Concept Note

Project/Programme Title:	**National Programme of Energy Efficient Refurbishment of Public Buildings in Georgia**
Country(ies):	**Georgia**
National Designated Authority(ies) (NDA):	**Ministry of Environment Protection and Agriculture**
Accredited Entity(ies) (AE):	**Municipal Development Fund (MDF) /Energy Efficiency Center Georgia**
Date of first submission/ version number:	*[YYYY-MM-DD] [V.0]*
Date of current submission/ version number	*[YYYY-MM-DD] [V.0]*

GREEN CLIMATE FUND

Notes

- The maximum number of pages should **not exceed 12 pages**, excluding annexes. Proposals exceeding the prescribed length will not be assessed within the indicative service standard time of 30 days.
- As per the Information Disclosure Policy, the concept note, and additional documents provided to the Secretariat can be disclosed unless marked by the Accredited Entity(ies) (or NDAs) as confidential.
- The relevant National Designated Authority(ies) will be informed by the Secretariat of the concept note upon receipt.
- NDA can also submit the concept note directly with or without an identified accredited entity at this stage. In this case, they can leave blank the section related to the accredited entity. The Secretariat will inform the accredited entity(ies) nominated by the NDA, if any.
- Accredited Entities and/or NDAs are encouraged to submit a Concept Note before making a request for project preparation support from the Project Preparation Facility (PPF).
- Further information on GCF concept note preparation can be found on GCF website Funding Projects Fine Print.

A. Project/Programme Summary (max. 1 page)			
A.1. Project or programme	☐ Project ☒ Programme	**A.2. Public or private sector**	☒ Public sector ☐ Private sector
A.3. Is the CN submitted in response to an RFP?	Yes ☒ No ☐ If yes, specify the RFP: _____	**A.4. Confidentiality**[1]	☐ Confidential ☐ Not confidential
A.5. Indicate the result areas for the project/programme	Mitigation: Reduced emissions from: ☒ Energy access and power generation ☐ Low emission transport ☒ Buildings, cities and industries and appliances ☐ Forestry and land use Adaptation: Increased resilience of: ☐ Most vulnerable people and communities ☐ Health and well-being, and food and water security ☐ Infrastructure and built environment ☐ Ecosystem and ecosystem services		
A.6. Estimated mitigation impact (tCO2eq over lifespan)	159,500 tC02	**A.7. Estimated adaptation impact (number of direct beneficiaries and % of population)**	40,000 child and 3,500 staff members
A.8. Indicative total project cost (GCF + co-finance)	Amount: USD 100 million	**A.9. Indicative GCF funding requested**	Amount: USD 60 million
A.10. Mark the type of financial instrument requested for the GCF funding	☒ Grant ☐ Reimbursable grant ☐ Guarantees ☐ Equity ☒ Subordinated loan ☐ Senior Loan ☐ Other: specify_____		
A.11. Estimated duration of project/ programme:	a) disbursement period: 5 years b) repayment period, if applicable: 20 years	**A.12. Estimated project/ Programme lifespan**	25 years
A.13. Is funding from the Project Preparation Facility requested?[2]	Yes ☒ No ☐ Other support received ☐ If so, by who:	**A.14. ESS category**[3]	☐ A or I-1 ☒ B or I-2 ☐ C or I-3
A.15. Is the CN aligned with your accreditation standard?	Yes ☐ No ☐	**A.16. Has the CN been shared with the NDA?**	Yes ☒ No ☐
A.17. AMA signed (if submitted by AE)	Yes ☐ No ☐ If no, specify the status of AMA negotiations and expected date of signing:	**A.18. Is the CN included in the Entity Work Programme?**	Yes ☒ No ☐
A.19. Project/Programme rationale, objectives and approach of programme/project (max 100 words)	Brief summary of the problem statement and climate rationale, objective and selected implementation approach, including the executing entity(ies) and other implementing partners. The concept note considers energy efficient (EE) refurbishment of public buildings and, in particular, kindergartens and other preschool institutions, in total, 392,308 sq. m. located in different municipalities of Georgia. In 2023, the Government of Georgia announced a national programme for rehabilitation of preschool institutions throughout the country and allocated for this purpose 1.3 billion GEL for phase implementation. 100		

[1] Concept notes (or sections of) not marked as confidential may be published in accordance with the Information Disclosure Policy (Decision B.12/35) and the Review of the Initial Proposal Approval Process (Decision B.17/18).
[2] See here for access to project preparation support request template and guidelines
[3] Refer to the Fund's environmental and social safeguards (Decision B.07/02)

	million GEL is already approved by the government for the first phase. This programme is fully aligned with the country's commitments to the PA (Paris Agreement) and to the EU Energy Community. These two key commitments regarding the EE refurbishment of public sector buildings are supported by the Climate Strategy 2030 and Action Plan for 2021-2023 and by the National Energy and Climate Integrated Plan (NECP). The CN asks for additional financial support, in a grant to strengthen the local capacities in EE technology implementation and a concessional sovereign loan for increasing (doubling) the rehabilitated areas and accelerate GHGs emission reduction process. There are several potential AEs considered for the project-specific accreditation. Among them are the Municipal Development Fund of Georgia (MDF), LEPL and Energy Efficiency Center -Georgia (EECG), NGO. Executive Entities: The Ministry of Finance (MoF) and the Ministry of Economy and Sustainable Development (MOESD) of Georgia.

