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**Terminal Evaluation of UNDP-GEF Project:**

**Sustainable Cities in Turkmenistan: Integrated Green Urban Development in Ashgabat and Awaza (SCT Project)**

(GEF ID number 9279, UNDP PIMS ID: 5452)

Time frame: June 2018 to November 2024

Region: CIS

GEF Focal Area: Climate Change

Executing Agency: Ministry of Environmental Protection of Turkmenistan

(MoEP)

United Nations Development Programme

**Final Report**

***Mission Members:***

Mr. Roland Wong, International Evaluator

January 2025

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# abbreviations

| **Acronym** | **Meaning** |
| --- | --- |
| ADB | Asian Development Bank |
| APPR | Annual Project Progress Report |
| BESS | Battery energy storage systems |
| CCM | Climate Change Mitigation |
| CDR | Combined Delivery Report |
| CO | Country Office |
| CP | Communities Programme |
| CPD | UNDP Country Program Document |
| DRR | Deputy Resident Representative |
| EE | Energy Efficiency |
| EoP | End of Project |
| ERC | UNDP Evaluation Resource Center |
| ESMP | Environmental and Social Management Plans |
| EV | Electric Vehicle |
| GDP | Gross Domestic Product |
| GEF | Global Environment Facility |
| GHG | Greenhouse Gases |
| GoT | Government of Turkmenistan |
| iNDC | Intended Nationally Determined Contributions |
| KM | Knowledge Management |
| L | Liter |
| LED | Light-emitting diode |
| LPAC | Local Project Appraisal Committee |
| M&E | Monitoring and Evaluation |
| MoCA | Ministry of Construction and Architecture |
| MoE | Ministry of Energy |
| MoEP | Ministry of Environmental Protection |
| MRV | Measurement, Reporting and Verification |
| MSW | Municipal solid waste |
| MTR | Mid-term Review |
| MVE | Monitoring, Verification and Enforcement |
| NDC | Nationally Determined Contribution |
| NGO | Non-Government Organization |
| NIM | National Implementation Modality |
| NSCC | National Strategy on Climate Change |
| PB | Project Board |
| PIF | Project Identification Form |
| PIR | GEF Project Implementation Report |
| PM | Project Manager |
| PMU | Project Management Unit |
| POPP | Programme and Operations Policies and Procedures |
| PPG | Project Preparation Grant |
| PRF | Project Results Framework |
| PV | Photovoltaic |
| RE | Renewable Energy |
| RTA | Regional Technical Advisor |
| SCT | UNDP-GEF Project “Sustainable Cities in Turkmenistan: Integrated Green Urban Development in Ashgabat and Awaza” |
| SDG | Sustainable Development Goal |
| SEIT | State Energy Institute of Turkmenistan |
| SES | Social and Environmental Standards |
| SESP | UNDP Social and Environmental and Social Screening Template |
| SMART | Specific, Measurable, Achievable, Relevant and Time-bound |
| SSTrC | South-South and Triangular Cooperation |
| STAP | GEF Scientific and Technical Advisory Panel |
| TE | Terminal Evaluation |
| TJ | Terajoule |
| ToC | Theory of Change |
| ToR | Terms of Reference |
| UNDAF | United Nations Development Assistance Framework |
| UNDP | United Nations Development Programme |
| UNDP-GEF | UNDP Global Environmental Finance |
| UNFCCC | United Nations Framework Convention on Climate Change |
| WHO | World Health Organization |

# Executive Summary

1. This Termination Evaluation (TE) report assesses the design and formulation, implementation, results (at goal, objective, outcome, outputs levels), targets (against the indicators in the June 2018 Project Result Framework, hereinafter referred to as the PRF), GEF additionality, catalytic effect, and progress to impact of the “*Sustainable Cities in Turkmenistan: Integrated Green Urban Development in Ashgabat and Awaza*” (hereinafter referred to as the *SCT Project*). It also evaluates the Project’s relevance, effectiveness, efficiency, sustainability, country ownership, gender equality, and cross cutting issues.
2. The Project received the ProDoc signature from the Government of Turkmenistan (GoT) on 11 June 2018. The Project inception workshop was held on 25 September 2018. The Project applied for one extension which was made in December 2023. An extension was granted for a period of 10 months to an End of the Project (EoP) date of 11 April 2025.
3. The TE assesses Project activity from 11 June 2018 to 31 October 2024, while also providing estimations on the key Project indicators by the EoP. The TE and this report follow the [*Guidance for Conducting Terminal Evaluations of UNDP-Supported, GEF-Financed Projects*](http://web.undp.org/evaluation/guideline/documents/GEF/TE_GuidanceforUNDP-supportedGEF-financedProjects.pdf), copyrighted by UNDP in 2020.

**Project Information Table**

| Project Details |  | Project Milestones |  |
| --- | --- | --- | --- |
| Project Title | *Sustainable Cities in Turkmenistan: Integrated Green Urban Development in Ashgabat and Awaza (SCT Project)* | PIF Approval Date: | 9 June 2016 |
| UNDP Project ID (PIMS #): | 5452 | CEO Endorsement Date (FSP) / Approval date (MSP): | 20 September 2017 |
| GEF Project ID: | 9279 | ProDoc Signature Date (Project start date): | 11 June 2018 |
| UNDP Atlas Business Unit, Award ID, Project ID: | Business Unit: UNDP-TMT  Award ID: 00081872  Project ID:00091000 | Date Project Manager hired: | July 2018 |
| Country/Countries: | Turkmenistan | Inception Workshop Date: | 25 September 2018 |
| Region: | CIS | MTR Completion Date: | 31 August 2021 |
| Focal Area: | Climate Change | Terminal Evaluation Completion date: | 31 December 2024 |
| GEF Operational Programme or Strategic Priorities/Objectives | GEF-6: CC 3: CC 1: Promote Innovation, Technology Transfer, and Supportive Policies and Strategies, Program 2: Develop and demonstrate innovative policy packages and market initiatives to foster a new range of mitigation actions | Planned Operational Closure Date: | 11 April 2025 |
| Trust Fund: | GEF | | |
| Implementing Partner (GEF Executing Entity): | UNDP Turkmenistan with the Ministry of Environmental Protection (MoEP) as lead national counterpart (post 2019) | | |
| NGOs/CSOs involvement: | Turkmen Nature Protection Society | | |
| Private sector involvement: | - | | |
| Geospatial coordinates of project sites: | Latitude: 38,53575° N  Longitude: 68.77905° E | | |

| Financial Information | | |
| --- | --- | --- |
| **PDF/PPG** | **At approval (US$ million)** | **At PPG/PDF completion (US$ million)** |
| GEF PDF/PPG grants for project preparation | **0.120** | **0.070** |
| Co-financing for project preparation | **-** | **-** |
| **Project** | **At CEO Endorsement (US$ million)** | **At TE (US$ million)** |
| [1] UNDP contribution: | **0.100** | **0.100** |
| [2] Government: | **64.000** | **72.261** |
| [3] Other multi-/bi-laterals: | **0.000** | **-** |
| [4] Private Sector: | **0.000** | **-** |
| [5] NGOs: | **0.000** | **-** |
| [6] Total co-financing [1 + 2 + 3 + 4 + 5]: | **64.100** | **72.361** |
| [7] Total GEF funding: | **6.060** | **5.788** |
| [8] Total Project Funding [6 + 7] | **70.160** | **78.149** |

**Project Description**

1. The population of Turkmenistan has steadily grown during the last decades with the country undergoing a steady shift toward greater urbanization, with an increasing proportion of citizens living in cities. The most notable urban growth has taken place in Ashgabat, the capital of Turkmenistan, and also in the new resort National Touristic Zone “Awaza” on the Caspian Sea. The population growth has triggered the creation of several new developed areas, with expansion of the infrastructure. Since 2010, Awaza has also experienced rapid infrastructure development, including construction of roads, a new gas-fired power plant, a desalination plant on the Caspian Sea, a sewage treatment plant, water supply networks, and a full renovation of the airport at the nearby city of Turkmenbashi. In addition, Awaza plays the role of a major business, cultural and sports center, where top-level meetings, representative international forums and creative festivals take place.
2. The development spurt of Ashgabat and Awaza has led to increased negative environmental impacts including gradually increasing GHG emissions mainly from increased municipal solid waste (MSW) and the rising use of private motor vehicles. Prior to 2018, efforts were made by Ashgabat and Awaza to implement certain measures to manage these negative environmental impacts such as replacement of all spent streetlamps with light-emitting diodes (LEDs) in Ashgabat, and limitations on private car usage in Awaza.
3. The SCT Project sought to expand on untapped technical potential to: (a) decrease the volume and impact of private vehicle traffic in all cities; (b) further expand efficient street lighting; (c) reduce waste and increase recycling; and (d) introduce “green” practices to hotels. The development challenge of the SCT Project was to measurably reduce the negative impacts of urban growth in Turkmenistan while also advancing social and economic development goals.
4. The strategy of the Project was to shift the cities of Ashgabat and Avaza, towards sustainable, low-emission urban development, only possible if the barriers that prevent widespread penetration of green urban practices into urban planning and subsequent implementation of sustainable urban development, are removed. Barriers were to be removed through:

* improving enabling conditions in Ashgabat and Awaza to identify, design, and implement integrated low-carbon and climate-resilient solutions;
* corresponding capacity development;
* implementation of pilot projects; and
* knowledge management for replication and scaling-up of results achieved in Ashgabat and Awaza.

**Evaluation Ratings**[[1]](#footnote-2)

|  |  |  |  |
| --- | --- | --- | --- |
| **1. Monitoring and Evaluation** | ***Rating*** | **2. IA & EA Execution** | ***Rating*** |
| M&E design at entry | 5 | Quality of Implementation Agency - UNDP | 6 |
| M&E Plan Implementation | 5 | Quality of Execution - Executing Entity (MoEP) | 6 |
| Overall quality of M&E | 5 | Overall quality of Implementation / Execution | 6 |
| **3. Assessment of Outcomes** | **Rating** | **4. Sustainability[[2]](#footnote-3)** | **Rating** |
| Relevance[[3]](#footnote-4) | 2 | Financial resources | 4 |
| Effectiveness | 5 | Socio-political | 4 |
| Efficiency | 5 | Institutional framework and governance | 4 |
| Overall Project Outcome Rating | 5 | Environmental | 4 |
|  |  | Overall likelihood of sustainability | 4 |

**Findings**

1. Findings are summarized on Table A that compares the intended objective and outcomes to actual achievements of the objective and outcomes.

**Table A: Comparison of Intended Project Objective and Outcomes from the ProDoc to Actual Objective and Outcomes**

| **Intended Objective and Outcomes in Project Results Framework of June 2018 (see Appendix F)** | **Actual Outcomes as of 30 November 2024** |
| --- | --- |
| **Objective:** Promote and implement integrated low-carbon urban systems in Ashgabat and Awaza, thereby reducing GHG emissions and create other environmental, social, and economic development benefits | **Actual achievement toward objective**: The Project has successfully promoted and implemented integrated low-carbon urban systems such as LED streetlighting and waste recycling in Ashgabat and pilot projects in LED lighting, renewable energy and water conservation in the Awaza hotel sector. GHG emission reduction targets have been achieved, creating a basis for environmental, social and economic development benefits. |
| **Intended Outcome 1a:** Improved capacities and enabling conditions in Ashgabat to identify, design and implement integrated low-carbon and climate-resilient solutions in public space | **Actual Outcome 1a**: Capacities of MoE personnel have improved in designing and implementing low carbon systems for the power grid. Capacities have also improved for waste recycling entities and the Municipality of Ashgabat. However, there have been no improvements in the capacities of government personnel who oversee sustainable transport systems. |
| **Intended Outcome 1b:** Reduced GHG emissions and other negative environmental impact through interventions involving public spaces and infrastructure | **Actual Outcome 1b**: There have been 960,439 tCO2 of GHG emission reductions from LED streetlighting, LED deployment in commercial and public buildings, transformer upgrades, and modernized cable products in Ashgabat and Awaza, 2.6 times the targeted GHG emission reductions. There have also been unquantified GHG emission reductions from waste recycling in Ashgabat. All these interventions involve public spaces and the power infrastructure. |
| **Intended Outcome 2a**: Improved capacities and enabling conditions in Awaza for integrated low-carbon and climate resilient tourism development. | **Actual Outcome 2a**: Capacities have somewhat improved for hotel sector personnel in Awaza as well as the municipality of Turkmenbashi in designing and implementing low carbon and water conservation measures (Para 89). |
| **Intended Outcome 2b**: Reduced GHG emissions and other negative environmental impact through interventions involving tourism facilities and infrastructure in Awaza. | **Actual Outcome 2b**: GHG emissions have been reduced due to LED streetlighting and other measures undertaken in the hotel sector in Awaza. Water conservation measures have also been undertaken in the hotel sector. There were no measures undertaken for sustainable transport. |
| **Intended Outcome 3**: Nationwide replication and scaling-up of results of first two components via information dissemination, enhancement of capacity of agencies and managers, and adoption of policies and regulation. | **Actual Outcome 3:** The “Law on Energy Savings and Energy Efficiency” developed with assistance of the Project and adopted in April 2024, will serve as the cornerstone of the country's energy sustainability. Only the City of Arkadag has adopted a sustainable city development plan in 2024 following the engagement of the staff of Ashgabat mayoral office using lessons learned from Ashgabat’s LED lighting transformation, transformer upgrades and waste recycling efforts (Para 97). |

**Conclusions**

1. The SCT Project has made significant progress towards GHG emissions and energy consumption reductions, regulatory impact, waste management, and promoting urban sustainability practices to a wider audience. Outcomes 1 and 2 provided pilot projects that demonstrated to the GoT the feasibility of integrated low-carbon urban systems consisting of LED streetlights, LED replacements in public and commercial buildings, pilot transformer upgrades and waste recycling. The feasibility of these pilot projects sets the stage for replication in other cities of Turkmenistan as well as Ashgabat and Awaza. The water conservation measures in the Awaza hotels also serve as a leading effort to encourage more water conservation throughout all cities in Turkmenistan. Lastly, the Project along with other partners has promoted and trained a number of engineers in renewable energy (including 45% women) under Outcome 3 as another aspect of low-carbon urban systems.
2. As such, this Project leaves behind several examples of successful sustainable low carbon and climate resilient measures. A scaled-up SCT Project for Ashgabat, Awaza and other cities in Turkmenistan should include

* energy efficiency measures in households, commercial and public buildings, transformer upgrades and SMART grid infrastructure;
* deployment of renewable energy in all cities;
* implementation of water conservation measures, regulations and policies; and
* gender-related actions that can positively impact the lives of women and vulnerable groups in Turkmenistan (Para 134).

**Lessons Learned**

1. *Lesson #1: A PMU staffed with ex-government employees can be an excellent measure to obtain government buy-in to UNDP concepts (Para 138).*
2. *Lesson #2: There needs to be consideration given to the cost-effectiveness of climate change mitigation efforts (Para 139).*
3. *Lesson #3: Projects where there are a wide range of interventions that could be implemented need to have the flexibility to be adaptively managed (Para 140).*

**Recommendations**

| **Rec #** | **Recommendation** | **Entity Responsible** | **Time Frame** |
| --- | --- | --- | --- |
|  | **Recommendation 1:** |  |  |
|  | *Scale-up the Sustainable Cities concept to include other cities in Turkmenistan with more emphasis on water conservation (Para 135).* | MoEP and UNDP | Immediate |
|  | **Recommendation 2** |  |  |
|  | *Scale-up and accelerate low carbon urban systems in Turkmenistan through developing a project that derisks measures for renewable energy deployment (Para 136).* | MoEP, MoE and UNDP | Immediate |
|  | **Recommendation 3** |  |  |
|  | *With regards to gender mainstreaming of future projects in sustainable cities or any other projects in Turkmenistan, there needs to be an understanding of technologies deployed and project actions taken on how technologies or the project can positively impact the lives of women and vulnerable groups (Para 137).* | MoEP, MoE and UNDP | Medium term |

# introduction

1. The Terminal Evaluation (TE) for the Project entitled “*Sustainable Cities in Turkmenistan: Integrated Green Urban Development in Ashgabat and Awaza”* (otherwise referred to as “*SCT Project*”, “SCT” or “the Project”) was conducted for UNDP-GEF as an impartial assessment of SCT Project activities, mainly comprised of capacity building activities and investments. The Project objective is to “promote and implement integrated low-carbon urban systems in Ashgabat and Awaza, thereby reducing GHG emissions and creating other environmental, social, and economic development benefits”.

## Objective of Terminal Evaluation

1. The purpose of this TE for the SCT Project was to *evaluate the progress towards the attainment of global environmental objectives, project objectives and outcomes, capture lessons learned and suggest recommendations on major improvements.* The TE is to serve as an agent of change and play a critical role in supporting accountability. As such, the TE will serve to:

* measure to what extent the Project has contributed to solve the needs identified in the design phase;
* measure Project’s degree of implementation, efficiency and quality delivered on expected results (outputs) and specific objectives (outcomes), against what was originally planned or officially revised;
* measure the Project contribution to the objectives set in the UNDP Country Program Document (CPD) for Turkmenistan, the UNDP Strategic Plan for Turkmenistan, Turkmenistan’s Nationally Determined Contribution (NDC) of 2022 and National Communications submitted to UNFCCC (latest in 2015), the new Turkmenistan Law “On Energy Saving and Energy Efficiency” (April 2024), along with relevant SDGs;
* assess both negative and positive factors that have facilitated or hampered progress in achieving the Project outcomes, including external factors, weakness in design, management, and resource allocation;
* assess the extent to which the application of the rights-based approach and gender mainstreaming are integrated within planning and implementation of the Project;
* generate substantive evidence-based knowledge by identifying best practices and lessons learned that could be useful to other development interventions at national (scale up) and international level (replicability) and to support the sustainability of the Project or some of its components promote accountability and transparency, and to assess and disclose levels of project accomplishments.

1. Outputs from this TE are to provide an outlook and guidance in charting future directions on sustaining current efforts by UNDP, the Government of Turkmenistan (GoT) and their donor partners to sustain the momentum built by the Project to continue with sustainable city developments and with the goal of reducing GHG emissions.

## Scope

1. The scope of this TE was to evaluate all activities funded by GEF and activities that are parallel financed. The Terms of Reference (ToR) for this TE is contained in Appendix A. Key issues addressed on this TE include:

* the issues related to delays in the SCT Project from June 2018 to the MTR date of August 2021;
* the measures used to overcome delays due to the COVID-19 pandemic from March 2020 to late 2021;
* Project achievements post-MTR and whether or not all targets and outcomes have been achieved;
* how can SCT activities be sustained after the EOP date of 11 April 2025.

## Approach and Methodology

1. The evaluation approach adopted was non-experimental evaluation[[4]](#footnote-5) where questions needed to be answered concerning policy and market for government stakeholders, and the benefits and impacts of pilot investments for Project beneficiaries. Interviews with government stakeholders were to bring up key issues with respect to the process of prioritizing SCT measures and enhancing market diffusion of SCT technologies and interventions; this was to strengthen learning within the SCT Project team and its stakeholders (mainly government) to support better decision-making to attain the Project objective. Government and beneficiary stakeholders were interviewed using a participatory approach on their experiences interacting with other stakeholders. These approaches contributed to an impartial assessment of the SCT Project.
2. The Evaluation methodology consisted of:

* setting up the TE report in the context of evaluation criteria of relevance, effectiveness, efficiency, sustainability, and impact, defined and explained in the UNDP Guidance for Conducting Terminal Evaluations of UNDP-supported, GEF-financed Projects (August 2020)” [[5]](#footnote-6);
* document review of Project findings in the context of progress, effectiveness and pace of awareness raising, sustained engagement of national implementation teams (including training of these teams), level of implementation, and Project management (including M&E performance);
* interviews conducted with selected stakeholders (i.e. government stakeholders, Project developers, and Project beneficiaries) to gauge the effectiveness and efficiency of capacity building efforts and pilot investments of the Project. This was important as these evaluation criteria were likely undocumented. The interview process was conducted in a participatory manner and in a spirit of collaboration with SCT Project Management Unit (PMU) personnel with the intention of providing constructive inputs that can inform activities of a potential subsequent phase of the SCT Project;
* triangulation of the various data sources that ensured optimum validity and quality of the information and data sources (i.e. interviews, focused group discussions and documents);
* compile and evaluate the progress and quality of implementation against the indicators of each objective and outcome in the PRF as provided Appendix F;
* formulation of TE conclusions and recommendations that focus on the current setup of the SCT Project and its completion by 11 April 2025.

1. The TE of the SCT Project is based on evaluability analysis consisting of formal (clear outputs, indicators, baselines, data) and substantive (identification of problem addressed, theory of change, results framework) inputs. Considering the information provided into this evaluation (which is mainly whether or not the technical assistance of the Project was effective to the GoT), the implication of this methodology is that it should be effective in the evaluation process and should inform government stakeholders and the SCT Project team as it possibly transitions into a subsequent phase.

## Data collection and analysis

1. Data and information for this TE was sourced from:

* a review of Project documentation as listed in Appendix C notably the final country reports from the UNDP Turkmenistan office. This was important in establishing information pertaining to the country’s efforts in implementing the Project. This was done primarily at the home base of the International Evaluator;
* the combination of in-depth interviews, field visits and focused groups discussions (full list of persons interviewed in Appendix B) which were semi-structured interviews with key stakeholders within an interview schedule. These discussions were based on questions designed for different stakeholders based on evaluation questions around relevance, coherence, effectiveness, efficiency, and sustainability. Interviews were conducted with:
  + *PMU personnel and UNDP Turkmenistan*, the purpose of which was to deal with implementation issues;
  + *The main executing agency*, the Ministry of Environmental Protection (MoEP), the purpose of which was to deal with execution issues;
  + *Other implementing partners*, namely the Ministry of Energy (MoE), Ministry of Construction and Architecture (MoCA), Ministry of Foreign Affairs, Agency “TurkmenAvtoTransport”, State Electric Power Corporation “Turkmenenergo” of the Ministry of Energy, Khyakimlik (Municipality) of Ashgabat, and the Khyakimlik of Turkmenbashi to gauge the effectiveness of training and institutional strengthening as well as other execution issues;
  + *Project partners* involving entities which worked in close collaboration with the implementing partners, including State Energy Institute of Turkmenistan (SEIT) of MoE; Research and Production Centre for Renewable Energy under the State Energy Institute; Institute "Turkmenproekt" of the Ministry of Construction and Architecture; pilot hotels in Awaza; Turkmen State University named after Makhtumkuli; the member of the Union of Industrialists and Entrepreneurs company “Toprak”;
  + *Beneficiaries* that include city residents of Turkmenistan, especially those in Ashgabat, are key stakeholders of the SCT Project as well as hotels and guests of Awaza who have a direct interest in the outcomes of the project.

A complete listing of partners is found in Annex A.

1. The Evaluator conducted interviews and field visits in a participatory and consultative approach to ensure close engagement with the Project team, implementing partners and male and female direct beneficiaries. Questions posed for these stakeholders are included in Appendix G and I. All interviews with the Evaluation team with various stakeholders were conducted in-person or on Zoom or Teams platforms with facilitation support provided by the PMU or the UNDP Country Office (CO). The International Evaluator made every effort to be flexible and available for scheduling interviews with stakeholders.

## Structure of the Evaluation

1. This evaluation report was presented as follows:

* An overview of Project activities from commencement of operations in June 2018 to the present activities of the SCT Project;
* A review of all relevant sources of information including documents prepared during the preparation phase (i.e. PIF, UNDP Social and Environmental Screening Procedure or SESP), the Project Document, Project progress reports, and any other materials that the team considers useful for this evidence-based evaluation;
* Interview information from a participatory and consultative approach that ensured close engagement with stakeholders who have Project responsibilities including the PMU, government counterparts, implementing partners, the Turkmenistan UNDP Country Office (CO), the Regional Technical Advisors, and other stakeholders. The Evaluation team conducted face-to-face and virtual interviews with the Project’s stakeholders;
* An assessment of results based on Project objectives and outcomes through relevance, effectiveness and efficiency criteria;
* Assessment of sustainability of Project outcomes;
* Assessment of monitoring and evaluation systems;
* Assessment of progress that affected Project outcomes and sustainability; and
* Findings, conclusions, recommendations and lessons learned.

1. This evaluation report was designed to meet GEF’s “Guidelines for Conducting Terminal Evaluations of UNDP-Supported, GEF Financed Projects” of 2020[[6]](#footnote-7) as well as UNDP guidelines “Evaluation during COVID-19” (updated to June 2021)[[7]](#footnote-8).

## Ethics

1. This Terminal Evaluation has been undertaken as an independent, impartial and rigorous process, with personal and professional integrity and is conducted in accordance with the principles outlined in the UNEG Ethical Guidelines for Evaluations, and the UNDP GEF M&E policies, specifically the August 2020 UNDP “Guidance for Conducting Terminal Evaluations of UNDP-supported, GEF-financed Projects”.

## Limitations

1. The only limitation to this TE process was the limited time available to interview all stakeholders and to visit all the SCT investments implemented. This was somewhat mitigated by visiting “representative” SCT investments and interviewing stakeholders who played important roles on the Project.

# Project description and development context

## Project Start and Duration

1. The SCT Project commenced as of 11 June 2018. The Project is being implemented up to the time of writing of this report (as of December 2024). The Project is scheduled to close as of 11 April 2025.

## Development Context

1. The population of Turkmenistan has steadily grown during the last decades with the country undergoing a steady shift toward greater urbanization, with an increasing proportion of citizens living in cities. The most notable urban growth has taken place in Ashgabat, the capital of Turkmenistan, and also in the new resort zone of Awaza on the Caspian Sea. The population growth has triggered the creation of several new developed areas, with expansion of the infrastructure.
2. According to Turkmenistan’s Nationally Determined Contribution of Turkmenistan under the Paris Agreement to UNFCCC of September 2022, “the emission reductions proposed in this new NDC are confirmation of Turkmenistan's ambitious goal, which aims to reduce its greenhouse gas (GHG) emissions by 2030. This target remains the highest of all possible ambitions that Turkmenistan can achieve by implementing measures to reduce GHG emissions in such sectors as Energy, Transport, Agriculture, Industrial Processes and Product Use, and Waste, as well as using co-mitigation benefits from adaptation measures to climate change. Due to changing and unforeseen global circumstances, the indicative target for the period up to 2030 represents a greater effort from Turkmenistan than was originally proposed. Turkmenistan will make every effort to achieve and exceed the targets set out in this NDC”.
3. To prevent climate change, the National Strategy of Turkmenistan on Climate Change outlined the main policy directions for consistent transition to an economy with the lowest greenhouse gas emissions, without prejudice to the pace of socio-economic development. Energy efficiency and energy saving, rational use of natural gas and petroleum products, expansion of the use of renewable energy sources are the main policy priorities of limiting greenhouse gas emissions stipulated in the strategy. To implement this policy, tools and measures are to be used limiting greenhouse gas emissions in key sectors of the economy in industry, transport, housing and communal services, which are simultaneously capable to maintain high economic growth rates.
4. Around 2017, Ashgabat was creating facilities and upgrading infrastructure in preparation for hosting the 5th Asian Indoor and Martial Arts Games held in September 2017. Similar construction and infrastructure development occurred in Awaza with numerous entertainment centers, high-quality hotels, children's health resorts, cottage villages, health and recreation centers. Since 2010, Awaza has also experienced rapid infrastructure development, including construction of roads, a new gas-fired power plant, a desalination plant on the Caspian Sea, a sewage treatment plants, water supply networks, and a full renovation of the airport at the nearby city of Turkmenbashi. In addition, Awaza plays the role of a major business, cultural and sports center, where top-level meetings, representative international forums and creative festivals take place.
5. The development spurt of Ashgabat and Awaza has led to increased negative environmental impacts including gradually increasing GHG emissions mainly from increased municipal solid waste (MSW) and rising usage of private motor vehicles. Prior to 2018, efforts were made by Ashgabat and Awaza to implement certain measures to manage these negative environmental impacts such as replacement of all spent streetlamps with light-emitting diodes (LEDs) in Ashgabat, and limitations on private car usage in Awaza.

