PATH2LC

LEARNING MUNICIPALITY NETWORKS

*D4.9*

# SE(C)APs: From municipal planning to concrete action

## Barriers, success factors and decision processes

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## Consortium partners

| LOGO | PARTICIPANT | COUNTRY | TYPE |
|---|---|---|---|
| IREES research for future. | Institute for Resource Efficiency and Energy Strategies (IREES) | Germany | Scientific |
| Fraunhofer ISI | Fraunhofer Institute for Systems and Innovation Research ISI (Fraunhofer) | Germany | Scientific |
| TU WIEN TECHNISCHE UNIVERSITÄT WIEN Vienna \| Austria | Technische Universität Wien (TU Wien) | Austria | Scientific |
| e think ENERGY RESEARCH | Zentrum für Energiewirtschaft und Umwelt (e-think) | Austria | Scientific |
| ENERGY CITIES | Energy Cities (ENC) | France | Scientific |
| HESPUL | Hespul (HESP) | France | Communication |
| UCSA Ufficio Comune per la Sostenibilità Ambientale | Joint Office for Environmental Sustainability (UCSA) | Italy | Local network |
| SUSTAINABLE CITY CITY NETWORK | Sustainable City Network (SCN) | Greece | Local network |
| OESTE SUSTENTÁVEL AGÊNCIA REGIONAL DE ENERGIA E AMBIENTE DO OESTE | Agência Regional de Energia e Ambiente do Oeste – OesteSustentavel (Oeste) | Portugal | Local network |
| CITIES NORTHERN NETHERLANDS | Cities Northern Netherlands represented by City of Leeuwarden (CNNL) | Netherlands | Local network |
| ALTE 69 | Agence Locale de la Transition Énergétique du Rhône (ALTE69) | France | Local network |

# The PATH2LC project

In the PATH2LC project public authorities are working together within the framework of a holistic network approach (so called learning municipality networks) with the aim to achieve low-carbon municipalities.

The core of the project activities are the SE(C)APs (Sustainable Energy (and Climate) Action Plans), or similar climate protection plans developed by the municipalities. The PATH2LC project will foster exchange of existing knowledge and experiences among municipalities, enhance coordination among different administrative bodies within the municipalities, improve cooperation with local stakeholders and civil society and will equip stakeholders in public authorities with required planning and monitoring tools to develop and implement transition roadmaps for achieving the targets set in the SE(C)APs.

The holistic network approach intends to link stakeholders in public authorities among municipalities enabling peer-to-peer learning and to increase the engagement for the energy and climate transition. Policy makers and public authorities at local level are supported with scientific analysis and expertise in order to understand and implement their SE(C)AP measures. Five existing networks of municipalities in Italy, Greece, Portugal, the Netherlands and France are participating in the project.

A special interest of the project is to invite other municipalities to replicate the learning municipality network approach and take advantage of the knowledge base collected in the project.

**Further information on** www.path2lc.eu

## Project information

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# DEFINITIONS

| | |
|---|---|
| Covenant of Mayors (CoM) | The EU Covenant of Mayors for Climate & Energy was launched in 2008 and brings together thousands of local governments voluntarily committed to implementing EU climate and energy objectives. www.covenantofmayors.eu |
| Decision maker | 'Active agents embedded in particular institutional, normative, and political contexts' who are placed at the core of governance' (Moser 2009, p. 314). |
| Grounded Theory | Codes and theories are constructed from the data itself through an iterative process by selecting topics that recurred most frequently across all interviews. It is a widely recognised method to analyse qualitative data (Strauss and Corbin 1996). |
| Invisible Structures | Informal networks and social relationships within municipal institutions (and also external) - a kind of co-existing world to the formal structure. |
| Path dependency | Decisions of the past define decision options in the future (Barazza and Strachan 2021). |
| SEAP / SECAP | The Sustainable Energy and Climate Action Plan (SECAP) is the key document of a signatory of the Covenant of Mayor (CoM) since 2018. It is an extension of the former Sustainable Energy Action Plan (SEAP). These documents outline the key actions that Covenant signatories plan to reduce greenhouse gas emissions (GHG). |
| Top-Down Processes / Bottom-up Processes | Top-Down Processes means that a process is initiated from the top level (e. g. the mayor) whereas a process is initiated from the lower level (e. g. citizens or institutions) when it is a Bottom-up Process. |

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# INTRODUCTION

Municipalities play a crucial role in the transition from a 'conventional' to a low-carbon society. This is not only due to their major contribution to greenhouse gas emissions mainly through the energy consumption of buildings and transportation (Strasser et al. 2018a), but also due to the dominant role of urban political actors and decision makers in the transition process (Cheung and Oßenbrügge 2020; Donnerer and Maraquin 2020; Heinelt 2017; Strasser et al. 2018a). In recent years, climate and energy topics have moved more and more into the focus of municipal political agendas. In parallel, even countries with a long tradition of centralized decision-making (e. g. France) recognised the potential of empowering municipalities to decide by themselves on climate adaptation measures, energy provision, and deployment. Big drivers of the energy transition are the EU and global climate goals, National Energy and Climate Plans (NECPs) and networks like the Covenant of Mayors. Regarding energy and climate measures, municipalities can do both: they can address their own property (e. g. refurbishing public buildings) or they can promote and create conditions to make energy and climate actions for local companies and residents more attractive (Burghard et al. 2019).

Nevertheless, this transformation task is not an easy one. Cities face a lot of challenges, including a variety of topics, targets, stakeholders, and market dynamics (Strasser et al. 2018a). This paper explores factors influencing the implementation of energy and climate actions set in Sustainable Energy (and Climate) Action Plans (SEAPs or SECAPs[1]) in the framework of municipal decision structures and other important aspects such as governance, financing, and stakeholders. The role of municipal actors in the transition process is in the focus as these actors are also addressed by the Learning Municipality Networks (LMN) approach of the PATH2LC project. Previous research has shown the prominent role of municipal actors in the global low-carbon energy transition process (Cheung and Oßenbrügge 2020; Fuhr et al. 2018; Jaglin 2014), however, also non-municipal actors like energy or technology providers as well as civil society actors play a crucial role (Bulkeley et al. 2018; Chassein et al. 2017; Cheung and Oßenbrügge 2020; Roelich et al. 2018). All these stakeholders are more or less involved along the road, from planning SE(C)AP measures to measure implementation. Within the PATH2LC project, the approach of Learning Municipality Networks (LMN) is being implemented for the first time.

In this deliverable, the stages of the implementation process are described with relative barriers and drivers according to literature review and empirical results from our case studies (interviews with municipal stakeholders from IT, GR, PT, NL, FR). Some first recommendations to "move forward" dealing with these barriers and drivers are given. The findings on main barriers perceived by the municipalities in the PATH2LC project, such as lack of capacity and tools, financing, stakeholder involvement or a lack of exchange of best practices between countries will then be addressed in the course of the PATH2LC project by several components: expert presentations and workshops at network meetings, webinars, peer-to-peer learning sessions and an open-source knowledge base.

The general research questions of this paper are: What hinders municipalities to implement measures planned in their SE(C)APs[2]? What is the role of different (municipal) stakeholders and administrative decision making structures in this process?

# PARTICIPATING NETWORKS IN THE PATH2LC PROJECT

The PATH2LC project brings together municipalities on regional and international level to support them in the process of implementing their existing SEAPs or SECAPs. Five existing networks of municipalities in five countries (Portugal, Italy, France, Netherlands, and Greece) take over the implementation part of the project and are supported by scientific and dissemination partners (see Figure 1 and list of municipalities in Annexe 1).

[1] The Sustainable Energy and Climate Action Plan (SECAP) is the key document of a signatory of the Covenant of Mayor (CoM) since 2018. It is an extension of the former Sustainable Energy Action Plan (SEAP). These documents outline the key actions that Covenant signatories plan to reduce greenhouse gas emissions (GHG).
[2] It is a precondition of the project that a SECAP or SEAP is already available in every municipality.

The core of the project is the 'Learning Municipality Network' (LMN) approach: very close cooperation of municipalities in the form of regular, well organised, and moderated meetings including expert input and peer-to-peer learning. With this project, we want to equip decision makers and administrative staff of municipalities with the necessary skills to implement energy-saving or mitigation and adaptation measures related to climate change on a personal and group level. The approach of Learning Municipality Networks follows a defined process: initiation of the network – identification of climate and energy related measures – setting a common target by all network participants – regular network meetings on predefined topics with relevant municipal stakeholders – monitoring of progress and success of the network – dissemination of results and experiences - trans-regional and international exchange with other municipalities. Within the project we work together with existing networks and municipalities which have already identified measures in their SEAPs or SECAPs.

