



## **United Nations Development Programme**

### **Government of Turkey**

# **PIMS 5285: Promoting Energy-Efficient Motors in Small and Medium Sized Enterprises (PEEMS)**

## **Final Mid-Term Review (MTR) Report**

**Prepared by:**

Manfred Stockmayer [manfred.stockmayer@gmail.com](mailto:manfred.stockmayer@gmail.com)

9 July 2020

## BASIC REPORT INFORMATION

**Title of UNDP supported GEF financed project:** Promoting Energy-Efficient Motors in Small and Medium Sized Enterprises (PEEMS)

**UNDP PIMS#:** 5285

**GEF project ID#:** 9081

**Mid Term Review time frame:** April – July 2020

**Date of Mid Term Review report:** 31 July 2020

**Region and countries included in the project:** Turkey

**GEF Operational Focal Area/Strategic Program:** Climate Change

**Executing Agency/Implementing Partner and other project partners:** Directorate General for Industry and Productivity (DGIP) under the Ministry of Industry and Technology (MoIT)

**MTR international consultant:** Mr. Manfred Stockmayer

### **Acknowledgements:**

The MTR Team would like to thank all stakeholders for their time and efforts during the course of this midterm review. In particular, the MTR Team would like to thank the PIU with Mr. Mustafa Salman and Mrs. Meltem Uzel for their patience in answering our questions; the Team of the UNDP Country Office in Turkey (Mr. Nuri Ozbagdatli, Mrs. Naz Ozguc and Mr. Necmettin Tokur) and the Regional Technical Advisor (Mr. John O'Brien) for their valuable contributions and comments.

We hope that this report provides valuable inputs for the remaining lifetime of the project and contributes towards a successful implementation of the PEEMS Project.

## TABLE OF CONTENTS

<b>BASIC REPORT INFORMATION.....</b>	<b>2</b>
<b>1. EXECUTIVE SUMMARY.....</b>	<b>7</b>
1.1 PROJECT INFORMATION TABLE.....	7
1.2 PROJECT DESCRIPTION .....	7
1.3 PROJECT PROGRESS SUMMARY .....	8
1.4 MTR RATINGS & ACHIEVEMENT SUMMARY TABLE.....	11
1.5 CONCISE SUMMARY OF CONCLUSIONS .....	12
1.6 RECOMMENDATIONS.....	15
<b>2. INTRODUCTION.....</b>	<b>20</b>
2.1 PURPOSE OF THE MID TERM REVIEW AND OBJECTIVES .....	20
2.2 MID TERM REVIEW METHODOLOGY AND SCOPE.....	20
2.3 STRUCTURE OF THE MTR REPORT .....	21
<b>3. PROJECT DESCRIPTION AND BACKGROUND CONTEXT .....</b>	<b>22</b>
3.1 PROJECT CONTEXT .....	22
3.2 PROBLEMS TO BE ADDRESSED BY THE PROJECT .....	22
3.3 PROJECT DESCRIPTION AND STRATEGY .....	23
3.4 PROJECT IMPLEMENTATION ARRANGEMENTS.....	24
3.5 PROJECT TIMING AND MILESTONES.....	25
3.6 MAIN STAKEHOLDERS .....	25
<b>4. FINDINGS.....</b>	<b>28</b>
4.1 PROJECT STRATEGY .....	28
4.1.1 <i>Project Design</i> .....	28
4.1.2 <i>Results Framework</i> .....	30
4.2 PROGRESS TOWARDS RESULTS .....	30
4.2.1 <i>Progress towards Outcomes Analysis</i> .....	30
4.2.2 <i>Remaining barriers to achieving the project objective</i> .....	46
4.3 PROJECT IMPLEMENTATION AND ADAPTIVE MANAGEMENT .....	46
4.3.1 <i>Management Arrangements</i> .....	46
4.3.2 <i>Work planning</i> .....	48
4.3.3 <i>Finance and co-finance</i> .....	48
4.3.4 <i>Project-level monitoring and evaluation systems</i> .....	52
4.3.5 <i>Stakeholder engagement</i> .....	53
4.3.6 <i>Communications</i> .....	54
4.4 SUSTAINABILITY .....	54
4.4.1 <i>Financial risks to sustainability</i> .....	54
4.4.2 <i>Socio-economic risks to sustainability</i> .....	55
4.4.3 <i>Institutional framework and governance risks to sustainability</i> .....	55
4.4.4 <i>Environmental risks to sustainability</i> .....	55
<b>5. CONCLUSIONS AND RECOMMENDATIONS.....</b>	<b>56</b>
5.1 CONCLUSIONS .....	56
5.2 RECOMMENDATIONS.....	59
<b>6. ANNEXES.....</b>	<b>64</b>
6.1 MTR ToR (EXCLUDING ToR ANNEXES) .....	64
6.2 MTR EVALUATIVE MATRIX (EVALUATION CRITERIA WITH KEY QUESTIONS, INDICATORS, SOURCES OF DATA, AND METHODOLOGY).....	65
6.3 RATINGS SCALES.....	71

6.4	MTR MISSION ITINERARY .....	71
6.5	LIST OF PERSONS INTERVIEWED .....	72
6.6	LIST OF DOCUMENTS REVIEWED .....	72
6.7	SIGNED UNEG CODE OF CONDUCT FORM .....	74
6.8	SIGNED MTR FINAL REPORT CLEARANCE FORM .....	75
6.9	AUDIT TRAIL.....	<b>ERROR! BOOKMARK NOT DEFINED.</b>

**LIST OF FIGURES**

Figure 1: Project Organization Structure.....	27
---	----

**LIST OF TABLES**

Table 1: Summary Review of Project .....	11
Table 2: Progress towards Results Matrix .....	40
Table 3: Project Budget and Expenditures 2018-2019 (in US\$).....	49
Table 4: Co-financing at endorsement.....	50
Table 5: Co-financing at CEO endorsement and at MTR .....	52

**ABBREVIATIONS**

AWP	Annual Work Plan
CEO	Chief Executive Officer
CO <sub>2</sub>	Carbon Dioxide
CPAP	Country Program Action Plan
DGP	Directorate General of Productivity
DGI	Directorate General of Industry
DGIP	General Directorate of Industry and Productivity
DGSIIP	General Directorate for Safety and Inspection for Industrial Products
DGSRP	Directorate General Strategic Researches and Productivity
EE	Energy Efficiency
EMOSAD	Association of Turkish Electric Motor Industrialists
EMU	Energy Management Unit
EOP	End-of project
EPC	Engineering, Procurement and Construction
ESCO	Energy Service Company
EU	European Union
EVD	Local energy efficiency consultants
EYODER	Association of Energy Efficiency and Management
FSM	Financial support mechanism
GEF	Global Environment Facility
GHG	Greenhouse Gas
I	Interview
IFI	International Finance Institution
KOSGEB	Small and Medium Industry Development Organization
KGF	Credit Guarantee Fund
LPAC	Local Project Appraisal Committee
kW	Kilowatt
LR	Literature Review
MoU	Memorandum of Understanding
MTR	Mid-Term Review
MW	Megawatt
MoIT	Ministry of Industry and Technology
MoENR	Ministry of Energy and Natural Resources
MEEIPs	Motor EE investment plans
MRV	Monitoring, reporting and verification
M&E	Monitoring and Evaluation
NIM	Nationally Implemented Measure
OFP	Operational Focal Point
OIZ	Organized Industrial Zone
PB	Project Board
PEEMS	Promoting Energy-Efficient Motors in Small and Medium Sized Enterprises
PFIs	Partner Financial Institutions
PIF	Project Identification Form
PIR	Project Implementation Reviews
PM	Project Manager

---

PIU	Project Implementation Unit
POPP	Programme and Operations Policies and Procedures
Prodoc	UNDP Project Document for “Promoting Energy-Efficient Motors in Small and Medium Sized Enterprises (PEEMS)”
Project	The project under review: “Promoting Energy-Efficient Motors in Small and Medium Sized Enterprises (PEEMS)”
PPG	Project Preparation Grant
PV	Photovoltaic
RE	Renewable Energy
RTA	Regional Technical Advisor
SDG	Sustainable Development Goals
SMART	Specific, Measurable, Achievable, Relevant, Time-bound
SME	Small and medium-sized enterprise
SMTPs	Standard motor testing reports
TEVMOT	Türkiye’de Enerji Verimli Motorların Teşvik Edilmesi
ToR	Terms of Reference
TSI	Turkish Standards Institute
TurSEFF	Turkey Sustainable Energy Financing Facility
UNDP	United Nations Development Programme
US\$	US Dollar

# 1. EXECUTIVE SUMMARY

## 1.1 Project Information Table

Project Title	Promoting Energy-Efficient Motors in Small and Medium Sized Enterprises (PEEMS)		
UNDP Project ID (PIMS #):	5285	PIF Approval Date:	04.06.2015
GEF Project ID (PMIS #):	9081	CEO Endorsement Date:	01.12.2016
ATLAS Business Unit, Award # Proj. ID:	95939	Project Document (ProDoc) Signature Date (date project began):	06.07.2017
Country(ies):	Turkey	Date project manager hired:	Nov 2017
Region:		Inception Workshop date:	12.12.2017
Focal Area:	Climate Change	Midterm Review completion date:	09.07.2020
GEF Focal Area Strategic Objective:	CC-1 Program 1	Planned closing date:	05.07.2022
Trust Fund [indicate GEF TF, LDCF, SCCF, NPIF]:	GEF	If revised, proposed op. closing date:	
Executing Agency/ Implementing Partner:	Directorate General for Industry and Productivity (DGIP) under the Ministry of Industry and Technology (MoIT)		
Other execution partners:			
Project Financing	at CEO endorsement (US\$)	at Midterm Review (US\$)	
[1] GEF financing:	US\$ 3,750,000	US\$ 1,944,246	
[2] UNDP contribution:	US\$ 300,000	US\$ 80,000 in-kind	
[3] Government:	US\$ 3,500,000 cash + US\$ 4,540,000 in-kind	US\$ 1,200,000 cash US\$ 2,529,285 in-kind	
[4] Other partners:	US\$ 20,000,000 in-kind	US\$ 9,374,646	
[5] Total co-financing [2 + 3+ 4]:	US\$ 28,340,000	US\$ 11,983,931	
PROJECT TOTAL COSTS [1 + 5]	US\$ 32,090,000	US\$ 13,928,177	

## 1.2 Project Description

The “Promoting Energy-Efficient Motors in Small and Medium Sized Enterprises (PEEMS)” project (PIMS #5285) started in July 2017 and is now in its third year of implementation. The project aims to promote significant additional investment in industrial energy efficiency in Turkey by transforming the market for energy efficient motors used in small and medium sized enterprises. This objective will be achieved by strengthening the legislative and regulatory framework related to both new and existing EE motors in Turkey, developing appropriate governance and information infrastructure, upgrading test laboratories at the Turkish Standards Institute (TSI), launching a “one-stop shop” sustainable financial support mechanism (FSM), and developing and implementing a comprehensive public awareness and training programme.. The project objective is to promote significant additional investment in industrial energy efficiency in Turkey by transforming the market for energy efficient motors used in SMEs. The project aims at reducing a total of 3,092 tons of CO2 from the replacement of inefficient motors with IE3 motors by end of project, reduce annual electricity consumption by 640,499 MWh and phase out a total of 5,000 inefficient electric motors.

The project has five major components:

- Component 1: Strengthened legislative and regulatory and policy framework for Energy Efficient (EE) motors in Turkey
- Component 2: Capacity building for relevant stakeholders to promote the benefits of EE motors
- Component 3: Upgraded Turkish Standards Institute (TSI) test laboratory and strengthened monitoring, verification and enforcement
- Component 4: One-stop-shop for financial support mechanisms
- Component 5: Knowledge management and Monitoring and Evaluation (M&E)

The project is implemented following UNDP's national implementation modality (NIM with UNDP providing support services) and is implemented according to the Standard Basic Assistance Agreement between UNDP and the Government of Turkey, and the Country Program Action Plan (CPAP). The Implementing Partner for this project is the Directorate General Strategic Researches and Productivity (DGSRP) under the Ministry of Industry and Technology (MoIT)<sup>1</sup> who is responsible and accountable for managing this project, including the monitoring and evaluation of project interventions, achieving project outcomes, and for the effective use of the project resources. The project will be executed by the Ministry of Industry and Technology (MoIT) under the overall responsibility of the DGIP over the lifetime of the project.

A Project Board (PB, also called Project Steering Committee) is responsible for making management decisions for the project including agreeing the annual project work plan, in particular when guidance is required by the Portfolio Manager and where important issues related to adaptive management need to be discussed and agreed. Members of the Project Board consist of key national governmental and non-governmental agencies, UNDP, and project partners as well as appropriate local level representatives.

The primary role of the Project Implementation Unit (PIU) is to oversee, support, administer and coordinate the implementation of the project on behalf of the Implementing Partner in line with the decisions taken by the Board. The planned setup of the PIU includes the Project Manager and a Project Associate.

The official acronym of the Project is PEEMS (Promoting Energy-Efficient Motors in Small and Medium Sized Enterprises). The acronym used by the Project and in this report is TEVMOT, the acronym for the Turkish name of the project (Türkiye'de Enerji Verimli Motorların Teşvik Edilmesi).

### 1.3 Project Progress Summary

The LPAC Meeting was held on 10 January 2017, signature of the ProDoc was on 6 July 2017, the Inception Workshop was held on 12 December 2017, the Inception Report was issued in December 2017. The PIU was established in November 2017, consists of a Project Manager and a Project Associate and the office of the PIU is located in the MoIT.

Under Component 1, originally an additional survey was planned to augment the results of a national survey on motor efficiency, which was carried out by DGIP in 2015/2016. However, the DGIP and the

---

<sup>1</sup> At the time of CEO endorsement, the directorate was called Directorate General of Productivity (DGP) under the Ministry of Science Industry and Technology (MoSIT). Until April 2020 it had the name of Directorate General of Industry and Productivity and then got renamed to DGSRP.



Ministry of Industry and Technology had taken the decision to not include any new or expanded electric motor surveys, but the DGIP would prefer to use information that is already available. It is not fully clear what the reason for that decision was, but the extensive effort in collecting information for the first survey definitely contributed to that decision. It was decided to proceed with a mixed model of data collection for the new market monitoring system, which includes monitoring of direct project impacts, bottom-up data from EMOSAD (Association of Turkish Electric Motor Industrialists) and member companies as well as production and import/export statistics and top-down data electricity intensity of the Turkish manufacturing industry.

Component 1 also includes the harmonization of Turkish policies supporting energy efficient electric motors with international best practice. Based on the Commission Regulation (EU) 2019/1781 of 1 October 2019 laying down ecodesign requirements for electric motors and variable speed drives, a draft of the harmonized Turkish legislation has been prepared under guidance of the Project Team. Three different documents were prepared by a national consultant, partly revising existing legislation, partly drafting new requirements. Further steps for transposition and date of entry into force are to be decided and taken by MoIT.

Under Component 2 technical assistance was given to EMOSAD, the National Electric Motor Association, defining a strategic roadmap for the association. The report lists a number of opportunities for EMOSAD, including strengthening of dialog with other public stakeholders on the regulatory framework, establishing supportive platforms for electric motor users to accelerate transformation to EE motor or providing consultancy services in national and international projects. The roadmap also touches upon the delicate topic of collecting information from members. An independent structure for collecting information from the sector is suggested as this would allow providing information without damaging the secrecy and privacy of enterprises. This is important for feeding data and information into the market monitoring system.

Whereas 3 of the key motor producers are still active with the TEVMOT project (Wat Motor, Volt Motor and Aemot), there hasn't been any contact with GAMAK over almost 2 years. GAMAK was very active in the beginning, but then showed no interest in the activities of the project. Hence, the co-financing commitment made by GAMAK (US\$ 5 million in-kind contribution) will not materialize and the Project needs to secure replacement.

Components 2 and 3 also include various training activities. A series of technical training seminars were held in 2018 and 2020, with the majority of trainings held as Organized Industrial Zone (OIZ) info days in various OIZs. A total of 450 participants were counted, out of which around 15% were women. For DG for Safety and Inspection for Industrial Products (DGSIIIP) staff training on "Market Surveillance of EE motors and motor driven systems for compliance with eco-design requirements" was carried out in April 2019, with a total of 31 participants.

The focus of Component 3 is the upgrading of the electric motor testing facility at TSI (Turkish Standards Institute). Before the start of the TEVMOT project, the TSI laboratory was only equipped to carry out tests for motors of up to 90 kW. The capacity for testing was increased to a capacity of 375 kW, the upgrade was finalized in December 2019. The contribution of the TEVMOT project was US\$ 1.2 million, TSI provided significant co-financing of around US\$ 1.43 million. This is a major achievement of the project.

A motor testing program for new motors for the purpose of upgrading the market monitoring and surveillance strategy of DGSIIIP was developed. Under the testing program, a total of 80 motors will be purchased in 2020 and 2021, covering various motor sizes between 7.5 kW and 1,000 kW. The

testing program was planned to start in 2019 but hasn't kicked-off yet. The reason given by the PIU was that the increase of the testing capacity has only been finalized end of 2019/beginning of 2020 and this was a prerequisite to start with the motor testing program. As the majority of motors used in SMEs is well with the previous capacity of the testing facility (up to 90 kW), an earlier start of the test program could have been helpful in carrying out activities as per the original work plan, get experience with testing, allowing TSI to publish first test results, thereby putting focus on the topic of energy efficient motors.

Component 4 is the core activity of the TEVMOT project. It includes the assessment of motor efficiency potential in selected OIZs and SMEs, the preparation of standard motor testing reports (SMTPs) and motor EE investment plans (MEEIPs) and the pilot EE motor replacements in selected OIZs and SMEs. Work with OIZs started in 2018, when the selection process for OIZs to be included in the pilot replacement program was carried out. Based on selection criteria included in the ProDoc, 7 OIZs best suited for the implementation of the pilot replacement program were selected. From these 7 OIZs, around 150 SMEs provided letters of intent to participate in the pilot program. In meetings with the OIZs in 2018, SMEs voiced the strong request to receive support in the preparation and implementation of the pilot motor replacements. Based on the feedback received, the PIU started discussions with KOSGEB (Small and Medium Industry Development Organization) to bring the institution on board.

Discussions with KOSGEB on the financial support mechanism took a lot of time. KOSGEB had very negative experience from a motor replacement project they launched in Kayseri OIZ in 2016/2017. Under that project, around 70 audits were carried out, but only one company used the funding scheme provided by KOSGEB (interest for loans to be covered by KOSGEB). This in combination with changes in responsibilities and a general low interest of KOSGEB in cooperating with the TEVMOT project, led to considerable delays. Discussions were only finalized in December 2019, when a protocol between KOSGEB and the ministry was signed. The PIU decided to first finalize discussion with KOSGEB on the financial support mechanism and only then start with the audits and following activities under Component 4. Retrospectively, it would have been better to initiate audits immediately and not wait for finalizing the financing scheme.

Due to the delays in being able to reach an agreement with KOSGEB, structural changes as well as changes of personnel in ministries and delays from COVID-19, the main activities under Component 4 haven't started yet. Trainings for EVDs (Energy Efficiency Consultants) and EMUs (Energy Management Units) have only been initiated in June 2020, no audit has been carried up until now. This will delay the implementation of the demonstration projects by around 2 years.

The ProDoc defines the development of a one-stop-shop mechanism within OIZs and the provision of stronger de-risking measures to assist industrial SME investment into EE motors as the key project output. So far, work under Outcome 4 has focused on setting up the support scheme for the demonstration phase with very limited work on the one-stop-shop mechanism, which is required for the replication phase. This is a major shortcoming in the project progress so far.

Work under Component 5 is focusing on knowledge management, awareness raising and Monitoring & Evaluation (M&E). Due to delays in previous Components (data collection for the market monitoring model, identification of best practice and case studies, etc.), there is little progress in this Component. The TEVMOT website has been established and can be reached at [www.tevmot.org](http://www.tevmot.org). The content of the website is fragmentary, with short paragraphs in some sections and a number of sections with no content (e.g. UNDP Project Team, incentives and support,...). There is good activity on social media accounts established by the Project Team (Twitter, LinkedIn, Facebook, Instagram).

## 1.4 MTR Ratings & Achievement Summary Table

The following table summarizes the MTR ratings and achievements.

**Table 1: Summary Review of Project<sup>2</sup>**

Measure	MTR Rating	Achievement Description
Progress Towards Results	Objective: Moderately Unsatisfactory (MU)	<ul style="list-style-type: none"> <li>No motors have been replaced up to now, therefore no CO2 emission reductions and no electricity consumption reduced.</li> <li>Delays are partly due to external factors (changes within MoIT and DGIP, lengthy discussions with KOSGEB)</li> </ul>
	Outcome 1: Moderately (S)	<ul style="list-style-type: none"> <li>Market monitoring system was adapted to requirements of ministry.</li> <li>Draft of the harmonized Turkish legislation to transpose the EU ecodesign regulation on electric motors prepared</li> <li>Training of DGSIIIP and DGIP staff carried out</li> </ul>
	Outcome 2: Highly Satisfactory (HS)	<ul style="list-style-type: none"> <li>Active participation of 3 motor manufacturers (Wat Motor, Volt Motor and Aemot)</li> <li>Series of technical training seminars were held in 2018 and 2020 for a total of 450 participants</li> </ul>
	Outcome 3: Satisfactory (S)	<ul style="list-style-type: none"> <li>Total of 5 persons of TSI personnel are testing in TSI laboratory</li> <li>Training on "Market Surveillance of EE motors and motor driven systems for compliance with eco-design requirements" carried out for DGSIIIP staff</li> <li>No motors have been sent for testing, 40 motors are planned to being procured for testing in 2020</li> </ul>
	Outcome 4: Unsatisfactory (U)	<ul style="list-style-type: none"> <li>No audits were carried out so far and no MEEIPs were elaborated</li> <li>As no motors were replaced until the MTR and one-stop-shop FSM hasn't been set up, no investments can be accounted for</li> <li>No confirmation of payback period can be given, as no motors have been replaced so far</li> </ul>
	Outcome 5: Moderately Unsatisfactory (MU)	<ul style="list-style-type: none"> <li>No survey has been carried out up to now, therefore no information available on awareness of SMEs on benefits of EE motors</li> <li>By the time of the MTR, 1,900 hits by 1,400 were counted on the website</li> <li>Social media accounts (Twitter, LinkedIn, Facebook, Instagram) are active</li> </ul>
Project Implementation & Adaptive Management	Marginally Satisfactory (MS)	The performance of the PIU can be evaluated as marginally satisfactory. Changes in the organizational structure of the ministry and relevant Directorates General, discussions to involve KOSGEB in the project or challenges due to COVID-19 were well managed by the PIU. The PIU managed to secure the contribution of KOSGEB by establishing direct contact with the

<sup>2</sup> The Project outputs are rated on the following scale: 6: Highly satisfactory (no shortcomings), 5: Satisfactory (minor shortcomings), 4: Moderately satisfactory, 3: Moderately unsatisfactory (significant shortcoming), 2: Unsatisfactory (major problems); and 1: Highly unsatisfactory (severe shortcomings). Sustainability is rated on the following scale: 4: likely, 3: moderately likely, 2: moderately unlikely, 1: unlikely.

		Minister. The PIU showed strength in planning and carrying out short-term activities and has good control of the project. While focusing on short-term priorities, the PIU somehow lost the overall targets out of sight. There is no regular review mechanism of EOP targets with actual performance, hence corrective actions and adaptive management don't take place as required.
Sustainability	Moderately likely (ML)	There are certain risks to the sustainability of project impacts and it is likely to expect that key outcomes will not be sustained. The main risk towards sustainability the project is facing is related to the lack of a sustainable finance mechanism. While the implementation of demonstration projects is secured, no mechanism has been established for the replication phase. The other positive aspect is that investments in EE motors are financially very attractive. With payback periods of around 1 year, there are various business opportunities – either for SMEs and other companies themselves by investing in EE motors or by service providers such as ESCOs.

