

A GUIDE TO TRANSFORMING ENERGY MANAGEMENT AT LOCAL LEVEL

With standardised energy management systems, energy-saving competitions and Sustainable Energy and Climate Action Plans

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A GUIDE TO TRANSFORMING ENERGY MANAGEMENT AT LOCAL LEVEL

FINAL PUBLIC PROJECT REPORT (D7.4)

IMPRINT

| PUBLISHER: | Compete4SECAP – Empowering local authorities to actively implement Energy Management Systems and bring to life their Sustainable and Energy and Climate Action Plans |
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| DESIGN & LAYOUT: | Rebekka Dold <u>www.rebekkadold.de</u> |
| PHOTOS: | Unless otherwise mentioned, all photos have been provided to the authors by representatives of the project consortium members. |
| | This document has been prepared in the framework of the European project "Compete4SECAP (C4S) – Empowering local authorities to actively implement Energy Management Systems and bring to life their Sustainable and Energy and Climate Action Plans" (Grant agreement no. 754162), funded by the European Union's Horizon 2020 research and innovation programme. The sole responsibility for the content of this document lies with the Compete4SECAP project and does not necessarily reflect the opinion of the European Union. |
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1. WHY COMPETE4SECAP?

1.1 BACKGROUND

The Compete4SECAP project set out to address existing gaps in planning and implementing strategies for climate action at local government level. Emissions reduction has been a central focus, specifically in connection with energy usage at building level, while also integrating this into a broader framework as enshrined in the European Covenant of Mayors (EUCoM) framework for city-level climate action, centred on the Sustainable Energy and Climate Action Plan (SECAP) as a planning instrument. The project has combined actions in three key areas: 1) standardised Energy Management Systems for improving municipal energy usage practices, 2) energy-saving competitions among municipal staff at the building level, and 3) strengthening municipal climate action overall through upgrading SEAPs to SECAPs (incorporating climate adaptation and more ambitious emissions reductions targets). These three pillars of action were carried out in 31 municipalities from eight different countries across Europe (Croatia, Cyprus, France, Germany, Hungary, Italy, Latvia and Spain) over a three year period.

At the time of writing in 2020, Compete4SECAP is coming to an end - but the wealth of experience gained is likely to be of value to local authorities (and supporting consultants) wishing to undertake similar work in their municipalities. This guide is for you!

1.2 WHAT IS THIS GUIDE AND WHO IS IT FOR?

This guide outlines the strategic approach (or theory) behind the C4S project (Chapters 1 and 2), and how that theory worked out in practice (Chapter 3). In Chapter 4, the key results of the C4S project are outlined, including each country's main achievements, the challenges encountered and enablers of success. Because each national context differs, these findings are presented country-by-country. Chapter 5 presents challenges, enabling factors and recommendations of general relevance, according to the three pillars of action (Energy Management Systems, energy saving competitions and SECAPs). Chapter 6 presents outstanding success stories in five of the C4S local authorities.

This guide is primarily for local authorities (and supporting consultants) with an interest in energy management and integrated climate action. It is likely to be of most use for those local authorities based in Europe, that are Signatories to the Covenant of Mayors, and recognise that transforming energy management demands action on multiple fronts. We hope you'll find this account of the C4S methods, and reflection on their application in practice, useful to accompany your own learning journey. This guide may be of interest to consultants and academics looking to conduct similar practice-oriented applied research, too. For those wanting to know even more, the final chapter lists key resources developed by the C4S project

For readers working for - or with - a local authority that already has an Energy Management System in place, you'll find additional content of interest in the <u>C4S Sustainability</u> <u>Strategy</u>. The recommendations in the Sustainability Strategy are targeted at the 31 C4S local authorities, with advice on how to maintain and build on their work so far - as well as other municipalities with a similar baseline of experience.

2.1 WHAT DO WE MEAN BY ENERGY MANAGEMENT SYSTEM?

With growing recognition of the climate emergency and the significant environmental impact of an organisation's energy use, a dedicated Energy Management System (EnMS) – instead of just an environmentally-friendly energy system – has become ever more essential to municipal operations.

Fortunately, the International Organisation for Standardization (ISO) has already produced a standard exactly for that purpose: ISO 50001:2018 for efficient energy management. ISO 50001's aim is to enable organisations to establish a system and processes necessary to improve their own energy performance, at the same time reducing greenhouse gas emissions and other related environmental impacts. Another quality and labelling system is the European Energy Award (eea), which supports local authorities in establishing interdisciplinary planning approaches and implementing effective energy and climate policy measures through the rational use of energy and increased use of renewable energies. The eea ensures that municipal and regional governments continually increase their energy efficiency, use of renewable energies and sustainable mobility.

Based on the above, C4S helped develop, certify and start to implement functional and efficient EnMS according ISO 50001:2018 in the 28 participating local authorities and eea in three German local authorities. In order to simplify their efforts and provide clear data gathering procedures, an **Energy Monitoring Platform** was designed and established for their use, which helps with gathering, analysing and comparing energy consumption data for thermal energy, electrical energy and fuel/resource consumption.

2.2 WHAT DO WE MEAN BY ENERGY COMPETITION?

The 31 C4S municipalities were also creatively challenged to save energy by taking part in a year-long energy saving competition in 2019, aimed at changing energy-use behaviour among building occupants and visitors. The aspects of gamification and competition were intended to stimulate engagement and maintain motivation of staff to actively reflect on and consider changing their own habits, in what might otherwise be seen as a burdensome and uncomfortable process.

Supporting partners from the C4S project helped set up an energy team for each building, conducted individual energy audits, held training sessions, gave information on energy saving tips and campaigns, provided teams with materials (e.g. thermometers, an energy meter) and set up an online tool for monitoring the energy consumption of the buildings. The teams competed to design the most efficient way of implementing an EnMS and to reach the highest level of energy savings in their buildings. Each team also developed an awareness-raising campaign to accompany the competition. The success of each city depended on how well its staff 'teamed up' to work together towards common goals. Each month the energy saving results were monitored and reported via newsletters to the energy teams.

92 publicly-owned buildings competed in the following areas:

- 1. Saving more energy through changing their energy use behaviour
- 2. Organising the most creative energy saving campaign

Besides the obvious positive result of saving energy in the buildings, prizes were distributed among the best performing public employees:

- The best energy saving teams (or best campaign developed) in each country
- > The four best energy saving municipalities
- The top three countries were recognised as a result of the previous two fields

2.3 UPGRADING FROM SEAP TO SECAP

European municipalities that signed up to the Covenant of Mayors some time ago face the challenge of upgrading their Sustainable Energy Action Plans (SEAPs), which had targeted emissions-reduction, and turning them into Sustainable Energy and Climate Action Plans (SECAPs), by aligning with new emissions-reduction targets and timeframes, and integrating adaptation measures. Up until 2015, EU-CoM Signatories addressing energy and climate change mitigation had committed to prepare and implement their SEAPs before 2020. Since then, Signatories pledge to prepare, implement, monitor and report on SECAPs, incorporating the following major components:

- A framework to reduce CO₂ and other greenhouse gas (GHG) emissions by at least 40% by 2030.
- A strategy to adapt to the impacts of climate change affecting the area.
- A comprehensive local action plan bringing together the above streams by outlining integrated measures, clear responsibilities, financing, etc. to achieve them.
- Clear monitoring and reporting plans to ensure effective implementation.

