STAP guidelines for screening GEF projects

PIF	What STAP looks for	Response

GEF ID: 10996
Project Title: Developing National Capacity of Turkmenistan through Improving Regulatory Environment towards Energy Efficient and Sustainable Building Sector

Date of Screening: June 1, 2022
STAP member screener: Saleem Ali
STAP secretariat screener: Sunday Leonard
STAP's overall assessment: Minor

This project takes a multifaceted approach to improving the energy efficiency of buildings in Turkmenistan by considering governance and subsidy reform alongside technological solutions to building retrofitting. We appreciate that the PIF references STAP Guidance (C.56/Inf.04) on achieving sustainable outcomes and also mentions the theory of change. However, a diagram which lays this out could sharpen the connections between interventions and outcomes.

In reviewing earlier GEF work in the country, it is worth noting that there was an important energy efficiency project linked to sustainable water delivery in Turkmenistan under the auspices of UNDP (https://www.thegef.org/projects-operations/projects/5536). The current project proponents should consider the lessons learned from that project and its applications. UNDP recently conducted a symposium on this topic in May 2022, and some of the scientific insights ensuing from this symposium should also be incorporated into the project design (https://www.undp.org/turkmenistan/press-releases/undp-promotes-renewable-energy-and-energy-efficiency-turkmenistan).

The World Bank had undertaken a much broader study almost a decade ago on success stories of energy efficiency in former Soviet-bloc countries referenced below. These lessons also should be incorporated and then linked to any specific innovations in this project (Stuggins, G., Sharabaroff, A., Semikolenova, Y., 2013. Energy Efficiency: lessons learned from success stories, Eastern Europe and Central Asia reports. THE WORLD BANK, Washington. https://doi.org/10.1596/978-0-8213-9803-6).

The proposal needs to clarify whether the project will focus on upgrading existing buildings or building new ones. In some instances, the PIF indicates that the project will upgrade existing buildings, while elsewhere, it says new buildings will be constructed. The clarification is essential given that energy efficiency measures will defer for new buildings and retrofitting of existing ones. Further, in considering which type of building to retrofit, Component 1 indicates that "energy efficiency will be achieved through the upgrade of the **new buildings** to a nearly zero-energy standard." We think that rather than focus on only new buildings, the demonstration should consider the diverse types of buildings predominant in the country that could generate significant GEBs if retrofitted, including old ones. Doing this will ensure that there are examples that can be replicated and scaled up in the future for the different types of buildings.

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For new constructions, the project should not only focus on energy efficiency measures but think holistically about circular construction. Examples of circular construction solutions include (1) optimizing building design for long service time, (2) applying passive design strategies, (3) nature-based solutions such as green roofs to reduce energy use, and (4) facilitating easy disassembly to recover and reuse valuable materials at the end of a building's life. These circular solutions are discussed further in STAP's report on circular economy and climate mitigation. We refer the project proponent to this report at https://stapgef.org/resources/advisory-documents/circular-economy-and-climate-mitigation.

The Energy Management Information System (EMIS) is an important innovative emulation stated in this project from earlier work in Croatia with UNECE. A useful recent reference in this regard is: Wang, T., Zhu, T., 2019. Better Understanding of Energy Consumption via Energy Information and Management System. IOP conference series. Materials Science and Engineering 677, 42108-. https://doi.org/10.1088/1757-899X/677/4/042108. The EMIS component provides a significant opportunity to be even more innovative. The system should go beyond just providing the government with real-time data on energy use for comparison with non-NZEBs, as noted in Output 2.1. It should incorporate the use of smart building energy management systems, which use modern digital technologies to effectively **monitor, control,** and **manage** the energy use of the buildings. We refer the proponent to relevant literature on this:

- Paula Rocha, Afzal Siddiqui, Michael Stadler, 2015. Improving energy efficiency via smart building energy management systems: A comparison with policy measures, Energy and Buildings, 88, 203-213, https://doi.org/10.1016/j.enbuild.2014.11.077.
- J. Ock, R. R. A. Issa, and I. Flood, "Smart Building Energy Management Systems (BEMS) simulation conceptual framework," 2016 Winter Simulation Conference (WSC), 2016, pp. 3237-3245, doi: 10.1109/WSC.2016.7822355.
- Marinakis, Vangelis, and Haris Doukas. 2018. "An Advanced IoT-based System for Intelligent Energy Management in Buildings" Sensors 18, no. 2: 610. https://doi.org/10.3390/s18020610
- IoTa Communications. Leveraging IoT Sensors & Analytics To Optimize Energy Efficiency. https://www.caba.org/wp-content/uploads/2020/07/IS-2020-84.pdf
- et al., T. J. H. (2019). A Review on Smart Energy Management Systems for Intelligent Buildings. International Journal of Advanced Science and Technology, 28(10), 175 - 181. Retrieved from http://sersc.org/journals/index.php/IJAST/article/view/1006

