INDEPENDENT EVALUATION DIVISION

Independent Thematic Evaluation

GEF UNIDO Cleantech Programme for SMEs in Turkey

UNIDO SAP ID: 130124
GEF Project ID: 5505

UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

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Ms. Joyce Miller, International Evaluation Consultant and Team Leader

Mr. Ümit Ozlale, National Evaluation Consultant

Abbreviations and acronyms

COP	(UN Climate Change) Conference of the Parties
CTO	Cleantech Open
EBRD	European Bank for Reconstruction and Development
EU	European Union
GCII	Global Cleantech Innovation Index
GCIP	Global Cleantech Innovation Programme
GDP	Gross Domestic Product
GEF	Global Environment Facility
ICT	Information and Communication Technology
KPI	Key Performance Indicator
M&E	Monitoring and Evaluation
(M)SME	(Micro) Small- and Medium-Sized Enterprise
ODG/EVQ/IEV	UNIDO Office for Independent Evaluation
PIR	Project Implementation Report
PMU	Project Management Unit
R & D	Research and Development
RBM	Results Based Management
SDG(s)	Sustainable Development Goal(s)
TE	Terminal Evaluation
TOC, RTOC	Theory of Change, Reconstructed Theory of Change
ToR	Terms of Reference
TTA(s)	Technology Transfer Accelerator(s)
TTGV	Technology Development Foundation of Turkey
TTO(s)	Technology Transfer Office(s)
TÜBITAK	Scientific and Technological Research Council of Turkey
TÜİK	Turkish Statistical Institute
UNDP	United Nations Development Programme
UNIDO	United Nations Industrial Development Organisation
TRY	Turkish Lira
USD	US dollar

Glossary of evaluation-related terms

Term	Definition
Baseline	The situation, prior to an intervention, against which progress can be assessed.
Effect	Intended or unintended change directly or indirectly due to an intervention.
Effectiveness	The extent to which the development intervention's objectives were achieved or are expected to be achieved.
Efficiency	A measure of how economically resources/inputs (funds, expertise, time, etc.) are converted to results.
Impact	Positive & negative, intended & non-intended, directly & indirectly, long term effects that represent fundamental durable change in the condition of institutions, people & their environment brought about by the Project.
Indicator	Quantitative or qualitative factors that provide a means to measure the changes caused by an intervention.
Intermediate States	The transitional conditions between the Project's outcomes & impacts which must be achieved in order to deliver the intended impacts.
Lessons learned	Generalizations based on evaluation experiences that abstract from the specific circumstances to broader situations.
Logframe (logical framework approach)	Management tool drawing on results-based management principles used to facilitate the planning, implementation and evaluation of an intervention. It involves identifying strategic elements (activities, outputs, outcomes, impacts) and their causal relationships, indicators, and assumptions that may affect project success or failure.
Outcomes	The likely or achieved short- to medium-term behavioural or systemic effects to which the Project contributes, which help to achieve its impacts.
Outputs	The products, capital goods, and services that an intervention must deliver to achieve its outcomes.
Relevance	The extent to which an intervention's objectives are consistent with beneficiaries' requirements, country needs, global priorities and partners' and donor's policies.
Risks	Factors, normally outside the scope of an intervention, which may affect the achievement of an intervention's objectives.
Sustainability	The continuation of benefits from an intervention, after the development assistance has been completed.
Target groups	Specific entities for whose benefit an intervention is undertaken.

Map of GEF-UNIDO Cleantech Programme for SMEs in Turkey

Establishment & operation of platform for Cleantech Competition & associated Accelerator

Strengthening of policy & regulatory framework for the development of a supportive local innovation ecosystem

Institutional capacity-building for the organisation of the Competition & Accelerator

Executive Summary

Evaluation Background and Methodology

This document represents the final report of the Terminal Evaluation (TE) of the "Cleantech Programme for SMEs in Turkey", initiated by UNIDO in partnership with the Global Environment Facility (GEF) in October 2013, for a 36-month duration, extended to 31 December 2018. This Evaluation Report describes the project's context, evaluation approach and its findings, conclusions, lessons learned, and recommendations. Detailed background information is included in the annexes.

This TE assessed the project's design and performance in terms of relevance, effectiveness, efficiency, sustainability of benefits, and progress to impact. The TE's main purposes are to (i) provide evidence of results to meet accountability requirements; (ii) promote learning, feedback, and knowledge sharing to enhance the design and implementation of future projects.

Carried out during October-December 2017 by an independent team, the TE consisted of i) desk review of relevant documentation; ii) assessment of project design, including a reconstruction of its Theory of Change; iii) online survey of key actors involved in the project's Competition-Accelerator with almost 80% response rate; iv) field mission (Ankara, Istanbul); v) remote consultation with other relevant stakeholders; vi) analysis and development of evidence-based findings & recommendations.

Summary of the Main Evaluation Findings

Impact

This intervention adequately incorporated environmental, economic and social safeguards. Evidence of progress-to-impact was observed, especially for Outcomes 1 and 3 (Competition-Accelerator and associated capacity-building); project support could have been further leveraged to reach desired impacts on Outcome 2 (strengthening policy environment to favour cleantech innovation adoption).

Project Design

The integration of technical (business assistance), policy review/support, and capacity-building is seen as a winning combination for promoting private sector development and expanding private sector engagement in stimulating the local innovation ecosystem and meeting national commitments of international environmental agreements. The approach was conceptually sound and could have benefitted even further from being designed as part of a larger programme rather than implemented as an individual country project. Improvements in formulations of outcomes and impacts would have better oriented the project's implementation to reach the full extent of its transformational impact.

Relevance

Filling a critical gap, the project successfully demonstrated a highly relevant approach to support cleantech innovation & commercialization. It was highly pertinent for international/regional/national priorities, target group needs, aligned with donor priorities & UNIDO's mandate, and highlights Turkey's potential to be a role model in terms of entrepreneurship within the broader region.

Effectiveness

Local institutional anchoring and achievements supported by the Competition-Accelerator were more than expected; there are further opportunities to strengthen the policy dimension, facilitate experience exchange, and support commercialization of cleantech ideas.

Efficiency

This intervention was judged to be highly efficient in the use of allocated resources to deliver more than initially envisaged achievements, albeit over a timespan almost double what was planned.

Sustainability of Benefits

The project effectively generated awareness amongst relevant stakeholders and facilitated the relationships of a few startups with relevant government entities to get a roadmap in place to overcome regulatory barriers. This result illustrated the power of this type of project support and shows the potential for Turkey to leverage the results and outcomes of the project, moving forward.

Gender Mainstreaming

The project team had relevant training and tools to address mainstreaming of gender and other socially-inclusive aspects. Targets were set and tracked for recruitment of female trainers, mentors, judges, and team leaders within participating startups.

Monitoring and Evaluation (M & E)

UNIDO's standard M&E approach was designed, adequately resourced, and implemented. Project monitoring activities represented the bulk of the workload of the Project Management Unit (PMU). The Project Steering Committee (PSC) was constituted by relevant key actors and had high legitimacy; the PMU could have benefitted even further from its supervision and strategic guidance.

Results-Based Management

The PMU and local executing host, TÜBITAK, maintained focus on progressing activities, outputs, and outcomes according to the project's results framework.

Performance of Partners

UNIDO carried out its implementation role and duties in a responsible manner. The agency's participation was highly valued by all stakeholders. Hopes for expanded exchange, links with other GCIP countries, and access rights to the cleantech platform and a key methodology utilized in the training need to be clarified. The deficiency in the project's steering structure to fulfil its role in providing strategic guidance and project supervision was counter-balanced by the strength, leadership, and commitment of the local host, TÜBITAK. GEF's contribution through the GCIP to bridge gaps in resources and capabilities for innovation was highly relevant and appreciated. The timely disbursement of project funds effectively supported the envisaged activities and outcomes.

Other Assessments Required for GEF-Funded Projects

No instances of financial mismanagement, unintended negative impacts, or risks that require a follow-up were detected. The cash and in-kind contributions from TÜBITAK made a highly positive impact throughout the project's implementation. Most of the co-financing commitments from other partners fell short, due to the inability to establish an effective coordination mechanism, which was to be operationalized through stable participation in the PSC. The failed coup attempt (15 July 2016) further impacted this aspect. Moving forward, TÜBITAK's intention to significantly increase its financial support and strengthen linkages with its existing Individual Young Enterprise (BiGG) to allow GCIP alumni to gain access to further support on their innovation journey, pave the way for transforming the GCIP initiative into a national programme.

Rating of Project Performance

Overall, the project is rated as "satisfactory". Table 1 provides an overview of the ratings[1].

[1] According to the evaluation criteria and 6-point scale stipulated in the evaluation's Terms of Reference: Highly Satisfactory (HS); Satisfactory (S); Moderately Satisfactory (MS); Moderately Unsatisfactory (MU); Unsatisfactory (U); Highly Unsatisfactory (HU). Sustainability of Benefits is rated from Highly Likely (HL) to Highly Unlikely (HU)

Table 1: Summary of Evaluation Ratings

Criterion	Rating
A. Impact	S
B. Project Design	S
➢ Overall Design	S
➢ Logframe	MU
C. Project Performance	S
➢ Relevance	HS
➢ Effectiveness	S
➢ Efficiency	HS
➢ Sustainability of Benefits	ML
D. Cross-cutting performance criteria	-
➢ Gender Mainstreaming	S
➢ M & E	S
➢ Results-Based Management (RBM)	S
E. Performance of partners	-
➢ UNIDO	S
➢ National Counterparts	S
➢ Donor	HS
F. Overall assessment	S

Summary of Lessons Learned and Recommendations

Lesson #1: A robust Theory of Change (TOC), developed through multi-stakeholder discussion with attention put on formulations, can strongly guide an intervention towards achieving meaningful transformational impact (ideally within a realistically-assigned timeframe and adequate resources).

Lesson #2: An overall programme framework, with adequate resourcing for management and supervision, can allow for synergies, cross-country fertilization, local adaptation to opportunities and needs, and generate an M&E framework from the outset that facilitates pertinent data-gathering and analysis to identify levers and pitfalls underpinning the sustainability of results and benefits.

Lesson #3: Recognize the importance of supervision in supporting and keeping implementing teams on track and within scope; competences may need to evolve as a project moves from startup to maturity and hand-off; staff, support, develop, and supervise the implementing team accordingly.

Lesson #4: Having a clear exit strategy as part of project design, together with assuring country ownership, funding and support is in place, is key to sustaining the project's results and benefits.

The following recommendations are offered to UNIDO, the Government of Turkey, and the GEF:

Recommendation #1: Increase focus on the policy side and aim to make substantive progress towards the originally envisaged outcome in this domain during the current 1-year extension.

Recommendation #2: Draw inspiration from experience and lessons learned within existing institutional collaboration in order to buttress needed competences and strengthen supervisory role.

Recommendation #3: Reinvigorate the project's steering structure through intensifying efforts to strengthen the national-level mechanism's coordination function, backed up by appropriate monitoring to track success, anchor country ownership, and assure exit from project support.

These recommendations are fully elaborated in the Report's final chapter, together with their envisaged linkages, desired effects, and suggestions regarding ways in which they can be pragmatically implemented in the short-term.

1 Evaluation Objectives, Methodology, Process

1.1 Introduction and Background on the Terminal Evaluation

1. The "GEF UNIDO Cleantech Programme for SMEs in Turkey" (hereafter, GCIP Turkey) project was launched in Turkey in October 2013 by UNIDO, hosted by the Scientific and Technological Research Council of Turkey (TÜBITAK), in collaboration with several other government institutions as co-financing partners.

2. Following UNIDO Evaluation Policy and GEF Monitoring and Evaluation Policy, this Terminal Evaluation (TE) has been carried out during October-December 2017 by an independent team including an international consultant (Ms. Joyce Miller), who also acted as the team leader, and a national consultant (Mr. Ümit Ozlale).

1.2 Objectives and Scope of the Terminal Evaluation

3. Guided by Terms of Reference given by UNIDO (see Annex 1), this evaluation had 3 objectives:

   - Assess project performance in terms of relevance, effectiveness, efficiency, sustainability of benefits, and progress to impact
   - Identify key learning to feed into the design and implementation of forthcoming projects
   - Develop findings, lessons, and recommendations that could be used to enhance the design of new projects and implementation of ongoing projects of UNIDO

4. This TE covers the project's duration from its start on 21 October 2013 until 31 December 2017, which included a 16 -month "no-cost" extension.

5. In terms of scope, the TE assessed the extent to which the project achieved its main purpose (to promote clean energy technology innovation & entrepreneurship amongst Turkish SMEs). In this light, the evaluation considered the extent to which the Clean Energy Technology Innovation Competition and Entrepreneurship Accelerator Programme (hereafter, Competition-Accelerator) was a suitable instrument for achieving this aim.

6. The evaluation also assessed the likelihood of sustainability of project results following project's completion. This involved looking into the extent to which the project: i) helped put in place conditions likely to address drivers and overcome barriers to promoting clean energy technology innovation & entrepreneurship in Turkey; ii) used a coordinating approach to catalyse a more vigorous implementation of ongoing direct support programmes and optimize/expand their support; iii) yielded direct outcomes that are already being utilized, or could be expected to be used in the near future, to stimulate and support cleantech startups within a policy framework that fosters a vibrant supportive local innovation ecosystem.

1.3 Evaluation Methodology

7. The TE was carried out by an independent team in accordance with the required guidance[2] following criteria elaborated in the evaluation's ToR, which were rated using UNIDO's 6-point scale, with justifications elaborated through the Report's main body and findings.

[2] UNIDO's 2015 Evaluation Policy, UNIDO's 2006 Guidelines for the Technical Cooperation Project and Project Cycle, GEF Guidelines for GEF Agencies in Conducting Terminal Evaluations, GEF Monitoring and Evaluation Policy, and GEF Minimum Fiduciary Standards for GEF Implementing and Executing Agencies.

8. The evaluation used a participatory approach where key stakeholders were kept informed and consulted throughout the process. The evaluation team liaised with UNIDO's Independent Evaluation Division (ODG/EVQ/IEV) on methodological issues and the evaluation's conduct.

9. To assure a robust approach, an evaluation framework was developed, together with envisaged sources of data that could be expected to yield evidence of achieved results and impacts. The project's Theory of Change was reconstructed and improved with feedback from the Evaluation Office and the Project Manager. A qualitative & quantitative approach was used in gathering data, with the aim of developing insights into fundamental strengths and shortfalls as a basis for crystallizing the findings and extracting relevant lessons for organisational learning & operational improvement. Data was collected using multiple means:

- Desk study and literature review: of key project documentation, including the initial approval request, annual work plans, monitoring reports, Project Steering Committee (PSC) minutes, annual Project Implementation Reports (PIRs), training documents, dissemination materials, relevant correspondence, project website, other thematic resource materials. See Annex 2.
- Field visit: to Ankara & Istanbul, which allowed for direct observations and meetings with the PMU, local host, PSC members, and other actors (mentors, assistant trainers, judges, entities supporting startups & teams involved in and directly benefitted from the project's support).
- Remote Interviews: were carried out with UNIDO staff in Vienna headquarters, the donor in Washington, international consultants involved in the project, as well as experts tapped to provide an external general view of cleantech innovation acceleration and venture capital.
- Online survey with ratings and explanatory justification: sent to 32 key actors identified by the PMU. With an almost 80% response rate, this survey yielded valuable knowledge regarding the operation and impacts of the Competition-Accelerator and uncovered perspectives regarding the relevance of and interest in this approach for the country and their services.

10. The PMU assisted in identifying and arranging meetings with relevant actors: 44 respondents were personally interviewed and/or provided written feedback through an online survey (see Annex 3). This consultation of a broad cross-section of implementing partners and relevant stakeholders was used to gather a range of perspectives to deepen understanding, triangulate the data, and allow for evidence-based conclusions and recommendations.

11. Steps were undertaken to enhance stakeholder engagement and the quality of consultation: i) respondents were informed about the TE's aims and guided in their input through a semi-structured protocol; ii) well-formulated, open-ended questions and further probes were used to promote balanced reflection, generate new insights, and yield higher quality data (as opposed to yes/no questions or an 'audit' approach), as it was considered that input to this evaluation required contextualisation, complex description, and explanation; iii) respondents were assured of the anonymity and confidentiality of their input.

12. The quality of data analysis was assured by using a software tool to systematically analyse, code, cross-reference, and comment data gathered through interviews and written input, with a clear trace back to the evidence underpinning the findings.

1.4 Challenges and Limitations

13. While it would have been ideal to have direct input from all actors involved in implementing activities over the project's entire duration, due to budget and time constraints, only a limited number of those involved in and impacted by the project could be consulted. It is hoped that the actors chosen for more intensive consultation provided a sufficiently representative view, thereby facilitating a balanced assessment of the project's intended outcomes and impacts.

14. This TE was undertaken just prior to the completion of the project's phase, in a period when the PMU was very busy with dissemination and training activities for a planned 5th cycle, in conjunction with building the argumentation for a further 1-year extension, until December 2018, which was granted on 2 December 2017. Due to the need to prioritize activities, there was some delay in providing timely reporting information for 2016-2017 operations. The Evaluation Team, in agreement with relevant parties, felt it was important to accommodate this delay in view of the value of this information for the assessment of project performance.

15. At the time of the preparation of this Evaluation Report, not all evidence was available regarding outcomes. In this light, the extent to which the expected outcomes were achieved as assessed and the extent to which their achievement depends on the delivery of project outcomes. This was assessed by looking at the project's causal pathways.

2 Country and Project Background

2.1 Country Background

16. Turkey has a population of close to 80 million, with 68% of the population between 15-64 years old. Turkey has a demographic window of opportunity which can be leveraged, with a median age of 31.4 years and 85% of the population below 55 years. Annual population growth in 2016 was 1.35%, which takes account of the massive inflow of immigrants from neighbouring Syria fleeing civil strife. Around 21.2% of the population lives below the poverty line[3]. Although total unemployment rate was 10.8% in August 2017, youth unemployment is over 20%. Despite recent improvements, labour force participation rate is still low, at 52.9%.

17. In 2016, Turkey had a GDP of USD 857.7 billion, with a GDP per capita slightly above USD 10'000. Although real GDP growth rate was around 3% in 2016, the expectation is that this will reach over 5% in 2017. The services sector represents 61% of GDP, while the shares of industry, agriculture, and construction sectors are 22.2%, 7%, and 9.7%, respectively. However, the labour force engaged in these sectors is differently represented: 52.6% (services), 18.9% (industry), 20.7% (agriculture), 7.9% (construction). The 2017 growth rate for industrial production is expected to remain strong, consistent with expected high real GDP growth. Research suggests that there is correlation between the GDP of a country and its capability to create a well-functioning cleantech innovation ecosystem[4].

18. Within the region, Turkey is a key production hub. Manufacturing exports constitute over 90% of total exports. 63% of exports come from mid-tech products. Only 3.8% are high-tech products. Around half of Turkey's exports go to the European Union. Germany is Turkey's major export partner, followed by the United Kingdom and United States. Turkey has run a foreign trade deficit for years; the share of manufacturing products in total imports is over 80%. Nearly 75% of Turkey's imports are imported intermediate (raw materials) goods. One dominating factor behind Turkey's structural foreign trade deficit is its reliance on energy imports, which underpins the importance of energy sustainability and diversity to assure sustainable economic growth.

19. Turkey's reliance on energy imports and its import-dependent production structure has led to a systematic current account deficit, which constitutes one of country's main macroeconomic

[3] The Turkish Statistical Institute's recent "Income & Life Conditions Study" set the poverty line at 60% of median income. The percentage of population below the poverty line would decrease to 14.3% if this was taken as 50% of median income.
[4] Global Cleantech Innovation Index Reports, 2014 and 2017 (pg14)

fragilities. Such a structure, together with the non-financial sector's excessive foreign debt, makes the Turkish economy more prone to exchange rate movements, which, in late 2017, represented a key macroeconomic risk. In this context, the government has put increasing emphasis on reducing energy imports through the utilization of renewable energy sources.

2.2 Sector-specific issues of concern to the project

20. Turkey's national energy strategy seeks to increase the share of power generated from renewable energy to 30% and meet 10% of transport sector energy needs with renewables by 2023. In fulfilling its mission to provide "the highest contribution to national welfare by utilizing energy and natural resources in the most efficient and environmentally-conscious manner", the Ministry of Energy and Natural Resources is following a strategic plan that emphasizes energy supply diversification and the use of renewable energy (2015-2019).

21. Regarding the renewable energy sector, Turkey established its basic legal framework to support renewable energy in 2005[5]. Investments in renewable energy started growing with the 2011 introduction of a technology-specific and longer-term support mechanism for renewable energy sources[6]. In 2012, the New Investment Incentives Programme was launched to spur renewable energy investments, R&D initiatives, development of equipment, and the manufacturing of component parts of renewable energy power plants.

22. The 2017 Global Cleantech Innovation Index (GCII, composed of 15 indicators of creation, commercialization and growth of cleantech startups) ranked Turkey 33rd of 40 countries[7]. Although well below the global average, some improvement in cleantech commercialization has been attributed to the country's cleantech commodity imports and above-average share of renewable energy of total primary energy consumption. There is room to improve, especially in creating a supportive policy environment that enables access to finance.

23. Despite its weak performance in the GCII, Turkey has a better position in terms of entrepreneurial activities. According to the Global Entrepreneurship Index 2017, which measures the health of entrepreneurship ecosystems, Turkey ranks 36th of 137 countries. However, female participation in entrepreneurship activities is still very low; Turkey scored below 50 (out of 100) in the 2015 Female Entrepreneurship Index.

24. According to the 2016-2017 Global Entrepreneurship Monitor Report, Turkey's entrepreneurship activity has great potential for positive social impact. In 2016, Turkey ranked 14th out of 64 countries on total early-stage-activity. With respect to internal market dynamics, Turkey also offers great potential, ranking 20th in this report. For R&D transfer, the country was

[5] Utilization of Renewable Energy in Electricity Generation Law 5346. Complemented by 2007 Energy Efficiency Law 5627 and Geothermal Law 5686 and 2013 Electricity Market Law 6446. Such laws oblige electricity retail suppliers to purchase electricity generated from renewables. There is a provision to reduce land acquisition fees for renewable energy investment
[6] Through YEKDEM, which exempts renewable energy generation facilities with a capacity below 1 megawatt from licensing
[7] This biennial review carried out by Cleantech Group, WWF, UNIDO, Asian Development Bank, Swedish Energy Agency and Tillväxtverket explores the cleantech innovation system of 40 countries through *inputs to innovation* (development of technology supply) and *outputs-to-innovation* (a country's ability to commercialize innovation). Inputs-to-innovation have general innovation drivers with cleantech specific innovation drivers as sub-pillars. Outputs-to-innovation have emerging cleantech innovation and commercialized cleantech innovation as sub-pillars. This index looks at i) why entrepreneurial companies developing sustainable solutions seem to spring up in certain geographies and which economic, social & environmental conditions cultivate hotbeds for such innovation; ii) policies and other factors relevant for producing cleantech entrepreneurs and supporting commercialization of their companies. See www.cleantech.com/2017-global-cleantech-innovation-index-a-look-at-where-entrepreneurial-clean-technology-companies-are-most-likely-to-emerge-from-over-the-next-10-years-and-why/

ranked 15th. In terms of social impact, the country was ranked 2nd on the potential of entrepreneurship activities to create jobs. Despite Turkey's improved rankings in doing business, government policies on tax and bureaucracy are amongst the most important obstacles for promoting the country's entrepreneurship ecosystem.

