



Reducing GHG emissions through improved energy efficiency of industrial sector in Georgia



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Project at a Glance

Title: Reducing greenhouse gases (GHG) emissions through improved energy efficiency of industrial sector in Georgia.

Objective: Reduce GHG emissions and improve productivity of Georgian industry through improved energy efficiency and stronger services market.

Donor: Federal Ministry for Sustainability and Tourism of Austria



Implementing Agency: UNIDO

Executing Partners: Austrian Energy Agency, Min. of Economy and Sustainable Development of Georgia, Min. of Environment Protection and Agriculture, Georgian industries, Georgian consultants, others.

Budget: € 796,460 (without project support costs)

Duration: 3 years (Jan 2017 – Dec 2019)

Project Structure

Component 1

Policy & Institutions

Outcome 1 - Enhanced policy and programmatic frameworks for promotion and support of industrial energy efficiency.

1. ISO 50001 is adopted & promoted as national EnMS standard
2. Increased knowledge of EE policy-making and policy-implementing institutions about IEE best-practice policies and programmes
3. National IEE Actions with quantified GHG emission reduction targets are developed

Component 2

Market Services, Skills & Implem.

Outcome 2 - Accelerated penetration of EnMS & MSO in Georgia industries and development of a market offer for implementation support services.

1. 25 local EE professionals are trained to provide implementation support and capacity building for
 - ✓ EnMS in line with ISO50001
 - ✓ Motor Systems Optimization
2. Implementation of EnMS & MSO in 10 companies
3. Industry awareness and information availability about IEE BAT and financing

Component 3

Enhancing Investments

Outcome 3 - Development of innovative financing mechanisms (including carbon financing) for investments in IEE and low carbon technologies.

1. Assessment of IEE and climate technologies financing mechanisms
2. Design of an innovative IEE-Climate financing mechanism/products
3. Increased capacity of local financing institutions about IEE and climate investments and financing mechanisms



Project Implementation Stakeholders

Counterparts

1. Ministry of Economy and Sustainable Development
2. Ministry of Environment Protection & Agriculture
3. Georgian Accreditation Center
4. Georgian National Agency for Standards and Metrology

Executing Partners

1. Ministry of Economy and Sustainable Development
2. Austrian Energy Agency
3. Kommunalkredit Project Consulting
4. Partner enterprises
5. EE consultants and service providers, including UNIDO RECP trained ones
6. Georgian Technical University
7. Pro Credit Bank Georgia

Other Stakeholders

1. Private and public sector enterprises at large
2. EE equipment suppliers, especially electric motor systems related
3. Employers/Industrial associations
4. Professional associations
5. Energy Efficiency Centre of Georgia
6. Financing institutions
7. International & bilateral organizations and donors
8. Others



Project Key Performance Indicators

KPI

Target

Project Objective

1. GHG emission reductions (over 7 years)
2. Energy performance improvement

50,000 ton CO₂eq
1% per year against normalized baseline

Comp. 1 Policy & Institutions

1. ISO 50001 is adopted & promoted as national EnMS standard
2. Increased knowledge of policy-making & -implementing institutions about IEE BAT policies and programmes
3. National IEE Actions with quantified emission reduction targets are developed

Adopted/Promoted

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1st IEE-EnMS-MSO Best-Practice Website
2nd Energy Management Certification Program
3rd Voluntary Target-Setting Agreement

Comp. 2 Services, Skills & Implement.

1. Number of qualified EnMS & MSO qualified experts
2. Number of enterprises with EnMS & MSO implemented
3. Number of industry decision-makers IEE BAT aware
3. Number of EnMS and MSO case studies

15 EnMS + 10 MSO (30%F)

10

80

10

Comp. 3 Enhancing Investments

1. Assessment of IEE & climate tech. financing mechanisms
2. Design of an innovative IEE-Climate financing mechanism/products
3. Increased capacity of local financing institutions about IEE and climate investments and financing mechanisms

Report

1st Motor Systems Efficiency
2nd EnMS-ISO 50001 Implement.