B. Project/Programme Information (max. 8 pages)

B.1. Context and baseline (max. 2 pages)

According to the new energy strategy that Georgia adopted in 2019, due to the very inefficient thermal characteristics of existing buildings in Georgia, this sector accounted for 40% of the total energy consumption. Most of the country's buildings are built according to the standards of the Soviet Union, as a result of which energy consumption for heating is 250-300 kWh/m^2 per year.
On June 10, 2020, the Law of Georgia "On Energy Efficiency of Buildings" entered into force, this law prescribes minimum requirements for both new and rehabilitated buildings with an area of more than 250 square meters. As required by law:
a. Final energy consumption on a fully heated new household area - 80 kW/m^2;
b. Final energy consumption in a fully heated new commercial or public area - 90 kW/m^2.
"Georgia's National Integrated Energy and Climate Plan" in relation to the buildings sector will certainly consider the assistance in the implementation of the legislative package of the Energy Efficiency of Buildings Directive (EPBD), namely:
- Developing the national methodology for calculating the energy efficiency of buildings and the methodology for calculating the cost-optimal level of minimum energy efficiency requirements
- Developing software for calculating energy indicators and conducting trainings in order to effectively use these methodologies.
- Support for energy efficiency act(s) that will focus on the building sector, taking into account different energy efficiency requirements for different categories of buildings. In particular, the act(s) should define separate energy efficiency standards and targets for existing and new buildings.
- Development of the national strategy for the reconstruction of public buildings.
The updated NDC document supports the low-emission development of the buildings sector, especially in public and tourist buildings through the widespread introduction of climate-oriented energy-efficient technologies and various services, although there is no more specific commitment expressed in numbers.
According to the 2030 Climate Change Strategy, by 2030 emissions from the buildings sector should be below the projected 4,625 Gg/a.
The following actions are considered in the 2021-2023 action plan:
- 100% of buildings built after 2024 are certified and energy efficient, within the framework of the standard established by law
- Annual energy efficient renovation of 1% of buildings owned or occupied by the Central Government with a gross floor area exceeding 250 m2. By 2030, such buildings should be more than 90%
- Also in this process, the replacement of ordinary inefficient lamps with energy-efficient lamps in public buildings is considered, so that by 2030 their share will be more than 90%.

The Integrated National Energy and Climate Plan of Georgia also considers 2030 as a target year.
The action plan discusses the EE-3 measure on the buildings used by the administrative body and especially the modernization of energy efficiency in schools. The years 2021-2023 are considered as the initial period for investment and the process continues until 2030 and beyond. In this plan, it is more specific that it is primarily about the energy efficiency of schools:
- Each year, 10% of schools will implement three initiatives: envelope insulation, installing energy-efficient lighting, replacing a solid fuel heater
- It is also a minimum target that 1% of the total usable floor area of buildings owned by public bodies requiring heating and/or cooling should be updated annually to meet minimum energy performance requirements.

As part of the EU integration process, Georgia took responsibility under the Energy Performance of Buildings Directive, making it mandatory to improve the building's thermal envelope practices from June 2023. Moreover, the Long-term Low-emission Development Concept of Georgia envisages significant reduction of GHG emissions in the buildings sector, which is unattainable without the application of this technology.
Thermal envelope insulation technology can save energy in the existing buildings and reduce greenhouse gas emissions by 40-50%, which will contribute to climate change mitigation.
If the technology is widely applied, the thermal quality of the buildings' indoor space will increase, meaning the buildings will become less vulnerable to extreme outdoor temperatures (heat and cold waves).
Currently, not 100% of the Georgian building stock is air-conditioned, which is due to the low purchasing power of the population. With the widespread application of building's thermal envelope insulation, more and more of the indoor space of buildings will become comfortable for living or working during peak seasons, which will improve the general social environment and contribute to public health. In addition, the costs saved by the consumers can be directed to solving other social issues.
Key energy efficient technologies in Georgia's building sector identified by the experts for achieving highest results are: thermal insulation of building envelope; thermal insulation of roofs; energy-efficient windows and doors; thermal insulation of floors; energy efficient lamps and innovative high efficiency heating and cooling systems, etc.

The technology has the following environmental benefits: reducing CO2 emissions, saving fossil fuels, reducing energy poverty, mitigating the depletion of the ozone layer, and mitigating the heat island effect.
The technology application helps to reduce energy costs, and the saved funds can be directed to the development of other areas of the economy.
In the process of ensuring energy efficiency of public buildings, it is important to consider and address the following barriers:
- Absence of certified bodies certifying the energy efficiency of buildings
- Shortage of highly qualified engineering resources, today there are not enough qualified engineers in the labor market for the widespread use of technology.
- Mandatory measurement-confirmation of characteristics of final products or on-site components and declaration of characteristics (for material certification) do not exist or are not carried out.
- Ensuring the necessity of the commissioning and start-up procedure of the building or system, introduction of mandatory confirmation of the characteristics of the building or system; Establishing hygienic standards for thermal insulation.
- There are no building occupancy management practices, including building energy efficiency management practices
- Low energy prices
- In the case of old/historical buildings, there are often problems related to the existing structure of the building, which require remodeling of certain parts of the building, which must be solved before starting energy efficiency measures, which significantly increases the initial investment, if at all technically feasible.
- It is not allowed to change the facade in historical buildings.
- The presence of low-quality construction products on the market, whose price is quite attractive to the consumer, hinders the pace of introduction of energy efficiency.

Ongoing projects and programmes focusing the energy efficient refurbishment of existing public building stock:
This concept note is constructed based on three key activities related to the EE refurbishment of existing low-efficient building stock:

1. Concept note prepared in 2015-2016 for NAMA facilities and is still uploaded there looking for investors. This building sector NAMA considers EE rehabilitation of 50,000-60,0000 sq.m area public buildings. Technological support 18 million Euro and capacity building support 0.9 million Euro. Among the objectives of this project two objectives are key for the considered national programme: to identify a **suitable implementing agency** within the country to carry out the envisioned work in the public sector and beyond and facilitate establishing of ESCOs and ESCO solutions as innovative for the country approach. This is still the issue to be solved. Cost of EE measures is estimated as 30% of total expenses 6 mln Euro. Taking into consideration monetary savings for ten years cost per ton of CO_2eq= 356 Euro and savings estimated is 1200 tCO_2eq/yr.
2. Another activity is ongoing EBRD project for EE rehabilitation of 200 public schools. In total 50 million, 10 mln. grant and 40 mln. sovereign loan of government. The project plans to achieve 13.3 tCO_2eq/a, increasing capacity of local construction companies and establishment of value chain of green construction technologies.
3. Lates programme from government of Georgia approved 1.3 billion Lari for rehabilitation of kindergartens. A 100 mln Lari is already allocated for launching the programme. 133,400 sq.m could be rehabilitated with the first allocation. Very rough estimation shows that total area of kindergartens is 1.3 million sq.m and maximum only 10% could be rehabilitated with the first allocation. Allocation was planned to take into consideration currently existing in country capacities. Without aggressive capacity building programmes and development of ESCO markets scale up the process is not possible.

