50000 &1 SEAPs

Energy management according to ISO 50001

D3.8 Report on certification of municipalities

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Executive summary

The 50000&1 SEAPs project provides a coherent approach to integrating Energy Management Systems (EnMS) with Sustainable Energy Action Plans (SEAPs), according to energy management standards such as ISO 50001 and the European Energy Award. It aims to help municipalities to overcome the barriers to institutionalisation of their action plans and reinforce internal structures and procedures for high-quality, long-term, energy policy and planning. This will ensure that sustainable approaches to local energy policy and planning are spread and strengthened across Europe.

Within the project over 40 municipalities from 8 EU countries, were supported in the process of the development of integrated SEAP+EnMS, starting from drafting overall Municipal Strategy and ending with formal approval of the SEAP and certification of the EnMS. The certification is done by an external, authorised body and aims at confirming system's compliance with ISO 50001 requirements. Although due to the relatively high costs of the certificate (which were not covered from the project except for Bulgaria and Romania) not all of the pilot municipalities managed to obtain it by the end of the project, they were all prepared for the certification process by project partners (who explained how to select certification body, undergo necessary internal and external audits, etc.). It is expected that the next certificates will be issued shortly after the end of the project.

The present document reports on the ISO 50001 certification process in pilot municipalities, including some major experiences and lessons learnt.

1 Methodological approach

ISO 50001 for local authorities

The international standard ISO 50001 (issued in 2011) works its way through becoming a standard applied not only in industry but also for EnMS of local authorities. In 2015 the ISO organisation counted worldwide only 20 entities designated as "public administrations". Certification for Industries is much more developed since they are much more used to quality, environment and energy management.

However, there is a clear advantage to introduce EnMS because energy expenditures can represent up to 10% of LAs' expenses besides manpower.

In order for a LA to undergo a certification process, several prerequisites have to be fulfilled :

- The LA has to have an awareness for energy (i.e. not only paying energy bills but also a follow-up) and have knowledge of energy consumption of its assets
- There has to be an energy management & team
- There has to be a strong implication from representatives of LA council and services.