It was assumed that there would be a replication of the project outputs in 130 multi-family residential and 5 new public buildings by the end of the project. However, the basis for this assumption is unclear from the PIF. Is there already a guarantee from the government that this will happen, or is this based on projections of building development in the country and the expected change in building codes? Given that the estimation of the expected GEBs is based on this assumption, it will be helpful to provide more information on the basis for this assumption and what will be done during the project implementation to ensure that the assumption holds. Further, the success, replication, and scale-up of the expected achievements from this project will depend on the engagement of, and cooperation with, the private sector actors in the country. We recommend that the project proponent think through and develop an effective private sector engagement strategy during the PPG stage.

While an environmental and social safeguard screening was included, the project did not conduct a climate risk assessment. Average temperatures in the country are projected to rise by 5.1°C by the 2090s, under the highest emissions pathway (RCP8.5), with the pace of warming significantly exceeding the global average, according to ReliefWeb, World Bank and ADB. This projected change in the climate profile of the country would affect

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energy demand and use in buildings. This has to be considered in the design of any energy efficiency measure. STAP, therefore, recommends that a climate risk screening should be carried out as the project is further designed and mitigation measures developed for identified risks before the project implementation begins. Not doing this will end up eroding the expected benefits from the project.		
Part I: Project Information **B. Indicative Project Description Summary**		
Project Objective	Is the objective clearly defined, and consistently related to the problem diagnosis?	Yes – overall this is achieved
Project components	A brief description of the planned activities. Do these support the project's objectives?	Yes
Outcomes	A description of the expected short-term and medium-term effects of an intervention. Do the planned outcomes encompass important global environmental benefits? Are the global environmental benefits likely to be generated?	Yes – Reasonable GEB data are provided alongside baseline and alternative information in a user-friendly table.
Outputs	A description of the products and services which are expected to result from the project. Is the sum of the outputs likely to contribute to the outcomes?	Yes, there are a series of outputs listed along with each outcome but these could be made more specific.
Part II: Project justification	A simple narrative explaining the project's logic, i.e. a theory of change.	
1. Project description. Briefly describe: 1) the global environmental and/or adaptation problems, root causes and barriers that need to be addressed (systems description)	Is the problem statement well-defined? Are the barriers and threats well described, and substantiated by data and references? For multiple focal area projects: does the problem statement and analysis identify the drivers of environmental degradation which need to be addressed through multiple focal areas; and is the objective well-defined, and can it only be supported by integrating two, or	

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	more focal areas objectives or programs?	
2) the baseline scenario or any associated baseline projects	Is the baseline identified clearly? Does it provide a feasible basis for quantifying the project's benefits? Is the baseline sufficiently robust to support the incremental (additional cost) reasoning for the project? For multiple focal area projects: are the multiple baseline analyses presented (supported by data and references), and the multiple benefits specified, including the proposed indicators; are the lessons learned from similar or related past GEF and non-GEF interventions described; and how did these lessons inform the design of this project?	Yes, and the outcomes are benchmarked with the baseline very well.
3) the proposed alternative scenario with a brief description of expected outcomes and components of the project	What is the theory of change? What is the sequence of events (required or expected) that will lead to the desired outcomes? • What is the set of linked activities, outputs, and outcomes to address the project's objectives? • Are the mechanisms of change plausible, and is there a well-informed identification of the underlying assumptions? • Is there a recognition of what adaptations may be required during project implementation to respond to changing conditions in pursuit of the targeted outcomes?	Theory of change diagram is not presented though STAP guidelines are referenced.
5) incremental/additional cost reasoning and expected contributions from the baseline, the GEF trust fund, LDCF, SCCF, and co-financing	GEF trust fund: will the proposed incremental activities lead to the delivery of global environmental benefits?	Noted

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	LDCF/SCCF: will the proposed incremental activities lead to adaptation which reduces vulnerability, builds adaptive capacity, and increases resilience to climate change?	
6) global environmental benefits (GEF trust fund) and/or adaptation benefits (LDCF/SCCF)	Are the benefits truly global environmental benefits, and are they measurable? Is the scale of projected benefits both plausible and compelling in relation to the proposed investment? Are the global environmental benefits explicitly defined? Are indicators, or methodologies, provided to demonstrate how the global environmental benefits will be measured and monitored during project implementation? What activities will be implemented to increase the project's resilience to climate change?	Yes,
7) innovative, sustainability and potential for scaling-up	Is the project innovative, for example, in its design, method of financing, technology, business model, policy, monitoring and evaluation, or learning? Is there a clearly-articulated vision of how the innovation will be scaled-up, for example, over time, across geographies, among institutional actors? Will incremental adaptation be required, or more fundamental transformational change to achieve long term sustainability?	The EMIS innovation needs to be unpacked further with some clarity in what made the Croatian case a best practice and how it can be transferred to Turkmenistan context.
1b. Project Map and Coordinates. Please provide geo-referenced information and map where the project interventions will take place.		Provided
2. Stakeholders. Select the stakeholders that have participated in consultations during the project identification	Have all the key relevant stakeholders been identified to cover the complexity	Yes – stakeholder mapping is included in project design and stakeholder satisfaction also in outcome goals.