## Problems that the SCT Project sought to address

1. The focus of the SCT Project is reduction of GHG emissions within the broader context of urban sustainability. In addition, the Project touches upon climate resilience with regard both to specific issues such as water management in hotels, which saves both energy and water, and to broader planning, strategy, and policy for sustainability and responsiveness to climate change. Barriers to this are:

* lack of incentives and regulations for fuel efficiency. Turkmenistan has a very active market in imported used passenger vehicles. Regulations are in place regarding the age and engine capacity of these vehicles (model year no more than three years before purchase year, engines no larger than 3.5 L);
* lack of specific needed infrastructure. During the PIF stage, the GEF Scientific and Technical Advisory Panel noted the potential for smart-grid technology to achieve energy savings in city lighting networks. Such technologies are completely absent in Turkmenistan, even on a pilot basis. Furthermore, while there is a waste-processing facility in Ashgabat that conducts some recycling, there is also a need to optimize the sorting, processing, and testing of incoming and outgoing waste streams to expand recycling and make the use of recovered materials more economically viable. In both of these areas, technical and financial assessment, investment, and training are needed to introduce these new types of infrastructure to Turkmenistan;
* lack of data and lack of technical and financial justification of state investment in urban sustainability;
* relative lack of attention to sustainable development solutions in Turkmenistan’s other cities;
* lack of systematic planning for sustainability in Ashgabat and Awaza;
* lack of political priority for sustainability which leads to a lack of planning and absence of champions for urban sustainability. The Government now recognizes the need for sustainable practices in all its cities, but policy and investment gaps remain;
* lack of technical capacity in planning and design for urban sustainability. The broad concept of sustainable cities and specific technical approaches to sustainable urban development and hotel practices are quite new to both the GoT and the private sector of Turkmenistan. Elaboration and implementation of effective integrated strategies for sustainable urban development will require technical assistance from outside experts and capacity-building for national decision makers and managers;
* Lack of public awareness and engagement about behavioural change for sustainability.

## Objective of SCT Project

1. The objective of the SCT Project is to “*promote and implement integrated low-carbon urban systems in Ashgabat and Awaza, thereby reducing GHG emissions and create other environmental, social, and economic development benefits*”. The SCT objective is contained in the SCT PRF in Appendix F.

## Expected Results

1. With this Project, the GoT requested GEF support to help identify, develop and support development of sustainable integrated low-carbon urban systems in Ashgabat and Awaza. The strategy of the Project was to use a combination of demonstration projects, policies and technical assistance to address and overcome the range of barriers currently facing the development of sustainable low carbon urban systems. Along with Turkmenistan’s baseline scenario, the Project expected the following outcomes as proposed in June 2018:

* Outcome 1a: Improved capacities and enabling conditions in Ashgabat to identify, design and implement integrated low-carbon and climate-resilient solutions in public space;
* Outcome 1b: Reduced GHG emissions and other negative environmental impact through interventions involving public spaces and infrastructure;
* Outcome 2a: Improved capacities and enabling conditions in Awaza for integrated low-carbon and climate resilient tourism development;
* Outcome 2b: Reduced GHG emissions and other negative environmental impact through interventions involving tourism facilities and infrastructure in Awaza;
* Outcome 3: Nationwide replication and scaling-up of results of first two components via information dissemination, enhancement of capacity of agencies and managers, and adoption of policies and regulation.

## Description of the Project’s Theory of Change

1. A Theory of Change (ToC) was developed for the original Project design. A review of the SCT PRF was conducted, revealing outcomes with SMART indicators that can effectively monitor Project progress (Para 32). From this analysis, a ToC was developed in Figure 2 on the basis of the PRF that has slightly re-worded outcomes, indicators and targets in red font, as provided in Table 7 and Appendix F.

## Total Resources for SCT Project

1. The total resources allocated to this Project at time of ProDoc signature on 11 June 2018 is provided in Table 1.

**Table 1: Total Resources for SCT Project as of August 2018**

|  |  |  |
| --- | --- | --- |
| **Component** | **GEF Resources (US$)** | **Planned Co-Financing Resources (US$)** |
| Outcome 1: Enabling policy and regulatory framework and capacity development for green energy SMEs TA | 1,355,060 | 4,790,000 |
| INV | 2,231,473 | 37,500,000 |
| Outcome 2: Access to finance for green energy SMEs and/or energy service users TA | 775,080 | 2,100,000 |
| INV | 640,000 | 14,400,000 |
| Outcome 3: Business models for green energy SME TA | 561,830 | 3,700,000 |
| Knowledge Management and M&E | 208,030 | 110,000 |
| Project Management | 288,573 | 1,500,000 |
| **Total** | **6,060,046** | **64,100,000** |

**Figure 2: Theory of Change for SCT Project**

Project Impact (Objective)

*Matching of Outputs to Causes*

Immediate, Underlying, and Root Causes

**Project Objective:**   
Promote and implement integrated low-carbon urban systems in Ashgabat and Awaza

**Development Challenge:**   
*Urban growth in Turkmenistan leads to increased resource use, infrastructure needs, and pollution, requiring new solutions for long-term sustainability*

Reduced global GHG emissions

2.2 Reduced GHG emissions and other negative environmental impacts through interventions involving tourism facilities and infrastructure in Awaza

2.1 Improved capacity and enabling conditions in Awaza for integrated low-carbon and climate-resilient tourism development

1.2 Reduced GHG emissions and other negative environmental impacts through interventions involving public spaces and infrastructure

1.1 Improved capacity and enabling conditions in Ashgabat to identify, design, and implement integrated low-carbon and climate-resilient solutions in public space

Evaluation of project, reporting and lessons learned

3.2 Updated norms and incentives established for fuel efficiency of vehicles

3.1. National policies developed and adopted in support of green urban practices

2.4. Managerial and technical capacity of planners, officials, and facility managers in Awaza enhanced

2.3. Optimally efficient surface transportation implemented in Awaza

2.2. Demonstration / replication of solar-powered public lighting

2.1 Practices to reduce energy consumption, water use, and waste implemented by hotels in Awaza

1.4 City-wide sustainability plans developed and approved

1.3 Waste volumes reduced and recycling expanded in Ashgabat

1.2 Sustainable urban transport solutions in Ashgabat

1.1 Energy efficient public lighting implemented in Ashgabat

Relative lack of attention to sustainable development solutions in other cities besides Ashgabat and Awaza

Lack of incentives and regulations for fuel efficiency

Lack of technical capacity for planning and design of urban sustainability

Lack of past political priority for sustainability

Lack of data, technical/financial justification

Lack of systematic planning for sustainability

Lack of public awareness and engagement on behavioural change for urban sustainability

Lack of specific needed infrastructure

Fund Impact

Project Outcomes

Project Outputs

3.1 Nationwide replication and scaling-up of results of first two components

## Main Stakeholders and Key Partners

1. The main stakeholders on the SCT Project are listed in Table 2. More details on these stakeholders are provided in Sections 3.1.4. and 3.2.2.

**Table 2: Primary Stakeholders on SCT Project**

| **Stakeholder** | **Role** |
| --- | --- |
| **Ministry of Environmental Protection or MoEP (formerly Ministry of Agriculture and Environmental Protection)** | MoEP is the GEF Operational Focal Point and UNFCCC Focal point, ensuring Project alignment with national climate change goals and priorities and providing inputs into the design and application of GHG emission reduction monitoring methodology. It is also the lead national counterpart for the Project, with oversight of all Project activities, co-chairing the Project Board. |
| **Ministry of Energy (MoE)** | MoE is responsible for management of the country’s electricity sector. The Ministry includes “Turkmenenergo”, State Electric Energy Corporation, a vertically integrated entity managing all state assets in the sector. Electricity savings is the priority of the MoE, as it will allow to increase Turkmen electricity exports to Afghanistan and Iran. MoE is represented in the Project Board. |
| State Electric Power Corporation “Turkmenenergo” under the Ministry of Energy | “Turkmenenergo” includes 8 state power, industrial associations and one company of electric networks, and is responsible for managing urban lighting in Ashgabat |
| Agency “Turkmenavtoulaglary” (formerly “TurkmenAvtoTransport”) under the Ministry of Industry and Communication | Agency “Turkmenavtoulaglary” (formerly the Ministry of Motor Transport), has been responsible since 2019 for planning, operating, and maintaining government-run fleets of buses and other motor vehicles throughout the country, abolished in 2019. The Agency is represented in the Project Board. |
| Ministry of Construction and Architecture (MoCA) | MoCA implements the state policy in the construction area; develops draft legal and regulatory acts; provides control over the implementation of design and planning decisions in the cities of Turkmenistan; and monitors compliance with building codes of Turkmenistan. MoCA is represented in the Project Board. |
| Ministry of Foreign Affairs | All official communications of UNDP with government agencies goes through MFA. MFA also ensures that all inquiries are considered, and questions asked are answered. |
| Khyakimlik (Municipality) of Ashgabat | Khyakimlik Ashgabat is represented in the Project Board. |
| Khyakimlik (Municipality) of Turkmenbashi | Khyakimlik Turkmenbashi is represented in the Project Board. |

# Findings

## Project Design and Formulation

1. The MoEP (formerly the State Committee for Environmental Protection and Land Resources in 2018) has a history of closely working with UNDP in programming for environmental protection projects funded by the GEF and others. MoEP had also been a leading partner in strategic planning and other support for preparation of the SCT Project. As the National Implementing Partner, MoEP has a senior staff member as National Project Coordinator who also co-chairs the Project Board (PB).
2. During the PPG phase of the Project, UNDP worked and closely consulted with responsible agencies of GoT with regard to specific activity areas: the Ministry of Energy for street lighting; the former Ministry of Motor Transport for transport; the former Ministry of Communal Services (replaced by MoCA) for waste management; the former State Committee of Tourism for hotel management; and the city administration of Ashgabat and the district administration of Awaza in all areas. Only the MoEP, MoE, MoCA and Agency “Turkmenavtoulaglary” now serve on the PB as listed on Table 2.
3. The Union of Industrialists and Entrepreneurs, founded in 2008, is the leading association of private sector businesses in Turkmenistan. The Union’s 15,000 members, or about 15 percent of registered private enterprises or individuals in private business in Turkmenistan, generate about 87 percent of the privately-generated GDP of the country. This organization has been a key partner in development of project strategy, especially with regard to transport and waste management, where some of its members are already active. The Union was ready to support the Project during implementation in matters ranging from technical consultancy to provision of needed equipment, to delivery of services.
4. Component 1 was to address improved capacities and enabling conditions in Ashgabat for the identification, design and implementation of integrated low-carbon and climate-resilient solutions in the public space. This would lead to reduced GHG emissions and mitigation of negative environmental impact through interventions involving LED streetlighting and sustainable urban transport measures. The measures under this component were also supposed to address waste management in Turkmenistan, specifically in Ashgabat under the Ministry of Communal Services. While the system of waste collection in Ashgabat is well developed (and the city itself is impressively clean), high-level Ministry officials recognized that population growth and economic development in the capital are leading to increasing volumes of waste, and the increasing the need for recycling waste as a cities sustainability strategy.
5. Component 2 was to address improved capacities and enabling conditions in Awaza for integrated low-carbon and climate-resilient tourism development. This would lead to reduced GHG emissions and mitigation of negative environmental impacts through interventions involving tourism facilities and infrastructure in Awaza. Technical assistance was to be provided to develop and implement green standards for hotels, conducting of energy and water audits, public promotion of successes in green hotel practices in Awaza, demonstration and replication of solar-powered lighting, piloting of solar-powered charging stations for electric vehicles, and train planners, officials, and facility managers in Awaza.
6. Component 3 was to develop and adopt national policies in support of integrated and scaled-up green urban practices, supported by capacity enhancement for responsible agencies and individuals. This would include developing and adopting national policies and budgets in support of scaled-up urban sustainability practices as well as training and information delivery for capacity enhancement of responsible agencies and individuals. This component was also to include national incentives and standards adopted for fuel efficiency of imported cars that was to include development and implementation of fuel economy standards and incentives for motor vehicles.

### Analysis of Project Results Framework for the SCT Project

1. Notwithstanding the components of the Project which divide Project work to Ashgabat and Awaza municipalities and to municipal and national policies, the SCT Project essentially sought to expand on untapped technical potential to: (a) decrease the volume and impact of private vehicle traffic in all cities; (b) further expand efficient street lighting; (c) reduce waste and increase recycling; and (d) introduce “green” practices to hotels. The development challenge of the SCT Project was to measurably reduce the negative impacts of urban growth in Turkmenistan while also advancing social and economic development goals.
2. The strategy of the SCT Project was to shift the cities of Turkmenistan, primarily Ashgabat and Awaza, towards sustainable, low-emission urban development, only possible if the barriers that prevent widespread penetration of green urban practices into urban planning and subsequent implementation of sustainable urban development, are removed. Barriers were to be removed through:

* improving enabling conditions in Ashgabat and Awaza to identify, design, and implement integrated low-carbon and climate-resilient solutions;
* corresponding capacity development;
* implementation of pilot projects; and
* knowledge management for replication and scaling-up of results achieved in Ashgabat and Awaza.

1. There were implementation issues on the SCT Project up to 2021. Many of these issues were due to a faulty design of the original SCT Project that was thoroughly reviewed and critiqued by the MTR consultant in August 2021. While most indicators were SMART[[8]](#footnote-9), there were concerns including:

* measurability of the Component 1 indicator “reduction in number of passenger-km of private car travel, via increased use of alternative modes and carpooling”. Measuring or quantifying a 3% reduction of passenger-km per year for this indicator was not sufficiently “specific” to be “achieved”;
* there was also no baseline economic incentive analysis underpinning the belief that a consumer would be incentivized for conversion to an electric vehicle given the low gasoline price;
* the Component 3 indicator of “existence and content of fuel economy standards and incentives for passenger vehicles” was not “relevant” considering that the GoT in 2018 already set a 5-year age limit for used imported cars and introduced mandatory annual technical inspections including exhaust. The poorly conceived strategies to improve fuel efficiency standards were detached from the realities in Turkmenistan including the introduction of hybrid cars without comparing the cost of hybrids with the cost of monetary savings from improved fuel efficiency (given the low fuel costs), and introduction of incentives without any details of required level of such incentives and without any prior consultation with the Ministry of Finance;
* low interest from transport Agency “Turkmenavtoulaglary” and related absence of a full-fledged transport sub-project team under the SCT Project;
* measurability of the promotion of safe cycling (Activity 1.2.3a), carpooling (Activity 1.2.3b), introduction of dedicated bus lanes, or urban sustainability planning policy, and waste recycling CO2 emissions reductions. There were no set targets in the ProDoc which could have been set in tons CO2 reduced;
* measurability of Component 2 indicator of “reduction of energy consumption and water consumption in Awaza hotels”. There were no baseline data to measure the reduction of energy and water use in hotels as of 2021. One assumes that the EoP target of “energy and water audit measures implemented” would acquire this baseline data;
* only one gender-sensitive activity was planned in the ProDoc, a promotion of cycling among women even though a more important issue of equal access of women to employment opportunities in the transport sector was not considered.

1. With these Project design and implementation issues, the MTR consultant detailed changes that were required to set the Project on the right track towards meeting its objectives and outcomes. The Project adopted many of the MTR recommendations with changes made by the CTA that better reflect the ground realities. For Outcome 1, the changes were as follows:

* Activity 1.2.1 was originally the “Design and construction of dedicated bus and bicycle lanes”. This has been changed to “an increased level of effort on the street lighting and smart grid upgrade work”, “focus on activities on organizing round tables with the mayoral office to inform on successful pilot cases in the CIS region” and “informing its willingness to contact a quality design team to support existing bicycle lanes when the mayoral office is ready”;
* Activity 1.2.2 was originally “Design of e-passes, map updates, and a mobile app for riders)”. With the mobile app for riders designed by the City of Ashgabat prior to the start of the Project, the PMU was going to design and propose additional improvements to the city (such as map and app updates). Should there be no willingness on the part of the mayoral office to benefit from such assistance, the PMU was to consider stopping focus on this activity;
* Activity 1.2.3 was originally “Behavioral-choice programs and outreach on sustainable transport”. The only activity being retained was the “Promotion of safe bicycling”. All other sub-activities were to be dropped;
* Activity 1.2.4 is still “Data collection and analysis on transport volumes, choices, and preferences” with the Project still aiming to get access to the data after possible signing of MoUs with the mayoral office and the Auto Transport Agency.

1. For Outcome 2, changes made were as follows:

* Activity 2.1.1 “Development and implementation of green standards for hotels” was kept with additions of:
  + an overview of best international practices;
  + prepare a review of the main driving forces in introducing green standards in countries with similar energy and water tariff rates;
  + developing draft green standards and organizing discussions with interested hotels (some of which are currently being privatized);
* Activity 2.3.1 “Piloting of solar-powered charging stations for electric vehicles” was revised to the following activities:
  + this activity was to be performed in both Awaza and Ashgabat;
  + the Project was to assist with installation of 2-3 charging stations for e-busses or provide trainings on servicing and maintaining the charging stations. The Project was to use the available channels that the UNDP office in Turkmenistan has with the Ministry of Foreign Affairs to expedite this process;
  + the Project was to hold consultations with Ashgabat and Awaza municipalities to establish the locations of the charging stations for private cars.

1. For Outcome 3, Activity 3.2.1 was revised to:

* development of regulations introducing more stringent fuel standards[[9]](#footnote-10) and a set of demand-side incentives for purchase of more energy efficient vehicles by the public entities and private consumers;
* prepare a review of international fuel standards and identify those that might be appropriate for Turkmenistan for the period of up to 2030;
* provide discussion of the proposed standards with the agencies and the expert community;
* prepare public outreach materials; and
* organize a dedicated event.

These changes are reflected in the revised PRF in Appendix F with red font indicating the changes made.

### Assumptions and Risks

1. Objective-level assumptions in the original 2018 PRF included detailed references to Annexures in the ProDoc on input data and calculations that underlie estimates of potential energy savings and GHG emissions reductions.
2. Outcome-level assumptions include:

* for Outcome 1:
  + “dynamic growing baseline, consistent with documented trends of increasing private vehicle ownership and use. Verification by traffic studies and participant surveys staff turnover in the Government is insignificant and trained people remain in their functions” against the indicator of “transport data collected and analyzed and roundtables organized with the mayoral office to inform on successful regional pilot cycling networks and for contacting a high quality design team when the mayoral office is ready”;
  + “Ministry of Energy carries through with grid upgrades with smart applications at least basic capacities exist to enforce performance standards” against the indicator of “reduction in electricity consumption from smart grid upgrade work”;
  + “measurement and evaluation of this indicator will depend on the availability of data from waste collection agencies, recycling facilities and landfills” against an indicator of “reduction in landfill waste from Ashgabat and Awaza relative to baseline from recycling and waste reduction programs”;
* for Outcome 2:
  + the Project will seek to establish standards applicable across the tourist zone. Individual hotels may also choose to establish their own standards that go beyond the standards are developed for Awaza” against an indicator of “adoption and implementation of green hotel management standards by Awaza hotels”;
  + “technical specifications of charging stations, including their capacity. will be determined during the design process. Establishment of charging stations outside Awaza is contingent on the emergence of a market for electric cars elsewhere in the country” against an indicator of “number and capacity of solar-powered charging stations for electric cars”;
* for Outcome 3:
  + “the Project will promote sustainability planning in several cities across Turkmenistan outside of Ashgabat and Awaza, not only two. Partial results regarding sustainability plans will be reported” against an indicator of “number of cities of Turkmenistan (and total population therein) that formally adopt sustainability practices in transport, lighting, and waste management”;
  + “number of citizens reached to be determined in aggregate from mass media circulation data, distribution of materials” against an indicator of “number of citizens reached by public-relations and knowledge-sharing on sustainable urban development”.

All these assumptions still hold true.

1. There were no Identified Project risks in the PRF. However, there were risks listed in the “Risk Log” of the ProDoc including:

* political support for policies and investment are insufficient to support the fulfilment of targeted outputs and outcomes, especially if global gas prices remain so low as to reduce state revenues and budgets
* implementation of project activities, especially pilot projects, is hampered by administrative delays arising from slow processes of permissions, contracting, and procurement
* piloted technologies and practices prove not to be technically and/or financially justified, and therefore do not lead to replication – or possibly even lead to a broad backlash against the technology (for example, premature failure of LEDs would damage the popularity of LEDs and all EE lighting);
* construction of new bicycle and bus lanes could lead to new problems of traffic congestion, disruption of utility services, safety concerns for workers or users, noise, and environmental damage;
* Project activity to promote bicycle use will expose citizens to increased risks of serious injury, given safety concerns with motor vehicles on the streets of Ashgabat;
* Project activity to promote increased carpooling exposes citizens to increased risks of crime, with particular risks for women;
* Project activity to promote bicycle use will contribute to gender inequality insofar as Turkmen women commonly wear long dresses that do not easily accommodate bicycle riding;
* creation of a new recycling program creates occupational safety concerns, as well as issues of consumer protection for products made with recycled materials, especially when waste streams are not sufficiently uniform or when they contain hazardous wastes;
* climate warming leads to various effects that reduce the effectiveness of project activities, such as lowered willingness to ride bicycles or wait for buses, increased demand for air conditioning in hotels in Awaza.

### Lessons from Other Relevant Projects Incorporated into SCT Project Design

1. There were a handful of projects that affected the SCT Project design including:

* City of Almaty Sustainable Transport (GEF ID#4013; PIMS 3757), a full-sized project (GEF grant: USD 4.886 million). Its implementation started in June 2011 and completed in December 2017 (the project has got 18-month extension). Project outputs among others included: Output 1.1: Streamlined institutional arrangements for developing and regulating urban transport services, and monitoring transport-related GHG emissions and other air pollutants; Output 1.5: Monitoring system for tracking GHG emission and transport-related air pollutants; Output 2.1: Transport-demand model and strategic master plan for developing sustainable urban transport; Output 3.2: Feasibility plans for integrated traffic management and retail economic stimulus areas. According to the Terminal Evaluation conducted in October 2017, “the project has successfully addressed the barriers to sustainable urban transport in Almaty city”. Achievement of each Outcome was rated as “Satisfactory”.
* Georgia: Green Cities: Integrated Sustainable Transport for the City of Batumi and the Achara Region (GEF ID #5468; UNDP PIMS #4980). Start date of this Medium-sized project was September 2015, MTR conducted in October 2017. Project outputs among others included: Development of sustainable urban transport plans; Investment in improved traffic flow (in synchronization of lighting along selected corridors and implementing parking restrictions along the corridor to create more road space for moving vehicles); Investment in improved public transit services (public transit services are competitive with private car usage, and thereby encourage shifts from private cars); Investment in the cycling network (improvements to the existing bicycle network). All activities were thoroughly planned and the proper design of the project contributed significantly to successful implementation with the project was rated “Satisfactory” by the MTR.
* Green Urban Lighting, Armenia (GEF ID #4742; UNDP PIMS #4669), a project (GEF grant: USD 1.6 million), with 4 components: Component 1: Municipal energy audits and technical capacity-building; Component 2: Demonstration projects; Component 3: Replication via municipal lighting programs and associated financial instruments; and Component 4: National policies, codes, and standards on lighting. Project implementation started in November 2013 and completed in November 2018 (the project has got 12-month extension);
* Belarus Green Cities: Supporting Green Urban Development in Small and Medium Sized Cities in Belarus, a full-sized project with a GEF grant of US$3.091 million, started in November 2015 and was concluded in August 2022. According to MTR “the measures being considered for the SUT demos lacked the needed level of “pull” to public transport by making it more attractive and completely lacked “push” from making private cars less attractive, so that the first two indicators were considered unlikely to be met”. The MTR also noted that “the project is making strong progress in the bicycle segment of this work. Its bicycle feasibility study is of high quality and may be used as a model for other similar work;
* Sustainable Green Cities - Catalyzing Investment in Sustainable Green Cities in the Republic of Moldova Using a Holistic Integrated Urban Planning Approach, a full-sized project with a GEF grant of US$2.720 million, started in November 2017. Some components of the project are similar to the SCT Project including implementation of pilot/demonstration projects with related MRV of the results in: (i) integrated and participatory urban land use and mobility planning; (ii) residential building energy efficiency and renewable energy use; (iii) low carbon mobility; and (iv) resource efficient waste management.

### Planned Stakeholder Participation

1. The SCT ProDoc details in very specific terms, the stakeholders to be involved on the Project (in the ProDoc on pgs. 99-100) including their relevance to the Project and their roles. The stakeholders identified for engagement had already been consulted during the PPG stages of the Project. Further stakeholder engagement during Project implementation was to be organized through extensive consultation processes through all stakeholders who were to serve as information providers in their roles of raising public awareness of the SCT Project.

### Linkages between the SCT Project and other interventions in the sector

1. The SCT Project was not linked with any other interventions or projects in Turkmenistan.

### Gender responsiveness of Project design

1. The impacts of the Project in terms of environmental quality and reduced traffic congestion, and various outcomes achieved in transport, lighting, waste, and overall planning were also expected to be fully inclusive of women, men and children. Therefore, while the Project did not have activities that specifically and directly aim to tackle gender inequality as a primary focus, the Project did seek equal engagement and equal benefits in all of its activities. Various areas where gender dimensions were to be taken into special account as follows:

* Data collection and analysis, especially regarding transport. While some areas of Project activity such as energy savings in street lighting are universal in how they affect all citizens without regard to gender, transport has various dimensions that may affect men and women unequally. Measures to reduce the use of private cars and increase public transportation may have differential effects, to the extent that men and women show different rates of car ownership and public transportation ridership. Data are essentially absent with regard to gender dimensions of transport. As such, the Project was to conduct comprehensive studies before and during its implementation of transport-related activities to maximize effectiveness and ensure gender-inclusivity;
* Engagement of women in project implementation. In addition to collection of data, the Project was to also ensure gender-relevance and gender-inclusivity in its activities by engaging women in the implementation of activities including those targeting professionals (such as the policy, planning, and management work under Output 1.4 on urban sustainability plans, 2.1 on hotel management, and 3.1 on national policy), as well as those targeting the general public (Output 1.2 on transport in Ashgabat and 1.3 on municipal waste and recycling). This engagement was to involve inclusion of women as national experts (where possible), recipients of training, and members of advisory groups;
* Informational outreach. The Project was to make an effort to reach both men and women equally with its informational outreach, including both training for professionals and promotional activity among the general public. Women were to be depicted equally in program materials, with a special attention to ensure equal portrayal in areas such as motor vehicle operation and maintenance, where stereotypes might more strongly assume male roles. Women do operate cars widely in Ashgabat, but statistics are unavailable.

It should be noted that a Gender Mainstreaming Analysis and Action Plan was provided during the TE.

1. The Social and Environmental Screening Procedure (SESP), Social and Environmental Screening deemed the low risks to promote increased carpooling exposes citizens to increased risks of crime, with particular risks for women. There was also the promotion of bicycle use which did not contribute to gender equality insofar as Turkmen women commonly wear long dresses that do not easily accommodate bicycle riding.

### Social and Environmental Safeguards

1. Aside from the gender related risks, the Project’s SESP also reviewed the social and environmental risks created by the Project. The SES notes moderate risks related to the transport and waste sectors including:

* construction of new bicycle and bus lanes could lead to new problems of traffic congestion, disruption of utility services, safety concerns for workers or users, and environmental damage;
* creation of a new recycling program creates occupational safety concerns, as well as issues of consumer protection for products made with recycled materials, especially when waste streams are not sufficiently uniform or when they contain hazardous wastes;
* mainly relate to occupational and consumer safety, as well as the release of pollutants, as well as temporary concerns about traffic, noise, and utility service disruption during construction.