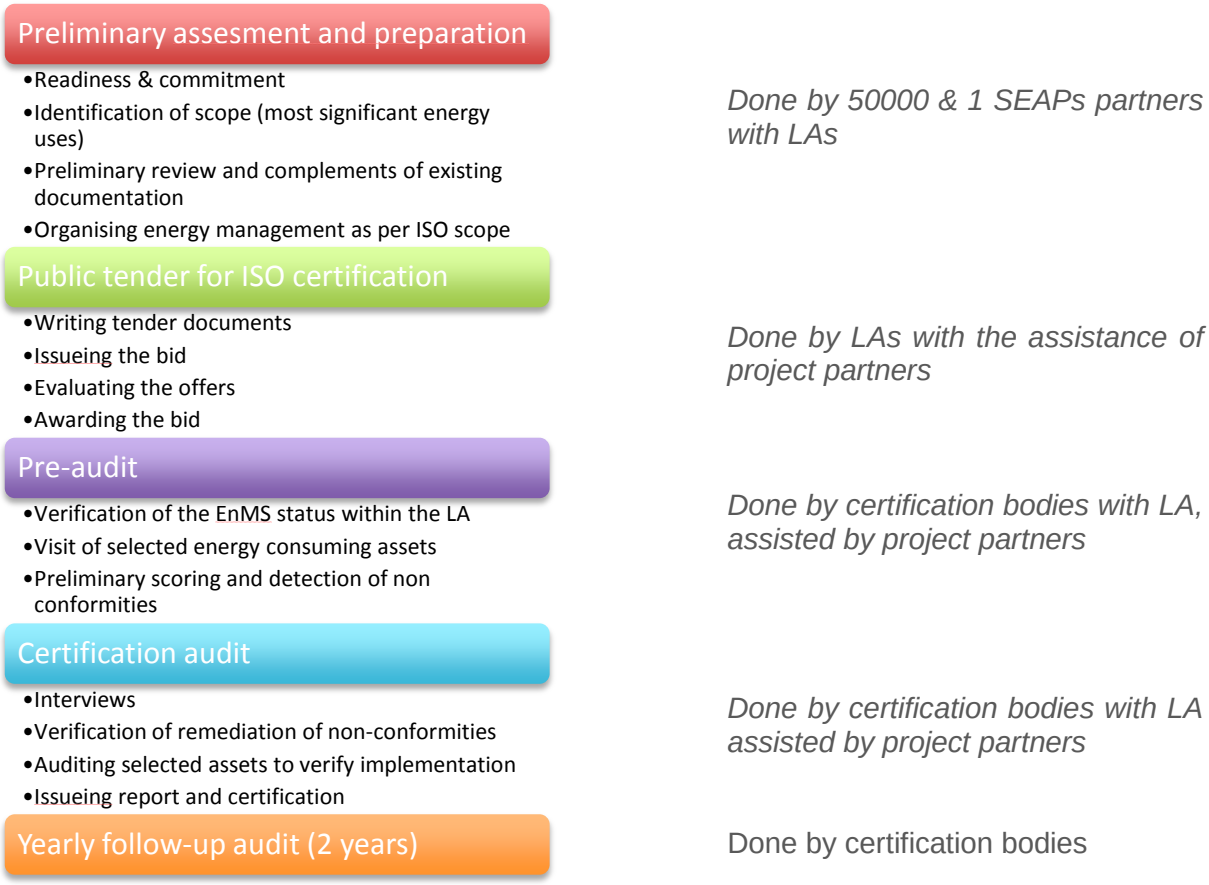

Figure 1: The approach of implementing and auditing ISO 50001

Preliminary assessment and preparation

This phase was intended to verify the LAs readiness for an ISO 50001 certification. It included :

- The assessment of the LA's awareness, commitment, organisation, actions and plans by means of an evaluation tool based on ISO 50001, done in one or several meetings ultimately as a blank audit.
- Review of the existing documentation (quality procedures, monitoring, indicators, …) and writing of the necessary documents (i.e. EnMS manual, procedures and instructions depending on quality assurance, support documents).

- Identification of the **significant energy uses** to define the perimeter of the future certification. The perimeter includes the largest uses (e.g. City hall or Council building, one or several large school(s), large sport facilities, LA owned vehicles' fuel consumption, public lighting (if applicable), wastewater treatment plant(s) if applicable), … The choice is made by size (buildings would represent more than 50% of the overall consumption) and type allowing sampling for future extension of the perimeter.
- Review of the organisation to cope with the standard.
- Use of ISO methodology to be extended to SEAP monitoring.

Public tender for selection of auditor

LAs can only award contracts on the basis of public tenders or on restraint bids on a best value for money basis for small amounts.
In this phase the LA with the assistance of project partners has set up the bid package for selecting an auditor. The bid included existing documentation and definition of the procedure and perimeter.
This proved to be a complicated task because the certificators are used to industry standards and multi-facility audits but not to LA procedures where the LA is certified and not the facility or the building. A large explanation effort was needed form project partners to explain the particular cases of LAs.
The ISO audit includes 3 main tasks :

1. Preliminary audit assessing conformity and raising non conformity issues
2. Certification audit
3. Follow up (3 years) including 2 yearly follow-up audits.

Certification bodies answered the bid and were selected after negotiations or the contract was not awarded (case of Lorient in France, for example).
In France, this phase was particularly difficult because some certification bodies insisted on auditing all facilities instead of the general procedures and samples of buildings, leading thereby to very high costs.

ISO 50001 pre-audit, audit and follow-up

Pre-audits by certification bodies are very interesting, as they highlight achievements and also lacks and non-conformities.
The pre-audit report points out at progress to be made for the certification audit by showing blocking and non-blocking shortcomings.

LAs worked on lifting the non-conformities in order to pass the certification audit. Project partners assisted the LAs in this process by own intervention and also during the P2P process.

Peer to peer assistance

Learning from each other is key in the process. Experienced partners' knowledge is very important, for example, SOGESCA staff includes ACCREDIA auditors, thereby very proficient in ISO matters.

2 Relevant project experience and lessons learnt

ISO & SEAPs

We found that SEAP + EnMS approach is quite useful (similar stakeholders and organisational issues). However, a SEAP perimeter that covers the entire territory cannot be certified by ISO because it exceeds the control of the LA.

