to consist of a Team Leader in charge of the overall project oversight and one international CTAs supervising the project activities related to climate change mitigation. The project team will be supported by technical experts as needed. UNDP office will support MENR in ensuring coordination and synergies with other similar projects and international initiatives. Under Component 1, the proposed project will work with the Ministry of Energy for the relevant policy and legal work. Under Component 2, UNDP and MENR will ensure synergies with Baku Executive Office refurbishment programmes to prioritize investments in EE measures. The proposed project will also coordinate with the Eu4Energy project that supports Ministry of Energy in the development of the new Law on Efficient Energy Use and the National Energy Efficiency Plan (NEEAP) as well as with the GEF funded NAMA project for energy efficiency for the buildings related outputs. Under Component 3, MENR and UNDP will ensure synergies with MIDA Social Housing projects, whereas under Outcome 4, MENR will contribute to the awareness raising campaign on the benefits of EMIS and energy efficiency.

7. Consistency with National Priorities

Is the Project consistent with the National Strategies and plans or reports and assesments under relevant conventions

Yes

If yes, which ones and how: NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, INDCs, etc

49. National Communications under UNFCCC; BUTR under UNFCCC; NDCs under UNFCCC

Consistency of the proposed project with other important national policy strategic directions: (i) EU-Azerbaijan Agreement currently under negotiation and EU-Azerbaijan Partnership Priorities (as of 2018) include energy and environment among its strategic directions; (ii) 20 Deliverables for 2020: launched in 2009 as a joint policy initiative the EU Eastern Partnership (EaP) features strongly energy efficiency investments, and sustainable energy consumption; (iii) Under its NDC and committed to climate change mitigation;

the aggregate quantitative contribution to GHG mitigation is a 35 percent reduction in the level of GHG emissions by 2030;(iv) Azerbaijan 2020 highlights the possible impacts of climate change on the country's society and economy, and the importance of preparing necessary policy measures; (v) The Strategic Roadmap for Development of Utilities Services in the Republic of Azerbaijan (2016); (vi) The Third National Communication to UNFCCC, shows that the rapid development of the Buildings sector requires the increase of energy efficiency in buildings, preparation and implementation of energy saving policy; (vii) Azerbaijan's "Transforming our World: The 2030 Agenda for Sustainable Development" (2030 Agenda)

8. Knowledge Management

Outline the Knowledge management approach for the Project, including, if any, plans for the Project to learn from other relevant Projects and initiatives, to assess and document in a user-friendly form, and share these experiences and expertise with relevant stakeholders.

50. The PIF preparation phase entailed research and uptake of generated knowledge from similar GEF projects and best practices in countries of the region. At the PPG phase a knowledge management plan for the project will be developed by further up take of relevant lessons learned and best practices generated under different GEF funded Energy Efficiency in Building projects especially related to EMIS (e.g. Serbia, Croatia, Bosnia and Herzegovina) and will tap into exiting global knowledge base generated by innovative programmes and initiatives (such as UN Led Building Efficiency Accelerator and Net-Zero Carbon Alliance) that may provide technical expertise and knowledge on the latest developments in the energy efficiency in buildings and Net-Zero Carbon Buildings (e.g. as invited speakers and contributors to the events organized by the project). A key knowledge management feature that the project will build on, is the "Open Data" approach, an online open data knowledge management platform providing a basis for project's public outreach, community engagement and partnership building activities. The project related documentation, presentations, training materials, evaluative knowledge as well as proposals and solutions generated within the project will be available on dedicated website (with full consideration of intellectual property rights). The "Open Data" is envisaged to be accessed with or without registration, depending on the complexity of requested data and benefits of social networking with people interested in this data. A suite of different processes designed to capture and disseminate lessons, best practices and expertise are proposed under Component 4, including: M&E (evaluative knowledge used in the project cycle management), trainings and knowledge generation, information sharing and facilitating access, awareness raising and at least 30 municipal government champions to lead by example and promote energy efficiency in building and a gradual transition to an ambitious decarbonization of building stock. The project will further make use of a diversity of tools and outputs such as the online energy information system (EMIS); an online open data platform; professional networks; South-South experience sharing; a voluntary Energy Efficiency Charter. At the same time, lessons learnt, and evaluative knowledge will be analyzed and collected and recommendations for upscaling results will be presented towards the end of the project.

Part III: Approval/Endorsement By GEF Operational Focal Point(S) And Gef Agency(ies)

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

Name	Position	Ministry	Date
H.E. Mukhtar Babaev	Minister	MINISTRY OF ECOLOGY AND NATURAL RESOURCES	11/5/2019

ANNEX A: Project Map and Geographic Coordinates

Please provide geo-referenced information and map where the project intervention takes place

Map 1. Absheron Peninsula and its districts