1. It is expected that on the whole, the Project will lead to net positive environmental impacts due to the reduction of GHG emissions and lowering of waste volumes. It is also expected that the Project will lead to positive social impacts.

## Project Implementation

1. The following is a compilation of significant events during implementation of the SCT Project in chronological order:

* 9 June 2016: PIF approved by the GEF;
* 17 September 2017: CEO Endorsement document approved;
* 2 November 2017: LPAC approval of the ProDoc;
* 11 June 2018: ProDoc signed by the MoEP (formerly State Committee of Turkmenistan of Environment Protection and Land Resources) and the Project started;
* 1 July 2018: Project Manager hired;
* 25 September 2018: Inception workshop conducted;
* 26 September 2018: First meeting of the Project Board;
* 14 May 2019: Meeting of the UNDP CO management with the MoEP on joint implementation of planned activities within the framework of SCT;
* 18 March 2019: Hiring of International Chief Technical Advisor;
* 16-22 September 2019: Meetings between UNDP CO management with the Mayor (Hyakim) of Ashgabat, MoAC, Agency "TurkmenAvtoTransport", and MoEP on joint implementation of SCT planned activities;
* 6 November 2019: Organization of the workshop in Awaza “Possibilities of reduction of energy consumption at hotels of Awaza Touristic zone”;
* November 2019: Energy audits of streetlighting systems and feasibility study introducing modern transformers to switch from 6 kV to 10 kV in settlements newly connected to Ashgabat;
* November 2019: Launch of the initial information campaign on the collection of plastic waste;
* 15-22 January 2021: Purchase of equipment for energy audit of buildings and the street lighting system at the pilot site. Training for the Sustainable Cities specialists and the staff of the pilot hotel "Grand Turkmen";
* 13 March 2021: New Law of Turkmenistan on “Renewable Energy Sources" developed by the Sustainable Cities project, adopted by the Mejlis (Parliament) of Turkmenistan;
* March 2021: Purchase of 60 transformers for the reconstruction of electrical distribution networks in newly connected settlements of Ashgabat;
* March-June 2021: Mid-term Review of the SCT Project;
* September 2021: Project Strategy Revision Report issued by CTA;
* July 2022: Specialist recruited for Awaza hotel demonstrations;
* November 2022: Demonstrations on energy and waste savings completed in Awaza;
* 2023: Modernization of LED streetlighting in Ashgabat and Awaza;
* April 2024: Official adoption of the new Law of Turkmenistan “On Energy Savings and Energy Efficiency” developed by the Sustainable Cities project, adopted by the Mejlis (Parliament) of Turkmenistan;
* April 2024: City of Arkadag adopted a sustainable city development plan;
* January 2024: The Project received an extension for 10 months with a EoP date of 11 April 2025.

1. The SCT Project is under National Implementation Modality (NIM) by the UNDP Turkmenistan Country Office, overseen and strategically guided by the Project Board (PB), which is chaired an Executive who is the Head of Department of the MoEP and composed of key Project stakeholders: MoEP, MoE, MoAC, Municipality of Ashgabat, Municipality of Turkmenbashi and UNDP as listed on Table 2 and further discussed in Paras 55-56. The PB has met on annual basis, sometimes twice per year, since January 2019 to review and approve annual work plans and budgets, review annual progress, provide strategic oversight of the Project, ensure coordination with key baseline initiatives and national investment programs, and provide guidance on the effectiveness of Project interventions and results.
2. The Executive has been responsible for the overall achievement of Project objectives through institutional coordination with the key stakeholder members of the PB and overall alignment of the Project with its intended objective and outcomes. The Executive has also been responsible for the coordinating of timely Project reporting, including the approval of Annual Work Plans (AWP), preparing of Annual Project Progress Reports (APPRs), Project Implementation Reviews (PIRs), and financial reports. The Executive has taken full ownership of the Project by leading and implementing the Project with interest and providing facilitation, management and oversight support during implementation of the Project. The SCT Project organization structure is shown on Figure 2.
3. The SCT Project Manager (PM) is tasked with the day-to-day management of Project activities, preparation of AWPs, financial reports and administration. The PM prepares the AWPs for submission to the MoEP for approval and is supported by a Program Assistant and a Project Assistant. There were also supposed to be national technical specialists on lighting, a team in Awaza to manage energy and water audits for hotels, a national consultant on solid waste management and recycling, a team to manage the transport activities, a team for public relations and outreach, and consultants on monitoring and evaluation.

**Figure 2: SCT Project organization structure**

**Project Stakeholders**

**Project**

**Manager**

**Project Board**

**Project Assurance**

UNDP Turkmenistan (Resident Representative, Deputy Resident Representative, head of the Energy and Environment Unit)

(Istanbul Regional Hub)

**Project Implementation Unit**

(logistical and administrative support) and **Field Technical Assistant**

**Project Organisation Structure**

**Team for transport, including full-time Task Leader and national consultants**

**National consultants on monitoring and evaluation**

**International consultants and experts**

UNDP Regional Technical Advisor

(Istanbul Regional Hub)

**National implementing partner**

Ministry of Environmental Protection

**Executing entity**

Ministry of Environmental Protection

**Other members**

Municipality of Ashgabat

Municipality of Awaza

Ministry of Energy, Ministry of Architecture and Construction, UNDP Turkmenistan

**Team for hotel management in Awaza (national consultants on energy and water audit)**

**Team for public relations and outreach, including UNDP Communications Associate**

**National consultant on outdoor lighting**

**National consultant on solid waste management and recycling**

* + 1. **Adaptive Management**

1. Adaptive management is discussed in UNDP evaluations to gauge performance of Project personnel to adapt to changing regulatory and environmental conditions and unexpected situations encountered during the course of implementation, both common occurrences that afflict the majority of UNDP projects. Without adaptive management, donor investments into UNDP projects would not be effective in achieving their intended outcomes, outputs and targets. Much of the adaptive management by the SCT Project Team is described in the following Paras.
2. The first opportunities for adaptive management were squandered by the Project. There were institutional changes that had occurred around the time of the Inception Workshop with the Ministry of Motor Transport (from whom UNDP received agreements during the PPG phase) being transformed into the Agency “Turkmenavtotransport” under the Ministry of Industry which only handled bus transport. This was going to cause problems for the Project in terms of meeting the Project outcomes for transport.
3. Among adaptive management measures suggested in the Strategy Review was a more dedicated focus of the Project on provision of dedicated support to the Ministry of Energy in the development of a number of regulatory legal acts on energy conservation and energy efficiency (aimed at reducing CO2 emissions) such as development of new Laws “On Renewable Energy Sources”, “On Energy Savings and Energy Efficiency”. The Project specifically introduced Article 53 “Standardization” in the Law on Energy Efficiency that requires alignment of timelines for introduction of energy efficiency requirements for a wide palette of goods: consumer electronics, whiteware, and motor fuel energy efficiency. Such concepts of standardization of energy efficiency work were absent in the national legislation prior to the Project’s involvement.
4. Another adaptive management measure was the compensation for the loss of GHG emission reductions from the Project’s transport activities to Project’s effort to support MoE’s efforts to upgrade and introduce modern transformers involving a switch from 6 kV to 10 kV in new settlements in Ashgabat. This effort sought to improve energy efficiency in electricity transmission as detailed in Paras 81-82. For these reasons, adaptive management was able to move the Project forward and is rated as ***satisfactory***.

### Actual Stakeholder Participation and Partnership Arrangements

1. Under the NIM execution modality of the SCT Project, the key to successful stakeholder participation arrangements has been the close involvement and consultations between the Project Team and relevant government ministries, private sector entities and NGOs to collect information on their baseline activities and engaging them to become involved with Project activities. The most important stakeholder relationship is with MoEP who serve as the Executing Agency for the Project and also as the GEF Operational Focal Point and UNFCCC Focal point. Relationships between UNDP and MoEP have been excellent due to many of the PMU personnel who were formerly with MoEP. Other key stakeholder relationships were with:

* the MoE, a key Project implementing partner, on overall Project implementation of the LED streetlighting pilots and the transformer upgrades. The Project was in close contact with the various departments within MoE that oversee streetlighting pilots and transformer upgrades. Relationships between the PMU and MoE were also excellent due to the PMU’s Energy Efficiency Specialist who was formerly a Chief Engineer with MoE;
* the Agency “Turkmenavtotransport” who oversees urban transport issues of the Project;
* the Municipality of Ashgabat managing the urban waste sector;
* the Municipality of Turkmenbashi that manages the Awaza hotel sector;
* Turken Society for Nature Protection, the NGO supported the managing the waste sector;
* the private sector company HJ “Toprak” that manages cardboard waste;
* the entrepreneur Mr. A. Berenov who is managing plastic waste in Ashgabat;
* pilot hotels in Awaza.

1. Overall efforts by the SCT Project team to forge effective partnership arrangements with various stakeholders have been ***highly satisfactory***.

### Project Finance

1. The total GEF budget for the SCT Project was US$6.06 million that was to be disbursed over a 72-month period, managed by a UNDP-PMU under the direction of a Project Board. Table 3 depicts disbursement levels up to 31 October 2024, 5.5 months prior to the terminal date of the SCT Project of 11 April 2025, revealing the following:

* The Project has expended US$5.759 million up to 31 October 2024 with small deviations in expenditures:
  + Component 1 expenditures were relatively on target with an over expenditure of 2.4%;
  + Component 2 was underspent by 13.6%;
  + Component 3 as well as M&E/KM were 36% and 52% underspent respectively; and
  + Project management costs were 40% over the original budget of US$288,573, due to additional management costs for replacing transport activities with transformer upgrades;
  + as of 31 October 2024, the Project still has a surplus of US$301,213.
* The majority of funds were expended on Contractual Services - Individuals (71400), Equipment and Furniture (72200), and International Consultants (71200). These are revealed in Table 4;

1. The Project has also demonstrated that appropriate financial controls are in place, notably through:

* Combined Delivery Reports (CDRs) and Project Budget Balance Report which shows the expenditure and commitments in the current year up to date (both as generated by Atlas/Quantum);
* Manual monitoring of Project expenditures against budget lines to attain an in-depth understanding of the financial progress and the pending commitments.

1. Project co-financing was estimated to be US$72.361 million, modestly above the expected co-financing target of US$64.1 million. Details and a summary co-financing can be found on Tables 5 and 6 respectively. The TE team observes the following details of Project co-financing:

* the majority of co-financing came from the MoE who provided financing of US$72.261 million to purchase and install LED streetlights and transformer equipment;
* there was in-kind co-financing from MoEP. Exact co-financing figures, however, were not released to the Evaluator;
* NGO in-kind assistance for managing waste streams in Ashgabat and plastic recycling. However, exact co-financing figures were not revealed to the Evaluator;
* Cardboard waste recycling at the private sector company HJ “Toprak”. Similar to MoEP and NGOs managing waste streams, exact co-financing figures were not revealed to the Evaluator.

**Table 3: GEF Project Budget and Expenditures for SCT Project (in US$ as of 31 October 2024)**

| **Outcomes** | **Budget (from Inception Report)** | 2018[[10]](#footnote-11) | 2019 | 2020 | 2021 | 2022 | 2023 | 2024[[11]](#footnote-12) | **Total Disbursed** | **Total remaining** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Component 1: Sustainable urban development in Ashgabat - TA | 3,586,533 | 15,886 | 372,868 | 512,204 | 800,050 | 1,082,815 | 376,791 | 512,895 | 3,673,510 | -86,977 |
| Component 2: Sustainable tourism infrastructure and management practices in Awaza - TA | 1,415,080 | 60,171 | 95,661 | 189,765 | 216,602 | 176,730 | 217,123 | 266,027 | 1,222,079 | 193,001 |
| Component 3: Municipal and National Policy | 561,830 | 74,053 | 52,140 | 35,747 | 29,212 | 85,583 | 33,777 | 47,134 | 357,645 | 204,185 |
| Monitoring and evaluation (M&E) and knowledge management | 208,030 | 7,128 | 10,301 | 5,461 | 32,056 | 3,651 | 6,572 | 34,352 | 99,523 | 108,507 |
| Project Management | 288,573 | 42,513 | 72,643 | 47,850 | 161,851 | 34,085 | 32,458 | 14,678 | 406,077 | -117,504 |
| **Total (Actual)** | **6,060,046** | **199,751** | **603,613** | **791,027** | **1,239,771** | **1,382,864** | **666,720** | **875,086** | **5,758,833** | **301,213** |
| Total (Cumulative Actual) |  | 199,751 | 803,364 | 1,594,391 | 2,834,161 | 4,217,025 | 4,883,746 | 5,758,833 |
| Annual Planned Disbursement (from ProDoc) | 6,060,046 | 153,231 | 975,473 | 2,040,737 | 1,638,600 | 648,330 | 415,950 | 187,725 |
| **% Expended of Planned Disbursement** |  | **130%** | **62%** | **39%** | **76%** | **213%** | **160%** | **466%** |

**Table 4: Expenditures by QUANTUM Code**

|  |  |  |
| --- | --- | --- |
| **QUANTUM Code** | **Expenditure Description** | **Spent as of 31 October 2024 (US$)** |
| 71300 | Local Consultants | $173,649 |
| 71600 | Travel | $144,462 |
| 71400 | Contractual Services-Individuals | $1,410,431 |
| 72200 | Equipment and Furniture | $2,806,823 |
| 72400 | Communications and Audio Visual Equipment | $73,761 |
| 72600 | Micro Capital Grants - Credit |  |
| 73400 | Rental and maintenance of other office equipment | $11,610 |
| 74200 | Audio Visual & Print Prod Costs | $232,813 |
| 74500 | Miscellaneous Expenses | $74,477 |
| 76100 | Realized loss/gain | $0 |
| 75700 | Training, Workshops and Conference | $108,064 |
| 72800 | Information Technology Equipment | $23,279 |
| 72500 | Supplies | $12,646 |
| 73100 | Rental & Maintenance-Premises | $8,610 |
| 74100 | Professional Services |  |
| 77660 | Vehicles-Depreciation Expense | $4,883 |
| 72100 | Service Cost | $214,052 |
| 75100 | Facilities | $18,711 |
| 71200 | International Consultants | $440,561 |
| **Total** | | **$5,758,833** |

**Table 5: SCT Project Co-Financing Details**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Classification** | **Name of Co-financier (source)** | **Type** | **Financing Committed (US$)** | **Actual committed (US$)** |
| Partner agency | UNDP | Grant | 100,000 | **100,000** |
| Partner agency | UNDP | In-kind |  |  |
| Government | MoEP | In-kind | 2,000,000 | Not known |
| Government | MoEP | Grant | 40,000,000 | Not known |
| Government | MoE | In-kind |  |  |
| Government | MoE | Grant | 22,000,000 | **72,261,412** |
| Private Sector | HJ “Toprak” | Equity |  | Not known |
| Civil Society Organization | Society for the Protection of Nature of Turkmenistan | In-kind |  | Not known |
| **Total Co-financing:** | | | **64,100,000** | **72,361,412** |

**Table 6: Co-Financing for SCT Project (as of 31 October 2024)**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Co-financing**  **(type/source)** | **UNDP own financing**  **(million USD)** | | **Government**  **(million USD)** | | **Partner Agency**  **(million USD)** | | **Private Sector**  **(million USD)** | | **Total**  **(million USD)** | |
| **Planned** | **Actual** | **Planned** | **Actual** | **Planned** | **Actual** | **Planned** | **Actual** | **Planned** | **Actual** |
| Grants | 0.100 | 0.100 | 64.000 | 72.261 | - | - | - | - | 64.100 | 72.361 |
| Loans/Concessions |  |  |  |  |  |  |  |  |  |  |
| * In-kind support |  |  |  |  |  |  |  |  |  |  |
| * Other (equity investment) |  |  |  |  |  |  |  |  |  |  |
| **Totals** | **0.100** | **0.100** | **64.100** | **72.261** |  |  |  |  | **64.100** | **72.361** |

1. Overall, the cost effectiveness of the SCT Project has been **satisfactory** in consideration of the funds being well spent towards installing LED streetlighting pilots in Ashgabat and Awaza, installing transformer upgrades in Ashgabat, strengthening capacities to manage demonstration pilot projects, all designed to achieve energy efficiency goals that meet GHG emission reduction targets.

### M&E Design at Entry and Implementation

1. The SCT ProDoc does provide for an M&E design on pages 25-29 in the ProDoc which was presented in a fairly generic manner, similar to other M&E designs from other GEF projects, and with preparations for a detailed M&E plan left to the implementation phase of the Project. There was a budget of US$293,300 for GEF-funded M&E activities (US$193,300) and UNDP co-financing (US$100,000), broken down on page 29 of the ProDoc for a PRF that had issues with SMART indicators and targets on transport activities as elaborated in Paras 35-40. As such, the M&E design is rated as***satisfactory***.
2. In terms of M&E plan implementation, the Evaluator had access to PIRs from 2019 to 2024 on the SCT Project, which were informative on progress made on various studies, actions taken by the Project, revised indicators against Project targets and extra activities in collaboration with other donors. This included details of the failed transport activities which were adaptively managed to include transformer upgrades (Paras 52-55). In addition, there was an MTR report completed in August 2021 providing details of pre-2021 Project events, and a Project Strategy Revision Report issued by CTA in September 2021. As such, monitoring of all Project activities is rated as ***satisfactory***.
3. As such, *M&E plan implementation is rated as* ***satisfactory***. Ratings according to the GEF Monitoring and Evaluation system[[12]](#footnote-13) are as follows:

* *M&E design at entry – 5;*
* *M&E plan implementation – 5;*
* *Overall quality of M&E – 5.*

### Performance of Implementing and Executing Agencies

1. Notwithstanding the difficulties in dealing with transport sector interventions on the SCT Project, the close relationship between MoEP[[13]](#footnote-14), MoE and UNDP has been excellent. MoEP has always taken the position that its cooperation with donor agencies such as UNDP, is to resolve problems and issues in a particular sector. In the case of the SCT Project, MoEP implemented the Project instead of just enforcing policies and regulations and found the Project to be very useful in being able to jointly implement pilot projects that demonstrate useful technologies and measures such as waste recycling and LED streetlighting. In the case of LED streetlighting and upgraded transformers, MoEP deferred to MoE to implement these pilots. In the case of waste recycling, MoEP deferred to the Municipality of Ashgabat, NGOs and the private sector for pilots, setting the stage for scale-up and replication. The SCT Project was making contributions to achieve voluntary national GHG emission reduction targets as Turkmenistan’s Nationally Determined Contribution of Turkmenistan under the Paris Agreement to UNFCCC of September 2022. The SCT Project has had the backing of MoEP leadership through frequent and constructive communications with UNDP. The role that MoEP served on the Project has been to:

* develop and deploy tools and measures to limit greenhouse gas emissions in key sectors of the economy in industry, transport, housing and communal services, which are simultaneously capable to maintain high economic growth rates, with the assistance of the Project;
* working closely with the PMU to identify barriers and to execute pilot investments;
* raise awareness of SCT interventions amongst all stakeholders;
* assist in building capacity to engage technical personnel of MoEP, MoE, the private sector and NGOs in the development and execution of SCT interventions; and
* strengthening the performance of SCT Project development and implementation.

The performance of MoEP can be rated as ***highly satisfactory***.

1. UNDP holds a position as a trusted strategic partner to the GoT. Comparative advantages of UNDP are: (a) reputation and positioning; (b) impartiality; (c) technical expertise to support multi-sector strategic frameworks, (d) strong and agile operational presence, and (e) provision of integrated, cross-sectoral solutions, combining policy and regulatory advice with capacity development. Its comparative advantages, especially established presence, trustworthy relations with the Government, global expertise and knowledge, have uniquely positioned UNDP as the lead development partner of the GoT in addressing the three major challenges identified in the Cooperation Framework.
2. For UNDP, there was the positive collaboration with MoEP that led to the successful completion of several SCT interventions, leveraging more MoE resources for scale-up and replication, and technical assistance to personnel of MoEP and MoE, as well as personnel from Ashgabat and Turkmenbashi municipalities. Moreover, the staffing of key PMU positions with ex-government personnel made the relationship between UNDP and GoT much stronger. The performance of UNDP can be rated as ***highly satisfactory***.
3. The performance of implementing and executing entities can be summarized as follows:

* *Implementing Partner (MoEP) –* 6;
* *Implementing Entity (UNDP)* – 6;
* *Overall quality of implementation/execution (UNDP/MoEP)* – 6.

### Risk Management

1. Since the Inception workshop, Project risks were assessed and revised by the PMU that are listed in UNDP’s Risk Register. This includes risks in the Project’s SESP. Project risks were closely monitored by the UNDP Turkmenistan and UNDP’s RTA throughout implementation, notably during the latter years of the Project:

* substantial risk ratings of the Project during 2019 to 2022 based on transformation of the key partner for the transport-related activities, the Ministry of Motor Transport to the Agency “Turkmenavtotransport” where there was a lack meaningful cooperation with the Project. Despite all efforts by UNDP and the Project Board, the Agency “Turkmenavtotransport” related activities were lagging with risks identified that Project would not achieve its intended results before the EoP with no potential for replication of transport-related interventions. The lack of transport pilot projects left an insufficient pipeline of further urban investment plans at that time for the remaining period of the project implementation;
* substantial risk ratings of the Project were decreased to moderate ratings after 2023 as a result of adaptive management activities mitigating the impacts of the COVID-19 pandemic with good progress on Project work with MoE and the securing of US$6 million for the scale-up of LED streetlighting, efforts to upgrade transformers and smart grid infrastructure pilots;
* the PMU consistently monitored the UNDP risk register and revised the risks with the PMU, UNDP CO, and the UNDP’s RTA having regular calls to assess Project progress, risks, and defined mitigation actions.

## Project Results and Impacts

1. This section provides an overview of the overall results of the SCT Project and an assessment of relevance, effectiveness and efficiency, country ownership, mainstreaming, sustainability, and impact of the Project. This analysis of Project results and impacts, however, uses the changes made to the PRF outcomes, indicators and targets shown in Appendix F and Table 7 (with changes in red font). The GEF Tracking Tool for the SCT Project is contained in Appendix E. For Table 7, the “status of target achieved” is color-coded according to the following scheme:

|  |  |  |
| --- | --- | --- |
| Green: Completed, indicator shows successful achievements | Yellow: Indicator shows expected completion by the EOP | Red: Indicator shows poor achievement – unlikely to be completed by Project closure |

### Progress towards objective

1. With the overall objective of this Project being to “*promote and implement integrated low-carbon urban systems in Ashgabat and Awaza, thereby reducing GHG emissions and creating other environmental, social, and economic development benefits*”, the following targets have been achieved as described in the following Paras.
2. With regards to the target of “*366,000 tCO2 reduction in GHG emissions from transport, public lighting, and hotel management, relative to baseline*”, there have been 960,439 tCO2 emission up to 30 June 2024 reductions from public lighting (186,888 tCO2), switchover from low voltage to medium voltage energy transmission (smart grid upgrades) for the city of Ashgabat (738,089 tCO2), and transformer upgrades in Awaza (35,462 tCO2). However, there have been no reductions from greening transport in these cities.
3. For the “*energy consumption target of 6,200 TJ reduction*”, 6,130 TJ was achieved up to 30 June 2024 from public street lighting (1,193 TJ), switchover from low voltage to medium voltage energy transmission (smart grid upgrades) for the city of Ashgabat (4,710 TJ) and transformer upgrades in Awaza (227 TJ).For the transport initiatives, there was no reduction in energy consumption. There is not much concern for this achievement since the LED efforts of the Project catalyzed LED investments into public and commercial buildings. This has led to enormous energy savings in Ashgabat, Awaza and likely other cities in Turkmenistan. Table 8 provides a partial listing of SCT Project GHG Emission reductions from 2018 to 2024.

**Table 7: Project-level achievements against SCT Project Objectives (edits to the PRF are made in red font)**

| **Project Strategy** | **Performance Indicator** | **Baseline** | **Target** | **Status of Target Achieved** | **Evaluation Comments** | **Rating[[14]](#footnote-15)** |
| --- | --- | --- | --- | --- | --- | --- |
| **Project objective:** *To promote and implement integrated low-carbon urban systems in Ashgabat and Awaza, thereby reducing GHG emissions and creating other environmental, social, and economic development benefits* | Reduction in GHG emissions from transport, public lighting, and hotel management, relative to baseline | Total estimated GHG emissions from motor vehicles, public lighting, and hotels in Awaza: approximately 4.4 million tonnes of CO2 per year, projected to grow to 5.0 million tonnes per year by 2020 | 366,000 tonnes of CO2 emissions (cumulative during Project implementation) | 960,439 tCO2 | See Para 72 | 6 |
| Reduction in energy consumption from transport, public lighting, and hotel management, relative to baseline | Total energy consumption from motor vehicles, public lighting, and hotels in Awaza estimated at 75,000 TJ per year, projected to grow to 85,000 TJ by 2020 | 6,200 TJ across all sectors (cumulative during Project implementation) | 6,130 TJ | See Para 73 | 5 |
| Number of direct individual and institutional participants (including both women and men) in project-led initiatives on alternative transport, pilot waste sorting and reduction, and green hotel management | No initiatives in these areas, therefore no participation | 30,000 citizens (15,000 women and girls) | 57,500 citizens (over 90% being women) | See Para 74 | 5 |
| **Component 1: Sustainable urban development in Ashgabat**  ***Targeted Outcomes:***   * Improved capacities and enabling conditions in Ashgabat to identify, design and implement integrated low-carbon and climate-resilient solutions in public space * Reduced GHG emissions and other negative environmental impact through interventions involving public spaces and infrastructure | Transport data collected and analyzed and roundtables organized with the mayoral office to inform on successful regional pilot cycling networks and for contacting a high-quality design team when the mayoral office is ready | No transport data collected and no information at mayoral office on successful cycling networks | Transport data collected and roundtables organized with the mayoral office to inform on successful pilot cycling networks in CIS region and for contacting a high-quality design team when the mayoral office is ready | No transport data collected and no roundtables on successful cycling networks | See Paras 76-79 | 1 |
| Promote safe bicycling | No efforts to promote safe cycling | Promotion of safe bicycling | No efforts to promote safe cycling | 1 |
| Number of EVs and EV charging stations | 0 EVs and EV charging stations | 4 electric buses and one EV solar charging station | 0 electric buses and EV solar charging station | 1 |
| Reduction in electricity consumption from public outdoor lighting in Ashgabat and all of Turkmenistan | 131 million kWh of annual electricity consumption by street lighting in all of Turkmenistan in 2015, projected to grow to 192 million kWh by 2023; 67 million kWh in Ashgabat in 2015, projected to grow to 75 million by 2023 | 1.5 million kWh per year in Ashgabat  8 million kWh per year in all of Turkmenistan | 55.355 million kWh/yr in Ashgabat  Electricity consumption in all of Turkmenistan is not known | See Para 80 | 6 |
| Reduction in landfill waste from Ashgabat relative to baseline from recycling and waste reduction programs | Baseline figures not available; to be determined during the first project year | Increase in recycling volume by 10 percent  Increase in use of secondary raw materials by 25% | 10%  150% | See Para 83 | 5 |
| **Component 2: Sustainable tourism infrastructure and management practices in Awaza**  *Targeted outcomes:*  *• Improved capacities and enabling conditions in Awaza for integrated low-carbon and climate resilient tourism development*   * *Reduced GHG emissions and other negative environmental impact through interventions involving tourism facilities and infrastructure in Awaza* | Reduction of energy consumption and water consumption in Awaza hotels | Baseline data unavailable. To be obtained by facility audits in first three project years. | Reduction in energy and water consumption per guest by an average of 10%[[15]](#footnote-16) | 15% reduction in energy in pilot hotels  56% reduction in water consumption in pilot hotels | See Paras 88-91 | 5 |
| Reduction in landfill waste from Awaza relative to baseline from recycling and waste reduction programs | Baseline figures not available; to be determined during the first project year | Increase in recycling volume by 10 percent  Increase in use of secondary raw materials by 25% | 0 | See Para 92 | 3 |
| Adoption and implementation of green hotel management standards by Awaza hotels | No green hotel management standards; only piecemeal application of some practices by individual hotels | Green hotel management standards adopted and implemented | Green hotel management standards are currently being reviewed. | See Para 93 | 4 |
| Number and capacity of solar-powered charging stations for electric cars | No solar charging stations | 10 solar charging stations installed nationwide at 3 different sites | 0 | See Para 94 | 5 |
| **Component 3: Municipal and National Policy**  Targeted outcome:   * Nationwide replication and scaling-up of results of first two components via information dissemination, enhancement of capacity of agencies and managers, and adoption of policies and regulation | Existence and content of fuel economy standards and incentives for passenger vehicles | No national fuel economy standards, except for stipulations on maximum engine capacity (3.5 liters) and age of cars sold in Turkmenistan | Implementation of standards and incentives, and verification of actual increase in fuel efficiency of cars by 6 percent (up to 11.3 km/l) |  | See Para 96 | 1 |
| Number of cities of Turkmenistan (and total population therein) that formally adopt sustainability practices in transport, lighting, and waste management | No cities have adopted formal sustainability practices | 2 cities in Turkmenistan with total population of at least 175,000 that have formally adopted sustainability plans | Only City of Arkadag has formally adopted sustainability plans | See Paras 97-99 | 4 |
| Number of citizens reached by public-relations and knowledge-sharing on sustainable urban development | No outreach on sustainable urban development in Turkmenistan | 500,000 citizens (250,000 women and girls) |  | See Paras 100-101 | 5 |

