

### STAP guidelines for screening GEF projects

| PIF   | What STAP looks for   | Response |
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| <p>GEF ID: 10788<br/>           Project Title: Increasing Access to Renewable Energy in Tuvalu<br/>           Date of Screening: May 18, 2021<br/>           STAP member screener: Saleem H. Ali<br/>           STAP secretariat screener: Sunday Leonard</p> | <p>STAP’s overall assessment: <b>CONCUR</b></p> <p>This is the first Asian Development Bank GEF project in Tuvalu to assist the country in meeting its NDC target of 100% renewable energy generation. As a fragile SIDS country, the salience of this project for Tuvalu is well-argued in the proposal documents with detailed baselines and linkages to additional World Bank commitments for support of a viable energy transition. The outer atoll settlements are ahead of the main population center in meeting renewable energy targets; hence, this project is appropriately targeted.</p> <p>The theory of change (ToC) for the project is simple but understandably so for such a project with a very clear goal of solar power infusion. The narrative and diagrammatic ToC can be improved by including information on the assumptions as well as the causal and alternative pathways. STAP’s theory of change primer (<a href="https://stapgef.org/resources/advisory-documents/theory-change-primer">https://stapgef.org/resources/advisory-documents/theory-change-primer</a>) can be a helpful guide in this regard.</p> <p>The proposal recognizes the negative impacts of solar installations on land-use change, especially in a country with limited land resources, and therefore seeks to deploy an innovative and emerging solution: Floating Photovoltaic panels. Thus, the project will support the development of a new technology that is currently less than 1% of global PV installed capacity. This feature of the project also has good potential for upscaling to other island states as well as sparsely populated coastal communities worldwide.</p> <p>In implementing the Floating PV systems, we encourage the project proponent to assess and consider the potential impact on biodiversity as have been identified in some research (see the suggested list of articles and reports below on this topic).</p> <p>Since Tuvalu is in a high storm risk region, the resilience of the Floating PV and other proposed technologies to climatic conditions will be a key risk factor to monitor. Consequently, the project proponent has prepared a very detailed and impressive climate and disaster risk screening of the project using the AWARE risk screening tool. The climate screening includes detailed climate information and future projection of climate impact up to 2050. It also identifies and ranks potential climate risks and presents an adaptation assessment and</p> |          |

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|     |                     | <p>mitigation measures. We commend this effort and encourage the proponent to follow through with the identified adaptation measures during project implementation.</p> <p>The expected climate change benefit was excellently presented with the assumption and a detailed Excel calculation sheet. This is commendable. The extra climate benefit due to reduced fossil fuel shipping was noted but not included in the GEBs estimate. We encourage that this should be done to account for the whole climate benefits from the investments.</p> <p>The co-benefits to air, soil, and marine environment, as well as other socio-economic benefits, were also noted. We encourage the project proponent to identify indicators and metrics for measuring these benefits, and they should be measured and reported during the project lifetime.</p> <p>As noted in the PIF, a significant challenge is the current imbalance in the economics of power generation, distribution, demand, and supply in Tuvalu, associated with the prevailing power tariff. While the average cost is high (compared to other countries in the region), the average tariff is less than the actual production cost. As rightly noted in the PIF, this situation is unsustainable and may impact the continuity and success of the project. Although not explicitly mentioned in the project components and activities, tariff review and institutional analyses were identified as solutions in the section on financial sustainability. This power economics is a major barrier, and we encourage the project proponent to consider creating and prioritizing interventions to address it. Specific activities, outputs, and indicators of success should be included in the project components. Solutions may consist of new business and financial models, private sector engagement, awareness-raising on the actual cost of energy, etc.</p> <p>An important seemingly missing section in the PIF is Component 3: Institutional capacity for inclusive renewable energy project development and implementation enhanced. This section has not been appropriately developed. We recommend that this section, as well as Component 4, should be designed in more detail.</p> <p>In addition, the proposed approach under Knowledge Management in Section 8 (learning, capturing best practice, communication, and outreach) is not seem reflected anywhere in the proposed project components. This should ideally be reflected in Components 3 and 4. We recommend that this should be done.</p> <p>The project should note the connection of this work to reaching the targets of the SAMOA (SIDS Accelerated Modalities of Action - <a href="https://sustainabledevelopment.un.org/sids/samoareview">https://sustainabledevelopment.un.org/sids/samoareview</a>) pathway, which was set forth by the United Nations for SIDS countries. The proponents should also note that the UN Department of Economic and Social Affairs (UNDESA) has recently supported the establishment of an “Island Policy Lab” (<a href="https://sites.udel.edu/island-policy-lab/">https://sites.udel.edu/island-policy-lab/</a>) with a focus on energy and environmental policy at the University of Delaware, and there could be opportunities for knowledge transfer of this project through this mechanism. The Island Innovations (<a href="https://islandinnovation.co/">https://islandinnovation.co/</a>) network is also a suitable venue for showcasing the results of this project in due course.</p> |