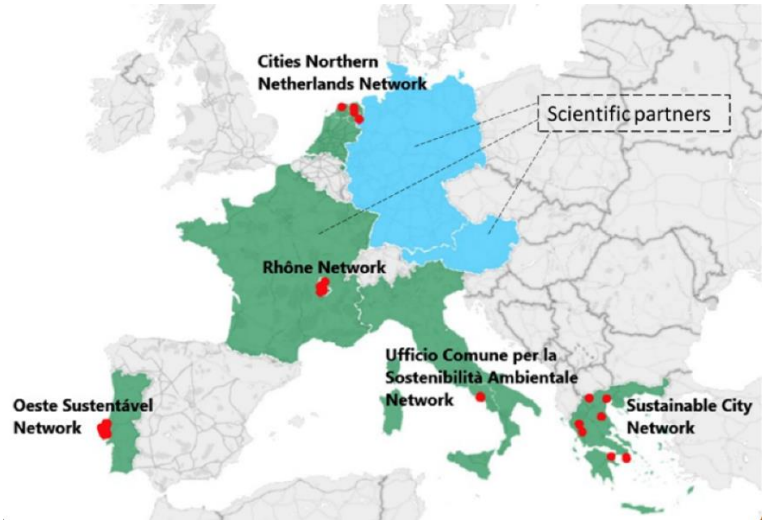


Figure 1: Project partners of the PATH2LC project. Red dots: Connected municipalities

As a first step of the PATH2LC project, existing SEAPs and SECAPs have been analysed (Task 4.2 of the PATH2LC project). After that, perceived barriers to and drivers of SE(C)AP measure implementation were identified in interviews with network operators and municipal stakeholders, summarized in this paper. While some challenges of SE(C)AP measure implementation, such as the involvement of citizens, concern all municipalities, there are major differences between and within the networks, such as: urban/rural location; service-/agricultural-/industry-based economy; unemployment rate and GDP as well as the quality of their action plans. Some of the cities in the project are 'on schedule' regarding their SE(C)AP implementation progress, others are ahead (NL), and some remain in the SEAP updating phase (GR) (described in Deliverable 4.3). In the following, the most outstanding characteristics of the networks are described. This information was collected in internal workshops, bilateral talks with network operators and analysis of documents (e. g., SECAPs). Each network gets a slogan as a kind of summary of our empirical results.

- *Italian network 'Better together':* Four municipalities in the Naples region have been working together for several years and now form the first Learning Municipality Network in Italy. Three of the municipalities have developed a joint SECAP. The network is operated by the UCSA[3], a shared office for four City Councils with a focus on sustainability matters. In addition to providing international exchange, the PATH2LC project will contribute to further develop the knowledge and specific skills of local administrators regarding energy and environmental issues. One of the focus measures of the network is the Energy Community that is about to get started.

[3] Ufficio Comune per la Sostenibilità Ambientale (Joint Office for Environmental Sustainability).

- *Greek network 'Blue Promising Sea':* Eight municipalities from a country-wide network participate in the PATH2LC project led by the SCN (Sustainable City Network). They get started with the implementation of planned SEAP measures, which have been developed jointly by five of the eight municipalities. A special emphasis on the network approach in PATH2LC will be put on capacity building for networking processes and capacity building for heating and cooling planning, as well as on updating the SECAPs and making them attractive for investors. Prioritising measures based on available data and expert input will be the first step.
- *Portuguese network 'Big Dreams'*: Nine municipalities from the western Portuguese region are organised in a network with regular meetings led by OesteSustentavel[4]. This network will now be strengthened by the PATH2LC project and its technical experts. The network of this project consists of a mix of small to medium-sized municipalities. This is seen as a challenge because 'best practice examples' often come from large cities. In addition to a variety of measures that have already been implemented, the ambition and motivation to go even further are high. A major goal of the network operator is to disseminate the results and experiences of the first Learning Municipality Network to reproduce it in the entire region. SEAPs that are already available for each municipality, are currently in the process of being updated and there is willingness to upgrade them to SECAPs.
- *Dutch network 'Forerunners'*: Four municipalities of the northern Netherlands (CNNL[5]) will participate in the PATH2LC project as a Learning Municipality Network and take advantage of the international peer-to-peer learning. The cities are working together on different topics, of which the energy transition is very important. A lot of measures have already been implemented and they have ambitious targets in their SE(C)APs (e. g. carbon neutrality by 2035 in Groningen). The implementation process in the Dutch municipalities benefits from a Sustainable Program Manager. Every municipal department provides one or two people for the Sustainability Program and the team works one or two days per month on the program. The program manager leads the team and has direct contact with the mayor or the 'wethouders' (in English: municipal executive). In addition to mandatory regional plans for large scale sustainable energy production and a regional heat plan (=> SEAPs), all Dutch municipalities must develop by the end of 2021 a plan for phasing out natural gas, which mainly translates into a heat transition in the built environment. In the city of Leeuwarden, small action plans with individual targets and measures are planned for each district.
- *French network 'Arms wide open'*: The Rhône network includes 146 municipalities of four municipal associations or communities of the French Rhône department and is managed by ALTE69[6]. The members of the PATH2LC network are the heads of these municipal communities, making the French network a 'network of networks'. The four municipal communities participating in the PATH2LC project have decided to follow their regional approach to become 'Positive Energy Territories'. That is, there is a strong political commitment to implement local energy policies although political consensus about concrete measures could be an issue. The PATH2LC technical expertise for energy planning will contribute to this commitment and help to upscale what they are already doing. A challenge is that skilled and motivated technicians are working together with elected officials across regional borders. All these territories have been involved in energy topics for at least three years and have set up SECAPs that are regularly updated.

## METHODOLOGICAL APPROACH

The perceived local barriers, drivers and decision structures have been elicited through two rounds of semi-structured interviews. The interviews provide the opportunity to gain a deeper understanding of the SE(C)AP implementation processes and of the way people think about it. At the same time, the interview questions make people think about the processes in a way they might never have thought about it before.

[4] Agência Regional de Energia e Ambiente do Oeste (Regional Energy and Environment Agency West)
[5] Cities Northern Netherlands represented by the City of Leeuwarden in the PATH2LC project.
[6] Agence Locale de la Transition Énergétique du Rhône (Local Agency for Energy Transition in the Rhône Region).

Besides barriers, drivers and decision structures, topics of the guidelines (see Annexe 2) in the two interview rounds have been framework conditions of the municipalities, stakeholders that are connected to PATH2LC activities, current and past activities on SE(C)AP measures as well as expectations regarding the knowledge platform that will be developed in work package 3 within the project.

In the *first round,* the five local partners of the project, who are network operators at the same time, have been interviewed in depth by IREES according to an interview guideline. The interviews with local partners were conducted by telephone, lasted around one hour each and were recorded, transcribed, and then analysed together with interviews with municipal stakeholders from the second round. In the *second round,* the local partners themselves were trained by IREES in interview practice and subsequently conducted semi-structured interviews with 1-2 stakeholders of each municipality actively involved in the respective Learning Municipality Network (LMN). This second round served to collect the perspective of the local stakeholders themselves. The guideline for these interviews was developed by IREES in English but interviews with municipal stakeholders were conducted by local partners in national language – ideally face-to-face for about 15-20 minutes each - to minimise language barriers. The minutes if these interviews were written by the local partners in national language, and an English summary of the answers was prepared and analysed by IREES.

In sum, 28 interviews have been conducted (Table 1) and analysed according to the Grounded Theory Approach ((Strauss and Corbin 1996)): Codes and theories are constructed from the data itself through an iterative process by selecting topics that recurred most frequently across all interviews. It is a widely recognised method to analyse qualitative data. The principal topics identified are depicted and explained in the following chapters.

TABLE 1: NUMBER OF CONDUCTED INTERVIEWS

| NETWORK | NUMBER OF INTERVIEWS |
|---|---|
| Italian network: | 1 local partner/network operator,<br>3 municipal stakeholders (out of 4 participating municipalities) |
| Greek network: | 1 local partner/network operator,<br>8 municipal stakeholders (out of 8 participating municipalities) |
| Portuguese network: | 1 local partner/network operator,<br>7 municipal stakeholders (out of 9 participating municipalities) |
| Dutch network: | 1 local partner/network operator,<br>0 municipal stakeholders (out of 4 participating municipalities) |
| French network: | 1 local partner/network operator,<br>5 municipal stakeholders (out of 4 participating municipal communities) |

# FROM SE(C)AP TO EXECUTION: SIX STAGES

Literature review and interview results brought up the following ideal-typical model of the process from SE(C)AP drafting to measures' execution in the municipalities (Figure 2). For this model – as for the whole project - we assume that the design of climate protection measures and their incorporation in a Sustainable Energy and Climate Action Plan is completed[7]. The follow-up process starts with picking one of the measures in the SE(CA)P and introducing it into the political discussion of the municipality, for example in the form of an application. Depending on decision structures and agenda setting of the respective government, the pace and form to proceed with this application may vary. When there is an agreement to go on with the proposed measure, the available budget and the alignment with regulations must be checked. As soon as this is approved, the measure can become more concrete, and details can be planned. In the best case, the concrete plan is discussed or even designed together with all stakeholders affected before the measure is executed. The monitoring of the implemented measure can lead to improvements (starting the process again) or lessons learnt for the next measure to be implemented. A dissemination strategy accompanies the implementation phase, with the aim to reach a high impact of measures and trust of citizens.

Figure 2 shows that human resources are needed at every step of the implementation process of SE(C)AP measures. These can be single or multiple stakeholders, depending on the process stage and the municipal structures. The findings of preconditions for a successful implementation of measures have been well summarized by Dütschke and colleagues (2019) in their study of the development of a district heat network: '[It] requires an enthusiastic team to start a project that is trusted by the local community and has the support of the district council'. Within this process municipalities have different functions: besides regulators and implementers they are consumers, role models, part of local networks and link their activities to other networks (Burghard et al. 2019).