B.2. Project/Programme description (max. 3 pages)

Describe the expected set of components/outputs and subcomponents/activities to address the above barriers identified that will lead to the expected outcomes.

This concept note envisages providing the following components:
Component 1: Local capacity for effective implementation of Law on "Building Sector Energy Efficiency" strengthened. Given outcome is achieved through the following 2 outputs: 1.1 Regulatory capacity of value chain market players for EE renovation of public buildings established and strengthened, including regulations for ESCO's sustainable operation and energy savings monitoring and 1.2 Technical capacities of EE market players (EE materials and equipment suppliers, specialists required for design, installation, maintenance and energy audits) are competitive, with sufficient capacity and baseline energy audits are conducted.
Activities aimed at accomplishment of Output 1.1 (Strengthening regulations for value chain market players) are as follows:
1.1.1 Establishing of regulatory environment for assessment of baseline EE for public buildings.
1.1.2. Establishing of regulatory environment for certification of locally produced construction materials, and EE technologies.
1.1.3 Establishment of quality assertion laboratory for materials and equipment certification.
1.1.4 Creation of regulatory environment (incl. certification) for establishing and operating of ESCO's.

1.1.5 Establishing regulatory environment for monitoring and verification of savings.

Activities aimed at accomplishment of Output 1.2 (Strengthening institutional and personal technical capacities) are as follows:
1.2.1 Reducing the fragmentation of responsibilities in ownership of public buildings' sector by establishing a single structure with direct responsibility for implementation of public buildings EE refurbishment programmes.
1.2.2 Implementation of the training programs for various stakeholders and market actors.
1.2.3 Developing skills and capacity building programs for universities, engineers and contractors.
1.2.4 Conducting baseline energy consumption (EE) inventory for different category of public buildings.

Component 2: ESCO's established, providing energy services in a sustainable and commercial ways without any subsidies.
This component is achieved through 2 of the outputs: 2.1. ESCOs are established and have financial strategies and internal strategic plans for sustainable operation in buildings EE renovation/ construction activities and 2.2. Developers and ESCOs have access to concessional finance (concessional loans, guarantees, etc.) necessary for operation (at the initial stage of development grants for results monitoring and some other activities could be available)

Activities aimed at accomplishment of Output 2.1 (Piloting ESCO model) are as follows:
2.1.1 Piloting ESCO models as internal EE capacity strengthening of existing developers (internal operation process is established)
2.1.2 Supporting ESCO's in establishing internal operation and financial strategy.
2.1.3 Trainings ESCOs energy managers in risks assessment and mitigation.
2.1.4 Providing on-job trainings to technical personnel (technology engineers).

Activities aimed at accomplishment of Output 2.2 (Accessibility to concessional finance) are as follows:
2.2.1 Establishing effective financial structures for ESCOs operation.
2.2.2. Providing financial support for technical assistance and feasibility study activities.
2.2.3. Establishing of financing programs with different financial instruments considered within the GCF financial policy for risks reduction (guarantee, insurance, etc.).

Component 3. About 400,000 m2 public buildings are refurbished with EE measures saving annually 3,000 tCO2eq.
This component is achieved through 2 of the outputs: 3.1 Renovation process of public building stock with thermal insulation, heat pumps and PV systems is established and sustainable and 3.2 As a result of an aggressive public campaign, with successful cases of energy savings, increased application for available incentives for an energy efficient renovation process was achieved.

Activities aimed at accomplishment of Output 3.1 (EE renovation of public buildings) are as follows:
3.1.1. Initiation EE renovation process for selected by Government priority buildings.
3.1.2. Monitoring and reporting of achieved energy savings.

Activities aimed at accomplishment of Output 3.2 (incentivising market demand readiness) are as follows:
3.2.1 Developing and implementing the incentive programmes for energy efficiency measures.
3.2.2 Conducting information campaigns for public and commercial sectors".
In terms of rationale, please describe the theory of change and provide information on how it serves to shift the development pathway toward a more low-emissions and/or climate resilient direction, in line with the Fund's goals and objectives.

If the concessional finance with donor support in technical assistance are provided to the private sector to address financial, professional and market related barriers along with the support addressing institutional barriers hindering development of insulation, heat pumps and PV systems, then, reduced GHG emissions with energy savings will be achieved, because independent ESCO's will provide sustainable business operation on a competitive basis.

The project is focused on mitigation activities and in particular on the energy efficient rehabilitation of public building sector. It contributes to the GCF result area Buildings, cities, industries and appliances and will have high social value.

Describe how activities in the proposal are consistent with national regulatory and legal framework, if applicable.
Activities planned in this CN is fully in compliance with the Building EE Law and are planned for implementation of this Law and Georgia's commitments under the PA and the EU Energy Community, though some supplementary regulations should be introduced in support to the activities planned in the CN. These regulations are:

1. Establishing of regulatory environment for assessment of baseline EE for public buildings.
2. Establishing of regulatory environment for certification of locally produced construction materials, and EE technologies.

3. Creation of regulatory environment (incl. certification) for establishing and operating of ESCOs.
4. Establishing regulatory environment for monitoring and verification of savings.

Describe in what way the Accredited Entity(ies) is well placed to undertake the planned activities and what will be the implementation arrangements with the executing entity(ies) and implementing partners.