## 1.5 Concise summary of conclusions

The following conclusions can be drawn:

- The components are well-structured and are a direct response to the main barriers identified during the project preparation phase. The various activities listed under each of the components clearly contribute to the outputs and outcomes defined for the 5 components.
- The Project Results Framework is well elaborated and includes well-defined indicators meeting the requirements of GEF to be “SMART” (Specific, Measurable, Achievable, Relevant, Time-bound). Targets both for MTR and Terminal Evaluation are clearly defined. For each of the Outcomes at least 2 indicators have been identified, which are adequate to measure the achievements made in project implementation.
- Most of the ministries involved in the Project were merged or changed including the project implementing partner, which is now called Ministry of Industry and Technology (MoIT). Moreover, the General Directorate of Productivity who has been the Implementing Partner is not separate and unique body anymore and was merged with the General Directorate of Industry to the General Directorate of Industry and Productivity (DGIP). The structural changes also led to changes in persons responsible for and involved in the Project, which led to considerable delays in project implementation.
- The initial plan under Component 1 to collect additional motor data in a survey was modified based on a survey carried out before project start. As a consequence the approach for providing inputs into a new market monitoring system was changed and is now consisting of three components: (1) monitoring direct project impacts, (2) collecting bottom-up production data from motor manufacturers (through EMOSAD) as well as import/export data and (3) applying a top-down approach by calculating and monitoring the electricity intensity of the Turkish manufacturing industry.
- For monitoring and reporting the direct project impact, it is essential that after the OIZs and SMEs for the initial energy audits have been selected, information on their baseline electricity consumption and operational characteristics of the electric motors in use is collected at a level as accurate as possible. The investment proposals to be developed after the initial energy audits should be obliged to also include an adequate monitoring, reporting and verification (MRV) plan, by which the achieved energy savings can be monitored and the projected energy

savings verified. The reported direct energy saving and GHG reduction impact of the project should at the end be based on actually monitored data rather than just projections made in the energy audit. A template for such monitoring reports shall be developed by the Project Team in order to secure consistency

- Bottom-up data collection with EMOSAD hasn't seen much progress. A questionnaire for obtaining the annual domestic production and sales statistics was completed and shared with EMOSAD members. GAMAK, who is the biggest domestic producer with around 25% market share, refused to share numbers on production and sales due to confidentiality reasons. As a consequence, also the other members of EMOSAD refused to share information. At the moment, a work plan for cooperation between EMOSAD and the TEVMOT project is under discussion. The work plan doesn't mention the issue of data collection, this needs to be added as a key contribution of EMOSAD.
- Under Output 1.2, a draft of the harmonized Turkish legislation on eco-design requirements for electric motors has been prepared. Three different documents were prepared by a national consultant, partly revising existing legislation, partly drafting new requirements. Further steps for transposition and date of entry into force are to be decided and taken by MoIT.
- Under Output 2, support is given to EMOSAD to increase the capacity of the organization. Further work is required in securing data relevant for market monitoring. Technical training seminars were held in 2018 and 2020 for a total of around 450 participants.
- The key result under Output 3 is the upgrade of the TSI laboratory. Whereas testing capacity was limited with 90 kW before start of the project, the upgrade will now allow TSI to test motors with a capacity of up to 375 kW. The upgrade was finalized in December 2019 and is a major achievement.
- With a grant support of US\$ 1.2 million, around one third of the total GEF funding is spent on the increase of the test capacity of the TSI laboratory. This is surprising, as less than 10% of motors in the 2015 motor inventory have a capacity above 90 kW. Taking into account that only 20% of the grant funding for the laboratory is available for supporting the implementation of the demonstration projects, a more balanced distribution of funds between these outputs would have been advisable.
- A further activity under Component 3 is a motor testing program for new motors, which has the purpose of upgrading the market monitoring and surveillance strategy of DGSIIIP. A total of 80 motors will be sampled by purchasing in 2020 and 2021 with sizes between 7.5 kW and 1,000 kW. It would have been better to start with the testing program in 2019 (as originally planned). This would have been helpful in carrying out activities as per the original work plan, get experience with testing, allowing TSI to publish first test results, thereby putting focus on the topic of energy efficient motors.
- Component 4 aims at setting up a one-stop-shop financial support mechanism for motor replacements. Work in this component is divided into a demonstration phase and a replication phase, both with challenging targets. Urgent adaptive management is required on this component. Due to these challenging targets, a timely execution of the demonstration phase was key to project success. Unfortunately, a number of events delayed the implementation of the project. This includes organizational changes within the MoIT as well as in the DGIP and considerable time spent with KOSGEB on agreeing on the financial support mechanism for the demonstration phase. While most of the events were outside of the influence of the PIU, however, the PIU could have pushed forward the audits in SMEs as well as the Motor EE Investment Plans (MEEIPs) while establishing the financing mechanism for the demonstration phase.
- The TEVMOT website has been established and can be reached at [www.tevmot.org](http://www.tevmot.org). The content of the website is fragmentary, with short paragraphs in some sections and a number of

sections with no content (e.g. UNDP Project Team, incentives and support). The website is only available in Turkish. Urgent adaptive management is required to greatly strengthen component 5 on outreach and awareness.

- The Project Board only meets once a year and has had 3 meetings during the Project so far. With the Project approaching the end of year 3, the Project is now coming to a phase, where stronger and more regular guidance by the PB is necessary. This is especially the case for Component 4, where activities are considerably delayed and the Project runs a serious risk of not achieving the EOP (end-of project) targets so it is recommended that the project organize a minimum of 3 project board meetings per year or one per four months.
- Delays in project implementation are also reflected in the project budget and expenditures. By end of 2019, 68.5% of the funds budgeted were disbursed, which shows that the project did not meet the annual spending limit target and is behind schedule. Overall disbursement by end of 2019 was around US\$ 1.77 million (or 46.2% of the total budget), out of this sum US\$ 1.2 million was provided as a contribution to the capacity increase of the TSI laboratory.
- After the start of the Project, the PIU was able to secure additional co-financing commitments, which is a good achievement. The Ministry of Energy and Natural Resources (MoENR) committed to a contribution of US\$ 1 million, EMOSAD to US\$ 100,000 and EYODER (Association of Energy Efficiency and Management) to US\$ 100,000. All additional contributions are in-kind and are focusing on training, public awareness and regulatory framework.
- By the time of the mid-term review, total co-financing amounted to US\$ 13.43 million, around 45.5% of expected co-financing over the lifetime of the project. This is a decent result and shows that stakeholders are committed in providing the required support. Cash co-financing is at US\$ 1.2 million, which is 33.5% of the entire cash co-financing committed, in-kind contributions are at US\$ 12.23 million or 47.1%.
- The M&E Plan in the ProDoc gives clear guidance on the methods, frequency and responsibilities to collect information and data for monitoring Project progress. Responsibility for the key indicators is basically split between the Project Manager and project consultants to be hired for monitoring. Discussions with the PIU during the MTR showed that the M&E system is not properly set up at the moment and the project really needs to hire a part time M&E national consultant. To a certain extent, this is due to the delays in implementation of Component 4, which would generate figures for core indicators such as kilo tonnes of CO2 reduced or MWh of annual reduced electricity consumption. As implementation is delayed, there was not real need to set up a system, which ensures that relevant data from OIZs and SMEs is being supplied to the PIU. However, it is important to use the M&E system as an input for strategic decisions. As the project is now in its second half of lifetime, it is important to set up a proper M&E system, which is providing feedback to the PIU and the PB and allows educated decisions.
- The Project sees active contributions from all key stakeholders: Directorate General of Productivity (DGP) and Directorate General of Industry (DGI), DGSIP, TSI, electric motor manufacturers and chambers of industry. The actual list of stakeholders involved in the project has been extended and now also includes the Ministry of Energy and Natural Resources, KOSGEB, EMOSAD, the Energy Efficiency and Management Association (EYODER) and the selected OIZs. A major achievement of the Project was the signature of the cooperation protocol in December 2019 between DGIP and KOSGEB which secured the financial support mechanism for the demonstration projects.
- Changes in the organizational structure of the ministry and relevant Directorates General, discussions to involve KOSGEB in the project or challenges due to COVID-19 were a challenge for the PIU and required various actions towards adaptive management. The PIU

managed to secure the contribution of KOSGEB by establishing direct contact with the Minister. The PIU showed strength in planning and carrying out short-term activities and has good control of the project. However, while focusing on short-term priorities, the PIU somehow lost the overall targets out of sight. There is no regular review mechanism of EOP targets with actual performance, hence corrective actions and adaptive management don't take place as required.

## 1.6 Recommendations

The following recommendations can be made:

### **Recommendation 1 – Hire a consultant in order to refocus work on setting up one-stop shop mechanism with TurSEFF and/or OIZs**

The ProDoc defines the development of a one-stop-shop mechanism within an OIZ and the provision of stronger de-risking measures to assist industrial SME investment into EE motors as the key project output. So far, work under Outcome 4 has focused on setting up a support scheme in cooperation with KOSGEB to provide grant financing (60% contribution, in case of Turkish motors 75%) during the demonstration phase. Initial talks were held with relevant partners (OIZs, IFIs, Credit Guarantee Fund (KGF), etc.) to setup the planned one-stop shop, but activities were not continued after decision by the ministry to proceed with KOSGEB for the demonstration phase. The discussions with KOSGEB not only led to considerable delays in setting up the scheme for the demonstration phase, but also didn't lead to any firm commitments for providing financing for the replication phase. The feedback received during the MTR was that results of the demonstration phase will be evaluated and then a decision about further funding (through ministry and/or KOSGEB) will be taken. This process will most likely take too much time for the TEVMOT project to produce decent results (see recommendation no. 3 on further cooperation with KOSGEB).

The activities to set up a one-stop shop mechanism need to be refocused immediately by the PIU. There were 4 different approaches described in the ProDoc, these were: (i) direct finance to the SME; (ii) portfolio finance by OIZ; (iii) vendor finance by manufacturer; and (iv) lease. Based on the feedback received from stakeholder interviews, direct finance to SMEs and portfolio finance by OIZs seem to be the most promising options.

An immediate starting point is TurSEFF (Turkey Sustainable Energy Financing Facility), developed by EBRD. TurSEFF provides loans or leases through local banks to finance resource efficiency and renewable energy investments in industrial SMEs. For financing of up to € 250,000, an automated technology selector approach has been developed, which includes pre-approved technologies. Motors with efficiency class of IE3 or better are eligible for financing under TurSEFF. SMEs can directly apply for funding, which will be implemented through PFIs (Partner Financial Institutions) of TurSEFF.

In addition to direct financing of motor replacements in SMEs, portfolio finance by the OIZs should be investigated. The benefit of that approach is that OIZs and their EMUs can drive the preparation of motor replacements, this would allow to develop project bundles, where replacements are happening in a group of SMEs within one OIZ. OIZ can use their own capital for financing motor replacements and get repayment from SMEs based on the ongoing savings of electricity costs. Alternatively, OIZs can aim at receiving funding from TurSEFF in order to reduce the capital requirements.

Both approaches (direct financing and portfolio financing) focus on using private sector funding or funding through IFIs for implementing motor replacements. This makes the Project more independent from decisions taken by the government, which led to massive delays when setting up the financing mechanism for the demonstration phase.

A further key aspect to be considered is the time when motors are being replaced. Rather than focusing only on preparing replacement programs with OIZs, the Project should also pursue the replacement of motors once they fail. At this point of time, the cost difference between a standard motor and a high efficiency motor (category IE3 or IE4) is marginal, as replacement costs need to be covered anyway. This also requires motor manufacturers having efficient motors on shelf, allowing companies to replace broken motors within a very short period of time (1-2 days).

The approaches suggested in the ProDoc all included the Credit Guarantee Fund (KGF), which would provide guarantees to banks or leasing companies providing funds for motor replacement. For motor replacements implemented under TurSEFF, KGF would not be necessary. However, there are several banks (Ilbank was mentioned as one example), which would be interested in providing financing for motor replacements. For these banks, a guarantee provided by KGF would be beneficial. Although KGF didn't show interest in the early days of the Project, talks should be re-established immediately by the PIU.

Establishing the one-stop-shop financial mechanism will be the key to ensure sustainability of the project. It is recommended to hire a short-term consultant ('Consultant on Finance') assisting in the establishment of the one-stop-shop, working closely with the project manager and the international CTA. The role of this second consultant shall be to design the financial mechanism together with the international CTA and the Project Manager. The consultant should be hired as soon as feasible and start work on the financial mechanism end of summer. The decision whether a national or international consultant is hired is up to the PIU

**Recommendation 2 – Extend project timeline with a request for +18 months extension no later than mid-2021**

Various factors have led to considerable delays in project implementation: discussions with KOSGEB and the ministry on the financing mechanism for the demonstration phase, repeated changes within MoIT and COVID-19. 100 audits should have been carried out in year 1 and pilot motor replacements should have started in towards the end of year 1. The actual implementation of the audits and demonstration projects will start in Q3/2020 and will be finalized in Q1/2021. This means a delay of more than 2 years by the time of the MTR. Leaving the end date of the project as planned (July 2022) would considerably reduce the opportunity to replicate and scale up the motor replacements, as it takes time for the market to pick up. Provided availability of funds, a 12-months no-cost extension of the project is suggested. To mitigate the negative impact of COVID-19, an additional extension of further 6 months is recommended, thereby extending the project end date by 18 months to end of December 2023. The extension is to be initiated by the Project Manager until end of August 2020 by writing to the RTA and then to UNDP New York. The extension is to be finalized by July 2021.

The extension of the project should only be approved on the basis that recommendation #1 is implemented until July 2021 and a financial mechanism for the replication phase has been setup.

**Recommendation 3 – Initiate discussions with KOSGEB on replication phase**

The Ministry and KOSGEB have found an agreement for providing financing for the demonstration phase. A total of 60% of investment costs for efficient motors (in case of Turkish products 75%) will be provided as grant financing to SMEs. Funding available is limited with \$480,000 which is US\$240,000



from the project and \$240,000 from KOSGB. Interviews during the MTR indicated that further funding could be provided by the ministry/KOSGEB in case the demonstration phase is successful.

The Project doesn't have the time to wait until the end of the demonstration phase to then enter into (lengthy) discussions or negotiations with the ministry and/or KOSGEB on funding for the replication phase. Also, the Project needs to set up the one-stop-shop mechanism and it will be necessary to understand contributions to be made towards financing of further replacements.

In autumn 2020, the PIU, supported by high-level management of UNDP, should get into initial discussions with KOSGEB and the ministry about the extension of funding. If additional grant funding is available, it is suggested to reduce the grant contribution. Investments into efficient motors have a short payback period of about 1 year, therefore only limited contributions are necessary. Also, high grant contributions give a wrong signal and make it more difficult to transform the system towards the one-stop-shop approach, where low or no grant contributions will be made. Cutting the maximum grant contributions by half (for example 30% for motor replacement in general, 40% when Turkish products are used) is suggested. It is also recommended to provide grant support to IE4 motors only in the next phase, there should be no grant support given to IE3 motors.

Audits are seen as a key entry point to engage SMEs in motor replacements. There is a lack of interest of SMEs to pay for audits, as SMEs are not fully aware of the benefits of motor replacement. Financing or co-financing of audit costs by KOSGEB/ministry in the replication phase would be an important contribution towards sustainability.

#### **Recommendation 4 – Ensure correct and appropriate monitoring of direct project impacts**

For monitoring and reporting the direct project impact, it is essential that after the OIZs and SMEs for the initial energy audits have been selected, information on their baseline electricity consumption and operational characteristics of the electric motors in use is collected at a level as accurate as possible. The records should be based, to the extent possible, on actual metering rather than estimates of electricity consumption from more aggregated figures. The investment proposals to be developed after the initial energy audits should be obliged to also include an adequate monitoring, reporting and verification (MRV) plan, by which the achieved energy savings can be monitored and the projected energy savings verified. Required metering and monitoring devices should be included into the investment plan, if required for implementing the MRV plan. The reported direct energy saving and GHG reduction impact of the project should at the end be based on actually monitored data rather than just projections made in the energy audit. In order to secure consistency between the different companies, a template for such monitoring report shall be developed after the initial selection of the participating OIZs and SMEs has been made.

Implementation of this recommendation should be as per the ProDoc, which determined hiring a project consultant to support M&E requirements of the Project. This consultant should be hired by the PIU in autumn 2020, support on monitoring should be given by available in-house capacity of UNDP (M&E Advisor under the CCE Portfolio and corporate M&E Analyst for UNDP Turkey).

#### **Recommendation 5 – Improve cooperation with EMOSAD with frequent meetings and consider signing an MoU for cooperation**

The electric motors manufacturers association, EMOSAD is playing an important role in the implementation of the TEVMOT project. At the time of the MTR, discussions were held between EMOSAD and the PIU about the further participation of EMOSAD in the project. For the 2020 work plan, it was suggested that EMOSAD will actively support workshops to be held in selected OIZs, support the creation of the calculation module for walk-through audits and ensure that EMSA (Electric

Motor Systems Annex) calculation modules are used in investment feasibility studies after field studies.

EMOSAD is also a key player in improving the supply side of efficient motors. Ideally, motors are being replaced once they fail, as additional costs between a standard motor and high efficiency motors are marginal. EMOSAD in cooperation with the PIU needs to work with motor manufacturers (especially those who provided co-financing commitments to the project) to secure that high efficiency motors are on stock and can replace failing motors within a very short period of time (1-2 days).

A key point missing in this list is the collection of data on annual domestic production and sales. Due to reasons of confidentiality and competition between EMOSAD members, no data has been shared up to now. There are different options to overcome this situation. One would be to hire a director, who has no ties to any of the companies represented in EMOSAD. Another option would be to hand over the data to a neutral third party (e.g. lawyer or notary public) with the task to merge data and only publish merged figures, which don't allow tracing back data to individual companies. The PIU is requested to elaborate in close cooperation with EMOSAD and its members a concrete approach, which will allow EMOSAD to provide market data on a regular basis without revealing commercially confident information, leading to an MoU for cooperation. This activity is to take place in autumn 2020.

**Recommendation 6 – Replace co-financing of GAMAK with the goal of making sure that co-financing ratio of at least 7-1 is met**

The project is not on track to reach a co-financing ration of 7-1. The ProDoc listed 4 motor producers as key stakeholders for the project, namely Gamak, Wat Motor (Arcelik), Volt Motor and Aemot. These companies are explicitly mentioned in the ProDoc and each of them has signed a co-financing commitment of US\$ 5 million. GAMAK has been very active in the beginning of the TEVMOT project but hasn't been actively participating for almost 2 years. It is not likely that the co-financing commitment of GAMAK will materialize, therefore replacement needs to be secured. EMOSAD, supported by the PIU, shall enter in discussions with other members of the association to provide co-financing to the TEVMOT project. Activities to be covered by this co-financing commitments should be in line with the original co-financing commitments given by the participating motor producers and can include participation in the development of governance and information infrastructure in the electric motors industry, continuation of investments for the production of high EE motors, development and delivery of detailed training for manufacturers, industry and end-users including the general public and the development of the financial support mechanisms. This activity is to be carried out until end of 2020, led by EMOSAD with support from the PIU.

**Recommendation 7 – Improve frequency and contents of Project Board meetings by organizing a minimum of 3 Project Board meetings per year or one per 4 months**

With the Project approaching the end of year 3, the Project is now coming to a phase, where stronger and more regular guidance by the PB is necessary. This is especially the case for Component 4, where activities are considerably delayed and the Project runs a serious risk of not achieving the EOP targets. Stronger guidance by the PB is required in this critical phase and it is recommended that the PB meets at least three times a year. It is the task of the Implementing Partner to secure adequate representation of decision makers. Apart from reviewing progress and implementation of activities, a more strategic, forward-looking discussion and decisions are required. Key project targets/indicators and ways of achieving the targets should be discussed in these meetings, rather than only focusing on the activities to be carried out over the coming months. This recommendation is to be implemented with immediate effect and the next PB meeting shall be organized by the PIU until October 2020 at the latest.

It is recommended that the international CTA and the consultant on designing the one-stop shop financial mechanism participate in all the Project Board meetings either remotely or in person.

**Recommendation 8 – Improve TEVMOT website**

The current TEVMOT website ([www.tevmot.org](http://www.tevmot.org)) is fragmentary, with short paragraphs in some sections and a number of sections with no content. The basic content of the website needs to be considerably improved to fill up all sections with good and meaningful information. There is currently no download section, where reports, presentations of information material can be provided, this should be added immediately. The PIU is requested to decide which information can be provided for downloads at the moment, further reports shall be added as soon as they are finalized. Once case studies and information on awareness campaigns is available, this should be added as well, accompanied by news/tweets about important achievements by the Project. A basic version in English is recommended to support dissemination of results and increase cooperation with other motor projects. As an example, the website of Topmotors ([www.topmotors.ch](http://www.topmotors.ch)) can be used. An improved version of the website shall be online by end of 2020, with PIU taking the lead on the revision.

## 2. INTRODUCTION

### 2.1 Purpose of the Mid Term Review and Objectives

In accordance with UNDP and GEF requirements, the project is required to undertake a Mid-Term Review (MTR) in its third year of implementation. The purpose of the MTR is to assess progress made towards the achievement of the objectives and outcomes as specified in the Project Document, and assess early signs of project success or failure with the goal of identifying the necessary changes to be made to set the project on-track to achieve expected results. The MTR will also review the project's strategy, its risks to sustainability and make recommendations on how to improve the project over the remaining lifetime. The MTR will also provide an assessment and recommendations on whether the project should be extended beyond the end of its originally planned 5 years lifetime.

### 2.2 Mid Term Review Methodology and Scope

The MTR was based on the following methodological approach:

- Key project documents of the project will be reviewed. The list of project documents provided by the Project Implementation Unit (PIU) is listed in chapter **Error! Reference source not found..**
- Interviews were conducted with UNDP staff and representatives of all key stakeholders involved in the project. The list of stakeholders interviewed can be found in chapter 6.5. Due to the COVID-19 situation, all interviews were held via skype or similar technologies.
- The site visits mentioned in the ToR were not carried out due to the COVID-19 situation.

The MTR respected the following key principles:

- Participative: the MTR involved all relevant project stakeholders in the review activities.
- Constructive: the underlying aim of the MTR was to help project stakeholders to find ways to optimize the project, so project objectives can be achieved.
- Independence and neutrality: the MTR team has no connections with the project and no interests in the project. The MTR sole objective and interest is to report objectively on the project in order to support future optimization.
- Evidence-based: all findings and conclusions are based on clear and balanced evidence collected during the MTR.

The MTR was undertaken in line and accordance with the new “*UNDP Evaluation Guidelines*” published in January 2019. In terms of scope, the MTR covered all aspect of the development and implementation of the Project, from the preparation of the PIF up till and including March 2020. According to the ToR (see Annex 1), the assessment covered the following four categories of project progress:

- Project Strategy
- Progress Towards Results
- Project Implementation and Adaptive Management
- Sustainability

The categories evaluative questions, indicators, sources of information and methods of review applied in the review can be found in the MTR Evaluative Matrix in chapter 6.2.

## **2.3 Structure of the MTR Report**

This MTR Report is presented as follows:

- An overview of project preparation and implementation from the commencement of operation in July 2017
- Review of project strategy, progress towards results, project implementation and adaptive management and sustainability
- Conclusions and recommendations on how to increase the performance of the project

### **3. PROJECT DESCRIPTION AND BACKGROUND CONTEXT**

#### **3.1 Project Context**

The growth of GHG emissions in Turkey has been globally one of the highest, increasing from 188 million tonnes CO<sub>2</sub> in 1990 to 459 million tonnes CO<sub>2</sub> in 2013. According to Turkey's INDC, this can be attributed to the 230% increase of Turkey's GDP between 1992 and 2012, a 30% increase in its population since 1990, and annual increases in energy demand of 6 to 7%. Demand for electricity power has been steadily increasing for the past decade and reached 255.5 TWh in 2014, an increase of 3.7% from 2013. With limited domestic reserves of fossil fuels, Turkey is highly dependent on energy imports with more than 70% of its energy needs and 60% of its electricity based on fossil fuel consumption.

In Turkey, 47% of net electricity consumption is from the industrial sector, with an estimated 70% of this energy consumption from electric motor-driven systems. In general, electric motors in Turkey are not energy efficient. Based on DGIP's 2015 motor inventory analysis, 72% of all motors in operation are in efficiency classes IE0 or IE1 and 99% of all motors are within efficiency class IE2 or lower. Only slightly more than 1% of motors are in classes IE3 or IE4. A typical electric motor causes an energy cost of more than 50 times its purchase cost during its 20 years of service life. This means that energy-efficiency is an extremely important consideration in the decision on which motor to purchase.

With most of the electric motors on the Turkish market are being used in the industrial sector, more than 95% of Turkey's industrial sector is comprised mainly of SMEs. Out of Turkey's more than 2.6 million SMEs, there are an estimated 355,312 SMEs in the industrial sector. SMEs comprise more than 99.5% of the enterprises within the industrial sector and produce more than 46% of the sector's outputs.

SMEs in Turkey have traditionally had difficulties in obtaining access to finance primarily due to their creditworthiness, inability to provide sufficient collateral, and their lack of capacity to articulate their specific needs for financing to banks. Turkish commercial banks have historically been reluctant to offer EE financing product lines since they associated such funding with higher transaction cost and higher risk. Moreover, these banks typically had limited internal capacity to properly assess, develop, and offer EE market financing instruments. The challenge lies in convincing SMEs to utilize more efficient motors in their industrial processes to save energy as opposed to their current alternative of resorting to the cheapest options of restoring operations of a motor, mainly through the rewinding of the motor.

#### **3.2 Problems to be addressed by the project**

In the ProDoc, the barriers towards increased use of EE electric motors in SMEs in Turkey were analysed in detail. The most relevant barriers are the following:

- Information and awareness barriers
- Technical barriers
- Institutional barriers
- Legal, regulatory and policy barriers
- Financial barriers
- Market barriers

Despite the availability of EE motors in the Turkish market, the level of awareness amongst policymakers, motor manufacturers in Turkey, and industrial end-users (mainly SMEs) is limited on potential energy savings and economic benefits. The limitation of this awareness within an industrial enterprise is also related to knowledge on the life-cycle benefits of energy efficiency. For many electric motor manufacturers in Turkey, there is limited knowledge on the different technologies and methods of design and manufacture of IE3 and IE4 motors due to the various components which can be used to remanufacture motors that do not meet EE standards.

For industrial SMEs, CEOs who make investment decisions have limited awareness of the differences and benefits of motors in various efficiency categories. Moreover, SMEs do not regard energy efficiency as important when their main concerns are related to optimizing production and minimizing risks of interruptions. As such, if an SME experiences reduced production from a malfunctioning motor, the CEOs make the decisions opting for lowest cost solutions without consideration of life cycle costs. This typically involves the replacement of this malfunctioning motor with a spare electric motor that is stored onsite. While the spare electric motor may not have the required capacity, the broken electric motor is then repaired in a clandestine repair shop, where it is rewired and loses 2-3% efficiency with each rewiring.

With their small-scale operations and limited own funds, limited collateral and capacity to borrow money, SMEs have limited access to de-risked credit support that does exist in Turkey. If an SME has money available to invest, either own means or bank credit, the SME typically will invest in increasing production rather than improving efficiency. As such, most industrial SMEs generally are unwilling to pay the replacement of this equipment with upfront costs for an energy efficient motor or measures.

Many industrial SMEs are located within OIZs who employ energy managers within energy management units (EMUs) who provide advice to member SMEs on energy related matters. Knowledge of these EMU on issues related to energy efficiency is generally weak.