**Table 9: SCT Project GHG Emission reductions from 2018 to 2024 (up to 30 June 2024)**

| # | **Beneficiaries** | **Equipment and Number of Units** | **Date Commissioned** | **Installed Capacity (kW)** | **Cumulative Energy Saved (MWh)** | **Cumulative CO2 Reduction (tCO2)** | **Total co-financing cost (US$)** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | City of Ashgabat | 91,400 LED Street lights 210W to replace 400W HPS lamps | August 2019 to December 2022 | 19.30 | 195,083 | 110,027 | 43,320,890 |
| 2 | City of Ashgabat | 66,414 LED lightbulbs 12W to replace 100W incandescent lightbulbs in park luminaires | August 2019 - January 2022 | 0.80 | 136,278 | 76,861 | 1,487,893 |
| 3 | Awaza City Hotels | Miscellaneous equipment**[[16]](#footnote-17)** | December 2022 | 1.87 | n/a | n/a | 0 |
| 4 | City of Ashgabat | 770 containers for separate waste collection | March 2022 | n/a | n/a | n/a | n/a |
| 5 | City of Ashgabat | Miscellaneous equipment[[17]](#footnote-18) | May 2024 | n/a | n/a | n/a | 0 |
| 6 | City of Ashgabat | 1,214 transformers (10/0.4kV; 110/35kV; 35/0.4kV) | January 2022 | n/a | 730,778 | 412,159 | 13,794,738 |
| 7 | City of Ashgabat | 396.7 km of electric cable (wire) replacements | January 2022 | n/a | 577,890 | 325,930 | 12,090,517 |
| 8 | City of Awaza | Replacement of 1,683 HPS and MV luminaires with LED lights | January 2023 | 0.69 | n/a | n/a | 1,023,906 |
| 9 | City of Awaza | Replacement of 16,668 100W park luminaires with 12W LED luminaires | May 2023 | 2.83 | n/a | n/a | 295,262 |
| 10 | City of Awaza | Replacement of 11 transformers to avoid commercial losses | March 2023 | n/a | 62,876 | 35,462 | 248,206 |
| **Totals** | | | |  | **1,702,906** | ***960,439*** | **72,261,412** |

1. With regards to the target of “*30,000 citizens (50% women) as direct individual and institutional participants (including both women and men)”*, 57,500 persons (including 90% women) actually benefitted from Project-led initiatives and cooperation with 2 recycling companies on pilot waste sorting and reduction of cardboard and plastic waste, and green hotel management in Awaza. For efforts in LED lighting and transformer upgrades, there were many more direct beneficiaries that were too difficult to quantify though these efforts benefitted women and men equally. There were no direct beneficiaries related in Project efforts in alternative transport.

### Progress towards Outcomes in Component 1

1. The outcomes of Component 1 are:

* the improved capacities and enabling conditions in Ashgabat to identify, design and implement integrated low-carbon and climate-resilient solutions in public space; and
* reduced GHG emissions and other negative environmental impact through interventions involving public spaces and infrastructure.

The following Paras provide narratives on the progress towards these outcomes.

1. The MTR of the Project made some changes to activities of this Component to better suit the field conditions of the Project, notably with the transport activities. Previously, the Project had the design and construction of dedicated bus and bicycle lanes, design of e-passes, map updates, and a mobile app for riders, and behaviour-choice programs and outreach on sustainable transport in Ashgabat. The revised Project design changed to indicators and targets as follows:

* transport data collected and analyzed and roundtables organized with the mayoral office to inform on successful regional pilot cycling networks and for contacting a high-quality design team when the mayoral office is ready;
* promotion of safe cycling; and
* 4 electric buses and one EV solar charging station.

1. With regards to the target of “*transport data collected and analyzed and roundtables organized with the mayoral office to inform on successful regional pilot cycling networks and for contacting a high-quality design team when the mayoral office is ready*” and the “*promotion of safe cycling*”, there has been no progress. Since the launching of the Project, the Ministry of Motor Transport[[18]](#footnote-19) was transformed into the Agency “Turkmenavtotransport” under the Ministry of Industry. Later, the Agency was reformed further into an agency responsible for only bus transportation with rail, air, and cargo transport activities transferred to other agencies. As such, the Agency had limitations in exercising its mandates for transport beyond bus travel.
2. From 2021 to June 2023 (after the COVID-19 pandemic), the State Organization for Standardization started to cooperate with the Project for further introduction of more stringent fuel efficiency requirements for imported cars. However, as of December 2023, this Organization did not permit a Project-led review of the existing fuel emissions standards citing concerns by the Customs Authorities that more stringent standards will reduce imports of cars that may result in lower customs duties revenue, which was not sanctioned by the President and was not compensated by a different source of income by the Ministry of Finance. The Agency “Turkmenavtotransport” also prevented any activities with Project consultants due to fear of disclosing the bus route data, economics, and problematic spots to outside observers. As such, all Project activities related to the collection and analysis of transport data and mayoral office roundtables on successful regional pilot cycling networks, and the promotion of safe cycling, were halted.
3. As for the target of “*4 electric buses and one EV charging station*” for Ashgabat, plans were made in late 2023 to supply up to 10 EVs and solar-powered EV chargers to be funded and installed by the Government organizations across Ashgabat, specifically the model City of Arkadag, located 20 km northwest of Ashgabat. In April 2024 after the completion, commissioning and settlement of Arkadag city, the Turkmenavtotransport Agency requested Project support in preparation of an “Urban Sustainable Transportation and Interconnectedness Atlas”. The Agency was provided with examples of Atlases with heat maps for both developed and developing transportation markets in the United States and Chile. These heat maps of transport-related indicators are designed to help the cities in prioritization of future investments into climate resilient infrastructure. It is aimed at delivering long-term effectiveness of public and private transport use, introducing incentives for a switchover from private-car transportation to e-bus mode thereby reducing the use of private cars on routes already served by e-buses[[19]](#footnote-20). The Project is scheduled to use this Atlas in 2025 for a pilot use in Arkadag with the consultancy moving slowly.
4. With regards to the target for “*reduction in electricity consumption from public outdoor lighting of 1.5 million kWh per year in Ashgabat and 8 million kWh per year in all of Turkmenistan”*, progress has been excellent:

* in late 2020, the Project reached an agreement with the MoE to replace inefficient luminaires with 300 LED lamps for street lighting. These were non-volatile LED street lighting lanterns with a power of 120 W and 2 sets of street lighting control cabinets set with intelligent networks and software on street lighting controls that were installed on the pilot site. The purpose of the pilot project was to demonstrate the positive results from the introduction of modern LED lamps and smart networks into the city's street lighting systems for controlling the operation of the street lighting system;
* by 30 June 2022, the pilots sponsored by the Project along with the parallel investments launched and co-financed by the government had achieved over 148,000 MWh of energy savings and 83,900 tCO2 emission reductions cumulatively from LED lighting upgrades in Ashgabat;
* by 30 June 2023, more LED pilots were implemented resulting in cumulative energy savings of 241,569 MWh and emission reductions of 136,245 tCO2 in Ashgabat
* by 30 June 2024, the LED pilots contributed to cumulative energy savings of 282,312 MWh of and cumulative emission reductions of 160,000 tCO2 in Ashgabat;
* the successes of the LED pilot rollouts at critical road junctions in Ashgabat resulted in the facilitation of public investments into full switchovers to LEDs in Ashgabat as well as Awaza. The first replacement of all LED streetlights across the two cities amounted to the replacement of over 300,000 luminaires. The co-financing leveraged by the LED pilots exceeded the target by a factor of 15;
* LED lighting in commercial establishments and public buildings and to a certain extent, private households, have converted to LED luminaires. This has an enormous impact on energy savings and GHG emission reductions of the Project as indirect impacts. Previous luminaires for all public buildings were mainly compact fluorescent lamps (CFLs).

1. In parallel and compensation for the loss of GHG emission reductions from the Project’s transport activities, the Project supported MoE’s efforts to upgrade and introduce modern transformers involving a switch from 6 kV to 10 kV in new settlements in Ashgabat. This effort sought to improve energy efficiency in electricity transmission.
2. Starting with studies and 14 sessions in energy audits in 2019 with MoE personnel, a group of energy auditors in streetlighting systems, electrical networks and transformers within the high-voltage testing laboratory of “AshgabadEnergo” was created with the Project purchasing new equipment to replace old measurement equipment at the laboratory. This led to:

* MoE officially agreeing on the specification and technical characteristics for the purchase of new transformers in August 2020;
* energy audits of the pilot section of electricity distribution network prior to the dismantling of old transformers, and after the replacement of old transformers, switching from 6 kV to 10 kV voltage with the replacement of old overhead power lines in February 2021;
* purchase and installation of 60 transformers by the Project for the reconstruction of electrical distribution networks in newly connected settlements of Ashgabat in March 2021;
* installation of over 100 of MoE procured additional transformers on new grid sections alone in 2022;
* purchase and installation at MoE expense of more than 370 km of modern 0.4 kV and 35 kV power cable products in power networks of Ashgabat and other cities of Turkmenistan.

Payback periods of these investments ranged from 1.8 to 3.2 years. The grid modernization component is a major contributor to the total GHG emissions reduction goal of the Project.

1. With regards to the target of “*increasing recycling volume by 10% and an increase in use of secondary raw materials by 25% for landfill waste from Ashgabat relative to baseline from recycling and waste reduction programs*”, targets have been successfully achieved. The Project together with the Society for Nature Protection of Turkmenistan launched an information campaign on plastic collection in 2019. In addition, the Project purchased 120 metal mesh containers that were distributed to industrial areas, sports facilities, schools and hotels. After phased growth of the information campaign, the number of participants from the civil society increased and wastepaper and glass were collected. Restrictions during the pandemic served as special impetus for expansion of the information campaign, which contributed to active involvement of the population in the waste sorting process.
2. In parallel, the Project performed educational public awareness activities, where popular lectures were delivered to schoolchildren, students and young environmental activists. Each lecture ended with the planting of tree seedlings with more than 16,600 seedlings distributed and planted.
3. Successful implementation of the information campaigns increased the scale of recycling, enabling partnerships to be established with processors of plastic with entrepreneur Mr. A. Berenov, wastepaper with private sector company HJ “Toprak”, and glass (not visited). To facilitate waste transportation to processors, two “Gazelle” vehicles were purchased for the Nature Protection Society of Turkmenistan. These actions led to a significant diversion of waste to landfills. Reported reductions of landfill volumes reached 8.5% in early 2024 and is projected to reach the target of 10% by the EoP in April 2025. The use of secondary raw materials has already reached 150% compared to the initial level, which is 7 times higher than the Project target).

### Progress towards outcomes in Component 2

1. The outcomes of Component 2 are:

* improved capacities and enabling conditions in Awaza for integrated low-carbon and climate resilient tourism development;
* reduced GHG emissions and other negative environmental impact through interventions involving tourism facilities and infrastructure in Awaza.

The Turkmenbashi municipality served as a national partner for the Project, coordinating all activities of this Component. The following Paras provide narratives on the progress towards these outcomes.

1. This component started in 2022 as the Project struggled to recruit an Awaza-based person to coordinate the activities. In 2022, a person was recruited by UNDP who had previously been the head of a government environmental agency based in Turkmenbashi, the Ecological Service “HazarEcoControl”. This provided the coordination and leadership for efforts to raise awareness on sustainable cities by the Project and a strong link with the Turkmenbashi municipality. Seminars were conducted on an annual basis in 2022, 2023 and 2024 for both Ashgabat and Awaza on actions and measures in support of sustainable cities.
2. With regards to the target of “*reduction in energy and water consumption per guest by an average of 10%*”, 3 hotels (Hasyl, Seyrana and Balkan hotels) out of 14 hotels in Awaza had agreed by early 2022 to have meters installed to monitor how much electricity, water and gas they were consuming. By late 2022, energy, water and gas surveys and audits were conducted. Data was collected and analyzed by Project experts to see what was expended on electricity, water and gas, and what were the possibilities for savings in utility costs. Incentives for saving electricity, water and gas are based on the metering of these utilities with inspectors monitoring these meters and providing billings based on usage. With tariffs for electricity, water and gas being higher for hotels and public organizations (than for households but lower than commercial), the other pilot 11 hotels are keen to reduce utility bills but need to first observe the results of the sustainable pilot measures for hotels.
3. Some of the measures implemented in hotels by December 2022 included:

* conversion of CFL to LED lighting systems in the pilot hotels. Some of these LEDs were purchased by the Project;
* 51 kW solar panels purchased by the Project for the Hasyl hotel as a pilot;
* the use of solar heat for some of the lobbies;
* the use of electricity for heating and cooking instead of gas;
* installation of water saving nozzles in all rooms in pilot hotels saving 56% of water in the first year. Most water is sourced from 2 desalination plants in and around Awaza. This applies to domestic consumption, and irrigation water (from wastewater). Some of the nozzles were purchased by the Project;
* drip irrigation system for trees on each pilot hotel compound. While this saved water, coniferous trees are fire hazards in the Turkmenistan climate thus requiring more water; however, it is recognized that coniferous trees absorb more CO2 than endemic species; and
* use of electrical lawn mowers and cutting equipment in place of gas-fired equipment. This generated additional energy savings from composting grass cuttings diverting diesel fuel transport to landfill, and chopping up tree waste for more compact truck hauling, all to reduce GHG emissions.

Training was provided to hotel personnel on the use and maintenance of all equipment. Hotel workers were very pleased with the composters as it saved them a lot of work.

1. Privatization was supposed to be the incentive and cost advantage for hotels to become more cost-effective in their utility expenditures with higher tariffs for electricity, water and gas for hotels and public organizations. However, privatization did not occur due to the COVID-19 pandemic and the falling off of tourist volumes post-pandemic. Contrary to conventional wisdom, these pilots have pilot hotels continually thinking of additional opportunities for saving energy and water.
2. Additional activities to reduce energy consumption in Awaza came with the conversion of streetlight high-pressure sodium (HPS) and mercury-vapour (MV) lamps (from 100 W to 50 W), indoor and park CFLs to LEDs (from 20 W to 5 W in early 2023, and the introduction of solar-PV energy for streetlighting which has saved 43 MWh of electricity. There were also 11 transformers purchased by MoE that were of a lower voltage.
3. With regards to targets of “*increase in recycling volume by 10% and increase in use of secondary raw materials by 25%*” in Awaza, Project activities are not expected to reach the target. The Project has launched a waste sorting initiative in a pilot hotel, where staff members have been instructed to separate organic waste for on-site composting, following internal hotel management guidelines. The use of composters (4 at the Hasyl Hotel) for grass cuttings diverts a small amount of waste from landfills. These initiatives, among others, aim to promote green practices in hotel management. However, the volumes of waste in Turkmenbashi (population of 73,000) are too small for any recycling and waste reduction programs to be considered. Only a city with the population of larger than 100,000 (such as Ashgabat) should be considered for such programs.
4. With regards to the “*adoption and implementation of green hotel management standards by Awaza hotels*”, hotels are now intaking the results of the pilots and considering actions to reduce electricity, gas and water consumption. Green hotel management standards will follow once all 14 hotels in Awaza have implemented sustainability measures.
5. With regards to the target of “*10 solar-powered charging stations for electric cars*”, this will not be reached. Currently, there are car parks outside of Awaza for tourists to park their cars and take petrol-fueled buses and taxis to the hotels. After analysis of the transport routes of the buses and taxis were analyzed, there are plans to convert these vehicles into EVs but not on this Project since there is insufficient time to complete this task. The two only EVs in Awaza reportedly belong to a commercial bank who have their own privately owned charging stations.

### Progress towards Outcome 3

1. The outcome of Component 3 is the “*nationwide replication and scaling-up of results of first two components via information dissemination, enhancement of capacity of agencies and managers, and adoption of policies and regulation*”.
2. With regards to the target of “*implementation of standards and incentives, and verification of actual increase in fuel efficiency of cars by 6 percent (up to 11.3 km/l)*”, this target will not be reached by the EoP. While a national consultant was hired for this activity, the activity was not implemented following multiple discussions with GosStandard, Turkmenistan’s standardization agency. In late 2023, GosStandard was placing priority on green buildings standard preparation and that it lacks capacities to evaluate proposals for an upgrade of the fuel emissions standards. The Agency was going to use the proposals that the Project drafted for green hotel standards and convert them into green buildings standards for new construction in the wake of entry into force of the EU Zero Buildings Regulations in May 2024.
3. With regards to the target of “*2 cities in Turkmenistan with total population of at least 175,000 that have formally adopted sustainability plans*”, the “Law on Energy Savings and Energy Efficiency” was developed with assistance of the Project and officially adopted as of April 2024. This law will serve as the cornerstone of the country's energy sustainability, paving the way for a green energy transition in the near future. This has helped the City of Arkadag (with 2024 population of over 60,000 people) adopt a sustainable city development plan in 2024 following the engagement of the staff of Ashgabat mayoral office from where the staffing of the mayoral office of the city of Arkadag was made. The lessons learned from Ashgabat’s LED lighting transformation, transformer upgrades and waste recycling efforts have catalyzed sustainability plans in Arkadag. In addition, Arkadag reportedly has a programme of EV buses planned.
4. To assist in the enforcement of sustainable cities plans, a Memorandum of Cooperation was signed between the MoEP and UNDP in 2020 to enable UNDP to assist in improving national environmental legislation, improving environmental monitoring system and waste management system, and fulfilling obligations under international conventions. Joint efforts are being made to prepare new regulatory legal acts, work on environmental education and enlightenment, and addressing climate change issues including:

* “Programs for improving the system of state environmental monitoring in Turkmenistan”;
* draft new regulatory legal act “Procedure for state monitoring of the state of atmospheric air in Turkmenistan”;
* draft new regulatory legal act “Procedure for accounting for emissions of pollutants into the atmospheric air in Turkmenistan”;
* draft new regulatory legal act “Waste Classifier”;
* draft new regulatory legal act “Criteria for determining the hazard of wastes”;
* draft new regulatory legal act “Limit(s) on waste disposal”;
* draft new regulatory legal act “Procedure for state registration and control of waste management”;
* additions and amendments to the Law of Turkmenistan “On Waste” (dated 2015);
* additions and amendments to the Law of Turkmenistan “On environmental impact assessment” (dated 2014);
* additions and amendments to the Law of Turkmenistan "On protection of the ozone layer" (dated 2009);
* preparation of draft new Law of Turkmenistan "On limiting greenhouse gas emissions"; and
* methodological manual “User's Guide for Greenhouse Gas (GHG) monitoring in order to perform calculations of greenhouse gas emissions reduction”.

1. Expanding urban sustainability practices to other cities across the country, however, has been hindered by the absence of public budget allocations in their annual budgets. Turkmenbashi municipality, for example, did not get public allocations from the national budget to follow-up on its sustainability plans that were supposed to cover transport and waste recycling activities. Despite the Project's proven success and the evident benefits of these practices, it has encountered challenges securing budgetary allocations from the central government, which prioritizes other initiatives. While the Project acknowledges that national and city budget decisions are outside its control, the Project has remained committed to promoting sustainability practices and enhancing national capacity as much as possible. Overall, it is premature to expect that by the EoP, sustainability policies in the waste and transport sectors could be replicated outside of Arkadag city.
2. With regards to the target of “*500,000 citizens (250,000 women and girls) reached by public-relations and knowledge-sharing on sustainable urban development*”, numerous events and media campaigns have been organized. The Project’s latest interventions in this regard are the continuation of an information campaign in the field of waste management and waste recycling to Balkan and Mary Velayats in addition to Ashgabat designed by the Society for the Protection of Nature of Turkmenistan. This brings the total coverage of residents to about 2 million people (including over 1 million of women and girls) accounting for television programs, news releases on the state channel, and subscriptions and circulation of national publications. A sampling of activities included:

* participation in the round table on 26 January 2024, “Youth for Climate Action” with the Institute of International Relations, State Energy Institute, International University of Oil and Gas and others[[20]](#footnote-21) ;
* SDG lectures “Tasks of sustainable development of cities and towns, ensuring decent living conditions for the population” and “The role of a reliable and sustainable energy system in ensuring sustainable development. International initiatives and experience of Turkmenistan”;
* 6 Higher Educational Institutions “Women Scientists in the Fight against Climate Change” 3 March 2024[[21]](#footnote-22);
* Conference at the State Energy Institute of Mary, 18-20 March 2024[[22]](#footnote-23);
* Organization of educational training on April 25-26, 2024. within the framework of the Regional Project “Climate Education to Promote SDGs and Action on Climate Change”[[23]](#footnote-24);
* Sustainable Energy Days in Ashgabat and Turkmenbashi from 27 April 27 to 3 May 2024 with lectures at universities, conference and environmental action in the most energy-efficient school in Turkmenbashi[[24]](#footnote-25);
* while climate change and energy savings activities were promoted, there has been a lack of activities that promote conservation of water, an emerging issue for Turkmen cities that are dealing with trends of decreasing rainfall.

1. Finally, renewable energy has been promoted by the Project in cooperation the State Energy Institute of Turkmenistan (SEIT) of the Ministry of Energy, and the Research and Production Center for Renewable Energy at the State Energy Institute for the development of renewable energy. Positive results were generated in:

* the creation of regulatory framework for the development of renewable energy and energy efficiency. A series of training seminars was held to study international experience in preparation of regulations on renewable energy development. The existing regulatory framework for the electric power industry has been analyzed, followed by a list of regulatory documents that needed to be prepared for the sustainable development of the electric power industry of Turkmenistan. As a result of the joint cooperation of international Project specialists and MoEP and SEIT specialists, several legislations were prepared including:
  + the new Law “On Renewable energy sources” (adopted by the Mejlis (Parliament) of Turkmenistan on 13 March 2021;
  + new regulatory legal acts to the Law “On Renewable Energy Sources” in the amount of 12 acts (11 of them are registered by the Ministry of Justice); and
  + new by-laws to the Law "On Electric Power Industry" in the amount of 8 pieces (all registered by the Ministry of Justice).
* professional development at SEIT of specialists and training of young specialists in the field of renewable energy and energy efficiency. A new faculty on sustainable energy, development of renewable energy and development of energy efficiency for advanced training of specialists of the Ministry of Energy departments has been opened at SEIT. The Project conducted 10 training seminars and 4 international conferences with participation of international consultants and project specialists, and a series of training lectures were organized for teachers and students of SEIT. Nine competitions were held among State Energy Institute young scientists on sustainable energy, development of renewable energy the development of energy efficiency. The winners of the competitions were awarded with the relevant UNDP certificates.
* creation of a research laboratory. The Project purchased laboratory devices and equipment to create the research laboratory for the Production Center for Renewable Energy at the State Energy Institute to conduct research work. This created opportunities for SEIT scientists to conduct research work on the study of the features of the operation of a renewable energy generation system in the climatic conditions of Turkmenistan. This facilitated the obtaining of valuable scientific data, which were used in preparation of recommendations on selection of equipment for a new 10 MW solar and wind power plant (built on the shore of the Turkmen lake Altyn Asyr).
* creation of a training laboratory. The Project purchased appropriate laboratory devices and equipment to create a training laboratory was created to improve the practical skills of SEIT students in the electrical equipment and power transformers. This has created opportunities for SEIT students to improve their practical skills on sustainable energy, renewable energy development and energy efficiency implementation.

1. Overall, the work under this outcome was completed with delivery of this outcome is rated as **satisfactory**.

### Relevance

1. The SCT Project is relevant to the development priorities of Turkmenistan related to a number of national strategies and plans including:

* the National Programme for Socio-Economic Development, 2011-2030, which aims to accelerate growth with stronger institutions and policies, increased synergy between the public and private sectors, greater use of technology, and integration into the global economy. This was complemented by the Presidential Programme for Socio-Economic Development of Turkmenistan, 2019-2025 that constituted a strategic framework focused on market reforms, delivery of SDGs, economic diversification, and investment in human capital;
* the National Strategy on Climate Change (NSCC) approved in June 2012, that outlines the country’s long-term vision for promoting renewable energy and low-emission development of the economy. The NCCS is intended to give substance to Turkmenistan’s commitments to both climate change mitigation and adaptation, while supporting the nation’s continued economic growth through modernization, diversification, and strengthening global (Para 114, 2nd bullet);
* the Third National Communications of Turkmenistan of 2015 which has a number of measures to mitigate climate change (Para 114, 3rd bullet);
* Turkmenistan ratifying the Paris Agreement on 21 October 2016;
* Turkmenistan committing to the SDGs, which it nationalized in 2016 with its Voluntary National Review reports progress toward nationalized targets for social policy, market transformation, and climate change adaptation and mitigation accompanied by large-scale investments in physical infrastructure continue, and investment is made in human capital and institutions;
* MoEP renewing the NCCS in 2019 to meet the requirements of Paris Agreement;
* MoEP developing the Turkmenistan’s 4th NC to UNFCCC during 2021-2024 (with the support of SCT project).

1. United Nations in Turkmenistan was implementing a 5-year Development Assistance Framework (UNDAF) from 2016 to 2020. Climate change mitigation and adaptation are included as one of key focus this framework, corresponding to the strategic legislative framework of Turkmenistan. UNDP in Turkmenistan had its own Country Programme Document (CPD) for 2016-2020 that focused on:

* energy efficiency, energy management, and implementation of the National Law Emission Development Plan;
* environmental protection and resource management, especially water management and implementation of the NAP;
* strengthening the rule of law; and
* increasing accessibility, quality, and reporting of data, for more effective use in research and evidence-based policymaking.

1. The SCT ToC is also relevant in the promotion of investments and technical assistance in SCT technologies and expanding access to improved energy efficiency and waste management for all targeted groups. This includes the poor within the framework of “leave no one behind agenda”. Thus, it can be concluded that the SCT Project is **relevant** to the development priorities in Turkmenistan, namely through the NCSS, UNDAF and UNDP CPD for Turkmenistan, and Turkmenistan’s 3rd NC to UNFCCC.