Accredited Entity (ies) is not decided at this stage, though the concept note considers several candidates and options of potential accredited entities. The first priority for the country is project specific accreditation of the Municipal Development Fund (MDF) of Georgia which currently is not accredited for GCF but has a long-term past experience in rehabilitation/refurbishment of public buildings in Georgia working under the guidance of EBRD, KfW, ADB and others, including governments investments in building sector[4]. Another potential candidate for the project-specific accreditation is Energy Efficiency Center Georgia (NGO) established by the EU and having more than 20 years' experience in implementing energy efficiency programmes and projects in building, industry and other sectors (short CV of EECG is attached to this CN). Since 2014 EEC is a supporter of Covenant of Mayors[5].

Executive Entities will be the Ministry of Economy and Sustainable Development (MESD), the Ministry of Finance, ESCOs (private sector), MDF, EECG.

Arrangements between AE and EE depends on the final decision who will be the AE (ties), though in all cases the MOESD will be key decision-making body on buildings' types and other elements of implementation, responsible to get maximum GHGs reduction and social effect. The MOESD is responsible for institutionalization of EE Building Law's complete implementation process. The Ministry of Finance will be responsible for monitoring and planning annual spendings for EE refurbishment and energy savings.

Please provide a brief overview of the key financial and operational risks and any mitigation measures identified at this stage.

Selected Risk Factor 1: Uncertainty		
Risk Category	Probability	Impact
Risks related to low awareness and information deficit	High	Medium
Description		
The absence of reliable statistics on the existing building stock, including public buildings, poses risks: Inaccurate Assessment: Without reliable statistics, assessing energy efficiency needs becomes challenging, leading to ineffective renovation strategies and suboptimal energy savings. Inefficient Resource Allocation: Without baseline characteristics, prioritizing buildings for renovation based on energy consumption becomes difficult, leading to inefficient resource allocation. Unrealistic Targets: Lack of reliable statistics hampers setting realistic energy efficiency targets, hindering achievable goals for energy savings and emissions reduction. Monitoring and Evaluation Difficulties: Without reliable baseline data, measuring actual energy savings and evaluating the effectiveness of measures becomes challenging, limiting assessment and strategy adjustments. Policy and Regulatory Limitations: Absence of reliable statistics hinders the development of targeted policies and regulations to address energy efficiency needs in different building types and sectors.		
Mitigation Measure(s)		
To mitigate these risks, it is crucial to invest in data collection and analysis efforts to establish a reliable database of existing building stock, including their baseline characteristics and energy consumption. This information will enable informed decision-making, effective resource allocation, accurate target setting, and successful monitoring and evaluation of energy efficiency initiatives. To address this is isses Activity 1.2.4 Conducting baseline EE of different category buildings (Conducting baseline inventory of building stock (public buildings as priority) and its EE parameters, activities to be implemented during the EE rehabilitation of considered stock) is planned.		
Selected Risk Factor 2: Absence of ESCO's		
Risk Category	Probability	Impact
Risks related to low awareness and information deficit	Medium	Medium
Description		
The absence of operational ESCOs in Georgia and limited stakeholder awareness pose risks:		

[4] http://mdf.org.ge/?site-lang=en
[5] http://www.eecgeo.org/

Limited Implementation Capacity: Without operational ESCOs, there is a lack of specialized entities to drive and implement energy efficiency projects, limiting the capacity for comprehensive initiatives.
Missed Energy Savings Opportunities: Without ESCOs, there is a risk of missing significant energy-saving opportunities and reducing building energy consumption.
Inadequate Financing Options: Absence of ESCOs limits tailored financing options, potentially hindering project implementation due to insufficient financial resources.
Limited Knowledge and Expertise: Stakeholders may lack awareness of ESCOs' operational principles, leading to uncertainty and suboptimal project design and implementation.
Slow Progress in Energy Efficiency Goals: Without ESCOs and stakeholder awareness, progress in achieving energy efficiency goals may be slower.
Decreased Confidence and Trust: Absence of operational ESCOs and limited stakeholder awareness can erode confidence in energy efficiency measures, hindering broader adoption.

Mitigation Measure(s)

To mitigate these risks, it is essential to focus on raising awareness among stakeholders about the benefits of ESCOs and their operational principles. Capacity-building initiatives, training programs, and knowledge-sharing platforms can help familiarize stakeholders with ESCO models, their financing mechanisms, and successful case studies. Additionally, supportive policies and regulations that encourage the establishment and operation of ESCOs can help create an enabling environment for their growth in Georgia.
To address this is issues Activity 2.1.1 Piloting ESCO models as internal EE capacity strengthening of existing developers (internal operation process is established), Activities 2.1.2 Suppoting ESCO's in establishing internal operation and financial strategy and activity 2.1.3 Trainings ESCOs energy managers in risks assessment and mitigation are planned

Selected Risk Factor 3: Limited awareness and recognition of the economic, social, and environmental benefits of energy efficiency

Risk Category	Probability	Impact
Risks related to low awareness and information deficit	High	Medium

Description

Limited awareness of the benefits of energy efficiency (EE) poses risks:
Inadequate Investment and Funding: Limited awareness may result in insufficient investment and funding for EE projects, missing out on economic gains and energy savings.
Slow Adoption of EE Practices: Limited awareness can impede the adoption of energy-efficient technologies and policies, hindering progress towards energy-saving targets.
Inefficient Resource Allocation: Lack of recognition of EE benefits may lead to suboptimal resource allocation and missed opportunities for energy savings.
Limited Policy Support: Insufficient recognition may result in weak policy measures, hindering effective energy-saving initiatives.
Public Engagement Challenges: Limited awareness hinders public engagement and participation in EE programs, affecting the effectiveness of awareness campaigns.
Missed Sustainability Opportunities: Failure to recognize the environmental benefits of EE hinders progress towards sustainable development goals.