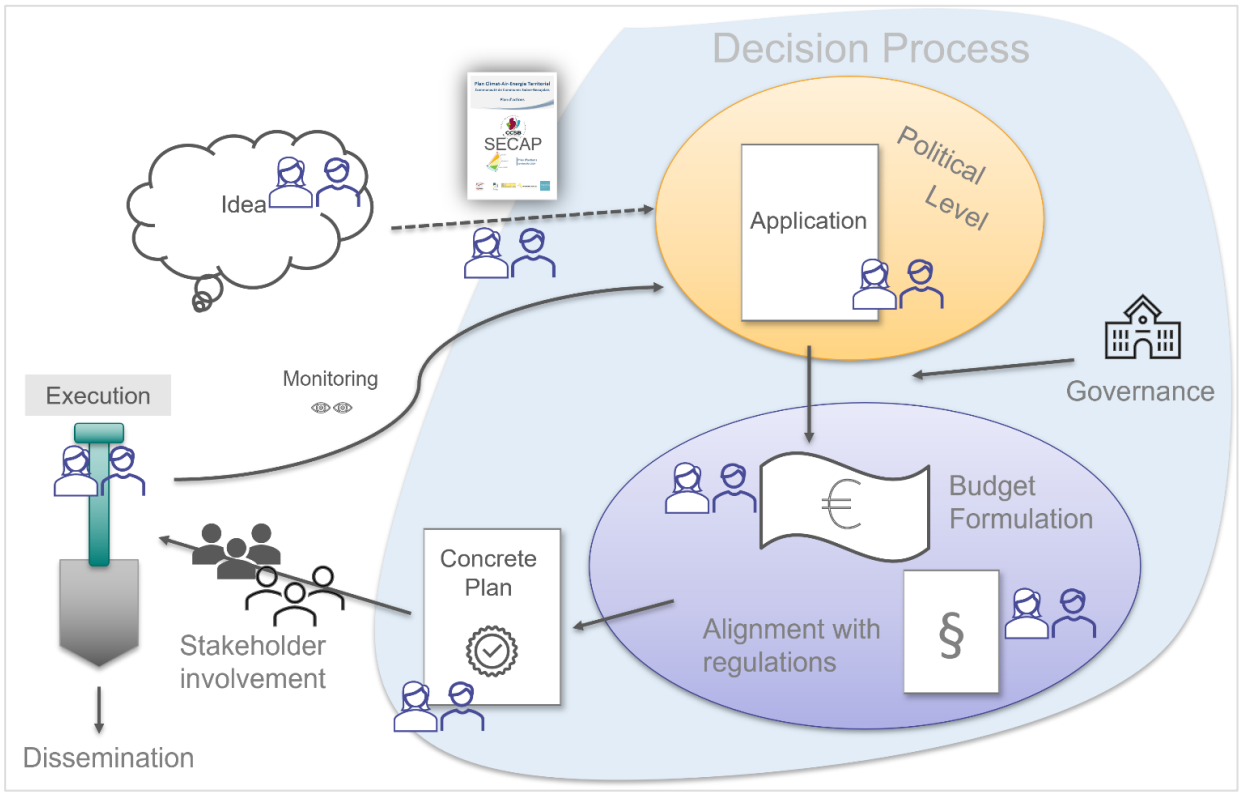


Figure 2: From SE(C)AP to execution – Implementation process of SE(C)AP measures (own presentation)

[7] Of course, in some municipalities the available SE(C)AP is in the phase of being updated. Nevertheless, there is a SE(C)AP available which is the starting point for all activities in the PATH2LC project.

In the following chapters, we take a closer look at this process to identify barriers that may hinder the implementation of a certain SE(C)AP measure. We identified six stages where barriers could be expected:

1) availability of human resources including their motivations and knowledge,
2) decision making structures and agenda setting of the municipality (governance),
3) financial resources and general regulations,
4) stakeholder involvement,
5) execution of the measure,
6) external factors, such as a pandemic.

In each chapter insights from other studies and projects are described according to these stages and added by results of the interviews with local stakeholders of our five case studies. Most of the aspects mentioned by respondents are related to decision making structures. This is only a weak indicator of the importance of this aspect as this also makes up a significant part of the interview guideline (Annexe 2) while other aspects were only mentioned without specific questions. Nevertheless, the first four stages are considered as the most important issues for the respondents. The stated aspects are broken down in more detailed categories in the following chapters. Each chapter first describes results from the literature review, then describes empirical results from the interviews and concludes, if necessary, with recommendations for moving forward at this stage.

The following chapters refer to individual quotes from the interviews or take these aspects as a starting point looking for confirmation by literature.

# STAGE 1: AVAILABILITY OF HUMAN RESOURCES INCLUDING MOTIVATION AND KNOWLEDGE

The main factor to take action regarding the implementation of SE(C)AP measures is the availability of human resources. In the interviews, especially the small municipalities expressed their need for additional municipal staff working on the topic of energy and climate. Nonetheless, much can be achieved if the available staff is skilled, motivated, and networked.

*Skilled Stakeholders*

Knowledge is essential to take good decisions (Göpfert et al. 2020; Jalonen 2007; Sorman et al. 2020; Strasser et al. 2018b). Research shows the importance of advisors involved in decision processes. Stakeholders who are part of the decision process may lack the skills to assess the quality of innovative technology and possible savings, as well as their risks (Cajot et al. 2017; Chassein et al. 2017; Polzin et al. 2018). Even in the technical offices in municipalities that are in charge of the built environment, Caputo and Pasetti (2015) found a lack of knowledge about energy, energy planning or available technologies. This was confirmed by our interview partners (see below). It is a challenge that both expertise on energy and climate action options and expertise of local realities are needed by municipal staff. The public administration recruitment processes, in most cases, are based more on political interest than on knowledge which explains the lack of qualified municipal personnel with a sufficient level of information and expertise (Biresselioglu et al. 2020). In order to move forward, it is important to complement the existing knowledge of municipal stakeholders with knowledge from outside the municipality. Then, new solutions, that have never been applied before, may be created. Participation processes can help to take technical expertise as well as local realities into account (see stage 4).

In some cases, measures are initiated by visionary potential civic users or individual municipal stakeholders rather than specialists (Dütschke et al. 2019). Knowledge might be also created from lessons learnt from past activities that might have revealed the need for external support. To make use of knowledge and experience, regular exchange

between the concerned stakeholders is necessary (see stage 2). Assuming that municipal stakeholders want to take decisions with the best information available, a central data management with simple tools to support the planning process also contributes to a successful implementation of SE(C)APs. Even if technology awareness and knowledge is present there is a "tendency to 'wait' for future improvements of innovative technologies and associated greater savings, also known as the 'energy efficiency paradox'" (Polzin et al. 2018). The main reason for this is a lack of prioritization and experience which can be addressed by exchange processes.

When knowledge of end users of the intended measures is missing this should be considered during a stakeholder involvement process in order to avoid lack of commitment (see stage 4).

*Motivated Stakeholders*

For a successful implementation of SE(C)APs, the interaction of different municipal stakeholders with specific characteristics is needed. They can take over the role of an influencer, a claimant, a collaborator, and a recipient. All roles are needed within a system. Municipal stakeholders can also operate as mediators, enablers and coordinators of energy and climate actions but without motivated stakeholders or 'key actors' who put extra energy and effort into the topic it often does not go forward (Fuhr et al. 2018; Göpfert et al. 2020; Leck and Roberts 2015). They can be members of the council, the mayor, other leading officials, or even actors from external institutions. Their interest in climate and local issues is usually linked with an in-depth understanding of related topics which is necessary to push action. Motivated stakeholders are even more important when professional and financial resources are missing. The identification of one responsible stakeholder for the coordination of SE(C)AP measures could be a big motivator (Bertoldi 2018). Motivated stakeholders often benefit from a strong informal network they can use for knowledge exchange, institutional or financial support or other collaborative advantages.

In order to decide and act in favour of the environment, stakeholders have to be aware of the importance of energy and climate actions and believe in environmental benefits (Biresselioglu et al. 2020). The implementation of climate protection measures benefits from an increase in awareness of climate change effects in the population (Mendizabal et al. 2018). On the other side, all local stakeholders who carry out energy efficiency policies and actions can set a good example and motivate citizens to take action (Thomas et al. 2016).

*Networked Stakeholders*

'Invisible aspects' that are defined as informal networks and social relationships within municipal institutions (and also external) have a high impact on knowledge-building and decision-making processes in municipalities (Fuhr et al. 2018; Leck and Roberts 2015; Sorman et al. 2020). These informal networks are unified with common interests, challenges, values, and beliefs. As the term 'invisible' suggests, these structures are usually hard to understand for outsiders and sometimes even for insiders. As invisible aspects are a kind of co-existing world to the formal structure, it is often not appreciated that they become transparent. Nevertheless, they have to be taken into account as much as possible when SE(C)AP measures should be implemented. They can bring actions forward as well as hindering them. For example, when talking to mayors one should find out what is important for mayors on their personal agenda or what they do in their free time so their personal interests and alliances can be addressed. Motivated actors or 'key actors' often have a great influence on 'invisible networks', therefore it is a good idea to keep connected to them when measures are planned. 'Energy transition and policy cannot and should not be seen in isolation from the political climate in which it is embedded both at the national or the regional level' (Sorman et al. 2020, p. 11).