One of the C4S objectives was to support the upgrade of local SEAPs to SECAPs (or similar integrated climate action plan) in order to match energy policies and EnMS with a wider climate approach and social engagement. To achieve that goal:

- Staff from the participating municipalities were surveyed to understand the main barriers and drivers in the implementation of the current SEAPs in order to learn from past experience how to best follow up with a SECAP upgrade.
- Project partner ICLEI developed a <u>Quick Access Guide</u> for upgrading from SEAP to SECAP, providing a shortform, accessible overview of what goes into a SECAP, in the broader context of integrating adaptation and mitigation actions into sustainable energy and climate action planning processes.
- Peer-to-peer training sessions were conducted to transfer practical knowledge both to project partners, and staff in the municipalities they supported.
- Partners worked consistently with their municipalities to identify needs and overcome barriers.

2.4 THE UNIQUE C4S APPROACH: THREE GEARS IN MOTION!

None of the three areas of action described above was designed to work alone, but rather to complement one another and work in combination. EnMS and competitions when combined can trigger significant benefits by providing innovative and efficient ways to involve municipalities that have already committed to strategic climate action (with a SECAP or similar), but are struggling to implement it, and to bring it in line with contemporary norms (emissions reduction targets and integration of climate adaptation measures).





3. FROM THEORY TO PRACTICE: C4S AT A GLANCE



KEY RESULTS OVERALL:

- 28 municipalities in Croatia, Cyprus, France, Hungary, Italy, Latvia and Spain have developed and implemented an EnMS according to the ISO 50001:2018 'Energy Management Systems' standard
- 22 of the above have already been certified according to ISO 50001:2018
- 3 municipalities in Germany have introduced the European Energy Award (eea); one-received a label, one-successfully audited.
- 31 municipalities developed corresponding operational plans

RESULTS OF EnMS IMPLEMENTATION AFTER JUST ONE YEAR:

- More than 28,000 MWh saved
- > At least €800,000 saved
- > More than 120 actions implemented
- At least 5000 tonnes CO₂ saved



RESULTS OF CHANGING ENERGY USE BEHAVIOUR THOUGH THE YEAR-LONG COMPETITION:

- > 1717.6 MWh saved
- > 512.6 tonnes CO₂ emissions avoided
- > Average energy reduction of 6.44%
- €176,433 saved
- > 6800 employees have been trained so far through the energy-saving competition
- > 92 buildings took part in the competition

RESULTS OF PROVIDING SUPPORT UPGRADING SEAPS TO SECAPS:

- 29 municipalities upgraded SEAPs to SECAPs (or similar plan) with new CO₂ reduction targets and measures planned till 2030
- > 2.3 million population influenced
- > 8.2 million MWh/year total estimated energy savings
- More than 200,000 MWh/year of energy savings triggered by the C4S project
- Around 33,000 MWh/year from renewable energy sources triggered by the C4S project

4. LESSONS FROM THE C4S EXPERIENCE

This section introduces the EnMS boundaries² for municipalities in each of the eight C4S countries, and describes key achievements, challenges and enablers of success.

4.1 CROATIA



ACHIEVEMENTS

- A total of 14 measures (technical, organisational/ institutional and educational) implemented in the building sector in the four C4S local authorities up until the end of 2020, as part of the EnMS.
- Better use of existing online tools for energy monitoring. Energy data is now collected using the ISGE system: an online system for collection and monitoring of energy and water consumption. For each building, a person is appointed to collect and enter the data, unless automatic input is enabled (e.g. using smart meters).
- Recognition of possible future improvements in energy management of lighting, IT and heating in buildings. In the City of Osijek, a certain amount of the future budget will be allocated to energy management.
- Four SECAPs completed (with two already approved by the city councils, in the City of Velika Gorica and the City of Rijeka).
- ² The concepts of scope and boundaries (both defined by the EnMS team) allow a degree of flexibility to define for the local context what should be included in a municipality's EnMS. While the EnMS scope may include up to the entire amount of activities and assets belonging to a municipality, the boundaries are usually a sub-set thereof, e.g. the EnMS team may decide to include only certain public buildings and/or only part of the public street lighting network, possibly with plans to extend to include other assets in the future.

CHALLENGES

Volatile political will

Inconsistent political momentum (including financial and resourcing commitments) for energy management on a local level resulted in a lack of staff capacity, and definition of limited EnMS boundaries in all four municipalities (i.e. boundaries that are very small compared to total municipal energy consumption - and hence not capable of significantly impacting energy management overall). It is however possible that some will include public lighting in future boundaries.

Gaps in legislation

Although municipalities are legally required to have an EnMS in place, and to monitor energy consumption, certification is not mandatory.

ENABLERS

Involvement of key decision-makers

Involvement of mayors, department teams and directors of public institutions in the EnMS implementation was a key success factor.

> EU funding

The limited local administration budget was supplemented by EU funds.

4.2 CYPRUS



ACHIEVEMENTS

- > Four municipalities have developed, and begun to implement, an EnMS.
- Two have passed the first phase of the ISO 50001:2018 certification and are awaiting completion of the second phase.
- 3,612 MWh in energy saved through EnMS implementation in all four municipalities.
- Two SECAPs have been approved and signed (Strovolos and Lakatamia) with new climate and energy targets for 2030, while two are awaiting approval (Agios Athanasios and Aradippou).
- > 12 buildings participated in the energy-saving competition.
- 26.1 MWh saved in total through the energy-saving competition.
- > 14 EnMS measures implemented.

CHALLENGES

Shrinking budgets

Funding of additional energy saving and monitoring measures has been halted due to budget-tightening in 2020 due to the COVID-19 pandemic, and the EnMS has also become a lower priority given corresponding changes to normal budgeting priorities.

> Difficulties calculating energy use

For Significant Energy Uses (SEU), municipal staff can only take the measurements from electricity bills at the moment which makes it difficult to define the consumption of each SEU, leading to more complicated calculations.

Lack of qualifications

Absence of personnel with the appropriate background in energy management or energy efficiency, making monitoring difficult - and reliance on consultants common. This knowledge gap has been partly addressed through training implemented during the project.