Mitigation Measure(s)

To address these risks, it is crucial to focus on raising awareness among stakeholders about the economic, social, and environmental benefits of EE. Education and outreach programs, targeted communication campaigns, and capacity-building initiatives can help enhance understanding and recognition of the advantages associated with energy efficiency. Additionally, clear communication of the country's global commitments and the importance of energy savings can help galvanize support and drive action towards achieving energy efficiency targets.
To address this is issues Activity 1.2.1 Reducing the fragmentation of responsibilities in building sector by establishing a single structure with direct responsibility for implementation of buildin EE programmes, Activity 1.2.2 Implementation of the training programs for various stakeholders and market actors and Activity 1.2.3 Developing skills and capacity building programs for universities, engineers and contractors are planned

Selected Risk Factor 4: Absence of incentives for energy efficiency measures

Risk Category	Probability	Impact
Market related	Medium	Medium

Description

Absence of incentives for energy efficiency poses risks:

Limited Motivation for Investments: Without incentives, stakeholders are less motivated to invest in energy efficiency measures with high upfront costs, affecting long-term savings. Slow Adoption of Technologies: High costs and low tariffs discourage the adoption of energy-efficient technologies, leading to higher energy consumption. Missed Energy Savings Potential: Lack of incentives results in missed opportunities for significant energy savings and increased energy costs. Slow Progress in Targets: Incentives drive progress towards energy efficiency targets, which may be hindered without their presence. Limited Market Development: Absence of incentives limits the growth of the energy-efficient products and services market. Competitive Disadvantage: Lack of incentives can put businesses at a competitive disadvantage compared to regions with supportive programs.
Mitigation Measure(s)
To mitigate these risks, it is important to consider implementing targeted incentives for energy efficiency measures with high upfront costs, even in the presence of low electricity and natural gas tariffs. These incentives can include financial incentives such as grants, subsidies, tax credits, and low-interest loans. Additionally, non-financial incentives such as technical support, capacity-building programs, and recognition for energy-efficient practices can also encourage stakeholders to adopt energy-saving measures. By providing the right incentives, governments and relevant authorities can stimulate investment in energy efficiency and accelerate progress towards sustainability goals. To address these is issues Activity 3.2.1 Developing and implementing the incentive programmes for energy efficincy measures, and Activity 3.2.2 Conducting information campaigns for public and commercial sectors are planned

B.3. Expected project results aligned with the GCF investment criteria (max. 3 pages)

Provide an estimate of the expected impacts aligned with the GCF investment criteria: impact potential, paradigm shift, sustainable development, needs of recipients, country ownership, and efficiency and effectiveness.

Impact potential: Anticipated impact of this national programme on GHGs emission reduction is high because the programme focuses on the existing building stock constructed in Soviet time with very low efficiency soviet norms. A 40% of GHGs emissions from building sector belongs to this existing building stock. Along with the high contribution to the country's commitments to Paris Agreement and EU Energy Community, the programme will have high social impact targeting initially kindergartens and social buildings, improving comfort of occupants of these buildings, generating additional renewable energy, reducing high social costs of budget due to the low efficient public buildings. With gender-centered capacity building initiatives women will get ability to be actively involved in the maintenance of the energy efficient heating pumps (EEHP's) and other EE technologies that will be widely installed in the state kindergartens – building that are the primary target of the concept note. Knowledge of the new technologies and their maintenance, which is expected to be easier than older ones (wood or coal stoves), will allow the female staff of the kindergarten maintain EEHP efficiently, benefit from the comfort of the utilization and earn additional money for the service.

Paradigm shift: Concept of paradigm shift of this national programme is as follow -"If the concessional finance with donor support in technical assistance are provided to the private sector to address financial, professional and market related barriers along with the support addressing institutional barriers hindering development of energy efficient technologies for buildings then, independent ESCO's will be able to provide sustainable energy efficient business operation on a competitive basis and ensure reduction of GHG emissions through energy savings in existing public building sector". Establishing enabling environment and market conditions for competitive operation of ESCOs will ensure the effective implementation and results monitoring of Law on Buildings Energy Efficiency for new constructions/buildings.

Sustainable development:
The programme contributes to the creation of new markets for operation of new private sector (ESCOs) and relevantly to the creation of additional working places, increasing technical knowledge in climate related technologies. The programme contributes to several Sustainable Development Goals (SDGs), such as:
SDG 7: Affordable and Clean Energy - Energy-efficient rehabilitation reduces energy consumption in public buildings, leading to greater energy affordability and promoting the use of clean and sustainable energy sources.
SDG 11: Sustainable Cities and Communities - Energy-efficient rehabilitation contributes to creating sustainable cities and communities in Georgia by improving the energy performance of public buildings, reducing greenhouse gas emissions, and enhancing resource efficiency.
SDG 13: Climate Action - Energy-efficient rehabilitation helps mitigate climate change by reducing carbon emissions from public buildings, aligning with Georgia's commitment to reducing its greenhouse gas emissions.

SDG 9: Industry, Innovation, and Infrastructure - Energy-efficient rehabilitation requires the adoption of innovative technologies and practices, promoting sustainable infrastructure development in Georgia.
SDG 3: Good Health and Well-being - Energy-efficient public buildings provide better indoor air quality, thermal comfort at working space, and overall healthier environments, contributing to the well-being and health of occupants.
SDG 12: Responsible Consumption and Production - Energy-efficient rehabilitation encourages responsible consumption and production patterns by optimizing energy use and reducing waste in public buildings.
SDG 17: Partnerships for the Goals - Achieving energy-efficient rehabilitation of public buildings in Georgia requires collaboration and partnerships between various stakeholders, including government entities, private sector organizations, and civil society, in line with SDG 17's objective of fostering global partnerships for sustainable development.
By focusing on energy-efficient rehabilitation of public buildings, Georgia can make progress towards these SDGs, contributing to a more sustainable and resilient future for the country.
Although is a well-known and widely lamented fact that men outnumber women in a number of fields in technology and engineering, the gender gap remains misaddressed in those field, also widely connected to the building sector (0,5% women and 13% men are occupied in the field of building and construction in Georgia, Geostat 2022). The CN aims at women's capacity building (CB) and the gender-inclusive CB should result in new jobs in the EE building sector (engineers of EE technologies, energy auditors, energy managers, etc.) with notable involvement of female professionals, although Other benefits of the EE rehabilitation of state kindergartens may be the following: parents will be more eager to leave children in rehabilitated, energy efficient buildings, which are more likely to be heated regularly, without fear that children get sick. Also, keeping children in kindergarten is crucial for their physical and mental development. Longer they stay in such environment, stronger is the benefit, and thus, parent will need spend less time taking care of child's development and preparation for school. As mothers are the main care givers to their children in Georgia, leaving their children in kindergarten they will have more time for accomplish other duties including going to work and earn money or for self-care and socializing.