SME distrust in the use of external engineers, ESCOs and equipment suppliers to improve their energy efficiency stems from the fact these experts and engineers are generally linked to preferred equipment suppliers. Due to their small scale, SMEs typically do not have dedicated energy managers that understand and convince management to engage with external parties to replace electric motors. Given the risk aversion of SMEs due to their lack of liquidity, general SME perceptions are that these engineers and experts may not offer unbiased EE solutions for their industrial enterprise.

### 3.3 Project Description and Strategy

The project objective is to promote significant additional investment in industrial energy efficiency in Turkey by transforming the market for energy efficient motors used in SMEs. The project aims at reducing a total of 3,092 tons of CO<sub>2</sub> from the replacement of inefficient motors with IE3 motors by end of project, reduce annual electricity consumption by 640,499 MWh and phase out a total of 5,000 inefficient electric motors. The key 5-step strategy to achieving the changes encapsulated in the Project objective of “promoting significant additional investment in industrial energy efficiency in Turkey by transforming the market of EE motors used in SMEs” will be i) strengthening the enforcement framework that includes an improved MV&E strategy, market surveillance, trained field inspectors; ii) improving capacity of relevant stakeholders to promote the benefits of EE motors; iii) improving capacity for monitoring, verification and enforcement for better compliance of electric motors supply chain through upgrading test laboratories at the Turkish Standards Institute as well as

improved MV&E strategy and training of field inspectors of MoIT; iv) launching of an operational and sustainable “one-stop-shop” for financing motor replacement programmes; and v) increasing the availability of EE motor information to raise stakeholder awareness on the benefits of EE motors and to sustain motor market transformation.

In order to achieve that, the project has been structured in 5 different components:

- Component 1: Strengthened legislative and regulatory and policy framework for EE motors in Turkey: the component will lead to the outcome of strengthened policies, regulations and standards that are applicable to EE motors and harmonized with the EU commission regulation (EC) number 640/2009 that is designed to increase the energy efficiency of the electric motors. A direct benefit of the GEF project to the Government of Turkey will be its strengthened capacity to adopt EU directives that will continually improve the efficiency of electric motors.
- Component 2: Capacity building for relevant stakeholders to promote the benefits of EE motors: the component addresses the barriers associated with the need for improved capacity within the local EE motors manufacturing industrial sector, OIZs and their EMU management personnel and industrial SME end-users. The intended outcome of this component will be the improved capacity of these relevant stakeholders to promote the benefits of EE motors.
- Component 3: Upgraded Turkish Standards Institute (TSI) test laboratory and strengthened monitoring, verification and enforcement: the component addresses the barriers associated with the need for improved capacity to undertake market surveillance programs related to electric motors. The intended outcome of this component is to have upgraded motor testing capacities of TSI and a strengthened program for monitoring, verification and enforcement of compliance with eco-design implementing measure 640/2009 (or future amendments).
- Component 4: One-stop-shop for financial support mechanisms: Outputs of this component will lead to an outcome of improved SME access to available financial mechanisms and additional de-risking measures that will facilitate an increase in investments in energy efficient electric motors within industrial SMEs. Project resources in this component will be focused on building the capacity of the OIZs and its EMU to become lead entities in managing a motor replacement programmes that would include a one-stop-shop for financial support mechanisms for industrial SMEs. Project resources used towards building EMU capacity will enable them to comprehend and prepare an “efficient motor assessed potential” or EMAP that will provide an assessment of the potential motors to be replaced within an industrial SME. With an EMAP in place, the SME can target certain motors for a standard motor testing report (SMTR) that will provide recommended improvements not just to the electric motor itself, but to the entire electric motor drive system.
- Component 5: Knowledge management and M&E: This component is mainly focused on the management of knowledge that will sustain EE motors amongst stakeholders in manufacturing and sales of EE motors, intermediaries such as the OIZs and EMUs to manage motor replacement programmes and the SME end users in the industrial sector. The intended outcome of this component will be the increased availability of EE motor information that raises stakeholder awareness of the benefits of EE motors and sustains market transformation.

### 3.4 Project Implementation Arrangements

UNDP is the GEF Agency for this project. The project is implemented following UNDP’s national implementation modality (NIM with UNDP providing support services) and is implemented according to the Standard Basic Assistance Agreement between UNDP and the Government of Turkey, and the



Country Program Action Plan (CPAP). The Implementing Partner for this project is the Directorate General for Industry and Productivity (DGIP) under the Ministry of Industry and Technology (MoIT)<sup>3</sup> who is responsible and accountable for managing this project, including the monitoring and evaluation of project interventions, achieving project outcomes, and for the effective use of the project resources. The project will be executed by the MoIT under the overall responsibility of the DGIP over the lifetime of the project. Direct day-to-day oversight of the project will be ensured by the GDP.

The Project Board (PB, also called Project Steering Committee) is responsible for making management decisions for the project including agreeing the annual project work plan, in particular when guidance is required by the Portfolio Manager and where important issues related to adaptive management need to be discussed and agreed. It plays a critical role in project monitoring and evaluations by assuring the quality of these processes and associated products, and by using evaluations for improving performance, accountability and learning.

The Project Board contains three distinct roles: Senior Executive (Chairman of Project Board) – MoIT – DG for Industry and Productivity, Senior Beneficiary (Executing Partner) – DG for Industry and Productivity and Senior Supplier (Implementing Partner) – UNDP. Members of the Project Board consist of key national governmental and non-governmental agencies, UNDP, and project partners as well as appropriate local level representatives. Representatives of other stakeholder groups may also be included in the Project Board as considered appropriate and necessary. The PB is meeting on a biannual basis or more frequently if required

The primary role of the Project Implementation Unit (PIU) is to oversee, support, administer and coordinate the implementation of the project on behalf of the Implementing Partner in line with the decisions taken by the Board. The planned setup of the PIU includes the Project Manager and a Project Associate.

### 3.5 Project Timing and Milestones

The project document was signed on 6 July 2017, the Inception Workshop was held on 12 December 2017. The planned closing date of the project is July 2022, which means a project lifetime of 5 years.

The multi-year workplan includes a tight program for all activities to be carried out under the 5 project outcomes. There is a focus on the regulatory framework, capacity building and implementation of the demonstration projects in the first half of the project, work in the second half is focusing on replication and awareness raising. The Terminal Evaluation is planned to be carried out 3 months prior to the end of the Project.

### 3.6 Main Stakeholders

According to the Project Document, the main project stakeholders include:

- Directorate General of Industry and Productivity (DGIP) under the Ministry of Industry and Technology (MoIT): the DGIP is serving as the national implementing agency of the TEVMOT project and is also the main stakeholder to contribute to the development and to ultimately manage the market monitoring system under consideration.

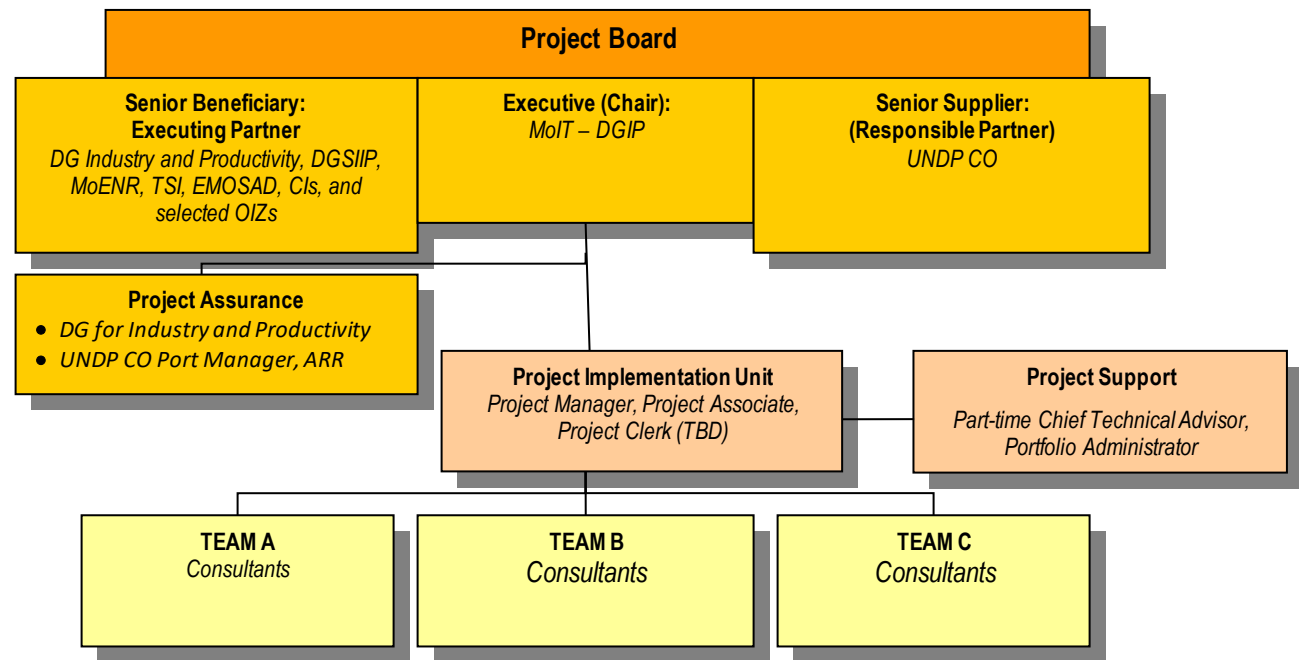
---

<sup>3</sup> At the time of CEO endorsement, the directorate was called Directorate General of Productivity (DGP) under the Ministry of Science Industry and Technology (MoSIT).

- Directorate General of Safety and Inspection of Industrial Products (DGSİİP) under MoIT: is responsible for product safety and implements the market surveillance programs for EE electric motors that enter the Turkish market.
- Turkish Small and Medium Enterprises Development Organization (KOSGEB): provides services and support to Turkish SMEs. KOSGEB has experience with EE motors through its pilot project in Kayseri OIZ.
- Association of Turkish Electric Motor Manufacturers (EMOSAD): represents about 95% of Turkish manufacturers as its member, including WAT Motor (Arçelik AS), GAMAK (Gamak Machinery Industry Inc.), Volt Motor (Volt Electric Motor Industry and Trade Inc.), Emf Motor (Emf Motor San. Ve Tic. A.). Ş.), Miksan Motor (Miksan Motor Industry and Trade Inc.), Femsan Motor (Femsan Electric Mot. San. Tic. A.Ş.), Elsan Motor (Elsan Electric Industry and Trade Inc.), Aemot (Aem Electric Motors Ind. Trade Inc.), ELK Motor (ELK Motor Industry and Trade Inc.), KSB (KSB Pump Armature Industry and Trade Inc.) and Omega Motor (Omega Motor Industry Inc.).
- Turkish Standards Institution (TSI): is the Turkish standardization body and provides the standards aimed at enabling industrialists to produce goods and services in compliance with rules, laws, codes and standards in Turkey.
- Energy Efficiency and Management Association (EYODER): an association of energy managers and Turkish ESCO companies, with around 80 members at the moment.
- Chambers of Commerce (Ankara, Istanbul): set up and operate Organized Industrial Zones (OIZs)
- Organized Industrial Zones (OIZs): are entities that manage and maintain infrastructure within a designated area where SMEs can operate. OIZ managers provide the administration for such services including the maintenance of factory buildings, utilities and roads. Provision of electricity to the SMEs at a lower rate is included in the OIZ services. In many cases, the OIZs generate their own electricity for supplying to the OIZ tenants. In addition to receiving revenues from SMEs to administer and maintain the OIZs, the OIZs also generate revenue from electricity sales and receive also some government support.
- Energy Management Units (EMUs) within OIZs: OIZs which accommodate more than 50 SMEs need to have their own EMU. The EMUs provide assistance and advice on all energy related issues, but mostly on energy efficiency aspects.

The following figure from the Project Document shows the Project Organization Structure.

Figure 1: Project Organization Structure



## 4. FINDINGS

### 4.1 Project Strategy

#### 4.1.1 Project Design

The objective of the project is the reduction of greenhouse gas emissions associated with the operation of inefficient motors in the industrial sector through the increased use of EE motors. In order to achieve that, the project has been structured in 5 different components:

- **Component 1: Strengthened legislative and regulatory and policy framework for EE motors in Turkey:** the component will lead to the outcome of strengthened policies, regulations and standards that are applicable to EE motors and harmonized with the EU commission regulation (EC) number 640/2009 that is designed to increase the energy efficiency of the electric motors. A direct benefit of the GEF project to the Government of Turkey will be its strengthened capacity to adopt EU directives that will continually improve the efficiency of electric motors.
- **Component 2: Capacity building for relevant stakeholders to promote the benefits of EE motors:** the component addresses the barriers associated with the need for improved capacity within the local EE motors manufacturing industrial sector, OIZs and their EMU management personnel and industrial SME end-users. The intended outcome of this component will be the improved capacity of these relevant stakeholders to promote the benefits of EE motors.
- **Component 3: Upgraded Turkish Standards Institute (TSI) test laboratory and strengthened monitoring, verification and enforcement:** the component addresses the barriers associated with the need for improved capacity to undertake market surveillance programs related to electric motors. The intended outcome of this component is to have upgraded motor testing capacities of TSI and a strengthened program for monitoring, verification and enforcement of compliance with eco-design implementing measure 640/2009 (or future amendments).
- **Component 4: One-stop-shop for financial support mechanisms:** Outputs of this component will lead to an outcome of improved SME access to available financial mechanisms and additional de-risking measures that will facilitate an increase in investments in energy efficient electric motors within industrial SMEs. Project resources in this component will be focused on building the capacity of the OIZs and its EMU to become lead entities in managing a motor replacement programme that would include a one-stop-shop for financial support mechanisms for industrial SMEs. Project resources used towards building EMU capacity will enable them to comprehend and prepare an “efficient motor assessed potential” or EMAP that will provide an assessment of the potential motors to be replaced within an industrial SME. With an EMAP in place, the SME can target certain motors for a standard motor testing report (SMTR) that will provide recommended improvements not just to the electric motor itself, but to the entire electric motor drive system.
- **Component 5: Knowledge management and M&E:** This component is mainly focused on the management of knowledge that will sustain EE motors amongst stakeholders in manufacturing and sales of EE motors, intermediaries such as the OIZs and EMUs to manage motor replacement programmes and the SME end users in the industrial sector. The intended outcome of this component will be the increased availability of EE motor information that raises stakeholder awareness of the benefits of EE motors and sustains market transformation.

The components are well-structured and are a direct response to the main barriers identified during the project preparation phase. The various activities listed under each of the components clearly contribute to the outputs and outcomes defined for the 5 components.

The project design has 2 very distinct features, which are important for the implementation of the TEVMOT project. First, it is structured in a demonstration and a replication phase. In the demonstration phase, which was supposed to last from start of the project until end of year 3, a total of 500 SMEs were planned to be supported. Out of this group of 500 SMEs, 100 early adopters were supposed to get full support in the necessary audits and replacement of inefficient motors, whereas the remaining 400 SMEs would only receive support for technical assistance. By supporting these 500 SMEs, around 7,600 motors should have been replaced. The replication phase would have built on the results of the demonstration phase and aimed at replacing 10,000 motors per year, from year 3 onwards, adding up to 30,000 motors in the replication phase.

With these challenging targets for the replication phase, a timely execution of the demonstration phase was key to project success. Unfortunately, a number of events delayed the implementation of the project. This includes organizational changes within the MoIT as well as in the DGIP and considerable time spent with KOSGEB on agreeing on the financial support mechanism for the demonstration phase. In early 2020, the effects of the COVID-19 pandemic led to further delays in implementation. Most of these events were outside of the influence of the PIU, however, the PIU could have pushed forward the audits in SMEs as well as the Motor EE Investment Plans (MEEIPs) while establishing the financing mechanism for the demonstration phase. As a result, the project is now at the end of year 3 with no demonstration projects implemented so far. This delay will obviously have a serious impact on the replication phase of the project (more details on that topic can be found in section 4.1.2).

The second distinct feature of the TEVMOT project is the establishment of one-stop shops for industrial SMEs to implement motor replacement programs. Energy Management Units (EMUs) of OIZs have a central role and once the one-stop shop is established, the EMUs will be able to charge service fees to continue to offer services. The one-stop-shop will allow the EMU to identify the potential for electric motor replacements, design a replacement plan for electric motors and assist and facilitate access to available financial products. The foundation to increase demand for financial support mechanisms will be the involvement of the EMU within the OIZ who will be enabled by the Project to provide guidance to industrial SMEs on best approaches to implementing an electric motor replacement program. 4 potential financing structures were identified in the ProDoc: (i) direct finance to the SME; (ii) portfolio finance by OIZ; (iii) vendor finance by manufacturer; and (iv) lease.

Interviews with various stakeholders during the MTR show that the structures identified in the ProDoc are still valid, with direct finance to the SME and portfolio finance by the OIZ being the most realistic approached to lead to success. Whereas the project design was appropriate and made the right suggestions to overcome the barriers identified, actual decisions in the Projects led to pursuing only the financing opportunity with KOSGEB rather than establishing a one-stop-shop (for details see section 4.1.2).

The ProDoc includes an increase of the test capacity of the TSI laboratory, which was limited at 90 kW before start of the project. The planned increase will allow testing of motors between 90 and 375 kW. The result of the 2015 motor inventory showed that 91.6% of the motors had a capacity of up to 90 kW, whereas only 8.4% of the motors had a capacity of more than 90 kW. The average motor size in the survey was 42.5 kW. With a grant support of US\$ 1.2 million, around one third of the total GEF funding is spent on the increase of the test capacity of the TSI laboratory. Although there is no clear

correlation between the size of a company and the capacity of motors installed in these companies, it is likely that only a limited share of motors to be installed in SMEs will have a capacity above 90 kW. It is therefore surprising that such a high share of project budget was assigned to an activity, which is not the core focus of the project. It would have been helpful in the project preparation phase to decrease the GEF budget for the test facility and increase the budget for Component 4.

#### 4.1.2 Results Framework

The Project Results Framework is well elaborated and includes well-defined indicators meeting the requirements of GEF to be “SMART” (Specific, Measurable, Achievable, Relevant, Time-bound). Targets both for MTR and Terminal Evaluation are clearly defined. For each of the Outcomes at least 2 indicators have been identified, which are adequate to measure the achievements made in project implementation. MTR targets take into account that there is a ramp-up period in the project and are usually between 25% and 40% of the end-of-project target.

All other indicators are clearly defined, and no modification is required.

## 4.2 Progress Towards Results

#### 4.2.1 Progress towards Outcomes Analysis

##### **Component 1: Strengthened legislative and regulatory and policy framework for EE motors in Turkey**

Component 1 consists in total of 3 different outputs:

- Output 1.1: Augmented baseline survey on industrial SME electric motor usage
- Output 1.2: Supportive policies for EE electric motors that are harmonized with international best practices
- Output 1.3: Strengthened institutional coordination mechanism

The original idea of Output 1.1 was to augment the results of a national survey on motor efficiency, which was carried out by DGIP in 2015/2016 and finalized in early 2018. The survey had a sample of around 900 industrial enterprises and covered a total of more than 93,000 motors with a power rate of 7.5 kW or above. With national estimates on the number of electric motors in Turkey ranging from 12 to 18 million, there was seen a need to increase the sample size of DGIPs survey in order to increase the confidence level for a national motors survey.

In 2018, consultants were hired to facilitate the establishment of a sustainable market monitoring system based on the national survey. By that time, the DGIP and the Ministry of Industry and Technology had taken the decision to not include any new or expanded electric motor surveys, but the DGIP would prefer to use information that is already available. It is not fully clear what the reason for that decision was, but the extensive effort in collecting information for the first survey definitely contributed to that decision.

In September 2018, a first series of meetings with key stakeholders was held to discuss the issue of baseline and data collection. Based on the meetings, the following proposal for a new market monitoring system was made:

- Monitoring the direct project impact i.e. energy savings resulting from the motor replacements supported directly by the TEVMOT project and the financial mechanism created under that.
- Bottom-up market monitoring by a stock model, for which the main data sources in the absence of a more comprehensive new survey were suggested to include:
  - The 2015 inventory data
  - Domestic production and sales statistics to be obtained regularly at annual intervals from EMOSAD and its members by using a specific questionnaire developed for that
  - The annual production, import and export statistics produced and managed by TUIK and the Ministry of Trade.
- Top-down market monitoring by calculating and monitoring the electricity intensity of the Turkish manufacturing industry by taking into account that electric motors have been estimated to account for over 70% of the total electricity consumption of the Turkish manufacturing industry. Such top-down analysis was also seen useful for verifying and cross-checking the results of any bottom-up analysis.

As regards the suggested first level of market monitoring (monitoring the direct project impact of the TEVMOT project), the formulation and selection of individual projects to benefit from the planned financing mechanism of the TEVMOT project hasn't been done yet, therefore no monitoring database has been completed yet. Once the participating OIZs and SMEs have been selected, the direct GHG reduction impact of these investments can be calculated based on the methodology used in the ProDoc.

For monitoring and reporting the direct project impact, it is essential that after the OIZs and SMEs for the initial energy audits have been selected, information on their baseline electricity consumption and operational characteristics of the electric motors in use is collected at a level as accurate as possible. The records should be based, to the extent possible, on actual metering rather than estimates of electricity consumption from more aggregated figures. The investment proposals to be developed after the initial energy audits should be obliged to also include an adequate monitoring, reporting and verification (MRV) plan, by which the achieved energy savings can be monitored and the projected energy savings verified. Required metering and monitoring devices should be included into the investment plan, if required for implementing the MRV plan. The reported direct energy saving and GHG reduction impact of the project should at the end be based on actually monitored data rather than just projections made in the energy audit. A template for such monitoring reports shall be developed by the Project Team in order to secure consistency.

Regarding the bottom-up process, it turned out during the work of the consultants that 2015 inventory data that was not available as an actual database, but in Excel sheets, which significantly limited the possibilities for data analysis. Consequently, the data inventory (over 50,000 entries) was converted from Excel to SQL. The converted data was analyzed, and the results were presented and shared with the TEVMOT team. The analysis revealed quite significant gaps and inconsistencies within the initial motor data. While these gaps had been addressed by different statistical methods in completing the 2015 inventory report, these methods could not really be tracked down, since they were not documented and the persons working on them had already left the DGIP. This also meant that due to the identified gaps and inconsistencies, the 2015 inventory data could not really be used as an adequate and credible basis for structuring the baseline stock and defining its key operational characteristics for the GHG emission monitoring purposes of the TEVMOT project.

A questionnaire for obtaining the annual domestic production and sales statistics directly from EMOSAD members was completed and the questionnaire was also sent to EMOSAD. GAMAK, who is the biggest domestic producer with around 25% market share, refused to share numbers on

production and sales due to confidentiality reasons. As a consequence, also the other members of EMOSAD refused to share information. A main reason for this seems to be the current structure of EMOSAD, where the representative of one company is acting as the deputy president of EMOSAD, which reduces the willingness of members to share information within EMOSAD. There are different options to overcome this situation. One would be to hire a director, who has no ties to any of the companies represented in EMOSAD. Another option would be to hand over the data to a neutral third party (e.g. lawyer or notary public) with the task to merge data and only publish merged figures, which don't allow tracing back data to individual companies.

At the moment, a work plan for cooperation between EMOSAD and the TEVMOT project is under discussion. The work plan doesn't mention the issue of data collection, this needs to be added as a key contribution of EMOSAD.

In addition to the gaps identified, the 2015 inventory data is lacking information on average load and operating hours. Even if new accurate and adequately disaggregated information from new motor sales would become regularly available, the 2015 inventory data does not provide adequate information for estimating the average load and operating hours of the motors currently in use, which would be needed to convert the estimated motor capacity to their electricity consumption and related greenhouse gas emissions.

Developing a “top-down” market monitoring system by largely relying on the already existing and regularly collected production value and electricity consumption data from Turkish industry appears to be the most straight-forward solution taking into account the challenges faced in the bottom-up model. While the required GDP data at an aggregated level appears to be readily available from TUIK as well from the World Bank databases (as it concerns the “PPP corrected GDP data at constant prices”), getting annual electricity consumption and GDP data at a more specific sub-sectoral level would require some extra work and queries either with the MoIT Industrial Registry Database, the TUIK industrial statistics or the electricity consumption statistics collected by other entities such as TEVAS. However, it needs to be noted that the top-down approach is not without problems either but seems to be the most straight-forward solution for market monitoring.

Output 1.2 aims at the harmonization of Turkish policies supporting energy efficient electric motors with international best practice. In September 2018, a report was prepared comparing the existing EU regulations with the regulatory framework in Turkey. The report concluded that the regulatory framework at that time, specifically the Commission Regulation (EU) No 640/2009 of 22 July 2009 on implementing eco-design requirements for electric motors, is implemented through the Communiqué on the Eco-design Requirements of Electric Motors No: SGM-2012/2. At the time of the report, the new Commission Regulation (EU) 2019/1781 of 1 October 2019 laying down eco-design requirements for electric motors and variable speed drives pursuant hasn't been published yet and therefore was not included in the report. The new regulation covers smaller (120 W to 750 W) and bigger motors (375 kW to 1,000 kW) as well and requires efficiency class IE3 for motors between 0.75 kW and 1,000 kW by July 2021.

Based on the new regulation, a draft of the harmonized Turkish legislation has been prepared. Three different documents were prepared by a national consultant, partly revising existing legislation, partly drafting new requirements. Further steps for transposition and date of entry into force are to be decided and taken by MoIT.



Output 1.3 is focusing on project management, with the setting up of the Project Board (PB) and a Technical Working Group (TWG). Details on this output can be found in section 4.3.1 on Management Arrangements.