## Empirical Results on Stage 1

The content analysis of the interviews revealed six topics related to stage 1 "Availability of human resources including motivation and knowledge" (for an overview and exemplary statements see annexe 3):

1. Lack of Human Resources
2. Lack of Skilled Stakeholders
3. Motivated Stakeholders: Mayors
4. Motivated Stakeholders: Municipal Staff
5. Motivated Stakeholders: Institutions
6. Networked Stakeholders

A common topic in all interviews was the lack of human resources:

> *'The local city may not have the internal capacity to write a proposal or to create a joint venture.' (Italian interviewee)*
> *'Municipal services do not have adequate staff.' (Greek interviewee)*
> *'Workload is big, and the number of staff is low, and this makes it difficult to implement projects which are more complex.' (Portuguese interviewee)*
> *'Sometimes you as a municipality have to take the lead in it and help your citizens in the jungle of the market. 'You cannot leave them on their own. You have to help them, but for helping them you need more people.' (Dutch interviewee)*
> *'The municipalities are missing financial resources for internal human resources to be independent from external actors.' (French interviewee)*

The lack of human resources is very much linked to the lack of knowledge or skilled stakeholders. The interviewees not only referred to specialised knowledge about technologies or energy planning but also to sustainability issues in general. As an Italian interviewee stated: *'It is very difficult for the public stakeholders to understand how important energy is within the whole picture of the territory'*. Especially the public stakeholders of each network asked for best practice examples and want to learn from experts and other municipalities about relevant options. However, not only public stakeholders but also citizens lack knowledge for example about the existence of a SE(C)AP. It was also mentioned in the interviews that it could be a barrier if public stakeholders are not aware of environmental topics which could be the first entry point to push action.

Finding motivated actors is easier in some municipalities than in others. We differentiate between motivated mayors, motivated institutions, and motivated municipal staff. Regarding the motivation of mayors, we found a mixed picture in the interviews: while most mayors in the Italian and Greek network seem to be very committed to their action plans, the network operators of the Portuguese, Dutch and French network relativised the commitment: '*on their daily schedules it´s not an emergency*' (Dutch interviewee). However, especially some French and Italian municipalities benefit from very motivated municipal staff and there is a growing awareness of environmental issues in other municipalities. Municipalities owe this not least to committed institutions such as UCSA (IT), SCN (GR), OesteSustentável (PT) or ALTE69 (FR), which are network operators in our project at the same time.

The network of stakeholders was not part of the analysis as this would be beyond the scope of the project. All municipalities of the project are embedded in a large network of municipalities and are usually well connected to at least some municipalities of their region. A special issue was mentioned in the French network with municipalities who share a frontier: '*Some projects like windfarms or biogas are at the frontier of two municipalities. So, it's important that they work together and that's a challenge.*'

## Recommendations for Moving Forward

On the one hand, the lack of municipal staff can only be addressed by governance (that entails prioritization of climate topics as well as their anchoring within decision structures) and available budget (see below). As the literature review shows, skilled, motivated, and networked stakeholders are needed for the successful implementation of planned SE(C)AP measures. It is an often neglected but very important first step to identify key actors or even hire some.

On the other hand, the motivation and engagement of municipal stakeholders depends on several factors. Municipal transition policies have to take into account the heterogeneity of stakeholders to encourage low-carbon investments successfully. Some of them, like character or bounded-rationality, cannot be influenced but have to be considered (Barazza and Strachan 2021). Based on the model of normative decision making (Klöckner and Matthies 2004), there are several factors which could be changed in order to bring people to action: 1) They need to be aware that there is a problem that needs a solution (see also (Biresselioglu et al. 2020). 2) They need a motivation which might be intrinsic (e. g. 'I will get a better quality of life.') or extrinsic (e. g., by monetary incentives). 3) They need to evaluate their power and resources in a way that they expect the measure to have a positive impact (so called self-efficacy). All these factors can be an entry point for interventions and capacity building.

The knowledge gap can be filled by a bundle of capacity building measures, depending on the stakeholders to be trained and the topic to be addressed. The following list gives some ideas:

- Municipal networks and a platform for the exchange of knowledge and experiences, for example about success stories (Mazzanti et al. 2019). Both are provided by the PATH2LC project.
- Industrial networks, as industrial companies have a high potential for energy efficiency measures (Dütschke et al. 2018).
- Continuous training of local technical staff and administrators (Bertoldi 2018; Chassein et al. 2017; Costa et al. 2019; Trapp et al. 2020). Some training opportunities by external experts are offered by the PATH2LC project which can be integrated in a continuous training concept.
- Training of professionals which are encouraged by incentives (Chassein et al. 2017; Trapp et al. 2020).
- Involvement of external consultants in municipal decision structures (Polzin et al. 2018).
- Regular meetings of stakeholders with different backgrounds (e. g. municipal staff with climate change experts) (Bertoldi 2018; Mendizabal et al. 2018; Strasser et al. 2018b). This is one important element of the Learning Municipality Network approach and in some networks already established in the recent years.
- Appointment of a specific officer in charge of municipal AND climate issues => contact person for all kinds of communication on that topic (Bertoldi 2018; Strasser et al. 2018b).

## STAGE 2: DECISION MAKING STRUCTURES AND AGENDA SETTING OF THE MUNICIPALITY (GOVERNANCE)

One should think that for cities that have developed a SE(C)AP or similar climate action plan it is only a small step to implement measures defined there. But, when it comes to concrete decisions of taking action the underlying administrative structure of city councils, as well as the characteristic of the decision makers is crucial. A common commitment by municipal stakeholders is conditionally necessary for the successful process of implementing a SE(C)AP (Jekabsone et al. 2019). This is why carefully organised decision processes are so important.

With 'decision makers' we refer to 'active agents embedded in particular institutional, normative, and political contexts' who are placed at the core of governance' (Moser 2009, p. 314). This means they are stakeholders who do not only take core decisions but also bring other stakeholders into action. The process of decision making itself is very complex as it is usually not linear and actors have to deal with decision constraints and unforeseeable circumstances (Jalonen 2007). Usually, decision makers are 'pressured by scientific, political and administrative complexities' (Cajot et al. 2017, p. 232).

The underlying decision structures of a municipality do not only set the decision process (e. g. political consensus - budget formulation – approval – execution - monitoring, see Cicmanova and Barnhusen 2018) but also stimulate communications and conflicting interests between interest groups (Jaglin 2014; Jalonen 2007). Above all, the municipal structure, as described further in the following, enables stakeholders to make decisions and take action (Cheung and Oßenbrügge 2020; den Exter et al. 2014; Fuhr et al. 2018; Göpfert et al. 2020; Jalonen 2007; Sorman et al. 2020; Strasser et al. 2018a; Strasser et al. 2018b).

Regarding SE(C)AP related decision processes, one of the most important aspects is the vertical and horizontal integration of climate issues into the municipal structure (Cajot et al. 2017; Göpfert et al. 2020; Strasser et al. 2018b). In most municipalities climate issues are integrated vertically in the municipal administrative structure. An example of vertical integration is one department dedicated to environmental topics connected to the mayor and an office/team working on that issue (see Figure 3). This is a simplified model, but one can imagine that problems may arise when measures should be implemented that are linked to other departments. Communication between the municipal departments is often insufficient (see Jekabsone et al. 2019). An exemplary measure could be the use of district heating that is linked to infrastructure and urban planning, among others. This means that responsible parties need to get in contact with several other municipal stakeholders to start any action. In most cases, energy, climate, and sustainability are a cross-cutting topics related to several departments. But even in cities where a formal urban energy planning is available, 'urban and energy planning are often separated disciplines, leading to making decisions based on limited views and responsibilities.' (Strasser et al. 2018a, p. 126).

A solution to that is horizontal integration into the municipal structure which complements the vertical structure (Figure 3). Horizontal integration means that not only a general SE(C)AP is available, but also an 'energy and climate action officer' or department that coordinates cross-sectoral issues (Strasser et al. 2018b). This position or administration unit can, for example, organise regular meetings with all departments and can also connect to and exchange with other municipalities. Regular meetings can enhance commitment and ensure that the topic of climate and sustainability stays in mind when decisions are taken, and they can help decision makers to find the most convenient solution before the action is implemented (see also stage 4). The supposed problem of limited time availability of affected actors can be invalidated by shorter decision-making processes. In many cases the horizontal integration is missing and therefore a special coordination office is regularly recommended by experts as the Joint Research Centre (JRC) of the EU (Bertoldi 2018) or the German Association of Cities (DStGB 2021). A disadvantage of horizontal integration is that it may be time consuming to listen to all parties when taking a decision. This problem can be solved by regular meetings which create an atmosphere of understanding and solution-oriented discussions (Bertoldi 2018; Jekabsone et al. 2019; Strasser et al. 2018b). Different decision makers working in different areas have different and sometimes contradicting interests in policy programmes and investments (Cajot et al. 2017; Chassein et al. 2017). In addition, multiple stakeholders at different levels perceive the problems from a different point of view and prefer different tactics when it comes to implementation. Political disagreements or limitations but also contradicting interests between users and for example financial institutions may slow down or even block processes (Cajot et al. 2017; Dütschke et al. 2019).

For both situations (vertical and horizontal) the level of integration can vary in terms of where the department is located in the organisational structure and how many people are working in such a team. As there is also a difference in decision making between women and men, a balanced gender mix should be considered in all teams of municipal decision makers (Sorman et al. 2020, p. 9). Having distinguished between the differentiation of vertical and horizontal integration, it is the mixture of both that brings SE(C)APs into successful implementation, as it is the case in the Dutch network of the PATH2LC project.