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Implementation Progress

PC1 – Policy and Institutions



PC 1 – Policy and Institutions

Planned Outputs

1. ISO 50001 is adopted & promoted as national EnMS standard
2. Increased knowledge of EE policy-making and policy-implementing institutions about IEE best-practice policies and programmes
3. National IEE Actions with quantified GHG emission reduction targets are developed

Progress as of 5 June 2018

- ✓ ISO 50001 adoption as national Georgian standard supported. Translation and national adoption of following standards is being supported

Standard ID	Title
ISO 50002:2014	Energy audits -- Requirements with guidance for use
EN 16231:2012	Energy efficiency benchmarking methodology
EN 16247-1:2012	Energy audits - Part 1: General requirements
EN 16247-2:2014	Energy audits - Part 2: Buildings
EN 16247-3:2014	Energy audits - Part 3: Processes
EN 16247-4:2014	Energy audits - Part 4: Transport
EN 16247-5:2015	Energy audits - Part 5: Competence of energy auditors

- ✓ 2-day EnMS-ISO 50001 training delivered to Georgian Accreditation and Standardization bodies – **22-23 Feb 2018**

PC 1 – Policy and Institutions

Planned Outputs

1. ISO 50001 is adopted & promoted as national EnMS standard
2. Increased knowledge of EE policy-making and policy-implementing institutions about IEE best-practice policies and programmes
3. National IEE Actions with quantified GHG emission reduction targets are developed

Progress as of 5 June 2018

- ✓ Active participation in the finalization of 1st Georgia National Energy Efficiency Action Plan (NEEAP)
 - Attended stakeholders meeting for presentation of draft NEEAP – **28 Feb 2017**
 - Submitted written comments – **15 Mar 2017**
- ✓ 1-day International Workshop on Energy Agencies for MoESD, MoEnergy, MoEnviron. and Min. of Finance to support decision-making on draft 1st NEEAP - **25 April 2017**
- ✓ 1-day Stakeholders Workshop to discuss PC1 & prioritize possible activities – **26 Apr 2017**
- ✓ 2-day International Workshop on Articles 7, 8 and 16 of the EU EE Directive – **5-6 Jun 2018**

PC 1 – Policy and Institutions

Planned Outputs

1. ISO 50001 is adopted & promoted as national EnMS standard
2. Increased knowledge of EE policy-making and policy-implementing institutions about IEE best-practice policies and programmes
3. National IEE Actions with quantified GHG emission reduction targets are developed

Progress as of 5 June 2018

- ✓ 1-day Stakeholders Workshop to discuss PC1, present IEE policy best-practice & “actions”, & prioritize possible activities – **26 April 2017**
- ✓ Consultations with Gov. counterparts and stakeholders, including other donor funded programs (ongoing or in the pipeline)
- ✓ IEE Actions prioritized for project TA support:
 1. Awareness raising and promotion through IEE-EnMS-MSO Information and Best-Practices website
 2. Development of Energy Manager/Management Certification Program
 3. Development of pilot Voluntary Target-Setting Agreement scheme for industry