## **Component 2: Capacity building for relevant stakeholders to promote the benefits of EE motors**

Component 2 consists in total of 2 different outputs:

- Output 2.1: Technical assistance delivered for building the capacity of newly established Turkish electric motors manufacturers association (TEMMA)
- Output 2.2: Technical training workshops on designing and implementing EE motor replacement programmes

At the time of the preparation of the ProDoc, 6 prominent electric motor manufacturers in Turkey were in the process of forming the Turkish Electric Motor Manufacturers Association (TEMMA). In 2016, the association was registered under the name “Elektrik Motorları Sanayicileri Derneği” (EMOSAD) and now comprises the following 11 manufacturers: Wat Motor, GAMAK, Volt Motor, Emf Motor, Miksan Motor, Femsan Motor, Elsan Motor, Aemot, Elk Motor, KSB and Omega Motor.

Under Output 2.1 technical assistance was given to EMOSAD through a national consultant assignment, defining a strategic roadmap for the association. The report lists a number of opportunities for EMOSAD, including:

- Strengthening of dialog with other public stakeholders on the regulatory framework
- Inform the public authorities and the electric motor users on international obligations regarding the climate change and the role of electric motors under the climate change obligations
- Establish supportive platforms for electric motor users to accelerate transformation to EE motors
- Establish its own vocational training platform which can train potential candidates for the workforce in the sector and members already working in the sector
- Provide consultancy services in national and international projects, by providing experts from member companies

The report also touches upon the delicate topic of collecting information from members. An independent structure for collecting information from the sector is suggested as this would allow providing information without damaging the secrecy and privacy of enterprises. Also, this would make sector wide information available. The report doesn't provide information in detail on how this can be arranged.

The report does not touch the issue of leadership in EMOSAD, which is currently a hurdle for effective work of the association. The current management of EMOSAD (deputy president) is also working for one of the member companies. Interviews during the MTR gave the impression that impartiality is not given, which restricts the willingness of other member companies to share information, such as data on motor sales by energy efficiency categories.

Whereas 3 of the key motor producers are still active with the TEVMOT project (Wat Motor, Volt Motor and Aemot), there hasn't been any contact with GAMAK over almost 2 years. GAMAK was very active in the beginning, but then showed no interest in the activities of the project. Hence, the co-financing

commitment made by GAMAK (US\$ 5 million in-kind contribution) will not materialize and the Project needs to secure replacement.

Output 2.2 focuses on providing technical training workshops on designing and implementing EE motor replacement programmes. A total of 20 technical training workshops on EE motor replacements are planned to be carried out, up to now, a total of 5 workshops was carried out.

An additional 10 EE motor replacement training workshops and seminars targeting OIZ management and EMU personnel, EECs, and industrial SME end-users are supposed to be carried out. Due to delays in selecting OIZs and SMEs, these workshops haven't been carried out so far.

International consultants were hired to prepare technical material and training documents to be used in these workshops and trainings. Due to the delays in implementing the pilot phase, documents are under preparation or only available as drafts.

### **Component 3: Upgraded Turkish Standards Institute (TSI) test laboratory and strengthened monitoring, verification and enforcement**

Component 3 consists in total of 3 different outputs:

- Output 3.1: Completed assessment of Monitoring, Verification and Enforcement (MV&E) needs
- Output 3.2: Upgraded electric motor testing facility
- Output 3.3: Developed plans for enforcement and market surveillance

For the work under Output 3.1 an assessment of the needs of DGSIIIP for capacity building in the field of market surveillance of industrial energy using products for compliance with eco-design requirements was carried out by an international consultant. The assignment also included the conformity assessment infrastructure for testing of electric motors for eco-design requirements under the relevant EU regulation and delivery of necessary training for MoIT and selected conformity assessment bodies.

The assessment confirmed that the ministry core team staff at DGSIIIP is already close to, and in most cases better than the equivalent staff in EU market surveillance authorities. This is attributed to the wide experience that the Ministry core team staff have of dealing with TSE compliance test reports and comparing the contents of those with the performance claims in the suppliers' technical documentation. Further improvement was identified in increasing technical knowledge of electric motors and the ways in which their performance can be tested in a suitable laboratory. For city-based sector-specialist inspectors further training on making examinations of technical documentation that suppliers of motors are obliged to supply under the EU regulation was suggested. Based on these findings, a training program was designed. The training was held in April 2019 as a 3-days training session for staff of MoIT – DGSIIIP) and city/regional inspectorate staff. A total of 30 persons participated in the training sessions.

Before the start of the TEVMOT project, the TSI laboratory was only equipped to carry out tests for motors of up to 90 kW. Under Output 3.2, the capacity for testing was increased to a capacity of 375 kW, the upgrade was finalized in December 2019. The contribution of the TEVMOT project was US\$ 1.2 million, TSI provided significant co-financing of around US\$ 1.43 million.

With a grant support of US\$ 1.2 million for the upgrade of the testing facility, around one third of the total GEF funding is spent on the increase of the test capacity of the TSI laboratory, which allows the laboratory to test motors between 90 and 375 kW. The result of the 2015 motor inventory showed that 91.6% of the motors had a capacity of up to 90 kW, whereas only 8.4% of the motors had a capacity of more than 90 kW. It is also worth noting that the survey for the 2015 inventory covered around 900 industrial enterprises, whereas the focus of the TEVMOT projects is SMEs. There is no clear correlation between the size of a company and the capacity of motors installed in the company and SMEs in certain sectors (e.g. milling) will use motors with a capacity above 90 kW. However, it is surprising that such a high share of project budget was assigned to an activity, which is not the core focus of the project. Interviews during the MTR did not give a clear argumentation for the inclusion of this specific output in the Project; however, it was indicated that this was a requirement on the political level to support the TEVMOT project. Taking into account that only 20% of the grant funding for the laboratory is available for supporting the implementation of the demonstration projects, a more balanced distribution of funds between these outputs would have been advisable.

Under Output 3.3, a motor testing program for new motors for the purpose of upgrading the market monitoring and surveillance strategy of DGSIP was developed. Under the testing program, a total of 130 motors will be purchased in 2020, 2021 and 2022, covering various motor sizes between 7.5 kW and 1,000 kW. The testing program was planned to start in 2019 but hasn't kicked-off yet. The reason given by the PIU was that the increase of the testing capacity has only been finalized end of 2019/beginning of 2020 and this was a prerequisite to start with the motor testing program. The majority of motors used in SMEs is well with the previous capacity of the testing facility (up to 90 kW) and the testing program only included a small number of motors with sizes above 90 kW. An earlier start of the test program could have been helpful in carrying out activities as per the original work plan, get experience with testing, allowing TSI to publish first test results, thereby putting focus on the topic of energy efficient motors.

#### **Component 4: One-stop-shop for financial support mechanisms**

Component 4 consists in total of 4 different outputs:

- Output 4.1: Completed efficient motor assessed potential (EMAP)
- Output 4.2: Standard motor testing reports and MEEIPs
- Output 4.3: Pilot EE motor replacements using "one-stop-shop" financing arrangements
- Output 4.4: Scaled up one-stop-shop for replacing inefficient electric motors

Component 4 is the core activity of the TEVMOT project. It includes the assessment of motor efficiency potential in selected OIZs and SMEs, the preparation of standard motor testing reports (SMTPs) and motor EE investment plans (MEEIPs) and the pilot EE motor replacements in selected OIZs and SMEs. Based on the successful implementation of the pilot motor replacements, a scaled-up one-stop shop for EE motor replacements will be established.

Work with OIZs started in 2018, when the selection process for OIZs to be included in the pilot replacement program was carried out. In Turkey, there are around 400 OIZs, out of which around 80 have Energy Management Units (EMUs). These OIZs were contacted by the PIU and 28 showed interest in participating in the TEVMOT project. Based on selection criteria included in the ProDoc, 7 OIZs best suited for the implementation of the pilot replacement program were selected.

From these 7 OIZs, around 150 SMEs provided letters of intent to participate in the pilot program. In meetings with the OIZs in 2018, SMEs voiced the strong request to receive support in the preparation

and implementation of the pilot motor replacements. Based on the feedback received, the PIU started discussions with KOSGEB to bring the institution on board.

KOSGEB, the Turkish Small and Medium Enterprises Development Organization, is aiming at supporting the economic and social development of SMEs through support schemes and services. During the PPG phase of the TEVMOT project, several attempts were made to get KOSGEB on board, as they are a key institution for SMEs. In the end, these attempts failed and KOSGEB rejected to participate in the project and provide a co-financing letter. Still, there were various references in the ProDoc towards cooperation with KOSGEB.

In 2016 and 2017, KOSGEB implemented a motor energy efficiency program in Kayseri OIZ before the start of the TEVMOT project. With the participation of a number of banks, SMEs were able to receive loans of up to TL 300,000 (at that time around US\$ 100,000) with interest of the loan being covered by KOSGEB. To qualify for this financial support, the SME needed to prepare an energy efficiency survey report for submission to KOSGEB. The SME then was supposed to apply to the bank for a loan, after approval the banks were supposed to assist in facilitating the investment with the inefficient motors delivered to the Kayseri OIZ for the purposes of recycling old equipment at a facility authorized by the Ministry of Environment and Urbanization.

The implementation of the Kayseri energy efficiency program was not successful and only a very small number of companies applied for support by KOSGEB. Although there was support in the identification of energy efficiency improvements, SMEs were not keen to take out loans for energy efficiency investments. Moreover, the requirement to return the old motor was seen as a hurdle. Based on this negative experience, the KOSGEB management showed little interest in participating in the TEVMOT project. It took until December 2019 to convince KOSGEB to join the TEVMOT activities, when KOSGEB signed a protocol with DGIP.

The time spent in discussions with KOSGEB led to considerable delays in the entire project implementation. Based on the feedback received from OIZs, which requested a clear structure of the financial support mechanism for the replacement of inefficient motors, the PIU decided to first finalize discussion with KOSGEB on the financial support mechanism and only then start with the implementation of the majority of activities under Component 4.

For the selection of pilot motors to be replaced, walk-through audits will be carried out in around 100 SMEs in the 7 selected OIZs. The objective of this first phase is to identify a list of up to 10 motors per company, which are worth being replaced during the pilot phase. The walk-through audit is aiming at identifying old motors, with a lot of operation hours per year, causing high operation costs, which have undergone rewiring. These are the best candidates to be replaced, as payback period will be short (expected less than 1 year without any financial support) and these replacements would be good case studies.

Based on the results of the walk-through audit, 1 to 3 motors per company would be selected in cooperation between the company owner, the EVD and the EMU of the OIZ. These motors will undergo an in-depth audit, which will result in Standard Motor Testing Reports (SMTPs). Based on these results, investment decisions will be made.

An important pre-requisite for this approach is well-trained EVDs and EMUs, which have the capability to quickly analyze the potential for motor replacement in a walk-through audit and can then prepare in-depth audit reports for selected motors. Training for these EE experts was about to start before the

MTR and was delayed due to COVID-19. The trainings will be held as a 4-days trainings course, with 3 days of classroom lessons and one day practical training in an SME.

The PIU took a deliberate decision to first finalize discussions with KOSGEB on the finance mechanism and only then carry out training sessions and walk-through audits. Retrospectively, it would have been better to initiate these activities immediately and not wait for finalizing the financing scheme. The 7 OIZ were selected long time ago, so it would have been easily possible to prepare the tenders for the EVDs and carry out the training activities. Also, the walk-through audits could have been started in at least some of the OIZs. This would have allowed collecting experience with the audits, improve the approach taken if and when necessary and be able to start with the in-depth audits. The audits to be carried out are independent of the financial support mechanism provided for implementing the motor replacements, therefore the delay in carrying out the audit work is a missed opportunity.

The financial support mechanism agreed upon with KOSGEB foresees that a grant support of 60% of the investment is given to SMEs in the pilot phase. In case a motor from a Turkish producer is being used, the grant support is increased to 75%. The grant is provided jointly by KOSGEB and the TEVMOT project, each covering half of the grant. Taking into account the short payback period of energy efficient motors (which is estimated at around 1 year by several stakeholders), a support of 75% seems to be excessive, as this will reduce the payback period to only 3 or 4 months. It was argued that this is based on KOSGEB's standard way of supporting SMEs, however, it should have been taken into account that a too high support in the pilot phase could lead to serious issues in the replication phase, when less (or no) funding might be available to provide grant contributions.

The ProDoc defines the development of a one-stop-shop mechanism within OIZs and the provision of stronger de-risking measures to assist industrial SME investment into EE motors as the key project output. So far, work under Outcome 4 has focused on setting up the support scheme for the demonstration phase. Initial talks were held with relevant partners (OIZs, IFIs, Credit Guarantee Fund (KGF), etc.) to setup the planned one-stop shop, but activities were not continued after decision by the ministry to proceed with KOSGEB for the demonstration phase. The discussions with KOSGEB not only led to considerable delays in setting up the scheme for the demonstration phase, but also didn't lead to any firm commitment for providing financing for the replication phase. The feedback received during the MTR was that results of the demonstration phase will be evaluated and then a decision about further funding (through ministry and/or KOSGEB) will be taken. This process will most likely take too much time for the TEVMOT project to produce decent results, therefore, restarting work on the one-stop-shop has highest priority for the Project Team.

4 potential financing structures were identified in the ProDoc: (i) direct finance to the SME; (ii) portfolio finance by OIZ; (iii) vendor finance by manufacturer; and (iv) lease. Interviews with various stakeholders during the MTR show that the structures identified in the ProDoc are still valid, with direct finance to the SME and portfolio finance by the OIZ being the most realistic approached to lead to success.

An immediate starting point for discussions on a sustainable finance mechanism is TurSEFF (Turkey Sustainable Energy Financing Facility), developed by EBRD. TurSEFF provides loans or leases through local banks to finance resource efficiency and renewable energy investments in industrial SMEs. For financing of up to € 250,000, an automated technology selector approach has been developed, which includes pre-approved technologies. Motors with efficiency class of IE3 or better are eligible for financing under TurSEFF. SMEs can directly apply for funding, which will be implemented through PFIs (Partner Financial Institutions) of TurSEFF.

In addition to direct financing of motor replacements in SMEs, portfolio finance by the OIZs should be investigated. The benefit of that approach is that OIZs and their EMUs can drive the preparation of motor replacements, this would allow to develop project bundles, where replacements are happening in a group of SMEs within one OIZ. From discussions with OIZs and other stakeholders it has been clarified that OIZs should have the capital to finance motor replacements. Alternatively or additionally, OIZs could bundle motor replacements in their OIZs and apply for funding at TurSEFF.

## **Component 5: Knowledge management and M&E**

Component 5 consists in total of 4 different outputs:

- Output 5.1: National EE electric motor database
- Output 5.2: Nationwide public awareness raising campaign for EE motors that targets the general public
- Output 5.3: EE motors website
- Output 5.4: Midterm Review and Terminal Evaluation

Work under Component 5 is focusing on knowledge management, awareness raising and Monitoring & Evaluation (M&E). Work under Output 5.1 is related to the discussions under Output 1.1. Up to now, no database has been developed due to lack of data. Action will be taken under Output 1.1 to receive data from EMOSAD on actual production and sale of motors produced in Turkey. This bottom-up approach will be merged with the top-down approach suggested by the international consultants according to their outcome of work under Output 1.1.

The public awareness campaign, which includes best practice and case study brochures and advertisements on the benefits of EE motors and the one-stop shop mechanism, is based on the outcomes of Component 4. As work is delayed, no results have been presented up to now. The delays are a missed opportunity, as success stories would have been extremely important for the replication phase. When designing the awareness campaign, all relevant stakeholders should be consulted (bilaterally or via a survey) on what the focus of the awareness campaign should be. Furthermore, it is suggested to monitor the effectiveness of the campaign every half year to see whether the campaign is successful or needs to be adjusted. Additionally, the campaign should target decision makers in the chain from manufacturers to SMEs rather than the general public.

When success stories are being prepared, it should be considered to select well-known companies for case studies. These can be used as “light-tower project”, which should have a positive impact on getting other companies interested in energy efficient motors.

Another key point in the awareness campaign is non-energy benefits of motor replacement, such as low maintenance costs or increase in productivity and quality. These should be presented together with the reductions in energy costs (example: [https://www.topmotors.ch/sites/default/files/2019-12/E\\_MB\\_30\\_Multiple\\_Benefits.pdf](https://www.topmotors.ch/sites/default/files/2019-12/E_MB_30_Multiple_Benefits.pdf))

The TEVMOT website has been established and can be reached at [www.tevmot.org](http://www.tevmot.org). The content of the website is fragmentary, with short paragraphs in some sections and a number of sections with no content (e.g. UNDP Project Team, incentives and support,...). The website is only available in Turkish. There is good activity on social media accounts established by the Project Team (Twitter, LinkedIn, Facebook, Instagram).

The MTR has started with a slight delay due to COVID-19. The Terminal Evaluation will be carried out 3 months prior to the end of the Project, the exact time is to be determined based on the actual end-date of the Project.

**Table 2: Progress towards Results Matrix**

<b>PROJECT GOAL: Reduction of greenhouse gas emissions associated with the operation of inefficient motors in the industrial sector through the increased use of EE motors</b>								
<b>Project Strategy</b>	<b>Indicator</b>	<b>Baseline Level</b>	<b>Level in 1<sup>st</sup> PIR (self-reported)<sup>4</sup></b>	<b>Midterm Target</b>	<b>End-of-project Target</b>	<b>Midterm Level &amp; Assessment</b>	<b>Achievement Rating</b>	<b>Justification for Rating</b>
<b>Project Objective:</b> To promote significant additional investment in industrial energy efficiency in Turkey by transforming the market for energy efficient motors used in small and medium sized enterprises.	Lifetime direct project CO <sub>2</sub> emission reductions from the replacement of inefficient motors with IE3 motors by end-of-project (EOP), ktonnes CO <sub>2</sub>	0	n/a	372	3,092	MTR level: 0 No motors have been replaced up to now.	<b>MU</b>	As the demonstration motor replacements haven't started yet, there are no contributions towards the indicators for the project objective. Delays are to a good part due to external factors, where the PIU only had limited influence (changes within MoIT and DGIP, lengthy discussions with KOSGEB). However, the PIU could have taken steps to start with training activities and audits before there was clarity about the financial support mechanism for the demonstration phase. This would have contributed to an earlier implementation of the first replacements. As a consequence, rating is MU.
	MWh of annual reduced electricity consumption in Turkey through the installation and use of EE motors installed during the Project by EOP	0	n/a	302,160	640,499	MTR level: 0 No motors have been replaced up to now.		
	% of SMEs with firm plans to procure and install EE motors by using the financial mechanism developed by the Project by EOP	>0.1%	n/a	1	5	MTR level: 0 Audits haven't started up to now, hence no SME with firm plans to procure and install EE motors.		
	Cumulative number of phased out inefficient electric motors taken into a recycling program by EOP	0	n/a	2,000	5,000	MTR level: 0 No motors have been replaced up to now, hence no motors have been phased out.		
<b>Outcome 1: Strengthened</b>	Number of completed national surveys on motors in the industrial sector in	0	n/a	1	1	MTR level: 1 It was decided by DGIP to not carry	<b>S</b>	Based on the decision of DGIP to not carry out another survey, the

<sup>4</sup> At the time of the MTR, only the 2019 PIR was available. The 2019 PIR included levels at 30 June 2018, all indicators were evaluated as "not set or not applicable".



legislative and regulatory framework related to both new and existing EE motors in Turkey	Turkey by Year 1					out a new/expanded electric motor survey, but to work with existing 2015 inventory data complemented by additional data to be collected. In Q4/2020 a survey to investigate the awareness of SMEs in terms of efficient motors will be carried out.		approach for the market monitoring system was modified. The bottom-up market monitoring will be based on the 2015 inventory data, complemented by domestic production and sales figures provided by EMOSAD plus import and export statistics produced and managed by TUIK and the Ministry of Trade
	Number of Turkish policies, regulations and standards applicable to motors harmonized with EU Eco-design standards by Year 1	0	n/a	1	2	MTR level: 1 A draft of the harmonized Turkish legislation to transpose the EU ecodesign regulation on electric motors (2019/1781) has been prepared and submitted to MoIT. The ministry has expressed its satisfaction with the drafts and will take further steps towards implementation. The relevant EU regulation will likely undergo a revision in 2021. The Project Team will assist in transposing the revised version in 2021.		The MTR target has been achieved. Further support of the ministry will be provided by the Project Team, thus also the EOP target will be achieved.
	Number of government officers who are involved with implementing policies and measures for EE motor replacement	0	n/a	10	10	MTR level: 10 Training on "Market Surveillance of EE motors and motor driven systems for		5 DGSIIIP staff and 5 DGIP staff took part in the training. Out of the total number of participants around 25%

	programmes by EOP					compliance with eco-design requirements" was carried out in April 2019, with a total of 31 participants.		were female.
<b>Outcome 2:</b> Improved capacity of relevant stakeholders to promote the benefits of EE motors	Number of electric motor manufacturers registered and engaged with promotional activities with an established national motor manufacturer association by EOP	0	n/a	3	6	MTR level: 3 3 motor manufacturers (Wat Motor, Volt Motor and Aemot) are actively participating, EMOSAD has been established in 2017 and is actively participating in the Project. Further expansion when agreement with EMOSAD signed.	HS	EMOSAD and 3 motor manufacturers are actively participating. Gamak, the biggest producer, has been active in the beginning, but hasn't been actively contributing for some time. Involvement of further companies is required to reach the EOP target.
	Number of attendees at 20 technical training seminars on EE motors that are targeted for manufacturers and end-users by EOP	0	n/a	250	1000	MTR level: 450 A series of technical training seminars were held in 2018 and 2020, with the majority of trainings held as OIZ info days in various OIZs. A total of 450 participants were counted, out of which around 15% were women.		8 technical training seminars (1 TEVMOT Technical Advisory Meeting and 7 OIZ Info Days) were held. In addition, visits to motor manufacturers were held and the Project Team participated in the EMOSAD board meeting in 2018.
<b>Outcome 3:</b> Improved capacity for monitoring, verification and enforcement of motors market transformation	Number of TSI personnel who are testing compliance with new EE motor eco-design standards by EOP	0	n/a	5	5	MTR level: 5 A total of 5 persons of TSI personnel are testing in TSI laboratory, including the upgraded test facility, which is covering motor sizes from 90-375 kW.	S	Although the new EE motor eco-design standard is not in place yet, TSI personnel is ready for testing motors with a capacity of up to 375 kW.

	Number of DGSIIIP personnel who are involved in PMSP for EE motors compliance in industrial SMEs by EOP	0	n/a	25	50	MTR level: 26 Training on "Market Surveillance of EE motors and motor driven systems for compliance with eco-design requirements" was carried out in April 2019, with a total of 31 participants (including Project Team).		4 DGSIIIP staff and 22 provincial inspectors took part in the training. Out of the total number of participants around 25% were female.
	Annual number of motors sent for testing at upgraded TSI motor testing facilities by EOP	0	n/a	10	250	MTR level: 0 Due to delays in upgrading the TSI motor testing facilities, no motors have been sent for testing, 40 motors are planned to be procured in 2020.		Changes in the organizational structure and delays in securing co-financing led to a delay in implementing the upgrade of the testing facilities. However, as the testing facility was able to test motors up to 90 kW, tests could have started earlier, and the MTR target could have been reached.
<b>Outcome 4:</b> One-stop shop improves industrial SME access to financing for EE motor investments	Number of motor energy efficiency investment plans (MEEIPs) for industrial SMEs in OIZs by Year 2 and EOP	0	n/a	500	2,408	MTR level: 0 Until the MTR, no audits were carried out and no MEEIPs were elaborated.	U	Due to discussions with the ministry and KOSGEB on financing of demonstration projects, activities under Outcome 4 started late. It was decided to wait with audits and MEEIPs until terms of financing were clarified, which was sub-optimal. An earlier start of audits would have helped to get more information on potential motor replacements, which could have been used for raising awareness and interest with SMEs, OIZs and financing institutions.
	Cumulative US\$ investments through an established "one-stop-shop" FSM by EOP	0	n/a	22.72 million	47, 92 million	MTR level: 0 As no motors were replaced until the MTR and one-stop-shop FSM hasn't been set up, no investments can be accounted towards the indicator.		
	% of SMEs where MEEIP investment is paid back in less than 24 months	0	n/a	75	90	MTR level: 0 As no motors were replaced until the MTR, no confirmation of		

						payback period can be given. Information collected during the MTR indicates that payback periods of around 1 year will be feasible.		Work on the FSM (Financial Support Mechanism) only focused on finding a solution for the demonstration phase. A decision was taken by the ministry to only follow the support scheme suggested by KOSGEB with 60% grants (75% for Turkish products). Initial talks were held with relevant partners (OIZs, IFIs, Credit Guarantee Fund (KGF), etc.) to setup the planned one-stop shop, but activities were not continued after decision to proceed with KOSGEB for the demonstration phase. Until the MTR, no concrete plans were made to setup the planned and required one-stop shop.
	Number of financial institutions involved with inefficient motor replacement programmes by EOP	0	n/a	3	6	MTR level: 0 Until the MTR, no financial institution was involved in the motor replacement program, financing in the demonstration phase is based on support provided by GEF and KOSGEB.		
<b>Outcome 5:</b> Availability of EE motor information that raises stakeholder awareness of the benefits of EE motors and sustain market transformation	Number of EE motors registered in national motors database hosted and maintained by the DGP by EOP	0	n/a	0	37,861	MTR level: 0 Not applicable, as zero target for MTR.	MU	The national motors database will include data on motors replaced within the Project. A monitoring system will be established, details need to be clarified between OIZs and DGIP.
	% of industrial SMEs who are aware of the benefits of EE motors by EOP	0	n/a	5	25	MTR level: 0 No survey has been carried out up to now, therefore no information available.		Awareness surveys are planned but haven't been realized up to now.
	Number of hits on the motors website by EOP	0	n/a	2,500	10,000	MTR level: 1,900 By the time of the MTR, 1,900 hits by 1,400 were counted on the website.		In addition to the website, social media accounts were established: <a href="https://twitter.com/tevmot">https://twitter.com/tevmot</a> <a href="https://www.linkedin.com/">https://www.linkedin.com/</a>

---

								<a href="https://www.facebook.com/tevmot/">company/tevmot/?originalSubdomain=tr</a> <a href="https://www.facebook.com/tevmot/">https://www.facebook.co</a> <a href="https://www.instagram.com/tevmot/">m/tevmot/</a> <a href="https://www.instagram.com/tevmot/">https://www.instagram.co</a> <a href="https://www.instagram.com/tevmot/">m/tevmot/</a> There is good activity on these social media accounts.
--	--	--	--	--	--	--	--	---

#### 4.2.2 Remaining barriers to achieving the project objective

The ProDoc listed a number of barriers for the implementation of the Project. All barriers are – to various degrees – still valid and further efforts need to address these barriers:

- The lack of importance of energy efficiency to most SMEs. Interviews with key stakeholders confirmed that this barrier is still valid. Increasing production, either quantitatively or qualitatively, was reported as the key focus of SMEs. Interruptions in the production process to replace motors or optimize production lines are rather seen as a risk than an opportunity. Awareness raising activities need to be started to contribute towards removing this barrier.
- The low level of awareness amongst SME personnel on the benefits of energy efficiency. When replacements in motors are being made, investment costs are the main decision factor, operation costs are hardly taken into consideration. Lack of results from demonstration projects makes it difficult to increase awareness with SMEs. Again, awareness raising activities are needed.
- The general lack of liquidity of SMEs to pay up front costs for energy efficient motor investments. As production has highest priority, there are limited funds available for investment into energy efficiency. The funding available for the demonstration phase will provide funding for some SMEs, however, a sustainable finance mechanism based on the one-stop-shop approach is necessary to start replication and create impact.
- SME aversion on the use of external engineers such as ESCOs and equipment suppliers to improve their energy efficiency. General SME perception is that engineers carrying out the audits may not offer the best solutions for their operations. In addition, they feel that there are higher risks of operational disruptions if the equipment replacement does not function as designed. Implementation of the audits for demonstration projects will be an important first step to overcome this barrier.
- Inefficient coordination in the implementation of the EE Law that slows the pace of legislative changes. Work of the Project has made good contributions to overcoming this barrier. The transposition of new EU ecodesign regulation on electric motors (2019/1781) has been finalized and transition is now in the hands of the ministry.