Perimeter issues

"Significant energy uses" is a key concept as regards certification. There are 2 criteria to select those :

1. Largest uses covering, let's say, more than 50% of the total consumption
2. A significant variety of buildings and facilities allowing to extend the perimeter and cover an increasing number of facilities.

Certification cost issues

Depending on certification bodies existing or not in the country and of their understanding of the local sector, certification costs turned out to be in a wide array of prices.

Main barriers identified

- Shortage of certification bodies in some of the countries;
- Lack of understanding of LAs operations and their needs by the certificators;
- High costs of certification in some of the countries;
- Unreadiness of certain LAs to put in place an EnMS, which is considered by them as stringent because quite formal.

ISO 50001 vs EEA

This issue is fully explained in the deliverable D5.2. Ultimately EEA is used for policy evaluation on the entire SEAP perimeter and beyond, on a yearly basis, whereas ISO 50001 covers mainly municipal assets and is used for energy management on a day to day basis.

3 Status of EnMS certification in partner countries and main conclusions from the process

Bulgaria

In Bulgaria all 5 pilot municipalities were successfully certified by the end of the project. The certifications costs were covered partly from the project budget, as agreed in the Grant Agreement and partly from the municipalities own funds.

In general the comments of the auditors from TUV Nord Bulgaria were positive for all five municipalities concerning the implementation of SEAP measures and the progress in the smart usage of RES. Only one of them, Nedelino Municipality, is still a little bit behind compared to the other four, because it has more small-scales actions. The auditors commented that the Mayors of the Municipalities have realized that the EnMS + SEAP approach will lead to energy saving, which is equal to funds savings and concentrate their actions in implementation of more energy saving measures. Rudozem and Bratzigovo Municipalities have already achieved energy savings from their previous actions and the saved financial resources have been allocated to the implementation of new measures for energy efficiency.

There were no major barriers encountered during the certification process. The auditors used positive approach and they tried to find more evidences for compliance with the ISO 50001 standard than non conformities.

Good logistics was one of the success factors of the certification process. The stage 1 and stage 2 of the audits in some of the municipalities were implemented in two consecutive days. In this way we managed to save time and implement all certification audits in the framework of project life.

The Mayors of all five municipalities had a positive attitude to the certification audits and facilitated them. They saw immediately the positive results during the certification audits. The Top Management of the Municipalities realized that the EnMS + SEAP approach will help their daily activity in the process of optimization and efficiency of the usage of all types of energy.

Table 1: EnMSs certified in Bulgaria

Municipality	Date of completing the certification process	Certification body	Certification cost (EUR)
Bratsigovo	2017-02-24	TUV NORD Bulgarien EOOD	3885.87
Chepelare	2017-02-24	TUV NORD Bulgarien EOOD	3527,97
Nedelino	2017-02-24	TUV NORD Bulgarien EOOD	3527,97
Rudozem	2017-02-24	TUV NORD Bulgarien EOOD	3885,87
Zlatograd	2017-02-24	TUV NORD Bulgarien EOOD	3527,97

France

In France certification costs turned out to be very high. AFNOR has a multiple position: French standardisation body, certification body and consultancy, which is quite confusing - LAs may think that they are the only ones, which is not accurate. There are several certificators, most of them among conformity control bodies (AFNOR, Bureau Veritas, Socotec, LRQA, …)

In 2014-2015, being certified ISO 50001 doubled the white certificates. This advantage dropped to 25% and is now gone.

There is a new co-financing incentive called PRO SMEn proposed by ATEE based on utility white certificates who propose to lower energy bill to LAs that would undergo certification.

Tours and Tours plus were certified early 2016 (joint certification) by AFNOR. It is the 2nd LA in France after St. Raphaël in 2015 with such a certificate. A web article from AFNOR relates about this.

Muretain Agglomeration was certified in April 2017 by Bureau Veritas.

Lorient faced exaggerated certification costs from AFNOR (much higher than Tours for a similar perimeter) and will subscribe to PRO SMEn during 2017.

Other LAs are interested in ISO 50001 as an EnMS and may also use PRO SMEn.