25. Turkey's innovation ecosystem has a variety of actors: accelerators, incubators, angel investors & venture capitalists, universities, governmental bodies and their support programs. According to Startups Watch, 26 incubators and accelerators were operating in 2017, some of which belong to global networks. According to the Treasury Under Secretariat, in November 2016, there were 408 accredited angel investors in Turkey. Technology Transfer Accelerator (TTA) estimated that 150 of these are active, meaning that they have invested in at least one startup. According to StartupsWatch, total investment at pre-seed and seed stages amounted to about USD 18 million in 2015. There are around 15 angel investor networks in Turkey. Only 3 of these (Galata Business Angels, BIC Angels, Keiretsu Turkey) have invested in over 10 startups in the country. Most of their investment was in Information & Communication Technology (ICT).

26. The Ministry of Science, Industry and Technology (MoSIT), TÜBITAK, and the Small and Medium Enterprises Development Organization (KOSGEB) are the main government bodies that support innovation and entrepreneurship through R&D centres[8], direct funding, incentives, exemptions, and capacity building. TÜBITAK offers programmes that support entrepreneurs, universities, venture capital funds, R&D activities, scientific and research projects, new product development initiatives, and patent applications. TÜBITAK also leads the Entrepreneurial and Innovative University Index, which aims to increase awareness amongst universities and students. KOSGEB provides support programs for entrepreneurs and SMEs to promote their R&D and innovation activities. Amongst these, the International Incubation Center and Accelerator Support Program offers financial support to universities and university techno-parks to establish incubation centres abroad. The main objective is to help technology startups enter new markets. Overall financial support from KOSGEB was about USD 11 million.

27. Technology Development Foundation of Turkey (TTGV) is a public-private partnership that supports technology entrepreneurship activities through research, incubation, and startup support programs. Many universities have their own incubation centres or accelerators that support entrepreneurial activities of students and/or faculty. Technology Transfer Offices (TTOs) and "techno-parks", primarily established on university campuses, aim to integrate academic studies with commercial activities. The TTOs assist public research organisations to transform their intellectual capital into commercial products. In November 2017, there were 34 TTOs in operation supported by TÜBITAK. By December 2015, 63 techno-parks were established, with 49 in operation. The performance of techno-parks located in Technology Development Zones is monitored by MoSIT and areas for improvement are being determined.

28. There are several regulations in place that affect innovation and entrepreneurship activities. An individual capital participation system sets the foundation for personal investments. The system requires investors to obtain a license that enables them to invest: either in an existing venture company or by setting up a new venture company with an entrepreneur. Based on certain criteria, investors can obtain tax deduction incentives for their investments. Venture Capital Investments are regulated under the Capital Markets Law, which ensures that venture capital company operations are aligned with Capital Market Board approvals. Another regulation that governs crowdfunding activities is included within the Capital Markets Law.

[8] As of December 2016, 334 R&D centers were approved by MoSIT.

2.3 Project Summary

2.3.1 Project Objective and Structure

29. The project's primary objective was to promote clean energy technology innovations and innovative clean energy technology entrepreneurship in Turkey through a Clean Energy Technology Innovation Competition and Entrepreneurship Accelerator Programme.

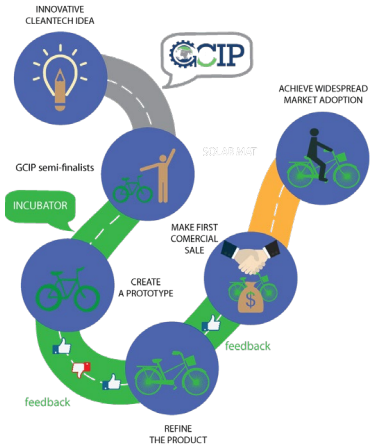
30. To achieve this objective, the project was structured into 3 components, which were themselves structured into a further 7 outputs, supported by monitoring and evaluation, and elaborated in a full logical framework (see Table 4).

2.3.2 Background

31. The project traces its origin to the 2011 UN Climate Change Conference of the Parties (COP) in which the "Greening the COP17" was launched by the Government of South Africa through GEF-UNIDO support. The project in Turkey builds on the success and lessons that emerged from the design and implementation of the first South Africa Clean Technology Competition for entrepreneurs and SMEs with innovative concepts in the areas of renewable energy. energy efficiency, and green building practices.

32. Subsequently, during the COP23 (2014 in Bonn, Germany), GEF and UNIDO collaborated to launch a Global Cleantech Innovation Programme (GCIP) with the aim of fostering innovation and entrepreneurship ecosystems through building national capacity, mentoring & training, promoting low carbon technology transfer, and linking innovative enterprises to finance to support and accelerate startup entrepreneurs to develop and commercialize cleantech solutions with potential to contribute towards protecting the global commons. The GCIP was designed to intervene at an early stage to identify and nurture the most promising cleantech innovators and accelerate these towards commercializing their innovative ideas (see Figure 1).

Figure 1: The GCIP's Embedding within the National Ecosystem for Innovation[9]



33. In 2013, individual GCIP country projects were launched in 6 countries: Armenia, India, Malaysia, Pakistan, South Africa, Turkey. GCIP Turkey's Project Document indicated that it was envisaged to create a network of clean energy entrepreneurs originating from the participating countries. By 2017, Morocco, Thailand, and Ukraine joined under subsequent GEF funding cycles.

[9] Source: Presentation to PSC (5 February 2015), by Tiep Nguyen, UNIDO Project Manager, GCIP Turkey

34. In an emerging economy like Turkey, there are plenty of innovators and inventors, but they face many barriers to transform their ideas into viable businesses, products, and services:

- Lack of an enabling policy and regulatory environment
- Limited access to finance
- Shortage of entrepreneurial skills and methodologies
- Insufficient institutional capacity and lack of coordination amongst key players
- Lack of awareness and hence insufficient participation and support from all relevant stakeholders and the public at large

35. The GCIP was launched in Turkey on 21 October 2013 with a 36-month duration (to October 2016) with the aim of removing, or at least mitigating the above-mentioned barriers, to facilitate the development of an enabling innovation ecosystem and encourage SMEs (which constitute 99% of all Turkish companies) to contribute towards climate change mitigation and adaptation. The term "innovation ecosystem" refers to the culture, enabling policies & leadership, and the availability of appropriate finance, quality human capital, venture-friendly markets, and a range of institutional and infrastructural support[10].

36. In July 2016, UNIDO, together with its executing partner TÜBITAK, in agreement with other relevant counterparts, extended the project until 31 December 2017 to "consolidate the outputs and achieving greater impact". Through a 2 December 2017 decision of TÜBITAK's Scientific Committee, GCIP Turkey was extended for a further year, until 31 December 2018.

2.3.2.1 Project Components

37. The "Cleantech Programme for SMEs in Turkey" (i.e. GCIP Turkey) has 3 components:

- Component 1: Promote coordination at national level to support clean technology innovations through establishing a platform to organise annual cleantech competitions and associated accelerator programmes, offer post-competition support, and facilitate participation in regional and global networking activities
- Component 2: Strengthen policy/regulatory framework to promote cleantech innovations in SME and develop a supportive innovation ecosystem through reviewing and adapting the current policy framework and promoting the development of new policies and regulations where needed, as well as training policy-makers on relevant cleantech policies
- Component 3: Build institutional capacity through strengthening national host institution's ability to organise the Competition-Accelerator; facilitate experience-sharing with other GCIP countries; and initiate establishment of a Clean Energy Technology Development Platform

2.3.2.2 Partners and Stakeholders

38. The project was launched with GEF funding, together with in-kind and cash contributions from UNIDO and co-financing partners in Turkey. As the implementing agency for the project, UNIDO was accountable for the GEF grant and other funding resources provided by the Turkish government and private sector. Details concerning financing aspects are in Annex 4. Other key stakeholders involved in project execution and their envisaged roles are outlined in Table 2. These actors were identified and engaged in the project based on their ability and interest to benefit from the project's outcomes and play a role in sustaining its results.

[10] Draft Terms of Reference for the Review of the Global Cleantech Innovation Programme for SMEs, GEF Independent Evaluation Office, January 2018

Table 2: Key Stakeholders involved in Project Execution

Stakeholder and Mandate	Role in the Project
Scientific & Technological Research Council of Turkey (TÜBITAK) Advises government on science, technology, & innovation policies; manages R&D institutes; carries out research, technology & development studies in line with national priorities. Stimulates transformation of research results into products & services and invigorates the role of SMEs in the national innovation system.	Was the project's lead executing agency in Turkey, member of the Project Steering Committee (PSC), formed project management team
Ministry of Science, Industry and Technology (MoSIT) Prepares national strategies and policies to support the development & competitiveness of the industrial sector, addressing issues that include sustainable development, green growth, energy efficiency, renewable energy, and eco-efficiency. Supervises TÜBITAK and KOSGEB, amongst other agencies.	PSC Chairman, participated in all project components, appointed suitable officers to attend various panels of the Competition
Small and Medium Enterprises Development Organization (KOSGEB) Strengthens SMEs through various support instruments including: financing, R&D, market research, marketing, export, and training.	PSC member, worked with TÜBITAK to implement the project in its support of SMEs
Ministry of Energy and Natural Resources (MENR) Formulates policies and legal frameworks and sets the direction for the country's energy industry in line with national development goals.	PSC member, participated in policy component, appointed suitable officers to attend various panels of the Competition
Ministry of Environment and Urbanization (MEU) Responsible for natural resource management, conservation and management of environment and urbanization.	PSC member, participated in policy component, appointed suitable officers to attend various panels of the Competition
Ministry of Development (MoD) Responsible for establishing national development policies through Development Plans and coordinating their implementation	PSC member, participated in policy component, appointed suitable officers to attend various panels of the Competition
Technology Development Foundation of Turkey (TTGV) Supports private sector technology and innovation projects (e.g. through the Technology Transfer Accelerator Project)	PSC member, appointed suitable officers to attend various panels of the Competition

2.3.2.3 Milestones in Project Design and Implementation

39. Table 3 documents the key milestones related to project design and implementation.

Table 3: Milestones and Key Dates in Project Implementation

Milestone	Date
GEF Operational Focal Point of Turkey endorsed Project Identification Form, with a GEF grant of US$ 990,000	February 2013
GEF Chief Executive Officer endorsement / approval date	9 September 2013
Start of project implementation	21 October 2013
Constitution of Project Management Unit (PMU): appointment of National Programme Manager (NPM) and Deputy National Programme Manager (D-NPM)	NPM: Osman Malik ATANUR > 17 March 2014 to present D-NMP: Arda Saygın KOSTEM > July 2014 – 31 December 2014
Global Cleantech Training Workshop (Vienna)	12 - 15 March 2014
Cleantech Open (CTO) Webinars for Country Coordinators	1 April – 15 May 2014
1st public announcement of GCIP Turkey (Bloomberg Businessweek)	3 May 2014
Call for Applications start of 2014 cycle (1st Competition)	2 June – 1 July 2014
1st Round screening/judging of cleantech 2014 applicants	9 - 11 July 2014
Announcement of 2014 semi-finalist teams	16 July 2014
First GCIP Turkey National Academy	6 August 2014
Training of GCIP Turkey mentors	7 August 2014
Weekly webinars, workshops, and business clinics for Start-Ups	August – October 2014
2nd Round screening/judging of cleantech applicants	14 October 2014
Announcement of finalist teams (2014 cycle)	16 October 2014
Final Jury Evaluation & National award event; 2014 Award Ceremony	24 October 2014
GCIP 2014 Demo Day (Istanbul)	25 October 2014

Participation of 2014 Cleantech national winner in CTO Global Forum (San Francisco, USA). 1 team and 2 members	12 - 13 November 2014
1st Steering Committee Meeting	5 February 2015
Global Cleantech Training Workshop (Vienna)	12-15 March 2015
Reconstitution of PMU: appointment of a new D-NPM and an additional Project Assistant (PA)	D-NPM: Ms. Eylem Doğan SUBASI: > 25 March – 31 Dec 2015 PA: Begum TANRISEVER > 16 March 2015 to present
Call for Application – start of 2015 cycle (2nd Competition)	20 March – -20 May 2015
CTO Webinars for Country Coordinators	April-May 2015
1st Round screening/judging of Cleantech 2015 applicants	28 - 29 May 2015
Announcement of Semi-Finalist 2015 teams	5 July 2015
GCIP Turkey 2015 National Academy	9 - 10 June 2015
Vienna Energy Forum 2015 (Vienna)	18-20 June 2015
Weekly webinars, workshops, and business clinics for Start-Ups	July – September 2015
2nd Round screening/judging of Cleantech semi-finalist (2015 cycle)	7 October 2015
Announcement of Finalist Teams (2015 cycle)	16 October 2015
GCIP 2015 Demo Day	10 October 2015
National award ceremony, including special appreciation awards (finalist, alumni Note: these awards were subsequently given to the winners during the 2016 Award Ceremony	2015 cycle Award Ceremony was cancelled due to Ankara Gar Station terrorist attack
Participation of Cleantech 2015 national winner in CTO Global Forum (San Francisco, United States)	17 - 19 November 2015
Preparation & review of PIF document for GCIP Turkey Phase II	17 February 2016
2nd Steering Committee Meeting	3 March 2016
Reconstitution of PMU: appointment of new D-NPM	Berna LEYLUHAN > 22 March 2016 through 22 October 2017
Call for Applications – start of 2016 cycle (3rd Competition)	10 March – 20 May 2016
1st Round screening/judging of Cleantech 2016 applicants	25 - 27 May 2016
Announcement of semi-finalist teams (2016 cycle)	29 May 2016
GCIP Turkey 2016 National Academy	31 May – 3 June 2016
Received endorsement letter for GCIP Turkey Phase II from GEF's Operational Focal Point (Ministry of Forestry and Water Affairs)	2 June 2016
First 1-year extension (from 1 January 2017 to 31 December 2017) granted, upon decision of TÜBITAK's Scientific Committee	30 July 2016
Weekly webinars, workshops, and business clinics for Start-Ups	June – October 2016
Alumni Follow-Up Sessions start	2 October 2016
Side Event: The Future of Energy (Istanbul)	31 October 2016
Conference of Parties (COP) 22 in Marrakesh, Morocco (I) Side Event at Turkish Country Pavilion: PMU participated (II) Side Event at UN Pavilion: 2 GCIP Turkey alumni teams participated	7 - 19 November 2016
2nd Round screening/judging of 2016 Cleantech semi-finalists	17 November 2016
Announcement of 2016 finalist teams	29 November 2016
2016 Final Jury evaluation and national award event Note: 2015 Award was given to 2015 cycle winner during 2016 Award Ceremony	21 December 2016 Final Jury Evaluation 22 December 2016 > Award Ceremony
Participation of 2016 cycle national winners in CTO Global Forum (San Francisco, United States); 4 teams	6 - 10 February 2017
Mentor training activities	1 - 28 February 2017
3rd Steering Committee Meeting	16 February 2017
Mentor training & orientation workshop for DeBarsy Methodology given by Paul DeGive DeBarsy (40+ participants)	7-10 March 2017
Research and preparation of content for GCIP Turkey's contribution to Global Cleantech Innovation Index 2017 Country Report	1 - 15 April 2017
Call for Applications – 2017 cycle	15 March – 10 May 2017
Vienna Energy Forum 2017, GCIP side event Clean Technology Innovation Day (Demo Day): GCIP for SMEs and Startups, with participation of 2 GCIP Turkey alumni teams	9 - 12 May 2017
1st Round screening/judging of Cleantech 2017 applicants	15 - 18 May 2017
Announcement of semi-finalist teams (2017 cycle)	16 June 2017

Presentation of GCIP Turkey 2016 Ministry of Science, Industry and Technology (MoSIT), Special Appreciation Awards to winning team	21 June 2017
GCIP Turkey 2017 National Academy	3 - 8 July 2017
Weekly webinars, workshops, and business clinics for Start-Ups	July-August 2017
Side Event: Hack & Break Open Innovation Camp 2017	19 - 26 August 2017
Letter of Intent: Ostim Organized Industrial Zone, mentioning financial support for the programme and investment in alumni initiatives	25 October 2017
Letter of Intent: private sector Investment company TBS Partners, indicating financial support to the programme and alumni investment	17 November 2017
Conference of Parties (COP) 23 in Bonn, Germany: (III) Side Event at Turkish Country Pavilion with presentations by UNIDO and CTO delegates (IV) Publication of Global Cleantech Innovation Index 2017 with the PMU's contribution of chapter on GCIP Turkey (V) Side Event at UN Pavilion GCIP Turkey alumni team participation	7 - 19 November 2017
Second 1-year extension (from 1 January 2018 to 31 December 2018) granted, upon decision of TÜBITAK's Scientific Committee	2 December 2017
Side Event: The Future of Smart Cities (Istanbul)	5 December 2017
2nd Round screening/judging Cleantech semi-finalists (2017 cycle)	12 – 13 December 2017
Announcement of 2017 Finalist Teams	18 December 2017
Final Jury Evaluation – 2017	4 January 2018
National Award Event 2017 (2017 cycle)	January 2018
Participation of 2017 cycle national winner in CTO Global Forum (Los Angeles and San Francisco, USA)	26 January - 2 February 2018
End of GCIP Turkey project (following two 1-year extensions)	31 December 2018

2.3.2.4 Implementation Arrangements and Project Partners

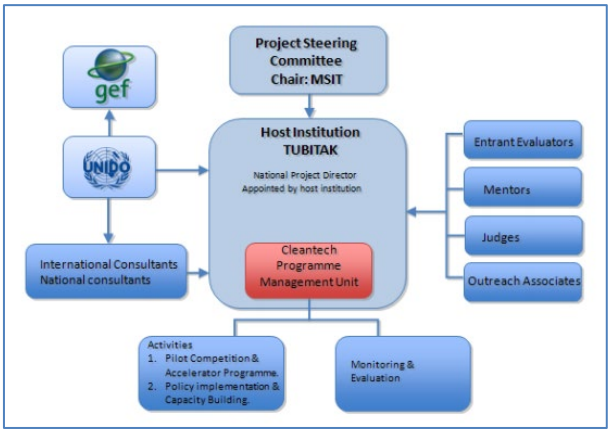
40. Following the GEF Chief Executive Officer's approval on 9 September 2013, the project was officially kicked-off on 21 October 2013 with a 36-month duration.

41. As the GEF implementing agency, UNIDO carried the ultimate responsibility for the project's timely implementation, in collaboration with TÜBITAK, the host institution, and other local executing partners. TÜBITAK appointed a senior manager as the National Project Director, who was the direct counterpart of UNIDO in guiding and supervising project implementation.

42. A Project Steering Committee (PSC) was formed under the chairmanship of MoSIT with members drawn from MoSIT, TÜBITAK, KOSGEB, MENR, MEU, MoD, TTGV, and UNIDO. As shown in Table 2, this committee is composed of the actors seen as most likely to benefit from the project and to be in a position to collectively sustain its results. The PSC was expected to supervise the Project Management Unit (PMU) and provide strategic guidance for project implementation, based on national imperatives and market needs.

43. The PMU was established to act as the secretariat of the PSC. The PMU assumed responsibility for the daily management of project activities and M&E, in line with agreed work plans. The PMU carried out extensive outreach and awareness-raising and coordinated all project activities carried out by national experts and partners engaged in the project. When necessary, it established advisory working groups. The PMU was headed by a National Project Manager who was engaged in March 2014 by UNIDO. The PMU was further staffed with a Technical and Training Advisor (who also assumed the role of Deputy Project Manager) and an Administrative Assistant, who joined in July 2014 and March 2015, respectively. The PMU team evolved over time, contracting and then reconstituting as shown in Table 3. The entities involved in steering, supervising, and implementing the project and their relationships are depicted in Figure 2.

Figure 2: Project Implementation Arrangement



44. The project was expected to adopt an inter-disciplinary implementation approach involving SME clusters, national ministries, academia, industrial associations, financing institutions, foundations, venture capitalists, and utilities in Turkey and abroad with the aim of promoting innovative technologies in selected energy-intensive SME clusters across the country.

45. It was envisaged that the project would benefit from the experience and expertise gained in promoting small business innovation in the USA under the CTO programme, which manages the world's largest cleantech accelerator and network. As part of the implementing arrangement for this project, CTO was to provide international expertise to participants and organisers and invite the cleantech programme in Turkey to join its network.

2.3.2.5 Positioning of the UNIDO Project

46. In 1967, UNIDO established a field office in Turkey, which, in 2000, became the UNIDO Centre for Regional Cooperation responsible for developing, coordinating, and actively supporting the overall cooperation between UNIDO and the Government of Turkey, academia, the private sector, and civil society with respect to promoting sustainable industrial development.

47. GCIP Turkey was designed to leverage UNIDO's learning from its general experience in supporting SME development and its specific experience in implementing the South Africa 2011 Cleantech competition. Synergies were also foreseen with other relevant parts of UNIDO (e.g. Green Industry Initiative). Moreover, at the project's outset, it was proposed that selected institutions would become an integral part of the Climate Technology Centres Network (CTCN) being established at the time by UNIDO, UNEP and others, becoming connecting nodes between similar climate technology centres in developing and emerging economy countries.