Implementation Progress

PC2 – IEE Market Services, Skills & Implementation



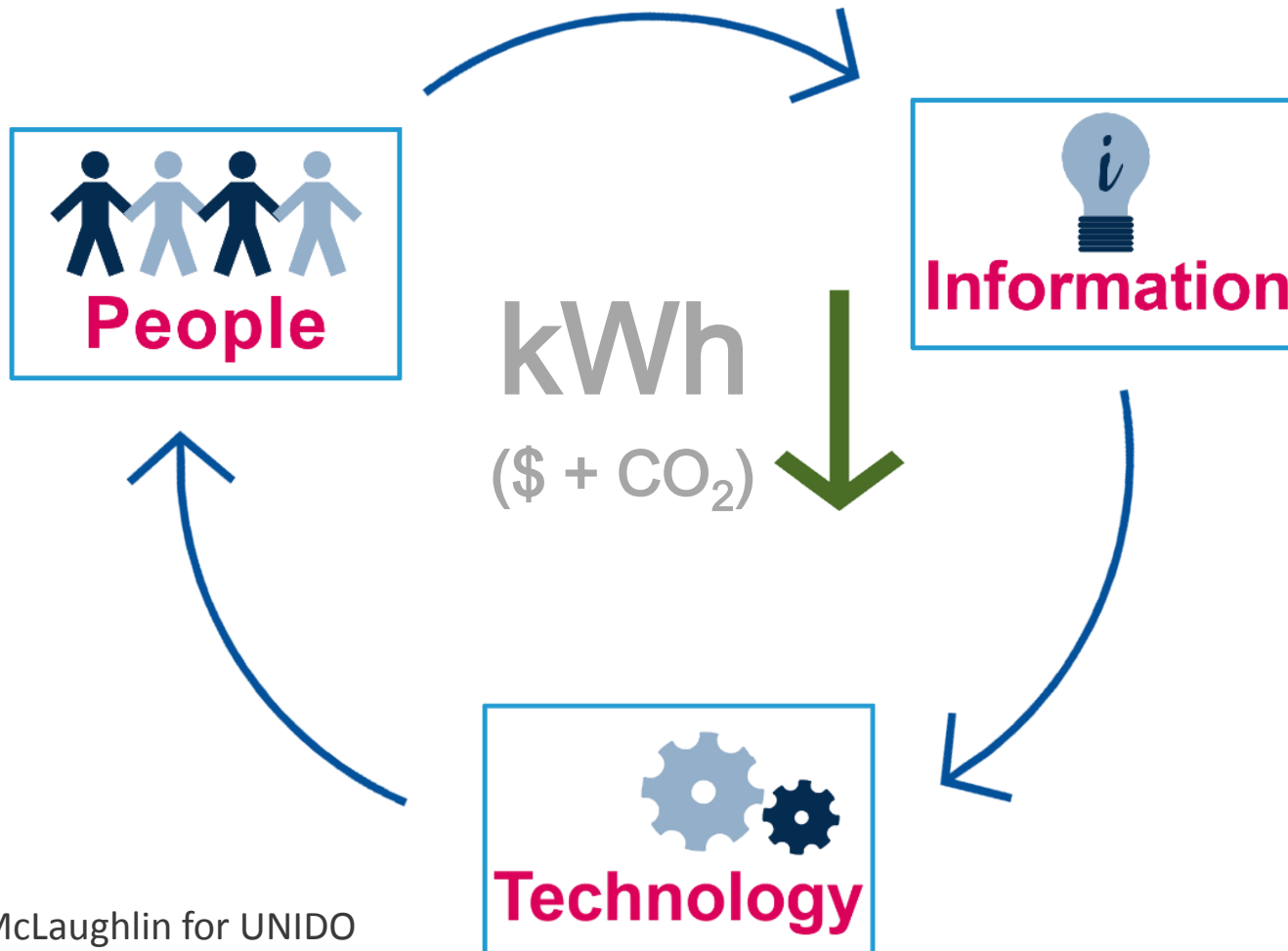
PC 2 – IEE Market Services, Skills & Implementation

Planned Outputs

1. 25 local EE professionals are trained to provide implementation support and capacity building for
 - ✓ **EnMS in line with ISO50001**
 - ✓ Motor Systems Optimization
2. Implementation of EnMS & MSO in 10-15 pilot enterprises
3. Industry awareness and information availability about IEE BAT and financing

