



Energy Management in Polish Industry *effects, results, cooperation perspectives*

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Project goal and basis of implementation



Project goal:

popularization of energy management in Poland according to EN ISO 50001 standard and economic and ecological benefits related to the implementation of this standard in 9 pilot implementation based on experience and "know-how" of the Norwegian project partner - Norsk Energi.

The basis of implementation:

- Resolution of the Steering Committee for the Bilateral Cooperation Fund for the PL04 Program ("Saving energy and promoting renewable energy sources") on the selection for financing from the Norwegian Financial Mechanism 2009-2014 under the Bilateral Cooperation Fund of a pre-defined bilateral project
- Decision of the Ministry of Environment communicated on January 18, 2016.
- Agreement between NFOŚiGW and NAPE regarding the project, signed on July 21, 2016



Indicators of the project results



Indicators of the project results	Achieved	Target
Number of partnership agreements / letters of intent at the project level concluded / signed by applicants / beneficiaries from the private sector	9	9
Agreement signed with 9 pilot companies which took part in the project		
Number of new technologies / new practices, including IT systems, implemented in the Beneficiary as a result of transfer of knowledge from a partner from the Donor State	1	1
Energy Management System according to ISO 50001		
Number of published bilateral articles / publications resulting from the cooperation of the applicant / beneficiary under the project	6	6
Experience from implementation of energy management in Norway enterprises published in six consecutive monthly bulletins of Energy Auditor`s Association send to more than 1500 recipients		



Indicators of the project results



Indicators of the project results	Achieved	Target
Level of satisfaction with partner cooperation under the project - applicants / beneficiaries from the public sector	High	High
Level of satisfaction with partner cooperation under the project - applicants / beneficiaries from the private sector	High	High
The level of access to the partner's skills and resources (knowledge, experience, experts, technologies)	High	High
The level of knowledge about the project partner in terms of its activities	High	High

EMPI project - rules of market penetration



Unlimited participation in the project for large enterprises

Basic criteria for sector selection:

1. Economic weight
2. Impact on the environment
3. Social benefits

Supplementary selection criteria:

1. Knowledge of the sector by project partners - NAPE and Norsk Energi
2. The ability to disseminate results

Selection of sectors

1. Manufacture of furniture (1310 enterprises)
2. Food processing (14142 companies)
3. District Heating (394 companies with a licence from President of the Energy Regulatory Office for the production and transmission of heat)



Project EMPI - schedule



- **Selection of beneficiaries (pilot companies)**
- **Preparation them for implementation of the ISO 50001 standard:**
 - Analysis of enterprises' needs with the use of Norsk Energi benchmarking
 - Development of energy audits
 - Development of assumptions for energy policy in enterprises
 - Preparation of the implementation of the energy management system in enterprises

Promotional activities

- Website
- Cooperation with industry organizations
- National conference
- Regional Round Table municipalities/enterprises



EMPI project - recruitment



Selection of 9 pilot companies – recruitment

- 22 companies applied for the project, including 12 from the heating sector, 5 from the furniture industry, 3 from the food industry and one from the health service
- 21 of them have been admitted to the qualification procedure
- selection of 9 enterprises that were qualified for the project



EMPI project - selected enterprises



Manufacture of furniture

Fabryka Mebli Szynaka Sp. z o.o.



Sits Sp. z o.o.



Food processing

„ROTR” Spółdzielnia Mleczarska w Rypinie



„TMT” Sp. z o.o.



District Heating

ENGIE EC Słupsk Sp. Z o.o.



Lubelskie Przedsiębiorstwo Energetyki Ciepłej S.A.



Miejska Energetyka Ciepła Sp. Z o.o. w Koszalinie



Miejskie Przedsiębiorstwo Energetyki Ciepłej S.A. w Tarnowie



Przedsiębiorstwo Energetyki Ciepłej w Suwałkach



EMPI project - workshops



There were 4 Workshops organized in Serock, aimed to transfer the know-how to beneficiaries

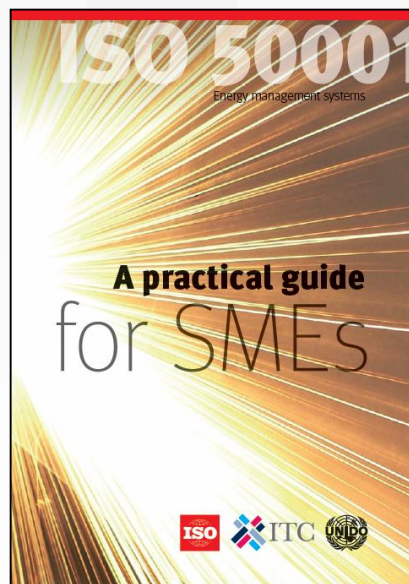
- **1st** : 28-29 September 2016
- **2nd**: 29-30 November 2016
- **3rd**: 7-8 March 2017
- **4th** : 8-9 June 2017



EMPI project - workshops



The workshop program was based on „ISO 50001 - A Practical Guide for SMEs” and on the questionnaire about assessment of implementation level