48. The project's architects envisaged creating linkages with relevant ongoing programmes in Turkey to share best practice and pertinent knowledge to enhance SME productivity, mitigate climate change, tap synergies, and build collective momentum for change; namely with:

- GEF/UNDP/UNIDO project on industrial energy efficiency, which had a USD 6 million GEF grant to promote energy efficiency in the Turkish industrial sector
- GEF/UNDP project on building energy efficiency with a US$4 million GEF grant to promote energy efficiency in the building sector
- The World Bank project on energy efficiency financing for SMEs, which had a USD 300 million budget to work on removing financial and policy barriers and thereby expand commercial bank lending for SMEs investing in energy efficiency in Turkey

- The World Bank, International Finance Corporation, European Bank for Reconstruction and Development (EBRD)'s Clean Technology Fund Investment Plan, which supported Turkey's 9th Development Plan (2007-2013)'s low-carbon objectives
- European Investment Bank loan schemes (€300 million to support SME investment in energy & environment via Industrial Development Bank of Turkey and Development Bank of Turkey)

49. GCIP Turkey was introduced in a context where many direct public support programmes had been launched to promote innovation and technology development. The project was expected to catalyse their more vigorous implementation as well as optimize and expand their support:

- MoSIT direct support schemes, TÜBITAK matching grant schemes, and KOSGEB programmes to support innovation and R&D in SMEs
- Technology and Innovation Grant Programmes Directorate (TEYDEB), which was established in TÜBITAK to fund technology development and innovation activities in Turkish companies mainly by means of non-reimbursable grants[11]
- Technology Development Foundation of Turkey (TTGV), which had its own USD 4 million Green Fund to provide matching funding for projects that promoted green industries in Turkey
- EBRD funding through Turkey Sustainable Energy Finance Facility for climate change projects the Turkey-USA cooperation programme was seen to offer potential investment support for GCIP Turkey finalists to turn their technology innovations into commercial ventures

50. In view of the large number of ongoing projects, the Project Document indicated that GCIP Turkey was expected to take a coordinating approach, supplying existing funding schemes (enumerated above) with a process methodology and a platform through which they could optimize their funding procedures. Concretely, the project was expected to catalyse more efficient investment by improving the disbursement rate of the existing baseline projects.

3 Project Assessment

3.1 Impact

51. Development organisations are increasingly asked to provide evidence-based impact for their interventions. As GEF's implementing agency for this GCIP project, UNIDO has pragmatically addressed this request by focussing on three impact dimensions: safeguarding environment, economic performance, and social inclusiveness. Accordingly, the Project Document did identify risks related to climate change as well as potential social and environmental risks that might prevent the project's objectives from being achieved. These risks were evaluated (rated) and suitable mitigation measures were proposed from the outset.

52. With respect to environmental safeguarding: the project contributed to this aspect by supporting the development of cleantech ideas, solutions, and services related to energy efficiency, renewable energy, reduced waste and GHG emissions, improved water sanitation, and increased agricultural productivity.

53. Regarding economic performance: project activities were designed to improve the functioning

[11] Since 1995, TEYDEB had designed & implemented several grant programmes; notably in 2011: university-industry collaboration grant programme; in 2012: research technology development and innovation projects in priority areas grant programme, multi-stage entrepreneurship support programme, technology transfer grant programme. From 1995 to 2011, TÜBITAK provided grants to 8,371 projects, 70% of which went to SMEs and 30% to larger industry. In 2011, the total grant value provided by TÜBITAK was US$167 million.

of Turkish startups, promote SME entrepreneurism, and stimulate the national innovation ecosystem. While long-term impacts have yet to materialize, positive signals were observed; for instance: TÜBITAK developed strong local ownership, provided input, reviewed its broader portfolio, and committed further financial and in-kind resources to assure the continuity of the Competition-Accelerator. This is seen as a sign that the project already has and will continue to have direct outcomes. Moreover, the project has made some achievements in invigorating the innovation ecosystem, which is captured in the remarks of a respondent illustrative of most views that emerged during the field visit: "*in the beginning, it was primarily the state that provided grants. GCIP entered the scene and created another network; now it's possible for an entrepreneur working on cleantech to get support from another source. The GCIP is working like a local hub to integrate these local entrepreneurs to a more global network*".

54. Regarding social inclusiveness: the project promoted gender mainstreaming (¶160) with the intention to create more opportunities for women entrepreneurs. The 10% target set for recruiting female trainers, mentors & judges and promoting women entrepreneurs was substantially exceeded. During 2014-2017, women held 18%-32% team leader positions (see Table 6). Social inclusiveness was bolstered through the delivery of a "Women-Led Entrepreneur Award" and "Young-Led Entrepreneur Award" in the 2015 cycle. Furthermore, although 90% of the participating startups were based in Ankara, Istanbul, and Izmir (the country's most developed and industrialized regions), a few startups from less developed Eastern parts of the country did participate. This outreach represents a valuable first start and is evidence that the project endeavoured to create a culture and spirit of inclusiveness (¶161).

55. Looking to replication, the Competition-Accelerator entered its 5th annual cycle in March 2018. The Project Document envisaged that 2 annual cycles would be completed with the allocated resources. The success of this initiative and its embrace within the local innovation ecosystem are indications that the project's methodology has been adopted and is being reproduced in "an operational mode". Further evidence of the project's catalytic and replication potential was seen in recognition of the value of thematically-focussed activities and the inclusion of a Call for Energy and Clean Technology on the part of TÜBITAK-TEYDEB in 2018 (¶140).

56. Scaling up, in the sense of "expanding, adapting and sustaining successful policies, programs and project on different places and over time to reach a greater number of people" could be seen, albeit in a limited way, through the above-mentioned efforts to reach beyond Turkey's industrialised regions (¶54) and through expansion of categories considered under the cleantech framework beyond renewable energy, energy efficiency, water efficiency, and waste to energy to also include transportation, green buildings, advanced materials, and chemicals.

57. Interpreting the concept of scaling up at another level, i.e. supporting the commercialization of clean technologies in Turkey (for example through promoting market adoption of these innovation, partnering clean technology entrepreneurs with the relevant support services and capital required for upscaling and growth, etc.) was outside the scope of the existing project.

58. With respect to mainstreaming, the project did not have an explicit objective to mainstream as it was designed and operationalised as a pilot to assess the value of such an approach for supporting cleantech innovation in Turkey. While positive signs were noted regarding the potential for replication (¶55), the project's support did not yet make the desired impact foreseen under its Outcome 2 in terms of strengthening the policy & regulatory environment to favour cleantech adoption, influencing broader stakeholder mandates, and realising the incorporation of its results into national laws, policies, and regulations.

The overall rating for impact is "satisfactory"

3.2 Project Design

3.2.1 Overall Design

59. The project was built on three substantive components: 1) identifying and nurturing emerging cleantech startups though an annual combined Competition-Accelerator under which local entrepreneurs benefit from resources, guidance on best practices, mentoring, and training on business plan development and validation, product/technology validation, finance, funding, legal and intellectual property issues, sustainability, government relations, angel & venture capital investment, scaling up and going global. The most promising startups are given the opportunity to take part in a global forum in Silicon Valley designed to connect them with potential partners, customers, and investors from around the world; 2) working with national policy-makers to strengthen the policy and regulatory framework to favour cleantech innovation and support SMEs and entrepreneurs; 3) building the capacity of national institutions and partners to sustain the Competition-Accelerator. In leveraging these three design elements, the GCIP concept has been characterized as a proven approach for promoting a cleantech ecosystem within a country by providing business assistance services to early stage companies and catalysing investment to support and accelerate these startups towards the commercialization of their innovative ideas.

60. The GCIP concept drew legitimacy from its constellation of partners: i) GEF, whose funding and endorsement helped build awareness and fuel support for the cleantech concept; ii) UNIDO, whose expertise in promoting industrial energy efficiency, renewable energy services, water management, chemicals management, and biotechnology and whose support for SMEs in developing and transition economies is well-recognized; iii) Cleantech Open (CTO), which runs the world's largest cleantech accelerator and has, from 2005 to date, supported 1200 early-stage startups through training, mentoring, and access to capital in the range of $USD 1.2 billion, creating over 3'000 clean economy jobs[12].

61. GCIP Turkey adopted a tripartite structure that represents a key design strength where UNIDO held the role of lead implementing agency, the Scientific and Technological Research Council of Turkey (TÜBITAK), which falls under the supervision of the Ministry of Science, Industry and Technology (MoSIT), was the local executing partner, and funding from the GEF was complemented by co-financing (including substantial in-kind contributions) from several national government institutions and private sector partners presumably having an interest in leveraging the Project's processes and outcomes. With a remit that covers the preparation of national strategies and policies to promote the development and competitiveness of the industrial sector, sustainable development, and green grown, all stakeholders supported the view that MoSIT was ideally suited to chair the Project's Steering Committee and assume a key leadership role within the GCIP Turkey project.

62. The project was adequately resourced to pursue its objectives. Risks were identified at the outset; these primarily related to lack of interest, coordination, incentives, and absorptive capacities, which were assessed as "low risk". Mitigation measures were suitably identified. Presumably these were included in the project's activities, but this could not be easily traced.

63. The project included a component dedicated to monitoring & evaluation with the aim of ensuring effective project implementation. The design indicates that regular monitoring exercises were to be conducted, tracking tools were to be developed and used, and PIRs were

[12] https://cleantechopen.org/

to be elaborated by the PMU. As well, a mid-term and final evaluation were to be carried out. A suitable M&E plan was clearly articulated within the original design document. Allocation for funding M&E activities followed common practice for such a medium-sized project.

64. Although its design was similar to initiatives launched in 2013/2014, GCIP Turkey was, in fact, an individual country project and consequently did not benefit from potential synergies, cross-country fertilization, management/supervision that a real programme framework could imply.

The rating for overall design is "satisfactory"

3.2.2 Logframe and Reconstructed Theory of Change

65. GCIP Turkey's design followed the same template used by UNIDO for other participating countries. In this light, the standard project results framework was utilized as shown in Table 4.

Table 4: GCIP Turkey's Results Framework

Components	Outputs	Outcomes
C1: Establishment of a cleantech innovation ecosystem involving a platform to organize the competition and associated accelerator programme	1.1 Two annual national competitions organised 1.2 Two associated accelerator programmes organised, including post competition support 1.3 Participation in regional and global networking activities	O1: A coordinating mechanism/ platform established at national level of identify, coach, and support clean energy technology innovators
C2: Strengthening of policy and regulatory framework for the development of a supportive local innovation ecosystem	2.1 Necessary policies and regulations required for the Cleantech competition and ecosystem identified and developed	O2: Policies and institutional framework strengthened to promote Cleantech innovations in SMEs and support the local innovation ecosystem
C3: Institutional capacity building for the organisation of the competition and accelerator programme	3.1 Capacity of host institution, TÜBITAK, strengthened and wide platform for all stakeholders established 3.2 Experience shared with other countries 3.3 Initiation of a Clean Energy Technology Development Platform	O3: National institutional capacity build for the mentoring and training programmes as part of the competition and acceleration programme

66. There is coherence and mutual support across this picture. The combined Competition-Accelerator is the primary vehicle that catalyzes and mediates the project's support. This mechanism was foreseen to stimulate and dynamize the country's innovation ecosystem (Outcome 1); simultaneously use and test the new policy and regulatory framework (Outcome 2); and provide on-the-job training (Outcome 3) to support the sustainability of Outcome 1.

67. The results chain has a logical sequencing; however, it is deemed that formulations for outcomes and impacts would not sufficiently orient the project's implementation to reach the full transformational impact presumably intended with the allocated resources and timeframe. The project's objective (seen as a proxy for its desired long-term impact) was specified as "the promotion of clean energy technology innovations & entrepreneurship in SMEs in Turkey". For such an intervention to achieve a transformative effect, its long-term impact should strive towards a fundamental durable change in the condition of institutions, people, and their environment. In this light, the formulation of the project's objective is seen to rest at the level of a means or process, rather than raise to a higher level/ambition. The current formulation of the project's objective could conceivably be an intermediate outcome of the intervention.

68. Outputs are specified and could be expected to produce the desired deliverables. However, improvements in formulation could have assured better understanding of their intention. For

instance, under Component 1, the output that describes 2 annual competitions, together with the associated accelerator programs, could be understood as 2 competitions each year[13], inferring that up to 6 Competition-Accelerator cycles were expected to take place within the project's initially planned 36-month duration. In this light, any eventual assessment regarding the project's performance would be inaccurate if the actual intention was for 2 Competition-Accelerator cycles within the project's 3-year duration. This example is illustrative of the power of appropriate formulation across the entire logframe.

69. The formulation of the outcomes in the results framework actually seems little more than a summing up of the respective underpinning outputs[14]. To focus project management on progress-to-impact and assist an intervention to reach desired impacts, it is important to articulate outcomes in terms of describing a discernible change in the target groups' short- to medium-term behaviour/performance or system/institutional performance. Table 5 offers some reformulations that encompass behavioural and systemic change, which could be deployed to put attention beyond the programmed activities and outputs, to the higher level of what target groups and other relevant stakeholders are doing with and the ways in which they are tangibly benefitting from the project's support.

Table 5: Examples of Formulations of Outcomes to Support Achievement of Impact

Current Formulation in Project's Results Framework	Reformulation with Behavioural or System Change
A coordinating mechanism/platform established at the national level of identify, coach and support clean energy technology innovators	The established coordinating mechanism is actively promoting and coordinating clean energy technology innovation and entrepreneurship in Turkish SMEs
Policies and institutional framework strengthened to promote Cleantech innovations in SMEs and support the local innovation ecosystem	The strengthened institutional framework supporting the local innovation ecosystem favours the coordination and promotion of cleantech in SMEs
National institutional capacity built for the mentoring and training programme as part of the competition and accelerator programme	The Competition-Accelerator program has been institutionalized & continues to be regularly organised, supported by capable Turkish mentors and trainers

70. The project's logframe mentioned indicators for outputs, specific targets, and means of verification. In some instances, the formulation of indicators is suitable for a desired outcome; e.g. "number of innovative businesses created/accredited as a result of the cleantech competition" can be used to assess/confirm that "a coordinating mechanism [has been] established at national level to identify, coach and support clean energy innovators" as a company's creation and recognition of meeting essential requirements (i.e. accredited) can be linked to participation in the Competition-Accelerator through which a business plan is developed/refined, together with a funding model. Such an eventuality would suggest that the established mechanism is functioning and being used by target beneficiaries (i.e. such use of the project's output would be a desired outcome). However, formulations of other indicators are insufficient. For instance, "the extent to which policies and regulations are amended or implemented" does not give evidence as to whether the relevant aspects have been investigated and changed, nor does it reflect the actual nature of project support in the policy domain. Best practice points to the need to devise *SMART* indicators (i.e. specific, measurable, achievable, relevant, time-bound). Many improvements could be made in this light.

[13] The PMU confirmed that the GCIP concept, schedule, and its link to the annual Global Forum organised by CTO were suitable to a single Competition-Accelerator per year, rather than a higher frequency.

[14] UNIDO's system for gaining feedback on project design has changed since GCIP Turkey was launched. While its logframe was perceived as an improvement over current practice at the time, it is understood that this design was carried out during a transitional phase and may not have fully benefitted from subsequently strengthened capacities in this area.

71. One indicator for the stated objective was articulated as “tons of GHG emissions directly & indirectly avoided”; this could be expected to orient the intervention towards favouring “energy”-related innovation. As the project was implemented under UNIDO’s Energy Department, this represents an understandable alignment; however, it may risk missing out on targeting the low-hanging fruit of the wider field of cleantech innovation, per se. In any case, the PMU pointed out that the description of “clean energy technology” used throughout the Project Document was misleading and needed correction as the initiative is for both energy and environment and should consequently be described simply as ‘cleantech’.

72. While outputs were stated, together with a timeline for their achievement, the activities to assure these outputs were not presented. As the GCIP concept was being implemented in 6 countries at essentially the same time, and presumably drew on CTO’s proof-of-concept and experience, it seems reasonable to expect that activities related to Outcome 1 and Outcome 3 would follow a standard path and could have been made explicit in the Project Document, which would have reduced the burden during the initial planning phase.

73. Targets and the notion of baseline were mentioned; however, baseline information evidently did not exist for most envisaged outputs. With baselines of “zero” indicated, targets are difficult to interpret. For instance, the logframe indicated that “no projects have taken a cleantech approach in Turkey” and a target is that “number of clean technologies start-ups increased by 15%”. Does this mean that during the project’s planned 36-month span, 15 startups should exist? Should they be formally incorporated as companies? Or merely accredited (whatever that meant to the project designers)? Does it mean that each entity should have a business plan and a funding plan in place? More clarity regarding which targets and how these should be measured would have better supported the project team.

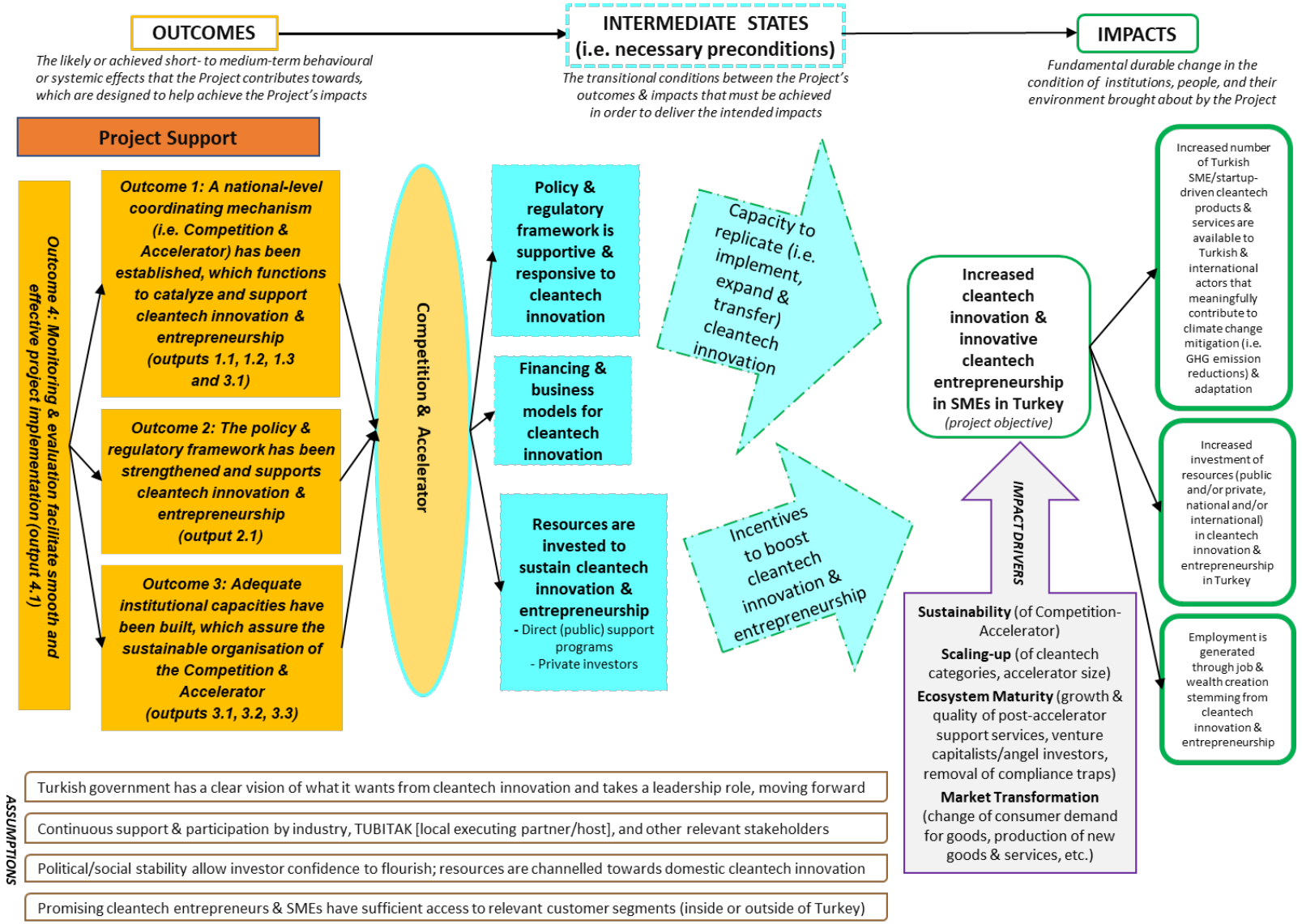
74. No suggestions were offered for areas that could be explored in order to develop baselines to facilitate the assessment of change. Consequently, project management would not be oriented by the logframe to develop these baselines unless this was clearly specified and obliged in an underlying activity framework or set of project milestones.

75. The Project Document indicated that there would be close coordination with other international efforts to share and exchange; links with other UNIDO projects (e.g. Green Industry initiative); and that selected institutions under the project would become an integral part (connecting node) of the Climate Technology Centres Network being established at the time by UNIDO, UNDP, and other actors. While these notions represent important catalytic potential, they were not explicitly referenced in the results framework/indicators and no project activities appeared to provide the scope for creating and leveraging such linkages.

76. The intervention logic and causal links from outputs to outcomes to impacts were not clearly presented in the Project Document nor in the results framework. Assumptions and risks were lightly outlined and were of a generic nature; for all aspects, these were covered by “continuous support and participation of industry, TÜBITAK [as local host] and other partners”.

77. Therefore, to deepen understanding of the intervention’s underlying logic and how the project’s designers may have thought change would happen, the Evaluation Team reconstructed the project’s Theory of Change (RTOC) and solicited input of the PMU (Turkey) and Project Manager and Evaluation Manager (UNIDO, Austria) to develop the result shown in Figure 3. In addition to making assumptions and impact drivers explicit, this visualisation demonstrates how the project could be expected to lead to its results by starting with the intended long-term impacts and working back through the necessary preconditions to identify the causal pathways, which, if followed, contribute to the desired end state.

Figure 3: Reconstructed Theory of Change - GCIP Turkey Project



78. In this visualisation, the project's intended long-term impacts were formulated as: i) Increased number of Turkish SME/startup-driven cleantech products & services are available to Turkish and international actors that meaningfully contribute to climate change mitigation (i.e. GHG emission reductions) and adaptation; ii) Increased investment of resources (public and/or private, national and/or international) in cleantech innovation and entrepreneurs; iii) Employment is generated through job & wealth creation stemming from cleantech innovation and entrepreneurship. In the RTOC, the project's stated objective of "Increased cleantech innovation & innovative cleantech entrepreneurship in SMEs in Turkey" is seen, in the eyes of the Evaluation Team, as an intermediate outcome. To stimulate the growth of cleantech innovation and entrepreneurship by Turkish SMEs, there are some necessary preconditions (intermediate states). These fall within two domains: "capacity to replicate" and "incentives to boost" cleantech innovation. These impact (causal) pathways link the project's direct outcomes to the intermediate outcome through to the intended long-term impacts.