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|   | <p>Lastly, we recommend that the proponents refer to the following literature related to the floating PV market, its opportunities, and challenges.</p> <ul style="list-style-type: none"> <li>• Cazzaniga, Raniero, and Marco Rosa-Clot. “The Booming of Floating PV.” <i>Solar Energy</i> 219 (2021): 3–10. <a href="https://doi.org/10.1016/j.solener.2020.09.057">https://doi.org/10.1016/j.solener.2020.09.057</a>.</li> <li>• Sahu, A., Yadav, N, Sudhakar, K. 2016. Floating photovoltaic power plant: A review. <i>Renewable and Sustainable Energy Reviews</i>, 66, 815-824, <a href="https://doi.org/10.1016/j.rser.2016.08.051">https://doi.org/10.1016/j.rser.2016.08.051</a>.</li> <li>• Bennun, L., van Bochove, J., Ng, C., Fletcher, C., Wilson, D., Phair, N., Carbone, G. (2021). Mitigating biodiversity impacts associated with solar and wind energy development. Guidelines for project developers. Gland, Switzerland: IUCN and Cambridge, UK: The Biodiversity Consultancy. <a href="https://portals.iucn.org/library/sites/library/files/documents/2021-004-En.pdf">https://portals.iucn.org/library/sites/library/files/documents/2021-004-En.pdf</a></li> <li>• Lammerant, L., Laureysens, I. and Driesen, K. (2020) Potential impacts of solar, geothermal and ocean energy on habitats and species protected under the Birds and Habitats Directives. Final report under EC Contract ENV.D.3/SER/2017/0002 Project: “Reviewing and mitigating the impacts of renewable energy developments on habitats and species protected under the Birds and Habitats Directives”, Arcadis Belgium, Institute for European Environmental Policy, BirdLife International, NIRAS, Stella Consulting, Ecosystems Ltd, Brussels.</li> <li>• Da Silva, G and Branco, A. 2018. Is floating photovoltaic better than conventional photovoltaic? Assessing environmental impacts. <i>Impact Assessment and Project Appraisal</i>, 36, <a href="https://doi.org/10.1080/14615517.2018.1477498">https://doi.org/10.1080/14615517.2018.1477498</a>.</li> <li>• Mohit Acharya and Sarvesh Devraj (2019), Floating Solar Photovoltaic (FSPV): A Third Pillar to Solar PV Sector?, TERI Discussion Paper: Output of the ETC India Project (New Delhi: The Energy and Resources Institute).</li> <li>• Hooper, T., Armstrong, A. Vlaswinkel, B. 2021. Environmental impacts and benefits of marine floating solar. <i>Solar Energy</i>, 219, 11-14. <a href="https://doi.org/10.1016/j.solener.2020.10.010">https://doi.org/10.1016/j.solener.2020.10.010</a></li> </ul> | <p>Lastly, we recommend that the proponents refer to the following literature related to the floating PV market, its opportunities, and challenges.</p> <ul style="list-style-type: none"> <li>• Cazzaniga, Raniero, and Marco Rosa-Clot. “The Booming of Floating PV.” <i>Solar Energy</i> 219 (2021): 3–10. <a href="https://doi.org/10.1016/j.solener.2020.09.057">https://doi.org/10.1016/j.solener.2020.09.057</a>.</li> <li>• Sahu, A., Yadav, N, Sudhakar, K. 2016. Floating photovoltaic power plant: A review. <i>Renewable and Sustainable Energy Reviews</i>, 66, 815-824, <a href="https://doi.org/10.1016/j.rser.2016.08.051">https://doi.org/10.1016/j.rser.2016.08.051</a>.</li> <li>• Bennun, L., van Bochove, J., Ng, C., Fletcher, C., Wilson, D., Phair, N., Carbone, G. (2021). Mitigating biodiversity impacts associated with solar and wind energy development. Guidelines for project developers. Gland, Switzerland: IUCN and Cambridge, UK: The Biodiversity Consultancy. <a href="https://portals.iucn.org/library/sites/library/files/documents/2021-004-En.pdf">https://portals.iucn.org/library/sites/library/files/documents/2021-004-En.pdf</a></li> <li>• Lammerant, L., Laureysens, I. and Driesen, K. (2020) Potential impacts of solar, geothermal and ocean energy on habitats and species protected under the Birds and Habitats Directives. Final report under EC Contract ENV.D.3/SER/2017/0002 Project: “Reviewing and mitigating the impacts of renewable energy developments on habitats and species protected under the Birds and Habitats Directives”, Arcadis Belgium, Institute for European Environmental Policy, BirdLife International, NIRAS, Stella Consulting, Ecosystems Ltd, Brussels.</li> <li>• Da Silva, G and Branco, A. 2018. Is floating photovoltaic better than conventional photovoltaic? Assessing environmental impacts. <i>Impact Assessment and Project Appraisal</i>, 36, <a href="https://doi.org/10.1080/14615517.2018.1477498">https://doi.org/10.1080/14615517.2018.1477498</a>.</li> <li>• Mohit Acharya and Sarvesh Devraj (2019), Floating Solar Photovoltaic (FSPV): A Third Pillar to Solar PV Sector?, TERI Discussion Paper: Output of the ETC India Project (New Delhi: The Energy and Resources Institute).</li> <li>• Hooper, T., Armstrong, A. Vlaswinkel, B. 2021. Environmental impacts and benefits of marine floating solar. <i>Solar Energy</i>, 219, 11-14. <a href="https://doi.org/10.1016/j.solener.2020.10.010">https://doi.org/10.1016/j.solener.2020.10.010</a></li> </ul> |
| <p><b>Part I: Project Information</b><br/> <b>B. Indicative Project Description Summary</b></p> |  |  |
| <p>Project Objective</p>  | <p>Is the objective clearly defined, and consistently related to the problem diagnosis?</p>  | <p>Suggest rephrasing the objective to make it more clearer. E.g., “to promote the increased utilization of renewable energy and reduce greenhouse gas emissions in Tuvalu.</p>  |
| <p>Project components</p>   | <p>A brief description of the planned activities. Do these support the project’s objectives?</p>   | <p>Yes. Component 3 and 4 need to be further developed.</p>  |
| <p>Outcomes</p>   | <p>A description of the expected short-term and medium-term effects of an intervention.</p>  |  |