### Effectiveness

1. The effectiveness of the SCT Project has been ***satisfactory*** in consideration of the responses to the Project’s interventions, notwithstanding the issues with sustainable transport. The technical assistance provide by UNDP has been exemplary in building capacity of government personnel and service providers, efforts to explain the benefits of energy efficiency and sustainable waste management to beneficiary stakeholders, and to achieve the intended outputs and outcomes. The national implementing entity, MoEP (formerly MoAEP), has had oversight of all aspects of SCT Project implementation, a role described in Para 65.
2. With participatory Project management and implementation with all relevant stakeholders that contributed towards achievement of the targets, the PMU was able to overcome most implementation issues. The Project has indirectly contributed to the well-being and human rights of vulnerable groups, including disabled, youth and indigenous people, effectively contributing to “leave no one behind agenda” and successfully integrating a human rights-based approach. This was mainly done through energy efficiency and waste management pilot interventions which if replicated in other cities will benefit several thousand more people. The Project mobilized over US$72 million of investment in LED lighting and transformer upgrades that has or is projected to grow to other cities in Turkmenistan. Sustainable waste management in Ashgabat is also growing based on the cardboard and plastics recycling pilot of the Project. There is reportedly an additional investment in a larger cardboard and plastic recycling facility in Ashgabat.
3. With regards to the effectiveness of the Project on sustainable transport, this Evaluator is of the opinion that sustainable transport should never have been proposed for the SCT Project. Reasons for this opinion are:

* the potential for GHG emission reductions from sustainable transport in Ashgabat or Awaza is small and insignificant. This includes EV pilots, shared rides, dedicated bus lanes and improved fuel efficiencies for ICE vehicles;
* there have been efforts by GoT independent of the Project to have a sustainable transport pilot through an operational fleet of electric buses for public transport in Arkadag. The mayor’s office in Arkadag is planning to monitor the fleet performance of these buses. The Project never became involved with this pilot;
* institutions in Turkmenistan overseeing transport issues were not ready for sustainable transport activities as planned in the ProDoc;
* insufficient incentives for institutions and individuals due to low fuel tariffs to convert ICE vehicles into EVs in Ashgabat, Awaza or any other city in Turkmenistan.

As such, efforts on sustainable transport for the SCT Project are being disregarded.

### Efficiency

1. The efficiency of the SCT Project has been rated as ***satisfactory*** as the Project was implemented in a 6-year, 10-month period, over a design period of 6 years. There were difficulties to implement the Project during COVD-19 pandemic, forcing the Project extend from June 2024 to April 2025. However, prudent management by the PMU and strong M&E activities kept the Project on schedule to achieve intended results. This included economical use of human resources.
2. The cost efficiencies of technical assistance and investments provided by the Project were satisfactory. This included the adaptive management on the issues of sustainable transport, and converting these activities to transformer upgrades and modernized cabling which had far more significance in terms of GHG emission reductions. Co-financing of these interventions as well as LED streetlights by the MoE contributed to reducing the overall Project costs, increasing GHG direct emissions of the Project, and freeing up GEF resources to address other issues such as waste management in Ashgabat and sustainable hotel management in Awaza.

### Mainstreaming

1. The SCT Project has managed to mainstream the concept of sustainable cities. Most notable Project activities to mainstream SCT Project activities were:

* all stakeholders (GoT ministries, public agencies, and the private sector) being aware of supported activities and investments projects for LEDs. Though the Project LED pilots were only for streetlighting, hotels and public buildings and commercial establishments all converted their lighting to LEDs in Ashgabat, Awaza and Turkmenbashi. There are reports that LEDs in streetlighting, public buildings and commercial establishments are now prevalent in other cities in Turkmenistan;
* through Project interventions and efforts by the Society for the Protection of Nature of Turkmenistan to make recycling in waste management mainstreamed as detailed in Para 100. These campaigns have reached over 2 million people of which at least 50% were women and youth;
* leading efforts to mainstream water conservation in the Awaza hotel sector. To date, however, there has been a lack of activities that promote conservation of water in other cities including Ashgabat. There needs to be more activities to mainstream this increasingly important issue for all cities in Turkmenistan with climate change expected to decrease rainfall amounts in Turkmen cities.

### Overall Project Outcome

1. Project outcomes have been ***satisfactory.*** The Project has successfully supported GoT in the promotion and implementation integrated low-carbon urban systems in Ashgabat and Awaza, thereby reducing GHG emissions and creating other environmental, social, and economic development benefits. The outcomes of the Project have been successful in:

* improving capacities and enabling conditions in Ashgabat to identify, design and implement integrated low-carbon and climate-resilient solutions in public space such as LED streetlighting, transformer upgrades, modernized cabling improvements and waste recycling (Outcome 1.1);
* reducing GHG emissions and other negative environmental impact through interventions involving public spaces and infrastructure such as LED streetlighting, transformer upgrades, modernized cabling improvements and waste recycling (Outcome 1.2);
* improved capacities and enabling conditions in Awaza for integrated low-carbon and climate resilient tourism development targeting reduction of energy, gas and water consumption (Outcome 2.1);
* reducing GHG emissions and other negative environmental impact through interventions involving tourism facilities and infrastructure in Awaza including a reduction of energy, gas and water consumption (Outcome 2.2);

1. One outcome that the Project did not fully achieve was Outcome 3, the nationwide replication and scaling-up of results of first two components. While there was information dissemination to over 2 million people and the enhancement of capacity of agencies and managers on sustainable city principles, sustainable city principles were being adopted in Arkadag, only one city out of a target of 4 cities. In addition, policies and regulations (including green building standards for hotels and public buildings) were still being developed as of the time of the writing of this report. However, policies and regulations on water conservation are not being actively developed at this time.

### Sustainability of Project Outcomes

1. In assessing sustainability of the SCT Project, the Evaluators asked, “how likely will the Project outcomes be sustained beyond Project termination?” Sustainability of SCT Project outcomes was evaluated in the dimensions of financial resources, socio-political risks, institutional framework and governance, and environmental factors, using a simple ranking scheme:

* *4 = Likely (L):* negligible risks to sustainability;
* *3 = Moderately Likely (ML):* moderate risks to sustainability;
* *2 = Moderately Unlikely (MU):* significant risks to sustainability; and
* *1 = Unlikely (U):* severe risks to sustainability.

Overall rating is equivalent to the lowest sustainability ranking score of the 4 dimensions*.* Details of sustainability ratings for the SCT Project are provided on Table 10.

1. *The overall SCT Project sustainability rating is likely (L).* This is primarily due to:

* low financial risks for the financing should be available after the EoP for implementing and training of integrated low-carbon climate resilient solutions in public spaces in Ashgabat and Awaza;
* low risk as many if not all Turkmen citizens support low-carbon climate resilient urban solutions at least in Ashgabat and Awaza. The integrated low-carbon climate resilient solutions in public spaces in Ashgabat and Awaza will benefit all Turkmen citizen long-term, well after the EoP;
* GoT have been very supportive of sustainable city measures and are currently assessing the pilots for the development of regulations and standards for green buildings. UNDP is a trusted development partner of the GoT committed to providing continuing support. UNDP to a large extent, does have a well-designed and well-planned exit strategy through completion of pilot investments which are then picked up by GoT for further implementation and development of related legislation; and
* sustainable transport, though in the ProDoc, was not considered in this sustainability assessment for reasons stated in Para 108.

### Country Ownership

1. The GoT demonstrates country ownership of the SCT Project through its:

* the National Programme for Socio-Economic Development, 2011-2030, which aims to accelerate growth with stronger institutions and policies, increased synergy between the public and private sectors, greater use of technology, and integration into the global economy (Para 103, 1st bullet);

| **Table 10: Assessment of Sustainability of Outcomes** | | |
| --- | --- | --- |
| **Actual Outcomes**  **(as of November 2024)** | **Assessment of Sustainability** | **Dimensions of Sustainability** |
| **Actual Outcome 1.1**: Capacities and enabling conditions have been identified, designed and implemented in Ashgabat for integrated low-carbon climate resilient solutions in public spaces. | * *Financial Resources:* Low risk due to available funding from GoT to continue to fund training and design teams for implementing further low carbon solutions well after the EoP; * *Socio-Political Risks*: Low risk as many if not all Turkmen citizens support low-carbon climate resilient urban solutions well after the EoP; * *Institutional Framework and Governance:* Low risk as policymakers of the GoT have improved their capacities for developing legislative support for the sustainable urban development; * *Environmental Factors:* No risk.   ***Overall Rating*** | 4  4  4  4  **4** |
| **Actual Outcome 1.2**: GHG emissions have been substantially reduced through deployment of LEDs, upgraded transformers, SMART grid infrastructure and waste management that involves public spaces and mitigates negative environmental impacts from power generation and methane formation in landfills. | * *Financial Resources*: Low risk as GoT financial resources are being allocated for additional LEDs for streetlighting and public buildings, upgraded transformers and SMART grid infrastructure, well after the EoP; * *Socio-Political Risks*: Low risk as there appears to be no opposition to deployment of LEDs, upgraded transformers, SMART grid infrastructure and waste management; * *Institutional Framework and Governance:* Low risk as GoT have been very supportive of sustainable city measures, and are currently assessing the pilots for the development of regulations and standards for green buildings; * *Environmental Factors:* No risk.   ***Overall Rating*** | 4  4  4  4  **4** |
| **Actual Outcome 2.1**: Capacities of municipal personnel in Turkmenbashi and hotel personnel in Awaza have been improved for integrated low-carbon and climate resilient tourism development involving energy efficiency measures, reductions in gas usage and water conservation measures. | * *Financial Resources:* Low risk as resources should be available well after the EoP from Awaza hotels and Turkmenbashi municipality to further finance training and legislative development of integrated low-carbon and climate resilient measures; * *Socio-Political Risks*: Low risk as there is no opposition to integrated low-carbon and climate resilient in Awaza; * *Institutional Framework and Governance:* Low risk as GosStandard has committed to developing green buildings standards (Para 96); * *Environmental Factors:* No risk.   ***Overall Rating*** | 4  4  4  4  **4** |
| **Actual Outcome 2.2**: GHG emissions and other negative environmental impact have been reduced through interventions in tourism facilities and infrastructure in Awaza | * *Financial Resources:* Low risk as resources should be available from Awaza hotels and Turkmenbashi municipality to further finance integrated low-carbon and climate resilient measures; * *Socio-Political Risks*: Low risk as there is no opposition to integrated low-carbon and climate resilient in Awaza; * *Institutional Framework and Governance:* Low risk as GosStandard has committed to developing green buildings standards (Para 96); * *Environmental Factors:* No risk.   ***Overall Rating*** | 4  4  4  4  **4** |
| **Actual Outcome 3**: Replication and scaling-up of sustainable city principles from the two components has been done in the City of Arkadag but not to 3 other cities in Turkmenistan as targeted. | * *Financial Resources:* Low risk as resources should be available to scale-up further finance for integrated low-carbon and climate resilient measures in other Turkmen cities; * *Socio-Political Risks*: Low risk as there should be no opposition to integrated low-carbon and climate resilient in the remaining cities in Turkmenistan; * *Institutional Framework and Governance:* Low risk as GosStandard has committed to developing green buildings standards (Para 96); * *Environmental Factors:* No risk.   ***Overall Rating*** | 4  4  4  4  **4** |
|  | ***Overall Rating of Project Sustainability:*** | **4**  ***(L)*** |

* the National Strategy on Climate Change (NSCC) approved in June 2012 that outlines the country’s long-term vision for promoting renewable energy and low-emission development of the economy. The NCCS is intended to give substance to Turkmenistan’s commitments to both climate change mitigation and adaptation by:
* addressing climate change challenges that contribute to sustainable development of the country’s economy;
* promoting innovative technologies, transfer of technology, scientific and technological progress as the basis for advances in climate change mitigation and adaptation;
* addressing climate change challenges based on a comprehensive and integrated approach; and
* implementing measures to reduce GHG emissions coordinated with adaptation measures. This includes a National Climate Change Fund to finance climate change mitigation and adaptation projects, including renewable energy generation;
* the Third National Communications of Turkmenistan of 2015 which has a number of measures to mitigate climate change including:
* modernization of transport through technological reconstruction of transport networks while ensuring effective service to all sectors of the economy with particular attention to the quality component in the development of the regional road network, increasing environmental safety of transport, and expanding transit transportation;
* building a system of mechanisms aimed at strengthening state’s role in development and implementation of laws and programs on energy efficiency and energy savings, startup of incentive mechanisms to motivate producers and consumers of electricity; and
* building regulatory and legal framework to implement energy-saving policies and system of economic incentives under the Law of Turkmenistan on energy savings and developing laws on renewable energy sources.

### Gender equality and women’s empowerment

1. While no gender marker was available for this Project[[25]](#footnote-26), the SCT Project’s contribution to the greater involvement and participation of women in sustainable cities has been weak:

* the Project assisted Bosfor, an NGO involved in bicycle repairs, where the NGO hires mostly women and girls for its work. Employees repair bicycles and assemble new ones, serving as one of the most secure places for employment of women free from any discriminatory practices. While the Project promotes gender equality by addressing gender imbalances in employment, 70% of Bosfor shop staff are women. However, as a part of the Project effort to promote sustainable transport, this gender effort is rather inconsequential considering cycling is not all that common in Ashgabat and GHG emission reductions from this activity are very small;
* the Project delivered several trainings in the operation and maintenance of RE technologies to students of the State Energy Institute Energy in Mary, where women comprised over 45% of all students;
* media campaigns for waste recycling for three plastics, paper, and glass, drew in mostly women (Output 1.3). As women in Turkmenistan predominantly take care of household maintenance, their active participation in the waste recycling made them a clear agent of change. This empowered them to be perceived as a separate stakeholder by the Ashgabat mayoral office and the private businesses. The long-term consequence of this increased visibility is that the Khyakimlik office will consider including women representatives in any subsequent public waste management hearings.

1. Partly in defence of the PMU, the Project has not had much opportunity to implement gender equality and empowerment efforts due to the lack of performance from the sustainable transport aspect of the Project. Sustainable transport activities were supposed to highlight the various dimensions that may affect men and women unequally (for example, measures to reduce the use of private cars and increase public transportation may have differential effects, to the extent that men and women show different rates of car ownership and public transportation ridership), and the absence of data with regard to gender dimensions of transport. The Project never conducted comprehensive studies to collect gender sensitive data despite the lack of transport-related activities.
2. In Turkmenistan, there needs to be an understanding how deployed technologies and project actions can positively impact the lives of women and vulnerable groups. For example, impacts on women and vulnerable groups in the Turkmen context can include the creation of new jobs in waste recycling (Para 117, 3rd bullet) and added security with streetlighting. The Project was also to ensure gender-inclusivity in its activities by targeting and engaging professional women in policy, planning, and management work (Output 1.4) on urban sustainability plans, and on hotel management (Output 2.1). This engagement was supposed to involve inclusion of women as national experts wherever possible, recipients of training, and members of advisory groups. Though the PMU had several women on staff[[26]](#footnote-27), engagement of women as national experts was lacking due to the lack of women in Turkmen society who are in those positions. However, the number of women attending training sessions on renewable energy technologies is encouraging (Para 117, 2nd bullet).
3. To summarize, the Project has had insufficient activities with regards to gender equality efforts. As such, the rating for gender equality and women’s empowerment is rated as **moderately unsatisfactory**.

### Cross cutting issues

1. According to the Project’s “Environmental and Social Screening Summary”, the screening outcome is “reducing the impact of transport, both by reducing the number of cars and increasing their efficiency; saving energy and reducing associated emissions from urban outdoor lighting; reducing waste and increasing recycling; and implementing best practices with regard to hotel management in Awaza. The Project seeks to mainstream best practices at the level of national government, municipal administrations, and hotels and private businesses. It also has major activities focusing on raising awareness and creating behavioral change among citizens, in waste reduction and sorting, carpooling, walking and cycling, using public transport, and so on”. With this risk categorization, there were no significant environmental and social issues associated with the SCT Project.
2. However, the Project did not execute any activities to reduce the impact of transport, simply since there were no issues with urban transport in terms of improving environmental quality from reduced traffic congestion. The Evaluation also notes that no direct attention was given to the impact of the other Project activities (such as LED streetlighting, transformer upgrades, and SMART grid infrastructure installations) on vulnerable groups (i.e. people with disabilities, youth) as these activities provide benefits to all groups, women, men, children and vulnerable groups. The Project did provide some attention to these groups on waste recycling.
3. The most important risk management measure with regards to the Project was to undertake consultations during Project identification (to determine the Project stakeholders and their roles during Project implementation) and during Project implementation and commissioning. Consultations on all components were designed to be gender-sensitive, inclusive and responsive to the needs of the stakeholders identified. A mechanism to deal with potential conflict issues during implementation was incorporated into the Project design. To summarize, the Project’s management of cross-cutting issues was rated as **satisfactory.**

### GEF Additionality

1. The issue of GEF additionality is quite clear on the SCT Project. Without the Project, there would be much less collaboration between government, NGOs and the private sector less, and less activity with energy efficiency (LEDs, transformer upgrades, and SMART grid infrastructure, and waste recycling) in Turkmenistan. Hence, there is GEF additionality for the SCT Project.

### Catalytic/Replication Effect

1. There were catalytic and replication effects of the SCT Project:

* pilot investments in LED streetlighting, transformer upgrades, and SMART grid infrastructure at various locations around Ashgabat and Awaza, were assessed for energy savings potential by MoE who were then catalyzed to make further replication investments;
* pilot investments were made in Awaza hotels on various low carbon climate resilient measures. These measures catalyzed hotels into thinking of other measures to reduce their carbon footprint and to conserve water;
* pilot activities for waste recycling were made for cardboard, plastic containers and glass. This has catalyzed investment of a new cardboard and plastic recycling facility in Ashgabat. Replication of these waste recycling facilities is reportedly limited to Ashgabat; smaller cities such as Awaza and Turkmenbashi do not have the waste volumes for the consideration of waste recycling programmes.

### Progress to impact

1. In terms of progress to impact of the SCT Project, there have been efforts since 2023 by the GoT to continue replicating the sustainable cities concept to other cities in Turkmenistan. Thus far, however, the City of Arkadag is the only city to adopt sustainable city plans that includes a fleet of electric buses for public transport. It is not known if their sustainable city plans include waste recycling or water conservation. Turkmenbashi did not receive a government allocation to carry out its sustainability plans though there are ongoing discussions about this allocation. It is not known if other cities have plans or are adopting sustainability plans.
2. With regards to the issue of urban transport, Ashgabat is not planning any sustainable transport initiatives. They are awaiting the results of the operations of the electric bus fleet in Arkadag and the completion of the “Urban Sustainable Transportation and Interconnectedness Atlas”.

# findings, conclusions, recommendations and lessons learned

## Findings

1. The SCT Project has managed to achieve 960,439 tCO2eq of direct emission reductions as of 30 June 2024 exceeding the target of 366,000 tCO2eq by a factor of 2.6 (Para 72 and Tables 7 and 8), and achieving the energy savings of 6,130 TJ against a target of 6,200 TJ (Para 73). The Project achieved measures for integrated low-carbon urban systems in Ashgabat and Awaza (Outcomes 1 and 2) through:

* building the capacities of MoE personnel to design and implement low carbon systems for the power grid
* installations of over 150,000 LEDs and 18,000 for streetlighting and parks in Ashgabat and Awaza respectively, a small portion paid for by the Project as an initial pilot;
* installations of 1,200 transformers in Ashgabat and 11 transformers in Awaza, a small portion paid for by the Project as an initial pilot;
* over 396 km of electric cable replacements in the City of Ashgabat;
* linking a private company in Ashgabat to recycle cardboard waste that diverts this waste from municipal landfills; and
* linking an NGO to recycle plastic containers in Ashgabat that also diverts this waste from municipal landfills;
* building capacities of the Municipality of Ashgabat and private entrepreneurs to design and implement waste recycling programmes for cardboard, plastic containers and glass; and
* building capacities of relevant stakeholders in Awaza and its tourism sector to design and implement sustainability measures to reduce their carbon footprint and to reduce water consumption.

1. For Outcome 3, scale-up of Sustainable Cities concepts was not achieved with only 1 out of 4 cities targets having sustainable city action plans despite Project efforts to provide technical assistance, including hired international expertise. With the late implementation of all pilot projects, green building standards and incentives are still being assessed with prioritization in building energy efficiency (with low carbon and sustainability measures in the Awaza hotel sector and with government capacity constraints).
2. The Project did not progress with sustainable transport measures and did not generate any GHG emission reductions from urban transport activities. This was mostly due to a faulty design of urban transport activities that identified efforts to “decrease the volume and impact of private vehicle traffic in all cities”, when in fact, the Ashgabat and Awaza experience very light traffic volumes. With insufficient incentives to convert ICE vehicles into EVs (Para 108), there is also a low potential for GHG emission reductions from sustainable transport, with transport institutions generally not being ready for sustainable transport in Turkmenistan. The only possible sustainable transport activities would have been piloting electric buses which is already being done in the model city of Arkadag independent of the Project (which would have generated very small GHG emission reductions). The targets of sustainable transport activities on this Project were designed to fail. However, a good outcome to SCT transport activities is the April 2024 agreement between UNDP and the Turkmenavtotransport Agency to support preparation of an “Urban Sustainable Transportation and Interconnectedness Atlas” that will help the cities prioritize future transport investments into climate resilient infrastructure (Para 79).
3. Other factors that limited progress included:

* change of priorities and lack of institutional capacity at the different Government levels that would have enabled development of new vehicular fuel efficiency standards;
* the COVID-19 pandemic resulting in less tourism. This discouraged privatization of the Awaza hotel sector that would have resulted in raised utility tariffs and given the privatized hotels more incentives to reduce their utility bills (Para 90);
* the lack of engagement of women as national experts (Para 119).

## Conclusions

1. Overall, the SCT Project has made significant progress towards GHG emissions and energy consumption reductions, regulatory impact, waste management, and promoting urban sustainability practices to a wide audience. On Outcomes 1 and 2, the SCT Project has provided pilots that demonstrated to the GoT the feasibility of integrated low-carbon urban systems (LED streetlights, LED replacements in public and commercial buildings, pilot transformer upgrades and SMART grid infrastructure installations and waste recycling) for replication in other cities of Turkmenistan as well as Ashgabat and Awaza. The water conservation measures in the Awaza hotels also serve as a leading effort to encourage more water conservation throughout all cities in Turkmenistan. Lastly, the Project along with SEIT under Outcome 3 has promoted and trained a number of engineers in renewable energy as another aspect of low-carbon urban systems.
2. As such, the SCT Project leaves behind several examples of successful sustainable low carbon and climate resilient measures. These measures serve as a foundation for replication of more low carbon investments and other sustainability measures throughout Turkmenistan’s other cities. A scaled-up SCT Project for Ashgabat, Awaza and other cities in Turkmenistan including Mary and Dashoguz should include:

* energy efficiency measures in households, commercial and public buildings, transformer upgrades and SMART grid infrastructure;
* deployment of renewable energy in all cities;
* implementation of water conservation measures, regulations and policies as all cities in Turkmenistan are dealing with climate issues of decreasing rainfall; and
* gender-related actions that can positively impact the lives of women and vulnerable groups in Turkmenistan. This can be achieved through an understanding of deployed technologies and project actions, and how female and male stakeholders react to these technologies and actions. Gender mainstreaming is not only about tracking the number of women in trainings and participation in project activities.

## Recommendations

1. The recommendations made in this Evaluation are made in the spirit of improving delivery of future sustainable city projects, and on the basis of the lessons learned during implementation of the SCT Project.

|  | **Recommendation** | **Entity Responsible** | **Time Frame** |
| --- | --- | --- | --- |
|  | **Recommendation 1:** |  |  |
|  | *Scale-up the Sustainable Cities concept to include other cities in Turkmenistan with more emphasis on water conservation*. The same works can be continued with:   * transformation of LED lighting, transformer upgrades, SMART grid infrastructure. These seems to be taking place on its own initiative in Ashgabat and Awaza for commercial and public buildings. Ashgabat, Awaza and other cities in Turkmenistan may require assistance on these upgrades, notably:   + for LEDs in households through a strong awareness raising campaign and unique financial incentives;   + SMART grid systems that can, for example, partially shutdown a set of streetlights, or react to motion detectors. This has enormous energy savings potential;   + on low energy tariff structures in the hotel sector as there are no financial incentives for the hotel sector to accelerate adoption of the various sustainability practices that the Project has piloted and demonstrated to interested actors. Though hotel privatization will raise the tariffs and economic incentives for adopting sustainability measures and practices, a heightened awareness raising campaign is required to sustain energy saving efforts of the hotel sector and beyond; * waste recycling in larger cities of Turkmenistan. This would include Dashoguz (population of 200,000) and Mary (population 126,000), and satellite cities of Ashgabat that includes Arkadag. Activities such as cardboard and plastic recycling should be scaled-up in these other cities. In addition, measures need to be taken to segregate organic wastes and compost them to a state where they will benefit agricultural areas of Turkmenistan. With 90% of waste recycling beneficiaries being women, a future project with a waste component needs to embed stronger gender mainstreaming approaches; * unique water conservation measures. This will be required to mitigate the impacts of climate change induced trends of lesser rainfall. Measures could include reduced household and industrial consumption of water and drip irrigation (if not already done). However, the low water tariffs for all sectors means that there are no financial incentives for all sectors to accelerate adoption of the various sustainability practices that the Project has piloted and demonstrated to interested actors in the Awaza hotel sector. Cities will likely require assistance on these measures including strong awareness raising of water conservation measures; * if possible, follow-up with the results of the urban sustainability atlas to gauge opportunities for testing and behavioural change models and studies for Turkmenistan’s transport sector to understand the motivation factors for the resident’s choices of transport modes, and how to encourage more use of public transportation. This may require the engagement of behavioural science experts in the design and learning from other countries. Though this activity is very important as a precursor to any sustainable transport efforts, this activity will not yet generate large volumes of GHG emission reductions. | MoEP and UNDP | Immediate |
|  | **Recommendation 2** |  |  |
|  | *Scale-up and accelerate low carbon urban systems in Turkmenistan through developing a project that derisks measures for renewable energy deployment*. Measures may include:   * *continual updating of long-term national renewable energy strategies;* * *piloting solar PV installations on rooftops or on vacant urban lands to generate electricity to assess electricity generation and test the concept of battery energy storage systems (BESS) to balance power generation from solar PV systems. When solar PV power generation stops at night, BESS can offset, mitigate or even eliminate this fossil fuel requirement. Studies should address the construction of excess solar PV capacity that can be stored in BESS for use in evenings and nighttime;* * *continued awareness raising campaigns to mitigate social acceptance risk of renewable energy projects;* * *strengthen R&D efforts on new RE technologies (wind and solar PV) that have the potential to add efficiencies to RE power generation capacities. This may include small-scale wind turbines (with blades and without blades) and solar thermal collectors, as well as off-grid solar PV sets with storage. This can also be done through the enhanced capacities of students who were trained in the operation and maintenance of RE technologies at the State Energy Institute Energy in Mary, where women comprised over 45% of all students (Para 117, 2nd bullet).* | MoEP, MoE and UNDP | Immediate |
|  | **Recommendation 3** |  |  |
|  | *With regards to gender mainstreaming of future projects in sustainable cities or any other projects in Turkmenistan, there needs to be an understanding of technologies deployed and project actions taken on how technologies or the project can positively impact the lives of women and vulnerable groups*. Gender mainstreaming is not only about tracking the number of women in trainings and participation in project activities. Impacts on women in the Turkmen context can include easing added security with streetlighting, and the creation of new jobs in recycling waste. | MoEP, MoE and UNDP | Medium term |

## Lessons Learned

1. *Lesson #1:* *A PMU staffed with ex-government employees can be an excellent measure to obtain government buy-in to UNDP concepts*. With this Project, there was an undeniable trust factor with ex-government personnel working in UNDP. While the PMU were ex-government personnel, they had the skills and personality to deal with government employees as well as dealing with UNDP personnel, UNDP administration and external consultants. The SCT Project PMU personnel managed these government and external relationships very well. If there are major government changes, this lesson may not be applicable.
2. *Lesson #2: There needs to be consideration given to the cost-effectiveness of climate change mitigation efforts*. There were already strong indicators that GHG emission reductions in the urban transport sector in Ashgabat would be small. In Ashgabat, there is a lack of traffic congestion, EURO V fuel efficiency standards in place and excellent public transport. As such, the transport interventions planned for the Project in the ProDoc did not reflect ground conditions, leading to a failure of the sustainable transport activities in the Project design. GEF Project designs need to be based on ground realities, not fictional made-up problems for the cities and the country in general. The fact remains that GEF funds placed into the transport sector were very costly from a GHG emission reduction perspective. Implementation of low cost-effective climate mitigation measures such as sustainable transport on the SCT Project simply cannot be repeated again.
3. *Lesson #3: Projects where there are a wide range of interventions that could be implemented need to have the flexibility to be adaptively managed*. The SCT Project is a good example of the need for flexibility and adaptive management. With the non-performance of sustainable transport activities, the Project was able to pivot away from sustainable transport and implement completely different climate mitigation measures such as transformer upgrades and modernized cabling to make up for the loss of GHG emission reductions from transport activities. This enabled the Project to meet its GHG emission reduction targets. The Project has also opened up opportunities to scale-up water conservation measures for urban areas though the Project could have invested more efforts into this area.