79. Working back through the "capacity to replicate" impact pathway: to implement, expand and transfer cleantech innovation, a policy framework that is supportive and responsive to cleantech innovation needs to be in place. In this emerging area, it is difficult to precisely anticipate; therefore, a significant proportion of the project's support (outputs & outcomes) to the Turkish government could be expected to take the form of deepening understanding of the cleantech innovation field, identifying priorities for policy and regulatory change to create a facilitating context for the promotion and adoption of cleantech innovation, and developing a responsive approach to compliance problems and/or new issues related to innovation.

80. Working back through the "incentives" impact pathway: to boost cleantech innovation and entrepreneurship, financing & business models must be developed by startups and entrepreneurs alike, and these must be recognized/understood by the public & private actors whose resources are invested to sustain their activities. In this light, outputs and outcomes aimed at establishing a national-level coordinating mechanism can usefully serve to catalyze and support cleantech innovation, backed by building institutional capacities to assure the sustainable organization of the mechanism. The establishment of the Competition-Accelerator presumably motivates Turkish SMEs to strive to create more cleantech innovations on a regular basis. With more cleantech innovation being generated by Turkish SMEs, the country's entire industrial sector would be invigorated, with a lower carbon footprint, be more socially- and environmentally-friendly, while generating more Gross Domestic Product for the nation.

81. In modelling and analysing these impact pathways, several 'impact drivers' and 'assumptions' were identified. The following 'impact drivers' (which are under the influence of the project, its implementing partners, and relevant stakeholders) are seen as transmitting vital catalytic power through the impact pathways and thereby contributing to the project reaching its intended transformative effects:

- **Sustainability** (of the Competition-Accelerator)
- **Scaling-up** (of cleantech categories, accelerator size)
- **Ecosystem Maturity** (growth and quality of post-accelerator support services, venture capitalists/angel investors, removal of compliance traps)
- **Market Transformation** (change of consumer demand for goods, production of new goods & services)

82. While largely beyond the control of the project, its implementing partners, and relevant stakeholders, if present, the following aspects ('assumptions') could positively influence the realisation of the intended impacts:

- The Turkish government has a clear vision of what it wants from cleantech innovation and takes a leadership role, moving forward
- Continuous support and participation by industry, TÜBITAK [local executing partner/host], and other relevant stakeholders
- Political & social stability allow investor confidence to flourish and resources are channelled towards domestic cleantech innovation
- Promising Turkish cleantech entrepreneurs and SMEs have sufficient access to relevant customer segments (inside or outside of Turkey)

83. In summing up the above analysis, the project's overall design incorporates important elements that offer strength; however, the logframe utilized to document the logic intervention and subsequently guide project implementation is relatively weak. Combining these aspects has a resulted in a "satisfactory" assessment of overall project design.

The rating for the logframe is "moderately unsatisfactory"

The overall rating for project design is "satisfactory"

3.3 Project Performance

3.3.1 Relevance

84. In so far that clean technologies and the business sector have been identified as important engines and instruments to deal with climate change challenges, GCIP Turkey's purpose/objectives are fully consistent with global, regional, and national development needs and environmental priorities. The project makes a pertinent contribution to the Paris Agreement and Sustainable Development Goals (SDGs)[15], which embody the world's commitment to safeguarding the global commons.

85. The Project Document indicates that this initiative is in line with Turkey's national policies (e.g. 10th National Development Plan, National Strategy on Climate Change, National Climate Change Action Plan, National Strategy on Industry, Strategy on Energy Efficiency), contributing to the country's sustainable green growth by addressing the global issue of climate change and national issues of energy security, employment creation, and SME competitiveness. The project supports Turkey's priorities expressed through its national science, technology, and innovation strategy framework (2011-2016), which supports the transformation of research results into commercial products & services and invigorates the role of SMEs in the national innovation ecosystem. This mandate falls directly within the workplans of MoSIT & TÜBITAK, key actors in GCIP Turkey. The promotion of innovation, research and development, and entrepreneurship has been recognized by the Turkish government as a key strategy for the country's economic and social development. By fostering the country's innovation and entrepreneurship ecosystem and promoting affordable, scalable solutions, the project will ideally enable Turkey to leapfrog to a cleaner, more resilient economy.

86. The project's relevance to national stakeholders was emphasized in the Steering Committee's first meeting in which participants pointed to its value of offering technical development,

[15] To make this assertion more tangible, evidence was drawn from two Turkish enterprises that participated in GCIP Turkey: I) NG Biotechnology's innovation increases crop yield by 30% (this supports SDG 1: No Poverty; SDG 2: Zero Hunger; SDG 3: Good Health, Well-Being; SDG 6: Clean Water & Sanitation; SDG 9: Industry, Innovation, Infrastructure; II) Positive Energy's self-operated buildings save 15-20% energy (re: SDG 7: Affordable Clean Energy; SDG 9: Industry, Innovation, Infrastructure; SDG 11: Sustainable Cities & Communities; SDG13: Climate Action via Energy Efficiency)

training, international experience, interdisciplinary cooperation, and vibrant spirit. During this meeting, the project was characterised as helping Turkey to maintain its position in the league of Developing Countries under UN Framework Convention on Climate Change (UNFCC) negotiations, thereby assuring continuing access to financial, capacity-building, technological support, and green climate funds. Respondents surveyed for this evaluation pointed to the potential and expectation for Turkey to be a role model in terms of entrepreneurship within the broader region; they pointed to the project's important contribution in this regard.

87. In providing his institutional endorsement of GCIP Turkey, the GEF Operational Focal Point of Turkey (Undersecretary, Ministry of Forestry and Water Affairs) confirmed that the project supported the country's commitment to relevant global environmental conventions and was in accordance with the Turkish government's national priorities embodied in its National Capacity Action Plan and National Climate Change Adaption Strategy and Action Plan (NCCAP), which was finalized in 2011 and points to the need for developing an "Energy NAMA" (Nationally Appropriate Mitigation Action). The project's architects saw its activities related to promoting energy efficiency, renewable energy, waste to energy, water efficiency, and green buildings as being well-aligned with the mitigation objectives of the NCCAP and an Energy NAMA.

88. As a rapidly industrialising country, Turkey is experiencing growing energy demand with corresponding GHG emissions. Increasing efficiency in all processes from energy generation to transmission, from distribution to use, preventing waste and reducing energy intensity at sectoral and macro level are amongst Turkey's most important agenda items in the energy sector[16]. As well as increasing the focus on clean energy technology on the national landscape, the technologies developed and promoted through the project's Competition-Accelerator support Turkey with its 2015 commitment (under the Intended Nationally Determined Contribution) to reduce GHG emissions up to 21% below business as usual by 2030. This is seen as enabling the country to step onto a low-carbon development pathway compatible with the long-term objective of limiting the increase in global temperature below 2°C[17].

89. The Project Document identified the problem to be addressed, offered support to overcome barriers, specified beneficiaries (entrepreneurs, SMEs) who perceived the provided business assistance services to help transform their cleantech ideas into viable commercial products & services as highly pertinent. The inclusion of a policy component was also very relevant for the target group, as this aspect was designed to spur the review of existing policies and create avenues for their discussion with government actors aimed at developing a supportive policy and regulatory framework to favour cleantech innovation.

90. Over half of those surveyed (52%) rated the project as highly relevant, confirming that this is a technically adequate approach for addressing key barriers to turning technological innovations into viable businesses. Respondents pointed to the alignment of GCIP targets with the vision of national institutions (e.g. TÜBITAK, TTGV, etc.) to support newly-established startups with social-environmental impact and the relevance of its function "*as a bridge between the startup and the market*". Respondents pointed out that the Turkish innovation ecosystem is small and operates in a context where the involved actors regularly meet. In this light, "*every stakeholder has to engage in activities that are complementary; coordination between the parties is a must in such an ecosystem*". Evidence gathered from interviewed stakeholders confirmed a broad

[16] Cited by UNDP in its review of Turkey's energy situation: www.tr.undp.org/content/turkey/en/home/operations/projects/poverty_reduction/improving_energy_efficiency_in_industry.html

[17] With respect to the UN Framework Convention on Climate Change: www4.unfccc.int/submissions/INDC/Published%20Documents/Turkey/1/The_INDC_of_TURKEY_v.15.19.30.pdf

appreciation of the GCIP's role, activities, and achievements thus far in Turkey. The GCIP was described as "*providing a positive externality to other stakeholders and their initiatives*", seen as "*creating new partnerships*", and played a key role in rejuvenating the participation of mentors & trainers and building their technical capacities in meaningful ways, which was seen to add an important level of dynamism and competence to the innovation ecosystem.

91. GCIP Turkey fills a gap not covered by other international or national mechanisms in that its support is available to early-stage startups, whereas existing (government) schemes provide funding, grants, and support to companies that have already been founded. In the cleantech innovation domain, such a hurdle would not necessarily be reached before sufficient customer validation is ensured. Indeed, the support provided to these startups under the GCIP framework is intended to nurture them along the path to maturity and formal establishment.

92. The project draws on UNIDO's decades-long experience in entrepreneurship development, its role in supporting technology transfer and other technical cooperation projects for industry (especially SME), and its expertise in Energy & Environment. The project is in line with the current UN Development Assistance Framework (UNDAF) with Turkey. It is consistent with the strategic decision to focus this bilateral cooperation on, inter-alia, energy. As well, the project operationalises UNIDO's belief that "*a consensus on the concept of a Green Economy can only be reached if developing countries are provided with concrete opportunities to participate in the global markets for environmental goods and services and if opportunities for sustainable development are created for them in the international system for a green economy*".[18]

93. The project is fully aligned with the donor's focal area priorities, particularly the GEF Council's Revised Strategy for Enhancing Engagement with the Private Sector, Modality 3; namely, "SME Competition Pilot: Encouraging Entrepreneurs and Innovators," which provides support to entrepreneurs and innovators seeking to establish commercial ventures in the field of clean technologies aimed at enhancing national competitiveness.

94. Given that the project was highly pertinent to international/regional/national priorities, the needs of the target group, donor priorities, and UNIDO's mandate, competences, and strategy for inclusive and sustainable industrial development[19], the project is assessed as highly relevant. The substantive aspects used to structure the project and the actors used to anchor it within the country are coherent and contributed to its relevance and effectiveness (¶99).

The rating for relevance is "highly satisfactory"

3.3.2 Effectiveness

95. The Project's effectiveness has been assessed by looking at the extent to which the outputs and outcomes targeted in the intervention's results framework were achieved, or are expected to be achieved in the near future, taking into account their relative importance.

Outcome 1: A coordinating mechanism/platform established at national level to identify, coach, and support clean energy technology innovators

96. Outcome 1 was designed to promote Turkey's innovation ecosystem by (i) assisting in identification and early stage nurturing of the most promising innovative clean energy

[18] Cited in the Project Document referring to UNIDO-Turkey Bilateral Consultation (Nov 2008) 5th Session

[19] The combination of technical (business assistance), policy review/support, and capacity-building is seen as a winning combination for promoting private sector development and expanding private sector engagement in meeting national commitments of international environmental conventions and agreements (e.g. UNFCC)

technologies; (ii) coordinating existing/planned national programmes, funds, and competitions that promote the development and deployment of clean energy technologies and providing pre-selected candidates and applicants for them; (iii) facilitating global networking with mentors and potential business partners abroad for the most promising Turkish startups.

97. It appeared that project support for Outcome 1 (and Outcome 3) was privileged due to a desire to quickly establish and bring into function the envisaged Competition-Accelerator (which brought direct benefits to the startups), responding to the expressed interest of counterparts, which had the advantage of providing evidence sooner than later of the benefits and the added value of the GCIP, compared to other programs operating in Turkey.

98. Table 6 details the status of the programmed outputs aimed at achieving this outcome, together with an overall assessment of their achievement.

Table 6: Summary of the Project's Success in Producing Outputs under Outcome 1

<table>
<tr><td colspan="3">Outcome 1: A coordinating mechanism/platform established at national level to identify, coach, and support clean energy technology innovators</td></tr>
<tr><td>Programmed Outputs</td><td>Target/Indicators</td><td>Status as at December 2017</td></tr>
<tr><td>1.1 Two annual national Cleantech Competitions organised</td><td>100 entrants per Competition

# of entries
# of semi-finalists
# of finalists</td><td>4 competitions were run during 4 annual cycles with a 5th cycle planned in 2018. During 2014-2017: 775 applications were received; 376 of these underwent pre-screening to identify the most promising ventures who participated in the Competition as “semi-finalists”. Of these: 27, 28, 27, 32 entrepreneurs in each respective annual cycle, were accepted into the Accelerator, meaning that a total of 114 startups were supported. 83% of these successfully completed the Accelerator to reach “alumni” status.
In 2014-2017: 20 “top teams” were identified (finalists, runner ups, special awards) and characterized as “having potential to commercialize their products in Turkey or abroad”
By year-end 2017, the PMU referred to being “in regular communication for improvement with more than 50 active cleantech companies”
<table>
<tr><td>Annual Cycle</td><td>Total # of applications received</td><td>Applications deemed eligible</td><td>Semi-finalists selected (# with female team leader that emerged from Competition</td><td>Teams that finished Accelerator (# with female team leader)</td></tr>
<tr><td>2014</td><td>217</td><td>96</td><td>27 (17, i.e. 18 %)</td><td>25 (8, i.e. 32%)</td></tr>
<tr><td>2015</td><td>199</td><td>88</td><td>28 (21, i.e. 24%)</td><td>25 (5, i.e. 20%)</td></tr>
<tr><td>2016</td><td>210</td><td>97</td><td>27 (17, i.e. 18%)</td><td>17 (3, i.e. 18%)</td></tr>
<tr><td>2017</td><td>149</td><td>96</td><td>32 (19, i.e. 20%)</td><td>28 (7, i.e. 25%)</td></tr>
<tr><td>Total</td><td>775</td><td>376</td><td>114</td><td>95</td></tr>
</table>
</td></tr>
<tr><td>1.2 Two associated Accelerators organised, including post-competition support</td><td>6 boot camps, training workshops, mentoring sessions
Improve disbursement from baseline funding programs by 15%</td><td>5+ group trainings were held over 15 days during the national part of programme: National Academy (3-6 days), Customer Validation Session (3 days), Peer-to-Peer Session (3 days), Business Clinics (2 days), Mock-Up Jury (2 days)
Mentors assigned to startup teams carried out at least 6 sessions during each June-November period of 4 Competition-Accelerator annual cycles until December 2016
Startup teams could participate in 25-30 webinars (2 seminars per week) in the July-September period during each of the 4 annual cycles</td></tr>
<tr><td>1.3 Participation in regional and global networking activities</td><td>15 regional workshops or training courses organised</td><td>National winners from 4 annual cycles participated in the 1-week Global Forum (USA), which constituted the international part of GCIP Turkey programme:
2014: 2 participants from “National Winner” team
2015: 5 participants (2 National Winner members + 1 member of 1st, 2nd, 3rd runner ups)
2016: 4 participants (1 member of first 4 ranked teams of 2016 cycle)
2017: 3 participants (1 member of first 3 ranked teams of 2017 cycle)
During 2014-2017: Turkish startups participated in Vienna Energy Forum, COP sessions, Hello-Tomorrow; these all served as platforms for networking and raising awareness of Turkish cleantech startups and entrepreneurism</td></tr>
</table>

99. The outputs described in Table 6 are interlinked and part of the global cleantech acceleration concept adopted by GCIP Turkey. Under project funding (see Annex 4) an annual Competition-Accelerator took place starting in 2014, implemented each year with a 5th cycle planned for 2018. During the 1st PSC meeting, it was reported “*this initiative was much more successful and*

vibrant than we had expected in terms of the quantity of applications, available mentors in the country poll, number of planned official events".

100. "Semi-finalists" identified through the Competition as having promising startups then underwent the Accelerator, which brought participating teams in contact with each other in the national setting. "Winning" teams from the 4 annual cycles (2014-2017) had the opportunity to participate in a 1-week Global Forum in Silicon Valley where they could network and pitch to venture capitalists/angel investors and learn from the experience of other cleantech entrepreneurs. As well, selected members of these "winning" teams could showcase their achievements in the annual Vienna Energy Forum, during COP sessions (Marrakesh, 2016; Bonn, 2017), and through Hello-Tomorrow[20] events (Istanbul, 31 October 2016; Ankara, 5 December 2017), which offered valuable networking opportunities.

101. The PMU reported that at least 3 GCIP Turkey cleantech teams (1 from 2015 cycle; 2 from 2017 cycle) have successfully raised funding from private sector investment groups[21].

102. The PMU reported that it had actually doubled the volume of initially anticipated outputs (2 Competition-Accelerator cycles within the planned duration versus the 4 that were carried out to date). To put this achievement in perspective, the Evaluation Team looked to the results of other GCIP participating countries: Armenia completed 2 cycles within a 36-month duration. Malaysia completed 3 cycles within a 42-month duration. In Pakistan and South Africa, 4 cycles were completed within 48 months and 49 months, respectively.

103. Given that the Competition-Accelerator has been regularly organised, with a 5th cycle already underway, the host institution's strong leadership role underpinning this achievement (¶189), and the highly positive sentiments of stakeholders (¶99, ¶132), arguably this aspect has already moved to operational mode. This would consequently represent evidence that the project succeeded in establishing a national-level mechanism/platform, which is now functioning in an ongoing manner to identify, coach, and support Turkish cleantech innovators.

104. As well as providing a proven methodology, the project was expected to institute a coordinating force that would function to optimize and expand the support available through existing direct public Turkish support programmes. The Project Document states that "*with a relatively small GEF grant*", the project was to *"act as an effective catalyst to boost more vigorous implementation of the larger baseline projects and programmes*". The notion of tracking the 15% target to increase the disbursement rate from baseline funding programmes was included in the PIR framework under Component 1/Output 1.2. However, the documented M&E information does not facilitate measurement of achievement against this target, which could infer that GCIP's envisaged national coordination function is not yet fully in place, or that it is in place, but the data to verify this target hasn't been regularly collected.

105. The involvement of several national institutions as co-financing partners and members of the PSC set-up a pertinent structure to pursue the envisaged national coordination and project supervision. However, the first Project Steering Committee (PSC) took place almost one year

[20] Hello Tomorrow (www.hello-tomorrow.org) is a global initiative with local hubs designed to "accelerate transformation of disruptive technologies into impactful solutions to real world problems"

[21] I) Positive Energy (2015 alumni): raised USD 320'000 through 1st round with USD 1 million in progress and USD 300'000 commitment in place by Dec. 2017 through 2nd round. Subsequently, a company valuation of USD 8 million was anticipated.
II) Biolive (2017 semi-finalist): raised TRY 500'000 in investment in 2017 from Vestel Ventures (based in Turkey)
III) Episome Biotech (2017 semi-finalist) received €1.7million investment by Dec. 2107 through 3 rounds from Diffusion Capital Partners (www.dcp.vc), which was managed by "Diffusion Capital Fund" (based in The Netherlands)

after the PMU's constitution and 15 months after the formal launch of the project.

106. All co-financing institutions that are part of the PSC were interviewed for this evaluation; they indicated that they are in benefitting from and leveraging the project. There is evidence of collaboration (e.g. other programs are using the GCIP's "manpower and channels" i.e. mentors used by one institution are also involved as mentors in the GCIP; startups that pass through one mechanism, such as the Ankara Development Agency (ADA)'s "bazaar", are encouraged to apply to the GCIP when cleantech is involved. A key stakeholder reported that cleantech-related projects constitute 25% of the pipeline going through the ADA, whose bazaar is a pipeline for GCIP Turkey. Positive intentions were expressed regarding the opportunity to actively collect project ideas which "*could be shared and filtered through the GC*IP".

107. In summary, the extent that the Competition-Accelerator was expected to spur national coordination amongst direct public support programmes has not been fully materialized. Interviewed stakeholders commented on the positive spirit and commended the tangible efforts so far observed. They also pointed to a need for significantly more channelling and leveraging to achieve the desired catalytic effect, indicating that "*this would exponentially increase the speed of development of the innovation eco-system*". Respondents indicated that "*the GCIP should be combined with other support programmes and the startups should see the support programs as a sequence; for example, after initially supported by GCIP, the startup can be automatically forwarded to KOSGEB or another development agency programme*".

Outcome 2: Policies and institutional framework strengthened to promote Cleantech innovations in SMEs and support the local innovation ecosystem

108. An overview of the status of the outputs aimed at achieving the project's Outcome 2 is presented in Table 7, with an overall assessment of their achievement.

Table 7: Summary of the Project's Success in Producing Outputs under Outcome 2

Outcome 2: Policies and institutional framework strengthened to promote Cleantech innovations in SMEs and support the local innovation ecosystem		
Outputs	*Target/Indicators*	*Status as at December 2017*
2.1 Necessary policies/regulations required for the Cleantech competition and ecosystem identified and developed	# of new policies and regulations developed to create a conducive policy environment for cleantech implementation 20 policy makers get training on policy development (10% women participants)	Informal discussions were facilitated between key relevant institutional partners of the project PMU tried to encourage a review of existing policies and programmes PMU made efforts to connect semi-finalists and alumni with relevant policy-making authorities Envisaged training postponed each year; did not so far take place

109. The Project Document states that the 1st Competition-Accelerator program (Outcome 1) was expected to use and test the new policy & regulatory framework (Outcome 2) and provide on-the-job training (Outcome 3) to support the sustainability of Outcome 1. While this set-up has great conceptual coherence, its implementation ran into challenges in the Turkish setting as key policy makers were seen to have different priorities during 2015, which was an election year, and finally attention was off this topic due to the attempted coup d'état and consequent succession of changes in personnel and responsibilities across government institutions.

110. There was no progress on Outcome 2 that could be used & tested during the 1st Competition-Accelerator, as foreseen in the Project Document; indeed, this ambition seems to be rather unrealistic at a design level. However, there was an opportunity to progress on this dimension during the 2nd cycle (2015): 2 startup teams had innovations facing regulatory hurdles due to implications for transmission lines and under-capacity operations of Turkish dams.

111. The PMU reported that it tried to encourage review of policies over the span of the project. Primarily informal discussions took place. The PMU was able to connect GCIP alumni and semi-finalists with policy-making authorities i.e. Ministry of Energy & Natural Resources' General Directorate for Renewable Energy, Ministry of Forestry & Water Affairs (MOFWA), and others responsible for regulation and legislation (existing or lacking) which had an impact on cleantech innovations. Specifically, a meeting was held with MOFWA in which a roadmap was clarified for the above-mentioned teams for the application/permission cycle from authorities. This was one of the few concrete results achieved in the policy domain, which are illustrative of the power of this type of project support. This was highlighted in the 2nd PSC meeting as "*an approach [that] could be replicated with all partner Ministries to leverage their support*".