### 4.3 Project Implementation and Adaptive Management

#### 4.3.1 Management Arrangements

The LPAC Meeting was held on 10 January 2017, signature of the ProDoc was on 6 July 2017, the Inception Workshop was held on 12 December 2017, the Inception Report was issued in December 2017.

The Implementing Partner for this Project is the Ministry of Industry and Technology (MoIT), which is responsible and accountable for managing the project, including the monitoring and evaluation of project interventions, achieving project outcomes, and for the effective use of resources. The project is executed by the MoIT under the overall responsibility of the General Directorate for Industry and Productivity (GDIP). Direct day-to-day oversight of the project will be ensured by the GDIP.

The primary responsibility for day-to-day project implementation and regular monitoring rests with the Project Implementation Unit (PIU). The PIU develops annual work plans based on the multi-year work

plan, including annual targets at the output level to ensure the efficient implementation of the project. The PIU ensures that the standard UNDP and GEF M&E requirements are fulfilled to the highest quality. This includes, but is not limited to, ensuring the results framework indicators are monitored annually in time for reporting (i.e. GEF PIR), and reporting to the Project Board at least once a year on project progress. The PIU consists of a Project Manager and a Project Associate, the office of the PIU is located in the MoIT. The PIU is in daily contact with DGSRP and has weekly and monthly meetings to discuss progress and take necessary decisions.

The Project Board (PB, also called Project Steering Committee) is responsible for making management decisions for the Project including agreeing the annual project work plan, in particular when guidance is required by the Portfolio Manager and where important issues related to adaptive management need to be discussed and agreed. Key members of the PB are DGIP and UNDP, other governmental and non-governmental agencies and project partners are invited as considered appropriate and necessary. The PB is supposed to meet at least twice per year.

Since project start, 3 meetings have been held by the PB, in January 2018, January 2019 and February 2020. The number of participants is varying considerably, from 11 participants in the 2020 meeting (only participants from DGIP and UNDP) to more than 50 participants in the 2019 meeting. In each of the meetings, the activities implemented in the previous year are reviewed, followed by discussion and approval of work plan and budget of the current year.

With the Project approaching the end of year 3, the Project is now coming to a phase, where stronger and more regular guidance by the PB is necessary. This is especially the case for Component 4, where activities are considerably delayed and the Project runs a serious risk of not achieving the EOP targets. Surprisingly, the 2020 PB meeting didn't mention any delay in project implementation and impacts on project targets apart from potential impacts of COVID-19 on specific activities. As in the other PB meetings, activities planned for the year were discussed, but there was no reflection whether these activities are sufficient to reach the overall project targets or whether adaptive management decisions need to be taken.

Stronger guidance by the PB is required in this critical phase and it is recommended that the PB meets at least twice a year. Apart from reviewing progress and implementation of activities, a more strategic, forward-looking discussion and decisions are required. Key project targets/indicators and ways of achieving the targets should be discussed in these meetings, rather than only focusing on the activities to be carried out over the coming months.

The PB meetings have seen varying numbers of participants. It is recommended that all relevant stakeholders are invited to the PB meeting in January of each year. Further PB meetings should only be held between DGIP and UNDP.

Apart from discussions with KOSGEB on the financing mechanism for the demonstration phase, various structural changes were a challenge for the Project. Most of the ministries were merged or changed including the project implementing partner, which is now called Ministry of Industry and Technology (MoIT). Moreover, the General Directorate of Productivity who has been the Executing Agent is not separate and unique body anymore and was merged with the General Directorate of Industry to the General Directorate of Industry and Productivity (DGIP) and was renamed in April 2020 to Directorate General Strategic Researches and Productivity (DGSRP). The structural changes also led to changes in persons responsible for and involved in the Project, which led to considerable delays.

### 4.3.2 Work planning

Work planning is done through Annual Work Plans (AWPs), which are prepared by the Project Manager and then presented to and approved by the Project Board. The Annual Work Plan also includes the budget envisaged to be spent for the activities carried out within one calendar year.

The AWP defines detailed activities for each output under each of the 5 components, planning is done by months. The AWP also allows the identification of time-critical activities and displays recruitment/mobilization phases and activities for purchasing goods and services. The AWP has an excellent structure and is sufficiently detailed to manage the implementation of the Project.

Towards the end of the MTR, the PIU presented an action plan helping to overcome the challenges the project is facing and listing activities to be carried out until July 2020. These activities focus on the following topics:

- Work with EMOSAD as a key stakeholder to increase their contribution to the Project, focusing on data collection and motivating their members towards a stronger involvement.
- Increase promotion activities for efficient motors in parallel to implementing the demonstration projects, rather than waiting from demos to be finalized.
- Implement the motor sampling plan agreed with GDSIIP, with 50 motors being tested each year in 2020, 2021 and 2022 at TSI.
- Intensify work with OIZs and their EMUs to create additional demand for motor audits.
- Establish contacts with national and international financing institutions and potential financing partners to prepare one-stop-shop financing solutions for replication.

The action plan presented is a good step of adaptive management and clearly identifies the necessary action. More focus should be given on action under Outcome 4, as this is the key Outcome in the entire project. Establishing the one-stop-shop financial mechanism will be the key to ensure sustainability of the project. It is recommended to hire a short-term international consultant assisting in the establishment of the one-stop-shop.

### 4.3.3 Finance and co-finance

The following table gives an overview on the project budget and expenditures in the years 2018 and 2019.



**Table 3: Project Budget and Expenditures 2018-2019 (in US\$)**

Outcome	2018		2019		Total disbursed 2018-2019	Total planned for project	Total remaining
	Actual	Planned	Actual	Planned			
Outcome 1	66,858	117,453	33,649	80,543	100,507	267,867	167,360
Outcome 2	22,586	63,973	36,730	47,480	59,316	156,920	97,604
Outcome 3	16,043	49,010	1,248,764	1,212,920	1,264,807	1,332,943	68,136
Outcome 4	49,485	153,588	91,196	650,645	140,681	1,562,243	1,421,562
Outcome 5	65,823	68,071	40,670	62,813	106,493	331,568	225,075
Project Management	69,935	39,314	27,807	36,750	97,742	178,460	80,718
Total	290,729	491,407	1,478,816	2,091,150	1,769,545	3,830,001	2,060,456
Total (Cumulative Actual)	290,729	491,407	1,769,545	2,582,557			
% of Planned Disbursement (pa)	59.2%		70.7%				
% of Planned Disbursement (cum.)	59.2%		68.5%		Overall disbursement		46.2%

The Project started in July 2017, but only minor activities were carried out in 2017. Total expenses in 2017 were US\$ 38,530, these were added to expenses in 2018. The table confirms the delays in project implementation described in the previous chapters. In 2018, only around 60% of planned funds as per the ProDoc were actually used, biggest differences between actual and planned were seen in Outcomes 1, 2 and 4. The situation improved in 2019, when actual disbursement increased to 70%. The biggest contribution was under Outcome 3, where the testing facility was implemented with a contribution of US\$ 1.2 million from the project budget. Overall actual disbursement increased to 68.5% of planned disbursement.

A more detailed analysis of the expenses gives the following results in terms of cost-effectiveness:

- The daily rates charged both by national and international consultants are in general lower than the assumptions made in the budget of the ProDoc. This is contributing to keeping costs low.
- For components 1, 2 and 5 contractual services of companies were replaced by services of contractual services of individuals. This led to lower costs due to lower rates charged by individuals.
- Various stakeholders commented positively about the work provided by the international consultants. This was especially the case for the Chief Technical Advisor, who is an asset for the project. This confirms effective use of funds for international consultants.
- Costs for training, workshops and conferences have seen some shifting between the budget years but are all within the approved budget.
- DGIP commented that in some cases the output of work of national consultants does not reach standards required for a GEF/UNDP project and more care should be taken in defining ToRs and evaluating the capacity of consultants before they are hired.

Overall, it can be concluded that funds were used in a cost-effective way.

The project has received co-financing commitments from UNDP, MoIT, TSI, the Chambers of Commerce of Ankara and Istanbul as well as 4 motor manufacturers. Total co-financing commitment at endorsement was US\$ 28.34 million, out of which US\$ 3.58 million were in cash and US\$ 24.76 million in-kind. The following table gives an overview on co-financing commitments at endorsement.

**Table 4: Co-financing at endorsement**

Sources & type of co-financing	Cash US\$	In-kind US\$	Total US\$
GEF Agency /UNDP	80,000	220,000	300,000
MoIT (DGIP, DGSIP)	500,000	2,000,000	2,500,000
TSI	3,000,000	350,000	3,350,000
Ankara Chamber of Industry (ACI)		2,000,000	2,000,000
Istanbul Chamber of Industry (ICI)		190,000	190,000
Gamak (Motor Manufacturer)		5,000,000	5,000,000
ARÇELİK (Motor Manufacturer)		5,000,000	5,000,000
VOLT (Motor Manufacturer)		5,000,000	5,000,000
AEMOT (Motor Manufacturer)		5,000,000	5,000,000
<b>Total</b>	<b>3,580,000</b>	<b>24,760,000</b>	<b>28,340,000</b>
Sources & type of co-financing	Cash US\$	In-kind US\$	Total US\$
GEF Agency /UNDP	80,000	220,000	300,000
MoIT (DGIP, DGSIP)	500,000	2,000,000	2,500,000
TSI	3,000,000	350,000	3,350,000
Ankara Chamber of Industry (ACI)		2,000,000	2,000,000
Istanbul Chamber of Industry (ICI)		190,000	190,000
Gamak (Motor Manufacturer)		5,000,000	5,000,000
ARÇELİK (Motor Manufacturer)		5,000,000	5,000,000
VOLT (Motor Manufacturer)		5,000,000	5,000,000
AEMOT (Motor Manufacturer)		5,000,000	5,000,000
<b>Total</b>	<b>3,580,000</b>	<b>24,760,000</b>	<b>28,340,000</b>

After the start of the Project, the PIU was able to secure additional co-financing commitments. The Ministry of Energy and Natural Resources (MoENR) committed to an in-kind contribution of US\$ 1 million, funding will be used for strengthening the regulatory framework, improve the financial support mechanism, develop capacities of ESCOs and contribute to training and public awareness activities. EMOSAD committed to contribute US\$ 100,000 in kind, focusing on promotion of EE motors in SMEs, participation in development of governance and information infrastructure in electric motor industry, support investments for production of high EE motors, development and delivery of training and development of the financial support mechanism. EYODER (Association of Energy Efficiency and

Management) committed to contribute US\$ 100,000 in kind, focusing on contributing to the preparation of trainings and workshops, assisting EMUs in conducting motor assessments and organization of information and promotion meetings.

With these additional contributions, total co-financing is US\$ 29.54 million, out of which US\$ 3.58 million are in cash and US\$ 25.96 million are in-kind.

By the time of the mid-term review, total co-financing amounted to US\$ 13.43 million, around 45.5% of expected co-financing over the lifetime of the project. This is a decent result and shows that stakeholders are committed in providing the required support. Cash co-financing is at US\$ 1.2 million, which is 33.5% of the entire cash co-financing committed, in-kind contributions are at US\$ 12.23 million or 47.1%.

There are a few comments to be made on co-financing:

- TSI had claimed total co-financing by the MTR of US\$ 2.6 million. This included US\$ 800,000 investment into the 0.75 to 90 kW range test system, US\$ 180,000 for operation of the 0.75 to 90 kW range test system and US\$ 190,000 for project staff during project development. These costs either incurred before the start of the project or are not directly related to the project and can therefore not be considered. The eligible co-financing of TSI is therefore US\$ 1.43 million, funding was mainly used for upgrading the existing laboratory and auxiliary equipment investment.
- The cash contribution of the government has been zero up to now. However, the funds to co-finance the demonstration projects are reserved and will be paid out through KOSGEB as defined in the protocol signed between the ministry and KOSGEB. Cash contribution will be at least US\$ 0.5 million.
- The in-kind contribution of the government is mainly based on staff provided for project implementation, provision of office and furniture for the PIU and costs for workshops, seminars and meetings. Total in-kind contribution is amounting to US\$ 1.1 million.
- As there were only minor cash contributions by UNDP until now, the figure reported is zero by the MTR. The majority of cash contribution will be provided in 2020 and 2021.
- In-kind contributions provided by the Ankara Chamber of Industry and Istanbul Chamber of Industry mainly included time of staff involved in the project, costs for organizing meetings and events and staff travel costs.
- Co-financing from Arcelik, Volt, and Aemot, currently stands at \$9.3 million in-kind contribution. All 3 companies provided staff mainly working on research & development as well as production engineering of energy efficient motors. Aemot invested into a new test laboratory, allowing the company to test motors between 0.12 – 450 kW.
- Gamak, the largest motor manufacturer in Turkey, has stopped cooperation with the project. Therefore, the co-financing committed (US\$ 5 million in-kind) will not materialize. In cooperation with EMOSAD, the Project Team should work on finding replacement for that co-financing commitment from other motor manufacturers.

The documents provided by motor manufacturers stated extremely high numbers of staff providing co-financing contributions towards the project (up to 20 persons working full time). This was argued by the efforts of companies working on high efficiency motor development. As the entire MTR was only held remotely and no site visits were made, this contribution should be revisited during the terminal evaluation.

All other in-kind contributions seem to be based on fair evaluations of the contributions provided by the various stakeholders.

The following table gives a summary on co-financing at CEO endorsement and at MTR.

**Table 5: Co-financing at CEO endorsement and at MTR**

Sources & type of co-financing	Name of co-financer	Amount confirmed at CEO Endorsement US\$	Actual amount contributed at MTR US\$
<b>CASH</b>			
GEF Agency	UNDP	80,000	0
Government	MoSIT (DGP, DGI, DGSIIIP)	500,000	0
Government	TSI	3,000,000	1,200,000
	<b>TOTAL CASH</b>	<b>3,580,000</b>	<b>1,200,000</b>
<b>IN- KIND</b>			
GEF Agency	UNDP	220,000	80,000
Government	MoSIT (DGP, DGI, DGSIIIP)	2,000,000	1,099,285
Government	TSI	350,000	1,430,000
NGO	Ankara Chamber of Industry (ACI)	2,000,000	25,165
NGO	Istanbul Chamber of Industry (ICI)	190,000	70,044
Private sector	Gamak (Motor Manufacturer)	5,000,000	N/A
Private sector	ARÇELİK (Motor Manufacturer)	5,000,000	2,592,220
Private sector	VOLT (Motor Manufacturer)	5,000,000	4,681,786
Private sector	AEMOT (Motor Manufacturer)	5,000,000	2,005,431
<b>ADDITIONAL IN-KIND CO-FINANCING LEVERAGED</b>			
Government	YEGM (EVÇED)	1,000,000	165,063
NGO	EMOSAD (Turkish Electrical Motor Manufacturers Association )	100,000	52,389
NGO	EYODER (Association of Energy Efficiency and Management)	100,000	29,500
	<b>TOTAL IN-KIND</b>	<b>25,960,000</b>	<b>12,230,883</b>
	<b>TOTAL CO-FINANCING</b>	<b>29,540,000</b>	<b>13,430,883</b>

#### 4.3.4 Project-level monitoring and evaluation systems

The project's Monitoring and Evaluation (M&E) system consist of the indicators and outputs of the project's results framework. As mentioned in chapter 4.1.2, the indicators are adequate to monitor achievements of the project.

The M&E Plan in chapter 6 and Annex B of the ProDoc gives clear guidance on the methods, frequency and responsibilities to collect information and data for monitoring Project progress. Responsibility for the key indicators is basically split between the Project Manager and project consultants to be hired for monitoring.

Discussions with the PIU during the MTR showed that the M&E system is not properly set up at the moment. To a certain extent, this is due to the delays in implementation of Component 4, which would generate figures for core indicators such as kilotonnes of CO<sub>2</sub> reduced or MWh of annual reduced electricity consumption. As implementation is delayed, there was not real need to set up a system, which ensures that relevant data from OIZs and SMEs is being supplied to the PIU. However, it is important to use the M&E system as an input for strategic decisions. As the project is now in its second half of lifetime, it is important to set up a proper M&E system, which is providing feedback to the PIU and the PB and allows educated decisions.

For a number of indicators, it is mentioned in the ProDoc that project consultants will be hired to generate information and data. To the extent possible, this should be replaced by a strengthened PIU that includes a full-time awareness raising and monitoring and evaluation national consultant, as this would allow constant updating of indicators, which is an important input for decisions to be taken. During the MTR the PIU has indicated that for the monitoring of electricity savings a database will be developed under the guidance of PIU in the form of excel sheets and the figures on electricity savings will be regularly collected by PIU during the project implementation. This is a good step of adaptive management compared to the ProDoc, where the data collection was supposed to be carried out by a project consultant.

The performance of the PIU can be evaluated as good. Changes in the organizational structure of the ministry and relevant Directorates General, discussions to involve KOSGEB in the project or challenges due to COVID-19 were well managed by the PIU. The PIU showed strength in planning and carrying out short-term activities and has good control of the project. While focusing on short-term priorities, the PIU somehow lost the overall targets out of sight. There is no regular review mechanism of EOP targets with actual performance, hence corrective actions and adaptive management don't take place as required. A good example is work on Outcome 4, where all work has been focused on preparing and implementing the demonstration phase. There was little attention given to the replication phase, which will immediately follow the demonstration phase. The understanding was to see how successful work in the demonstration phase is and then to plan next steps for the replication phase. With results of the demonstration phase available by the end of 2020 and an original end-date of the project by July 2022, there would only be 1.5 years to design and implement the financial mechanism for the replication phase. Due to the limited time available, this is not workable and more pro-active and strategic planning needs to be carried out. The action plan presented towards the end of the MTR is a first good step in that direction.

#### 4.3.5 Stakeholder engagement

The ProDoc lists the main stakeholders for the TEVMOT project, defines their contribution and involvement in the various outputs. The list in the ProDoc includes the DGIP (in the ProDoc these were separate Directorates General: Directorate General of Productivity (DGP) and Directorate General of Industry (DGI)), DGSIP, TSI, electric motor manufacturers and chambers of industry. The actual list of stakeholders involved in the project has been extended and now also includes the Ministry of Energy and Natural Resources, KOSGEB, EMOSAD, the Energy Efficiency and Management Association (EYODER) and the selected OIZs.

The main body for stakeholder engagement is the Project Board (PB), which has met 3 times since project start. As recommended in section 4.3.1, more regular meetings of the PB are recommended, with all relevant stakeholders invited to the PB meeting in January of each year and further PB meetings to be held only with DGIP and UNDP as participants.

A major achievement of the Project was the signature of the cooperation protocol in December 2019 between DGIP and KOSGEB on the financial support mechanism. for the demonstration phase. The protocol defines the cooperation in the financial support mechanism for the demonstration projects and the obligation of each party. The protocol also secures that the GEF funding for the demonstration projects of US\$ 240,000 is matched by the same amount provided by KOSGEB.

Further protocols will be signed between DGIP and Pilot OIZs to define the cooperation for the demonstration projects. These protocols are currently under preparation.

#### 4.3.6 Communications

The internal communication between the Project and the key stakeholders is done bilaterally and through the PB meeting minutes. The minutes are concise and clear, give a good overview on the achievements as well as next steps in the Project. As mentioned before, there is a request for more PB meetings to be held, the number of meetings should be increased to 2 per year for the remaining lifetime of the project.

External communication is mainly done through the project website ([www.tevmot.org](http://www.tevmot.org)). So far, the website only provides very general information on the project and is far away from being used as an active tool to communicate the work carried out and results achieved by the Project. The basic content of the website needs to be considerably improved to fill up all sections with good and meaningful information. There is currently no download section, where reports, presentations of information material can be provided, this should be added immediately.

### 4.4 Sustainability

There are certain risks to the sustainability of project impact and it is likely to expect that key outcomes will not be sustained. Accordingly, sustainability is rated as Moderately Likely (ML). The following sub-chapters give a clear reasoning for this rating.

#### 4.4.1 Financial risks to sustainability

The biggest risk to the sustainability of the project is that the one-stop shop financial support mechanism will not be operational and with funds to continue to operate beyond the lifetime of the project, by the time that the project is due to close.

The project aimed at setting up a one-stop-shop sustainable financial support mechanism, which will ensure the replication of motor replacements carried out during the demonstration phase. Work on financing motor replacements up to now has almost entirely focused on setting up the financing scheme for the demonstration phase. Initial attempts were made to set up the planned one-stop-shop, but focus was given on the financing scheme provided by KOSGEB. Therefore, there is a considerable financial risk towards sustainability.

However, it was mentioned by several stakeholders during the MTR interviews that the TEVMOT project is now receiving good attention from the MoIT. If the Project successfully implements the demonstration projects, the general understanding was that there will be additional funding available by the GoT for a replication phase. Nevertheless, it seems unlikely that it is possible at the moment to have any commitment towards financing for the replication phase from the GoT.

During the MTR, the Project Team realized that work on the one-stop-shop needs to be refocused. With the preparation of the demonstration projects, more attention needs to be paid on replication.

The other positive aspect is that investments in EE motors are financially very attractive. With payback periods of around 1 year, there are various business opportunities – either for SMEs and other companies themselves by investing in EE motors or by service providers such as ESCOs. When considering non-energy benefits (for example increased productivity/quality or reduced maintenance costs), payback periods are only a few months.

#### **4.4.2 Socio-economic risks to sustainability**

At the time of the MTR, it was difficult to assess the socio-economic risks to sustainability. On the one hand, there are stakeholders actively involved, who are positively looking forward to working with TEVMOT, especially in the implementation of the demonstration projects. A certain risk is the position KOSGEB is taking in the implementation of the project. Whereas KOSGEB in the end agreed to contribute in the demonstration phase with funds provided by the MoIT, KOSGEB rejected suggestions by the PIU for setting up a sustainable finance mechanism including OIZs. For the replication phase it will be important for the Project to focus on the sustainability of the mechanism rather than meeting the requirements of KOSGEB.

On the other hand, capacity building activities are in a very early stage and it is not possible to assess whether participants in training activities and addressees of communication and marketing work take up sufficient know-how to be able to sustain the results of the project. Due to the delays in various activities, there is a risk to sustainability, as the remaining lifetime of the Project might not allow the replication originally planned in the ProDoc.

#### **4.4.3 Institutional framework and governance risks to sustainability**

There is a risk of institutional framework and governance to sustainability. Experience in the past has shown that the project suffered from changes in the organizational structure of government institutions. Ministries were merged or their responsibility was changed, similar changes happened on the level of General Directorates. Key persons with institutional memory and good understanding of the work to be carried out by the TEVMOT project were replaced. All these changes are not under control of the Project and are therefore considerable risks to sustainability. As a mitigation strategy it is recommended to focus on working with private sector actors when setting up the sustainable finance mechanism, such as OIZs, TurSEFF or private banks.

#### **4.4.4 Environmental risks to sustainability**

The main risk identified during the project preparation phase is the risk of waste and hazardous waste being generated during motor replacement. This risk is planned to be mitigated through implementation of a well-designed waste management (recycling) programme in accordance with the Regulation on Waste Electrical and Electronic Equipment (WEEE) transposing the WEEE Directive of the EU. Due to the delay in project implementation and first replacements taking place in the demonstration phase, no waste management programme has been elaborated up to now. However, the mobilization of a national waste expert is about to take place and it is expected that this risk is managed well.