Table 2: EnMSs certified in France

Municipality	Date of completing the certification process	Certification body	Certification cost (EUR)
Communauté d'agglomération du Muretain	20 April 2017	Véritas+freelance consultant	
Ville de Tours	17 June 2016	AFNOR	
Communauté d'agglomération Tours Plus	17 June 2016	AFNOR	

Greece

In Greece EnMSs have been developed in 4 pilot municipalities. CRES, Greek partner, provided with relevant support, which included:

- Meetings with Mayors, Vice-Mayors and Technical Teams
- Discussion for development of Municipal Strategy and Energy Policy.
- Discussion and training on Energy Review and Energy Baseline (ISO 50001) and Development of ISO 50001
- Training of energy teams and municipal staff on the procedures of the ISO 50001 standard
- Preparation of procedures and documentation for the ISO 50001 standard
- Coaching and support for collection and processing of energy and energy related data

Certification of the systems is planned shortly after the end of the project. The closest is the municipality of Metamorphosi, who has proceeded with the selection of the certifying body but the audit has not been conducted yet. The certification costs have been estimated at the level of 3000-4500 EUR and will be covered from municipal budgets.

3 key messages for success factors regarding SEAP + EnMS approach:

- The Energy Management System can be a tool for the development of the SEAP, however, the commitment to the CoM SEAP by the Mayor is what triggers the manpower for the setting of the system.

- The development of the ISO50001 system results in a good understanding of the factors affecting the energy consumption in the municipality
- Thanks to the EnMS implementation the Municipality can structure a coherent and analytical approach to monitor the energy performance of the LG properties.

3 key messages for barriers:

- The setting up of the ISO50001 procedures has proven to be far more time consuming than expected, even if commitment was strong from the beginning. This is due to complexity of internal organization and cooperation among departments, lack of manpower, and also lack of prior experience.
- The data collection required for the ISO50001 process, due to the quality and continuity of the data required is very time consuming.
- The limited human resources is a critical factor in the energy management process. The geographic and organisational dispersion within the municipality may be another barrier.

Italy

In Italy EnMSs have been developed in 3 municipalities and 1 federation and successfully certified in 2 of them (Montecchio Maggiore and Marostica). 2 more certifications are planned in the next 2-3 months. The certification costs have been estimated between 3500-6000 EUR for the first certification (Stage 1 and Stage 2) and will be covered from municipal budgets

Table 3: EnMSs certified in Italy

Municipality	Date of completing the certification process	Certification body	Certification cost (EUR)
Montecchio Maggiore	2016-10-17	DASA RAGISTER	3 383,67
Marostica	2017-02-15	Bureau Veritas	4,000

In each case the auditors acknowledged the joint approach but the EnMS scope is limited to LG assets since it is under LG control.

The certification bodies had some difficulties in understanding the application of EnMS on buildings and facilities directly managed by the LG but with "third party" as final users. Another important difficulty in understanding is represented by the data consumption availability, mostly concerning on "real time consumption" which is impossible to be satifsfied according with the availability of the data coming from energy suppliers (thermal

consumption data are provided each 4/6 months.. so it's quite difficult identify immediatly anomaly consumptions..).

Thanks to the 50000and1SEAPs project, however, several certification bodies starts to approach municipalities in EnMS certification instead of private companies. LG certification is quite different, Municipalities are not private companies and manage a huge number of different buildings and facilities and a huge numner of energy use. That's means that thanks to the 50000and1SEAPs experience, the approach of the certification bodies should become more "elastic" and more focused on LGs in energy management

Latvia

In Latvia EnMSs have been developed in 5 municipalities. 1 of them was certified within the duration of the project.

Table 4: EnMSs certified in Latvia

Municipality	Date of completing the certification process	Certification body	Certification cost (EUR)
Daugavpils	09.12.2016	TUV	2900

The EnMS was well evaluated by the auditors. For the certification body it was the first municipality certified. Since the system is large it was evaluated in details. The certificate proves the existence of an EnMS in three main public sectors (boundaries) in the city:

- Public buildings (includes 100 buildings with the total heated area of 233 739 m2);
- Public street lighting system (with 9183 luminaires; total length of the system - 351 km);
- Public transport (over 90 vehicles for 32 bus and 3 tram routes).