112. Interviews with stakeholders indicated that a report on the policy/regulatory landscape had been planned as an early stage activity, but this was repeatedly postponed. An envisaged training for policy-makers did not take place. According to the PIRs, this was postponed each year. By the end of 2017, it had still not taken place. The PMU indicated that this training is now planned for the 1st half of 2018, under the project's (second) 1-year extension.

113. During the 2nd PSC meeting, the project's support was requested to identify policy gaps in Turkey for the commercialization of clean technologies. Activities were carried out on an ad-hoc basis for some specific innovations for which existing policies/regulations were found to represent an obstacle to compliance and commercialisation. This initiative is indicative of the project's contribution on the policy side in terms of supporting Turkish public actors to develop a facilitating environment to favour cleantech adoption.

Outcome 3: National institutional capacity built for the mentoring and training programmes as part of the competition and acceleration programme

114. An overview of the status of the outputs aimed at achieving the project's Outcome 3 is presented in Table 8, together with an overall assessment of their achievement.

Table 8: Summary of the Project's Success in Producing Outputs under Outcome 3

Outcome 3: National institutional capacity built for the mentoring and training programmes as part of the competition and acceleration programme		
Outputs	*Target/Indicators*	*Status as at December 2017*
3.1 Capacity of host institution, TÜBITAK, strengthened and wide platform for all stakeholders established	TÜBITAK staff trained to organise Competition-Accelerator # of partners involved in platform # of mentors recruited & trained	PMU is hosted by TÜBITAK, facilitating on-the-job training and exchange TEYDEB-TUBİTAK's Entrepreneurship Support Group (ESG) has been continuously involved in GCIP activities and training (e.g. ToT, March 2017); ESG assisted GCIP alumni & mentors, investor connection activities 400+ mentors have registered to take part in GCIP Turkey; 55 mentors and 4 Assistant Trainers were trained (March 2017 and June 2017, respectively) There is a loyal volunteer base: 10+ volunteer trainers25+ mentors, who have regularly participated in all programme cycles since its launch in 2014 TGCIP Turkey has received support from over 40 different organizations
3.2 Experience shared with other countries	# of regional workshops or training courses organised	Each year, at least 2 additional national workshop/training activities were organised for especially for alumni; these Alumni Follow-Up sessions allowed for tracking the continuing momentum of the startup teams. Over time, more startup teams participated in international activities (e.g. Global Forum Silicon Valley, Vienna Energy Forum, COPs in Marrakech & Bonn), UNIDO General Conference 2017
3.3 Initiation for establishment of a Clean Energy Technology Development Platform conducted	Assessment report on conditions, possibilities, and needs for the establishment of the Platform	It appeared that no progress has yet been made on this output. The PMU indicated that a training is planned for 1st half of the 2018.

115. The PMU, which is responsible for the daily management of the project and monitoring of activities, is hosted by the local executing partner, TÜBITAK. This physical co-location allows for the continuous exchange of experience, mutual development of knowledge, and ongoing on-the-job training for building the capacities of the institutional partner.

116. This setting, the support received from over 40 entities (universities, institutions, NGOs, other incubation organisations), and the institutional capacity building that has ensued are seen to very effectively anchor the overall program and assure the sustained organisation of the combined Competition-Accelerator. Most of the respondents interviewed expressed very favourable sentiments regarding GCIP Turkey's embeddedness within TÜBITAK, indicated that its leadership role was highly appropriate and effective, and for the most part, felt it was very positive for TÜBITAK to continue its hosting role and strengthen its ownership of this activity.

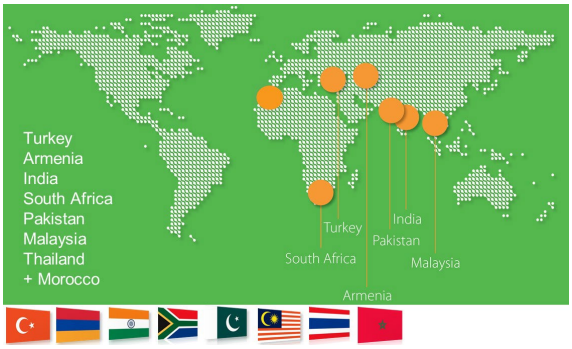
117. No progress was mentioned with respect to the initiation of a Clean Energy Technology Development Platform, although a training has been envisaged for the first half of 2018 to move forward on the needed assessment activities.

118. The idea of sharing experience with other countries is a natural component of UNIDO's strategy under inclusive and sustainable industrial development. In the PSC's first meeting, the UNIDO Project Manager underlined the GCIP's international dimension in terms of "*sharing information, knowledge, and experience inside GCIP countries via Regional Cooperation and South-South Cooperation for the purpose of increasing economic mobility and development of SMEs locally, regionally, and internationally*". In this respect, under the GCIP context, as already mentioned (¶102), "winning" Turkish teams had the opportunity to participate in a Global Forum in Silicon Valley and showcased their achievements in the annual Vienna Energy Forum (which brought together GCIP alumni from 7 different countries), during COP sessions (Marrakesh, 2016; Bonn, 2017), and more recently, the 2017 UNIDO General Conference.

119. While acknowledging that these networking and exchange opportunities existed for a select few Turkish startups, many startup team members as well as mentors expressed the strong wish for broader contact and exchange with mentors and startups of other GCIP countries. By the end of 2017, the GCIP approach had been implemented in 8 countries (see Figure 4). Following an overall programme evaluation being conducted by the GEF in early 2018, it was envisaged that a further 25 countries could be included, creating a truly global platform for exchange. To date, within GCIP Turkey, there appeared to be limited exchange on a regional or international basis, although one of the justifications for launching the project outlined in the Project Document was "to create an extensive network of clean energy entrepreneurs originating from countries participating in the global programme". Other GCIP participating countries appear to have interest of such a level of exchange, if the vision painted by the Malaysia GCIP website could be taken as indicative of a larger interest: "*Our vision is a global programme that enables an entrepreneur in Kuala Lumpur or Hyderabad to receive mentoring from an expert in Johannesburg or Istanbul, license their technology to a partner in New Delhi, Sao Paulo or Shanghai and secure venture funding from Silicon Valley, Moscow or London*"[22].

[22] http://malaysia.cleantechopen.org/news-resources/gef-unido-cleantech-programme/

Figure 4: GCIP Participating Countries by end of 2017



Source: Cleantech Open Presentation, 2016

120. While such wishes for exchange and networking were repeatedly heard, discussion with an international venture capitalist external to the project characterized this as "letting the lame help the blind" and suggested that such networking would yield little tangible value as "all the startups are fighting for the same investors and customers; would a startup share its investor base with another startup?". This discussion suggested that Turkish cleantech startups should focus on getting local customers, build up their confidence/capability, do customer validation, and develop a pipeline as a basis for approaching corporates for funding in order to scale-up.

121. This view was disputed by innovation experts and academic researchers in the field of startup innovation, who pointed out that the ecosystem in which innovation flourishes is "chaotic", "rich and dense", and emphasized the importance of exposure (events, networking, pitching of ideas, role models, community) and internationalization[23] (meeting startups in other countries, spending time in other innovation ecosystems like Silicon Valley, Tel Aviv, Shanghai, New York) to develop an attitude that allows one to question established techniques and traditional approaches and develop a "pioneering spirit which encourages an entrepreneurial culture"[24].

122. Providing an overall view of the project's effectiveness, 70% of those surveyed rated the extent to which the project had achieved its objectives as "satisfactory". These respondents pointed to its achievements in "creating awareness about the importance of clean technology for a sustainable world", "creating positive impact and mobility for startups"; providing "a good opportunity for entrepreneurs to promote their business and establish an effective network". While high appreciation was indicated for the mentoring, further improvements were seen as needed in terms of thematic expertise for mentorship and consultancy, post-Competition/Accelerator support for alumni, and developing links for funding and investment.

123. It appeared that project support for Outcomes 1 and 3 was privileged due to a desire to quickly establish and bring into function the envisaged Competition-Accelerator (which brought direct benefits to the startups), responding to the expressed interest of counterparts, which had the advantage of providing evidence sooner than later of the benefits and the added value of the GCIP, compared to other programs operating in Turkey.

124. Summing up the evidence, while the performance related to Outcome 1 was more than expected, has already reached an institutional anchoring, and could therefore be characterised

[23] Dr. Hervé Lebret, Vice Presidency for Innovation, Ecole Polytechnique Fédérale de Lausanne (EPFL) Innovation Park, Switzerland http://www.startup-book.com/

[24] Martin Kenney, Professor of Human and Community, University of California Davis. "Understanding Silicon Valley: Anatomy of an Entrepreneurial Region" 2000. Stanford University Press

as highly satisfactory, aspects related to Outcomes 2 and 3 must also be considered in determining the overall rating of project effectiveness. These aspects were satisfactory and offer opportunities for further development, particularly in relation to leveraging the project's support for strengthening the policy and regulatory environment and facilitating the exchange of experience to strengthen the capabilities of mentors, development of local trainers, and supporting the startup teams vis-à-vis transformation of their ideas into commercial ventures.

The rating for project effectiveness is "satisfactory"

3.3.3 Efficiency

125. The notion of efficiency was integrated into the project concept from the outset in that this intervention was architected to, "with a relatively small GEF grant", "act as an effective catalyst to boost more vigorous implementation of the larger baseline projects and programmes". While this catalytic effect may not have been sufficiently tracked (¶102), the project's efficiency in boosting the local innovation ecosystem in Turkey was confirmed through discussions with all stakeholders and previously highlighted (¶107).

126. Potential for efficiency was further designed into the program through the opportunity for coordination with other ongoing and upcoming GEF projects under the Climate Change focal area, which was expected, according to the Project Document, to "save costs, create synergies and avoid any potential overlaps". The extent to which this coordination did, in fact, materialize with the corresponding efficiencies, is not evident from the project reporting.

127. The intervention underwent two 1-year extensions at "no cost", upon the decision of TÜBITAK's Scientific Committee and UNIDO. This means that the originally allocated budget and in-kind resources contributed for a 36-month project have actually been stretched over a 60-month period. This is an important achievement and the PMU and local host, TÜBITAK, are to be congratulated on this.

128. While acknowledging that the project has substantially exceeded its planned timespan (almost double), the originally allocated resources were used to deliver substantially more services than initially imagined (¶102). This achievement must also be put in context in that the project and its partners benefitted from a significant efficiency related to the highly favourable USD-Turkish lira exchange rates[25], which translated into a near doubling of the latter compared to what had been anticipated and budgeted for.

129. The Project Document indicated that "cost-effectiveness has been considered a priority throughout the project design process". The PMU indicated that it followed a principle to use the provided resources in an efficient way. The team seemed conscientious and respectful regarding the use of resources, expert time, etc., asserting "we are not wasting funds". A mentor involved in the program summed up the sentiments also expressed by others, indicating: "*They use government's or other institution's physical spaces for programmes so they do not waste their resources for fancy places. Still, the rooms and conference halls are good to facilitate an effective working environment. They utilize distant meeting opportunities, so the entrepreneurs should not travel for each meeting or activity*". 52% of those surveyed rated the extent to which the project had achieved its objectives as "satisfactory" and 35% put their rating of this aspect as "highly satisfactory".

[25] On the project's start date, the USD:TRY rate was 1.98. By the end of December 2017, the rate was 3.79.

130. The PMU was embedded directly within the local implementing partner's own facilities, which provided valuable efficiencies in terms of access to infrastructure as well as facilitating continuous access to and contact with the TÜBITAK team, as well as experience and knowledge exchange and on-the-job training, as mentioned above (¶115).

131. The PMU's resources and preferences were leveraged for the delivery of project support and other services. Beyond the day-to-day management of the project and the monitoring of activities, the team provided valued technical expertise, participated in numerous networking, public relations, and dissemination activities, and went above and beyond its project mandate by also contributing the Country Chapter on Turkey in the 2017 Global Cleantech Innovation Index. The team's focus on action, versatility, and engagement provided a positive boost with regard to how economically the project's human resources were used to produce results.

The rating for project efficiency is "highly satisfactory"

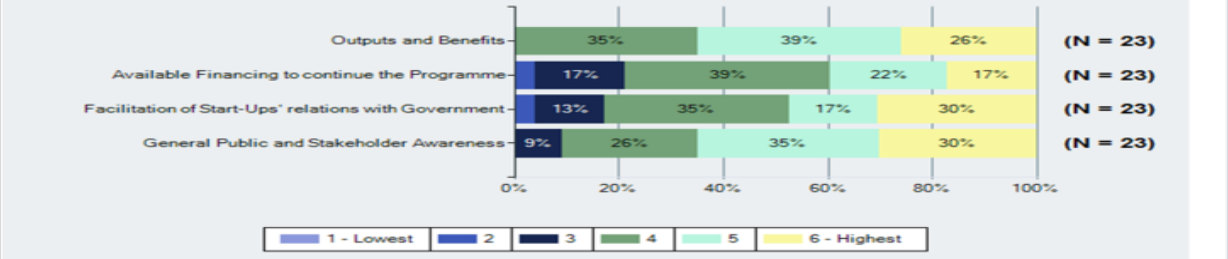
3.3.4 Sustainability of Benefits

132. The survey of actors closely involved in the GCIP Turkey initiative, which was carried out by the Evaluation Team, unveiled very positive perceptions regarding the sustainability of project's results (see Table 9). According to these respondents, the bulk of which included startup teams, jury members, and mentors, the project did a particularly good job in generating awareness amongst relevant stakeholders and the general public and in facilitating startups' relationships with relevant Turkish government entities. These aspects set an important stage for Turkey to be able to leverage the results and outcomes of the project, moving forward.

Table 9: Survey Results Showing Positive Perceptions of Sustainability of Project Results

To what extent do you believe that the Cleantech programme's results will be sustained in Turkey (i.e. continue to be of use and value) according to the following elements?

		1 - Lowest	2	3	4	5	6 - Highest	Total Responses
(a)	Outputs and Benefits	0 0%	0 0%	0 0%	8 35%	9 39%	6 26%	23
(b)	Available Financing to continue the Programme	0 0%	1 4%	4 17%	9 39%	5 22%	4 17%	23
(c)	Facilitation of Start-Ups' relations with Government	0 0%	1 4%	3 13%	8 35%	4 17%	7 30%	23
(d)	General Public and Stakeholder Awareness	0 0%	0 0%	2 9%	6 26%	8 35%	7 30%	23



133. The implementation of the GCIP concept has inspired Turkish government institutions about how to organise sector-specific and/or thematic SME support programme calls, funding programmes, and incubators/accelerators. Looking to the future, respondents interviewed indicated that there is potential for the involved actors to spread the concept to other specific thematic fields (e.g. biotechnology, health, health tourism, defence, agriculture, etc.)

134. Based on the GCIP's visible success over the past 4 years, some further institutional structures have incorporated cleantech startups and their investment within their agenda[26]. By comparison, the GCIP's performance is understandably significantly further ahead in terms of momentum and support of cleantech startups and SMEs on the national landscape.

135. The Project Document did not mention an exit strategy and it is understood that such an aspect may not have been a formal requirement at the time of the design of this project (presumably in 2012). Good practice has evolved over the years to put more attention on this aspect from the outset. UNIDO's Evaluation Manual indicates that an exit strategy, planned together with UNIDO, or arrangements for continued funding of certain activities is a key aspect for assuring the probability and continuation of benefits following project closure.

136. According to the Project Document, the PMU was foreseen to "continue the organisation of the cleantech programme after project completion". While this may have been intended as an implicit exit strategy, there was no actual mention of an exit strategy in the Project Document, nor was such an eventuality discussed in any the PSC meetings. During the PSC's 2nd meeting (March 2016), ahead of the project's envisaged completion date (October 2016), a 1-year extension was granted with the stated aim to consolidate the outputs and achieve greater impact. Another 1-year extension was granted through a 2 December 2017 decision of UNIDO and TÜBITAK's Scientific Committee, thereby extending the programme until December 2018.

137. The notion of an exit strategy can be implicitly pursued to the extent that a project works with institutional structures that would retain the knowledge and skills developed under the project, together with the idea of mainstreaming cleantech innovation within existing policies and regulations (as opposed to creating new policies & instruments). GCIP Turkey has indeed identified and collaborated with the relevant national institutions, with ongoing capacity-building and exchange facilitated by the PMU's embeddedness within TÜBITAK facilities (¶130). Evidence was gathered that, by the end of its fourth year of operation in December 2017, "the mechanisms are starting to work", and while there may have been some initial delays, the engagement and participation of other national entities has been reinvigorated. However, further efforts are needed in this area to assure sustainability of the results.

138. The sustainability of the project's results has been heightened by recent development: i) the 2018 Competition-Accelerator was executed with essentially Turkish resources/funding (promotional material, logistics, trainers, mentors, travel); ii) the capacities of primarily Turkish trainers and mentors were used, with limited involvement of CTO staff providing extra advisory support to selected startups co-funded by TÜBITAK as a test for extending GCIP services; iii) the cost for further national activities will be covered by TÜBITAK and TBS Investment, an angel investor that has partnered with GCIP Turkey; and iv) prizes offered in the 2018 annual cycle will be covered by TÜBITAK, TBS Investment and OSTIM, one of the country's organised industrial zones.

[26] I) Hello Tomorrow Türkiye, a French-funded non-profit organization, aims to accelerate commercialization of primarily cleantech technologies. This initiative does not include a national mentoring base or training. It has organised two events supporting the local innovation ecosystem: The Future of Energy (2016), The Future of Smart Cities (2017); see www.facebook.com/hellotomorrowtr/ II) Climate Launchpad Turkey founded March 2016 is actively seeking promising cleantech entrepreneurs through calls launched over past 2 years; is powered the EU's main climate innovation initiative Climate-KIC; using a similar approach to the GCIP (Competition, Accelerator, Boot Camps/training, coaches, judging, Grand Final, awards) . Its programme is structured in 3 stages, with dedicated guidance & grants provided with each Accelerator phase designed to help startups get funding and launch their products worldwide. See www.climateturkey.com/

139. During the 2017 GCIP Turkey Award ceremony convened on 8 May 2018, TÜBITAK-TEYDEB launched a Clean Future Fund (CFF)[27], which is a directly attributable outcome of the GCIP. The CFF is designed to scale up and strengthen focus on clean technology by facilitating a structured convergence of national public funds and private sector investment for the acceleration and commercialization of clean technology innovations and entrepreneurs. A second phase of the GCIP was expected to contribute to CFF's capitalization and complement it with continued and expanded business acceleration and commercialisation services

140. GCIP Turkey's operation demonstrated the need for and value of having thematically-focussed technology innovation and accelerator activities. In this light, for the first time, in 2018, TÜBITAK-TEYDEB launched 6 thematic Calls for Proposals within its grant programmes, including a Call for Energy and Clean Technology (ECT), which drew 46 proposals, constituting 10% of all proposals received. This is a clear indication of the project's catalytic potential.

3.3.4.1 Financial Risks

141. The absence of coordination in the project's initial years created some level of financial ambiguity. Most of the in-kind co-financing commitments were not met, which generated uncertainty surrounding the project's financial sustainability. The political situation after the attempted coup d'état (15 July 2016) led to severe financial scrutiny of all government initiatives, which was seen as limiting the timely contribution of various national stakeholders.

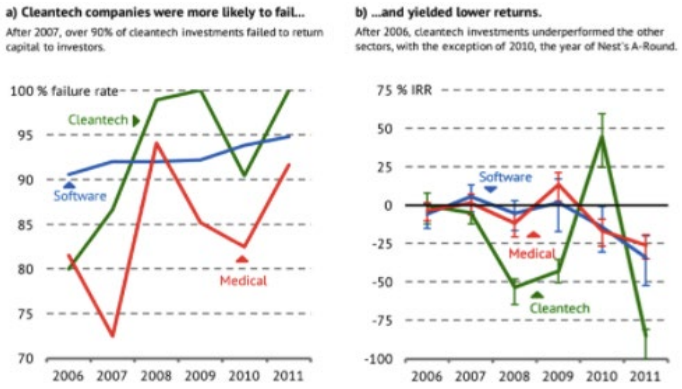
142. In addition to engaging its staff and assuming a leadership role, TÜBITAK contributed financial resources to ensure GCIP's anchoring and secure operation (¶189). Through discussions carried out for this evaluation, TÜBITAK indicated that it was prepared to contribute further financial and in-kind resources. This is taken to be an important and strong indicator of local ownership and commitment. This bodes well for the sustainability of the project's results.

143. Assessing the likely availability of resources following project close involves a complexity of factors: availability of public support and its effective channelling; private investors/venture capitalists/angel investors (domestic, international) and their willingness to invest in cleantech innovation. Commercialization is perceived as the biggest hurdle facing entrepreneurs. This barrier is closely related to the way that potential clients and investors assess innovative ideas as well as the level of an initiative's maturity. The energy market is dominated by very large players. Big investors are purportedly not interested in the projects of small entrepreneurs. In Turkey, foreign origin products appear to be more attractive. Sanctions and legislation can be used as mechanisms to encourage competition and favour domestic products.

144. From the investigation carried out with stakeholders, there is a growing frustration on the part of Turkish entrepreneurs regarding insufficient venture capital investment in cleantech; instead, investor focus is reportedly more on web- and mobile-innovations and traditional SMEs (e.g. retail, hotels). While the high failure rate for cleantech startups and their low rate of returns has been well documented, there are much faster and higher returns from med-tech, bio-tech, and software, as shown in Figure 5.

[27] The CFF launch was very well attended (about 150 people), also at the highest level, with the presence of TUBITAK's President Prof. Hasan Mandal and H.E. Mr. Faruk Özlü, Minister of Science, Industry and Technology (MoSIT), who expressed his strong support to the new CFF, great appreciation for UNIDO's support to Turkey's sustainable industrial development in general and for GCIP's results, in particular. Other public and private sector institutions in Turkey's cleantech innovation eco-system (Directorate for Renewable Energy of the Ministry of Energy, Middle East University, OSTIM, TBS Investments) also expressed their support for the CFF

Figure 5: Risk-Reward for Cleantech Investors Compared to Software and Medical Technologies[28]



145. According to one respondent, who conveyed a view illustrative of current wisdom: "If you can live with the notion that only a few of your initiatives will be successful, the GCIP approach is a good instrument. If you have this attitude, it works for stimulating entrepreneurship".