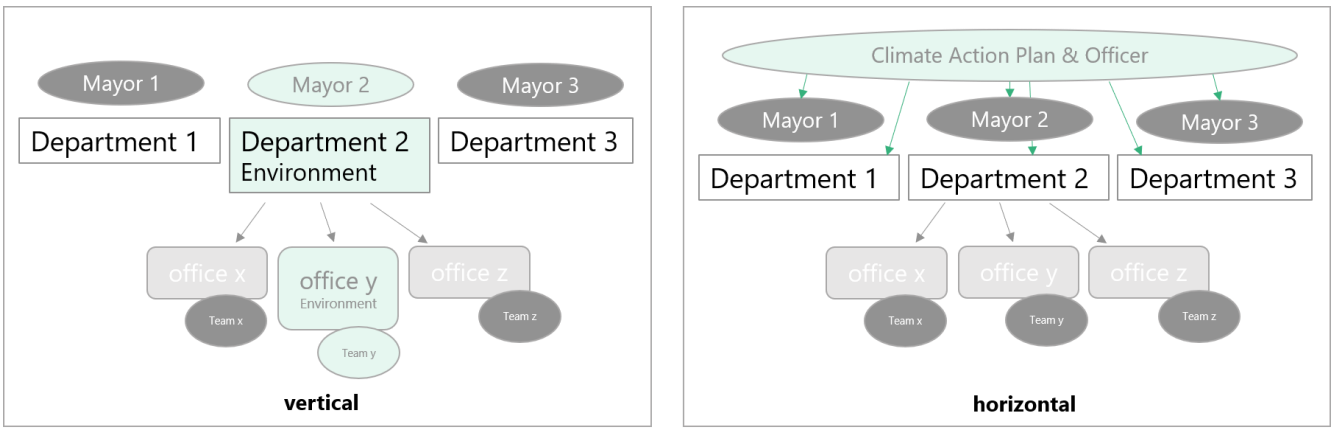


Figure 3: Vertical and horizontal integration of climate issues into the municipal structure (own presentation)

## Empirical Results on Stage 2

The content analysis of the interviews revealed eight topics related to stage 2 "Decision Making Structures and Agenda Setting of the Municipality" (for an overview and exemplary statements see Annexe 3):

1. Description of Decision Making Structure in General
2. Special issues of Small Municipalities
3. Availability of Vertical Integration Climate issues in the Municipal Structure
4. Availability of Horizontal Integration Climate issues in the Municipal Structure
5. Regular Meetings of Decision Makers
6. Governance / Agenda Setting
7. Relevance of SE(C)AP for the Municipality
8. Relevance of External Consultants for the Municipality

The decision making structures of the municipalities were a big topic in the interviews, not only due to the number of questions in the interview guideline but also due to the number of principal topics identified (see Annexe 2). On the one hand, decision processes are perceived as a possible obstacle as they can slow down implementation processes. On the other hand, the interviewees often found it difficult to describe the processes as they are quite complex.

First of all, the decision making structures have been described in general. A lot of changes have been going on in recent years. For example, in Portugal several interviewees of the municipalities reported some changes regarding restructuring the divisions, so that it is clearer who is responsible for environmental and sustainability topics. Some interviewees emphasized the matter that there are '*long administrative procedures for approval of decisions/actions*' (Portuguese interviewee). SE(C)AP measures were mainly implemented top-down, except from one Italian and one Greek municipality where there are also bottom-up processes.

In all networks, the vertical integration of climate issues into the municipal structure can be found. The hierarchy levels of this structure are more or less distinct, as there are more levels of decision-making in some municipalities than in others. A difference can be seen between small and big municipalities, i.e., large municipalities being '*much more structured and defined in their internal organization than the smaller ones*' (Portuguese interview). This is also the reason why in small municipalities the vertical structure is not perceived as a barrier. But the more complex decision making processes become, the more the need for coordinated action and cross-sectoral collaboration is expressed.

Elements of horizontal integration can be found in municipalities within networks of Italy, Portugal, the Netherlands, and France. This is not only expressed by their formal or informal municipal structure but also by regular meetings of decision makers (mainly organised by the institutions that are local partners of our project).

Besides organisational elements of decision making processes the integration of climate issues into municipal routine ('governance' or 'agenda setting') was also a research question. The interviews show that environmental and climate issues are on different levels of the top ten of the municipal agenda. Whereas Italian municipalities rated energy and environmental topics quite high on the political agenda (besides social topics), Greek municipalities rated them more at the end of a top ten scale. Other topics are economics, health care (especially in times of pandemic), social life, housing, unemployment. Even within a network, prioritization of climate issues strongly depends on the mayor and the political agenda. All network operators said that they are very much fighting for a high prioritisation of sustainability issues. However, as a Dutch interviewee stated, the prioritisation in the Dutch municipalities should be higher than it currently is, because '*all the other problems that are high on the agenda don't matter if you are drowning*'. For example, election periods or conflicting interests of different parties regarding environmental issues (e. g. in Greece) can negatively influence agenda setting and decision processes about SE(C)AP measure implementation.

The relevance of the SE(C)AP for the municipality also differs between municipalities in the networks. This is also reflected in the different level of detail, the availability of monitoring or the writing process of the plan (e. g. by a steering committee as in a municipal network in France or by external consultants as in almost all municipalities in Greece) which was analysed in the Deliverables 4.3 and 4.4 (Conforto 2021).

It is not unusual that cities hire external consultants, but it depends on how many tasks they are in charge of. In some municipalities, for example in Greece, the Netherlands and France, the SE(C)APs were written by external consultants. As an interviewee of a Portuguese municipality points out: '*Indeed, the local authority prefers having internal skills for economic reasons (cheaper than paying external consultants) and to capitalise as much knowledge as possible internally (unavoidable loss of knowledge when the mission of the consultant finishes).*' The collaboration with other municipalities in the region as is the case in Portugal, Netherlands and France can contribute to the successful implementation of SECAP measures.

### Recommendations for Moving Forward

Besides the horizontal and vertical integration of climate topics in general (especially regular meetings of relevant stakeholders), it is also recommended to institutionalise these topics within a climate action plan. A SEAP or SECAP is already available in all but three municipalities of our project. These three municipalities have a similar climate action plan. Nevertheless, the content and structure of the SE(C)AP as well as the availability of monitoring is relevant (Cajot et al. 2017; Conforto 2021; den Exter et al. 2014; Jekabsone et al. 2019; Mendizabal et al. 2018; Sorman et al. 2020). Within our case studies, a large variety of content and structure of SE(C)APS was found (Conforto 2021). The SE(C)AP is the basis for all energy and climate related actions. In the best case, it is developed by internal instead of external experts. External consultants may have no in-depth knowledge about the municipality and might not be available anymore after the SE(C)AP is developed. The presence of elements such as a timeline, a prioritization of measures, and clear targets, beyond the basic elements of the plan, can support a successful implementation. The plan should be implementation-oriented instead of a pure fulfilment of directives. To learn from experiences, monitoring is indispensable. For prioritization as well as for monitoring, it is helpful if the SE(C)AP contains as many details as possible. This is strongly connected to the availability and quality of data. Last but not least, the SE(C)AP should be anchored in the municipal organisation and policy so that it becomes part of agenda setting and is considered in everyday routine (horizontal implementation). A guideline on the development of a Sustainable Energy Action Plan (SEAP) is given by the Joint Research Centre (JRC) of the EU (Bertoldi 2018).

Besides complex decision making structures, a bundle of barriers that are more or less associated with decision making structures may hinder the implementation of climate measures. These are described in the following chapter.

## STAGE 3: FINANCIAL RESOURCES AND GENERAL REGULATIONS

Budget limitations or not drafting a budget can pose a huge barrier to reach sustainability goals. For instance, in the study of Jekabsone and colleagues (2019), only one municipality was able to specify an allocated budget for its SE(C)AP implementation[8]. Solutions for the missing budget can be found with loans, capital, grants, and funding. There are, for example, EU monetary funds available to promote and support environmental programs or projects: the European Regional Development Fund (ERDF)[9], the European Social Fund (ESF)[10] and the Cohesion Fund[11]. Also in many countries national funds, grants, feed-in tariffs, subsidies or tax schemes are available as shown in Table 2.