Needs of recipients: The needs of recipients are very high and, in particular, the needs for strengthening local capacity for piloting or scaling up already piloted energy efficient technologies for the building sector. Efficiency of the market value chain is not satisfactory and low-quality technologies are prevalent in the country's construction technology market. Commitments made by the country to the PA and the EU Energy Community are not feasible without technological and financial support. The target, to rehabilitate 4 million sq. meters of existing buildings annually with EE measures increasing the costs of rehabilitation by 30% is a challenge for the country.

Country ownership: Country ownership is well demonstrated by the government of Georgia having in progress several different programmes of rehabilitation of public buildings (rehabilitation of public schools supported by EBRD; rehabilitation of kindergartens financed from the national budget, etc.). In 2023, the Government approved 1.3 billion Lari for rehabilitation of kindergartens, 100 million Lari (approximately 40 million USD) have been already allocated for the first phase of implementation. The programme considered in this concept note will be additional support to the existing government's programme scaling up the programme and accelerating GHGs emissions reductions process. Commitment on EE refurbishment of public buildings is declared by the country in NDC, Climate Change Strategy 2030 and its Action Plan, in Energy and Climate Integrated Action Plan (for EU Energy Community). EE rehabilitation of existing high-emission building stock with high priority to the public building stock is a part of Georgia's LEDS (Low Emission Development Strategy) document as well.

Efficiency and effectiveness: The programme have high initial investment costs due to the lack of knowledge and experience related to the new technologies leading to the expensive capacity building components, though the long-term transformative effect is anticipated to be high. Efficiency from the perspective of costs per ton of CO2 reduced is low due to the high costs of local capacity building throughout the whole value chain. Estimating price of per tCO2 reduction based on EE technologies share (30%) in full costs of rehabilitation it is USD 125.4 considering only GCF grant amount and equals to USD 376/tCO2 for total GCF contribution (this is quite similar to the cost Euro 356 per tCO2 calculated in NAMA project). The cost per tCO2 reduced equals to USD 627 for the project full cost. Regarding the leveraging of additional finance, in this case, the government intends to leverage 100% of its contribution from GCF for intensive capacity building and acceleration of the implementation process, and the number of areas rehabilitated annually.

tB.4. Engagement among the NDA, AE, and/or other relevant stakeholders in the country (max ½ page)

Please describe how engagement among the NDA, AE and/or other relevant stakeholders in the country has taken place and what further engagement will be undertaken as the concept is developed into a funding proposal.

All stakeholders of the concept were actively involved in the development of different elements of the programme. The CN was initiated and prepared during the implementation of Georgia's Technology Needs Assessment (TNA) process conducted in Georgia in 2021-2023 and financially supported by the GCF through CTCN/UNEP. Key stakeholders involved at this stage were: experts involved in preparation of TAP (Technology Action Plan) for building sector, project steering committee consisting of representatives of different Ministries and chaired by the Ministry of Environment

Protection and Agriculture (GCF DNA). Individual consultations were conducted with the responsible representatives of potential AEs (MDF, EECG) and EEs (MOESD, MoF, ESCOs). Two broad partnership workshops were conducted with all potential partnerships. Unfortunately, not enough consultations have been done yet with representatives of construction organizations ("developers") and this deficit should be filled at the next stage when full support is from the Government and its role is decided. Starting from 1 July 2023 energy consumption parameters for all new constructions should follow energy directives approved under the Energy Efficient Buildings Law. The "developers" is most important segment targeted by the CN for development of ESCOs solutions in Georgia as a part of a company with the perspective that later ESCOs could operate independently or as a part of developers segment, as appropriate.

C. Indicative Financing/Cost Information (max. 3 pages)

C.1. Financing by components (max ½ page)

Please provide an estimate of the total cost per component/output and disaggregate by source of financing.

Component/Output	Indicative cost (USD)	GCF financing		Co-financing		
		Amount (USD)	Financial Instrument	Amount (USD)	Financial Instrument	Name of Institutions
Component 1	6 million	5 million	Grant	1 million	In-kind	MOESD
Component 2	16 million	15 million	Grant	1 million	In-kind	MOESD/MoF
Component 3	80 million	40 million	Loan	40 million	Co-financing of loan	MoF
Indicative total cost (USD)	102 million	60 million		42 million		

For private sector proposal, provide an overview (diagram) of the proposed financing structure.

C.2. Justification of GCF funding request (max. 1 page)

Explain why the Project/ Programme requires GCF funding, i.e. explaining why this is not financed by the public and/ or private sector(s) of the country.

A 50% of rehabilitated areas will be financed by the budget.

Describe alternative funding options for the same activities being proposed in the Concept Note, including an analysis of the barriers for the potential beneficiaries to access to finance and the constraints of public and private sources of funding.

Alternative to GCF funding options are increasing the annual share/expenses of the Government in this refurbishment process or asking for support from other investors. As it was already explained above, the country's budget is limited (sovereign loan is higher than approved by ???) and annually more expenses for this activity are not available from the budget, though what is most important, there is not enough local capacities to fulfil commitments and strengthening local capacities requires significant grant support for scaling-up and speed-up existing public buildings rehabilitation process.