## 5. CONCLUSIONS AND RECOMMENDATIONS

### 5.1 Conclusions

The following conclusions can be drawn:

- The components are well-structured and are a direct response to the main barriers identified during the project preparation phase. The various activities listed under each of the components clearly contribute to the outputs and outcomes defined for the 5 components.
- The Project Results Framework is well elaborated and includes well-defined indicators meeting the requirements of GEF to be “SMART” (Specific, Measurable, Achievable, Relevant, Time-bound). Targets both for MTR and Terminal Evaluation are clearly defined. For each of the Outcomes at least 2 indicators have been identified, which are adequate to measure the achievements made in project implementation.
- Most of the ministries involved in the Project were merged or changed including the project implementing partner, which is now called Ministry of Industry and Technology (MoIT). Moreover, the General Directorate of Productivity who has been the Implementing Partner is not separate and unique body anymore and was merged with the General Directorate of Industry to the General Directorate of Industry and Productivity (DGIP). The structural changes also led to changes in persons responsible for and involved in the Project, which led to considerable delays in project implementation.
- The initial plan under Component 1 to collect additional motor data in a survey was modified based on a survey carried out before project start. As a consequence the approach for providing inputs into a new market monitoring system was changed and is now consisting of three components: (1) monitoring direct project impacts, (2) collecting bottom-up production data from motor manufacturers (through EMOSAD) as well as import/export data and (3) applying a top-down approach by calculating and monitoring the electricity intensity of the Turkish manufacturing industry.
- For monitoring and reporting the direct project impact, it is essential that after the OIZs and SMEs for the initial energy audits have been selected, information on their baseline electricity consumption and operational characteristics of the electric motors in use is collected at a level as accurate as possible. The investment proposals to be developed after the initial energy audits should be obliged to also include an adequate monitoring, reporting and verification (MRV) plan, by which the achieved energy savings can be monitored and the projected energy savings verified. The reported direct energy saving and GHG reduction impact of the project should at the end be based on actually monitored data rather than just projections made in the energy audit. A template for such monitoring reports shall be developed by the Project Team in order to secure consistency.
- Bottom-up data collection with EMOSAD hasn't seen much progress. A questionnaire for obtaining the annual domestic production and sales statistics was completed and shared with EMOSAD members. GAMAK, who is the biggest domestic producer with around 25% market share, refused to share numbers on production and sales due to confidentiality reasons. As a consequence, also the other members of EMOSAD refused to share information. At the moment, a work plan for cooperation between EMOSAD and the TEVMOT project is under discussion. The work plan doesn't mention the issue of data collection, this needs to be added as a key contribution of EMOSAD.
- Under Output 1.2, a draft of the harmonized Turkish legislation on eco-design requirements for electric motors has been prepared. Three different documents were prepared by a national



consultant, partly revising existing legislation, partly drafting new requirements. Further steps for transposition and date of entry into force are to be decided and taken by MoIT.

- Under Output 2, support is given to EMOSAD to increase the capacity of the organization. Further work is required in securing data relevant for market monitoring. Technical training seminars were held in 2018 and 2020 for a total of around 450 participants.
- The key result under Output 3 is the upgrade of the TSI laboratory. Whereas testing capacity was limited with 90 kW before start of the project, the upgrade will now allow TSI to test motors with a capacity of up to 375 kW. The upgrade was finalized in December 2019 and is a major achievement.
- With a grant support of US\$ 1.2 million, around one third of the total GEF funding is spent on the increase of the test capacity of the TSI laboratory. This is surprising, as less than 10% of motors in the 2015 motor inventory have a capacity above 90 kW. Taking into account that only 20% of the grant funding for the laboratory is available for supporting the implementation of the demonstration projects, a more balanced distribution of funds between these outputs would have been advisable.
- A further activity under Component 3 is a motor testing program for new motors, which has the purpose of upgrading the market monitoring and surveillance strategy of DGSIIIP. A total of 80 motors will be sampled by purchasing in 2020 and 2021 with sizes between 7.5 kW and 1,000 kW. It would have been better to start with the testing program in 2019 (as originally planned). This would have been helpful in carrying out activities as per the original work plan, get experience with testing, allowing TSI to publish first test results, thereby putting focus on the topic of energy efficient motors.
- Component 4 aims at setting up a one-stop-shop financial support mechanism for motor replacements. Work in this component is divided into a demonstration phase and a replication phase, both with challenging targets. Urgent adaptive management is required on this component. Due to these challenging targets, a timely execution of the demonstration phase was key to project success. Unfortunately, a number of events delayed the implementation of the project. This includes organizational changes within the MoIT as well as in the DGIP and considerable time spent with KOSGEB on agreeing on the financial support mechanism for the demonstration phase. While most of the events were outside of the influence of the PIU, however, the PIU could have pushed forward the audits in SMEs as well as the Motor EE Investment Plans (MEEIPs) while establishing the financing mechanism for the demonstration phase.
- The TEVMOT website has been established and can be reached at [www.tevmot.org](http://www.tevmot.org). The content of the website is fragmentary, with short paragraphs in some sections and a number of sections with no content (e.g. UNDP Project Team, incentives and support,...). The website is only available in Turkish. Urgent adaptive management is required to greatly strengthen component 5 on outreach and awareness.
- The Project Board only meets once a year and has had 3 meetings during the Project so far. With the Project approaching the end of year 3, the Project is now coming to a phase, where stronger and more regular guidance by the PB is necessary. This is especially the case for Component 4, where activities are considerably delayed and the Project runs a serious risk of not achieving the EOP (end-of project) targets so it is recommended that the project organize a minimum of 3 project board meetings per year or one per four months.
- Delays in project implementation are also reflected in the project budget and expenditures. By end of 2019, 68.5% of the funds budgeted were disbursed, which shows that the project did not meet the annual spending limit target and is behind schedule. Overall disbursement by end of 2019 was around US\$ 1.77 million (or 46.2% of the total budget), out of this sum US\$ 1.2 million was provided as a contribution to the capacity increase of the TSI laboratory.

- After the start of the Project, the PIU was able to secure additional co-financing commitments, which is a good achievement. The Ministry of Energy and Natural Resources (MoENR) committed to a contribution of US\$ 1 million, EMOSAD to US\$ 100,000 and EYODER (Association of Energy Efficiency and Management) to US\$ 100,000. All additional contributions are in-kind and are focusing on training, public awareness and regulatory framework.
- By the time of the mid-term review, total co-financing amounted to US\$ 13.43 million, around 45.5% of expected co-financing over the lifetime of the project. This is a decent result and shows that stakeholders are committed in providing the required support. Cash co-financing is at US\$ 1.2 million, which is 33.5% of the entire cash co-financing committed, in-kind contributions are at US\$ 12.23 million or 47.1%.
- The M&E Plan in the ProDoc gives clear guidance on the methods, frequency and responsibilities to collect information and data for monitoring Project progress. Responsibility for the key indicators is basically split between the Project Manager and project consultants to be hired for monitoring. Discussions with the PIU during the MTR showed that the M&E system is not properly set up at the moment and the project really needs to hire a part time M&E national consultant. To a certain extent, this is due to the delays in implementation of Component 4, which would generate figures for core indicators such as kilo tonnes of CO2 reduced or MWh of annual reduced electricity consumption. As implementation is delayed, there was not real need to set up a system, which ensures that relevant data from OIZs and SMEs is being supplied to the PIU. However, it is important to use the M&E system as an input for strategic decisions. As the project is now in its second half of lifetime, it is important to set up a proper M&E system, which is providing feedback to the PIU and the PB and allows educated decisions.
- The Project sees active contributions from all key stakeholders: Directorate General of Productivity (DGP) and Directorate General of Industry (DGI)), DGSIIIP, TSI, electric motor manufacturers and chambers of industry. The actual list of stakeholders involved in the project has been extended and now also includes the Ministry of Energy and Natural Resources, KOSGEB, EMOSAD, the Energy Efficiency and Management Association (EYODER) and the selected OIZs. A major achievement of the Project was the signature of the cooperation protocol in December 2019 between DGIP and KOSGEB which secured the financial support mechanism for the demonstration projects.
- Changes in the organizational structure of the ministry and relevant Directorates General, discussions to involve KOSGEB in the project or challenges due to COVID-19 were a challenge for the PIU and required various actions towards adaptive management. The PIU managed to secure the contribution of KOSGEB by establishing direct contact with the Minister. The PIU showed strength in planning and carrying out short-term activities and has good control of the project. However, while focusing on short-term priorities, the PIU somehow lost the overall targets out of sight. There is no regular review mechanism of EOP targets with actual performance, hence corrective actions and adaptive management don't take place as required.

## 5.2 Recommendations

The following recommendations can be made:

### **Recommendation 1 – Hire a consultant in order to refocus work on setting up one-stop shop mechanism with TurSEFF and/or OIZs**

The ProDoc defines the development of a one-stop-shop mechanism within an OIZ and the provision of stronger de-risking measures to assist industrial SME investment into EE motors as the key project output. So far, work under Outcome 4 has focused on setting up a support scheme in cooperation with KOSGEB to provide grant financing (60% contribution, in case of Turkish motors 75%) during the demonstration phase. Initial talks were held with relevant partners (OIZs, IFIs, Credit Guarantee Fund (KGF), etc.) to setup the planned one-stop shop, but activities were not continued after decision by the ministry to proceed with KOSGEB for the demonstration phase. The discussions with KOSGEB not only led to considerable delays in setting up the scheme for the demonstration phase, but also didn't lead to any firm commitments for providing financing for the replication phase. The feedback received during the MTR was that results of the demonstration phase will be evaluated and then a decision about further funding (through ministry and/or KOSGEB) will be taken. This process will most likely take too much time for the TEVMOT project to produce decent results (see recommendation no. 3 on further cooperation with KOSGEB).

The activities to set up a one-stop shop mechanism need to be refocused immediately by the PIU. There were 4 different approaches described in the ProDoc, these were: (i) direct finance to the SME; (ii) portfolio finance by OIZ; (iii) vendor finance by manufacturer; and (iv) lease. Based on the feedback received from stakeholder interviews, direct finance to SMEs and portfolio finance by OIZs seem to be the most promising options.

An immediate starting point is TurSEFF (Turkey Sustainable Energy Financing Facility), developed by EBRD. TurSEFF provides loans or leases through local banks to finance resource efficiency and renewable energy investments in industrial SMEs. For financing of up to € 250,000, an automated technology selector approach has been developed, which includes pre-approved technologies. Motors with efficiency class of IE3 or better are eligible for financing under TurSEFF. SMEs can directly apply for funding, which will be implemented through PFIs (Partner Financial Institutions) of TurSEFF.

In addition to direct financing of motor replacements in SMEs, portfolio finance by the OIZs should be investigated. The benefit of that approach is that OIZs and their EMUs can drive the preparation of motor replacements, this would allow to develop project bundles, where replacements are happening in a group of SMEs within one OIZ. OIZ can use their own capital for financing motor replacements and get repayment from SMEs based on the ongoing savings of electricity costs. Alternatively, OIZs can aim at receiving funding from TurSEFF in order to reduce the capital requirements.

Both approaches (direct financing and portfolio financing) focus on using private sector funding or funding through IFIs for implementing motor replacements. This makes the Project more independent from decisions taken by the government, which led to massive delays when setting up the financing mechanism for the demonstration phase.

A further key aspect to be considered is the time when motors are being replaced. Rather than focusing only on preparing replacement programs with OIZs, the Project should also pursue the replacement of motors once they fail. At this point of time, the cost difference between a standard motor and a high efficiency motor (category IE3 or IE4) is marginal, as replacement costs need to be

covered anyway. This also requires motor manufacturers having efficient motors on shelf, allowing companies to replace broken motors within a very short period of time (1-2 days).

The approaches suggested in the ProDoc all included the Credit Guarantee Fund (KGF), which would provide guarantees to banks or leasing companies providing funds for motor replacement. For motor replacements implemented under TurSEFF, KGF would not be necessary. However, there are several banks (Ilbank was mentioned as one example), which would be interested in providing financing for motor replacements. For these banks, a guarantee provided by KGF would be beneficial. Although KGF didn't show interest in the early days of the Project, talks should be re-established immediately by the PIU.

Establishing the one-stop-shop financial mechanism will be the key to ensure sustainability of the project. It is recommended to hire a short-term consultant ('Consultant on Finance') assisting in the establishment of the one-stop-shop, working closely with the project manager and the international CTA. The role of this second consultant shall be to design the financial mechanism together with the international CTA and the Project Manager. The consultant should be hired as soon as feasible and start work on the financial mechanism end of summer. The decision whether a national or international consultant is hired is up to the PIU

**Recommendation 2 – Extend project timeline with a request for +18 months extension no later than mid-2021**

Various factors have led to considerable delays in project implementation: discussions with KOSGEB and the ministry on the financing mechanism for the demonstration phase, repeated changes within MoIT and COVID-19. 100 audits should have been carried out in year 1 and pilot motor replacements should have started in towards the end of year 1. The actual implementation of the audits and demonstration projects will start in Q3/2020 and will be finalized in Q1/2021. This means a delay of more than 2 years by the time of the MTR. Leaving the end date of the project as planned (July 2022) would considerably reduce the opportunity to replicate and scale up the motor replacements, as it takes time for the market to pick up. Provided availability of funds, a 12-months no-cost extension of the project is suggested. To mitigate the negative impact of COVID-19, an additional extension of further 6 months is recommended, thereby extending the project end date by 18 months to end of December 2023. The extension is to be initiated by the Project Manager until end of August 2020 by writing to the RTA and then to UNDP New York. The extension is to be finalized by July 2021.

The extension of the project should only be approved on the basis that recommendation #1 is implemented until July 2021 and a financial mechanism for the replication phase has been setup.

**Recommendation 3 – Initiate discussions with KOSGEB on replication phase**

The Ministry and KOSGEB have found an agreement for providing financing for the demonstration phase. A total of 60% of investment costs for efficient motors (in case of Turkish products 75%) will be provided as grant financing to SMEs. Funding available is limited with \$480,000 which is US\$240,000 from the project and \$240,000 from KOSGB. Interviews during the MTR indicated that further funding could be provided by the ministry/KOSGEB in case the demonstration phase is successful.

The Project doesn't have the time to wait until the end of the demonstration phase to then enter into (lengthy) discussions or negotiations with the ministry and/or KOSGEB on funding for the replication phase. Also, the Project needs to set up the one-stop-shop mechanism and it will be necessary to understand contributions to be made towards financing of further replacements.

In autumn 2020, the PIU, supported by high-level management of UNDP, should get into initial discussions with KOSGEB and the ministry about the extension of funding. If additional grant funding is available, it is suggested to reduce the grant contribution. Investments into efficient motors have a short payback period of about 1 year, therefore only limited contributions are necessary. Also, high grant contributions give a wrong signal and make it more difficult to transform the system towards the one-stop-shop approach, where low or no grant contributions will be made. Cutting the maximum grant contributions by half (for example 30% for motor replacement in general, 40% when Turkish products are used) is suggested. It is also recommended to provide grant support to IE4 motors only in the next phase, there should be no grant support given to IE3 motors.

Audits are seen as a key entry point to engage SMEs in motor replacements. There is a lack of interest of SMEs to pay for audits, as SMEs are not fully aware of the benefits of motor replacement. Financing or co-financing of audit costs by KOSGEB/ministry in the replication phase would be an important contribution towards sustainability.

**Recommendation 4 – Ensure correct and appropriate monitoring of direct project impacts**

For monitoring and reporting the direct project impact, it is essential that after the OIZs and SMEs for the initial energy audits have been selected, information on their baseline electricity consumption and operational characteristics of the electric motors in use is collected at a level as accurate as possible. The records should be based, to the extent possible, on actual metering rather than estimates of electricity consumption from more aggregated figures. The investment proposals to be developed after the initial energy audits should be obliged to also include an adequate monitoring, reporting and verification (MRV) plan, by which the achieved energy savings can be monitored and the projected energy savings verified. Required metering and monitoring devices should be included into the investment plan, if required for implementing the MRV plan. The reported direct energy saving and GHG reduction impact of the project should at the end be based on actually monitored data rather than just projections made in the energy audit. In order to secure consistency between the different companies, a template for such monitoring report shall be developed after the initial selection of the participating OIZs and SMEs has been made.

Implementation of this recommendation should be as per the ProDoc, which determined hiring a project consultant to support M&E requirements of the Project. This consultant should be hired by the PIU in autumn 2020, support on monitoring should be given by available in-house capacity of UNDP (M&E Advisor under the CCE Portfolio and corporate M&E Analyst for UNDP Turkey).

**Recommendation 5 – Improve cooperation with EMOSAD with frequent meetings and consider signing an MoU for cooperation**

As the electric motors manufacturers association, EMOSAD is playing an important role in the implementation of the TEVMOT project. At the time of the MTR, discussions were held between EMOSAD and the PIU about the further participation of EMOSAD in the project. For the 2020 work plan, it was suggested that EMOSAD will actively support workshops to be held in selected OIZs, support the creating of the calculation module for walk-through audits and ensure that EMSA (Electric Motor Systems Annex) calculation modules are used in investment feasibility studies after field studies.

EMOSAD is also a key player in improving the supply side of efficient motors. Ideally, motors are being replaced once they fail, as additional costs between a standard motor and high efficiency motors are marginal. EMOSAD in cooperation with the PIU needs to work with motor manufacturers (especially those who provided co-financing commitments to the project) to secure that high efficiency motors are on stock and can replace failing motors within a very short period of time (1-2 days).

A key point missing in this list is the collection of data on annual domestic production and sales. Due to reasons of confidentiality and competition between EMOSAD members, no data has been shared up to now. There are different options to overcome this situation. One would be to hire a director, who has no ties to any of the companies represented in EMOSAD. Another option would be to hand over the data to a neutral third party (e.g. lawyer or notary public) with the task to merge data and only publish merged figures, which don't allow tracing back data to individual companies. The PIU is requested to elaborate in close cooperation with EMOSAD and its members a concrete approach, which will allow EMOSAD to provide market data on a regular basis without revealing commercially confident information, leading to an MoU for cooperation. This activity is to take place in autumn 2020.

**Recommendation 6 – Replace co-financing of GAMAK with the goal of making sure that co-financing ratio of at least 7-1 is met**

The project is not on track to reach a co-financing ration of 7-1. The ProDoc listed 4 motor producers as key stakeholders for the project, namely Gamak, Wat Motor (Arcelik), Volt Motor and Aemot. These companies are explicitly mentioned in the ProDoc and each of them has signed a co-financing commitment of US\$ 5 million. GAMAK has been very active in the beginning of the TEVMOT project but hasn't been actively participating for almost 2 years. It is not likely that the co-financing commitment of GAMAK will materialize, therefore replacement needs to be secured. EMOSAD, supported by the PIU, shall enter in discussions with other members of the association to provide co-financing to the TEVMOT project. Activities to be covered by this co-financing commitments should be in line with the original co-financing commitments given by the participating motor producers and can include participation in the development of governance and information infrastructure in the electric motors industry, continuation of investments for the production of high EE motors, development and delivery of detailed training for manufacturers, industry and end-users including the general public and the development of the financial support mechanisms. This activity is to be carried out until end of 2020, led by EMOSAD with support from the PIU.

**Recommendation 7 – Improve frequency and contents of Project Board meetings by organizing a minimum of 3 Project Board meetings per year or one per 4 months**

With the Project approaching the end of year 3, the Project is now coming to a phase, where stronger and more regular guidance by the PB is necessary. This is especially the case for Component 4, where activities are considerably delayed and the Project runs a serious risk of not achieving the EOP targets. Stronger guidance by the PB is required in this critical phase and it is recommended that the PB meets at least three times a year. It is the task of the Implementing Partner to secure adequate representation of decision makers. Apart from reviewing progress and implementation of activities, a more strategic, forward-looking discussion and decisions are required. Key project targets/indicators and ways of achieving the targets should be discussed in these meetings, rather than only focusing on the activities to be carried out over the coming months. This recommendation is to be implemented with immediate effect and the next PB meeting shall be organized by the PIU until October 2020 at the latest.

It is recommended that the international CTA and the consultant on designing the one-stop shop financial mechanism participate in all the Project Board meetings either remotely or in person.

**Recommendation 8 – Improve TEVMOT website**

The current TEVMOT website ([www.tevmot.org](http://www.tevmot.org)) is fragmentary, with short paragraphs in some sections and a number of sections with no content. The basic content of the website needs to be considerably improved to fill up all sections with good and meaningful information. There is currently no download section, where reports, presentations of information material can be provided, this

---

should be added immediately. The PIU is requested to decide which information can be provided for downloads at the moment, further reports shall be added as soon as they are finalized. Once case studies and information on awareness campaigns is available, this should be added as well, accompanied by news/tweets about important achievements by the Project. A basic version in English is recommended to support dissemination of results and increase cooperation with other motor projects. As an example, the website of Topmotors ([www.topmotors.ch](http://www.topmotors.ch)) can be used. An improved version of the website shall be online by end of 2020, with PIU taking the lead on the revision.

## **6. ANNEXES**

### **6.1 MTR ToR (excluding ToR annexes)**

See separate Annex



## 6.2 MTR evaluative matrix (evaluation criteria with key questions, indicators, sources of data, and methodology)

Evaluative Questions	Indicators	Sources	Method
<b>Project Strategy</b>			
<b>Project design</b>			
What is the problem addressed by the project and what are the underlying assumptions? Is it clear? Have any incorrect assumptions or changes to the context affected the project results as outlined in the project document?	Clear and coherent descriptions	Approval documents, minutes of PB meetings	Literature Review (LR), Interviews (I)
Is the project relevant? Does the project strategy provide the most effective route towards expected/intended results? Were lessons from other relevant projects properly incorporated into the project design?	Alignment to national/stakeholder priorities, clear and coherent descriptions	Approval documents	LR, I
Does the project address country priorities? Is there country ownership? Is the project concept in line with the national sector development priorities and plans?	Alignment to national/stakeholder priorities, evidence of engagement and commitment, evidence of consultation	Approval documents	LR, I
What are the decision-making processes? Were perspectives of those who would be affected by project decisions, those who could affect the outcomes, and those who could contribute information or other resources to the process, taken into account during project design processes?	Evidence of clear, logical and consultative planning processes and decision-making in the project	Stakeholders. PB members and minutes. Project management reports.	
Were gender aspects raised in project design? Are gender aspect being monitored effectively?	Evidence of gender aspects being raised in project design and being monitored	Approval documents, project reports, stakeholders	LR, I
Are there major areas of concern, recommended areas for improvement?	Concerns and recommendations raised	Stakeholders	I
<b>Results Framework/Logframe</b>			
Is the project's logframe, indicators and targets clear and logical? How "SMART" are the midterm	Clear and logical framework, SMART	Approval documents	LR, backed up by I

and end-of-project targets are (Specific, Measurable, Attainable, Relevant, Time-bound)?	indicators		
Are the project's objectives and outcomes or components clear, practical, and feasible within its time frame?	Clear and logical and realistic project strategy and implementation framework	Approval documents	LR, backed up by I
Can progress so far or future progress catalyse beneficial development effects that should be included in the project results framework and be monitored?	Beneficial development effects identified	Stakeholders	I
<b>Progress Towards Results</b>			
What is progress of the log-frame indicators towards the end-of-project targets using the Guidance For Conducting Midterm Reviews of UNDP-Supported, GEF-Financed Projects; colour code progress in a "traffic light system" based on the level of progress achieved; assign a rating on progress for each outcome; make recommendations from the areas marked as "High risk of not being achieved" (red).	Use of project indicators (assuming they are 'SMART'), evidence of actual impact	Project reports, consultations with project management	LR, I
How does the GEF Tracking Tool at the baseline compare to the one completed right before the MTR?	Indicators in tracking tool	GEF Tracking tool at Baseline and before MTR	LR
Are there barriers remaining to achieving the project objective in the remainder of the project?	Remaining barriers	Stakeholders, project reports, approval documents	LR, I
How can successful aspects of the project be further expanded?	Successful aspects	Project reports, stakeholders	LR, I
<b>Project Implementation and Adaptive Management</b>			
<b>Management Arrangements</b>			
How is overall effectiveness of project management? Have changes been made and are they effective? Are responsibilities and reporting lines clear? Is decision-making transparent and undertaken in a timely manner? What are recommended areas for improvement?			
What is the quality of execution of the Executing Agency/Implementing Partner(s)? What are recommended areas for improvement?			
What is the quality of support provided by the GEF			