[8] The study which was conducted in Latvia in the year 2018 under the framework of a H2020 project, aims to analyse the implementation of the Latvian SEAPs. Out of 42 municipalities that developed a SEAP, 11 agreed to take part in the study.
[9] European Regional Development Fund - Regional Policy - European Commission (europa.eu)
[10] European Social Fund - European Commission (europa.eu)
[11] Cohesion Fund - Regional Policy - European Commission (europa.eu)

TABLE 2: EXEMPLARY FUNDS IN THE CASE STUDIES

| FUND | SHORT DESCRIPTION |
|---|---|
| **Italy** Superbonus 110% | The Superbonus, also known as the Ecobonus, offers a deduction rate of 110% for expenses that are related to energy efficiency, such as installing photovoltaic solar power systems and charging infrastructures in buildings meant for electric vehicles. The Superbonus can be obtained by individual people, housing cooperatives, volunteer programs and non-profit organizations. The deduction can be received annually, in form of a discount from the suppliers or can be transferred to the credit. |
| **Greece** 850 million program for energy efficiency in the private buildings sector | The Greek government has prepared a 850 million Euros program for energy efficiency in the private buildings sector, including incentives for the use of renewable energy for self-consumption and the introduction of solutions for smart homes. The idea is to introduce energy saving measures in 60.000 households per year until 2030. The government subsidizes up to 85% of each investment while the maximum per household is 50.000 Euros. |
| **Portugal** Programa de Apoio Edifícios mais Sustentáveis / FEE | The program aims to finance measures that promote decarbonization, energy efficiency, water efficiency, circular economy and improvement of energy and environmental performance of buildings. The program covers single family and multi family (residential) buildings. 30 million Euros are available within the program. |
| **Netherlands** Sustainable energy investment subsidy scheme (ISDE) | Can be received for the purchase of heat pump space heaters, water heaters, solar water heaters and installations for the production of sustainable energy via solar panels and wind turbines. Eligible for the subsidy are private individuals, independent entrepreneurs, housing corporations, companies, municipalities, provinces and other public bodies. The subsidy amounts approximately 20% of the investment amount. |
| **France** MaPrimeRénov | MaPrimeRénov is accessible to all homeowners (including landlords) and allows to finance the expenses incurred for energy efficiency improvements in homes. The amount of the bonus varies with materials and equipment but can be up to 20.000 Euros and for a maximum period of 5 years. MaPrimeRénov replaces the tax credit for energy transition (CITE) since 2020. |

Despite that from a financing standpoint, the implementation of the SE(C)AP as well as to reach the set sustainability goals are still far from being prioritized. Consequently, the possibility of municipalities to conduct larger investments are influenced in a quite negative way (Jekabsone et al. 2019).

Another crucial aspect is the attitude of decision makers who often fear innovation or product related risks and arising transaction costs (Biresselioglu et al. 2020; Polzin et al. 2018). Transaction costs are the time and various kinds of resources that are needed to make a change, and they can be divided into three distinct categories: 1) search and information costs, 2) bargaining and decision costs, 3) policing and enforcement costs. In addition, decision makers do not necessarily act rationally when it comes to assessing costs and benefits (Polzin et al. 2018). One solution could be to establish alliances between the entities to share and therefore lower risks and costs (Trapp et al. 2020). For example, in the context of needed information about district heating, transaction costs can be reduced if there is a cooperation and collaboration of municipal stakeholders with experts on this topic. In addition, decision makers might not be willing to invest in new technologies as long as the older and therefore relatively inefficient technology

currently in use is still within its operational lifetime (Chassein et al. 2017). For that reason, the status quo is maintained, and fewer investments are made leading to blocked actions for the desired implementation of the SE(C)AP.

It is important to utilize innovative technologies when it comes to decarbonization for reaching the goals of the SE(C)AP. Since the innovation cycle for innovative technologies is short, which means that new technologies are developed rapidly, the fear of lost investments occurs. This happens because there is a significant chance that the technologies once invested in, become inefficient in the long term if newer and therefore better technologies are developed. This effect can even be intensified if there is a lack of verified information on the quality of new technologies or more specifically on potential energy savings (Biresselioglu et al. 2020; Polzin et al. 2018; Rayner et al. 2018). Furthermore, there are market barriers that hinder the implementation of the SE(C)AP as well, e. g. market distortions. Market distortions are generated by sending contrary signals to investors, for example, if a government sticks on supporting fossil fuel production. As a result, investors take the undesirable decision to profit in the short-term instead of focusing on long term benefits, such as energy savings and a successful transition process many further generations will benefit from (Cajot et al. 2017; Chassein et al. 2017; Rayner et al. 2018). Another important aspect is the payback time of investments into renewable energy systems of approximately three to five years, which is longer than the one for a standard investment. In many cases, those investments are therefore anticipated as unprofitable by decision makers (Chassein et al. 2017; Polzin et al. 2018). Also, potential investors and even end users are looking for payback times as short as possible. This anticipation can even be fostered if, as already mentioned above, the quality of the technologies and potential energy savings are unclear (Polzin et al. 2018). In order to incentivize end users, soft loans could be provided by the government to raise the willingness of private stakeholders to take action. This is because loans below market rates and with longer payback periods are more attractive for consumers who potentially want to invest in new technologies (Chassein et al. 2017; Trapp et al. 2020).

Investments can also be blocked through misaligned regulations. Land use regulations determine the types of and the given space for activities on a piece of land. For example, pre-granted planning permissions or the ability to purchase land for implementing the SE(C)AP measures influence the effectiveness of investments (Chassein et al. 2018; Chassein et al. 2017). Imagining that these regulations are misaligned, investments and therefore the implementation of actions are hindered. This is the case in the French network where a biomass plant could not be built as part of the designated land reserved for other purposes. If higher-level decision makers, such as the government, respond to the fear of product related risks with blocking processes, it also influences the lower-level decision makers, such as stakeholders (Biresselioglu et al. 2020; Mendizabal et al. 2018). To change these circumstances for the better, which means that an empowering framework is implemented, assigned regional and local authorities with responsibility and legitimacy are needed. Examples of well empowered local authorities are Scandinavian countries, who therefore are often ahead of the EU and national policies (Thomas et al. 2016).

The discussion about an empowering framework leads to another important aspect: an adequate balance between the international, national, and regional, respectively local level is crucial to empower the stakeholders. It should be mentioned that the international level forms the basis of the whole transition process. Clear international saving targets have proven to be effective for increasing the actions and investments towards energy efficiency (Thomas et al. 2016). Beyond that, if a good transposition of the whole transition roadmap and energy efficiency, in general, is ensured in the national legislation, international savings targets can be met more easily and even better achievements can be made (Bolle 2019). In order to further advance the energy transition and energy efficiency, the regional and local level should be put on an equal footing with the national level (Sorman et al. 2020), leading to decentralization with better regional and local control over which measures are implemented in which way and to what extent (Hewitt et al. 2017; Mazzanti et al. 2019). In addition, the national saving target should be broken down by sector, giving regional and local authorities the legitimacy to set own targets. This enables a more effective and motivated implementation of transition measures (Thomas et al. 2016). However, it is important to harmonize the value definitions on the international, national, regional and local levels to avoid mismatches in SE(C)APs (Cajot et al. 2017).

Political will and support are other important drivers for implementing SE(C)AP measures and reaching sustainability goals. At this point, clear and long-term policies are needed, signalizing a path of an indispensable change (Cajot et al. 2017; Jones 2015; Polzin et al. 2018; Rayner et al. 2018). The need for long-term policies also indicates that dependencies on personalities or politics should be avoided (Mendizabal et al. 2018). In combination with an adequate regulatory framework, that, as an example, takes a reduction of subsidies on fossil fuels into account,

appropriate market signals could be sent to investors (Rayner et al. 2018). As a result, the engagement of decision makers and stakeholders could be increased. Moreover, forcing investments in new technologies with the help of regulations to meet environmental standards obliges decision makers to think outside the box (Mazzanti et al. 2019). Furthermore, policy certainty, respectively policy longevity without rapidly changing policy regarding renewable energies, reduces the perceived risk if talking about investments (Cajot et al. 2017). Current literature defines the various interpretations of the subject about policy longevity: as an example, Jones (2015) indicates ten years, while Koskimaa et al. (2021) describe the need for a policy that lasts one human generation, which is equivalent to 25 years. From this, one can conclude that political instabilities influence the implementation of the SE(C)AP in a negative way and that laws and regulations, in general, should be as transparent and standardized as possible (Chassein et al. 2017; Nikas et al. 2020).

## Empirical Results on Stage 3

The content analysis of the interviews revealed seven topics related to stage 3 "Financial Resources and General Regulations" (for an overview and exemplary statements see annexe 3):

1. Fund Raising
2. Energy & Climate Action Budget
3. Government as a Role Model
4. Bankability
5. Attract Investors
6. Investment-intensive measures / Payback Time
7. Other Aspects: land use regulations, architecturally protected buildings, feed-in tariffs, risk perception, public procurement

The financing of measures is always a hot topic for public stakeholders. Municipalities in the networks struggle more or less with setting a budget, applying for funds or finding investors.

Fund raising issues were mentioned in all networks. The organisations which manage the networks in Italy, Portugal and France were founded to support public authorities with public tender processes for example. The Dutch interviewee pointed out as well that local stakeholders need support in '*the jungle of the market regarding available technologies and their respective financing possibilities*'. But there was also a call for more national funding or at least better access to national (or European) funds.

Besides funding it is a matter of political agenda setting which municipal budget is available for the implementation of SE(C)AP measures and how this is used for example to design financial incentives. Two municipalities in Portugal pointed out that there is no specific budget for climate and environmental actions. Implementation of actions is therefore only possible through funded projects even if they are short-term measures: '*A lot of time and effort has been put on finding financial solutions for the implementation of SEAP measures*'. Missing budget is also reflected in the lack of human resources (see stage 1).

In the Italian and French interviews financial support from the national government was mentioned to be very important. This matters on the one hand as a signal that policies are aligned and environmental investments officially welcome (Italian interviewee). On the other side '*citizen's resistance could be reduced if the EU or national governments would have a clear position on it, enabling to spread trust in these "new" energies*' (French interviewee).