ENABLERS

Involvement of technical staff, management and finance Involving staff at implementation and management levels, as well as the finance department, can support successful implementation of the EnMS. Technical staff know the facilities better and are in a good position to pinpoint any problems and opportunities. On the other hand, more senior staff involved in management can ensure the implementation of all the processes required by the ISO 50001.

> Political commitment

In the Cypriot municipalities, the involvement of the mayor and the council has been critical, as these parties have the final word on budget and other decisions that affect the implementation of both EnMS and SECAP.



4.3 FRANCE



ACHIEVEMENTS

- > All four municipalities have established an EnMS.
- Three also successfully certified their EnMS according to the new ISO 50001:2018 standard: Brest Métropole, Grand Montauban and the City of Lorient.
- 235 buildings, ca. 38,000 lighting points and 984 municipal vehicles are in the scope of the three certified local authorities.
- Caen and Caen-la-Mer are implementing their EnMS and aiming for certification in 2021.
- EnMS implementation has significantly improved the work between different departments within all four municipalities, as well as improving accountability for actions and clarifying everyone's role in energy performance.
- 534.5 MWh of energy saved by the 12 public buildings that participated in the energy-saving competition.
- Highest energy savings (26%) achieved in the building of "Mairie-Les Carmes" (City hall and ancillary buildings) at Montauban.
- The municipality of Montauban has been inspired by the competition's success to introduce energy competitions among other public buildings during the next few years.
- In Caen, the competition made it possible to designate a person who is in charge of reading the meters every month.
- > Two SEAPs upgraded to SECAP and approved with new climate and energy targets for 2030.

CHALLENGES

Collection of energy data

Energy use data is not readily available, which meant two communities decided to record manually in order to have a chosen frequency and reliable data. Similarly, it is often not certain what exactly is being metered.

Lack of measurement and analysis tools

The lack of equipment to measure and differentiate refrigeration, heating, equipment and lighting electric consumption made it difficult to analyse the data.

- Reluctance of internal stakeholders to get involved Some managers are not convinced of the value of the approach or do not want to change their way of working.
- The vocabulary and functioning of ISO 50001 needs guidance

Energy managers encountered difficulties in understanding some of the requirements of the standard and making it their own.

Competing frameworks for climate planning

In France, municipalities are required to have an official climate plan approved before they can submit a SECAP, meaning a SECAP is not useful as a standalone governance instrument, but rather an additional piece of work.

Municipal elections

In France, 2020 elections were delayed due to the COVID-19 pandemic. In some cases, this has caused some disturbance and delay in planning processes.

ENABLERS

Fun and colourful games and visuals

Raising awareness about energy use among employees in a playful way has been effective for the French municipalities.

Commitment of many public employees, as well as leaders

Widespread staff involvement, supported at the high level, reinforced the sense of a shared endeavour - and a sustainable one. This was particularly crucial for the energy-saving campaign.

4.4 GERMANY



LOCAL AUTHORITIES

- > Amt Hohe Elbgeest
- > Hohen Neuendorf
- Greifswald

EnMS BOUNDARIES

- > Public buildings
- > According to eea process:

Development and spatial planning strategy, municipal buildings and facilities, Supply and disposal, mobility, Internal organisation, communication and cooperation

ACHIEVEMENTS

- In all three municipalities, an internal audit, ('initial energy review' in eea terminology), was conducted and an action plan developed.
- > The external audit was conducted in the municipalities Amt Hohe Elbgeest and Greifswald. The latter is expected to get labelled with the eea award by the end of February 2021. In Hohen Neuendorf, the external audit will be carried out in the first half of 2021.
- 120 measures for improved energy management planned in all three municipalities (58 of these measures have been started to be implemented).
- > All three municipalities have developed a SECAP (two of them from scratch, having had no SEAP previously).
- > Nine public buildings participated in the energy saving competition, resulting in 64.6 MWh energy saved, almost €10K costs saved, and 24 tonnes of CO₂ emissions avoided.
- The winning building in the competition reduced its energy consumption by as much as 29.8 %.

CHALLENGES

Availability of data У

Data in various fields was found lacking, or had to be generated in cooperation with other actors.

Limited staff capacities

In several cases there was a clear imbalance between the tasks to be managed and the staff available. Responsible departments are confronted with a high number of duties in the field of climate action due to current developments (e.g. rising community pressure from the Fridays for Future movement).

Limited funds for the implementation of measures

Already limited budgets were squeezed even further in 2020 as tax revenue decreased due to the COVID-19 pandemic.



ENABLERS

High level support

Where high level support was secured, this ensured resources and the necessary backing for the process.

> Positive feedback through awards and competitions Positive feedback played an important role in creating and

sustaining motivation.

Clear priorities set at the political level

High level direction on priorities was an important precondition to demonstrate the importance of the changes to employees and indicate a sustainable, longer term outlook.

Inclusion of stakeholders

The early inclusion of all important stakeholders in the planning and implementation process was stated as an important precondition to assure ongoing support.

Creation of an energy team

The energy team was an essential factor, and in the case of some municipalities went beyond key departments to also include committed local residents.

4.5 HUNGARY



LOCAL AUTHORITIES

- **B**udaörs
- Kaposvár
-
- > Pestszentlőrinc-Pestszentimre
- > Strovolos

EnMS BOUNDARIES

Public buildings

 (administration, swimming pools, kindergartens, health care centre, community centre)

ACHIEVEMENTS

- All four participating municipalities have developed an EnMS according to the new ISO 50001:2018 standard, certified it in 2019, and successfully passed the annual surveillance audit in 2020.
- > Two new SECAPs have been developed and accepted by the respective city councils.
- A total of 29 measures implemented in the four Hungarian municipalities by the end of 2020, mainly focused on the buildings sector and public lighting sector.
- Staff from 11 public buildings successfully conducted an energy saving campaign in 2019 and saved 8.31% on average, while the winning building saved as much as 28.98%.



CHALLENGES

Data availability

Despite the dedication of political leaders, energy use data is often not readily available. This resulted in conservative definition of EnMS boundaries, which in all cases represented only a small proportion of total energy consumption in public assets (3-11 buildings).

> Changes in leadership and technical staff

There were municipal elections in the middle of the project (2019) and in some cases the change in leadership has caused some disturbance in the ongoing work (e.g. original energy team members left and were replaced).

Changes to national legislation

Due to systemic changes in the national legislation, the responsibilities and influence of local authorities have been diminishing in recent years (e.g. overall management of schools, local taxes shifted to national government, nationalisation of waste management companies).

Limited funding

Sources of funding for the C4S project came exclusively from the local administration budgets, which were limited.

ENABLERS

> Eligibility requirements of new funding schemes

The possibility of new funding schemes that favour municipal administrations with SECAPs and EnMS, such as the European City Facility, motivated the participating municipalities to initiate these strategic steps (development of SECAP and EnMS).