Even though current boundaries are large, municipality plans to expand them and include also municipal capital companies, like hospitals, etc.

Regarding the remaining Latvian municipalites, their status is following:

- **Cēsis**: the municipality has taken decision to certify the energy management system until June 2018 (this target is included in the SEAP approved in 2016). The boundaries of the EnMS are: (1) All public buildings; (2) Public street lighting system; (3) Public fleet.
- **Sigulda**: Law on Energy Efficiency foresees that municipality of Sigulda has to implement energy management system and report to the Ministry of Economics until

November 2017. City Council took a decision to postpone certification until 2018. The boundaries of the EnMS are: (1) 34 public buildings in the territory of the municipality; (2) Public street lighting system; (3) Public fleet.

- **Smiltene:** municipality announced a price competition. Certification costs are 1900 EUR (excluding VAT) for first stage audit. Due to the decision of the SEAP strategic group, certification has been postponed until 2018. The boundaries of the EnMS are: (1) 72 public buildings in the territory of the municipality; (2) Public street lighting system; (3) Public fleet.
- **Ādaži:** Law on Energy Efficiency foresees that municipality of Ādaži has to implement energy management system and report to the Ministry of Economics until November 2017. Due to this legal requirement, Council took a decision to postpone certification. The boundaries of the EnMS are: (1) 6 public buildings in the territory of the municipality; (2) Public street lighting system.

As already mentioned, the new Energy Efficiency Law entered into force in 2016 stating that all municipalities participating in the project except Smiltene have an obligation to develop and implement an EnMS in their territory. Only largest cities have an obligation to certify their EnMS - also Daugavpils municipality, that has certified their EnMS by the end of the project. Other municipalities shall report progress in their EnMS to the State and are not obliged to certify their EnMSs.

Poland

In Poland the certification process should be launched shortly after the end of the project. The Association of Municipalities Polish Network "Energie Cités", Polish partner, prepared full EnMS documentation for pilot municipalities, basing on PN-EN ISO 50001:2012 standard and model documents developed by the Municipality of Dzierżoniów within the Energy for Mayors project. The package can be adapted to any municipaity - it only needs adding reference to local situation, local activities and planned EnMS boundariers/scope. 4 out of 6 Polish EnM-municipalities (Grybów, Sztum, Pilzno and Żyraków), already finalized the adaptation process and their EnMSs were fully implemented. Certification is planned for May-July 2017.

To support the municialities in the certification process PNEC also did a market research concerning existing certification bodies and certification costs. The costs depend on the scope of EnMS, in particular number of people, processes and buildings/facilities included. In case of Polish pilots the certification cost for a 3-year period ranged from 17 600 PLN (approx 4 000 EUR) to 33 000 PLN (approx. 7 700 EUR). The cost of sole certification audit (confirming implementation of the system) ranged from 8600 – 16 400 PLN (approx. 2000-3800 EUR) and the cost of one supervision audit ranged from 4500 - 8600 PLN (approx. 1000 - 2000 PLN).

PNEC also invited one of the certification bodies to the 2nd local training so that they explained pilot municipalities all the steps and requirements of the certification process.

Romania

In Romania EnMSs have been developed for 6 municipalities. Ineu, Resita, Sannicolaul Mare, Lugoj, Otelu Rosu and Faget have had the full system implementation (Energy Review, Procedures, Documentation, Internal EnMS audit performed) and a pre0certification audit visit were carried out. Also certification audits were scheduled.

The certification costs have been estimated at approx. 2 000 EUR and will be covered from the project budget, as agreed in the Grant Agreement. The certification body will be SOCOTEC CERTIFICATION INTERNATIONAL. It is expected that the certification process might take a while, since the certification bodies have some difficulties in auditing the EnMS based more on procedures than venues.

Spain

In Spain the process of EnMS certification is ongoing. The costs have been estimated at approx. 2 225 EUR and will be covered from municipalities own budgets. For Carballiño and Xinzo de Limia the certification is planned for October 2017. The certification body will be TUV.

CONSORTIUM:

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