

REVISED STAP SCREENING TEMPLATE, OCTOBER 2022

GEF ID	11474
Project title	Energy resilience and security for the residential and public sector in Antigua and Barbuda
Date of screen	24 January 2024
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1. Summary of STAP's views of the project

The proposal is well-written and adequately explains the problem of the over-reliance on fossil fuels and feasible technical, management, policy, and financial solutions. The theory of change is sound and includes the barriers, enablers, assumptions, and clear causal pathways and outcomes. The issues are well described, and the project is justified well.

Also, one of the core problems identified is the lack of financial capacity among the population to purchase renewable energy infrastructure, but it is unclear how and if the specific interventions in the project components will address this problem. The PIF did propose bulk purchases to reduce the cost of PVs and batteries and revolving loans for the populace, but there is no analysis of what the populace can afford and if these measures will be sufficient to ensure affordability among the populace. This analysis is essential to the success of the sustainability of the financing mechanism being proposed and needs to be carried out.

Also, the proposal needs to discuss the options for the end-of-life management of the PVs and batteries to ensure responsible reuse or disposal. A starting point for this is in the design of the PVs and the batteries in the first place. By influencing the design of the equipment to be based on a circular approach, the project can ensure a circular approach to the end of life management.

Though for a small country, STAP sees this project as having the potential to be an excellent example of how SIDS can transition towards sustainable and resilient energy systems that can be replicated.

Note to STAP screeners: a summary of STAP's view of the project (not of the project itself), covering both strengths and weaknesses.

STAP's assessment*

- Concur - STAP acknowledges that the concept has scientific and technical merit
- Minor - STAP has identified some scientific and technical points to be addressed in project design**
- Major - STAP has identified significant concerns to be addressed in project design

Please contact the STAP Secretariat if you would like to discuss.

2. Project rationale, and project description – are they sound?

See annex on STAP's screening guidelines.

The project aligns with the Government of Antigua and Barbuda's goal of achieving 100% renewable energy generation by 2030 under the Paris Agreement. Achieving this target will decouple the energy supply from fossil fuels, which should generate global environmental benefits.

The PIF is well-written and covers many of the elements that STAP suggests are necessary for a well-designed project. The proponents clearly describe the issues, and the theory of change describes the drivers of change and the various components of the system.

The proponents demonstrate a good understanding of the trends and interactions between the system's key elements and drivers, as evidenced in the detailed ToC on page 15. The future implications in the absence of the project, the risks of achieving the project objectives and the outcomes the project seeks to achieve, in addition to how the baseline will change, and the barriers and enablers are clearly described in the theory of change.

The aims of the project are formulated within the context of the system, and a convincing explanation is given to justify the project. Focusing on renewable energy is essential to inform the green transition and aligns with current scientific knowledge.

For continuity and effort maximization, it is good to see the proponents state previous and current complementary projects that this project will leverage.

Having a component that focuses on policy issues is good. The project should also evaluate the current policy mix across different sectors/ministries to determine if any conflicting policies result in policy incoherence, which can derail achieving the project objective. See STAP reports on policy coherence [here](#) and [here](#) for more on this.

Further, the proponent needs to consider how institutional and behavioural changes can be achieved, as the resistance to change in both the public and private sectors is probably one of the main barriers the project will face. See STAP report on [behavior change](#).

The competitiveness of renewable energy sources over non-renewable energy sources needs to be considered a potential risk, and measures to make renewable energy systems more competitive should be explored.

Also, one of the core problems identified is the lack of financial capacity among the population to purchase renewable energy infrastructure, but it is unclear how and if the specific interventions in the project components will address this problem. The PIF did propose bulk purchases to reduce the cost of PVs and batteries and revolving loans for the populace, but there is no analysis of what the populace can afford and if these measures will be sufficient to ensure affordability among the populace. This analysis is essential to the success of the sustainability of the financing mechanism being proposed and needs to be carried out. Furthermore, STAP encourages the proponent to be creative in designing innovative financing and policy mechanisms (beyond loans) that can enhance affordability among the populace.

The proposal needs to discuss the options for the end-of-life management of the PVs and batteries to ensure responsible reuse or disposal, where there may be room to foster innovations. A starting point for this is in the design of the PVs and the batteries in the first place. By influencing the design of the equipment to be based on a circular approach, the project can ensure a circular approach to the end of life management. Refer to the [STAP report on circular economy and climate change](#), which has a section that discusses circular economy approaches for renewables, and the OSTI report on [End of Life Management: Solar Photovoltaic Panels](#).

It is great there is a public awareness, monitoring, and knowledge management component in the project. The project has the potential to be an excellent example of how SIDS can transition towards sustainable and resilient energy systems that can be replicated. Hence, it is essential that the knowledge management and learning aspects are well designed and implemented with a focus on replication, scaling, and facilitating transformation.

The estimate of direct emissions GEB is clear, with adequate information on the parameters and assumptions used. This is commendable. More details are needed on how indirect emissions reduction benefits were estimated, including the assumption on which the multiplier of 5 was based.