Partner Agency (UNDP)? What are recommended areas for improvement?			
<b>Work Planning</b>			
Have there been delays in project start-up and implementation? What are the causes? What are proposed solutions?	Evidence of meeting time targets	Approval documents, progress reports, project management	LR, I
Is work-planning results-based?	Evidence of logical, transparent and results oriented planning process	Progress reports, project management	
Has the project document logical/results framework been used as a management tool and have there been any changes since project start? (Ensure any revisions meet UNDP-GEF requirements and assess the impact of the revised approach on project management).	Evidence of logical and transparent planning process, using adaptive management	Approval documents, progress reports	LR, I
<b>Finance and co-finance</b>			
How is the financial management of the project, with specific reference to the cost-effectiveness of interventions	Evidence of clear, transparent reporting, evidence of cost-effective processes and purchases	Financial reports, project reports	LR, backed by I
Have there been changes to fund allocations as a result of budget revisions? How were these decided? Have they been appropriate and relevant?	Evidence of reallocation based on clear, logical transparent decision processes	Project reports, budgets	LR, backed by I
Does the project have the appropriate financial controls, including reporting and planning, that allow management to make informed decisions regarding the budget and allowed for timely flow of funds?	Evidence of effective financial controls and management	Project reports, financial reports	LR, backed by I
Is the co-financing mobilized efficiently? Is co-financing being used strategically to help the objectives of the project? Are project teams meeting with all co-financing partners regularly in order to align financing priorities and annual work plans?	Evidence that co-financing is in line with approval documents, evidence of monitoring of co-financing, evidence of co-financers involvement/engagement in project.	Co-financing report, project reports	LR, I
<b>Project-level Monitoring and Evaluation Systems</b>			
Do monitoring tools provide the necessary information? Do they involve key partners? Are	Evidence of efficient and cost-effective monitoring	Approval documents, project reports	LR, I

they aligned or mainstreamed with national systems? Do they use existing information? Are they efficient? Are they cost-effective? Are additional tools required? How could they be made more participatory and inclusive?			
Are sufficient financial resources being allocated to monitoring and evaluation? Are these resources being allocated effectively?	Budget used for monitoring	Project reports	LR, I
<b>Reporting</b>			
Have adaptive management changes been reported by the project management and shared with the Project Board? How are planning and management decision taken?	Evidence that monitoring is actively and effectively supporting project planning and decision-making, with appropriate role of all stakeholders.	Project reports, project management	LR, I
How well has the Project Team and partners fulfilled GEF reporting requirements (i.e. how have they addressed poorly-rated PIRs, if applicable?)	Meeting reporting requirements	Project reports	LR
Have any lessons derived from the adaptive management process been documented and shared with key partners and internalized by partners?	Evidence of this happening	Project reports, project management	LR, I
<b>Stakeholder Engagement</b>			
Project management: Has the project developed and leveraged the necessary and appropriate partnerships with direct and tangential stakeholders?	Evidence of interaction with stakeholders	Project reports, stakeholders	LR, I
Participation and country-driven processes: Do local and national government stakeholders support the objectives of the project? Do they continue to have an active role in project decision-making that supports efficient and effective project implementation?	Evidence of active participation of stakeholders	Project reports, stakeholders	LR, I
Participation and public awareness: To what extent has stakeholder involvement and public awareness contributed to the progress towards achievement of project objectives?	Contribution of stakeholder involvement and public awareness toward project progress	Project reports, stakeholders	LR, I
<b>Communications</b>			
Internal project communication with stakeholders: Is communication regular and effective? Are key	Evidence of internal communication and of it	Project reports, project stakeholders, project	LR, I

stakeholders left out of communication? Are feedback mechanisms for communication? Does this communication with stakeholders contribute to their awareness of project outcomes and activities and long-term investment in the sustainability of project results?	being strategic, effective and efficient	management	
External project communication: Are proper means of communication established or being established to express to the public the project progress and intended impact (is there a project website for example)? Did the project implement appropriate outreach and public awareness campaigns?	Evidence of external communication and of it being strategic, effective and efficient	Project outputs, projects materials and media, project reports.	LR, I
Overall, is the project management effective? Have changes been made and are they effective? Are responsibilities and reporting lines clear? Is decision-making transparent and undertaken in a timely manner?	Evidence of clear, fair decision-making processes and results, evidence of participation from stakeholders and co-financiers.	Project plans, project reports, project stakeholders, project management	LR, I
<b>Sustainability</b>			
Are the risks identified in the Project Document, the most important and are the risk ratings applied appropriate and up to date?	Usefulness of risk analysis and associated tools	Project approval documents and reports	LR, backed by I
Overall, how is risk management of sustainability factors - in terms of risks to motivations, capacity, and resources? Does the project have sustainability benchmarks built into the project cycle?			LR, I
Financial Sustainability: What is the likelihood of financial and economic resources not being available once the GEF assistance ends (consider potential resources can be from multiple sources, such as the public and private sectors, income generating activities, and other funding that will be adequate financial resources for sustaining project's outcomes)?	Evidence that an assessment of options has been undertaken/is planned, and that a complete and realistic upscaling or exit strategy exists or is being prepared.	Project reports, budget reports, minutes of project board	LR, I
Socio-political Sustainability: Are there any social or political risks that may jeopardize sustainability of project outcomes? What is the risk that the level of stakeholder ownership (including ownership by governments and other key stakeholders) will be insufficient to allow for the project	Evidence that socio-political risks to sustainability have been assessed and any mitigation measures taken.	Project reports, budget reports, minutes of project board, project management	LR, I

outcomes/benefits to be sustained? Do the various key stakeholders see that it is in their interest that the project benefits continue to flow? Is there sufficient public / stakeholder awareness in support of the long-term objectives of the project? Are the lessons learned are being documented by the project team on a continual basis and shared/ transferred to appropriate parties who could learn from the project and potentially replicate and/or scale it in the future?			
Institutional and Governance Sustainability: Do the legal frameworks, policies, governance structures and processes pose risks that may jeopardize sustenance of project benefits? While assessing this parameter, also consider if the required systems/ mechanisms for accountability, transparency, and technical knowledge transfer are in place	Evidence that institutional/governance risks to sustainability have been assessed, that a full consultation process has taken place/is planned, that potential mitigation measures have been identified/are planned, and that a clear strategy for ensuring sustainability is in place/under preparation	Project reports, budget reports, minutes of project board, project management	LR, I
Environmental Sustainability: Are there any environmental risks that may jeopardize sustenance of project outcomes? The MTR should assess whether	Evidence that any environmental risks to sustainability have been assessed and any mitigation measures taken.	Project reports, budget reports, minutes of project board, project management	LR, I

### 6.3 Ratings Scales

<b>Ratings for Progress Towards Results: (one rating for each outcome and for the objective)</b>		
6	Highly Satisfactory (HS)	The objective/outcome is expected to achieve or exceed all its end-of-project targets, without major shortcomings. The progress towards the objective/outcome can be presented as “good practice”.
5	Satisfactory (S)	The objective/outcome is expected to achieve most of its end-of-project targets, with only minor shortcomings.
4	Moderately Satisfactory (MS)	The objective/outcome is expected to achieve most of its end-of-project targets but with significant shortcomings.
3	Moderately Unsatisfactory (HU)	The objective/outcome is expected to achieve its end-of-project targets with major shortcomings.
2	Unsatisfactory (U)	The objective/outcome is expected not to achieve most of its end-of-project targets.
1	Highly Unsatisfactory (HU)	The objective/outcome has failed to achieve its midterm targets and is not expected to achieve any of its end-of-project targets.

<b>Ratings for Project Implementation &amp; Adaptive Management: (one overall rating)</b>		
6	Highly Satisfactory (HS)	Implementation of all seven components – management arrangements, work planning, finance and co-finance, project-level monitoring and evaluation systems, stakeholder engagement, reporting, and communications – is leading to efficient and effective project implementation and adaptive management. The project can be presented as “good practice”.
5	Satisfactory (S)	Implementation of most of the seven components is leading to efficient and effective project implementation and adaptive management except for only few that are subject to remedial action.
4	Moderately Satisfactory (MS)	Implementation of some of the seven components is leading to efficient and effective project implementation and adaptive management, with some components requiring remedial action.
3	Moderately Unsatisfactory (MU)	Implementation of some of the seven components is not leading to efficient and effective project implementation and adaptive, with most components requiring remedial action.
2	Unsatisfactory (U)	Implementation of most of the seven components is not leading to efficient and effective project implementation and adaptive management.
1	Highly Unsatisfactory (HU)	Implementation of none of the seven components is leading to efficient and effective project implementation and adaptive management.

<b>Ratings for Sustainability: (one overall rating)</b>		
4	Likely (L)	Negligible risks to sustainability, with key outcomes on track to be achieved by the project's closure and expected to continue into the foreseeable future
3	Moderately Likely (ML)	Moderate risks, but expectations that at least some outcomes will be sustained due to the progress towards results on outcomes at the Midterm Review
2	Moderately Unlikely (MU)	Significant risk that key outcomes will not carry on after project closure, although some outputs and activities should carry on
1	Unlikely (U)	Severe risks that project outcomes as well as key outputs will not be sustained

### 6.4 MTR mission itinerary

No mission was carried out due to COVID-19. All interviews with stakeholders were held virtually between 20 April and 17 June. A list of persons interviewed can be found in the following section.

## 6.5 List of persons interviewed

Mustafa Kemal Akgül	DG for Industry and Productivity (DGIP)
Hasan Akgumuz	KOSGEB
Yavuz Cabbar	Ankara Chamber of Industry (ASO)
Yasemin Demircioğlu	DG for Safety and Inspection for Industrial Products (DGSİIP)
Güvenir Kaan Esen	Turkish Standards Institution (TSE)
Hakan Gedik	EMOSAD - Association of Turkish Electric Motor Industrialists
Eric Gudbjerg	International Consultant
Gorkem Gurbuz	KOSGEB
Naci Işıklı	Energy Efficiency and Management Association (EYODER)
Egbert Liese	International Consultant
Mevlut Hürol Mete	DG for Safety and Inspection for Industrial Products (DGSİIP)
John O'Brien	UNDP
Nuri Ozbagdatli	UNDP
Naz Ozguc	UNDP
Vesa Rutanen	International Consultant
Mustafa Salman	TEVMOT
Gürsu Sezen Torun	DG for Industry and Productivity (DGIP)
Asuman Sonmez	National Consultant
Necmettin Tokur	UNDP
Meltem Uzel	TEVMOT

## 6.6 List of documents reviewed

In alphabetical order

Document	Document type
Annual Workplan 2020	Pdf
Budget Revision 2019	Excel
Cash position 2019	Pdf
Co-finance letters	Pdf
Combined Delivery Report 2018	Pdf
Combined Delivery Report 2019	Pdf
Core Indicators	Excel
Deliverables of Workplan 2020	Excel
EMOSAD Workplan	Word
Final Audit Report 2019	Pdf
Final Report Output 1.1	Word
Gender aspects of the project	Word
Gender Screening	Word
Inception Report PEEMS	Pdf
Letter of Agreement	Pdf
LPAC Meeting Attendance Sheet	Pdf
LPAC Meeting Minutes	Pdf
PIR 2018	Pdf
ProDoc PEEMS	Pdf
Protocol SVGM - KOSGEB	Pdf
SESP	Pdf
Steering Committee Minutes 2018	Pdf
Steering Committee Minutes 2019	Pdf



---

Steering Committee Minutes 2020	Word
Strategy Review Eric Gudberg	Word
TEVMOT actions by 19 June 2020	Excel
Various documents on Components 1, 2, 3	Word, pdf, Excel
Workplan 2020	Excel

## 6.7 Signed UNEG Code of Conduct form

### Evaluators/Consultants:

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

### MTR Consultant Agreement Form

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

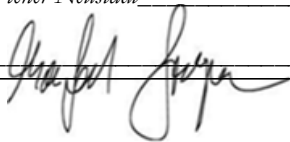
Name of Consultant: Manfred Stockmayer\_\_\_\_\_

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

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

Signed at *Wiener Neustadt*\_\_\_\_\_ (Place) on *25 June 2020*\_\_\_\_\_ (Date)

Signature: \_\_\_\_\_



## **6.8 Signed MTR final report clearance form**

## Audit Trail

Various comments on the Draft MTR Report were received. The comments of the following authors are listed in the audit trail:

EG – Erik Gudbjerg  
JO – John O'Brien  
MS – Mustafa Salman  
NO – Naz Ozguc  
NT – Necmettin Tokur

Author	Comm. No.	Comment/Feedback on the draft MTR report	MTR response and actions taken
JO	1	<p>The MTR contains some good recommendations, but it is ambiguous when it comes to KOSGEB. On the one hand it recommends to 'refocus' the FSM away from KOSGB. On the other hand, it says work with all stakeholders and then it talks about working on the replication of project activities with KOSGEB.</p> <p>Recommendation 1 and Recommendation 3 appear to contradict one another.</p> <p>The project recommendations alternatives to the FSM that might work with Turseff but then does not talk about how they might work.</p> <p>In short, it is unclear and contradictory as to how the project might work with KOSGEB.</p>	Comments considered in various sections.
JO	3	What are the targets? Please state them up front.	Project objective and targets added.
EG	4	We have to be aware of that the targets are not coherent	Not sure why the targets are not coherent. In any case, the targets have been set in the ProDoc and cannot be changed.
NT	7	Five components	Corrected.
MS	9	<p>Not valid anymore. New title as of Directorate General Strategic Researches and Productivity (DGSRP) by 14th April 2020 is on force, based on the regulation Item 7-1 c) and 9-1 mentioned here below. <a href="https://www.resmigazete.gov.tr/eskiler/2020/04/20200414-15.pdf">https://www.resmigazete.gov.tr/eskiler/2020/04/20200414-15.pdf</a></p> <p>This is the third institutional name change of DG since 2017 and new 4th General Manager is going to be assigned in person officially nowadays. In other words, there is no signature authority at all currently at DG level. It explains how the Project institutional memory weakened in MoIT and lack of senior DG level initiative usage in the Project as of Executing Partner.</p> <p>On the other hand, in order to overcome the lack of DG level initiative, we built</p>	<p>Name of Implementing Partner is corrected.</p> <p>It is correct that KOSGEB is mentioned several times in the ProDoc. However, KOSGEB did neither sign a co-financing letter nor commit in any form to contribute to the project. Also, there is no role assigned to KOSGEB in the ProDoc. Therefore, an active contribution of KOSGEB could not be expected.</p>

Author	Comm. No.	Comment/Feedback on the draft MTR report	MTR response and actions taken
		<p>vis-a-vis communication opportunity with Mr. Minister (MoIT) Mustafa Varank in 28.10.2019 when PUI presented TEVMOT to him and he forced the final decision to KOSGEB to launch TEVMOT support programme. Indeed, KOSGEB has not voluntarily contributed to TEVMOT at all. However, KOSGEB by name states 49 times in the ProDoc via assigning crucial role in terms of especially one-stop shop structuring process and to be on-board.</p> <p>Even if we could show up some tangible results and new demands from SMEs during our Pilot phase, we might not be sure about sustaining KOSGEB and securing public incentive in dissemination phase if Mr. Minister Mustafa Varank personally is replaced on the way.</p>	Wording added under adaptive management to recognize the contribution of the PIU in securing KOSGEB funding.
MS	11	Actually, our Project office premises states in the Ministry building. In other words, we are on a daily basis in touch with GDSRP management and expert staff who is the Implementing Partner. We have conducted also formal weekly and monthly meetings to take necessary interim decisions in coordination with UNDP CO CCE portfolio Manager and ICTA (formerly CTA) so far. SCMs have been conducted once a year to approve the annual work plan, budget and Project target achievement performances evaluation majorly.	Wording added in section 4.3.1.
JO	13	I suggest stating how often it meets.	Please see following section
MS	15	SCMs could be two times in a year but minimum senior level participation from Executing Partner side should be Deputy Minister.	Recommendation in section 1.6 extended to clarify that it is the task of the Implementing Partner to secure adequate representation of decision makers.
JO	17	I think you should make it very clear here up front that the project is not on track to meet its objective during the time frame of the project and that only with an extension and an additional 12 + 6 months might the project have a chance to succeed.	This section is about progress, please refer to section 1.6 for recommendations.
EG	18	That's through and if we manage to engage EMOSAD and TSI and develop a very effective awareness campaign covering whole Turkey and all stakeholder in the motor procurement process	Noted, national awareness campaign planned under Output 5.2.
EG	21	For the awareness campaign there is a serious need for a survey among all stakeholders to assist with knowledge what to focus on in the campaign, furthermore there is a need to monitor the effectiveness of the campaign every half year to make sure the campaign can be adjusted	Suggestion considered in section 4.2.1 under Component 5.
EG	23	EMOSAD has so far not been able to deliver any data	This is noted and considered in the recommendations.
NT	25	Three documents??.... there is only one document transposing the new eco-design IM (Reg (EU) 2019/1781) to replace Reg (EU) 640/2009.	Please see the documents provided by Meltem Uzel, this includes three different

Author	Comm. No.	Comment/Feedback on the draft MTR report	MTR response and actions taken
			documents.
EG	27	When return this report I enclose a report prepared by Asuman and Erik	Noted
EG	29	No in-kind contribution has been activated	3 motor manufacturers have submitted information about co-financing provided to the project, please see section on co-financing for details.
EG	31	Sorry but i mostly see the achievement in the way as spending dollars, TSI has been very inactive, and I find it very disappointing	TSI has received the upgrade of the testing facility and will be further involved in testing of motors.
NT	33	Only 40+40 motors will be sampled, and the rest depends on the compliance profile of the marketplace, adoption of new eco-design regulation and progress of market surveillance activities of the MoIT.	Number corrected
MS	35	We concluded the protocol document and signed by MoIT and TSE in July 2019. The protocol covers the “testing procedures of samples received within the scope of market screening activities and laboratory investment”. In other words, technically we could not have started motor sampling and testing motors even below 90 kW which is already existing lab capacity before July 2019. Within the second half of 2019, TSE implemented tendering and installation stage for new investment and did not accept testing for our samples even below 90 kW before launching the new capacity. In other word, during laboratory new investment process, the existing lab. setting has been gradually dismantled and it was impossible to test any motor until the entire dismantling and installation have been completed.	The timeline is well understood. Still, it would have been possible to arrange tests if the protocol would have been signed earlier and a first batch of tests could have been carried out before dismantling the lab.
EG	37	The test Facility was operative end dec 2019 so there has been plenty of time to plan and do test	Agreed
MS	39	ProDoc Annex-N	Noted
JO	41	But it hasn't worked has it. Throughout the document there are major contradictions on KOSGEB. I respectfully submit that saying it's a great achievement to sign an agreement is not consistent with then saying that the One Stop Shop mechanism does not exist.	Based on the history of discussions with KOSGEB on the fact that KOSGEB didn't co-finance the project, it is an achievement to secure co-financing for the demonstration phase, which allows kicking-off the first replacements.
JO	43	Explain why briefly.	Explanation added.
MS	45	We discussed this issue with DGSRP as an alternative scenario to start with our Project budget of 240 k \$ for HEM capex incentive and involve pilot OIZ Directorates into financial modality to maintain one-stop shop development without waiting so long for KOSGEB decision. However, this option does not promise the sustainably manner when we consume up all Project budgeted 240	The argument made here is that audits could have started earlier, independent of the finalization of the financial support scheme. This would have helped in getting actual figures from SMEs on

Author	Comm. No.	Comment/Feedback on the draft MTR report	MTR response and actions taken
		K \$. Ministry also insisted on KOSGEB to be on board after October 2019. After a long negotiation period, at the end KOSGEB denied involving OIZ Directorate's contribution in the financial model due to the reason for eliminating any duplication in incentive mechanism, nevertheless it had in fact technically been solved by PIU proposed finance modality scheme, KOSGEB stuck to its own conventional procedures. KOSGEB positioned themselves only as a payment agent and not contributed to the entire activities related with one-stop shop establishment in OIZs. Therefore, until 2nd January 2020 when KOSGEB TEVMOT incentive was on force, we could had not reacted for motor replacement in OIZs.	replacement opportunities. Wording modified to make clear that audits should have been implemented earlier.
JO	47	It is not a delay in discussion but rather a delay in being able to secure an agreement.	Wording revised.
MS	49	We have started our EE audits in Sincan ASO1 OIZ by 24th June 2020 and will be followed in other pilot OIZs by 10th July 2020 after our EVD online training scheduled as 7-10 July 2020. We plan to finalise all 100 EE audits in selected SMEs by the end of Year 2020. Motor replacements could start within the last Quarter of 2020 if Covid-19 normalization measures remains steady but not getting worse.	Noted. However, the point made in the MTR Report still stands that audits could have been implemented earlier.
EG	51	The training was planned to be delivered in April however it was cancelled due to Covid, now an online training is planned for July However, the impact of the training cannot be expected to be as effective as and F to F In connection with the audits in SINCAN that should deliver input to case stories, an online training has been delivered by ICTA, sadly enough the EVD company was not to enthusiastic, this statement is based on the fact that the EVD company did not review the training material before the training even though it was shared with them	Noted, training activities have started now.
EG	53	Agree we need to develop the web side TEVMOT could use TOPMOTORs as an example.	Added to recommendation 8.
JO	55	Normally one would first develop a financial mechanism and then provide training, so it is hard to see how it is possible to conclude HS when there is no financial mechanism.  Surely, a lot of the training needs to be on the FSM once it exists so how is this component rated as having 'significantly exceeded the target?'	Outcome 2 is not on the financial mechanism but has a more technical focus. MTR targets were achieved; therefore, the rating is HS.
MS	57	EMOSAD and some of members participated in our workshops for eco-design legislation, EE audit methodology structuring and conducted TEVMOT presentations in relevant exhibitions and summits.	Noted

Author	Comm. No.	Comment/Feedback on the draft MTR report	MTR response and actions taken
EG	59	See my earlier comments. I will also share report on this issue with you.	Noted
EG	61	I think it is due to the very difficult situation in developing the financial mechanism	As mentioned before, there was no need to wait with finalizing the financial mechanism for carrying out audits.
EG	63	However, we can give this from other sources	Of course, it can be provided from other sources, however, it would have been good to have real figures from Turkish SMEs.
JO	65	The financial mechanism with KOSGEB has not been working and significant adaptive management is required. Halfway through the project and energy audits have not even been carried out yet. Also, when you write that 'While focusing on short-term priorities, the PIU somehow lost the overall targets out of sight' but yet you give a S rating. This is contradictory. I think rating needs to be assessed in terms of the overall project rating that is MU.	Valid comments, rating revised to MS, slight revision of text.
JO	67	The financial mechanism with KOSGEB has not been working and significant adaptive management is required.	The financial mechanism with KOSGEB is about to be implemented for the demonstration phase, whether the mechanism works still needs to be found out. Agreed on adaptive management for further work on financial mechanism, see recommendation 1.
MS	68	EE motor audits have been initiated by 24th June 2020 and planned to be continued in July 2020 in all 7 pilot OIZs simultaneously.	Noted.
MS	71	Actually, we as PIU mentioned these EOP targets in our weekly and monthly meetings with DGSRP frequently and subjected also seriously in our Steering Committee Meetings but not reported due to sensitive policy dialogue conditions we have built up with the Ministry so far.	There is a difference between mentioning targets and monitoring progress. The discussions during the MTR confirmed that no monitoring mechanism is implemented, which allows the PIU to review progress. Also, there is a difference whether EOP targets are mentioned or whether progress towards targets is discussed and included in minutes. The latter hasn't been the case up to now.
JO	73	One of the conclusions should be about ADAPTIVE MANAGEMENT.	Conclusion added.



Author	Comm. No.	Comment/Feedback on the draft MTR report	MTR response and actions taken
EG	75	I don't agree. I think several issues are not taken into account, as an example the project was planned to coordinate with the UNIDO ENMS project however it finishes in 2017.	The statement is sustained that the components are well structured and a direct response to the barriers identified. On UNIDO, the project officially started in July 2017, but kick-off was only in December 2017, which limited coordination with the ENMS project.
EG	77	As I read the pro doc the targets are not consistent	Not sure why the targets are not coherent. In any case, the targets have been set in the ProDoc and cannot be changed.
NT	79	I think now called Implementing Partner??	Wording revised.
EG	81	I totally agree with this paragraph	Noted
EG	83	It is a problem that EMOSAD does not show more enthusiasm in cooperation	Agreed, see recommendation #5
EG	85	We should discuss how much monitoring is wanted and who should pay for it	Monitoring is clearly defined in the monitoring plan, there is also a budget for monitoring.
EG	87	Update "nothing has happened yet"	Noted
EG	89	This is very important and has worked well in EU	Noted
MS	91	Former decisions among parties during Project proposal writing phase might have resulted with this activity to be placed in the Project components. Please see ProDoc Page 16 first paragraph mentioned as: This component is intended to address the barriers associated with the need for improved capacity to undertake market surveillance programs related to electric motors. The intended outcome of this component is to have upgraded motor testing capacities of TSI and a strengthened program for monitoring, verification and enforcement of compliance with eco-design implementing measure 640/2009	Noted. This point was mentioned with several stakeholders, no clear answer on the reasons was received.
EG	93	See my earlier comments on this topic	Noted
NT	95	Here, "purchasing" is not pretty good word, because the main concern here is "compliance". Therefore, the motors will be sampled but not following the typical procurement procedures but rather by paying the price of the motor.  In addition, 40+40 motors will be sampled. The rest is dependent.... See below.	Wording revised.
MS	97	Same comment as mentioned in Page 9 here.	See response on comment on page 9
MS	99	Motor efficiency investment plans (MEEIPs) and standard motor testing reports (SMTRs) are the outcome of EE motor audits in the SMEs. In Turkey there have been several projects implemented and seen that less than 10% of EE audits or survey assessments return to investment. With the mutual agreement of the Project managing board, the hit rate referring the number of SMEs making EE	Noted, however the comment that audits could have been carried out earlier is still valid. The audits provide information on the technical and financial viability of a motor replacement and does not need to

Author	Comm. No.	Comment/Feedback on the draft MTR report	MTR response and actions taken
		motor investment per the number of SMEs audited was aimed to be maximized. This approach also secured to use Project resources for audits in a more result-oriented way. Therefore, in order to increase the number of SMEs who are willing to change their motors after EE audits, firstly financial modality was designed and proposed.	be linked to the financial mechanism provided.
NT	101	Audits, MEEIPs and financial mechanism are components of replacement programmes. So, without any financial model, replacement programmes cannot be implemented even if the audits are done.	Please see response on comment no. 45.
MS	103	Alternative co-financing options originally designed by our Finance Consultant and proposed modality by PMU in 2018 to the Ministry. It was also covering the third party financial national and international institutions after discussion meetings with them. OIZ one-stop shop would have reserved finance pool to sustain cycling effect and to trigger additional EE audits to be conducted by OIZ Energy Management Unit (EMU) engineers. OIZ EMUs have their own EE audit measurement devices and capacity building of them by training and coaching could have been planned. If we could have done so, that would have populated a lot the number of MEEIPs in OIZs. However, as the public incentive supplying actor, KOSGEB denied our finance modality and did not allow to contribute with any other third-party financial institutions. Moreover, since 4 of domestic motor manufacturers and EMOSAD are formal Project partners in TEVMOT, technically it was not possible from UNDP Procurement Unit to buy EE motors via direct procurement from those parties to eliminate any conflict of interest results. The same positioning was also valid for EYODER who is representing association for EVDs and also TEVMOT Project partner to procure EE audits from such EVDs directly. Therefore, PIU and Finance Expert took care about these restrictions while designing the finance model for one-stop shop structure in OIZs. Through adaptive management approach PIU and Finance Expert together with intensive contribution of GDSRP experts prepared Finance Strategy Report in July 2018 / October 2018 and Road Map for Financial Activities in December 2019, etc. to settle most reasonable finance model considering positioning of Project partners and expectation of the stakeholders.	Noted. Additional co-financing opportunities proposed in 2018 should be revised when working on the financial support mechanism for the replication phase. It is important to not be held hostage by KOSGEB.
JO	105	Can you say what this is for?	Clarification added.
JO	107	Can you please say what this is for?	Details on co-financing can be found in section 4.3.3.
EG	109	So far the commitment has not been seen	Noted
EG	111	The OIZ does not count much in order to reach one of the targets change of 3X10000 motors here. TEVMOT needs a very effective awareness campaign and support from all stakeholders in the decision what to buy	Noted, wording on awareness campaign modified in section 4.2.1.