# Appendix A - Mission Terms of Reference for SCT Project terminal Evaluation

|  |  |
| --- | --- |
| **Location:** | home-based with a trip to Turkmenistan |
| **Application Deadline:** | DD-MONTH-24 **(Midnight New York, USA)** |
| **Time left:** | -d --h –m |
| **Additional Category:** | Sustainable Development |
| **Type of Contract:** | Individual Contract |
| **Assignment Type:** | International Consultant |
| **Languages Required:** | English |
| **Starting Date:** (date when the selected candidate is expected to start) | 15 October 2024 |
| **Duration of Initial Contract:** | Two months period from the start date of the assignment |
| **Expected Duration of Assignment:** | 35 working days |

1. **INTRODUCTION**

In accordance with UNDP and GEF M&E policies and procedures, all full- and medium-sized UNDP-supported GEF-financed projects are required to undergo a Terminal Evaluation (TE) at the end of the project. This Terms of Reference (ToR) sets out the expectations for the TE of the *full-sized* project titled “Sustainable Cities in Turkmenistan: Integrated Green Urban Development in Ashgabat and Avaza” (PIMS# 5452) implemented through the State Committee for Environmental Protection and Land Resources of Turkmenistan (later transformed into Ministry of Agriculture and Environmental Protection, and then again to Ministry for Environmental Protection (MEP). The project started on 11 June 2018 and is in its 6th year of implementation. Then after request from Ministry for Environmental Protection and UNDP Turkmenistan the GEF approved in December 2023 the project extension till 11 April, 2025. The TE process must follow the guidance outlined in the document ‘Guidance for Conducting Terminal Evaluations of UNDP-Supported, GEF-Financed Projects’

(<http://web.undp.org/evaluation/guideline/documents/GEF/TE_GuidanceforUNDP-supportedGEF-financedProjects.pdf>).

1. **PROJECT BACKGROUND AND CONTEXT**

The $6.06 million UNDP - GEF “Energy Efficiency and Renewable Energy for Sustainable Water Management in Turkmenistan” project started in June 2018 and is scheduled to finish in April 2025. The project is financed by the Global Environment Facility and implemented through the United Nations Development Programme.

Through provision of technical assistance, improving national capacities, and making contributions to a strategic shift in national priorities, the project will address the multifaceted issue of sustainable urban development, contribute to significant GHG emissions via subsequent nationwide replication. In the end, the project will showcase a new paradigm of how cities and citizens of Turkmenistan can deal with growth in these key sectors, yielding change that will persist after the project’s interventions have ended. Co-financing of $63,1 million USD has been committed. Through various interventions, the project aims to achieve some 6.2 TJ of direct energy savings per year by the end of the project and some 366,500 tonnes of CO2 per year by the end of project.

The objectives of this UNDP/GEF project are as follows:

* Improved capacities and enabling conditions in Ashgabat and Avaza to identify, design and implement integrated low-carbon and climate-resilient solutions
* Reduction of GHG emissions and other negative environmental impacts
* Nationwide replication and scaling-up of results of first project two components, enhancement of capacity of agencies and managers, and adoption of policies and regulation.

These outcomes were planned to be achieved through the implementation of three Project components.

* Component 1 is focused on sustainable urban development in Ashgabat via achieving two outcomes and four outputs.
* Component 2 is focused on sustainable tourism infrastructure and management practices in Avaza via achieving two outcomes and four outputs.
* Component 3 - Municipal and National Policy – should be implemented via achieving one outcome and one output.

While the first two components define the technical opportunity and priorities for replication, the third component is seeking to lay the foundation for the sustainable continuation of the activities on a national scale.

The National Strategy 2030 states that achieving sustainable, inclusive growth, is a strategic priority of Turkmenistan along with streamlined development and diversification of the economy. Given that more than half of the population lives in rural areas, about 48 percent of the workforce is involved in agriculture, increased rate of diversification of the economy and its development (including concomitant growth of major urban centers) puts urban development front and center on the agenda and requires state support. A diversified economy also implies expanding the role of the private sector, actors from which were an integral part of the waste minimization and recycling activities of the project.

The overall development challenge of project – fulfilling the potential for sustainable urban development in Turkmenistan – aimed at making a positive impact on all genders and age groups via improved environmental quality, reduced traffic congestion. The project aimed to make a particularly significant contribution to improved safety of women and children by provided uniform and quality lighting across the cities of Ashgabat and Avaza, reduced volumes of dumped waste and waste transported through Avaza thoroughfares, and improved accessibility of educational establishments in Ashgabat.

Overall, the project activities link to such SDGs as SDG 5 (Gender), SDG 10 (Reduced Inequalities), SDG 9 (Infrastructure), SGD 11 (Sustainable Communities), SDG 12 (Responsible Consumption and Production), and SDG 17 (Partnerships).

The key partners of the Project were the State Committee (later transformed into the Ministry) of the Environmental Protection, the Ministry of Energy, the Agency of Automobile Transportation, the Mayoral Office (hakimlik) of Ashgabat and Turkmenbashi (which oversees Avaza Tourist Zone that is located in Turkmenbashi’s vicinity), and the Ministry of Construction and Architecture. The Project also worked with educational establishments (of primary, secondary, and higher education) as well as (NGOs such as the Turkmenistan Society for the Protection of Nature) and companies of the private sector (such as several players of the recycling market).

The Project faced two challenges during the period of its implementation. One of its key partners (the Ministry of Transport) was re-structured three times during the period of implementation eventually splitting into several agencies (auto, rail, telecom, air transportation). As a result of the changes, the eventual partner, the Automobile Transport Agency could not secure neither required changes to the transportation legislation nor co-financing. To counter this development, as part of adaptive management practice, the Project secured co-financing from another of the existing stakeholders – the Ministry of Energy – while doubling down on sustainable infrastructure legislation in non-transport impact areas.

Another challenge was that privatization of the hotel sector – for which ProDoc provided execution of 24 energy audits – was cancelled in the wake of COVID-19. This resulted in no change to the highly subsidized tariff structure of the hotel sector and that kept payback period for energy efficiency measures and renewable energy installations at artificially low levels thereby reducing incentives for co-investments from the hotel industry.

A Strategic Review executed at mid-term assessment recommended that – as a result of all the changes – additional indicators be introduced to the Results Framework.

The Project also obtained a 10-month COVID-19-related extension.

1. **TE PURPOSE**

The TE report will assess the achievement of project results against what was expected to be achieved and draw lessons that can both improve the sustainability of benefits from this project, and aid in the overall enhancement of UNDP programming. The TE report promotes accountability and transparency and assesses the extent of project accomplishments.

The **purpose** of the evaluation is to provide an independent external view of the progress of the project at its completion, and to provide feedback and recommendations to UNDP and project stakeholders.

The **objectives** of the Terminal Evaluation are to:

* Identify potential project design issues;
* Assess progress toward achievement of expected project objective and outcomes;
* Identify and document lessons that can both improve the sustainability of benefits from this project and aid in overall enhancement of UNDP and GEF programming in the region;
* Make recommendations necessary to help consolidate and support sustainability of the project results.

COVID-19 and social-economic crises impacted the projects’ outputs, causing delays in activities and the need to refocus some of them. The relevant GEF Focal Area Tracking Tools will also be completed during the final evaluation. Before three months of the project operational closure, the project team will complete the Project Terminal Report.

The Terminal Evaluation should also provide recommendations for follow-up activities and requires a management response which should be uploaded to PIMS and to the [UNDP Evaluation Office Evaluation Resource Center (ERC)](http://erc.undp.org/index.aspx?module=Intra).

**Duties and ResponsibilitieS**

1. **TE APPROACH & METHODOLOGY**

The TE report must provide evidence-based information that is credible, reliable and useful.

The TE Evaluator with support of national expert will review all relevant sources of information including documents prepared during the preparation phase (i.e. PIF, the Project Document, the Social and Environmental Screening Procedure/SESP), annual PIRs, project budget revisions, the strategy revision documents, the mid-term evaluation reports, national strategic and legal documents, and any other materials that the Evaluator considers useful for this evidence-based evaluation. The TE Evaluator -will review the baseline and midterm GEF focal area Core Indicators/Tracking Tools submitted to the GEF at the CEO endorsement and midterm stages and the terminal Core Indicators/Tracking Tools that must be completed before the TE field mission and online and or face-to-face interviews with relevant stakeholders and counterparts begin.

The TE Evaluator is expected to follow a participatory and consultative approach ensuring close engagement with the Project Team, government counterparts (the GEF Operational Focal Point), Implementing Partners, the UNDP Country Office(s), the International Chief Technical Advisor (CTA), the Regional Technical Advisor (RTA), national consultants, direct beneficiaries and other stakeholders. Stakeholder involvement should include interviews with stakeholders who have project responsibilities, including but not limited to the following: the Ministry of the Environmental Protection, the Ministry of Energy, State Institute of Energy (the city of Mary), Municipality of Ashgabat, Municipality of Turkmenbashi, Project Board members (including a representatives from the Ministry of Construction and from the Agency “Turkmenautotransport), project beneficiaries (hotel managers, private-sector players of the waste-recycling business), academia, representatives of the residential communities in Ashgabat. Additionally, the TE Evaluator is expected to conduct a field mission to the Avaza project site (including visits to 3 pilot hotels there).

The specific design and adjustment of methodology for the TE should emerge from consultations between the TE Evaluator and the above-mentioned parties regarding what is appropriate and feasible for meeting the TE purpose and objectives and answering the evaluation questions, given limitations of budget, time and data. The TE Evaluator, however, must use proper (and gender-responsive) methodologies and tools and ensure that cross-cutting issues and SDGs are incorporated into the TE report.

The TE methodology should employ innovating approaches, relevant quantitative, qualitative or combined methods, based on diverse ecosystem of evidence, using gender sensitive data collection and analytical methods and tools applicable in the concrete case. Limitations to the chosen approach/methodology and methods shall be made explicit by the Evaluator and the consequences of these limitations shall be discussed in the proposed methodology.

The Evaluator is expected to carry out the evaluation process with careful consideration of these Terms of References. In cases where sensitive or confidential issues are to be addressed in the evaluation, the Evaluator should ensure an evaluation design that do not put informants and stakeholders at risk during the data collection phase or the dissemination phase.

The Evaluator will use other data collecting methodologies, as appropriate, such as interactive and innovative tools (i.e. “the most significant change”, visual tools / cards/ creative canvases to capture insights, progress and suggestions, etc.) to unleash creativity and generate valuable insights from partners. To ensure maximum validity, reliability of data (quality) and promote use, the Evaluator will ensure triangulation of the various data sources. All evaluation products need to address gender, disability, and human right issues.

The final methodological approach including interview schedule, field visits and data to be used in the evaluation must be clearly outlined in the TE Inception Report and be fully discussed and agreed between UNDP, stakeholders and the Evaluator.

The final TE report must describe the full TE approach taken and the rationale for the approach making explicit the underlying assumptions, challenges, strengths and weaknesses about the methods and approach of the evaluation.

1. **DETAILED SCOPE OF THE TE**

The TE will assess the entire duration of the project, it’s performance against expectations set out in Project’s Document and Results Framework (see ToR Annex A). The TE will assess results according to the criteria outlined in the Guidance for TEs of UNDP-supported GEF-financed Projects

<http://web.undp.org/evaluation/guideline/documents/GEF/TE_GuidanceforUNDP-supportedGEF-financedProjects.pdf>

The Findings section of the TE report will cover the topics listed below. A full outline of the TE report’s content is provided in ToR Annex C.

The asterisk “(\*)” indicates criteria for which a rating is required.

Findings

i. Project Design/Formulation

* National priorities and country drivenness
* Theory of Change
* Project Strategy and objectives
* Social and Environmental Safeguards
* Analysis of Results Framework: project logic and strategy, indicators
* Assumptions and Risks
* Lessons from other relevant projects (e.g. same focal area) incorporated into project design
* Planned stakeholder participation
* Linkages between project and other interventions within the sector
* Management arrangements

ii. Project Implementation

* Adaptive management (changes to the project design and project outputs during implementation)
* Actual stakeholder participation and partnership arrangements
* Project Finance and Co-finance
* Monitoring & Evaluation: design at entry (\*), implementation (\*), and overall assessment of M&E (\*)
* Implementing Agency (UNDP) (\*) and Executing Agency (\*), overall project oversight/implementation and execution (\*)
* Risk Management, including Social and Environmental Standards

iii. Project Results

* Assess the achievement of outcomes against indicators by reporting on the level of progress for each objective and outcome indicator at the time of the TE and noting final achievements
* Relevance (\*), Effectiveness (\*), Efficiency (\*) and overall project outcome (\*)
* Sustainability: financial (\*), socio-political (\*), institutional framework and governance (\*), environmental (\*), overall likelihood of sustainability (\*)
* Country ownership
* Gender equality and women’s empowerment
* Cross-cutting issues (improved governance, climate change mitigation and adaptation, capacity development, knowledge management, etc., as relevant)
* GEF Additionality
* Catalytic Role / Replication Effect
* Progress to impact

iv. Main Findings, Conclusions, Recommendations and Lessons Learned

* The TE Evaluator will include a summary of the main findings of the TE report. Findings should be presented as statements of fact that are based on analysis of the data.
* The section on conclusions will be written in light of the findings. Conclusions should be comprehensive and balanced statements that are well substantiated by evidence and logically connected to the TE findings. S/he should highlight the strengths, weaknesses and results of the project, respond to key evaluation questions and provide insights into the identification of and/or solutions to important problems or issues pertinent to project beneficiaries, UNDP and the GEF, including issues in relation to gender equality and women’s empowerment.
* Recommendations should provide concrete, practical, feasible and targeted recommendations directed to the intended users of the evaluation about what actions to take and decisions to make. The recommendations should be specifically supported by the evidence and linked to the findings and conclusions around key questions addressed by the evaluation.
* The TE report should also include lessons that can be taken from the evaluation, including best practices in addressing issues relating to relevance, performance and success that can provide knowledge gained from the particular circumstance (programmatic and evaluation methods used, partnerships, financial leveraging, etc.) that are applicable to other GEF and UNDP interventions. When possible, the TE Evaluator should include examples of good practices in project design and implementation.
* It is important for the conclusions, recommendations and lessons learned of the TE report to include results related to gender equality and empowerment of women.

The TE report will include an Evaluation Ratings Table, as shown in the ToR Annex F.

1. **TIMEFRAME**

The total duration of the TE will be 35 working days over a time period of *(12 of weeks)* starting on *25 October 2024.* The tentative TE timeframe is as follows:

| Timeframe | Activity |
| --- | --- |
| 23 September 2024 | Application closes |
| 4 October 2024 | Select the consultant |
| 15 October 2024 | Preparation period for TE team (handover of documentation) |
| 18 October 2024 (6 days) | Document review and preparation of TE Inception Report |
| 28 October 2024 (3 days) | Finalization and Validation of TE Inception Report |
| 11 November 2024 (10 days) | TE mission: stakeholder meetings, interviews, field visits, etc. |
| 21 November 2024 (2 days) | Mission wrap-up meeting & presentation of initial findings; earliest end of TE mission |
| 27 November 2024 (10 days) | Preparation of draft TE report |
| 10 December 2024 | Circulation of draft TE report for comments |
| 16 December 2024 (4 days) | Incorporation of comments on draft TE report into Audit Trail & finalization of TE report |
| 30 December 2024 | Preparation and Issuance of Management Response |
| 6 January 2025 | Expected date of full TE completion |

All final TE reports will be quality assessed by the UNDP Independent Evaluation Office (IEO). Details of the IEO’s quality assessment of decentralized evaluations can be found in Section 6 of the UNDP Evaluation Guidelines. <http://web.undp.org/evaluation/guideline/>

1. **TE DELIVERABLES**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| # | Deliverable | Description | Timing | Responsibilities |
| 1 | TE Inception Report | TE team clarifies objectives, methodology and timing of the TE | No later than 2 weeks before the TE mission: 28 October 2024 | TE team submits Inception Report to Commissioning Unit and project management |
| 2 | Presentation | Initial Findings | End of TE mission: 22 November 2024 | TE team presents to Commissioning Unit and project management |
| 3 | Draft TE Report | Full draft report (using guidelines on report content in ToR Annex C) with annexes | Within 3 weeks of end of TE mission: 12 December 2024 | TE team submits to Commissioning Unit; reviewed by BPPS-GEF RTA, Project Coordinating Unit, GEF OFP |
| 5 | Final TE Report\* + Audit Trail | Revised final report and TE Audit trail in which the TE details how all received comments have (and have not) been addressed in the final TE report (See template in ToR Annex H) | Within 1 week of receiving comments on draft report: 30 December 2024 | TE team submits both documents to the Commissioning Unit |

1. **TE ARRANGEMENTS**

The principal responsibility for managing the TE resides with the Commissioning Unit. The Commissioning Unit for this project’s TE is the UNDP Country Office in Turkmenistan.

The Commissioning Unit will contract the Evaluator and ensure the timely provision of per diems and travel arrangements within the country (if applicable) for the Evaluator. The Project Team will be responsible for liaising with the Evaluator to provide all relevant documents, set up stakeholder interviews, and arrange field visits.

1. **DUTY STATION**

The TE assignment is expected to be a combination of home-based work (26 business days) and work during a field mission (9 working days) to meet with all relevant stakeholders across the project sites in Ashgabat and Avaza.

**Travel:**

* + International travel is required to Turkmenistanduring the TE mission;
  + The BSAFE course must be successfully completed prior to commencement of travel;
  + Individual Consultants are responsible for ensuring they have vaccinations/inoculations when travelling to certain countries, as designated by the UN Medical Director.
  + Consultants are required to comply with the UN security directives set forth under: https://dss.un.org/dssweb/
  + All related travel expenses will be covered and will be reimbursed as per UNDP rules and regulations upon submission of an F-10 claim form and supporting documents and should be included to the **Letter of Confirmation of Interest and Availability.**

**REQUIRED SKILLS AND EXPERIENCE**

1. **EVALUATOR’S REQUIRED QUALIFICATIONS**

An international evaluator with experience and exposure to projects and evaluations in similar regionswill conduct the TE. The Evaluator will assess emerging trends with respect to regulatory frameworks, budget allocations, capacity building, work with the Project Team in developing the TE itinerary, and will be responsible for the design and writing of the TE report.

The evaluator cannot have participated in the project preparation, formulation and/or implementation (including the writing of the project document), must not have conducted this project’s Mid-Term Review and should not have a conflict of interest with the project’s related activities.

The selection of the evaluator will be aimed at maximizing her/his qualities in the following areas:

Corporate Competencies:

* Demonstrates integrity by modeling the UN’s values and ethical standards;
* Promotes the vision, mission, and strategic goals of UNDP;
* Displays cultural, gender, religion, race, nationality and age sensitivity and adaptability;
* Treats all people fairly without favoritism;
* Fulfills all obligations to gender sensitivity and zero tolerance for sexual harassment.

Functional Competencies:

* Competence in adaptive management;
* Knowledge of and work experience in the energy efficiency related water and agriculture projects, including those funded by the GEF;
* Excellent training, facilitation and communication skills;
* Results driven, ability to work under pressure and to meet required deadlines;
* Good understanding and experience in the field of GHG emissions calculation and monitoring.

Education

* An advanced University degree (Master’s, PhD) in Energy, Environment, Business Administration, Economics, Engineering, or related field is required;

Experience

* Relevant experience with results-based management evaluation methodologies;
* Extensive (at least 10-year) work experience and proven track record with policy advice and/or project development/implementation in climate change and related policy and impact areas related to project goals such as sustainable transport, buildings, energy sector efficiency, and urban planning in transition economies is required;
* Experience working with the GEF or GEF project evaluations within the past ten years including experience with SMART based indicators and reconstructing or validating baseline scenarios is required;
* Competence in adaptive management, as applied to Climate Change;
* Project evaluation/review experiences within United Nations system will be considered an asset
* Experience working with international technical assistance projects in the Eastern Europe countries or CIS region in the past seven years is required;
* Experience in Turkmenistan will be an asset;
* Demonstrated understanding of issues related to gender and climate change; experience in gender responsive evaluation and analysis;
* Excellent communication and presentation skills;
* Demonstrable analytical skills.
* Project evaluation/review experience within United Nations system will be considered an asset;
* Experience with implementing evaluations remotely will be considered an asset

Language

* Fluency in written and spoken English is required.

1. **EVALUATOR ETHICS**

The TE Evaluator will be held to the highest ethical standards and is required to sign a code of conduct upon acceptance of the assignment. This evaluation will be conducted in accordance with the principles outlined in the UNEG ‘Ethical Guidelines for Evaluation’. The evaluator must safeguard the rights and confidentiality of information providers, interviewees and stakeholders through measures to ensure compliance with legal and other relevant codes governing collection of data and reporting on data. The evaluator must also ensure security of collected information before and after the evaluation and protocols to ensure anonymity and confidentiality of sources of information where that is expected. The information knowledge and data gathered in the evaluation process must also be solely used for the evaluation and not for other uses without the express authorization of UNDP and partners.

1. **PAYMENT SCHEDULE**

* 20% payment upon satisfactory delivery of the final TE Inception Report and approval by the Commissioning Unit
* 40% payment upon satisfactory delivery of the draft TE report to the Commissioning Unit
* 40% payment upon satisfactory delivery of the final TE report and approval by the Commissioning Unit and RTA (via signatures on the TE Report Clearance Form) and delivery of completed TE Audit Trail

Criteria for issuing the final payment of 40%

* The final TE report includes all requirements outlined in the TE TOR and is in accordance with the TE guidance.
* The final TE report is clearly written, logically organized, and is specific for this project (i.e. text has not been cut & pasted from other TE reports).
* The Audit Trail includes responses to and justification for each comment listed.

**APPLICATION PROCESS**

1. **SCOPE OF PRICE PROPOSAL AND SCHEDULE OF PAYMENTS**

**Financial Proposal:**

* Financial proposals must be “all inclusive” and expressed in a lump-sum for the total duration of the contract. The term “all inclusive” implies all cost (professional fees, travel costs, living allowances etc.);
* For duty travels, the UN’s Daily Subsistence Allowance (DSA) rates are (fill for all travel destinations), which should provide indication of the cost of living in a duty station/destination *(Note: Individuals on this contract are not UN staff and are therefore not entitled to DSAs. All living allowances required to perform the demands of the ToR must be incorporated in the financial proposal, whether the fees are expressed as daily fees or lump sum amount.)*
* The lump sum is fixed regardless of changes in the cost components.

1. **RECOMMENDED PRESENTATION OF PROPOSAL**

Interested individual consultants must submit the following documents/information to demonstrate their qualifications:

All experts applying for this position are required to provide:

* Brief description **of approach to work/technical proposal** of why the individual considers him/herself as the most suitable for the assignment, and a proposed methodology on how s/he will approach and complete the assignment; (max 1 page);
* Financial Proposal with the references to (1) the daily rate for the assignment and within the timing scale indicated in the present TOR, and (2) any other expenses (including transportation costs, accommodation costs, the possibility of vaccination and etc.). Template of the **Letter of Confirmation of Interest and Availability** can be found at: http://www.tm.undp.org/content/turkmenistan/en/home/procurement.html. The UNDP will enter into an Individual Contract based on a lump sum amount. The financial proposal shall represent a detailed, justified and “all inclusive” amount.  In order to assist UNDP in the comparison of financial proposals, the financial proposal shall include a breakdown of this lump sum amount, including: a daily fee for the tasks and an estimated duration as specified in this announcement, travel (to and from the missions), per diems, any other possible costs (including vaccinations, dwelling, communication etc.);
* Cover letter explaining why s/he are the most suitable candidate for the assignment;
* Resume /CV.

Note (Conflict of Interest): Any individual who participated in the project preparation, formulation, and/or implementation (including the writing of the Project Document) is ineligible to participate in this bidding.

1. **CRITERIA FOR THE SELECTION OF BEST OFFER**

Only those applications which are responsive and compliant will be evaluated. Offers will be evaluated according to the Combined Scoring method – where the educational background and experience on similar assignments will be weighted at 70% and the financial proposal will weigh as 30% of the total scoring. The applicant receiving the Highest Combined Score that has also accepted UNDP’s General Terms and Conditions will be awarded the contract.

When using this method, the award of the contract should be made to the individual consultant whose offer has been evaluated and determined as:

* Responsive/compliant and having received the highest score – out of 100 points.

Out of the maximum score, the score for technical criteria equals 70% - maximum 70 points, and for financial criteria 30%- maximum of 30 points.

The technical evaluation will take into account the following as per the scoring provided:

* Educational background (Advanced University degree, Master’s or a PhD in Energy, Environment, Business Administration, Economics, Engineering or related field) – 10 points;
* Extensive (at least 10-year) work experience and proven track record with policy advice and/or project development/implementation/evaluation in climate change and or urban efficiency (including at least some experience with climate change and impact areas related to project goals such as sustainable transport, buildings sector, energy sector efficiency, and urban planning) in transition economies – 15 points max (more than 20 years of experience projects in respective project areas = 15 points, 15-20 years = 10 points, 10–14 years = 7 points);
* Experience working with the GEF or GEF project evaluations (Mid-term reviews or Terminal Evaluations) within the past seven years including experience with SMART based indicators (project evaluation/review experiences within United Nations system will be considered an asset) – 15 points max (with 15 points awarded for at having least 7 assignments, 10 points to be awarded for at least 4 assignments, 7 points awarded for 1 to 3 assignments);
* Experience working with international technical assistance projects in the Eastern Europe countries or CIS region in the past seven years – 10 points max (strong experience [at least 4 assignments] = 10 points; very good experience [at least 3 assignments] = 7 points, good experience [at least 2 assignments] = 4 points, satisfactory experience (at least 1 assignment) – 2 points, no experience = 0 points);
* Experience in Turkmenistan on technical assistance projects will score - 5 points;
* Methodology on how IC will approach and complete the assignment – 15 points max;
* Interview – 20 points max;
* Language skills (English required) – 10 points (10 points will be awarded for superior writing and oral skills in English); 5 points will be awarded for superior writing and average oral skills in English. Writing skills will be judged by the quality of the 1-page cover letter with the brief description of the approach to the work to be carried out to be sent with this application along with the level of English language mastery during the oral interview.

Maximum available technical (education, experience and competencies) score – 100 points.

Additional requirements for recommended contractor:

Recommended contractors aged 65 and older, and if the travel is required, shall undergo a full medical examination including x-ray, and obtain medical clearance from the UN-approved doctor prior to taking up their assignment. The medical examination is to be cleared by the UN physicians, and shall be paid by the consultant.