Political commitment

The presence of political will and commitment of the city leadership made changes easier in the participating public buildings and institutions.

Dedication of employees

Dedication of numerous public employees was critical, especially in the energy-saving campaign.

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4.6 ITALY



ACHIEVEMENTS

- Three of the Italian municipalities (Rubano, Abano Terme and Udine) successfully certified their EnMS according to the new ISO 50001:2018 standard by the end of 2020, while the City of San Vito di Leguzzano expects to be certified in 2021.
- Rubano, Abano Terme and Udine have also integrated their existing Management Systems with the new EnMS: Rubano with Quality Management System ISO 9001, Abano Terme and Udine with Environmental Management System ISO 14001. This has significantly improved the work between different departments and the design of actions, and has clarified everyone's role in energy performance. Abano Terme and Rubano have, in particular, designed very ambitious Energy Management Action Plans based on 'Energy Diagnosis in Buildings' and an innovative approach in design according to ambitious national incentive programmes dedicated to energy efficiency improvement.
- A total of ten schools, two libraries and two other municipal buildings participated in the energy saving competition. The participation of schools in particular has meant a very large cohort of 'future energy savers' were reached: over 1200 pupils.
- Four SECAPs completed for all participating municipalities, along with a new methodology for assessing risk and vulnerability, based on extensive data collection and in line with the ambitious requirements of the Covenant of Mayors

CHALLENGES

Lack of expertise

The lack of specific expertise on energy and energy management remains an important issue to address. Municipal staff were not always equipped with the skills to deal with all aspects of ISO 50001.

Communication

The planning of actions for energy efficiency is not always related to the objectives of an EnMS, often due to insufficient communication between top management and the energy team (with the notable exception of Abano Terme).

Data-sharing issues

Long-standing energy supply contracts represent a barrier to data sharing. This makes timely measurement of energy performance and monitoring difficult.

ENABLERS

Enthusiasm

Energy teams and representatives of top management enthusiastically underwent training to be ready to face the certification process of the EnMS.

Knowledge is power!

The improvement of specific knowledge on the energy issue has allowed some of the participating municipalities to renegotiate their contracts for the supply of energy services.

Involvement of users

The involvement of the municipal building users has allowed greater control over - and timely monitoring of energy use.

4.7 LATVIA



ACHIEVEMENTS

- All four municipalities successfully certified their EnMS according to the new ISO 50001:2018 standard in 2019 and passed the surveillance audit in 2020.
- Extensive (ambitious) EnMS boundaries established in all four municipalities: in total 199 public buildings, 106.5 km of public lighting with 110 lighting points and 295 municipal vehicles.
- Energy savings of 4023 MWh and cost savings €186K in the first year alone (data of three municipalities).
- Municipalities of Bauska and Saldus received C4S Award for implementation of the EnMS (1st and 2nd place).
- Energy managers appointed in all four municipalities during the project and three of them extended their employee contracts in autumn 2020, despite the project coming to an end.
- ▶ 14 public buildings participated in the energy competition during 2019 and in total saved 263.4 MWh of energy and €20.9K, and avoided 60.3 tonnes of CO₂ emissions. All four local administrations decided to allow the public buildings to keep the energy savings achieved during energy competition.
- The municipality of Saldus has decided to introduce energy competitions among other public buildings in the municipality during the next few years.
- Highest energy savings (31%) were achieved in a kindergarten in the municipality of Kegums, even though the energy team was sure at the beginning of the competition that they had already done everything possible to be efficient!
- Four SEAPs upgraded and approved with new climate and energy targets for 2030.

30 additional Latvian municipalities were informed about the C4S experience.

CHALLENGES AND ENABLERS

Historical data availability

Even though today there are smart meters and other technologies to monitor and control energy consumption, availability of historical energy data is still a challenge in some municipalities. This is especially the case for buildings in rural areas without centralised energy sources. One of the solutions introduced by C4S was an *Energy Monitoring Platform* and local instructions to technicians working in public buildings to collect and insert monthly energy data in the platform.

Political priorities changed (but certification was a counter-force!)

Changes in political forces and in local priorities are a rather common issue to be faced by any municipality. During the three years of C4S, new administrations were elected in all four Latvian municipalities. The change in general didn't change the path already defined locally, however in some cases it influenced the decision-making process. Energy managers of all four municipalities acknowledged the benefits of certification to solve any kinds of challenges introduced by the political changes.

Clarity in communication and role definition

One of the largest challenges is to reach local technicians and ensure certain existing procedures shift towards saving energy - or that new procedures are introduced where they simply don't exist. Clear assignment of roles and responsibilities as part of the EnMS can initiate the change, however it is crucial to ensure continuous communication with all the involved employees to ensure the change lasts.

4.8 SPAIN



ACHIEVEMENTS

- > All four municipalities successfully certified their EnMS according to the new ISO 50001:2018 standard in 2020.
- Extensive boundaries established in all four cases: in total 20 public buildings and 4,138 lighting points.
- Cieza received a C4S Award for implementation of the EnMS (3rd place).
- > Energy managers appointed in all four municipalities during the project.
- 12 public buildings participated in the energy competition during 2019 and in total saved 193 MWh of energy, ca.
 €27.1K, and avoided 64.14 tonnes CO₂ emissions.
- > Highest energy savings (26.3%) were achieved in the public library, where involving public staff was key.
- Four SECAPs upgraded and approved with new climate and energy targets for 2030, and adaptation and energy poverty objectives included.
- A total of 12 measures implemented in the four Spanish LAs, mainly focused on the buildings sector.



CHALLENGES

Elections

New municipal administrations were elected in the C4S implementation period. Thus, political priorities changed in some cases and energy teams had to re-organise their tasks.

Lack of equipment

A lack of equipment to measure and differentiate the refrigeration, heating, equipment and lighting electric consumption made it difficult to analyse the data in the four municipalities.

ENABLERS

High involvement of employees in the whole project implementation

The energy teams of each of the four municipalities responsible for implementation of measures were committed and heavily involved in the project. This commitment was instrumental to the success of the energy competition, the development of the SECAPs and the certification of the EnMS.

> Political commitment

Success is not possible without the commitment of the local leaders, as they are the ones which finally decide the strategy of the municipality. Despite difficulties, political commitment and support for implementation was achieved in the four municipalities. Difficulties were overcome by clearly defining the roles and responsibilities of the different energy team members. Good coordination among the different actors was the key for this.

5. KEY MESSAGES

The achievements, challenges, enablers and recommendations below are divided among the three action pillars: EnMS, energy saving competition, and SECAP. The findings for the EnMS and the competition are largely based on a survey conducted among energy managers from the C4S municipalities, while findings for the SECAP development process largely draw on the experience of the C4S project partners working with the 31 municipalities.