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phase: Indigenous people and local communities; Civil society organizations; Private sector entities. 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.	of the problem, and project implementation barriers? What are the stakeholders' roles, and how will their combined roles contribute to robust project design, to achieving global environmental outcomes, and to lessons learned and knowledge?	
3. Gender Equality and Women's Empowerment. Please briefly include below any gender dimensions relevant to the project, and any plans to address gender in project design (e.g. gender analysis). Does the project expect to include any gender-responsive measures to address gender gaps or promote gender equality and women empowerment? Yes/no/ tbd. If possible, indicate in which results area(s) the project is expected to contribute to gender equality: access to and control over resources; participation and decision-making; and/or economic benefits or services. Will the project's results framework or logical framework include gender-sensitive indicators? yes/no /tbd	Have gender differentiated risks and opportunities been identified, and were preliminary response measures described that would address these differences? Do gender considerations hinder full participation of an important stakeholder group (or groups)? If so, how will these obstacles be addressed?	Gender equity plan is adequately provided.
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	Are the identified risks valid and comprehensive? Are the risks specifically for things outside the project's control? Are there social and environmental risks which could affect the project? For climate risk, and climate resilience measures: • How will the project's objectives or outputs be affected by climate risks over the period 2020 to 2050, and	Risk management table is also included Climate risk screening with adequate citations provided.

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	have the impact of these risks been addressed adequately? • Has the sensitivity to climate change, and its impacts, been assessed? • Have resilience practices and measures to address projected climate risks and impacts been considered? How will these be dealt with? • What technical and institutional capacity, and information, will be needed to address climate risks and resilience enhancement measures?	
6. Coordination. Outline the coordination with other relevant GEF-financed and other related initiatives	Are the project proponents tapping into relevant knowledge and learning generated by other projects, including GEF projects? Is there adequate recognition of previous projects and the learning derived from them? Have specific lessons learned from previous projects been cited? How have these lessons informed the project's formulation? Is there an adequate mechanism to feed the lessons learned from earlier projects into this project, and to share lessons learned from it into future projects?	Further linkage to earlier UNDP projects and the work of the World Bank on energy efficiency in post-Soviet context could be noted.
8. Knowledge management. Outline the "Knowledge Management Approach" for the project, and how it will contribute to the project's overall impact, including plans to learn from relevant projects, initiatives and evaluations.	What overall approach will be taken, and what knowledge management indicators and metrics will be used? What plans are proposed for sharing, disseminating and scaling-up results, lessons and experience?	Yes adequately provided

STAP's advisory response

STAP advisory response	*Brief explanation of advisory response and action proposed*
1. Concur	STAP acknowledges that on scientific or technical grounds the concept has merit. The proponent is invited to approach STAP for advice at any time during the development of the project brief prior to submission for CEO endorsement. * In cases where the STAP acknowledges the project has merit on scientific and technical grounds, the STAP will recognize this in the screen by stating that ***"STAP is satisfied with the scientific and technical quality of the proposal and encourages the proponent to develop it with same rigor. At any time during the development of the project, the proponent is invited to approach STAP to consult on the design."***
2. Minor issues to be considered during project design	STAP has identified specific scientific /technical suggestions or opportunities that should be discussed with the project proponent as early as possible during development of the project brief. The proponent may wish to: (i) Open a dialogue with STAP regarding the technical and/or scientific issues raised; (ii) Set a review point at an early stage during project development, and possibly agreeing to terms of reference for an independent expert to be appointed to conduct this review. The proponent should provide a report of the action agreed and taken, at the time of submission of the full project brief for CEO endorsement.
3. Major issues to be considered during project design	STAP proposes significant improvements or has concerns on the grounds of specified major scientific/technical methodological issues, barriers, or omissions in the project concept. If STAP provides this advisory response, a full explanation would also be provided. The proponent is strongly encouraged to: (i) Open a dialogue with STAP regarding the technical and/or scientific issues raised; (ii) Set a review point at an early stage during project development including an independent expert as required. The proponent should provide a report of the action agreed and taken, at the time of submission of the full project brief for CEO endorsement.