Author	Comm. No.	Comment/Feedback on the draft MTR report	MTR response and actions taken
JO	113	What about KOSGEB? Nothing moving here so how is this an active contribution?	KOSGEB is contributing through co-financing the demonstration phase.
JO	115	I recommend discussing the Who, When, and How of each recommendation.	Added to each recommendation in section 1.6.
NT	117	Any recommendations for revision of targets in the RF and/or change in implementation strategy?	As mentioned in the review, targets are consistent, and no change is suggested.
JO	119	Should it not be clear that this is not a restarting as they have been TRYING to work with KOSGEB. Do you recommend stopping this completely? It is not clear.  Who = Project Manager, Project Staff, CTA When = Immediately How = Meetings with EBRD, TurSeff etc	The sustainable finance mechanism needs to be seen independently from KOSGEB, as their further commitment after the demonstration phase is not clear.  Information on who, when and how added.
JO	121	In the main text, I recommend giving more details about how such an FSM might work	Further details added in section 4.2.1.
JO	123	TurSeff and OIZs should be separate recommendations. Do you agree? I think this might help.	Based on outcome of MTR Report call, TurSEFF and OIZs should be in one recommendation. There seems to be a possibility that TurSEFF could provide financing to OIZs.
MS	124	In 2018, we discussed the cooperation rooms with EBRD Turkey Office directly, but they did not prefer to launch a specific loan pack but rather advised us to continue with existing TurSEFF Facility. From SME side, there is nothing special nor attractive way if they ask TurSEFF TL currency credit from its partner banks with not so preferable interest rates. Therefore, TurSEFF could be tried again but not so promising alone unfortunately.  In 2019, MoIT initiated negotiations with World Bank and French Development Bank to receive reasonable lending lines for EE motor incentive package addressing around 40 M \$ disbursement figure. Such IFIs prefer Treasury guaranteed debit loans to the Government but not for green product lines with commercial banks. So, they do not prefer bottom up operation. Only EBRD is preferring such green credit line facilities with local bank and leasing institutions. Due to the nature of small volume of investment figures for EE motors, per SME, such facilities like TurSEFF and its partner banks are preferring EE utility investments with larger amount of loans but including EE motors. Even SMEs prefer such green loans for their production machinery park improvements rather than tweezing motors individually. Therefore, motor buying itself is a retail-based investment and require special micro-campaign and efforts for Fis referring <	See previous response

Author	Comm. No.	Comment/Feedback on the draft MTR report	MTR response and actions taken
		250 K \$ volume.	
JO	127	But they just signed an MoU with KOSGEB.	The protocol with KOSGEB is limited to the demonstration phase.
JO	129	When??? Or do you want to say that we stop now working with KOSGEB? Please clarify.	Cooperation with KOSGEB in the demonstration phase is continuing, there is no suggestion to stop working with them. Participation of KOSGEB in the replication phase is to be clarified, see recommendation no. 3. Reference to recommendation no. 3 added for clarification.
JO	131	Please be clear about whether you want the project to stop trying to work with Kosgeb or not?	See previous response
EG	133	Knowing a little to the Turkish situation have been working there since 2011, I would say it is not possible to stop cooperation with KOSGEB	Noted, see recommendation #3
JO	135	Surely a better word it re-focused. They are not stopped. Just they are working with a partner KOSGEB where it has not been working.	Wording revised.
MS	136	We still have around 1.5 M \$ in the project budget for Component-4 and around 330 K \$ would be spent for 200 EE audits and 240 K \$ would be spent for pilot phase motor replacement Capex incentive contribution with KOSGEB. Possibly we are going to save around 200 K \$ from Component-4 budget due to implementing many activities with ICs rather than RFQs. So, shall we use such an excess amount for one-stop shop finance mechanism initiation in parallel with KOSGEB modality or else for much more impactful awareness raising activities under Component-5? It needs such a strategic and budget-wise change in the Project. Is it possible?	The one-stop shop for the replication phase is a must and any budget available is good and should be wisely used.
JO	139	Which of these models is best? Can you discuss the best approach and why in section 4.	Discussion of models added in section 4.
NT	140	BACKGROUND INFO: During PPG phase, the Executing Agency did not welcome any of these models fully and suggested to reinforce or develop another model during implementation phase.	The PIU is free to elaborate any model that works. The suggestions in the ProDoc should be seen as a starting point where details in implementation are leading to deviations from original suggestions.
JO	143	Are you recommending signing an MoU with EBRD? Or how do you propose to cooperate with them. Is this not a whole separate recommendation? Please specify.	As the scheme is up and running, an MoU doesn't seem necessary. Work with TurSEFF and the OIZs should be in one recommendation, as there should be

Author	Comm. No.	Comment/Feedback on the draft MTR report	MTR response and actions taken
			opportunities for OIZs to receive funding from TurSEFF.
MS	144	Communicate and find a win-win solution with local and international financial institutions - IFIs. WB, EBRD, AFD, EIB and some other IFIs have implemented green loan credit lines including HEMs even for small loans (i.e. < 250 K \$) with their local partner banks without conflicting with public incentives. Moreover, leasing, credit guarantee funds, green credit lines under commercial banks, etc. options are still on the table. So, while implementing KOSGEB incentive model in pilot phase, in parallel to that alternative financial scenarios shall be generated with focal point endurance of OIZs possibly.	This is a good description of the required approach.
JO	147	Is this not a whole separate recommendation?	This can be a key component of the financial mechanism.
JO	149	Why hasn't it been done already?	This was investigated but rejected by KOSGEB.
JO	151	To be carried out by who?	Wording added.
NT	153	This is important! We already have a finance expert who is local. So, why is it specifically recommended to have an international expert?? Cannot we go with our existing expert for one-stop-shop or is this different??	Wording revised, final decision whether national or international consultant is up to PIU.
EG	155	Could we develop a simpler solution for support in DK we had a list with motors, and the size of support was connected to the size and prize of motor.	This can be considered, still, a financial mechanism needs to be established.
NT	157	This should also include repeated and long lasting (never-ending) restructuring processes within the MoIT.	Wording revised.
NT	159	This should mean "with no additional budget", because, any extension leads to additional costs, because at least the fixed costs (e.g. salaries of PIU, maintenance of office, etc) will continue in addition to originally contemplated implementation period.	No-cost extension is the technical term used for extending a project timeline without requesting additional funding.
JO	161	Given the time that it takes to get these extension requests approved and given that it's not allowed to request less than 6 months before end of the project. I suggest this is done by July 2021 so at least one year before  Who = Project Manager When = by July 2021 How = Write to RTA and then to UNDP New York	Wording added.
JO	163	For discussion/consideration but are you saying to extend the project even if the adaptative management recommendations are not followed?	A considerable reason for delays in the project were external factors. Therefore, it is justified to extend the project timeline. Also, as there is no additional funding requested, there is no additional risk by

Author	Comm. No.	Comment/Feedback on the draft MTR report	MTR response and actions taken
			extending the project timeline.
EG	165	TEVMOT needs this extension in order to reach the targets, could it be considered to direct the awareness raising to other sectors?	Agreed
JO	167	Recommendation 3 sort of contradicts recommendation 1 which says to refocus away from KOSGEB and now suddenly we are talking with KOSGEB about a replication phase.	At the current point of time, it is not clear whether KOSGEB is participating in the replication phase of the project. This needs to be investigated in the coming months. If KOSGEB is taking a more positive approach, this could be helpful for the Project.
JO	169	Who, when, how?	Mention in third para, clarification added.
NT	171	Protocol??	Protocol is an agreement as well.
JO	173	What is the typical ticker size for this? It seems tiny.	The figures mention is the funding available both from TEVMOT and KOSGEB. Funding is sufficient for the demonstration phase, but further support is necessary for replication phase.
EG	175	10 % of all motors fail every year if companies would start to buy HEM in this situation, we would be more than close to target as there is a motor stock of 4.3 mio motors in turkey 😊 maybe we should consider this	This was added in Recommendation #1
EG	177	First, we need to get Emosad and importers to agree on delivering data otherwise there is nothing to monitor	Agreed, see recommendation #5
JO	179	Maybe the recommendation should be to hire a full time M&R consultant. – National Consultant under component 5 focuses on Knowledge Management and Monitoring and Reporting What should the budget be?	There is no need for a full-time consultant, as there are no extensive M&E requirements. Wording added to clarify required approach.
NO	181	Maybe we can hire a short-term consultant for the knowledge management content of the project as we have an in-house M&E Advisor under the CCE Portfolio and corporate M&E Analyst for UNDP Turkey	Suggestion considered; wording revised.
JO	183	Who, when, how?	Wording revised.
NT	185	All recommendations made here have been tried by the PIU.	This is noted. However, it is suggested to keep close contact with EMOSAD aiming at increasing their participation and assistance.
EG	187	The key missing is cooperation	Agreed
JO	189	Replace with who? Can you make some suggestions in the text?	As already mentioned in the text, co-financing is to be provided by other motor producers, which are members of

Author	Comm. No.	Comment/Feedback on the draft MTR report	MTR response and actions taken
			EMOSAD.
JO	191	Who, when, how?	Details added
NT	193	I don't think it is so easy! We need to clearly understand exclusion procedures of GEF (if any). An official process should be initiated by MoIT/UNDP for exclusion/replacement of GAMAK from co-finance and partnership.	There is no procedure for excluding co-financing, the co-financing is just not provided. Also, for additional co-financing, there is no specific procedure and 3 additional co-financing letters were provided after approval of the project.
JO	195	Who when how?	Details added.
EG	197	The thing is we need competent consultant, we will have this after the training in July. Let's discuss	Noted, trainings have started
JO	199	This looks very urgent to me. We cannot do 1) financial support mechanism and 2) audits. We need to FIND a way to do audits now. Who When What	As clarified by the PIU in this document, the audits will start early July. As this activity is on track, no further recommendation required.
NT	200	Audits do not make sense without a financial model.	See previous comments on audits and financial model.
JO	203	Can we please consider a recommendation on how to strengthen this?	This is included in recommendations 3, 4 and 7.
EG	205	TEVMOT also needs to understand the decision process that leads to HEM, and who influences this process.	This is covered under information and awareness barrier, but needs to be considered obviously
EG	207	The motors are there however the SMEs see 2-week delivery time because the manufacturers don't focus on HEM.	Immediate availability of motors has been considered in Recommendation #1
EG	209	The big motor producers know how to produce them, they even export them to DK, however it seems focus is elsewhere domestically.	Noted
EG	211	This is why we need awareness raising with super impact.	Addressed in revised wording in section 4.2.1.
EG	213	Payback time is less than one year.	Yes, still SMEs are asking for grant contributions
EG	215	It is planned that CTA and LFC visit and train all EMUs in OIZs in Turkey. The managers will be invited to regional meetings to get a good half-day training and keep their training material so they can train energy managers in their respective OIZs	Noted
JO	217	You should state the project objective up front and the targets in terms of tonnes of CO2 to reduce, MhH energy consumption saved, MWh of electricity to be	Project objective and targets added.

Author	Comm. No.	Comment/Feedback on the draft MTR report	MTR response and actions taken
		reduced, and 5000 motors replaced.	
JO	219	You don't mention the interest rate subsidy mechanism and yet this was a central and important point of Component 4.	The interest rate subsidy mechanism was applied by KOSGEB in a project, which is not related to the TEVMOT project.
MS	221	In ProDoc Project Result Framework chapter in Page 28, cumulative number of phased out inefficient electric motors taken into a recycling program by EOP is defined as 5,000 pcs. Moreover, in page 30, cumulative USD investments through an established "one-stop-shop" FSM by EOP is mentioned as 47, 92 million. What would be solid strategic recommendations which could be converted into an action plan to achieve such figures?	Based on all discussions held during the MTR, the strategy defined in the ProDoc is still valid and should be implemented. The key to success is the financial support mechanism, which is described in chapters 4.2.1 and the recommendations.
EG	223	EMOSAD members are well established and they can afford to establish a member organization if they want.	Agreed
EG	225	This was the way it was done in DK	Noted
EG	227	I think we should consider the resources allocated to this monitoring as we already know from EU, Canada, US that HEM is beneficial to a country	Monitoring needs to be carried out as per the M&E plan, budget is assigned for that work.
EG	229	We have discussed in the PMU how the motor training that has been developed can be integrated in the educational environment in Turkey, such as universities, energy manager education and adult /vocational training programmes	Noted
EG	231	See enclosed report about EMOSAD	Noted
EG	233	Trainings will be delivered in July as online training	Noted
JO	235	What was this for?	Funds were used for the upgrade of the testing facility. Wording added.
EG	236	New motor testing equipment installed in Q4 2019. It is ready to work however TSI has only been in contact with TEVMOT when TEVMOT requested meetings, which has been difficult	Noted, there should be closer cooperation during the motor testing which is planned.
JO	239	You make no mention of the interest rate subsidy mechanism that is described in detail in the prodoc. Please discuss this and what happened.	The interest rate subsidy mechanism was applied by KOSGEB in a project, which is not related to the TEVMOT project. Information is included in this chapter.
JO	241	What was the role of our project in this activity? If no role, please state. If there was a role, please state.	Clarification added that this was before the start of the TEVMOT project.
MS	243	There was only zero interest rate loan campaign for Kayseri OIZ resident SMEs as public incentive approach. KOSGEB made an agreement with several commercial local banks to recover the interest rate for the loans of eligible energy efficient motors. The remarkable point here is that KOSGEB incentives for free EE audits and grants for Capex of 60 to 75% of EE utilities were still	Noted.



Author	Comm. No.	Comment/Feedback on the draft MTR report	MTR response and actions taken
		active at that time. Because of almost no demand coming from SMEs for this grant at that time, KOSGEB designed new model of recovering interest rate of motor loans but not included Capex incentive as well. KOSGEB can apply only one type of incentive for a specific support modality. However, that concept also failed. SMEs accepted EE audits but later on only 1 SME applied for motor replacement support in Kayseri.	
MS	245	<p>For TEVMOT as PIU, we designed SMART and innovative finance model within the first half of the year 2018 via including commercial banks and also OIZ Directorates as of one-stop shop stiffeners. We have initiated several discussion sessions with KOSGEB together with DGSRP to adapt KOSGEB to our innovative financial model in a reasonable way. KOSGEB did not accept involving or redesigning such an innovative new programme but insisted on assimilating our offered model into one of its existing conventional incentive schemes (i.e. free EE audits and grants for Capex of 60 to 75%). In the meantime, while discussions were ongoing, KOSGEB even withdrew this grant incentive for general EE audit and utility capex grant programme which had been in force for around a decade, from circulation in December 2018 which was the date that we were continuing our discussions with KOSGEB and they did not inform this decision neither to TEVMOT, DGSRP nor to MoENR which is another governmental body supplying public EE incentives for broadly larger size enterprises. By the way, KOSGEB is a governmental institution under MoIT like DGSRP and such kind of serious decisions are taken with the Deputy Minister approval. The reason mentioned to us and to DGSRP for this withdrawal is the lack of applications by SMEs for EE audits and EE investments.</p> <p>It was the time for Project board management to decide either to continue with KOSGEB or not. MoIT decided not to take KOSGEB out from the Project finance modality in October 2019. Even after that, KOSGEB denied any other financial incentive like commercial bank loans to be maintained with OIZ cooperation and contribution and so what we had in our hand was the grant scheme (i.e. free EE audits and grants for Capex of 60 to 75% of EE utilities) which was the same as the so called “unsatisfactory” support withdrawn from circulation in December 2018. We spent the year 2019 to convince KOSGEB for further discussions to relaunch grant incentive for TEVMOT. At the end, in 2nd January 2020 it was on force and announced.</p> <p>Hence, if we succeed on pilot EE audit and motor replacement with 100 SMEs under these circumstances, then it will be also real showcase for KOSGEB and MoIT to illustrate how to apply public EE loans successfully to the attraction of</p>	The statement in the text is about whether audits can be carried out without clarity about the financing mechanism, which is the opinion of the mid-term reviewer. If there is a financing mechanism with commercial banks and OIZs, PIU should further develop that mechanism and implement it for the replication phase.

Author	Comm. No.	Comment/Feedback on the draft MTR report	MTR response and actions taken
		SMEs which could also be a tangible outcome under the capacity building of KOSGEB. In fact, we know that unless we know how to promote the incentives wisely, it would not be so interesting anymore for SMEs. We have received around 150 signed letters of intent from SMEs currently in 7 OIZs with successful info-day workshop organizations with OIZ directorates and if we sustain boosting the demand from SMEs for the continuation of KOSGEB TEVMOT grant through other OIZs, then the result of the pilot motor replacement activities would also be lessons-learned for both KOSGEB and MoIT and also for further KOSGEB funding.	
JO	247	Why not hire a full time or part time knowledge management and M&E Coordinator	See response on comment no. 181.
EG	249	This campaign should target the decision makers and the chain from manufacturers to the SMEs. The general public is not important and can come as a spinoff effect of the campaign	Wording revised
EG	251	TEVMOT needs to monitor the whole market; both domestic production and import market.	Agreed
EG	253	Case stories could have been developed with the help of EMOSAD. If EMOSAD can be more cooperative, the domestic produces can sell HEM to the Turkish market	Agreed, see recommendation on cooperation with EMOSAD
EG	255	I have never understood why the large industry, service and trade etc are not targeted. There is a potential	Decision was taken during project preparation to focus on SMEs.
MS	257	Implementing Partner, DGSRP and MoIT decided	Wording revised
EG	259	Therefore, I suggest that focus should be “replace when fail” as earlier mentioned. There is 10% fail every year so it would easily bring us to the target. This requires that the suppliers can deliver HEM within hours and that the suppliers, installers etc know what to supply.	Included in Recommendation #1
EG	261	There is also a need to highlight the value of non-energy benefits <a href="https://www.topmotors.ch/sites/default/files/2019-12/E_MB_30_Multiple_Benefits.pdf">https://www.topmotors.ch/sites/default/files/2019-12/E_MB_30_Multiple_Benefits.pdf</a> This was widely used in the Danish campaign as energy savings often are not the most important, SMEs are more interested in low maintenance costs, productivity, quality etc as mentioned in the above link	Included in chapter 4.2.1 on awareness campaign
EG	263	Do we know why?	This was mentioned in several discussions with stakeholders. Reasons given were lack of trust and costs.
EG	265	This is also what TEVMOT has experienced.	Noted
EG	267	I don't know the board but one question could be: Does it consist of people that	The PB is a standard structure and

Author	Comm. No.	Comment/Feedback on the draft MTR report	MTR response and actions taken
		can help the PMU?	includes key stakeholders.
JO	269	Section needs a lot of work. These are just numbers. What was the money spent on? Was it cost-effective?	Analysis of cost-effectiveness added.
JO	271	You are required to provide some discussion on the cost-effectiveness of the use of funds and I do not see this anywhere. Perhaps it could be done by component.	Analysis of cost-effectiveness added.
EG	273	We need to discuss how to activate the in-kind finance	Co-financing has been confirmed by stakeholders with co-financing statements.
EG	275	I have not seen this commitment	Agreed
JO	277	How is this consistent with the earlier claim that all stakeholders have been actively involved in the project?	This only involved the cash contribution, not the in-kind contribution.
JO	279	Previously you say it is \$480,000 broken down into 240K + 240K. Now, can we please be consistent?	The \$480,000 consists of \$240,000 from GEF and \$240,000 from the government. The total cash co-financing commitment from the government is \$500,000, so an additional \$ 260,000 will be made available for technical assistance.
JO	281	Can you please comment on this?	Details on in-kind contribution from motor manufacturers were added.
JO	283	Can you please comment on this?	See previous comment
JO	284	Needs a lot more detail.	The table only provides a summary on the co-financing, explanations are provided in the paras above.
JO	286	Empty comment	-
JO	287	Sorry but this section needs major improvement. We have co-financing of \$13.43 million but no detailed explanation of what the funds were spent on and why indeed they do qualify for co-financing.	The section already included details on co-financing provided. Additional text was included to provide information on contributions from all stakeholders. The section also excludes claims for co-financing (made by TSI) and requests the terminal evaluation to have a closer look at co-financing claims of motor manufacturers.
EG	288	Agree and we need to discuss how it should be spent	See previous comment
JO	291	You have no discussion anywhere of cost-effectiveness and yet it IS in the TOR for all evaluations.	Discussion of cost-effectiveness was added in section 4.3.3 on finance and co-financing.

Author	Comm. No.	Comment/Feedback on the draft MTR report	MTR response and actions taken
EG	293	I have been wondering why is the electricity sector not involved, in any other country with HEM campaigns the electricity sector is involved with support as the HEM campaign will free capacity in the production and grid if all motors in Turkey would be HEM the electricity saving is equal to the Danish electricity consumption, so no need for new powerplant	Not sure whether the Turkish electricity sector is seeing it that way, electricity demand is continuously increasing, and new capacities are added every year.
JO	295	In other words, the PIU has tried hard but it has not worked as well as might have been envisaged.	That is correct
MS	297	It is not fair to mention that PIU lost the overall targets. The reasons behind unachieved targets especially due to activities under Component-4 are the lack of imitative usage by MoIT until 28 October 2019 when we conducted directly with Mr. Minister after a long lobbying effort. Even, Mr. Claudio Tomasi visited Deputy Minister two times in that period for this reason to overcome the managerial barriers and so such systematic occasions cannot be driven by adaptive management only from UNDP CO side. Thus, it should not be solely addressed to PIU.	There is no evidence that EOP targets and progress towards achieving these targets were discussed in any of the PB meetings, as there is nothing mentioned in the minutes. The effort to contact the minister to secure support by KOSGEB is a good initiative, however, this only covers the demonstration phase and does not include any long-term initiative towards securing funding for the replication phase as well. It is the impression of the MTR reviewer that the PIU has taken up this comment and is now taking a more strategic approach towards achieving EOP targets, which is a good step forward.
JO	299	Why is it due to time? It is more due to the economic situation and KOSGEB not in a position to do the FSM at this time with UNDP.	Wording added for clarification.
EG	301	We could look for the installers, retail companies and the producers of equipment with motors pumps, fans etc, engineers that design products, buildings etc	Noted
JO	303	How is this a major achievement if the FSM is not implemented?  This comment is not consistent with the recommendation that there needs to be a re-focusing of the FSM.	After all the discussions with KOSGEB and the ministry, it is a major improvement to have financing for the demonstration phase secured. Re-focusing of the FSM is required as it is not clear whether KOSGEB will contribute to the replication phase.
EG	304	As far as I remember changes were requested soon after	Noted
JO	307	What about TURSEFF. You don't mention it.	At the moment no protocols are under preparation with TurSEFF.

Author	Comm. No.	Comment/Feedback on the draft MTR report	MTR response and actions taken
JO	309	Why as good as ML with no financial support mechanism and energy audits not even started yet?	The rating provided covers all 4 criteria of sustainability. The next rating would be “moderately unlikely”, which does not reflect the sustainability of the project in the opinion of the MTR reviewer.
JO	311	If you agree, please add this.	Wording added.
EG	312	I see the financial support as a kickstart, the business case for HEM is so positive that when words spread HEM can sell them self, no one would consider not buying a HEM in DK	Agreed
JO	315	Who in the government?	Wording modified.
JO	317	Refocused is a better word than restarted.	Wording revised.
EG	319	This is without the value of non energy benefits, if they are included you come down to months	Wording revised.
JO	321	What about the limited involvement of KOSGEB? Is this not a risk to sustainability? You don't mention it.	Wording added to evaluate the involvement of KOSGEB.
EG	323	The four-day training will include daily test and a test at the last day to monitor the learnings	Noted
JO	325	What can be done to improve this?	Wording added on risk mitigation.
JO	327	What about the ESMF. Environmental and Safety Management Framework?	Wording modified.
EG	328	HEM will have a positive effect on heath and safety as less noise and heat comes from HEM. one of the NEBs	
JO	330	How is this not just a complete re-statement of 1.5  5.1 and 1.5 appear exactly the same and 1.6 is also similar. Please fix this and make them different.	Chapter 1 is the Executive Summary of the MTR, therefore all conclusions and recommendations in chapter 5 can be found as well in chapter 1 (sub-chapters 1.5 and 1.6).
JO	332	You completely repeat 1.6. I don't get it. All my comments form 1.6 are here also. Please do not repeat.	Chapter 1 is the Executive Summary of the MTR, therefore all conclusions and recommendations in chapter 5 can be found as well in chapter 1 (sub-chapters 1.5 and 1.6).
EG	334	I don't agree that audits are key to come into companies. At the moment LFC is conducting interviews with companies the survey will reveal what could be driver Audits/ redesign is required in order to get the full benefits of HEM	Noted
EG	336	This is not a way forward the baseline can be affected by a lot of factors, production mix , climate etc If 100 motors are changed in a company, it is not feasible to monitor them all. That will “eat” the first year's savings	Wording has been added in section 1.6

---

Author	Comm. No.	Comment/Feedback on the draft MTR report	MTR response and actions taken
EG	338	See enclosed document about EMOSAD	Noted
EG	340	An English website would also help cooperation with other motor projects. We have discussed in the PMU to put the training material on the website.	Included in recommendation in section 1.6.