ACHIEVEMENTS

- > 75% of survey respondents agreed or strongly agreed that the EnMS has led to new insights, and future energy savings already demonstrated or expected.
- ➤ 58% of respondents agreed or strongly agreed that the EnMS has already been a worthwhile investment. Of the respondents that answered this question, 47% anticipate the energy consumption within the EnMS to decrease by +5%, while 16% expect a decrease of +10%.



- 58% of respondents said that the probability that their municipality attains its greenhouse gas mitigation target is now higher or much higher thanks to the EnMS.
- A majority of respondents also expect that the EnMS will lead the municipality to offer more training on energy conservation behaviour and to prioritise investments according to their energy saving potential.
- Enthusiasm of participants during the educational activities increased the ambition of the energy department and management, and in some municipalities there are plans for similar training sessions to be conducted in the future.

CHALLENGES

- Getting a large number of departments to cooperate was the hardest challenge to overcome. 46% of respondents considered this to be a very - or extremely - hard challenge.
- > Lack of interest among management.
- Lack of funding (very or extremely hard for 33% of respondents).
- Missing historical energy consumption data (29% of respondents).

On the other hand, some things that might have been expected to be challenging turned out to be not that hard. 78% of respondents answered that the perception (of decision makers or technical staff) that possible energy cost savings might only be negligible was not a challenge at all or only a slight challenge. Obtaining political support was also not a big problem for 71% of respondents.

ENABLERS

Important motivational factors (enablers) for establishing an EnMS have been the following:

- > To reduce energy costs (88% of respondents rated this as very important or important).
- > To mitigate greenhouse gas emissions (88%).
- > To improve the municipality's image (71%).
- Internal considerations like rationalising inefficient workflows also had some importance (58% rated this as very important or important).

Projects like C4S can be a crucial driver for establishing an EnMS. Only 17% of survey respondents believed that their EnMS would have been introduced without the project.

To make the energy managers' work easier, the C4S project made available a web-based *Energy Monitoring Platform* developed by Ekodoma, which received an overwhelmingly positive response from the 12 respondents who have been using it. Of these, all agreed or strongly agreed with the statement that use of the Energy Monitoring Platform is easy to learn, helpful in monitoring energy data, and that results are presented in a clear and concise way. 92% of these respondents also confirmed that the Energy Monitoring Platform makes them more productive and that they would recommend it to other municipalities.

RECOMMENDATIONS

> Promote multiple benefits

Energy savings should be linked to (and promoted in terms of) public benefits (e.g. better public service, more comfort in buildings, reduced environmental impact, higher employment rate, improved indoor air quality), not only the financial impact of costs saved.

Think outside the EnMS: consider overall governance arrangements

Energy management typically works well in municipalities with good governance overall, e.g. if a quality management system is in place. The implementation of a process management like the eea or an EnMS should start with a high level decision, in order to assure technical staff receive comprehensive support.

Appoint a dedicated energy manager - with adequate skills and capacity!

An energy manager is key for smooth implementation of the EnMS. Without a person who can dedicate at least half of his/her time for operation of the energy management system, the full energy savings potential won't be reached. Ideal energy manager competencies include understanding of energy management and the ISO 50001 standard, however an engineering qualification is not mandatory. Don't underestimate the importance of good communication and project management skills!

Start gathering energy data right now!

Even if your local authority is not ready yet to develop and introduce an EnMS, you can initiate gathering of monthly heat and electricity consumption data of your public buildings, street lighting and even municipal fleet. This helps to create not only a history and baseline, but also to learn about existing challenges and to familiarise the administration with the concept of energy management and its benefits.

Keep gathering data, and employ staff with the skills to interpret it

In some cases, installing a Building Energy Management System or smart meters will be very helpful as a first step, however expertise is also needed to interpret the data. Still often energy consumption bills in local authorities are handled by the financial department, where staff lack the expertise to understand what's behind the numbers. An EnMS team including this expertise can help pinpoint abnormalities in consumption.

Include stakeholders

Identify and include all concerned stakeholders (departments, elected representatives and users) as early as possible, and make sure they are also strongly committed.

> Prepare, and estimate the time needed

Think at the beginning about the tools and methods to collect energy data, and make a realistic estimate of the time to be spent on the implementation of the approach. This means not underestimating it (risking that the implementation of the system will take much longer or even run out of steam) but not overestimating it either (risking having too much time to devote to the system in relation to the issues at stake).

Individual efficiency counts

In order to maximise the effect of behavioural change in municipal operations, every employee needs to know how to do his or her job as energy efficiently as possible.

It doesn't have to cost much

Energy management measures usually will require no or small investments, especially initially as they will often be based on changing behaviour and existing practices.

Teams need support

Greater support towards the local and the EnMS energy teams might bring better results and more dedication, but also prevent the premature burnout of enthusiastic and dedicated public employees. This support can be in different forms, e.g. partial relief from other duties, regular recognition of efforts, ensuring the necessary number of active team members.

Train, train, train!

Staff training must be continuous. This is an essential element in terms of EnMS and continuous improvement of energy performance. Awareness-raising also needs to be seen as a long term process, as some people will adopt the behavioural changes soon, but for others it will take a long time.

Work on improving communication between senior management and energy team

Communication between top management and the energy team must be constant and aim at the same objectives.

Act in line with European, national and regional programmes and funds

Diagnosing and subsequently designing in compliance with the incentive requirements made available by European, national and regional programmes and funds can facilitate the achievement of better performance and finance energy efficiency works.

Introduce an obligation for municipalities to have an EnMS in place

The main driving force for local authorities to implement EnMS according to ISO 50001:2018 in Latvia was approval of the Energy Efficiency Law in 2017. The Law obliged the introduction of energy management in certain municipalities. Even though initially it seemed like a new burden for municipalities, during the last three years the number of municipalities with an EnMS in place has increased, especially among the voluntary municipalities.

Heating optimisation

Technical staff of public buildings should be responsible for selecting and regulating indoor temperature during the working days, weekends and holidays. This is really simple measure which can lead to high consumption savings.

Smart meters

The acquisition of smart meters (or even control meters) in order to measure the lighting, refrigeration, heating and other consumption can make the monitoring process much easier.

For external consultants who advise municipalities, keep in mind:

- Meeting the mayor prior to any EnMS introduction is a must, preferably with an introduction to its tangible benefits.
- Projects like C4S, and networks like the EU-COM can be powerful sources of motivation for municipal staff.
- Select SMART energy performance indicators.
- Municipal staff (energy team) to support them in proposing their own solutions, rather than imposing one.
- Be careful not to push beyond municipal staff capacity. Staff are often under pressure to do more with increasingly shrinking resources.
- Do not forget about the comfort of the building occupants.
- Cooperation and exchange with other experienced municipalities can be beneficial.