The Greek and the Portuguese network stand out with bankability problems due to the economic situation of their nation. A Portuguese interviewee explained this with an example: '*Investment is not such of a problem for countries or municipalities that don't have some credit rating issues on the banking system or if they have received funds from the government. The same solar project would be cheaper in Germany than in Portugal [or another southern European country]. The potential and yield in Portugal for solar energy production would be higher but it would be cheaper in Germany because the banking rating system is much more favourable for financing*.' This could also affect the process of attracting investors for SE(C)AP measures.

Additionally, the Greek interviewee pointed out that SE(C)APs are not written with the purpose to find investors which means that a lot of details are missing for this purpose. It was also a question of the Portuguese interviewees how investors could be attracted. However, the Dutch interviewee said it is '*not really a problem to find investors*.'

The matter of investment intensive measures and payback time was also mentioned as a barrier in two interviews with Greek and Portuguese stakeholders. Some measures have not (yet) been implemented because a considerable sum of money is needed, or payback times are longer than three years.

Other aspects are land use regulations which hinder for example placing a solar field on available land or architecturally protected buildings that cannot easily be renovated. One French interviewee stated that 'feed-in tariffs do not evolve in the right direction' and a Portuguese interviewee brought up the issue of risk aversion of public stakeholders who are afraid of inefficient investments: 'Sometimes a technology is innovative, but it does not work'.

### Recommendations for Moving Forward

Summarized from the literature review and ideas from the interviews the following steps could help to solve the financing problem:

- Municipal Budget: SE(C)AP topics should be as high on the agenda as possible.
- Capacity building of decision makers in order to better assess risks and financial calculations. This is part of the capacity provided by the PATH2LC project.
- Establish alliances between the entities to share and therefore lower risks and costs.
- Financial instruments like soft loans could help to overcome the barrier of investment intensive measures or measures with a long payback time.
- Implement (or fight for) an empowering framework for local authorities regarding regulation policies.
- The regional and local levels should be put on an equal footing with the national level in regard to responsibility and legitimacy of authorities. In addition, the national saving target should be broken down by sector, giving regional and local authorities the legitimacy to set own targets.
- Harmonize the value definitions on the international, national, regional, and local levels to avoid mismatches in SE(C)APs. The comparison of SE(C)APs within the deliverable 4.4 of the PATH2LC project shows some options to align values as well as data gaps in the action plans.
- Provide a clear and long term stable policy related to energy and climate issues.

## STAGE 4: STAKEHOLDER INVOLVEMENT

In order to identify the most suitable options to overcome specific climate related problems a coordinated cooperation between the public and private sector is beneficial (Mendizabal et al. 2018). Besides municipal officers and decision makers from different sectors (see stage 2), end-users, experts and intermediaries need to be involved in SE(C)AP processes. Stakeholders can be involved in setting up a whole SE(C)AP or for planning and implementing a single measure (Bolle 2019; Cajot et al. 2017). Involvement can reach from mere information to participation methods to work on a solution together. For example, in the French network, we know from the interviews that the SECAP is unknown by the majority of the population. At the same time, in many cases, there is opposition from inhabitants against wind farms or solar fields (NIMBY effect - not in my backyard, see Westerberg et al. 2015). Both, missing knowledge and oppositional action, could be entry points for different kinds of intervention strategies (Dütschke et al. 2017). Resistance can also be seen as an uncoordinated participation act as people coming from outside of planning processes try to influence outcomes (Adelina et al. 2021). Besides exploding costs, resistance may lead to a bad public image and loss of trust in the municipal politicians (Koirala et al. 2018; Polzin et al. 2018). When these kinds of oppositional actions have already started, it is not too late to intervene but at the same time politicians have no other

choice and might be forced to take inadequate decisions such as fulfilling a promise that cannot be taken back. This is why in the best case intervention strategies should be applied before any opposition takes action.

It may also be the case that commitment of stakeholders is needed to run the measure efficiently for example if a new district heating pipeline is established, consumers need to connect and get rid of their old system. This could be put at risk by the lack of stakeholder involvement (Jekabsone et al. 2019; Moallemi and Malekpour 2018; Polzin et al. 2018). Measures with high commitment of local stakeholders can lead to a major increase of local added value compared to measures carried out by external developers (Adelina et al. 2021; Bolle 2019). Commitment or a sense of ownership can become an intrinsic motivation for the stakeholders (Cajot et al. 2017; Cheung and Oßenbrügge 2020; Jalonen 2007). Passive end-users can become active prosumers and engaged stakeholders (Koirala et al. 2018). Stakeholder groups for involvement are not only end-users (private households or companies) but also intermediaries like banks, energy or technology providers.

The more diverse the stakeholder group involved in the participation process is, the more diverse objectives can be considered (Cajot et al. 2017). To identify relevant stakeholder groups to be involved, a stakeholder analysis including identification of key actors is recommended.

If stakeholders are to be involved, the type of measure to be implemented is relevant. There are two general types of measures: 1) measures that are directly implemented by the municipality itself, like the refurbishment of public buildings or setting up wind and solar parks; 2) measures that have to be implemented by private stakeholders (households or companies) but are incentivised by the municipality, like funding PV or an awareness campaign for energy saving. For both types of measures, it may be necessary to involve experts and staff related to the implementation of the measure (e. g., administration or communication office) in the process of planning the measure in detail (Jekabsone et al. 2019). In addition, for the first type of measures which are directly implemented by the municipality, it is recommended by a majority of researchers (beginning with Arnstein 1969) to involve all stakeholders who will be affected (directly and indirectly) by the measure before execution of the measure. In the second type of measure the stakeholders decide in the end by themselves to implement the measure or to change their behaviour. The characteristics of the target group of such a measure need to be considered to gain an effect.

## Empirical Results on Stage 4

The content analysis of the interviews revealed five topics related to stage 4 “Stakeholder Involvement” (for an overview and exemplary statements see annexe 3):

1. Involvement Campaigns Running/Completed
2. Assessment of Stakeholder Involvement
3. Need for Awareness Raising Campaigns
4. Need of Participatory Processes
5. Experience with Resistance to Climate Actions

In all networks of the project there are already some success stories of involvement processes. For example, the Italian network started to create energy communities, in a Portuguese municipality there was a project of behavioural education in schools and in the Netherlands a municipality succeeded to motivate citizens to cooperate in finding spaces for solar fields.

When we asked the interviewees about the assessment of stakeholder involvement in municipal processes, the Greece, Portuguese, and French network operators expressed a high appreciation of involvement processes.

Before participatory processes can take place, the municipality has to ensure that stakeholders are aware of the ‘problem’. The need for awareness raising campaigns was mentioned in the Portuguese, Dutch and French interviews. One interviewee mentioned that the ‘*SECAP is unknown by the majority of the population*’. As the concept of a SECAP, its background and purpose are rather complex, it might be better to raise awareness for the more general issues behind it.

However, participation processes for the conceptualisation of SECAPs (as it was realized recently for example by the city of Karlsruhe) can increase the willingness to get involved locally and understand the processes behind. There is a

need for participatory processes especially in the Portuguese and French network. This might not be an easy task as the Dutch interviewee explains: '*You cannot just say that you have to talk with your citizens from the part of the town*.'

In the French and Dutch networks interviewees already had to deal with resistance mainly by inhabitants at the sites where a wind farm, a solar field or a biogas plant should be located. In addition, a French interviewee reported about citizens '*who are often opposed to energy projects, mainly because of ignorance about renewable energies.'*

## Recommendations for Moving Forward

Stakeholder involvement is not an easy process, as challenges like contradicting interests and beliefs have to be faced. The process of stakeholder involvement is about dialogue and communication, trusting atmosphere, collaborative planning and consensus coherence and shared understanding (Bolle 2019; Cajot et al. 2017; Christoforidis et al. 2013; IEA and EBC 2013; Jalonen 2007; Mendizabal et al. 2018). Several approaches have been developed which are listed below. Their effectiveness depends on the target and concrete design of the participation process and the dissemination strategy of invitation and results (Biresselioglu et al. 2020). Usually, a mix of interventions that are repeated is most effective to achieve long-term impact (Maréchal and Holzemer 2015).

Exemplary methods of stakeholder involvement in measure planning:

- Learning network process: The network approach is not only a capacity building method (see above) but also a participation method as multiple stakeholders get the chance to find a joint solution or create knowledge among participants (Cajot et al. 2017; Palm and Backman 2020). For this purpose, the network meetings must be carefully moderated. In addition, trust in new technologies can be increased when experiences can be shared among the members (Chassein et al. 2017). This is the core approach of the PATH2LC project: Learning Municipality Networks.
- Information campaign: Information should be 'Visible, easily accessible, understandable, comprehensive, comparable and constantly updated. Here several means of communication should be used, complementary to the target group (website, online helpdesks, and telephone hotline).' (Chassein et al. 2017)
- Energy communities: The willingness to participate is elevated if there is a sense of community among different stakeholders. A sense of community can be created through e. g. involving an entire district for implementing the SE(C)AP, building teams with individuals and cooperatives and engaging stakeholders/citizens in the entire planning process. Energy communities are a new trend of 'collective self-consumption'. This could be for example a cooperative of housing blocks that uses the energy of cooperative implemented PV systems. Projects developed in a community have proven to be more effective compared to projects by traditional investor-owned companies (Bolle 2019; IEA and EBC 2013; Koirala et al. 2018). A first initiative of 58 energy communities in 23 countries was the EU CONCERTO initiative beginning in 2005, now CONCERTO PLUS initiative which aimed to demonstrate that the optimisation of the building stock of whole neighbourhoods is more efficient and cheaper than optimising each building individually[12].
- Energy working group: An interdisciplinary energy team established officially by the municipality. Member of the team will be politicians, administrative staff from relevant departments, dedicated private citizens, representatives of other stakeholder groups (companies, education, organisations) and external experts as guests depending on the topic on the agenda. Regular meetings as well as social interactions are important to empower the working group (IEA and EBC 2013). This is also a kind of horizontal decision making process.
- Awareness campaign: Acceptance of new technologies is supported if stakeholders are engaged in the process of energy transition and get to know current developments in the changing energy landscape. Moreover, stakeholders' participation is crucial to maintain the overall transition process (Koirala et al. 2018).
- Mediation of conflicting parties: Support from consultants or other intermediaries is needed for developing professional expertise about easing communication among the different actors who are participating in the project. This will help with finding solutions for arising tensions (Dütschke et al. 2019).