Justify the rationale and level of concessionality of the GCF financial instrument(s) as well as how this will be passed on to the end-users and beneficiaries. Justify why this is the minimum required to make the investment viable and most efficient considering the incremental cost or risk premium of the Project/ Programme (refer to Decisions B.12/17; B.10/03; and B.09/04 for more details). The justification for grants and reimbursable grants is mandatory.

In the case of private sector proposal, concessional terms should be minimized and justified as per the Guiding principles applicable to the private sector operations (Decision B.05/07).

C.3. Sustainability and replicability of the project (exit strategy) (max. 1 page)

Please explain how the project/programme sustainability will be ensured in the long run and how this will be monitored, after the project/programme is implemented with support from the GCF and other sources.

This programme presented in the CN is a part of national programme of EE refurbishment of public building stock starting with rehabilitation of schools and kindergartens. In total 160 mln. sq. m of old buildings exists in Georgia and the country committed to rehabilitate whole stock with EE modern technologies in 40 years. Annually 4 million sq.m should

be rehabilitated. Two ongoing programmes (schools and kindergartens in total approximately maximum 3.5 mln. sq. m) if fully accomplished will result less than 1% of total stock to be renovated in low-emission way.

For *non-grant instruments, explain how the capital invested will be repaid and over what duration of time.*

Cost-benefit analysis conducted by ISET demonstrated that ??????

D. Supporting documents submitted (OPTIONAL)

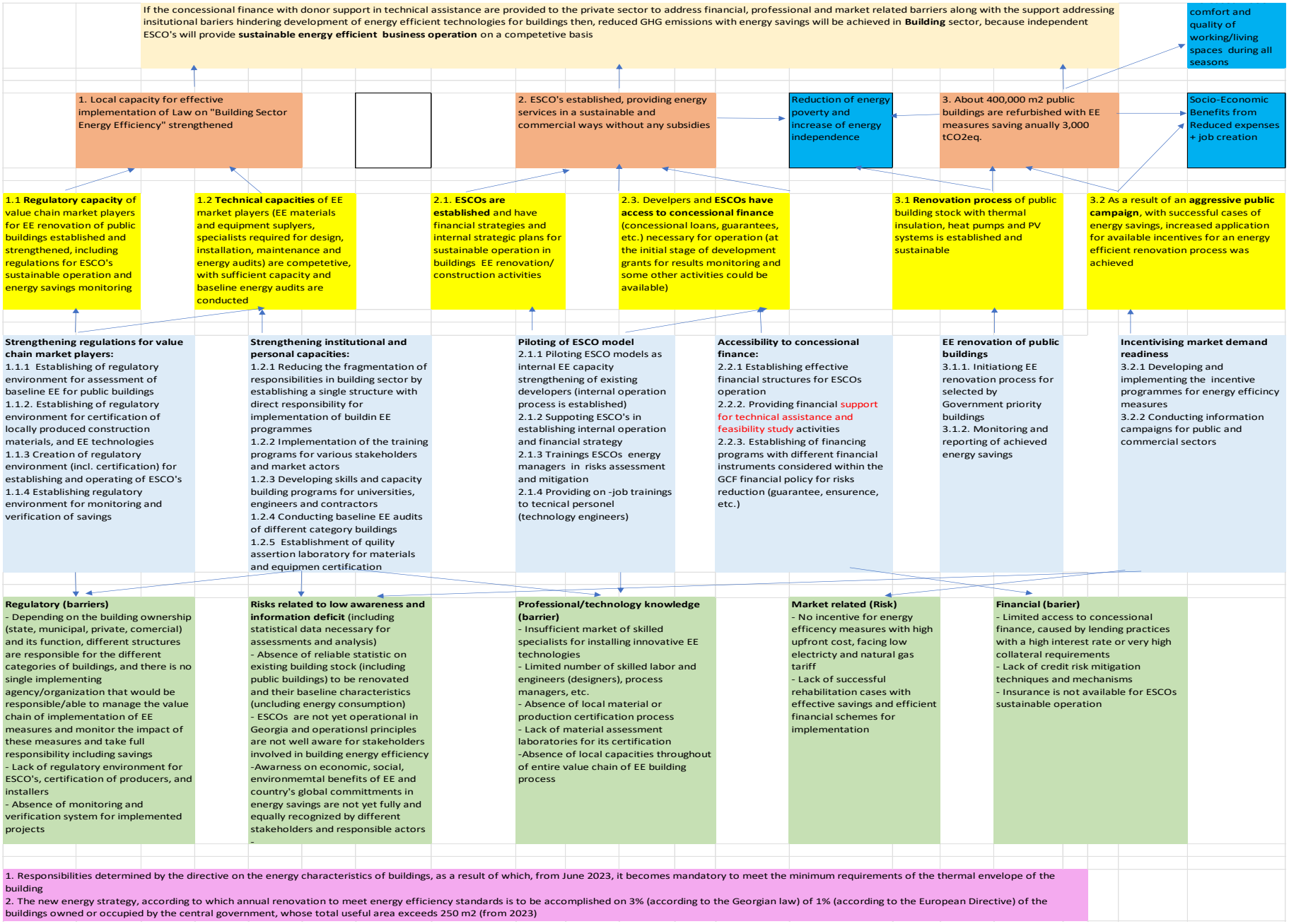
- ☐ Map indicating the location of the project/programme
- ☒ Diagram of the theory of change
- ☒ Economic and financial model with key assumptions and potential stressed scenarios
- ☐ Pre-feasibility study
- ☐ Evaluation report of previous project
- ☐ Results of environmental and social risk screening

Self-awareness check boxes

Are you aware that the full Funding Proposal and Annexes will require these documents? Yes ☐ No ☐