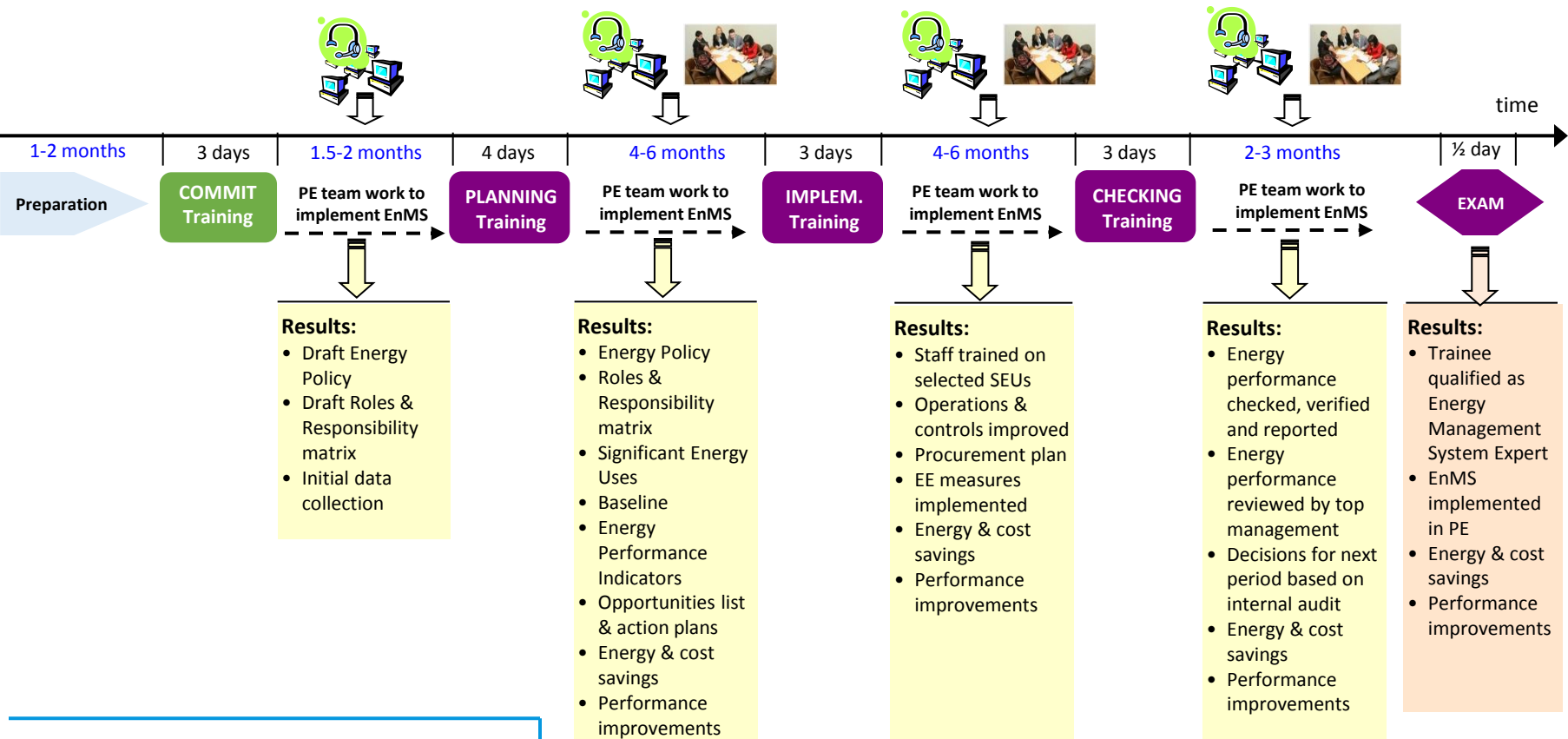
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EnMS – Managing and improving 3 pillars



Source: W. McLaughlin for UNIDO

UNIDO EnMS Program - Skills development & results



Legend

PE team A Partner Enterprise (PE) team is formed by the PE's staff participating in the EXPERT program plus 1-2 national consultants trainees.



Ongoing and periodic communication through webinars, emails and phone calls between international trainers and PE teams to review progress, discuss issues and provide guidance.



Plant visits by national EE consultants trainees

PC 2 – IEE Market Services, Skills & Implementation

Planned Outputs

1. 25 local EE professionals are trained to provide implementation support and capacity building for
 - ✓ **EnMS in line with ISO50001**
 - ✓ Motor Systems Optimization
2. Implementation of EnMS & MSO in 10-15 pilot enterprises
3. Industry awareness and information availability about IEE BAT and financing

Progress as of 5 June 2018

- ✓ Train-the-Trainers training – **28-31 Mar 2017**, 20 participants (EnMS Expert Trainees candidates)
- ✓ 15 Consultants selected as EnMS Expert Trainees (5 women, 10 men)
- ✓ **MODULE 1 - COMMITMENT TRAINING** delivered on **9-11 Oct 2017**, 26 participants and on **11-13 Dec 2017**, 12 participants
 - 15 consultants
 - 12 enterprises' representatives
 - 2 Pro Credit bank representatives
 - 5 other institutional stakeholders
- ✓ **MODULE 2 – PLANNING AND ENERGY PERFORMANCE TRAINING** delivered on **26 Feb – 1 Mar 2018**, 26 participants (14 Con.; 8 Ent.; 4 others)