# Appendix B - Mission Itinerary (for november 2024)

| **#** | **Activity** | **Stakeholder involved** | **Place** |
| --- | --- | --- | --- |
| ***17 November 2024 (Sunday)*** | | | |
|  | Arrival of Mr. Roland Wong in Ashgabat |  |  |
| ***18 November 2024 (Monday)*** | | | |
| 1 | Meeting with PMU on briefing of the Project including specialists on energy and environmental issues | UNDP | Ashgabat |
| 2 | Meeting with Deputy Resident Representative and Programme Analyst on Environment and Energy | UNDP | Ashgabat |
| ***19 November 2024 (Tuesday)*** | | | |
| 3 | Meeting with Mr. Azat Seydinov, Member of the Committee on Environmental Protection, Nature Management and Agro-industrial Complex at the Mejlis (Parliament) of Turkmenistan | Committee on Environmental Protection, Nature Management and Agro-industrial Complex of the Parliament of Turkmenistan | Ashgabat |
| 4 | Meeting with Mr. Nury Jumashov, Deputy Minister of Environmental Protection | GEF Operational Focal point for the GoT | Ashgabat |
| 5 | Meeting with Mr. Dovran Yagmurov, Head of the Environmental Protection Department of the MoEP | National Coordinator of SCT Project | Ashgabat |
| 6 | Visit with Mr. Murad Hudayarov, Specialist of the Environmental Control Service (ECS) laboratories of the MoEP to become familiar with equipment purchased by the Project. | Ministry of Environmental Protection | Ashgabat |
| ***20 November 2024 (Wednesday)*** | | | |
| 7 | Meeting with Ms. Enejan Kakayeva, Head of Department, Member of the Project Board | Ministry of Energy | Ashgabat |
| 8 | Meeting with Mr. Vepaly Berdyyev, Head of Department of “Turkmenenergo” State Electric Power Corporation, and Mr. Meret Atayev, Director General of the “Ashgabatenergo” Production Association | Ministry of Energy | Ashgabat |
| 9 | Meeting with Mr. Aganiyaz Jumayev, Deputy of Rector of the State Energy Institute of Turkmenistan (SEIT), and Mr. Muhammetaman Saryiev, Director of Research-Production Center on Renewable Energy of the SEIT | Ministry of Energy | On-line |
| 10 | Meeting with Ms. Elena Zhuchenko, International Consultant of the Project on Renewable energy issues | UNDP | On-line |
| 11 | Meeting with Mr. Valeriy Afanasyev, International Consultant of the Project on Energy efficiency issues | UNDP | On-line |
| 12 | Visual inspection of the Ashgabat LED streetlighting pilot investment in the evening | Ministry of Energy | Ashgabat |
| ***21 November 2024 (Thursday)*** | | | |
| 13 | Meeting with Ms. Ahgela Gaziyeva, Coordinator of the Ozone Center | Ministry of Environmental Protection | Ashgabat |
| 14 | Meeting with Ms. Maya Ashirova, Project Manager of the NAP project | UNDP/Green Climate Fund/MoEP | Ashgabat |
| 15 | Meeting with Ms. Gozel Orazdurdiyeva, National Officer of the interim Secretariat (UNEP) of the Tehran Convention | UNEP/ Ministry of Environmental Protection | Ashgabat |
| 16 | Meeting with Ms. Gozel Atamuradova, Project Manager of the Aral Sea Project | UNDP/GEF /MoEP | Ashgabat |
| 17 | Meeting with Ms. Zalina Rossoshanskaya, Founder of the “Bosphorus” NGO | “Bosphorus” NGO | Ashgabat |
| 18 | Meeting with Mr. Kakajan Yagmyrov, Head of Department of the “Turkmenavtoulaglary” Agency | Agency Turkmenavtoulaglary | Ashgabat |
| ***22 November 2024 (Friday)*** | | | |
| 19 | Meeting with Mr. Arslan Amangeldiyev, Chief Engineer of the Main Architectural Administration, Member of the Project Board | Ashgabat Municipality | Ashgabat |
| 20 | Meeting with Mr. Merdan Arazmedov, Head of division of the Turkmen Society for Nature Protection (NGO) | Turkmen Society for Nature Protection (NGO) | Ashgabat |
| 21 | Visit to pilot site of the cardboard waste management project | HJ “Toprak” | Ashgabat |
| 22 | Visit pilot site of plastic container recycling facility of the Entrepreneur of Mr. Alamurad Berenov | Mr. Allamurad Berenov | Ashgabat |
| ***23 November 2024 (Saturday)*** | | | |
|  | Work on TE report |  |  |
| ***24 November 2024 (Sunday)*** | | | |
|  | Meeting with Mr. Paata Janelidze, Senior Specialist of the SECCA regional project (funded by the EU). | EU / Ministry of Energy | Ashgabat |
|  | Departure to Turkmenbashi city |  |  |
| ***25 November 2024 (Monday)*** | | | |
| 23 | Meeting with Mr. Amanshih Mammedov, the Executive Officer of the Turkmenbashi Municipality | Turkmenbashi Municipality | Awaza |
| 24 | Meeting with Rustem Ashirov, Director of the pilot hotel “Hasyl” in Awaza | “Hasyl” hotel | Awaza |
| 25 | Visual inspection of pilot hotel sustainability measures at “Hasyl” hotel | “Hasyl” hotel | Awaza |
| 26 | Visual inspection of LED streetlighting in Awaza | UNDP | Awaza |
|  | Departure back to Ashgabat |  |  |
| ***26 November 2024 (Tuesday)*** | | | |
| 27 | Meeting with Tomica Paovich, UNDP Turkmenistan Deputy Resident Representative to discuss mission results | UNDP | Ashgabat |
| ***27 November 2024 (Wednesday)*** | | | |
|  | Departure of Mr. Roland Wong from Ashgabat |  |  |

Total number of meetings conducted: 27

# Appendix C - List of Persons Interviewed

This is a listing of persons contacted in the SCT Team (unless otherwise noted) during the Terminal Evaluation Period only. The Evaluators regrets any omissions to this list.

1. Mr. Tomica Paovich, UNDP Turkmenistan Deputy Resident Representative
2. Mr. Farhat Orunov, UNDP Turkmenistan Programme Analyst on Environment and Energy
3. Mr. Batyr Ballyyev, Project Manager, PMU;
4. Mr. Alexei Zakharov, Chief Technical Advisor/International Consultant;
5. Mr. Atamuhamed Sariyev, Energy Efficiency Specialist, PMU;
6. Ms. Jemal Durdykova, Waste Management Specialist, PMU;
7. Ms. Victoria Akopova, Ecological Monitoring Specialist, PMU;
8. Mr. Hoshgeldi Kirliyev, Energy Audit Associate, PMU;
9. Ms. Victoria Saygusheva, Project Assistant, PMU;
10. Ms. Elena Zhuchenko, International Consultant of the Project on Renewable Energy, UNDP;
11. Mr. Valeriy Afanasyev, International Consultant of the Project on Energy Efficiency, UNDP;
12. Mr. Azat Seydinov, Member of the Committee on Environmental Protection, Nature Management and Agro-industrial Complex at the Mejlis;
13. Mr. Nury Jumashov, GEF Operational Focal point, MoEP;
14. Mr. Dovran Yagmurov, Head of the Environmental Protection Department of the MoEP and National Coordinator of SCT Project;
15. Mr. Murad Hudayarov, Specialist of the Environmental Control Service (ECS) laboratories of the MoEP;
16. Ms. Enejan Kakayeva, Head of Department, MoE;
17. Mr. Vepaly Berdyyev, Head of Department of “Turkmenenergo” State Electric Power Corporation, MoE;
18. Mr. Meret Atayev, Director General of the “Ashgabatenergo” Production Association, MoE;
19. Mr. Aganiyaz Jumayev, Deputy of Rector of the State Energy Institute of Turkmenistan (SEIT),MoE;
20. Mr. Muhammetaman Saryiev, Director of Research-Production Center on Renewable Energy of the SEIT, MoE;
21. Ms. Ahgela Gaziyeva, Coordinator of the Ozone Center, MoEP;
22. Ms. Maya Ashirova, Project Manager of the NAP project, UNDP/Green Climate Fund/MoEP;
23. Ms. Gozel Orazdurdiyeva, National Officer of the interim Secretariat (UNEP) of the Tehran Convention;
24. Ms. Zalina Rossoshanskaya, Founder of the “Bosphorus” NGO;
25. Mr. Kakajan Yagmyrov, Head of Department of the “Turkmenavtoulaglary” Agency;
26. Mr. Arslan Amangeldiyev, Chief Engineer of the Main Architectural Administration, Ashgabat Municipality;
27. Mr. Merdan Arazmedov, Head of Division of the Turkmen Society for Nature Protection (NGO);
28. Mr. Alamurad Berenov, Entrepreneur of plastic container recycling facility;
29. Mr. Amanshih Mammedov, the Executive Officer of the Turkmenbashi Municipality;
30. Mr. Paata Janelidze, Senior Specialist of the SECCA regional project (funded by the EU);
31. Mr. Rustem Ashirov, Director of the pilot hotel “Hasyl” in Awaza.

# Appendix D - List of documents reviewed

1. UNDP-GEF Project Document on “Sustainable Cities in Turkmenistan: Integrated Green Urban Development in Ashgabat and Awaza, 11 June 2018;
2. UNDP CEO Endorsement Document on “Sustainable Cities in Turkmenistan: Integrated Green Urban Development in Ashgabat and Awaza”, 17 August 2017;
3. Inception Report on “Sustainable Cities in Turkmenistan: Integrated Green Urban Development in Ashgabat and Awaza”, April 2019;
4. UNDP MTR on “Sustainable Cities in Turkmenistan: Integrated Green Urban Development in Ashgabat and Awaza”, August 2021;
5. Project Strategy Revision Report for “Sustainable Cities in Turkmenistan: Integrated Urban Development in Ashgabat and Awaza” PIMS No.: 5452, by Alexei Zakharov – Project Chief Technical Advisor, October 2021;
6. PIRs for ICRBE Project for 2019 to 2024;
7. Project Boards Meeting Minutes (8 meetings) from January 2019 to March 2024;
8. UNDP Country Programme Document for Turkmenistan (2021-2025);
9. Nationally Determined Contribution of Turkmenistan under the Paris Agreement, Turkmenistan, 2022;
10. Third National Communication of Turkmenistan under UNFCCC, 2015;
11. United Nations – Turkmenistan Partnership Framework for Development 2016-2020;
12. Final evaluation of implementation of the UNDP/GEF Project "Sustainable Cities in Turkmenistan: Integrated Green Urban Development in Ashgabat and Avaza” (summary abstracts for UNDP), late 2024.

# Appendix e - completed tracking tool

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Core Indicator 1** | **Terrestrial protected areas created or under improved management for conservation and sustainable use** | | | | | | | | | | ***(Hectares)*** |
|  |  | | | | | *Hectares (1.1+1.2)* | | | | | |
|  |  | | | | | *Expected* | | | | Achieved | |
|  |  | | | | | PIF stage | | Endorsement | | MTR | TE |
|  |  | | | | |  | |  | |  |  |
| Indicator 1.1 | Terrestrial protected areas newly created | | | | | | | | | |  |
| Name of Protected Area | WDPA ID | IUCN category | | | | Hectares | | | | | |
| Expected | | | | Achieved | |
| PIF stage | | Endorsement | | MTR | TE |
|  |  |  | | | |  | |  | |  |  |
|  |  |  | | | |  | |  | |  |  |
|  |  | Sum | | | |  | |  | |  |  |
| Indicator 1.2 | Terrestrial protected areas under improved management effectiveness | | | | | | | | | |  |
| Name of Protected Area | WDPA ID | IUCN category | | Hectares | | METT Score | | | | | |
| Baseline | | | | Achieved | |
|  | | Endorsement | | MTR | TE |
|  |  |  |  | | |  | |  | |  |  |
|  |  |  |  | | |  | |  | |  |  |
|  |  | Sum |  | | |  | |  | |  |  |
| **Core Indicator 2** | **Marine protected areas created or under improved management for conservation and sustainable use** | | | | | | | | | | ***(Hectares)*** |
|  |  | | | | | Hectares (2.1+2.2) | | | | | |
|  |  | | | | | Expected | | | | Achieved | |
|  |  | | | | | PIF stage | Endorsement | | | MTR | *TE* |
|  |  | | | | |  |  | | |  |  |
| Indicator 2.1 | Marine protected areas newly created | | | | | | | | | |  |
| Name of Protected Area | WDPA ID | IUCN category | | | | Hectares | | | | | |
| Expected | | | | Achieved | |
| PIF stage | | Endorsement | | MTR | TE |
|  |  |  | | | |  | |  | |  |  |
|  |  |  | | | |  | |  | |  |  |
|  |  | Sum | | | |  | |  | |  |  |
| Indicator 2.2 | Marine protected areas under improved management effectiveness | | | | | | | | | |  |
| Name of Protected Area | WDPA ID | IUCN category | | | Hectares | METT Score | | | | | |
| Baseline | | | | Achieved | |
| PIF stage | | Endorsement | | MTR | TE |
|  |  |  | | |  |  | |  | |  |  |
|  |  |  | | |  |  | |  | |  |  |
|  |  | Sum | | |  |  | |  | |  |  |
| **Core Indicator 3** | **Area of land restored** | | | | | | | | | | ***(Hectares)*** |
|  |  | | | | | Hectares (3.1+3.2+3.3+3.4) | | | | | |
|  |  | | | | | Expected | | | | Achieved | |
|  |  | | | | | PIF stage | | Endorsement | | MTR | TE |
|  |  | | | | |  | |  | |  |  |
| Indicator 3.1 | Area of degraded agricultural land restored | | | | | | | | | |  |
|  |  |  | | | | Hectares | | | | | |
| Expected | | | | Achieved | |
| PIF stage | | Endorsement | | MTR | TE |
|  |  |  | | | |  | |  | |  |  |
|  |  |  | | | |  | |  | |  |  |
| Indicator 3.2 | Area of forest and forest land restored | | | | | | | | | |  |
|  |  |  | | | | Hectares | | | | | |
| Expected | | | | Achieved | |
| PIF stage | | Endorsement | | MTR | TE |
|  |  |  | | | |  | |  | |  |  |
|  |  |  | | | |  | |  | |  |  |
| Indicator 3.3 | Area of natural grass and shrublands restored | | | | | | | | | |  |
|  |  |  | | | | Hectares | | | | | |
| Expected | | | | Achieved | |
| PIF stage | | Endorsement | | MTR | TE |
|  |  |  | | | |  | |  | |  |  |
|  |  |  | | | |  | |  | |  |  |
| Indicator 3.4 | Area of wetlands (including estuaries, mangroves) restored | | | | | | | | | |  |
|  |  |  | | | | Hectares | | | | | |
| Expected | | | | Achieved | |
| PIF stage | | Endorsement | | MTR | TE |
|  |  |  | | | |  | |  | |  |  |
|  |  |  | | | |  | |  | |  |  |
| **Core Indicator 4** | **Area of landscapes under improved practices (hectares; excluding protected areas)** | | | | | | | | | | ***(Hectares)*** |
|  |  | | | | | Hectares (4.1+4.2+4.3+4.4) | | | | | |
|  |  | | | | | Expected | | | | Expected | |
|  |  | | | | | PIF stage | | Endorsement | | MTR | TE |
|  |  | | | | |  | |  | |  |  |
| Indicator 4.1 | Area of landscapes under improved management to benefit biodiversity | | | | | | | | | |  |
|  |  |  | | | | Hectares | | | | | |
| Expected | | | | Achieved | |
| PIF stage | | Endorsement | | MTR | TE |
|  |  |  | | | |  | |  | |  |  |
|  |  |  | | | |  | |  | |  |  |
| Indicator 4.2 | Area of landscapes that meet national or international third-party certification that incorporates biodiversity considerations | | | | | | | | | |  |
| Third party certification(s): | | | | | | Hectares | | | | | |
| Expected | | | | Achieved | |
| PIF stage | | Endorsement | | MTR | TE |
|  | |  | |  |  |
|  | |  | |  |  |
| Indicator 4.3 | Area of landscapes under sustainable land management in production systems | | | | | | | | | |  |
|  |  |  | | | | Hectares | | | | | |
| Expected | | | | Achieved | |
| PIF stage | | Endorsement | | MTR | TE |
|  |  |  | | | |  | |  | |  |  |
|  |  |  | | | |  | |  | |  |  |
| Indicator 4.4 | Area of High Conservation Value Forest (HCVF) loss avoided | | | | | | | | | |  |
| Include documentation that justifies HCVF | | | | | | Hectares | | | | | |
| Expected | | | | Achieved | |
| PIF stage | | Endorsement | | MTR | TE |
|  | |  | |  |  |
|  | |  | |  |  |
| **Core Indicator 5** | **Area of marine habitat under improved practices to benefit biodiversity** | | | | | | | | | | ***(Hectares)*** |
| Indicator 5.1 | Number of fisheries that meet national or international third-party certification that incorporates biodiversity considerations | | | | | | | | | |  |
| Third party certification(s): | | | | | | Number | | | | | |
| Expected | | | | Achieved | |
| PIF stage | | Endorsement | | MTR | TE |
|  | |  | |  |  |
|  | |  | |  |  |
| Indicator 5.2 | Number of large marine ecosystems (LMEs) with reduced pollution and hypoxial | | | | | | | | | |  |
|  |  |  | | | | Number | | | | | |
| Expected | | | | Achieved | |
| PIF stage | | Endorsement | | MTR | TE |
|  |  |  | | | |  | |  | |  |  |
|  |  |  | | | |  | |  | |  |  |
| Indicator 5.3 | Amount of Marine Litter Avoided | | | | | | | | | | |
|  |  |  | | | | Metric Tons | | | | | |
| Expected | | | | Achieved | |
| PIF stage | | Endorsement | | MTR | TE |
|  |  |  | | | |  | |  | |  |  |
|  |  |  | | | |  | |  | |  |  |
| **Core Indicator 6** | **Greenhouse gas emission mitigated** | | | | | | | | | | ***(Metric tons of CO₂e )*** |
|  |  | | | | | Expected metric tons of CO₂e (6.1+6.2) | | | | | |
|  |  | | | | | PIF stage | Endorsement | | MTR | | TE |
|  | Expected CO2e (direct) | | | | | 366,000 | 366,000 | | n/a | | *960,439* |
|  | Expected CO2e (indirect) | | | | | *n/a* | n/a | | *n/a* | | *>10 million* |
| Indicator 6.1 | Carbon sequestered or emissions avoided in the AFOLU sector | | | | | | | |  | |  |
|  |  |  | | | | Expected metric tons of CO₂e | | | | | |
| PIF stage | | Endorsement | | MTR | TE |
|  | Expected CO2e (direct) | | | | |  | |  | |  |  |
|  | Expected CO2e (indirect) | | | | |  | |  | |  |  |
|  | Anticipated start year of accounting | | | | |  | |  | |  |  |
|  | Duration of accounting | | | | |  | |  | |  |  |
| Indicator 6.2 | Emissions avoided Outside AFOLU | | | | | | | | | |  |
|  |  |  | | | | Expected metric tons of CO₂e | | | | | |
| Expected | | | | Achieved | |
| PIF stage | | Endorsement | | MTR | TE |
|  | Expected CO2e (direct) | | | | | 366,000 | | 366,000 | | n/a | *960,439* |
|  | Expected CO2e (indirect) | | | | | *n/a* | | n/a | | *n/a* | *>10 million* |
|  | Anticipated start year of accounting | | | | |  | |  | |  |  |
|  | Duration of accounting | | | | | *2018-2024* | | *2018-2024* | | *2018-2024* | *2018-2024* |
| Indicator 6.3 | Energy saved | | | | | | | | | |  |
|  |  | | | | | MJ | | | | | |
| Expected | | | | Achieved | |
| PIF stage | | Endorsement | | MTR | TE |
|  | LED streetlighting, upgraded transformers and modernized cabling | | | | | 6,200,000 | | N/A | | N/A | 6,130,000 |
| Indicator 6.4 | Increase in installed renewable energy capacity per technology | | | | | | | | | |  |
|  | Technology | | | | | Capacity (MW) | | | | | |
| Expected | | | | Achieved | |
| PIF stage | | Endorsement | | MTR | TE |
|  | Biomass Gasification | | | | | N/A | | N/A | | N/A | N/A |
|  | Biomass (biogas) | | | | | N/A | | N/A | | N/A | N/A |
| **Core Indicator 7** | **Number of shared water ecosystems (fresh or marine) under new or improved cooperative management** | | | | | | | | | | ***(Number)*** |
| Indicator 7.1 | Level of Transboundary Diagnostic Analysis and Strategic Action Program (TDA/SAP) formulation and implementation | | | | | | | | | |  |
|  |  | Shared water ecosystem | | | | Rating (scale 1-4) | | | | | |
| PIF stage | | Endorsement | | MTR | TE |
|  |  |  | | | |  | |  | |  |  |
| Indicator 7.2 | Level of Regional Legal Agreements and Regional Management Institutions to support its implementation | | | | | | | | | |  |
|  |  | Shared water ecosystem | | | | Rating (scale 1-4) | | | | | |
| PIF stage | | Endorsement | | MTR | TE |
|  |  |  | | | |  | |  | |  |  |
|  |  |  | | | |  | |  | |  |  |
| Indicator 7.3 | Level of National/Local reforms and active participation of Inter-Ministerial Committees | | | | | | | | | |  |
|  |  | Shared water ecosystem | | | | Rating (scale 1-4) | | | | | |
| PIF stage | | Endorsement | | MTR | TE |
|  |  |  | | | |  | |  | |  |  |
|  |  |  | | | |  | |  | |  |  |
| Indicator 7.4 | Level of engagement in IWLEARN through participation and delivery of key products | | | | | | | | | |  |
|  |  | Shared water ecosystem | | | | Rating (scale 1-4) | | | | | |
| Rating | | | | Rating | |
| PIF stage | | Endorsement | | MTR | TE |
|  |  |  | | | |  | |  | |  |  |
|  |  |  | | | |  | |  | |  |  |
| **Core Indicator 8** | **Globally over-exploited fisheries Moved to more sustainable levels** | | | | | | | | | | ***(Metric Tons)*** |
| Fishery Details | | | | | | Metric Tons | | | | | |
| PIF stage | | Endorsement | | MTR | TE |
|  | |  | |  |  |
| **Core Indicator 9** | **Reduction, disposal/destruction, phase out, elimination and avoidance of chemicals of global concern and their waste in the environment and in processes, materials and products** | | | | | | | | | | ***(Metric Tons)*** |
|  |  | | | | | Metric Tons (9.1+9.2+9.3) | | | | | |
|  |  | | | | | Expected | | | | Achieved | |
|  |  | | | | | PIF stage | | PIF stage | | MTR | TE |
|  |  | | | | |  | |  | |  |  |
| Indicator 9.1 | Solid and liquid Persistent Organic Pollutants (POPs) removed or disposed (POPs type) | | | | | | | | | |  |
| POPs type | | | | | | Metric Tons | | | | | |
| Expected | | | | Achieved | |
| PIF stage | | Endorsement | | MTR | TE |
|  |  |  | | | |  | |  | |  |  |
|  |  |  | | | |  | |  | |  |  |
| Indicator 9.2 | Quantity of mercury reduced | | | | | | | | | |  |
|  |  |  | | | | Metric Tons | | | | | |
| Expected | | | | Achieved | |
| PIF stage | | Endorsement | | MTR | TE |
|  |  | | | | |  | |  | |  |  |
| Indicator 9.3 | Hydrochloroflurocarbons (HCFC) Reduced/Phased out | | | | | | | | | | |
|  |  | | | | | Metric Tons | | | | | |
|  |  | | | | | Expected | | | | Achieved | |
|  |  | | | | | PIF stage | | Endorsement | | MTR | TE |
|  |  | | | | |  | |  | |  |  |
| Indicator 9.4 | Number of countries with legislation and policy implemented to control chemicals and waste | | | | | | | | | |  |
|  |  |  | | | | Number of Countries | | | | | |
| Expected | | | | Achieved | |
| PIF stage | | Endorsement | | MTR | TE |
|  |  |  | | | |  | |  | |  |  |
| Indicator 9.5 | Number of low-chemical/non-chemical systems implemented particularly in food production, manufacturing and cities | | | | | | | | | |  |
|  |  | Technology | | | | Number | | | | | |
| Expected | | | | Achieved | |
| PIF stage | | Endorsement | | MTR | TE |
|  |  |  | | | |  | |  | |  |  |
| Indicator 9.6 | Quantity of POPs/Mercury containing materials and products directly avoided | | | | | | | | | | |
|  |  |  | | | | Metric Tons | | | | | |
|  |  |  | | | | Expected | | | | Achieved | |
|  |  |  | | | | PIF stage | | Endorsement | | PIF stage | Endorsement |
|  |  |  | | | |  | |  | |  |  |
| **Core Indicator 10** | **Reduction, avoidance of emissions of POPs to air from point and non-point sources** | | | | | | | | | | ***(grams of toxic eq gTEQ)*** |
| Indicator 10.1 | Number of countries with legislation and policy implemented to control emissions of POPs to air | | | | | | | | | |  |
|  |  |  | | | | Number of Countries | | | | | |
| Expected | | | | Achieved | |
| PIF stage | | Endorsement | | MTR | TE |
|  |  |  | | | |  | |  | |  |  |
| Indicator 10.2 | Number of emission control technologies/practices implemented | | | | | | | | | |  |
|  |  |  | | | | Number | | | | | |
| Expected | | | | Achieved | |
| PIF stage | | Endorsement | | MTR | TE |
|  |  | | | | |  | |  | |  |  |
| **Core Indicator 11** | **Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment** | | | | | | | | | | ***(Number)*** |
|  |  |  | | | | Number | | | | | |
| Expected | | | | Achieved | |
|  |  |  | | | | PIF stage | | Endorsement | | MTR | TE |
|  |  | Female | | | | 8960 | | 14250 | | - | 2.398 mln |
|  |  | Male | | | | *8960* | | 14250 | | - | 2.351 mln |
|  |  | *Total* | | | | *17920* | | 28500 | | - | 4.75 mln |