5.2 COMPETITIONS

ACHIEVEMENTS

- Energy team members and employees were able to reduce heat consumption by 5% on average and electricity consumption by 6% on average. In some buildings, substantially more was saved.³
- Some of the C4S municipalities are so persuaded of the value of energy-saving competitions, that they plan to keep using this instrument and engage more buildings in future.

CHALLENGES

- > Absence of central heating regulation.
- > Technical problems.
- > Changes in building occupancy and use.

ENABLERS

- A communications campaign accompanying the competition was crucial to maintain momentum, e.g. raising awareness among the teams of their overall standing compared to other buildings in their respective countries.
- Workshops to both educate and persuade energy team members were successful in motivating the team to in turn educate and persuade their co-workers.
- Informational materials, e.g. door hangers, stickers and posters placed in strategic locations to remind employees of better energy use behaviour when it was most critical – e.g. when they were about to leave their office without switching off computers or turning down heaters – were reported as effective.
- In addition to information-giving, the distribution of cheap and simple monitoring equipment was successful in raising consciousness of energy usage.
- Materials and tools developed by the C4S team for use by the energy teams were seen as helpful, e.g. a <u>Strategic</u> <u>Handbook</u> and tools (e.g. energy meter, thermometer), promotional materials (e.g. flyers, stickers, chocolates, textile bags, mugs, etc.), sample quizzes, measuring devices.

RECOMMENDATIONS

> Integrate new habits into daily routine

Behavioural change related activities work best if they are integrated as much as possible into everyday processes, tasks, job descriptions and strategies.

Secure support from management

Competition teams supported by management tend to be more successful.

Set evidence - and show it

Access to historical and current energy consumption data is essential to monitor progress. Showing real evidence to employees that their building has huge energy consumption, but also great potential to reduce it, can help to overcome reluctance to change habits.

> Diversify communications

Use several communication channels for communicating the same message.

Reward success

Commitment and success should be rewarded! Where possible, it is effective to introduce rewards for employees/workplace for further savings, such as organising a joint excursion or meal, distributing plants in the offices, chocolate in the morning for those switching off all electrical appliances, etc.

Samification works better than giving instructions!

Raising awareness about energy-saving among employees in a playful way is more effective than just sending around official notifications and instructions. Avoid the impression that behavioural change will lead to a loss in comfort. Instead make it a source of enjoyment, fun and learning.



³ For more details, see: Kaselofsky, J. and Schüle, R., et al. (2020): Top Energy Saver of the Year: Results of an Energy Saving Competition in Public Buildings, Environmental and Climate Technologies 24(3), pp. 278-293.





ACHIEVEMENTS

The 31 C4S municipalities received considerable support from C4S partners with developing their SECAPs: a complex and extensive undertaking. At the end, 29 SEAPs had been upgraded to SECAPs (either completed or over 90% complete), while in Germany two SECAPs were developed from scratch, where there had been no SEAP in place. At the time of writing, at least 20 of these SECAPs had already received council approval.

CHALLENGES

SECAP development was perceived as among the most challenging dimensions of the project, with partners reporting the following issues:

Lack of data

• Lack of climate data at local level (e.g. climate scenarios for projecting future climate impacts, historic data on the costs of natural disaster costs for conducting a costbenefit of analysis and making a case for implementing adaptation measures). • Very few adaptation measures have been implemented, and as a result there has been little monitoring and evaluation of their effectiveness.

Lack of knowledge and capacity

- Municipal staff responsible for energy management often have little knowledge regarding adaptation and in some cases may confuse what is a mitigation and what is an adaptation measure.
- The risk assessment component of establishing an adaptation baseline was perceived as particularly challenging.

Competing national frameworks

In France, Climate Air Energy Action Plans (PCAET) are compulsory for conurbations exceeding 20,000 inhabitants and their content is defined by law. They differ however from SECAPs. As a consequence of these action plans, commitment to the Covenant of Mayors, and the associated SECAP is not very popular. Large cities & conurbations subscribe to CoM for international prestige reasons.

Energy data available but not usefully disaggregated, or only available at a price

In France, the latest energy data available is as of 2017 by sector but not by energy carrier (from open data:

electricity from Enedis and gas from GRDF). Besides, it has to be anonymised at all times. Energy consumption and renewable energy production data is at times collected by regional energy agencies, but at times only available to local authorities at a fee, and/or out of date.

Disruption from political changes

Local election cycles can have a major impact on the daily workload of municipal staff, creating extra tasks in the medium term, and interrupting continuity of plans and programmes if elections result in changes to political priorities and/or staff.

> Absence of coordination between departments

Given the wide-ranging nature of integrated climate planning, and especially the reliance of adaptation baseline assessment and corresponding measures on data and capacity from various departments, the tendency for departments to work independently from one another was exposed as a major obstacle.

RECOMMENDATIONS

- Where data is not available at local level, use data available at the natinal/regional level and adapt to local level.
- Where resources and staff capacity are scarce, the Joint Research Centre suggests an indicator-based rather than spatial RVA. See <u>Part 6.2.2 Risk and Vulnerability</u> <u>Assessment from Part 1 of the JRC guide</u> and 10.2 Indicator-based vulnerability assessment from Part 2.
- Establish clear organisational roles and responsibilities (e.g. energy manager, climate policy steering committee, energy working group).
- > Build on, or expand the remit of, an existing working group (e.g. energy working group).
- Map stakeholders to identify additional working group members (considering in particular informational needs and decision-making influence). A communication and engagement strategy may be needed to reach key staff whose input could benefit the plan.
- Where the mapping reveals skills or resources gaps, consider seeking external support, e.g., from a local/ regional energy agency, partnership with a nearby

university department or from a designated Covenant of Mayors Territorial Coordinator.

Actively consider interactions between mitigation and adaptation measures. Your cross-departmental working group will help to identify these, while investing resources in a quantitative (spatially explicit) Risk and Vulnerability Assessment will enable you to pinpoint energy infrastructure at risk from climate impacts.

Actively incorporate the EnMS into the SECAP. The EnMS provides a deeper understanding of the energy consumption of the local authority, comprehensive processes for addressing energy consumption and opportunities for improvement. Furthermore, it provides an ideal tool for tracking the progress, ensuring constant monitoring and improvement.

THANK YOU FOR KEEPING THE DOOR CLOSED

6. CASE STUDIES



BAUSKA,



BOUNDARIES OF THE EnMS:

- 63 public buildings (29 in City of Bauska; 34 in parishes)
- Public lighting system (32.6 km with 13 lighting sections)
- Municipal fleet with 56 vehicles

POPULATION: 23,570

CLIMATIC REGION:

Maritime climate, wet, moderate winters

Bauska is the first municipality in Latvia that has been certified according to the new ISO 50001:2018 standard

CORE ENERGY MANAGEMENT TEAM OF FIVE:

Energy Manager, Deputy Executive Director, representatives from Development and Planning, and Technical departments

> TOTAL ENERGY SAVED:

2119 MWh and €84,000 EUR (in 2019 compared to 2018)

> SPECIFIC OBJECTIVES ACHIEVED:

- The total heat energy consumption of municipal buildings has decreased by 14% (against the baseline).
- Based on the successful result of EnMS implementation the job position of energy manager is now permanent.
- The specific energy consumption of the municipal fleet has been reduced by 2.7% compared to 2018, and is 92.16 kWh/100km.