- Feasibility Study
- Environmental and social impact assessment or environmental and social management framework
- Stakeholder consultations at national and project level implementation including with indigenous people if relevant
- Gender assessment and action plan
- Operations and maintenance plan if relevant
- Loan or grant operation manual as appropriate
- Co-financing commitment letters

Are you aware that a funding proposal from an accredited entity without a signed AMA will be reviewed but not sent to the Board for consideration? Yes ☐ No ☐


If the concessional finance with donor support in technical assistance are provided to the private sector to address financial, professional and market related barriers along with the support addressing insitutional bariers hindering development of energy efficient technologies for buildings then, reduced GHG emissions with energy savings will be achieved in **Building** sector, because independent ESCO's will provide **sustainable energy efficient business operation** on a competetive basis
comfort and quality of working/living spaces during all seasons
1. Local capacity for effective implementation of Law on "Building Sector Energy Efficiency" strengthened
2. ESCO's established, providing energy services in a sustainable and commercial ways without any subsidies
Reduction of energy poverty and increase of energy independence
3. About 400,000 m2 public buildings are refurbished with EE measures saving anually 3,000 tCO2eq.
Socio-Economic Benefits from Reduced expenses + job creation
1.1 **Regulatory capacity** of value chain market players for EE renovation of public buildings established and strengthened, including regulations for ESCO's sustainable operation and energy savings monitoring
1.2 **Technical capacities** of EE market players (EE materials and equipment suplyers, specialists required for design, installation, maintenance and energy audits) are competetive, with sufficient capacity and baseline energy audits are conducted
2.1. **ESCOs are established** and have financial strategies and internal strategic plans for sustainable operation in buildings EE renovation/ construction activities
2.3. Develpers and **ESCOs have access to concessional finance** (concessional loans, guarantees, etc.) necessary for operation (at the initial stage of development grants for results monitoring and some other activities could be available)
3.1 **Renovation process** of public building stock with thermal insulation, heat pumps and PV systems is established and sustainable
3.2 As a result of an **aggressive public campaign**, with successful cases of energy savings, increased application for available incentives for an energy efficient renovation process was achieved
Strengthening regulations for value chain market players:
1.1.1 Establishing of regulatory environment for assessment of baseline EE for public buildings
1.1.2. Establishing of regulatory environment for certification of locally produced construction materials, and EE technologies
1.1.3 Creation of regulatory environment (incl. certification) for establishing and operating of ESCO's
1.1.4 Establishing regulatory environment for monitoring and verification of savings
Strengthening institutional and personal capacities:
1.2.1 Reducing the fragmentation of responsibilities in building sector by establishing a single structure with direct responsibility for implementation of buildin EE programmes
1.2.2 Implementation of the training programs for various stakeholders and market actors
1.2.3 Developing skills and capacity building programs for universities, engineers and contractors
1.2.4 Conducting baseline EE audits of different category buildings
1.2.5 Establishment of quility assertion laboratory for materials and equipmen certification
Piloting of ESCO model
2.1.1 Piloting ESCO models as internal EE capacity strengthening of existing developers (internal operation process is established)
2.1.2 Suppoting ESCO's in establishing internal operation and financial strategy
2.1.3 Trainings ESCOs energy managers in risks assessment and mitigation
2.1.4 Providing on -job trainings to tecnical personel (technology engineers)
Accessibility to concessional finance:
2.2.1 Establishing effective financial structures for ESCOs operation
2.2.2. Providing financial support for technical assistance and feasibility study activities
2.2.3. Establishing of financing programs with different financial instruments considered within the GCF financial policy for risks reduction (guarantee, ensurence, etc.)
EE renovation of public buildings
3.1.1. Initiationg EE renovation process for selected by Government priority buildings
3.1.2. Monitoring and reporting of achieved energy savings
Incentivising market demand readiness
3.2.1 Developing and implementing the incentive programmes for energy efficincy measures
3.2.2 Conducting information campaigns for public and commercial sectors
Regulatory (barriers)
- Depending on the building ownership (state, municipal, private, comercial) and its function, different structures are responsible for the different categories of buildings, and there is no single implementing agency/organization that would be responsible/able to manage the value chain of implementation of EE measures and monitor the impact of these measures and take full responsibility including savings
- Lack of regulatory environment for ESCO's, certification of producers, and installers
- Absence of monitoring and verification system for implemented projects
Risks related to low awareness and information deficit (including statistical data necessary for assessments and analysis)
- Absence of reliable statistic on existing building stock (including public buildings) to be renovated and their baseline characteristics (uncluding energy consumption)
- ESCOs are not yet operational in Georgia and operationsl principles are not well aware for stakeholders involved in building energy efficiency
-Awarness on economic, social, environmemtal benefits of EE and country's global committments in energy savings are not yet fully and equally recognized by different stakeholders and responsible actors
-
Professional/technology knowledge (barrier)
- Insufficient market of skilled specialists for installing innovative EE technologies
- Limited number of skilled labor and engineers (designers), process managers, etc.
- Absence of local material or production certification process
- Lack of material assessment laboratories for its certification
-Absence of local capacities throughout of entire value chain of EE building process
Market related (Risk)
- No incentive for energy efficency measures with high upfront cost, facing low electricty and natural gas tariff
- Lack of successful rehabilitation cases with effective savings and efficient financial schemes for implementation
Financial (barier)
- Limited access to concessional finance, caused by lending practices with a high interest rate or very high collateral requirements
- Lack of credit risk mitigation techniques and mechanisms
- Insurance is not available for ESCOs sustainable operation
1. Responsibilities determined by the directive on the energy characteristics of buildings, as a result of which, from June 2023, it becomes mandatory to meet the minimum requirements of the thermal envelope of the building
2. The new energy strategy, according to which annual renovation to meet energy efficiency standards is to be accomplished on 3% (according to the Georgian law) of 1% (according to the European Directive) of the buildings owned or occupied by the central government, whose total useful area exceeds 250 m2 (from 2023)