**Appendix f – turkmenistan SCT Project Results Framework (revised version from 2021) with red font to indicate recommended changes by MTR Team**

|  |
| --- |
| **This project will contribute to the following Sustainable Development Goal (s):**  Goal 7: Ensure access to affordable, reliable, sustainable and modern energy for all  Goal 11: Make cities inclusive, safe, resilient and sustainable |
| **This project will contribute to the following country outcome included in the UNDAF/Country Programme Document:***Outcome 2.2: Environmentally sustainable use of natural resources contributes to effectiveness of economic processes and increased quality of life* |
| **This project will be linked to the following outputs of the UNDP Strategic Plan:** *Output 1.3:* *Solutions developed at national and sub-national levels for sustainable management of natural resources, ecosystem services, chemicals, and waste.  Output 1.5. Inclusive and sustainable solutions adopted to achieve increased energy efficiency and universal modern energy access (especially off-grid sources of renewable energy)* |

|  | **Objective and Outcome Indicators** | **Baseline** | **Mid-term Target** | **End of Project Target** | **Assumptions** |
| --- | --- | --- | --- | --- | --- |
| **Project Objective:**  To promote and implement integrated low-carbon urban systems in Ashgabat and Awaza, thereby reducing GHG emissions and creating other environmental, social, and economic development benefits | Reduction in GHG emissions from transport, public lighting, and hotel management, relative to baseline | Total estimated GHG emissions from motor vehicles, public lighting, and hotels in Awaza: approximately 4.4 million tonnes of CO2 per year, projected to grow to 5.0 million tonnes per year by 2020 | Savings of 80,000 tonnes of CO2 emissions achieved via project interventions by end of year 3 | Savings of 366,000 tonnes of CO2 emissions achieved via project interventions by end of project | See Annex J for details on the input data and calculations that underlie estimates of potential energy savings and GHG emissions reductions |
| Reduction in energy consumption from transport, public lighting, and hotel management, relative to baseline | Total energy consumption from motor vehicles, public lighting, and hotels in Awaza estimated at 75,000 TJ per year, projected to grow to 85,000 TJ by 2020 | Energy savings of 1350 TJ across all sectors achieved by the end of year 3 | Energy savings of 6,200 TJ across all sectors | See Annex J for details on the input data and calculations that underlie estimates of potential energy savings and GHG emissions reductions |
| Number of direct individual and institutional participants (including both women and men) in project-led initiatives on alternative transport, pilot waste sorting and reduction, and green hotel management | No initiatives in these areas, therefore no participation | Confirmed participation by at least 5,000 citizens (2,500 women and girls) | Confirmed participation by at least 30,000 citizens (15,000 women and girls) |  |
| **Component 1: Sustainable urban development in Ashgabat**  *Targeted Outcomes:*  ***Improved capacities and enabling conditions*** *in Ashgabat to identify, design and implement integrated low-carbon and climate-resilient solutions in public space*  ***Reduced GHG emissions*** *and other negative environmental impact through interventions involving public spaces and infrastructure* | Original text:  Changes after MTR:  Transport data collected and analyzed and roundtables organized with the mayoral office to inform on successful regional pilot cycling networks and for contacting a high quality design team when the mayoral office is ready | Original text:  Changes after MTR:  No transport data collected and no information at mayoral office on successful cycling networks | Original text: | Original text:  Changes after MTR:  Transport data collected and roundtables organized with the mayoral office to inform on successful pilot cycling networks in CIS region and for contacting a high-quality design team when the mayoral office is ready | A dynamic growing baseline, consistent with documented trends of increasing private vehicle ownership and use. Verification by traffic studies and participant surveys. |
| Changes after MTR:  Promote safe bicycling | Changes after MTR:  No efforts to promote safe cycling |  | Changes after MTR:  Promotion of safe bicycling |  |
| Changes after MTR:  Number of EVs and EV charging stations | Changes after MTR:  0 EVs and EV charging stations |  | Changes after MTR:  4 electric buses and one EV solar charging station |  |
| Reduction in electricity consumption from public outdoor lighting in Ashgabat and all of Turkmenistan | 131 million kWh of annual electricity consumption by street lighting in all of Turkmenistan in 2015, projected to grow to 192 million kWh by 2023; 67 million kWh in Ashgabat in 2015, projected to grow to 75 million by 2023 | Reduction of electricity consumption from public outdoor lighting by 1.5 million kWh per year in Ashgabat, compared with baseline | Reduction of electricity consumption from public outdoor lighting by 1.5 million kWh per year in Ashgabat and 8 million kWh per year in all of Turkmenistan, compared with baseline | See Annex J for a discussion of data and calculations used to define the estimated energy-saving potential and targeted reductions from the lighting sector. |
| Changes after MTR:  Reduction in electricity consumption from smart grid upgrade work | Changes after MTR:  Baseline figures not available |  | Changes after MTR:  Reduction of electricity consumption in Ashgabat from smart grid upgrades | Changes after MTR:  Ministry of Energy carries through with grid upgrades with smart applications |
| Reduction in landfill waste from Ashgabat and Awaza relative to baseline from recycling and waste reduction programs | Baseline figures not available; to be determined during the first project year | Increase in recycling volume by 5 percent  Increase in use of secondary raw materials by 10% | Increase in recycling volume by 10 percent  Increase in use of secondary raw materials by 25% | Measurement and evaluation of this indicator will depend on the availability of data from waste collection agencies, recycling facilities and landfills. |
| **Component 2. Sustainable tourism infrastructure and management practices in Awaza**  *Targeted outcomes:*  *• Improved capacities and enabling conditions in Awaza for integrated low-carbon and climate resilient tourism development*  *• Reduced GHG emissions and other negative environmental impact through interventions involving tourism facilities and infrastructure in Awaza* | Reduction of energy consumption and water consumption in Awaza hotels | Baseline data unavailable. To be obtained by facility audits in first three project years. | Energy and water audits completed in 24 hotels, with measures identified for cost-effective reduction of energy and water consumption per guest by an average of 10% | Energy/water audit measures implemented, leading to reduction in energy and water consumption per guest by an average of 10% | See Annex J for a discussion of the potential for energy savings and avoided emissions from Awaza hotels, including comparisons with international benchmarks. |
| Adoption and implementation of green hotel management standards by Awaza hotels | No green hotel management standards; only piecemeal application of some practices by individual hotels | Green hotel management standards developed with participation by major hotels in Awaza | Green hotel management standards adopted and implemented[[27]](#footnote-28) (changes after MTR) | The project will seek to establish standards applicable across the tourist zone. Individual hotels may also choose to establish their own standards that go beyond the standards are developed for Awaza. |
| Number and capacity of solar-powered charging stations for electric cars | No solar charging stations | One solar charging station installed, with performance evaluation initiated | A total of ~~ten~~ one solar charging stations installed nationwide in Awaza (changes after MTR) | Technical specifications of charging stations, including their capacity. will be determined during the design process. Establishment of charging stations outside Awaza is contingent on the emergence of a market for electric cars elsewhere in the country. |
| **Component 3. Municipal and National Policy**  *Targeted outcome:*   * *Nationwide replication and scaling-up of results of first two components via information dissemination, enhancement of capacity of agencies and managers, and adoption of policies and regulation* | Existence and content of fuel economy standards and incentives for passenger vehicles | Original text:  Changes after MTR:  New standards stipulate that cars cannot be imported into Turkmenistan if their model year is more than three years earlier than the date of purchase ensuring that most vehicles are relatively young and therefore reflect the latest advances in fuel efficiency. | Original text: | Original text:  Changes after MTR:  Development of:   * regulations introducing more stringent fuel standards and a set of demand-side incentives for purchase of more energy efficient vehicles by the public entities and private consumers * international fuel standards that are appropriate for Turkmenistan to 2030 | See Annex J for a full discussion of sectoral potential for increased fuel efficiency, and of the methods used to calculate potential energy savings and avoided emissions. |
| Number of cities of Turkmenistan (and total population therein) that formally adopt sustainability practices in transport, lighting, and waste management | No cities have adopted formal sustainability practices | Ashgabat and Awaza have formally adopted sustainability plans in given areas, and/or an integrated sustainability plan | Two other cities in Turkmenistan with total population of at least 175,000 have formally adopted sustainability plans | The project will promote sustainability planning in several cities across Turkmenistan outside of Ashgabat and Awaza, not only two. Partial results regarding sustainability plans will be reported. |
| Number of citizens reached by public-relations and knowledge-sharing on sustainable urban development | No outreach on sustainable urban development in Turkmenistan | 100,000 citizens reached (50,000 women and girls) | 500,000 citizens reached (250,000 women and girls) | Number of citizens reached to be determined in aggregate from mass media circulation data, distribution of materials. |

# APPENDIX G – evaluation question matrix

| **Evaluative Questions** | **Indicators** | **Sources** | **Methodology** |
| --- | --- | --- | --- |
| Relevance: How does the project relate to the main objectives of the GEF Focal area, and to the environment and development priorities a the local, regional and national level? | | | |
| To what extent was the project in line with GEF focal area, UNDP CPD, UNSDCF, Turkmenistan’s Intended Nationally Determined Contribution (INDC) submitted to UNFCCC, Turkmenistan State Programme on Development of the Economy on 2022-2028 along with relevant SDGs? | Number of national priorities aligned with Project strategy | ProDoc  PIRs  Project designers | Desk review of PIRs and interviews PMU, stakeholders |
| To what extent was the theory of change applied in the project relevant to promoting investment in SCT technologies and expanding access to environmental and energy services for the poor within the framework of “leave no one behind agenda”? | Quality of outcomes and indicators on log frame | ProDoc  PIRs  Project designers | Desk review of PIRs and interviews with project designers, PMU, stakeholders |
| Are the project objectives and outputs clear, practical and feasible within its frame? Do they clearly address target groups? | Quality of outcomes and indicators on log frame | ProDoc  PIRs  Project designers  PMU | Desk review of PIRs and interviews with project designers, PMU, stakeholders |
| To what extent were lessons learned from other relevant projects considered in the design? | Related projects aligned with Project strategy | ProDoc  PIRs  Project designers  PMU | Desk review of PIRs and interviews with project designers, PMU, stakeholders |
| To what extent were perspectives of men and women who could affect the outcomes, and those who could contribute information or other resources to the attainment of stated results, taken into account during project design processes? | Number of national priorities aligned with Project strategy | ProDoc  PIRs  Project designers  PMU | Desk review of PIRs and interviews with project designers, PMU, stakeholders |
| To what extent was this Project designed as rights based and gender sensitive? | Effectiveness and efficiency ratings of the project by the evaluation | ProDoc  PIRs  Project designers  PMU | Desk review of PIRs and interviews with Project designers, PMU, stakeholders |
| To what extent does the Project create synergy/linkages with other projects and interventions in the country? | Effectiveness and efficiency ratings of the project by the evaluation | ProDoc  PIRs  PMU | Desk review of PIRs and interviews with PMU, stakeholders |
| Effectiveness: To what extent have the expected outcomes and objectives of the project been achieved? | | | |
| To what extent did the Project contribute to the attainment of the development of outputs and outcomes initially expected/stipulated in the Project Document’s logical framework until the end of the project duration? | Effectiveness ratings of the project by the evaluation | PIRs and information from PMU and MOEP personnel | Desk review, interviews with PMU and MOEP personnel |
| To what extent has the UNDP partnership strategy been appropriate and effective? | Stakeholder engagement ratings of the project by the evaluation | PIRs and information from PMU and MOEP personnel | Desk review, interviews with PMU and MOEP personnel |
| In which areas does the project have the greatest achievements? Why and what have been the supporting factors? How can the project build on or expand these achievements? | Effectiveness ratings of the project by the evaluation | PIRs and information from PMU, stakeholders and MOEP personnel | Desk review, interviews with PMU, stakeholders and MOEP personnel |
| In which areas does the project have the fewest achievements? What have been the constraining factors and why? How can or could they be overcome? | Effectiveness ratings of the project by the evaluation | PIRs and information from PMU and MOEP personnel | Desk review, interviews with PMU and MOEP personnel |
| What, if any, alternative strategies would have been more effective in achieving the project objectives? | Effectiveness ratings of the project by the evaluation | PIRs and information from PMU and MOEP personnel | Desk review, interviews with PMU and MOEP personnel |
| To what extent are project management and implementation participatory, and is this participation of target groups/ stakeholders contributing towards achievement of the project objectives? | Quality of adaptive management | PIRs and information from PMU and MOEP personnel | Desk review, interviews with PMU and MOEP personnel |
| To what extent has the project been appropriately responsive to the needs of the target groups and changing partner priorities? | Stakeholder engagement ratings of the project by the evaluation | PIRs and information from PMU, stakeholders and MOEP personnel | Desk review, interviews with PMU, stakeholders and MOEP personnel |
| To what extent has the Project contributed to the well-being and human rights of vulnerable groups, including, women? Did the Project effectively contribute to “leave no one behind agenda” and successfully integrate human rights-based approach (HRBA)? | Stakeholder engagement ratings of the project by the evaluation | PIRs and information from PMU, stakeholders and MOEP personnel | Desk review, interviews with PMU, stakeholders and MOEP personnel |
| To what extent has Turkmenistan’s financing programme been effective in improving SME socio-economic standing and energy savings? | Quality of financing strategy to intended results | PIRs and information from PMU, financial stakeholders and MOEP personnel | Desk review, interviews with PMU, financial stakeholders and MOEP personnel |
| To what extent has Turkmenistan’s demonstration projects and financing programme been effective in creating awareness in urban centers and rural areas for renewable energy technology deployment and in demonstrating a functioning and viable financing model? | Quality of financing strategy to intended results | PIRs and information from PMU, financial stakeholders and MOEP personnel | Desk review, interviews with PMU, financial stakeholders and MOEP personnel |
| Did Covid-19 measures have a positive or negative effect on the achievement of Project results? | Quality of strategy to intended results | PIRs and information from PMU and MOEP personnel | Desk review, interviews with PMU and MOEP personnel |
| Efficiency: Was the project implemented efficiently, in line with international and national norms and standards? | | | |
| How well did Project Management work for achievement of results? | Institutional and management arrangements of the Project | PIRs and information from PMU and MOEP personnel | Desk review, interviews with PMU and MOEP personnel |
| To what extent has there been an economical use of financial and human resources? Have resources (funds, staff, time, expertise, etc.) been allocated strategically and cost- effectively to achieve outcomes? | Institutional, financing and management arrangements of the Project | PIRs and information from PMU and MOEP personnel | Desk review, interviews with PMU and MOEP personnel |
| To what extent have project funds and activities been delivered in a timely manner? | Institutional, financing and management arrangements of the Project | PIRs and information from PMU and MOEP personnel | Desk review, interviews with PMU and MOEP personnel |
| To what extent do the M&E systems utilized by UNDP ensure effective and efficient project management? | Institutional and management arrangements of the Project | PIRs and information from PMU and MOEP personnel | Desk review, interviews with PMU and MOEP personnel |
| To what extent was there any identified synergy between UNDP initiatives/ projects that contributed to reducing costs while supporting results? | Institutional and management arrangements of the Project | PIRs and information from PMU and MOEP personnel | Desk review, interviews with PMU and MOEP personnel |
| Sustainability: | | | |
| To what extent will targeted people benefit from the project interventions in the long-term? | Number of stakeholders with issues concerning sustainable livelihoods | PIRs and information from PMU and MOEP personnel | Desk review, interviews with PMU and MOEP personnel |
| Are there any political or financial risks that may jeopardize sustainability of project results? | Number of government and financial stakeholders with issues concerning RE | PIRs and information from PMU, financial stakeholders and MOEP personnel | Desk review, interviews with PMU, financial stakeholders and MOEP personnel |
| Are the legal frameworks, policies and governance structures and processes in place for sustaining Project benefits? | MOEP governance and administrative processes | PIRs and information from PMU and MOEP personnel | Desk review, interviews with PMU and MOEP personnel |
| To what extent have development partners committed to providing continuing support? What is the risk that the level of stakeholder ownership will be insufficient to allow for the Project outcomes/benefits to be sustained? | Number of funds set up for post-GEF assistance | PIRs and information from PMU and MOEP personnel | Desk review, interviews with PMU and MOEP personnel |
| To what extent does this UNDP intervention have a well-designed and well-planned exit strategy? | Institutional and management arrangements of the Project | PIRs and information from PMU and MOEP personnel | Desk review, interviews with PMU and MOEP personnel |
| What could be done to strengthen exit strategies and sustainability in order to support SMEs? | Institutional and management arrangements of the Project | PIRs and information from PMU and MOEP personnel | Desk review, interviews with PMU and MOEP personnel |
| Cross-cutting issues and gender equality and women’s empowerment: How did the project contribute to gender equality and women’s empowerment? | | | |
| To what extent has the Project contributed to “leave no one behind agenda” (including disabled, elderly, youth, refugees etc.)? | Number of stakeholders who are able to comment on gender aspects | Stakeholders | Stakeholder interviews |
| To what extent have gender equality and the empowerment of women been addressed in the design, implementation and monitoring of the project? | Quality of design to intended results | ProDoc and PIRs | Desk review |
| Is the gender marker assigned to this project representative of reality? | Number of stakeholders who are able to comment on gender aspects | Stakeholders | Stakeholder interviews |
| To what extent has the project promoted positive changes in gender equality and the empowerment of women? Did any unintended effects emerge for women, men or vulnerable groups? | Number of stakeholders who are able to comment on gender aspects | Stakeholders | Stakeholder interviews |
| Impact: Are there indications that the project has contributed to, or enabled progress toward reduced environmental stress and/or improved ecological status? | | | |
| To what extent has the project provided an enabling environment and basis for deployment of SCT Project installations in urban and rural areas? | Effectiveness and efficiency ratings of the project by the evaluation | PIRs  Stakeholders (mainly government personnel) | Desk review, interviews with PMU and stakeholders |
| To what extent has the project established a sustainable financing mechanism for SCT projects? To what extent is the financing model piloted by the project replicable and up-scalable for other settings? | Barriers to objectives  Opportunities to leverage | PIRs  Stakeholders (mainly government personnel) | Desk review, interviews with PMU and stakeholders |

# APPENDIX H – responses to comments received on draft te report

Submitted as a separate file.

**Appendix I - Questionnaire**

*These questions are designed for Implementing and Project partners*:

## Has the Project been effective at the national levels in influencing implementation of SCT investment projects?

## Were you involved in revising the changes in the plans for the Project (around the MTR)?

## What were some of the positive or negative, intended or unintended, changes brought about during project implementation? Were there delays in the delivery of some of the outputs?

## What were the challenges that enhanced or impeded Project performance? Were alternative approaches considered in overcoming these challenges? Were the issues procurement related, COVID-related, on-the-ground related?

## Have monitoring and evaluation systems of the Project helped to ensure that activities and outputs were managed efficiently and effectively?

## What were some of the challenges to design and implement ongoing policy on SCT market diffusion?

## With respect to awareness raising, have newsletters and other media informed the general public of Project activities?

## What activities does your organization focus on? Does it empower women or does it ensure everyone is brought into Project activities considering the number of people on the Project?

## After the Project, what are the next steps to providing continuing support to RES investments? Does this include appropriate institutional capacities (systems, structures, staff, expertise, etc.) to be in lace after the Project’s closure date? Does this include raising awareness of project developers on solar pV, wind, biogas and biomass?

## What impact has the Project had on SCT project developers on RES installations? What has been the impact on the livelihoods of the beneficiaries?

## What has been the impact of the Project on the beneficiaries? How has the Project made a difference in their lives?

## Do you see any barriers and risks that may prevent further progress to the long-term impact of continuing RES investments by Damu?

## Do you see any real change in gender equality in the context of decision‐making power, and division of labour?

## What are the most urgent actions to be taken in view that the Project is ending?

*These questions are designed for project developers and beneficiary stakeholders:*

* 1. How did you hear about the SCT Project? Did you have newsletters or other media to informed you of the Project?
  2. How did you arrange your financing for the SCT installation?
  3. Did you experience problems applying for an RES installation with MoE and financial institutes?
  4. What were some of the changes brought about during the switch to RE? Please tell me about positive or negative changes, intended or unintended, were there delays in the delivery of some of the materials?
  5. What were the challenges during the installation of the RES systems? Were there delays in the installation of the RES technologies, and were alternative approaches considered in overcoming these challenges? Were the issues procurement related, COVID-related, on-the-ground related?
  6. With the installation of an RES technology in your household / business, how has the technology benefitted you? What impact has the new RES technology had on you?

# APPENDIX J - evaluation consultant agreement form

Independence entails the ability to evaluate without undue influence or pressure by any party (including the hiring unit) and providing evaluators with free access to information on the evaluation subject. Independence provides legitimacy to and ensures an objective perspective on evaluations. An independent evaluation reduces the potential for conflicts of interest which might arise with self-reported ratings by those involved in the management of the project being evaluated. Independence is one of ten general principles for evaluations (together with internationally agreed principles, goals and targets: utility, credibility, impartiality, ethics, transparency, human rights and gender equality, national evaluation capacities, and professionalism).

**Evaluator 1:**

1. Must present information that is complete and fair in its assessment of strengths and weaknesses so that decisions or actions taken are well founded.
2. Must disclose the full set of evaluation findings along with information on their limitations and have this accessible to all affected by the evaluation with expressed legal rights to receive results.
3. Should protect the anonymity and confidentiality of individual informants. They should provide maximum notice, minimize demands on time, and respect people’s right not to engage. Evaluators must respect people’s right to provide information in confidence, and must ensure that sensitive information cannot be traced to its source. Evaluators are not expected to evaluate individuals, and must balance an evaluation of management functions with this general principle.
4. Sometimes uncover evidence of wrongdoing while conducting evaluations. Such cases must be reported discreetly to the appropriate investigative body. Evaluators should consult with other relevant oversight entities when there is any doubt about if and how issues should be reported.
5. Should be sensitive to beliefs, manners and customs and act with integrity and honesty in their relations with all stakeholders. In line with the UN Universal Declaration of Human Rights, evaluators must be sensitive to and address issues of discrimination and gender equality. They should avoid offending the dignity and self-respect of those persons with whom they come in contact in the course of the evaluation. Knowing that evaluation might negatively affect the interests of some stakeholders, evaluators should conduct the evaluation and communicate its purpose and results in a way that clearly respects the stakeholders’ dignity and self-worth.
6. Are responsible for their performance and their product(s). They are responsible for the clear, accurate and fair written and/or oral presentation of study imitations, findings and recommendations.
7. Should reflect sound accounting procedures and be prudent in using the resources of the evaluation.

**Evaluation Consultant Agreement Form[[28]](#footnote-29)**

**Agreement to abide by the Code of Conduct for Evaluation in the UN System**

**Name of Consultant:** \_\_Roland Wong\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Name of Consultancy Organization** (where relevant)**:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*A close-up of a signature

Description automatically generated***I confirm that I have received and understood and will abide by the United Nations Code of Conduct for Evaluation.**

Signed at *Surrey, BC, Canada* on 31 December 2024

1. Evaluation rating indices (except sustainability – see Footnote 2, and relevance – see Footnote 3): 6=*Highly Satisfactory (HS)*: The project has no shortcomings in the achievement of its objectives; 5=*Satisfactory (S)*: The project has minor shortcomings in the achievement of its objectives; 4=*Moderately Satisfactory (MS)*: The project has moderate shortcomings in the achievement of its objectives; 3=*Moderately Unsatisfactory (MU):* The project has significant shortcomings in the achievement of its objectives; 2=*Unsatisfactory (U)* The project has major shortcomings in the achievement of its objectives; 1=*Highly Unsatisfactory (HU):* The project has severe shortcomings in the achievement of its objectives. [↑](#footnote-ref-2)
2. Sustainability Dimension Indices: *4 = Likely (L):* negligible risks to sustainability; *3 = Moderately Likely (ML):* moderate risks to sustainability; *2 = Moderately Unlikely (MU):* significant risks to sustainability; and *1 = Unlikely (U):* severe risks to sustainability. *Overall rating is equivalent to the lowest sustainability ranking score of the 4 dimensions.* [↑](#footnote-ref-3)
3. Relevance is evaluated as follows: 2 = Relevant (R); 1 = Not relevant (NR) [↑](#footnote-ref-4)
4. From the UNEG Compendium of Evaluation Methods: <http://www.unevaluation.org/document/detail/2939> [↑](#footnote-ref-5)
5. <http://web.undp.org/evaluation/documents/guidance/GEF/mid-term/Guidance_Midterm%20Review%20_EN_2014.pdf> [↑](#footnote-ref-6)
6. Available at: <http://web.undp.org/evaluation/guideline/documents/GEF/TE_GuidanceforUNDP-supportedGEF-financedProjects.pdf> [↑](#footnote-ref-7)
7. Available at: <http://web.undp.org/evaluation/guideline/documents/covid19/update/June2021/UNDP%20DE%20Guidance%20Planning%20and%20Implementation%20during%20COVID19%203%20June%202021.pdf> [↑](#footnote-ref-8)
8. Specific, Measurable, Achievable, Relevant, Time-bound [↑](#footnote-ref-9)
9. Cooperation on the standards was to involve liaising with The Ministry of Interior (import regulations), Auto Transport Agency (public procurement regulations), and standardization agency (incentives for private buyers). [↑](#footnote-ref-10)
10. Starting 18 July 2018 [↑](#footnote-ref-11)
11. Up to 31 October 2024 [↑](#footnote-ref-12)
12. 6 = HS or Highly Satisfactory: There were no shortcomings;

    5 = S or Satisfactory: There were minor shortcomings,

    4 = MS or Moderately Satisfactory: There were moderate shortcomings;

    3 = MU or Moderately Unsatisfactory: There were significant shortcomings;

    2 = U or Unsatisfactory: There were major shortcomings;

    1 = HU or Highly Unsatisfactory

    U/A = Unable to assess

    N/A = Not applicable. [↑](#footnote-ref-13)
13. On 14 July 2023, GoT has split the former IP, MoAEP into two separate ministries: the Ministry of Agriculture and the MoEP with the latter becoming the IP of the SCT Project. The impact of this change was the slow-down of Project implementation as it took 4-5 months until the new MoEP became fully operational. [↑](#footnote-ref-14)
14. Ibid 12 [↑](#footnote-ref-15)
15. Energy and water audit measures to be implemented [↑](#footnote-ref-16)
16. 1) LED floodlight “Midea MDL - FLFB 100 W” for lighting sports grounds - 76 units; 2) Solar grid power plant 9.9 kW based on Seraphim SRP 370 BM solar modules and SOFAR 3300TL G3 inverters - 1 piece; 3) LED lamp E-27 “Midea MDL - BUA 4505 W”- 3,320 pcs; 4) LED lamp E -14 "Midea MDL-CAC37M05W" - 3,800 units; 5) Aerator "Neoperl 40 2056 92" complete with adapter " Neoperl 33 NL 10 11" for washbasin and bath mixer - 320 units; 6) Water-saving shower head "Neoperl PCR 02 6298 94" - 200 units; 7) Composter "Graf Thermostar 1000 l - 4 units; 8) Electric lawn mower "HONDA HRG 466 XB SEEA"- 2 units; 9) Electric chopper "BOSCH AXT 25 TC" - 2 units; 10) Submersible centrifugal pump for waste and salt water "Wilo Drain TP 100E230/70" - 1 unit; 11) Reverse Osmosis Membrane Element "HYDRANAUTICS CPA5 MAX" - 12 units. [↑](#footnote-ref-17)
17. 1) metal containers for the collection and processing of plastic waste - 75 units; 2) 180 units of three-section urns; 3) 600 plastic containers; 4) two 3.5 t trucks for collection, sorting and removal of household waste at pilot sites. [↑](#footnote-ref-18)
18. There was a co-financing letter issued by this Ministry for the ProDoc. [↑](#footnote-ref-19)
19. The Atlas proposes a contact-less fixed-fee family monthly e-bus passes that should be in high demand in the school period. These pilot measures (such as real-time bus availability forecasting) will test interest of the residents to climate-neutral transport solutions. The Project has recruited a consultant to produce a forecast of efficiencies that can be achieved by the Government in the post-project period in other localities based on changes to the fleet composition of public bus and government-owned taxi operators and more effective bus route planning. The consultant is looking to measures to achieve both reductions in mileage per passenger (based on removing route duplication and dry bus runs) and monetary efficiencies (by reducing the number of buses to be purchased and serviced). [↑](#footnote-ref-20)
20. <https://turkmenportal.com/blog/77585/mezhdunarodnaya-konferenciya-po-izmeneniyu-klimata-proshla-v-gorode-turkmenbashi> [↑](#footnote-ref-21)
21. <https://www.instagram.com/p/CyN9a6sKGBZ/?igshid=MTc4MmM1YmI2Ng%3D%3D&img_index=1> [↑](#footnote-ref-22)
22. <https://orient.tm/en/post/70144/series-events-promote-energy-efficiency-technologies-was-held-mary> [↑](#footnote-ref-23)
23. <https://turkmenistan.gov.tm/ru/post/83200/v-turkmenistane-predstavlen-novyj-uchebnyj-modul-po-izmeneniyu-klimata> [↑](#footnote-ref-24)
24. <https://turkmenportal.com/blog/77585/mezhdunarodnaya-konferenciya-po-izmeneniyu-klimata-proshla-v-gorode-turkmenbashi> [↑](#footnote-ref-25)
25. Gender marker for this Project could be “1”. [↑](#footnote-ref-26)
26. The PMU had 3 women (1 Assistant, 2 Project Specialists) as well as 4 women as National Consultants (2 on Transport issues; 1 on Ecological data and 1 on Waste), and International Consultants (1 woman on RE; 1 woman on EE). [↑](#footnote-ref-27)
27. This indicator will be accompanied by an overview of best international practices; preparation of a review of the main driving forces in introducing green standards in countries with similar energy and water tariff rates; and the development of draft green standards that are to be discussed with interested hotels (some of which are currently being privatized). [↑](#footnote-ref-28)
28. www.unevaluation.org/unegcodeofconduct [↑](#footnote-ref-29)