The proponents need to appropriately delineate between project implementation risks, which is what is required in the risk table, and the risks associated with drivers of change. For example, the climate, environment, and political risks identified in the table are actually drivers of change, which should already be

incorporated in the analysis of the system and project rationale and interventions, as was rightly noted in the risk table. A correct project implementation risk is the risk of theft or damage of the PV.

Note: provide a general appraisal, asking whether relevant screening guideline questions have been addressed adequately – not all the questions will be relevant to all proposals; no need to comment on every question, only those needing more attention, noting any done very well, but ensure that all are considered. Comments should be helpful, evaluative, and qualitative, rather than yes/no.

3. Specific points to be addressed, and suggestions

STAP recommends addressing the issue discussed in Section 2 above, and specifically the following:

1. Undertake analysis to determine affordability among the populace and consider creating innovative financing mechanisms or policy options that can help increase affordability among the targeted populace.
2. Carry out analysis of policy mix to determine if there are any policy incoherence and address them, if such exists.
3. Incorporate upstream circular economy solutions for the design and installation of renewable energy equipment and discuss options for the end-of-life responsible management. See Section 2 for recommended publications. There may also be a need to foster innovations in end-of-life management actions among the users or enact policies that support market development.
4. Provide details on how indirect emissions were calculated.
5. In addition to participating in the training, it is essential to provide details on how else women will benefit from the project. Will women-headed households be prioritized?
6. The risk of theft mentioned in the ToC can addressed through innovations such as anti-theft systems (e.g., <https://doi.org/10.1063/1.4979395>)

Note: number key points clearly and provide useful information or suggestions, including key literature where relevant. Completed screens should be no more than two or three pages in length.

*categories under review, subject to future revision

ANNEX: STAP'S SCREENING GUIDELINES

1. How well does the proposal explain the problem and issues to be addressed in the context of the **system** within which the problem sits and its drivers (e.g. population growth, economic development, climate change, sociocultural and political factors, and technological changes), including how the various components of the system interact?
2. Does the project indicate how **uncertain futures** could unfold (e.g. using simple **narratives**), based on an understanding of the trends and interactions between the key elements of the system and its drivers?
3. Does the project describe the **baseline** problem and how it may evolve in the future in the absence of the project; and then identify the outcomes that the project seeks to achieve, how these outcomes will change the baseline, and what the key **barriers** and **enablers** are to achieving those outcomes?
4. Are the project's **objectives** well formulated and justified in relation to this system context? Is there a convincing explanation as to **why this particular project** has been selected in preference to other options, in the light of how the future may unfold?
5. How well does the **theory of change** provide an "explicit account of how and why the proposed interventions would achieve their intended outcomes and goal, based on outlining a set of key causal pathways arising from the activities and outputs of the interventions and the assumptions underlying these causal connections".
 - Does the project logic show how the project would ensure that expected outcomes are **enduring** and resilient to possible future changes identified in question 2 above, and to the effects of any conflicting policies (see question 9 below).
 - Is the theory of change grounded on a solid scientific foundation, and is it aligned with current scientific knowledge?
 - Does it explicitly consider how any necessary **institutional and behavioral** changes are to be achieved?
 - Does the theory of change diagram convincingly show the overall project logic, including causal pathways and outcomes?
6. Are the project **components** (interventions and activities) identified in the theory of change each described in sufficient detail to discern the main thrust and basis (including scientific) of the proposed solutions, how they address the problem, their justification as a robust solution, and the critical assumptions and risks to achieving them?
7. How likely is the project to generate global environmental benefits which would not have accrued without the GEF project (**additionality**)?
8. Does the project convincingly identify the relevant **stakeholders**, and their anticipated roles and responsibilities? is there an adequate explanation of how stakeholders will contribute to the

development and implementation of the project, and how they will benefit from the project to ensure enduring global environmental benefits, e.g. through co-benefits?

9. Does the description adequately explain:

- how the project will build on prior investments and complement current investments, both GEF and non-GEF,
- how the project incorporates **lessons learned** from previous projects in the country and region, and more widely from projects addressing similar issues elsewhere; and
- how country policies that are contradictory to the intended outcomes of the project (identified in section C) will be addressed (**policy coherence**)?

10. How adequate is the project's approach to generating, managing and exchanging **knowledge**, and how will lessons learned be captured for adaptive management and for the benefit of future projects?

11. Innovation and transformation:

- If the project is intended to be **innovative**: to what degree is it innovative, how will this ambition be achieved, how will barriers and enablers be addressed, and how might scaling be achieved?
- If the project is intended to be **transformative**: how well do the project's objectives contribute to transformative change, and are they sufficient to contribute to enduring, transformational change at a sufficient scale to deliver a step improvement in one or more GEBs? Is the proposed logic to achieve the goal credible, addressing necessary changes in institutions, social or cultural norms? Are barriers and enablers to scaling be addressed? And how will enduring scaling be achieved?

12. Have **risks** to the project design and implementation been identified appropriately in the risk table in section B, and have suitable mitigation measures been incorporated? (NB: risks to the durability of project outcomes from future changes in drivers should have been reflected in the theory of change and in project design, not in this table.)