146. Experts involved in building innovation ecosystems stressed the importance of a risk-taking mindset[29] and the openness and ability of entrepreneurs and their supporters to accept failure, knowing that "*even if a startup fails, the team will get a benefit out of this for their next entrepreneurial venture*". GCII 2017's chapter on Turkey indicates that "*the concept of risk-taking and the possibility of failure, which are inherent to the concept of entrepreneurship, are not well-accepted in Turkish society*". It was further mentioned that "*the main concern of Turkish entrepreneurs is more government aid for the training of entrepreneurs and the strengthening of entrepreneurial culture*". Yet, there are ongoing risks for the Turkish innovation ecosystem to rely to a large degree on public funding. Experts interviewed indicate that "*as sometimes public money can not accept failure, every government programme has to be successful*"; this view is backed up by academic research in the field.

147. Interviews carried out with various government institutions showed that especially TÜBITAK and the General Directorate of Renewable Energy are ready to make new financial commitments and increase their financial support. TÜBITAK indicated that it has the necessary financial resources and can easily open up a call for cleantech solutions. Respondents explicitly stated that UNIDO's continued association is vital for building up the programme's reputation.

148. In addition to government institutions, other stakeholders expressed their eagerness to support the program. In autumn 2017, Letters of Intent were received from OSTIM and TBS Investment, a Turkish private sector investment firm, expressing the intention to financially support the GCIP and invest in the initiatives of its alumni.

The rating for financial risks is "satisfactory"

[28] B. Gaddy, V. Sivaram, F. O'Sullivan, Venture Capital and Cleantech: The Wrong Model for Clean Energy Innovation, MIT Energy Initiative Working Paper, July 2016

[29] From What Makes an Entrepreneurial Ecosystem?", N. Colin (Oct 2015): entrepreneurial ecosystem needs 3 ingredients:
– capital: by definition, no new business can be launched without money and relevant infrastructures (which consist of capital tied up in tangible assets);
– know-how: you need engineers, developers, designers, salespeople: all those whose skills are necessary for launching and growing innovative businesses;
– rebellion: an entrepreneur always challenges the status quo. If they wanted to play by the book, they would innovate within big, established companies, where they would be better paid and would have access to more resources.

3.3.4.2 Sociopolitical Risks

149. As highlighted in the project's RTOC, political and social ability play a critical role in allowing investor confidence to flourish and resources to be channelled towards domestic cleantech innovation (¶82). While largely beyond the control of the Project, its implementing partners, and other key stakeholders, sociopolitical stability has a direct link to positively influencing the realisation of the project's intended impacts.

150. However, the seeming lack of interest on the part of the public and private sector in the first few years of the project created some level of social risk that could have impeded its progress. This risk was alleviated to a certain extent through significant public relations, communication, and dissemination efforts undertaken by the PMU and TUBİTAK in subsequent stages.

151. The strategy documents of Turkish government institutions stress the importance of sustainable economic growth, which requires solid regional development, better functioning SMEs, and less dependence on imported fossil-based energy. GCIP Turkey offers effective solutions on these three fronts, which is also recognized by the participating entities.

152. Various stakeholders, including KOSGEB, the General Directorate of Renewable Energy, and Regional Development Agencies explicitly stated that they are ready to integrate their support programmes with GCIP Turkey, which would help the project to attain its goals with respect to the above-mentioned socio-political aspects (¶151).

The rating for sociopolitical risks is "moderately likely".

3.3.4.3 Institutional Framework and Government Risks

153. The first few years of the program witnessed the lack of an effective coordination mechanism amongst local stakeholders, which led to some delays in the decision-making and implementation stages of the project, particularly with respect to the project pursuing the vision of achieving a coordinating function at national level.

154. In the Project Document, the potential lack of effective coordination between various project partners was identified in the design stage; however, this risk was assessed as low. This inadequate level of risk assessment could have created an unhelpful filter whereby the lack of coordination was overlooked, and its consequences were incorrectly perceived as minimal.

155. There is still not a clear-cut institutional framework, where the government institutions, the PMU, and the other relevant parties effectively communicate and take critical decisions on a regular basis. In its current form, if the generous support of TUBİTAK were to be excluded, institutional risks are likely to intensify, even with the positive efforts of the PMU.

156. Having said that, there should not be any concerns regarding the transparency and accountability of the programme, which reduced risk on this dimension to a significant extent.

The rating for institutional framework and government risks is "moderately likely".

3.3.4.4 Environmental Risks

157. The project's support is aimed at achieving global environmental benefits, including improvements in resource efficiency and the reduction of waste and GHG emissions. The cleantech solutions being developed by the involved startups to improve water sanitation, and agricultural productivity are recognized and valued by relevant government institutions.

158. The government's recently published strategy documents emphasize the importance of energy

efficiency, environmentally-friendly technologies, and (SME) entrepreneurship, which all point to supporting the project in delivering positive outcomes on the environmental front.

The rating for environmental risks is "highly likely"

The rating for sustainability of benefits is "moderately likely"

3.4 Assessment of Cross-Cutting Performance Criteria

3.4.1 Gender Mainstreaming

The extent to which UNIDO interventions have contributed to better gender equality and gender-related dimensions were considered in the intervention.

159. The UN has a mandate to address human rights and gender equality in all interventions to promote social justice and equality[30]. The PMU received training in Vienna on UNIDO's gender mainstreaming strategy and training in Ankara within a process for developing a UN Development Cooperation Strategy for Turkey with a gender mainstreaming perspective. These staff awareness-raising and capacity-building initiatives are seen to give the PMU the tools and strategies through which gender could be mainstreamed in project implementation.

160. The mainstreaming of gender and other socially-inclusive aspects were addressed at the level of project design through the expressed intention to create jobs & more opportunities for women entrepreneurs. This led to incorporating aspects into the Cleantech Competition-Accelerator to recruit female trainers, mentors, and judges, promote women entrepreneurs (a target of 10% was set) and by designing specific prizes and support programmes. During the GCIP 2014 cycle, 43 of 103 involved jury members, specialists and mentors were female; this proportion was maintained throughout subsequent cycles. A "Women-Led Entrepreneur Award" and "Young-Led Entrepreneur Award" were delivered in the 2015 cycle.

161. Monitoring activities tracked and aggregated data about the participation of women in semi-finalist and finalist teams. Data was available showing the number of women in team leader positions within the eligible applications to the Competition as well as their success in reaching alumni status (¶54). In this light, over the 2014-2017 period, women figured in 18%-32% alumni team leader positions.

162. In terms of social inclusiveness, respondents mentioned that they observed efforts to balance the number of men and women within the teams and that the project made an attempt to reach universities and technology transfer offices distributed all over Turkey. Although 90% of the participating startups were based in the country's most developed and industrialized regions (Ankara, Istanbul, Izmir), there were a few startups from less developed parts of the country to the East that did participate. This outreach represents a valuable first start and is evidence that the project endeavoured to create a culture and spirit of inclusiveness.

163. 69% of those surveyed rated the extent to which the project had been sensitive to considerations regarding gender and social inclusiveness as "highly satisfactory" (52%) or "satisfactory" (17%).

The rating for gender mainstreaming is "satisfactory"

[30] Guidance Document: Integrating Human Rights and Gender Equality in Evaluations, UN Evaluation Group, Aug 2014, pg19

3.4.2 M & E System

3.4.2.1 M & E Design

164. In terms of design, a detailed M & E plan was prepared with detailed steps defined to provide visibility of the progress of results. A Project Implementation Report (PIR) framework was drawn up to guide documentation, share progress on outputs and outcomes, and track activities against the work plan approved by the PSC. This approach equipped the PMU to take corrective measures in case of deviations between the work plan and actual implementation.

165. PSC meetings were also designed to function as an M & device, providing supervision and strategic guidance according to national imperatives and market needs.

166. A mid-term review and independent terminal evaluation were part of the project's initial architecture. These mechanisms were designed to facilitate reflection, promote discussion regarding content, scope, and resourcing of activities, provide an opportunity for recalibration, and evaluate the project's progress-to-impact and achievements.

3.4.2.2 M & E Implementation

167. As the GEF's implementing agency, UNIDO held the responsibility for M&E, which was expected to represent a significant part of the PMU's workload. It was reported that monitoring was undertaken regularly through interaction with the involved actors.

168. PIRs were compiled on an annual basis, structured according to the results framework. This approach functioned to formally document and communicate the project's progress in achieving its outcomes against the key performance indicators specified in the planning documents. Within the PIR framework, the PMU carried out self-ratings, with justifications for these assessments, and highlighted risks and potential mitigation measures. Implementation and execution issues were noted.

169. PIRs covering the periods of October 2013 to June 2015 (PIR 2015), July 2015 to June 2016 (PIR 2016), and July 2016 to December 2017 (PIR 2017) were made available to the Evaluation Team. The level of detail contained within these PIRs is commendable, thereby constituting an extremely useful monitoring instrument.

170. During 2017, the PMU indicated that it had prepared a report that focused on the energy savings and GHG emission reductions resulting from the project.

171. Although the original plan was to have two PSC meetings each year, only one such meeting was organized per year. The PSC Meeting Minutes for 2014, 2015, and 2016 were available to the Evaluation Team. No PSC meeting was convened since 16 February 2017.

172. Although it was planned and budgeted, there was no mid-term review. Having implemented two annual cycles of the Competition-Accelerator, there seemed to be a feeling that the project was on track and the idea of undertaking such a strategic reflection seemed to have been overlooked. In discussions with relevant actors, the Evaluation Team gained the impression that the value of such a mid-way reflection, whether executed internally or supported through external facilitation and/or intervention, was not well understood.

3.4.2.3 Budgeting and Funding for M&E Activities

173. A detailed budget was planned and allocated for M&E activities, which included continuous monitoring of project execution and tracking progress towards milestones. The overall budget of USD 70,000 was allocated for M&E activities, by combining USD 20,000 cash contribution

from the GEF and USD 50,000 co-financing (presumably in-kind contributions). Within the GEF's contribution, USD 8,000 was reserved for the terminal evaluation. The Project Document further noted that some unspecified proportion of UNIDO's contribution of USD 50,000 (it is not clear if this is part of the USD 50'000 cash contribution or the in-kind contribution of UNIDO, according to the institution's 2013 commitment letter supporting this initiative) to project implementation was to be used by the UNIDO project manager and the UNIDO Regional Office in Ankara to monitor project implementation.

174. The amount of cash funding in the overall USD 70'000 budget available for M&E was not clear. As the bulk of the allocation was composed of in-kind contribution, this may imply that a substantial proportion of the ongoing M&E efforts were covered as part of the salaries provided to the PMU and UNIDO Project Management staff, leaving cash contributions available to cover the expenditures involved in undertaking the mid-term and terminal evaluations. In this light, it is not clear that sufficient cash allocations were reserved within the project's design to facilitate the mid-term and terminal evaluations. There may have been an idea that cost-savings gained from omitting the mid-term review (which was not seen as being obliged) could be saved for contribution to the terminal evaluation. For a typical mid-sized project of this size, the standard allocation set aside for the terminal evaluation is USD 30'000.

The rating for M & E implementation is "satisfactory"

3.4.3 Results-based Management (RBM)

175. The lag between the project's formal approval (Oct 2013) and the constitution of the PMU (March 2014) is consistent with the delay observed in many projects undertaken within international cooperation. During this period, project staff were being recruited, facilities within the host institution were being prepared, and the supervisory & support structure in UNIDO headquarters was being established.

176. Despite this 5-month lag, once established, the PMU team, supported by TÜBITAK, managed to get quickly on track. Working under a tight schedule, the team was able to initiate and implement the first annual Competition-Accelerator cycle, which created a positive perception of the GCIP project and momentum for moving forward.

177. The project's results framework was the basis for developing the annual work plan (including key activities, milestones, targets), the M & E system, and the PIR structure. This functioned to support the project in results-based management.

178. The M&E system in place tracked progress on activities, outputs, and outcomes according to the results framework. Information was collected on specific indicators throughout the implementation period. Specific attention was paid to recording statistics related to the Competition-Accelerator (e.g. received applications, qualified applications, semi-finalists, female-led team, mentors, business clinics, technology innovations of startups). M&E activities for other aspects of the project appeared to be backgrounded, reflecting certain preferences.

179. As mentioned, the PSC only convened for the first time in February 2015 (¶105). The explanation for the delay of 15 months after the project's formal start was not clear. The delay in convening the body that was to provide strategic guidance and oversight of implementation was not available to support the project until an almost critical stage. When the PSC finally did convene, there was major turnover of representatives from the constituting institutions. This meant that each time the PSC convened, new representatives had to be informed about the project. In this light, the prospects for carrying out the anticipated duties of providing strategic guidance and exercising project supervision were impeded.

180. In summing up, while there was a delay at the outset, this was compensated by the initiative and "action" orientation of the PMU. The delay and weakness of the PSC structure continues to have negative consequences; however, this has been countered by the strong orientation of the PMU working together with its host, TÜBITAK, to keep the project moving ahead.

The rating for RBM is "satisfactory"

3.5 Performance of Partners

3.5.1 UNIDO

181. As GEF's implementing agency, UNIDO held ultimate responsibility for the project's timely implementation, delivery of planned outputs, and monitoring achievement of expected outcomes. UNIDO was also accountable to the GEF grant and other funding resources provided by the Turkish government and the private sector. It is judged that UNIDO has undertaken these responsibilities in a serious and respectful manner and has fully carried out its duties.

182. The participation and reputation of UNIDO was highly valued by all stakeholders. Many of the respondents interviewed for this evaluation remarked on the importance of UNIDO's association with this project and expressed strong wishes for its continuation. According to one stakeholder, who expressed a commonly-held view, "*the importance of UN branding can not be underestimated. It inspires. People are keen to help because of association with non-profit, clean tech. When I mention the UN, that seals the deal*".

183. UNIDO contributed the project design and adequately oversaw its implementation, monitoring, reporting, and evaluation. Some hopes were expressed about the possibility for UNIDO to strengthen its supervision and guidance to project management for strategies and approaches that could flow through to strengthening the policy dimension of such a project.

184. Technical backstopping was conducted by experts identified/engaged by UNIDO and included in their ToR. These experts were perceived as highly competent; their support was highly appreciated. The PMU also played a role in technical assistance, going beyond its mandate.

185. The area of cleantech innovation is a new domain for UNIDO. Upon the launch of the GCIP initiative, there seems to have been some challenges around identifying the management capacity to supervise and support the project related to staff turnover. GCIP country responsibility was consequently distributed across several different Project Managers. UNIDO's recent appointment of an overall GCIP Coordinator is seen as a positive step to facilitate the sharing of experience and lessons learned across the GCIP implementing countries.

186. Acknowledging the power of the private sector in fuelling and funding innovation and eventually for providing an exit strategy from direct public funding, concerns were expressed by those interviewed about the ability and willingness of UNIDO to bring further global and private sector partners/sponsors into the programme.

187. With respect to assuring the sustainability of the GCIP in Turkey, concerns were expressed regarding the "ownership" of the cleantech platform, the data assembled and stored there thus far, the extent to which this mechanism will continue to be available to GCIP Turkey (and other involved countries), and access rights to the platform as well as to the key methodology (DeBarsy) being heavily utilized under the GCIP framework.

188. As already mentioned (¶119), many stakeholders expressed the wish for more exchange and links with other GCIP countries and hoped to leverage UNIDO's networks and other activities

to gain more international exposure. The weakness in coordination capacity at global level was highlighted as an area for improvement as well as tapping cooperation opportunities between UNIDO's Energy Branch and Environment Branch. The latter is well-known for its role, together with UN Environment, in supporting the Resource Efficiency and Cleaner Production (RECP) programme and global network (RECP*net*) of service providers. To date, there appeared to be few, if any, links between cleantech, eco-innovation, and RECP, although the original pilot country for the GCIP initiative, South Africa, has been involved in piloting eco-innovation and has a leadership role within the RECP*net*. Malaysia and Thailand also have activities in all three of these domains, supported by UNIDO and/or UN Environment.

The rating for UNIDO's performance is "satisfactory"

3.5.2 National Counterparts

189. From the outset, TÜBITAK played a strong leadership role as the local executing partner. It has effectively collaborated with UNIDO and PMU for organising the Competition-Accelerator. Its performance, continuity of engagement, and commitment have been widely recognized and appreciated by all stakeholders. Its strong desire and action to ensure that the programme is in line with Turkey's entrepreneurship strategy shows a high level of institutional ownership. Its financial & in-kind contributions (¶206) have assured the regular operation of the programme. TÜBITAK's focal point was stable and its management and staff actively participated in the project, benefitting from on-the-job training and continuous involvement in the project. In this light, TÜBITAK is viewed as fully capable to carry on the Competition-Accelerator platform, which is seen to have already moved to an operational mode (¶103).

190. Several government entities took up the invitation of UNIDO to join GCIP as partners and co-financers, which also involved taking up membership on the PSC. All those identified to take part were seen as relevant, able to benefit from the project's activities and outcomes, and identified as having a key role to play in anchoring the sustainability of its benefits and results.

191. In the project's initial years, most of these entities underwent several restructurings. Consequently, their GCIP focal point regularly changed. The delay in convening the PSC (¶177) and its changing institutional representatives had a negative impact vis-à-vis the goal of national-level coordination through the Competition-Accelerator. PSC members supported the project in a bilateral way (e.g. at PMU's request, identified appropriate contacts/discussion entry points for specific innovation projects, offering representatives to participate as GCIP jury members). However, opportunities for discussion and effective coordination across the partners were missed. Early agreement on specific roles, responsibilities, and co-financing would have given the project a stronger boost, facilitated progress on all components, and enabled this governance structure to better fulfil its role in supervision and strategic guidance.

192. The co-financing partners have a key role in anchoring the sustainability of project benefits and results. Recognition of this role and opportunity was visible during interviews conducted for this evaluation, which also yielded specific commitments for support, moving forward.

193. Balancing these commitments, the strengths and weaknesses on the dimensions described above, the performance of the national counterparts is rated as "satisfactory".

The rating for National Counterparts' performance is "satisfactory"

3.5.3 Donor

194. The GEF's financial contribution and support through the GCIP for nurturing technology and

entrepreneurship was highly appreciated by all stakeholders concerned and perceived to be highly relevant assistance to bridge gaps in resources and capabilities for innovation and acting as a catalytic force for further development of the local innovation ecosystem.

195. The GEF Operational Focal Point (in MOFWA) endorsed the Project Identification Form, triggering a GEF grant of USD 990'000. To the understanding of the Evaluation Team, there was a timely disbursement of project funds to support the envisaged activities and outcomes. Project supervision from the GEF side functioned adequately. The annual PIRs prepared for the GEF were accepted.

196. For the GEF, this is a medium-sized project, which involved approval by the GEF Secretariat, and delegation to UNIDO as the implementing agency. Nevertheless, when approached for input into this TE, there was openness and a genuine interest expressed in the results that have been achieved in Turkey and a drive to understand the extent to which the GCIP Turkey experience is replicable.

The rating for the donor is "highly satisfactory"

3.6 Processes affecting achievement of project results

3.6.1 Preparation and readiness / quality at entry

197. The project was developed based on lessons learned from the design & implementation of the 1st South Africa Clean Technology competition for green entrepreneurs and SMEs implemented by UNIDO, with GEF support, in 2011 under the "Greening the COP17 programme" (¶31).

198. As GCIP Turkey was launched at the same time as other similar country projects, it was unlikely that directly applicable lessons beyond the South Africa experience were available to inform its design & implementation. The extent to which lessons learned from past projects implemented by UNIDO or the involved Turkish actors were incorporated into the project's design is not clear. No mention of this was made in the original design document. However, the Evaluation Team did observe an improvement in some formulations in the project's results framework compared to another GCIP country (i.e. Armenia) implemented in the same period.

3.6.2 Financial Planning

199. GCIP Turkey was financed by the GEF through cash contributions and also benefited from in-kind contributions from UNIDO and several Turkish government partners. The original overall financial plan summary and its breakdown by outcomes are contained within the approved Project Document is included in Annex 4.

200. At project start, co-financing partners signed commitment letters totalling USD 2'650'000 (see Annex 4 for details). The planned level of resources and in-kind contributions are judged to be fully adequate to implement the project and support its envisaged outcomes. Table 10 shows the evolution of the overall budget and expenditure.

Table 10: Total Project Budget and Expenditure, 27 November 2017

Year	Total Budget	Expenditure	Available Budget
2013	$ 60.129,74	$ 60.129,74	$ -
2014	$ 208.734,74	$ 208.734,74	$ -
2015	$ 265.302,47	$ 265.302,47	$ -
2016	$ 147.302,03	$ 147.302,03	$ -
2017	$ 308.531,02	$ 190.549,19	$ 189.981,80

Total	$ 990.000,00	$ 872.018,17	$ 189.981,80

201. The initial absence of the strategic coordination mechanism described above (¶189) generated a certain amount of ambiguity in terms of financial projections. In addition, when the project was designed, due to limited project experience, conservative assumptions were made both about the allocated budget and the expenditures realised in the first years of the project.

202. The total budget planned for 2017 remained well above the expenditures. This unexpected situation arose because: i) according to UNIDO's financial procedures, funds unspent during the previous year are always carried forward to the next year. One reason for the high amount of budget allocated for 2017 is that the funds unspent in 2016 were carried forward to 2017[31]; ii) before 2016, some consultancy costs were incurred by UNIDO Headquarters for the coordination of the GCIP. During the preceding 1.5 years, no consultancy costs were charged to GCIP Turkey, which lowered the expenditures; iii) TÜBITAK financed several expenditure items (panellist fees, venues, brochures, etc.), from its own sources; iv) the PMU performed several activities either without having to pay or with a budget that was much less than foreseen, by using its network in the entrepreneurial ecosystem; v) expenditure were mostly in domestic currency while the allocated budget was in terms of USD; the depreciation of the Turkish Lira against foreign currencies in recent years worked in favour of project financing.

203. As already noted (¶127), the project was able to stretch the resources originally allocated for a 36-month span to effectively cover a 60-month duration, delivering significantly more services than initially imagined. By the end of 2017, the PMU expected that both TÜBITAK and UNIDO would each carry forwards USD 100'000 to the next financial year, which would be sufficient to fund another call (Competition-Accelerator) in 2018.

3.6.3 Effect of Co-Financing on Project Outcomes and Sustainability

204. At the time of project endorsement, several national government stakeholders committed to contribute through co-financing, primarily through participation in the PSC and in-kind transfers. Conceptually, this created a larger pool of potential support for delivering the project's outcomes, which could generate efficiencies and develop national ownership.

205. Apart from the contributions provided by the local host TÜBITAK, most of the other co-financing commitments fell short. This was partially related to the inability to establish an effective coordination mechanism, which was to be operationalized through stable participation in the PSC. Its member institutions had been under severe financial scrutiny since 2014 and most of the high-end bureaucrats in these institutions were removed from their offices on a frequent basis. This high turnover rate and the surrounding uncertainty negatively affected the PSC's operation and the co-financing commitments of the government institutions. The failed coup attempt (15 July 2016) further impacted this aspect.