ACTIONS TAKEN FOR ACHIEVING THE ENERGY SAVING GOALS:

- Monthly energy data analysis by energy manager, based on the energy consumption data entries of municipal buildings in the C4S Energy Monitoring Platform.
- The identification and in-depth analysis of TOP 10 highest heat and electricity consumers of municipal buildings, and implementation of respective energy efficiency measures.
- The organisation of one year long C4S energy saving competitions in 3 municipal buildings, including the local government administration building.
- The organisation of individual meetings between energy manager, technical staff and employees of the municipal buildings about energy behaviour aspects as well as implementation of energy efficiency measures to reduce the energy consumption.

> LESSONS LEARNT AND RECOMMENDATIONS:

- The EnMS is seen as an effective approach on how to save public money that is used for energy resources, and that has been successfully obtained and adapted by the municipality of Bauska.
- The challenge is to find an employee who understands the essence of EnMS and can find out how to overcome the difficulties with EnMS implementation with the least resistance.
- The biggest challenge for the energy manager is finding an effective way to deal with 'the human factor', as well as explain the necessity of EnMS in all EnMS levels when the system is developed.
- It is important not to withdraw from the decision, even when the implementation of the EnMS can be much more time consuming than it was expected, especially when starting the process.

- To reduce total energy consumption by 1% relative to the specified energy baseline in 2019 for municipal buildings (heat and electricity) and street lighting.
- The consumption of the municipal fleet should not exceed the baseline of 2019.



BOUNDARIES OF THE EnMS:

- 90 public buildings
 - (27 with central heating system; 63 individual)
- Public lighting system (65 km with 55 lighting sections)
- Municipal fleet with 180 vehicles

POPULATION: 22,006

CLIMATIC REGION:

Maritime climate, wet, moderate winters

Saldus is one of the first municipalities in Latvia that has hired Energy Manager.

CORE ENERGY MANAGEMENT TEAM OF SIX:

Energy Manager, Executive Director, representatives from Development, Financial, Administrative and Technical departments

> TOTAL ENERGY SAVED:

779 MWh and €64,000 EUR (in 2019 compared to 2018)

> SPECIFIC OBJECTIVES ACHIEVED:

- The energy manager position will now be permanent in Saldus due to the EnMS success, including energy savings.
- Heat consumption for top 10 heat consumers reduced from 148.9 kWh/m² in 2018 to 136.6 kWh/m² in 2019.
- Electricity use for top six consumers reduced from 18.3 kWh/m² in 2018 to 17.8 kWh/m² in 2019.

ACTIONS TAKEN FOR ACHIEVING THE ENERGY SAVING GOALS:

- Monthly energy consumption data entries and analysis of municipal buildings in the C4S Energy Monitoring Platform.
- In-depth analysis of consumption data for top ten most heat and top six most electricity consumers of municipal buildings, and implementation of energy efficiency measures.
- Adjustment of the mechanical ventilation system for efficient use in all municipal buildings.

LESSONS LEARNT AND RECOMMENDATIONS:

• The Saldus case shows the EnMS as a system whose role in decision-making is growing year by year and can be a smart tool for the analysis of municipal infrastructure and a baseline for future developments.

- It is quite difficult to involve and motivate all municipal employees to adapt to the new responsibilities and follow the energy consumption trends.
- The ISO 50001 standard requires understanding and the need to keep up with quite a large number of documents in order to implement and maintain the EnMS.
- There are still difficulties regarding the heat meters that are not installed in many municipal buildings, as a result the energy consumption data are not precise, but estimations.
- If a municipality is not convinced of the necessity of EnMS, initially rather small EnMS boundaries may be set, e.g. 10 municipal buildings. For these buildings, energy consumption patterns can be detected, and by implementing some simple low cost energy efficiency measures, the energy savings can be reached.
- Invite knowledgeable people who can suggest simple energy saving measures without big investments like energy behavioural change practices. Thus, the municipality and society benefit from the first day, when the EnMS is implemented.
- Consider certifying the EnMS, because these investments will pay off quickly. Moreover, the municipality will have to actively implement the EnMS, and it will not be considered as another document sitting on the shelf.

- To reduce the total energy consumption by 3% relative to the specified energy baseline in municipal buildings, street lighting and municipal transport.
- To introduce a motivation system for municipality employees in buildings where accurate energy records can be carried out.



BOUNDARIES OF THE EnMS:

- 24 Buildings with a total area of 23,669 m²
- 3,680 Lighting points
- 8 PV Plants
- 3 Solar Thermal Plants

POPULATION: 16,689

CLIMATIC REGION:

Mediterranean climate

Rubano Municipality integrated its ISO 9001 Quality Management System with an Energy Management System according to ISO 50001:2018. The Municipality is therefore certified with an integrated Quality and Energy management system.

CORE ENERGY MANAGEMENT TEAM OF 12+:

Top Management (Mayor and City Board including Public Work and Environment Assessors), 1 Energy Team Coordinator (Public Work Sector Director), 4 Energy Team members (1 Responsible Heating Plant and Heating contract and maintenance, 1 person responsible for Electricity plants in buildings and Public Lighting contract and plants, 2 staff responsible for Energy Efficiency Design and funds), 1 representative of the Quality Management System.

> TOTAL ENERGY SAVED:

55.60 MWh; €12,134

> SPECIFIC OBJECTIVES ACHIEVED:

- Two schools involved in the energy saving campaign (around 200 pupils).
- Successful integration of a Quality Management System (ISO 9001) with an Energy Management System (ISO 50001).
- First LA in Italy certified according to the new ISO 50001:2018

ACTIONS TAKEN FOR ACHIEVING THE ENERGY SAVING GOALS:

- All the staff of the municipality participated in the training sessions on EnMS and energy saving. The training sessions took place over two days to facilitate staff participation.
- The training on energy saving at school involved about 10 classes from two schools (Buonarroti and Marconi).

The training initially involved the referent teachers and subsequently the classes. Frontal training was carried out and communication and monitoring tools were provided for energy saving in the classroom and at school.

 The municipality has an excellent knowledge of its structures and design skills in terms of energy efficiency. Energy saving design is always carried out taking into account the national and regional incentive requirements. This allows for high savings and co-financing of projects.