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|   | <p>Do the planned outcomes encompass important global environmental benefits?</p> <p>Are the global environmental benefits likely to be generated?</p>   |   |
| Outputs   | <p>A description of the products and services which are expected to result from the project.</p> <p>Is the sum of the outputs likely to contribute to the outcomes?</p>  | Yes   |
| <b>Part II: Project justification</b>   | A simple narrative explaining the project's logic, i.e. a theory of change.  |   |
| <p><b>1. Project description. Briefly describe:</b></p> <p>1) the global environmental and/or adaptation problems, root causes and barriers that need to be addressed (systems description)</p> | <p>Is the problem statement well-defined? Are the barriers and threats well described, and substantiated by data and references?</p> <p>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 more focal areas objectives or programs?</p> | Yes – this is adequately presented.                                 |
| 2) the baseline scenario or any associated baseline projects  | <p>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?</p> <p>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;</p>                                | Yes, there are citations to earlier studies and materials provided. |

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|  | <p>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?</p>   |   |
| <p>3) the proposed alternative scenario with a brief description of expected outcomes and components of the project</p>                        | <p>What is the theory of change?<br/>           What is the sequence of events (required or expected) that will lead to the desired outcomes?</p> <ul style="list-style-type: none"> <li>• What is the set of linked activities, outputs, and outcomes to address the project's objectives?</li> <li>• Are the mechanisms of change plausible, and is there a well-informed identification of the underlying assumptions?</li> <li>• Is there a recognition of what adaptations may be required during project implementation to respond to changing conditions in pursuit of the targeted outcomes?</li> </ul> | <p>Yes</p>  |
| <p>5) incremental/additional cost reasoning and expected contributions from the baseline, the GEF trust fund, LDCF, SCCF, and co-financing</p> | <p>GEF trust fund: will the proposed incremental activities lead to the delivery of global environmental benefits?<br/>           LDCF/SCCF: will the proposed incremental activities lead to adaptation which reduces vulnerability, builds adaptive capacity, and increases resilience to climate change?</p>   | <p>Yes</p>  |
| <p>6) global environmental benefits (GEF trust fund) and/or adaptation benefits (LDCF/SCCF)</p>  | <p>Are the benefits truly global environmental benefits, and are they measurable?<br/>           Is the scale of projected benefits both plausible and compelling in relation to the proposed investment?<br/>           Are the global environmental benefits explicitly defined?</p>  | <p>Yes. Refer to STAP overall assessment for comments on GEBs</p> |