206. TÜBITAK's cash and in-kind contributions[32] made a highly positive impact throughout the project's implementation. Furthermore, TÜBITAK expressed its intention to significantly increase its financial support and strengthen linkages with its existing Individual Young Enterprise (BiGG) to allow GCIP alumni to gain access to further support on their innovation

[31] A decision was made in March 2016 to split the remaining funds over two subsequent years: USD 230k in 2016, USD 258k in 2017. As the 2016 expenditures were much less than expected (compared to 2015), unspent funds were carried forward.
[32] During July 2016-December 2017, TÜBITAK contributed USD 33K in cash and in-kind contributions valued at USD 100K, covering the project's physical and logistical support: office, internet, phone, design/printing/delivery of publicity materials, and dissemination through different platforms.

journey, paving the way for transforming the GCIP initiative into a national programme.

3.6.4 Implementation approach

207. The implementation approach followed the tried and tested path adopted by UNIDO in all standard GEF-funded projects. It was managed by UNIDO headquarters staff in Vienna. The PMU was housed within the premises of the local executing partner, TÜBITAK, which had the benefit of providing access to infrastructure; promoting local country ownership; and facilitating ongoing exchange and on-the-job training for staff to develop the capacities to successfully support ongoing organisation of the Competition-Accelerator.

208. The PMU was expected to establish the planning and M&E system to assure the project's smooth and effective functioning. A results-based management approach was used, as already described and positively assessed (¶177, ¶178, ¶180). Illustrative of its implementation: the PMU developed/presented a 2015 detailed draft timeline with relevant activities during the first PSC. It was emphasized that the timeline was prepared taking into account national and religious holidays, including Ramadan, while staying in aligned with the GCIP's main activities internationally. This workplan and timeline was subsequently endorsed by the PSC.

209. The PMU did an excellent job in identifying, involving, and managing all relevant stakeholders through regular information-sharing and consultation. The dedication, hard work, and efforts of the PMU's head are recognized. Substantial outreach and dissemination activities were conducted. This achievement has very been positively assessed and is an important contributor to the results that have been achieved.

210. In constituting the PMU, it appears that efforts were made to include diverse backgrounds and perspectives within the team. This could have expected to be assets in handling the PMU's very high workload. However, several factors appeared to reduce the PMU's ability to fully leverage the team's inherent contributions, which could potentially have functioned to reduce turnover[33], better balance the workload, and enrich the results. Stakeholders pointed to the important need for enhancing competence on project management, general management, (managing team dynamics, delegating developing team members, balancing short-term crisis response with long-term planning) and financial skills to support M&E. It could be argued that the unit is insufficiently and inappropriately staffed to fully undertake its expected activities.

211. Discussions were already afoot in 2015, which resulted in developing a Project Concept Note for a GCIP Phase II in Turkey, with substantially more GEF funding and associated in-kind co-financing contributions attached to this. Evidently, the development of this second phase was already foreseen by GCIP partners during the project's initial development phase and was included in the CEO Approval Request document as a project output[34]. The idea of a Phase II was already brought forward to the PSC during its 2nd meeting (3 March 2016). This Phase II was architected to cover the next stage needs of startups and successful alumni to realize the commercialization of their ventures by drawing on additional funding and services that were to be made available. Under this subsequent phase, the ongoing organisation of the annual Competition-Accelerator was foreseen for a further 5 years. The Evaluation Team would assert that such early discussion, and indeed formulation of specific plans, could have acted as a

[33] Table 4 shows the initial constitution of the PMU and the regular loss of key staff over time, generating transaction costs.
[34] According to this August 2015 Concept Note: Innovative Clean Technology Enterprise Development: Expansion of the GCIP in Turkey, the development of this new project had already been foreseen by GCIP project partners during the initial development phase and was included in the CEO Approval Request document as a project output. It was noted that the GEF Operational Focal Point in Turkey and GEF Secretariat were supportive of the development this new project.

braking factor in the pursuit of full-scale local ownership and blurred recognition that the Competition-Accelerator has already moved from project mode to operational mode.

3.7 Other Assessments Required for GEF-Funded Projects

212. **Need for follow-up**: after talking to the project management unit and TUBİTAK officials regarding the execution of the project, no instances of financial mismanagement, unintended negative impacts, or risks that require a follow-up were detected.

213. **Materialization of co-financing**: during 2014-2016, local host TUBİTAK committed to contribute USD 200'000 as co-financing. As of November 2017, TUBİTAK's contribution totalled USD 80'000. TUBİTAK agreed to contribute another TRY 90'000 to cover the 4th cycle's (2017) monetary awards. By end 2017, TUBİTAK's contribution amounted to USD 102'500. For the remainder of TUBİTAK's commitment made at the project start, it was expected that this amount (around USD 100'000) would be carried forward to 2018, to be spent on a 5th cycle. In-kind contributions by other co-financing partners fell significantly short. The reasons for this and the impact on project outcomes and sustainability was described above (¶205).

214. **Environmental and social safeguards**: This intervention adequately incorporated environmental, economic and social safeguards, as previously described (¶52, ¶53, ¶54). Although there were signs of lack of awareness at the beginning of the project, the PMU and TUBİTAK took relevant steps to introduce the project to the entrepreneurial ecosystem and other relevant parties.

The overall rating for project performance is "satisfactory"

215. The project's overall performance is rated as satisfactory. Suitable financial management, supervision, backstopping, and M&E mechanisms were put in place. Significant attention and resources were focussed on establishing and anchoring the Competition-Accelerator (now seen as having reached an operational mode), which acts as a fulcrum to effectively stimulate the local innovation ecosystem, build institutional capacity-building, and leverage outcomes from policy strengthening. While the project is judged to be highly relevant, operated efficiently, and showed potential for replication, some aspects could nevertheless be reinforced to assure the resilience and continuation of long-term benefits (e.g. by strengthening project management infrastructure, facilitating experience exchange, overcoming hurdles to commercialization, putting more attention on strengthening the policy environment to favour cleantech adoption, influence broader stakeholder mandates, and incorporate the project's results into national laws, policies, and regulations).

4 Conclusions, Lessons Learned, Recommendations

4.1 Conclusions

216. Looking at the project's overall **progress-to-impact**, the evidence observed confirms that intervention contains environmental safeguards [project activities enhanced environmental protection by supporting the development of cleantech ideas, solutions, and services (¶52)]; supported economic performance improvements [project activities boosted the functioning of Turkish startups, promoted SME entrepreneurism, and meaningfully stimulated the national innovation ecosystem (¶53)]; and was sensitive to social inclusiveness [attention was put on promoting jobs for women, creating opportunities for women entrepreneurs & youth, and some first steps to reach out beyond Turkey's main industrial centres were taken (¶54)].

217. The successful regular operation of the Competition-Accelerator suggests that this aspect of the intervention is now well-anchored and has moved from project mode to operational mode (¶103). This is clear evidence that the project has succeeded in establishing a national-level mechanism/platform, which is now functioning in an ongoing manner to identify, coach, and support cleantech innovators in Turkey (¶103, ¶189), although the desired level of national coordination (¶102) and optimization of disbursement of direct support have clearly not yet been achieved (¶102). Key stakeholders (MoSIT, YEGM, ADA, TTGV, etc.) expressed interest and made commitments to continue to pursue this direction (¶147). The **steady replication** of the Competition-Accelerator (¶55) and **initial scaling up efforts** [(enlarged scope of categories for inclusion in cleantech, geographical outreach (¶56)] show quite satisfactory impacts within this domain of the project. The establishment of the Clean Future Fund (CFF) is a direct outcome of the GCIP's operation and sets a valuable structure for converging public and private sector investment towards the acceleration and commercialization of clean technology innovations and entrepreneurs (¶139). Strengthening of the policy and regulatory framework to favour the adoption of cleantech (¶58) still need further work to foster cleantech adoption.

218. Project support for Outcome 1 and Outcome 3 appeared to be privileged over advancing on the policy dimension, which was perhaps related to the political uncertainty that emerged during the project implementation period (¶109, ¶179, ¶205), the inclination to respond to counterparts' expressed interest to focus on the Competition-Accelerator (¶123), and a desire to realise short-term impacts in order to generate evidence of the benefits and added value of the GCIP, compared to other programmes operating on the Turkish landscape (¶134).

219. Regarding **design**: project components were based on a proven concept with design strength (¶59), which was supported by the legitimacy and resources (¶61) associated with a constellation of relevant partners (¶60, ¶116). The concept appears to have been implemented in a similar fashion across the 6 pilot countries, without the benefit of indepth analysis/identification of country-level opportunities and levers that could arguably have powered the initiative to achieve even more powerful effects within the allocated timespan and resourcing. To be fair, this could be attributed to the novelty of the cleantech innovation approach for UNIDO and the time needed for the involved partners to come up to speed on understanding their different roles and opportunities for contribution.

220. The project was **highly relevant** for international/regional/national priorities (¶97) and target group needs (¶90) and aligned with donor priorities & UNIDO's mandate (¶92). The project bridged a gap not covered by other mechanisms in that its support was available to nurture early-stage startups along a path to maturity and formal establishment (¶91). Given the potential and expectation for Turkey to be a role model in terms of entrepreneurship within the broader region, the project has made an important contribution in this regard.

221. It is judged that the project **operated efficiently**, based on its achievement in stretching the resources originally allocated for 36 months to cover a 60-month duration (albeit leveraging highly favourable exchange rate), delivering significantly more services than initially imagined (¶127, ¶203). The question could be asked: to what extent could even further results, benefits, and effects have been achieved if the promised co-financing commitments (¶204) had materialized? An alternative explanation to the assertion of efficiency could be put forward that this situation instead reflects insufficient understanding of the domain in which resources were to be utilized, which resulted in poor planning. While it was observed that project support for the policy dimension was backgrounded, to confirm this alternate hypothesis of inefficiency, a more indepth analysis would be needed (outside this TE's resourcing) to gauge the extent to which in-kind efforts/contributions may have filled gaps and stretched resources.

As an OECD country aspiring to join the EU, it can be expected that costs of Turkish hiring venues, doing publicity through national media, etc. might be significantly higher than in other countries functioning in a different economic context. Hence, any question about whether resource allocation was excessive or adequately spent would need to be considered within a cross-country context, against the experience and achievements of other GCIP pilot countries.

222. Project support was focussed on establishing the Competition-Accelerator, building up local mentoring capabilities, and assuring that institutional capabilities were in place to support the Competition-Accelerator's regular operation. It is judged that the project has **effectively achieved** these aspects (¶103, ¶189), which function as a backbone for stimulating the local innovation ecosystem. While the project results thus far outperformed stakeholder expectations (¶99, ¶102), to get a more granular view, put in context, and make a more informed assessment of the effectiveness of GCIP Turkey, it would eventually be useful to undertake a cross-country analysis of the 9 GCIP pilots, looking at total volumes of received applications through to number of start-ups supported and explore the extent to which different selection criteria, political/socio-economic contexts, management/supervision, technical backstopping or other factors could have been at work, which would point to the levers to seize and pitfalls to avoid in rolling out such a framework to other countries.

223. To ensure the sustainable operation of the Competition-Accelerator in Turkey (taking account of natural attrition and the desire for category and geographical expansion) and assure country ownership, there is a need to build local training capacity, enhance mentoring skills, and clarify access and ownership issues related to platform use, stored data, and a key (DeBarsy) methodology being deployed under the GCIP framework (¶191). Reliance on aspects linked to others' intellectual property and infrastructure could undermine the **sustainability of the project's results and benefits** by weakening country ownership. On the other hand, from 2018, the Competition-Accelerator was essentially a national execution supported principally by Turkish trainers for the National Academies, Business Clinics, and mentors.

224. Regarding cross-cutting performance criteria, the **mainstreaming of gender and other socially-inclusive aspects** were addressed at the level of project design through the expressed intention to create jobs/opportunities for women entrepreneurs. Targets were set and tracked for recruitment of female trainers, mentors, judges, and team leaders within participating startups. An **M&E system** was adequately designed, resourced, and implemented. The PMU and TÜBITAK have implemented a **results-based management approach**; despite challenges in the functioning of the steering/governance structure (¶105, ¶179), they maintained focus on progressing activities, outputs, and outcomes according to the project's results framework.

225. **UNIDO** carried out its role for the project's timely implementation, delivery of planned outputs, and monitoring of expected outcomes in a serious, responsible manner (¶181). The agency's association with the project gave the GCIP a valued boost for attracting the involvement of relevant government actors, targeted beneficiaries (startups), and the mentors engaged in supporting their development. Given the importance of evolving an environment that favours the adoption of cleantech innovation, the project could have benefitted from a stronger orientation to engage relevant stakeholders in identifying strategic priorities where cleantech innovation could play a role, reviewing and identifying barriers/gaps, and initiating inputs to feed project results into national laws, policies, and regulations (¶58).

226. **TÜBITAK** played a strong leadership role as **national executing partner** (¶189). The stability of this focal point and level of staff engagement, together with financial and in-kind contributions provided (¶202) and committed for the future (¶206), indicate that this entity is well-equipped and well-positioned to anchor the sustainability of the project's results and benefits, moving

forward. Further efforts to engage the contributions/involvement of **co-financing partners** are key to pursuing the desired long-term impact and ensuring that the benefits these actors see for their own organisations (¶192) and optimisation of the local ecosystem are realised (¶217).

227. As **donor, GEF's performance** was highly satisfactory. The agency's contribution and timely disbursement of funds served to bridge gaps in resources, capabilities and played a catalytic role through the GCIP for further development of the local innovation ecosystem in Turkey.

228. The project followed UNIDO's tried & tested **implementation approach**: it was managed by UNIDO headquarters staff, with planning & monitoring to be carried out by the PMU housed within the local host, with technical backstopping to be conducted by experts identified by UNIDO. The PMU's achievements in dissemination and outreach were very positively assessed, and it was observed that valuable technical contributions were also made. It was observed that a highly directive management style was adopted, together with a focus on short-term benefits. This may have been appropriate, given the pressure from stakeholders to launch the Competition-Accelerator on relatively short notice and deliver results to generate credibility and gain an edge on the increasingly competitive landscape. However, such a management style can miss out on engaging the contributions of team members, demotivate, and lead to regular turnover, which the project experienced (¶39, ¶210).

229. In summary, the project's **overall performance is rated as satisfactory**. Suitable financial management, backstopping, and M&E were put in place. Attention and resources were focussed on establishing the Competition-Accelerator, which stimulated the local innovation ecosystem, built institutional capacities, and has the capacity to leverage outcomes from policy strengthening. While the project is judged as highly relevant, operated efficiently, and showed positive signs regarding its replication potential, some aspects could nevertheless be reinforced to assure the resilience & continuation of long-term benefits: there are further opportunities to strengthen the policy dimension, which would respond to the expressed interest of government partners (¶113), facilitate experience exchange (¶119), enhance the envisaged national coordination function to optimize/expand available support (¶102, ¶107), and support the commercialization of cleantech ideas (¶143).

230. Table 11 provides an overall summary of the evaluation findings, justifications, and ratings[35].

Table 11: Summary of Findings and Ratings by Evaluation Criteria for the GCIP Turkey Project

Criterion	Summarized Assessment of the Findings	Section	Rating
A. Impact	The project incorporates environmental, economic & social safeguards. Evidence of progress-to-impact was observed, especially for Outcomes 1 & 3; project support could have been further leveraged to reach desired impacts on Outcome 2.	3.1	S
B. Project Design	The overall project design incorporates elements that offer coherence & strength, but this was undermined by poor articulation of outcomes and impacts.	3.2	S
Overall design	The approach was conceptually sound and could have benefitted even further from being designed as part of a larger programme rather than implemented as an individual country project. The project was adequately resourced with a governance structure with high legitimacy.	3.2.1	S
Logframe	While the Competition-Accelerator serves as a backbone to leverage the outcomes, poor formulations have insufficiently oriented the project's implementation to reach the full extent of its transformational impact.	3.2.2	MU
C. Project Performance	While judged to be highly relevant and efficient, some aspects could nevertheless be strengthened to assure the continuation of long-term benefits and resilience.	3.3	S

[35] Highly Satisfactory (HS); Satisfactory (S); Moderately Satisfactory (MS); Moderately Unsatisfactory (MU); Unsatisfactory (U); Highly Unsatisfactory (HU). Sustainability of Benefits is rated from Highly Likely (HL) to Highly Unlikely (HU)

Criterion	Summarized Assessment of the Findings	Section	Rating
Relevance	Highly pertinent for international, regional, national priorities, target group needs, consistent with donor priorities, and fully aligned with UNIDO's mandate.	3.3.1	HS
Effectiveness	Local anchoring and achievements supported by the Competition-Accelerator were more than expected; there are further opportunities to strengthen policy dimension, facilitate experience exchange, support commercialization of cleantech ideas.	3.3.2	S
Efficiency	Highly efficient in use of allocated resources to deliver more than initially envisaged achievements, albeit over a timespan almost double what was planned.	3.3.3	HS
Sustainability of Benefits	Awareness and positive perceptions of relevant stakeholders and general public gives potential to spread the concept to other themes & sectors. Competitive offers to accelerate incubation have emerged in Turkey. Gaining the attention and interest of private sector investors limits opportunities for meaningful customer validation. Commercialization is still a major hurdle.	3.3.4	ML
D. Cross-Cutting Performance Criteria		3.4	-
Gender mainstreaming	The PMU had relevant training and tools to address mainstreaming of gender and other socially-inclusive aspects. Targets were set and tracked for recruitment of female trainers, mentors, judges, and team leaders within participating startups.	3.4.1	S
M & E	UNIDO's standard M&E approach was designed, adequately resourced, and implemented. Project monitoring activities represented a major portion of the PMU's workload. The value of a mid-term review was not well understood.	3.4.2	S
Results-based Management	The PMU and local host, TÜBITAK, maintained focus on progressing activities, outputs, and outcomes according to the project's results framework.	3.4.3	S
E. Performance of Partners		3.5	-
UNIDO	UNIDO has undertaken its implementation role & duties in a responsible manner. The agency's participation is highly valued by all stakeholders. Hopes for expanded exchange and links with other GCIP countries and access rights to the cleantech platform and a key methodology utilized in the training need to be clarified.	3.5.1	S
National Counterparts	The weakness of the project's governance structure (PSC) to fulfil its role in providing strategic guidance and project supervision was counter-balanced by the strength, leadership, and commitment of the local host, TÜBITAK.	3.5.2	S
Donor	GEF's contribution through the GCIP to bridge gaps in resources and capabilities for innovation was highly relevant and appreciated. The timely disbursement of project funds effectively supported envisaged activities and outcomes. Genuine interest in understanding and leveraging the results of this pilot was observed.	3.5.3	HS
F. Overall assessment	Overall performance is satisfactory. Suitable financial management, technical backstopping, M&E were put in place. Attention & resources were focussed on establishing the Competition-Accelerator, which has stimulated local innovation ecosystem, built institutional capacity, and can leverage outcomes from policy strengthening. While the project is judged to be highly relevant, operated efficiently, and showed potential for replication, some aspects could nevertheless be reinforced to assure the resilience and continuation of long-term benefits.	¶215	S

4.2 Lessons Learned

231. In the spirit of promoting organisational learning, key lessons have been distilled from the project's experience, which are seen to be relevant for future programme formulation and implementation by UNIDO, GEF, TÜBITAK, and other main project partners.

Lesson #1: A robust Theory of Change (TOC), developed through multi-stakeholder discussion with attention put on formulations, can strongly guide an intervention towards achieving meaningful transformational impact (ideally within a realistically-assigned timeframe and adequate resources).

232. The use of a TOC approach is considered best practice for deepening understanding of an intervention's underlying logic. By identifying and working back through this project's "capacity to replicate" impact pathway (¶79), the implementing team may have grasped the importance of allocating resources to strengthening the policy/regulatory framework [which was backgrounded (¶97)] to be supportive and responsive to cleantech innovation, as a key element for nurturing the development of the local innovation ecosystem. Through the RTOC, it was observed that formulations of outcomes, long-term desired impact, associated indicators, and the ways in which these were consequently being pursued, did not sufficiently

orient the implementation of the project towards reaching the transformational impact that was presumably intended by its architects (¶65, ¶68). Formulations at the level of a means or process (¶67), or stating outcomes that merely sum up the underpinning outputs (¶68), misses a vital opportunity to raise the impact of such an intervention to a higher achievable level.

Lesson #2: An overall programme framework, with adequate resourcing for management and supervision, can allow for synergies, cross-country fertilization, local adaptation to opportunities and needs, and generate an M&E framework from the outset that facilitates pertinent data-gathering and analysis to identify levers and pitfalls underpinning the sustainability of results and benefits.

233. Although it appeared to be implemented within a global framework, GCIP Turkey was actually an individual country project (¶64); consequently, the project team could not easily realise the cross-country exchange foreseen in the Project Document (¶119) nor capitalize on ongoing learning from the implementation of other similar country-level projects. A cross-country analysis of the similar pilots underway would put GCIP Turkey's performance in context and allow for a more informed assessment of the efficiency (¶221) and effectiveness (¶222). Such reflection would have been more naturally carried out on a regular basis and generated less transaction cost if put in place under a real overall programme framework from the outset.

Lesson #3: Recognize the importance of supervision in supporting and keeping implementing teams on track and within scope; competences may need to evolve as a project moves from startup to maturity and hand-off; staff, support, develop, and supervise the implementing team accordingly.

234. As UNIDO's implementing entity, the PMU assumed responsibility for daily management of project activities and M&E, in line with agreed work plans (¶43). Given the desire to realise short-term impacts (¶218) [to attract startup applications, engage mentors] and generate evidence of the GCIP's added value, compared to other initiatives (¶97) [building legitimacy to pursue a national coordinating function], it is understandable that the PMU would be staffed with the competence to facilitate technical backstopping and adopt a highly directive management style to deliver results under pressure (¶228). The drive to engage PMU staff with technical expertise (in energy management or other technical fields) overlooks the importance of general management and project management skills, which need support and development to facilitate the contributions of all team members and enhance overall project performance (¶210). Supervision on the part of UNIDO and the PSC could have helped to keep the PMU more tightly within the scope of its daily management and M&E activities.

Lesson #4: Having a clear exit strategy as part of project design, together with assuring country ownership, funding and support is in place, is key to sustaining the project's results and benefits.