1. Engagement

- Workshop 1
- Chapters 1 – 7 (63 pages)
- Homework: 27 questions from the questionnaire

2. Planning

- Workshop 2
- Chapters 8 – 13 (20 pages)
- Homework: 17 questions from the questionnaire

3. Implementation

- Workshop 3
- Chapters: 14 – 18 (24 pages)
- Homework: 19 questions from the questionnaire

4. Checking and improving

- Workshop 1
- Chapters: 19 – 22 (16 pages)
- Homework: 13 questions from the questionnaire

EMPI project - work with beneficiaries



- **ENERGY AUDITORS - ENTERPRISES**

Energy auditors helped to determine the current state of energy management in enterprises, define areas of significant energy consumption and opportunities to improve energy efficiency, and determine energy performance indicators.

- **ISO AUDITORS - ENTERPRISES**

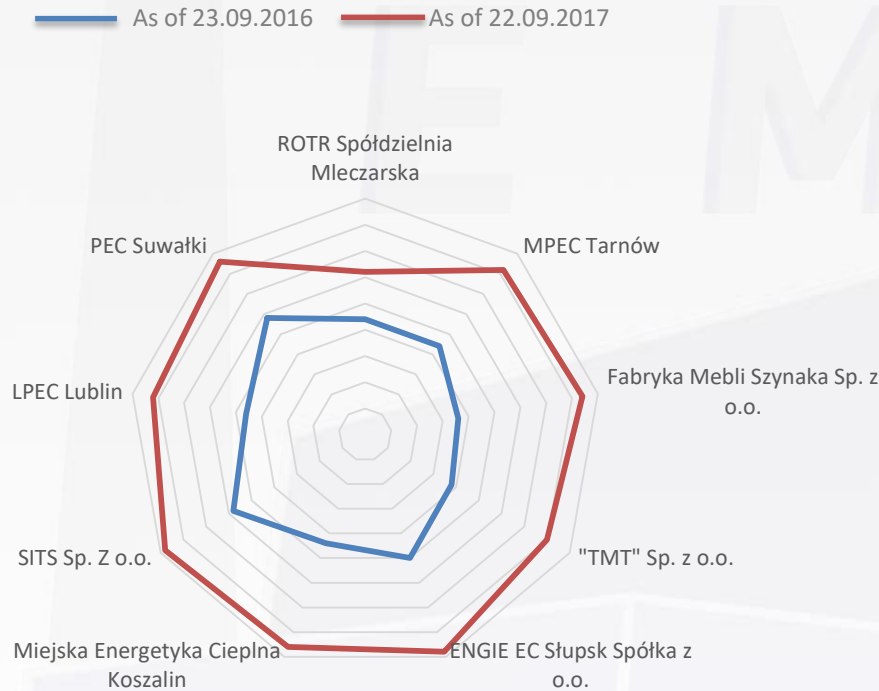
ISO auditors assisted Enterprises in defining individual implementation procedures compliant with ISO 50001 standard and successively studied the progress of works.

- **NORSK ENERGI - ENTERPRISES**

During the workshops, Norsk Energii presented Norwegian know-how, passed on Norwegian knowledge and experience to enterprises from Poland.



EMPI project - assessment of the implementation level of ISO 50001 in selected enterprises



- The assessment of the implementation level was based on a comparison of the levels of advancement of the following key elements of energy management:

- A. Energy policy
- B. Level of knowledge about energy consumption
- C. Goals, tasks and action plans
- D. Organization, competences and training
- E. Communication and documentation
- F. Operational control
- G. Orders and design
- H. Monitoring and measurements
- I. Management assessment

- The blue curve indicates the state before the project was carried out, and the pink state after the project implementation.
- Level 0 - worst, level 5 - the best.
- It is estimated that level 4 is sufficient to meet the requirements of the standard.

EMPI Project - results



Pilot enterprises	SPBT			Volume of savings MWh/year	Average per one enterprise MWh/year
	min	max	average		
5 district heating	9,6	70,2	24,6	50 247	10 049
2 food processing	0,4	66,5	7,8	4 795	2 397
2 manufacture of furniture	1,3	32,9	4,9	2 594	1 297

Sum of effects of measures identified in energy audits in 9 enterprises

Yearly Energy savings: 57 000 MWh/year

- Expenditures: 140 700 000 pln
- Annual cost savings: 6 100 000 pln
- Average payback period: 23 years

Typical projects:

- District heating: modernization (exchange) of heating networks and nodes
- Furniture: modernization of ventilation systems and electric drives
- Food: modernization of lighting, compressed air systems, reduction of heat and cooling losses, economizers on boilers

Further co-operation opportunities



- The findings of the EMPI final conference and of the round table in Masovian region showed the following needs of intervention:
 - strengthening the district heating sector by uptake of modern technologies related to waste incineration, cooling and other consumer- oriented services
 - sharing the Norwegian experiences in municipal energy management with Polish municipalities

Thank you for your attention!

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