LESSONS LEARNT AND RECOMMENDATIONS:

- The participation of the senior management in the activities from the beginning of the project facilitated the achievement of the objectives.
- The management and control of contracts and contracts with suppliers is not always easy. In this field the Municipality needs continuous training.
- Having a long experience (since 2005) in Quality Management Systems (ISO 9001) has helped the organisation to better integrate the energy part in its system.

- Improve monitoring and detection of deviations in energy performance
- Link the municipality's investments as much as possible to the identified energy improvement opportunities.
- Address the training needs of staff.



BOUNDARIES OF THE EnMS:

- Four public buildings with a total of 3,112 m²
- 4,138 lighting points (all the public lighting of the municipality).



POPULATION: 34,988

CLIMATIC REGION: Mediterranean climate

Outstanding cultural, environmental and archaeological heritage.

CORE ENERGY MANAGEMENT TEAM OF 4+:

Energy Manager, Communication manager, Representatives of the buildings involved, Technical departments

> TOTAL ENERGY SAVED:

32.82 MWh in the public buildings and 174.59MWh in the public lighting: a total of 207.39 MWh and €29,035 from Feb-Sep 2019 to Feb-Sep 2020.

SPECIFIC OBJECTIVES ACHIEVED:

- The position of energy manager as of now will be permanent in Cieza as well as the energy team, due to the successful implementation of the EnMS and energy saved.
- The public library has achieved energy savings of 26.34%, reducing its consumption in 24.80 kWh/m² for 2019 in comparison with 2018.
- All the buildings have reduced consumption as well as public lighting.

ACTIONS TAKEN FOR ACHIEVING THE ENERGY SAVING GOALS:

- First of all, an internal work of the energy manager and the energy team was done in order to start with the energy competition, the EnMS and the SECAP.
- Secondly, numerous awareness and training activities were implemented in order to promote the project concept and raise awareness among the local staff.
- Finally, Cieza developed participatory actions involving external stakeholders from different sectors in order to

elaborate the SECAP. These sessions were enriching, and fruitful insights were added because of this in the SECAP.

> LESSONS LEARNT AND RECOMMENDATIONS:

- The commitment of the local authorities was key for the success of the project.
- Monthly energy data analysis by the energy manager was extremely useful for the whole process.
- A participatory approach is key for the success of such a project, both involving internal and external actors in order to include in the overall strategy all the different points of views.

- To integrate new buildings in the EnMS. Cieza's SECAP has highlighted the importance of continuing with these activities.
- To implement Cieza's SECAP, and perform a continuous monitoring of the plan, not only regarding the internal actions, but also the external ones.
- To continue promoting the 'spirit' of the project, in order to contribute to the energy transition and climate objectives from the local level. Internal and external awareness campaigns will be a crucial aspect for this.



COMPETITION SCOPE:

• 3 buildings (2 office buildings and 1 reception and leisure building), for a total area of 4,478 m².

POPULATION: 210,000 (metropolitan area)

CLIMATIC REGION: Maritime climate

Brest is one of the first local authorities to deploy nudges to save energy. After a project carried out in schools, it is deploying this awareness-raising tool in its administrative buildings.

> TEAM INVOLVED IN THE COMPETITION:

- 1 energy manager: responsible for the link between the national project partner and the energy referents.
- 1 energy 'referent' per building: responsible for the link between the energy manager and the agents of its building, 2 energy awareness officers (1 from the LA and 1 from Ener'gence: local energy agency): responsible for leading the awareness-raising workshops.
- All building users.

> SPECIFIC OBJECTIVES ACHIEVED:

- Creating a momentum to involve of municipal employees and all users to carry out energy savings that are necessary for implementing an EnMS.
- Using more appealing techniques such as nudges [*] instead of traditional training and sensitizing.

ACTIONS TAKEN FOR ACHIEVING THE ENERGY SAVING GOALS:

- Conducting workshops to raise awareness and reflect on energy savings in the workplace.
- Design of 'nudges' by the buildings' users from each participating building.
- Installation of nudges with the participation of users.
- Monthly monitoring of energy consumption.
- Distribution of flyers, setting up of posters, creation of photo cartoons with the agents.
- Highlighting of the approach in local newspapers.

> LESSONS LEARNT AND RECOMMENDATIONS:

• Competitions help to motivate staff by giving them a common goal.

- Enabling users to get involved in the use of the building and the approach by having them identify the relevant actions that increase their impact by simple gestures.
- Using humor and playful approaches makes people want to get involved.
- Competitions in publicly-accessible buildings can reach a much wider audience.
- It is necessary to raise awareness on a regular basis and provide information on changes in consumption to ensure that the dynamic continues.
- Occupants can still impact energy use even if heating is automatically (centrally) managed.

TARGETS FOR THE FUTURE (TO ENSURE CONTINUITY OF THE SAVINGS):

- The energy management system implemented by the Brest local authority will soon be integrated in all municipal buildings. Awareness-raising will be critical to improve their energy performance.
- The climate plan adopted in 2020 by the Brest local authority (also available as a SECAP thanks to the C4S project) has numerous energy management actions on the metropolitan scale.
- Raising the awareness of its staff is one of the actions to be carried out by the local authority to comply with EU energy saving objectives.

[*] Nudge is a concept in behavioral economics, political theory, and behavioral sciences which proposes positive reinforcement and indirect suggestions as ways to influence the behavior and decision making of groups or individuals. The photo illustrates what has been created in the C4S project. The frog attracts the user's eye towards the light switch to remind them to turn off the light on their way out.

7. WANT TO FOLLOW OUR LEAD?

The C4S experience has shown that combining three areas of action: design, certification and implementation of an EnMS, running an energy saving competition at building level, and integrating both into a strategic energy and climate action plan addressing both mitigation and adaptation (such as a SECAP) works to transform local energy management practices.

The C4S project team have developed a range of resources to inspire and support others interested in developing a similar, multi-faceted strategy to tackle energy saving, based on an Energy Management System, energy-saving competition and a Sustainable Energy and Climate Action Plan.

The following resources (many of them available in Croatian, French, German, Greek, Hungarian, Italian, Latvian and Spanish in addition to English) contain tips and detailed guidance to follow our lead!

-- ENERGY MANAGEMENT SYSTEM

- Energy Management System. Guidebook for Local Authorities
- Guidelines for use of the Energy Management Platform

C4S Sustainability Strategy: the way forward for municipalities with an energy management system in place

ENERGY SAVING

- Strategic handbook for energy teams
- Methodology for the evaluation of competition
- Visual and technical materials
- Energy saving tips

SUSTAINABLE ENERGY ------

Upgrading from SEAP to SECAP for Integrated Climate Action: <u>A Quick Access Guide</u>

> Fact sheets on financing opportunities



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This project has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement No 754162. The sole responsibility for the content of this document lies with the Compete4Secap project and does not necessarily reflect the opinion of the European Union.