235. The Project Document did not mention an exit strategy (¶135), although the PMU was foreseen to "continue the organisation of the cleantech programme after project completion" (¶136). Potentially too early discussions (already in 2015) of a Phase II, which included project support for the organisation of the annual Competition-Accelerator for a further 5 years, together with the elaboration of specific plans, in a context where co-financing commitments were not materializing apart from the local host, could have blinded the project team from the need to reinforce efforts to pursue full-scale local ownership and recognize that the Competition-Accelerator has already moved from project mode to operational mode.

4.3 Recommendations

236. Based on the TE's conclusions and lessons learned, some recommendations are offered with the aim of sustaining the project's results and reaching impact:

Recommendation #1: Increase focus on the policy side and aim to make substantive progress towards the originally envisaged outcome in this domain during the current 1-year extension.

237. While it may have played into the preferences, competences, and desire of various actors to focus on "quick action" and privilege attention on establishing the Competition-Accelerator: to mainstream, upscale, and sustain the project's results, the importance of strengthening the policy setting can not be underestimated. Efforts invested now will provide the impetus to engage the contribution of co-financing partners in areas where they have natural strength and mandate (policy!) to even more strongly position the GCIP to play its envisaged role in coordinating at national level and significantly invigorate the Turkish innovation ecosystem. The type of policy strengthening undertaken by the project should become more systematic, structured, and an integral part of GCIP services.

238. To expedite progress and identify leverage points, it is suggested to analyse the cleantech ideas that have emerged through the GCIP's 4 cycles to inventory areas where there are policy or regulatory barriers. Then, in discussion with stakeholders, understand which priorities (specific innovations? thematic areas? domains that allow for experimentation & development of insight?) that the Turkish government feels would especially drive forward and invigorate the economy or correspond to other priorities or initiatives where there could be links.

239. Establish Working Groups, drawn from co-financers and other relevant actors, reporting to the PSC, supported by guidance from UNIDO on mandate & process with a clear timeline for their input. These structures could function as legitimate, pragmatic counterparts to discuss barriers vis-à-vis prioritized innovations and their related entrepreneurs (ideally several on a similar theme). Charge these Working Groups with the task of undertaking a gap analysis on the policy/regulatory side. Provide a framework for their reporting such that their results form an input (e.g. White Paper? Working Paper? Policy Brief?) into the ongoing, established policy-making progress, leveraging TÜBITAK's role & responsibility for the design and formulation of Turkish Science and Technology policy (TÜBITAK's positioning within the policy landscape is an asset that has not been fully leveraged by the project).

Recommendation #2: Draw inspiration from experience and lessons learned within existing institutional collaboration in order to buttress needed competences and strengthen supervisory role.

240. Insights for architecting the above-mentioned process can be drawn from, amongst other avenues, the successful approach of UN Environment's Eco-Innovation pilot, referring to structures & processes used in Kenya, Vietnam, Colombia, Peru under its Policy Component[36]. Within GCIP Turkey, the preference to work on technical aspects and shy away from the policy side is evidence that this is an area where UNIDO Project Managers need further orientation and skills to better guide and supervise local structures to which implementation is delegated. UN Environment's competence in policy guidance is widely-recognized. UNIDO's competence in technical assistance to industry is widely-recognized. Pursuing an exchange on working process and drawing on relevant lessons learned could strengthen collaboration between the agencies as well as instantiate efforts towards SDG 17 (Partnerships to achieve the Goal).

Recommendation #3: Reinvigorate the project's steering structure through intensifying efforts to strengthen the national-level mechanism's coordination function, backed up by appropriate monitoring to track success, anchor country ownership, and assure exit from project support.

[36] As described and very positively assessed in the Terminal Evaluation of the UN Environment Project "Resource Efficiency and Eco-Innovation in Developing and Transition Economies", Dr. Joyce Miller, November 2017 (Section B. Achievement of Outputs; Section C. Effectiveness: Attainment of Project Objectives and Results; Section D. Sustainability and Replication)

241. The established Competition-Accelerator has already proven its effectiveness and added value in identifying, coaching, and developing cleantech innovators. Working backwards through the project's RTOC causal impact pathways, project actors should be able to count on this mechanism to motivate Turkish startups to create more cleantech innovations on a regular basis. The GCIP is strongly encouraged to seize its legitimacy, institutional outreach, and capacities to strengthen the national-level coordinating function that it was set up to fulfill.

242. Foregrounding this focus can be used to reinvigorate the PSC, as its constituents would have an institutional self-interest to contribute to and collectively steer discussion around the ways in which the GCIP framework could be used, together with their own programmes & initiatives, to build a coherent journey for cleantech innovators to get the support they need, at the appropriate development phase, and move them from early stage through to maturity to commercialization. Such discussion and collaborative work would also serve to build country ownership and anchor the project's results and benefits. It is recommended to convene the PSC bi-annually and to assure stability of its focal members, enabling this structure to effectively perform its role in providing strategic guidance & supervision.

243. A mapping of all relevant actors operating on the innovation landscape (even beyond cleantech, imagining sector-spillover and disruptions ahead) could be very usefully undertaken to identify where the GCIP could be best positioned to leverage its recognized catalytic role and assure the vigorous implementation of larger baseline programmes (presumably still to be measured by optimizing and expanding the disbursement rate).

244. With cleantech innovation pipelines, hubs, and institutional relationships defined and coordinated (using the above mapping & PSC reflection) to move startups along a supported path (under the existing direct public support programmes), with the appropriate indicators defined and monitoring to track progress, it will also be important to attract/stimulate the development of private sector investment. Although there are few, if any instances, where there is a total absence of public support to ensure that startups survive "the valley of death", this is a window of opportunity to strike partnerships with business angels and develop the homegrown seed/early stage/late stage venture capital and private equity markets to enable and encourage startups to undertake the needed customer validation, mature into established companies, and reach commercialization. Angel investors/venture capitalists offer valuable opportunities for partnership under the GCIP framework, although care must be taken to assure options are available for a variety of actors who could usefully contribute.

245. Looking outside Turkey, there is a wealth of experience/resources/models (e.g. Switzerland, Canada, Sweden, The Netherlands[37]) from which to draw insight and inspiration. There are opportunities that could be explored for country-level cooperation, in light of GEF's association with and endorsement of the GCIP framework (183 countries are GEF contributors) to pursue the exposure and internationalisation that helps startups to flourish (¶121).

[37] Switzerland: https://vpi.epfl.ch/entrepreneurship ♦ www.innosuisse.ch/inno/en/home.html Canada: www.sdtc.ca/en/results/canadas-cleantech-sector ♦ www.canadacleantechalliance.ca/ Sweden: http://cleantechhubs.se/about-us/ The Netherlands: www.cleantechholland.com/ ♦ www.cleantechdelta.nl/ ♦ www.eu-opportunities.eu/cleantech-energy

Annex 1. Evaluation ToR

Annexes should include the evaluation TOR, list of interviewees, documents reviewed, a summary of project identification and financial data, including an updated table of expenditures to date, and other detailed quantitative information. Dissident views or management responses to the evaluation findings may later be appended in an annex.

Annex 2. List of Documents Reviewed

Project Documents and Other Relevant Documentation

Annual Project Implementation Report (PIR), UNIDO/PMU, 2015
Annual Project Implementation Report (PIR), UNIDO/PMU, 2016
COP-22 Marrakesh Presentation (Global Cleantech Innovation Programme (GCIP) Turkey: Challenges and Opportunities at Cleantech Start-Ups), Osman Malik Atanur, PMU, 9 November 2016
GCIP Global Programme brochures (English) for 2014, 2015, UNIDO, GEF, Cleantech Open
GCIP Global webinar schedule (2014-2017)
GCIP Global Side Event agenda Vienna Energy Forum 2015
GCIP Global Side Event Concept Note Vienna Energy Forum 2017
GCIP India National Workshop Presentation (Global Cleantech Innovation Programme & Network), Kevin Braithwaite, Cleantech Open, 11 June 2016
GCIP Turkey Alumni Traction Table, PMU, 2017
GCIP Turkey Certificate examples (mentor, semi-finalist, finalist, winner), PMU, 2014
GCIP Turkey Entrepreneur Online Application Manual (Turkish), PMU, 2017
GCIP Turkey Mentor Online Application Manual (Turkish), PMU, 2017
GCIP Turkey Mentor Platform User Guide (Turkish), PMU, 2017
GCIP Turkey Semi-Finalist Platform User Guide (Turkish), PMU, 2017
GCIP Turkey Applicant Instruction and Directive (Turkish), PMU, 2017
GCIP Turkey Application Requirements and Qualifications (Turkish), PMU, 2017
GCIP Cycle Call Dissemination Materials (brochure, poster) for 2014, 2015, 2016, 2016; PMU
GCIP Turkey Dissemination Text (Turkish and English), PMU, 2017
GCIP Turkey press release collection in Turkish (2014-2017), PMU
GCIP Turkey End Year Catalogues in Turkish (2014, 2015), PMU
GCIP Turkey End Year Project Contribution booklet (English), PMU, 2015
GCIP Turkey short video (Turkish with English-subtitles), PMU, 2016
GCIP Turkey Stats 2016, 2017, PMU
GCIP Turkey Technology Database of Alumni (2014-2016), PMU
GCIP Turkey Training Materials collection in English (2014-2017), PMU
GCIP Turkey Workplan 2017, 14 February 2017
GCIP Turkey Phase 2 Concept (draft), PMU, 4 August 2015
GEF Endorsement Letter (Phase 2), Turkish Ministry of Forestry and Water Affairs, Department of European Union and Foreign Relations, 2 June 2016
GEF-6 Project Identification Form (PIF) application (draft)
GEF Secretariat Review (Phase 1) for Full/Medium-Sized Projects, GEF/LDCF/SCCF/NPIF Trust Funds, Jan. 2013
Mentor Briefing, Kevin Braithwaite, Cleantech Open, 7 August 2014 in Ankara
PSC Meeting Presentation (Global Cleantech Innovation Programme (GCIP) for SMEs), UNIDO/Tiep Nguyen, February 2015 in Vienna
Promoting the Commercialization of Clean Energy Technologies in Turkey, PMU, 4 March 2017
Request for MSP Approval (original Project Document), using GEF-5 template, 2012

(1st) Steering Committee Meeting Minutes, 5 February 2015 in Ankara
(2nd) Steering Committee Meeting Minutes, 3 March 2016 in Ankara
(3rd) Steering Committee Meeting Minutes, 16 February 2017 in Ankara
Steering Committee Meeting Presentation (Global Cleantech Innovation Programme (GCIP) Turkey), Osman Malik Atanur, 16 February 2017 in Ankara

Thematic Materials Consulted

Cleantech getting a lift in Europe, International New York Times, 10 March 2014
Clean Tech Open www.cleantechopen.org/
Entrepreneurship & Technology Commercialization Report 2016: Global Trends and Specific Look at Turkey, Technology Transfer Accelerator, Advisory Services and Networking, Lead Author: Duygu Öktem, with contributions from Deniz Bayhan and Doğan Taşkent, Dec 2016

Global Cleantech Innovation Index 2017, Lead Author: Chris Sworder, Cleantech Group; Contributing Authors: Louisiana Salge and Henri Van Soest, Cleantech Group; published on behalf of CleanTechn Group, UNIDO, WWF, Asian Development Bank, Swedish Energy Agency, Tillväxtverket (Swedish Agency for Economic and Regional Growth), June 2017
Global Entrepreneurship Monitor Report 2016-2017, Global Entrepreneurship Research Association, London Business School, 2 April 2017
www.unido.org/news/new-report-investigates-innovation-ecosystem-cleantech-startups-eight-countries 12 November 2017
Green Entrepreneurship in Turkey, Regional Activity Centre for Cleaner Production, by UNEP, MAP, Stockholm Convention, Ministry of Environment, Rural & Marine Affairs of Spain, with Technical Support of TTGV, 2012
Impact Hub Global Community www.impacthub.net/
Innovation Convergence Unlocks New Paradigms: Examining the technologies with the most potential to disrupt and transform industries. https://info.kpmg.us/techinnovation.html
Republic of Turkey, Ministry of Energy and Renewable Resources, Strategic Plan, 2015-2019
StartupsWatch: Market Intelligence Insights & Data for VCs and Business Development Professionals, https://startups.watch/
Swiss Federal Office of Energy Cleantech www.bfe.admin.ch/cleantech/06765/index.html?lang=en
(draft) Terms of Reference for the Review of the Global Cleantech Innovation Programme for SMEs, GEF Independent Evaluation Office, January 2018
The GEF UNIDO Global Cleantech Programmes for SMEs: Fostering Clean Technology Innovation in Emerging and Developing Countries, GEF Secretariat, 2011
Türkiye Ulusal Yenilenebilir Enerji Eylem Planı, Ministry of Energy and Renewable Resources, supported by European Bank for Reconstruction and Development, Deloitte, Ministry of Economy and Competitiveness of Spain, 2014
Türkiye İstatistik Kurumu, Gelir ve Yaşam Koşulları Araştırması, 2015
Türkiye İstatistik Kurumu, Milli Gelir İstatistikleri, 2016
World's Top 10 Innovation Hubs, 6 March 2017 https://businessfacilities.com/2017/03/worlds-top-10-innovation-hubs/

Guidance Documents Consulted

Evaluation Manual (draft), UNIDO Independent Evaluation Division, August 2017
Evaluation Report Format Guidance, UNIDO Independent Evaluation Division, September 2017
Integrating Human Rights and Gender Equality in Evaluations – Guidance Document (United Nations Evaluation Group, August 2014)
Introduction to Theory of Change / Impact Pathways, the ROtl Method and the ROtl Results Score Sheet (UNEP, last updated December 2015)
Likelihood of Impact Assessment Decision Tree (UNEP, last revised 23 January 2017)
Sample Independent Terminal Evaluation Report: Environmentally Sound Management (ESM) and Disposal of Polychlorinated Biphenyls (PCBs) in Peru, Aaron Zazueta & Ruth Loayza Flores, June 2017
Sample Independent Terminal Evaluation Report: GEF UNIDO Cleantech Programme for SMEs in Armenia, Brahmanand Mohanty & Hakob Hakobyan, April 2017

Annex 3. List of Respondents

Related to UN Agencies

Name	Organisation	Position	Role in GCIP Turkey	Location
Osman Malik ATANUR	UNIDO	Project Management Unit (PMU)	Project Manager	Ankara, Turkey
Begüm TANRISEVER	UNIDO	Project Management Unit (PMU)	Project Assistant	Ankara, Turkey
Marco MATTEINI	UNIDO	Industrial Development Officer	GCIP Turkey Project Manager	Vienna, Austria
Pamela MIKSCHOFSKY	UNIDO	Associate GEF Coordination Expert, Environment Partnerships Division, Department of Partnerships, Results Monitoring	Involved in GCIP at the early stage from UNIDO headquarters side	Vienna, Austria
Tiep NGUYEN	UNIDO	Sustainable Energy Expert	ex-Project Manager in UNIDO Vienna	Hanoi, Vietnam
Süleyman YILMAZ	UNIDO	Representative of UNIDO in Turkey & Director of the Centre for Regional Cooperation	Involved in GCIP at the early stage from UNIDO Field Office	Ankara, Turkey
Berna YURTSEVEN	Formerly UNIDO (now in TÜBİTAK)	Technology Enterprise Support (TÜBİTAK)	ex-Deputy Project Manager, PMU	Ankara, Turkey

Related to National Agencies

Name	Organisation	Position	Role in GCIP Turkey	Location
Evren BÜKÜLMEZ	Technology Development Foundation of Turkey	R&D, Commercialization Programme Manager	National Stakeholder	Ankara, Turkey
Hakan HELVA	Ministry of Forestry and Water Affairs	Head of EU & External Relations Department	National Stakeholder	Ankara, Turkey
Dr. Oğuz CAN	General Directorate of Renewable Energy, Ministry of Energy and Natural Resources	General Director	National Stakeholder	Ankara, Turkey
Dr. Tuğba DINÇBAŞ	Ministry of Science, Industry and Technology	Senior Expert of Environment and Climate Change Department	National Stakeholder	Ankara, Turkey
Muhammed Ali OFLAZ	Ankara Development Agency	Investment Support Office Coordinator	National Stakeholder	Ankara, Turkey
Nusret ÖZGÜNALTAY	KOSGEB	Head of SME Support Department	National Stakeholder	Ankara, Turkey
Dr. Sinan TANDOĞAN	Scientific & Technological Research Council of Turkey Technology and Innovation Funding Directorate (TÜBİTAK-TEYDEB)	Head of Entrepreneurship	National Counterpart (host)	Ankara, Turkey

Start-Ups in Turkey

Name	Organisation	Position	Role in GCIP Turkey	Location
Cem DEĞERLIYURT	Bigventus	Entrepreneur	GCIP 2017 semi-finalist	Ankara, Turkey
Erdem ERIKÇI	Tarla io	Entrepreneur	GCIP 2014 alumnus	Ankara, Turkey
Murat Bahadır KILINÇ	Episome Biotech	Entrepreneur	GCIP 2017 semi-finalist	Istanbul, Turkey
Ahmet KUZUBAŞLI	RF Sens	Entrepreneur	GCIP 2015 alumnus	Ankara, Turkey
Duygu YILMAZ	Team Biolive	Entrepreneur	GCIP 2017 semi-finalist	Istanbul, Turkey

National Mentors, Trainers, Judges

Name	Organisation	Position	Role in GCIP Turkey	Location
Ms. Dilek BAĞDATIOĞLU	Technology Company	Entrepreneur	Mentor	Istanbul, Turkey
Deniz BAYHAN	Technology Development Foundation of Turkey	Technology Transfer Accelerator Project Leader	Judge	Ankara, Turkey
Dr. Derya ÇAĞLAR	Ostim Teknopark	General Manager	Mentor, Judge	Ankara, Turkey
Gökhan ÇELEBI	ODTÜ Teknopark	Head of Entrepreneurship	Mentor	Ankara, Turkey
Ms. Sanem Yalçıntaş GULBA	TED University	Research Director, Technology & Innovation Unit	Mentor, Trainer, Judge (2015-2017)	Istanbul, Turkey
Ms. Elif KALAYCI	Atilim University	Assistant Professor, Economics Department	Mentor & Trainer (2017)	Ankara, Turkey
Ms. Ece Idil KASAP	World SME Forum	Advisor	Mentor & Trainer (2017)	Turkey
Mehmet KIRCA	Freelance	Angel Investor	Mentor	Turkey
Ms. Ayse KUYRUKCU	Atilim University	Professor, Industrial Engineering Department	Mentor & Trainer (2017)	Ankara, Turkey
Emin OKUTAN	Viveka	Entrepreneur	Mentor	Ankara, Turkey
Ms. Seda ÖLMEZ	Technology Development Foundation of Turkey	Manager, Kivilcim Programme	Mentor (2017)	Turkey
Emre ÖZBEK	Kovvan Innovation Agency	Founder	Mentor	Istanbul, Turkey
Atilla Hakan ÖZDEMIR	Bilkent Technology Transfer Office	Director	Mentor & Judge	Ankara, Turkey
Ms. Ece TAHMAZ		Freelance consultant	Mentor & Judge (2014 - 2016)	Turkey

International Actors

Name	Organisation	Position	Role in GCIP Turkey	Location
Brigitte BAUMANN	Go Beyond Early Stage Investing	Founder & CEO	External	Global
Kevin BRAITHWAITE	Cleantech Open Global	Founder	Cleantech Platform Owner	San Francisco, USA
Patrick BROSSELS	Stage-Co	Chief Connector and Enabler	Mentor	Global
Paul DEGIVE	The deBarsy Group	Managing Director	Mentor & Trainer	Palo Alto, USA
Jeff ENGELS	Blue Oceans Group	Founder	Mentor & Trainer	
Lea FIRMIN	Venture Foundation	CEO	External	Zurich, Switzerland
Albert FISCHER	Yellow & Blue Investment Management B.V.	Managing Director International Venture Capitalist	External	Utrecht, Netherlands
Hervé LEBRET	Ecole Polytechnique Fédérale de Lausanne (EPFL) Innovation Park	Vice-Presidency for Innovation	External	Lausanne, Switzerland
Olivier MARX	Marx Capital	Founder	External	Lausanne, Switzerland
Gil REGEV	ITECOR Sàrl and EPFL Systemic Modelling Laboratory LAMS	Senior Researcher in Systems Thinking	External	Lausanne, Switzerland
David Elrie RODGERS	Global Environment Facility (GEF)	Senior Climate Change Specialist, Programs Unit	Donor	Washington DC, USA
Preeti SINHA	YES Bank	Senior President	External	Geneva & New Delhi

Annex 4. Summary of Project Identification and Financial Data

Project Factsheet

Milestone	Expected date	Actual date
Project CEO endorsement/approval date	9 September 2013	9 September 2013
Project implementation start date PAD issuance date)	21 October 2013	21 October 2013
Original expected implementation end date (indicated in CEO endorsement/ approval document)	31 December 2016	31 December 2017
Revised expected implementation end date	31 December 2018	31 December 2018
Terminal evaluation completion	31 January 2018	28 February 2018

Project budget

Financing plan summary

	Project Preparation	Project	Total ($)
Financing (GEF / others)	Not Applicable Single Step MSP	990,000	990,000
Co-financing (cash and in-kind)	20,000 (UNIDO in-kind)	2,950,000	2,950,000
Total (USD $)	**1,520,000**	**3,940,000**	**3,940,000**

Source: Project Document

Financing plan summary - Outcome breakdown

Project outcomes	Donor (GEF) ($)	Co-Financing ($)	Total ($)
1. Establishment of a Cleantech innovation ecosystem involving a platform to organize the Cleantech competition and associated accelerator programme.	680,000	1,900,000	2’580,000
2. Strengthening of policy and regulatory framework for the development of a supportive local innovation ecosystem.	75,000	150,000	2.250,000
3. Institutional capacity building for the organization of the competition and accelerator programme.	125,000	350,000	4,750,000
Project management	90,000	500,000	590000.00590,000
Monitoring and evaluation	20,000	50,000	70,000
Total	990,000	2,950,000	3940000.00

Source: Project Document

Co-Financing sources and breakdown

Name of Co-financier (source)	Classification	Type	Total Amount ($)
UNIDO	GEF Agency	In kind Cash	50,000 50,000
MoSIT	National Government	In kind	610,000
KOSGEB	National Government	In kind	600,000
Ministry of Energy and Natural Resources	National Government	In kind	400,000
Industries to be identified	Private sector	In kind	700,000
TÜBITAK	National Government	Cash	200,000
Ministry of Environment & Urbanization	National Government	In kind	250,000
TTGV	Foundation	In kind	90,000
Total Co-Financing ($)			**2,950,000**

Source: Project Document