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|   | <p>Are indicators, or methodologies, provided to demonstrate how the global environmental benefits will be measured and monitored during project implementation?</p> <p>What activities will be implemented to increase the project's resilience to climate change?</p>   |  |
| <p>7) innovative, sustainability and potential for scaling-up</p>   | <p>Is the project innovative, for example, in its design, method of financing, technology, business model, policy, monitoring and evaluation, or learning?</p> <p>Is there a clearly-articulated vision of how the innovation will be scaled-up, for example, over time, across geographies, among institutional actors?</p> <p>Will incremental adaptation be required, or more fundamental transformational change to achieve long term sustainability?</p> | <p>Yes, the use of an emerging solar solution (Floating PV) is particularly innovative</p> |
| <p><b>1b. Project Map and Coordinates.</b><br/>Please provide geo-referenced information and map where the project interventions will take place.</p>   |   |  |
| <p><b>2. Stakeholders.</b><br/>Select the stakeholders that have participated in consultations during the project identification phase: Indigenous people and local communities; Civil society organizations; Private sector entities. If none of the above, please explain why.<br/>In addition, provide indicative information on how stakeholders, including civil society and indigenous peoples, will be engaged in the project preparation, and their</p> | <p>Have all the key relevant stakeholders been identified to cover the complexity of the problem, and project implementation barriers?</p> <p>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?</p>  | <p>Yes</p>   |

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| respective roles and means of engagement.  |   |  |
| <p><b>3. Gender Equality and Women's Empowerment.</b><br/>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.<br/>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</p> | <p>Have gender differentiated risks and opportunities been identified, and were preliminary response measures described that would address these differences?</p> <p>Do gender considerations hinder full participation of an important stakeholder group (or groups)? If so, how will these obstacles be addressed?</p>  | <p>Yes, there is a description of the gender disparities and features of the project and targets were presented.</p> |
| <p><b>5. Risks.</b> 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</p>  | <p>Are the identified risks valid and comprehensive? Are the risks specifically for things outside the project's control?</p> <p>Are there social and environmental risks which could affect the project?</p> <p>For climate risk, and climate resilience measures:</p> <ul style="list-style-type: none"> <li>• How will the project's objectives or outputs be affected by climate risks over the period 2020 to 2050, and have the impact of these risks been addressed adequately?</li> <li>• Has the sensitivity to climate change, and its impacts, been assessed?</li> </ul> | <p>Yes</p>   |

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|   | <ul style="list-style-type: none"> <li>• Have resilience practices and measures to address projected climate risks and impacts been considered? How will these be dealt with?</li> <li>• What technical and institutional capacity, and information, will be needed to address climate risks and resilience enhancement measures?</li> </ul>  |   |
| <p><b>6. Coordination.</b> Outline the coordination with other relevant GEF-financed and other related initiatives</p>  | <p>Are the project proponents tapping into relevant knowledge and learning generated by other projects, including GEF projects?</p> <p>Is there adequate recognition of previous projects and the learning derived from them?</p> <p>Have specific lessons learned from previous projects been cited?</p> <p>How have these lessons informed the project’s formulation?</p> <p>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?</p> | <p>Coordination with the World Bank project on Renewable Energy uptake is provided.</p>   |
| <p><b>8. Knowledge management.</b> 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.</p> | <p>What overall approach will be taken, and what knowledge management indicators and metrics will be used?</p> <p>What plans are proposed for sharing, disseminating and scaling-up results, lessons and experience?</p>  | <p>Yes – though as noted there should be linkages to SAMOA Pathway, Island Policy Lab (UNDESA supported) and Island Innovations.</p> <p>Please reflect the knowledge management approach within the project components.</p> |

**STAP's advisory response**

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| <i>STAP advisory response</i>                                 | <i>Brief explanation of advisory response and action proposed</i>  |
| <b>1. Concur</b>  | <p>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.</p> <p>* 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 <b><i>“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.”</i></b></p> |
| <b>2. Minor issues to be considered during project design</b> | <p>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:</p> <p>(i) Open a dialogue with STAP regarding the technical and/or scientific issues raised;</p> <p>(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.</p> <p>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.</p>               |
| <b>3. Major issues to be considered during project design</b> | <p>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:</p> <p>(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.</p>           |