PC 2 – IEE Market Services, Skills & Implementation

Planned Outputs

1. 25 local EE professionals are trained to provide implementation support and capacity building for

✓ EnMS in line with ISO50001

✓ **Motor Systems Optimization**

2. Implementation of EnMS & MSO in 10-15 pilot enterprises

3. Industry awareness and information availability about IEE BAT and financing

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Motors System Optimization Expert Programme

MODULE 1 EXPERT

**MSO USER
Training**

Day 1 | Day 2

17-18 Apr

6-8 weeks

MODULE 2 EXPERT

Day 3 | Day 4 | Day 5

2-4 Jul 2018

3-4 weeks



Communication between trainers and trainees

2-3 months

1-2 weeks

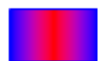
Exam

Time

Legend



Classroom training taught by international MSO experts



Motor System energy assessment measurements on-site (at one facility) taught by international MSO experts



Periodic communication between trainer and trainees through webinars, emails and phone calls

EXPERT Trainees prepare individual assessment report based on measurement carried out and worked done during the training. International MSO expert reviews and provides feedback

Deliverable

MSO assessment report prepared by each MSO EXPERT trainee

MSO Teams carry out steam system energy assessment in project partner enterprises with remote technical support & supervision by international MSO experts.
MSO Team = 1 Ent. + 1-2 Consultants

Deliverable

MSO assessment report prepared by enterprise MSO teams and cleared by international MSO expert

MSO Team

National MSO EXPERT trainees



+



Partner Enterprise

PC 2 – IEE Market Services, Skills & Implementation

Planned Outputs

1. 25 local EE professionals are trained to provide implementation support and capacity building for

✓ EnMS in line with ISO50001

✓ **Motor Systems Optimization**

2. Implementation of EnMS & MSO in 10-15 pilot enterprises

3. Industry awareness and information availability about IEE BAT and financing

Progress as of 5 June 2018

✓ Meetings with electric motors and system solutions providers in Georgia (Siemens, ABB and Schneider Electric)

✓ MODULE 1 – MSO USER TRAINING delivered on **17-18 Apr 2018**, 24 participants

- 8 consultants

- 14 enterprises' representatives

- 5 rep. from ABB and Schneider Electric

✓ 6 Consultants selected as MSO Expert Trainees + 6 enterprise representative to be nominated

✓ Portable measuring equipment procured

✓ MODULE 2 – MSO EXPERT TRAINING scheduled for **2-4 Jul 2018**, on-site session on 3rd Jul in Rustavi Azot

PC 2 – IEE Market Services, Skills & Implementation

Planned Outputs

1. 25 local EE professionals are trained to provide implementation support and capacity building for
 - ✓ EnMS in line with ISO50001
 - ✓ Motor Systems Optimization
2. Implementation of EnMS & MSO in 10-15 pilot enterprises
3. Industry awareness and information availability about IEE BAT and financing

Progress as of 5 Jun 2018

- ✓ Two Briefing sessions for enterprises organized – 27 Mar 2017 and 8 Jun 2017
 - 10 enterprises participated
- ✓ 6 EnMS partner companies at the moment
 - Rustavi Azot - Fertilizers
 - Kutaisi Automotive Plant - Automotive
 - Saknakhshiri - Mining
 - Saqinvest - Logistics
 - Tbilisi Transport Company - Transport
 - Georgia Water & Power - Utility
- Module 1 & 2 attended ✓
- Letter of Intent (LoI) Signed  Lol in process 





Implementation Progress

PC3 – Enhancing investments



PC 3 – Enhancing Investments for IEE

Planned Outputs

1. Assessment of IEE and climate technologies financing mechanisms
2. Design of an innovative IEE-Climate financing mechanism/products
3. Increased capacity of local financing institutions about IEE and climate investments and financing mechanisms

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Progress as of 5 Jun 2018

- ✓ Meetings and consultations carried out in 2017 with all main IFIs present/active in Georgia (WB, EBRD, ADB) in the field of energy efficiency
- ✓ Meetings and consultations with Pro Credit Bank (PCB) Georgia, only local bank responding to request for meeting and discussion.
- ✓ PCB Georgia interested in developing new EE lending products targeted to industry, including ISO 50001
- ✓ Assessment report being developed



THANK YOU!

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