[12] CONCERTO - European Union initiative (concertoplus.eu)

- Design Thinking[13] based Communication Model: It is crucial that stakeholders are informed about all steps of the transition process as early as possible. As a result, needs and requirements can be identified at an early stage and a common vision can be established leading to an important role of stakeholders in the entire planning process (Bretzmann et al. 2017).

# STAGE 5: EXECUTION OF SE(C)AP MEASURES

At the stage of the measure execution process (i.e. the real 'ground breaking') it is important to find skilled craftsmen and technical experts in order to gain high-quality renovations or guaranteed energy savings (Jekabsone et al. 2019). Due to the innovative character of climate and energy related technologies and short innovation cycles constant training possibilities are important (Chassein et al. 2017). The lack of skilled technical experts or missing effective technologies might hinder well planned measures in the end. Another problem might be missing standardizations, for example for infrastructure or regarding the evaluation of the best available technology (Rayner et al. 2018, p. 56).

## Empirical Results on Stage 5

The content analysis of the interviews revealed three topics related to stage "Execution of SE(C)AP measures" (for an overview and exemplary statements see annexe 3):

1. Lack of Qualification
2. Availability of Technology
3. Next Steps

When it comes to the execution of SECAP measures, the interviewees do not see big problems coming up. However, it must be stressed that there was no concrete question in the interview guideline addressing this stage.

Only in the French interview it was mentioned that there are capable companies for energy efficient refurbishment or other relevant technologies, but they are hard to find. The availability of technology was not evaluated as an issue: '*The offer is not as much a problem as the demand*.'

As an Italian interviewee pointed out: '*It is important to put more and more goals as soon as one has been reached.*'

# STAGE 6: EXTERNAL FACTORS

With the right technology and skilled technology providers available and after successful completion of all other stages only external factors could hinder the execution of SE(C)AP measures. These factors might not be under control, but they should be taken into consideration.

Path dependency could hinder the implementation of SE(C)AP measures. This means that decisions of the past define decision options in the future (Barazza and Strachan 2021). These could be established institutions that support the current system, the physical infrastructure of energy systems as well as habits and routines of key players (Barazza and Strachan 2021; Dütschke et al. 2019; Rayner et al. 2018).

Especially in rural or remote areas, the absence of alternatives (e. g. due to path dependency) could be a serious limitation to measure planning and implementation (Rayner et al. 2018). On the contrary, 'In high-density urban areas, […] options for deployment of large-scale renewable energy installations are very limited' (Bolle 2019).

[13] Design thinking approach refers to product development: "Now, however, rather than asking designers to make an already developed idea more attractive to consumers, companies are asking them to create ideas that better meet consumers' needs and desires." (Brown 2008, p. 86).

### Empirical Results on Stage 6

The content analysis of the interviews revealed three topics related to stage "External Factors" (for an overview and exemplary statements see annexe 3):

1. Media
2. Path Dependency
3. Pandemic

External factors to the implementation process of SE(C)AP measures were mentioned casually in the interviews. The media or dissemination infrastructure could influence implementation processes. For example, '*for politicians it´s a key driver to get the media's attention*' (Portuguese interviewee). In addition, a communication strategy is needed for a successful implementation: '*Little towns or villages don't always have a good website and mayor's secretaries are often overcharged*' (French interviewee).

Path dependency was also mentioned in the interviews related to infrastructure or bad experiences in the past that influence decisions of today.

A specific topic of these days is the pandemic situation which brought up a 'reshuffling' of municipal priorities towards health care, social and economic issues and slowed down many SE(C)AP activities (Portuguese interviewee): '*Some financial resources had to be redirected for supporting families and enterprises and some activities had to be suspended. […] but sustainability in its social and environmental dimensions will be still a focus in the future with a different look because of the pandemic*.' As it was stated in the interviews the recent pandemic situation may have an impact on the priorities of decision makers in two ways: 1) slowdown of administrative processes in favour to pandemic related measures, 2) raising awareness of 'the power of nature' and, as a result, possibly higher perceived importance of climate change mitigation or adaptation measures. In addition, we know from literature that issues of uncertainty related to the pandemic make long-term planning difficult (Malandrino and Demichelis 2020). The rule of social distance during the pandemic leads to a transfer of physical meetings to virtual ones which bring specific challenges (technology availability and understanding, more possible distractors, more concentration capacity needed, less coffee breaks conversations, different activation methods needed).

## CONCLUSION AND DISCUSSION

The analysis of municipal structures and barriers or drivers for the implementation of SE(C)AP measures is not an easy task due to its complexity. We chose the way of defining stages of preconditions and intervention possibilities assuming that the best way to implement a SE(C)AP measure is to have the best outcome on each stage. For every stage described this means: 1) a sufficient number of motivated, skilled and networked staff; 2) vertical and horizontal integration of energy and climate topics in municipal decision structures; 3) sufficient municipal budget, funds and investors as well as beneficial regulations; 4) commitment of all stakeholders who are affected by a measure; 5) available technology and skilled technology providers and craftsmen; 6) absence or mitigation of limiting external factors (as path-dependencies or pandemic).

Nevertheless, we cannot conclude that a successful implementation of a measure is *only* possible with the best outcome at each stage. We know for example from the French network that much can be achieved when only one person fights for a sustainable way of living. In this case this woman already found several solutions even with the lack of human resources at the municipal level. We know from a municipality in Greece that they are very successful in finding investors despite unlucky preconditions of bankability rating. And we know from Italy and Portugal that there is a strong sense of working together on SE(C)AP measure implementation although formal structures of climate and energy processes are only on a low level. These examples show that there is not only the possibility of different transition pathways but maybe also the need for them. Historically developed ways of finding solutions should be taken into account. In the end the most important thing is that actions happen. This does not mean that measures should be planned without thinking about consequences, but the fear of negative consequences should not prevent implementation. As van Vliet and colleagues found in their study of risk assessment associated with decarbonisation

pathways in twelve countries 'most of the time, there are more reasons to worry about a future not happening at all (barriers to implementation) rather than to worry about outcomes (consequences of actions and decisions)' (van Vliet et al. 2020, p. 405).

The barriers identified in the interviews with municipal stakeholders are both individual and common. The individual stakeholders are unique but what unites them is a lack of commitment or lack of capacity. The individual handling of the SE(C)AP is unique but broken down, one of the most important barriers is the integration of SE(C)APs in daily routines. The individual problems of financing measures are unique but all in all, there is a kind of helplessness in the jungle of possibilities. The individual stakeholders that need to be involved are unique but what unites the municipalities is a will to involve them and a need to learn about the ways to do so. The good message was summarized by an interviewee: 'So with almost all of the barriers PATH2LC would be a help.' We can also refer to a first success of the project as another interviewee stated: 'PATH2LC provides opportunities and input to recover the subjects of the Covenant of Mayors (CoM) that were almost dead.'

The fact that some issues as stakeholders' involvement or finding skilled companies for execution were not mentioned by the interviewees can be attributed above all to the fact that municipalities have not reached this stage yet. In most cases only 'low hanging fruits' have been grasped, which means that only easy to implement measures have been addressed so far. This project should support the municipalities to go one step further.

As mentioned several times in this paper, a very effective instrument offered by the PATH2LC project to address these barriers is the approach of Learning Municipality Networks with the core elements of joint target setting and regular exchange. Other support to the municipalities in the project comes in form of webinars, peer-to-peer sessions (inter-regional and inter-national), expert input and tailored workshops as well as an open source knowledge base.

A special challenge in the project is the pandemic situation. The project team found great alternatives to bring the network participants together under the premise of social distance. Nonetheless, the limitations of virtual meetings became clear. Especially informal elements as coffee break talks were missing which are important for the network dynamic. Future research will bring up other aspects that have to be considered associated with the pandemic situation.

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# ANNEXE 1: LIST OF MUNICIPALITIES IN THE NETWORKS

| LIST OF MUNICIPALITIES IN THE NETWORKS | | |
|---|---|---|
| **ITALY** | | |
| Palma Campania | San Giuseppe Vesuviano | |
| San Gennaro Vesuviano | Striano | |
| **GREECE** | | |
| Dodoni | Messini | Vari-Voula-Vouliagmeni |
| Korinthos | Oichalia | Xylokastro |
| Ierapetra | Pella | |
| **PORTUGAL** | | |
| Alcobaça | Bombarral | Óbidos |
| Alenquer | Caldas de Rainha | Peniche |
| Arruda dos Vinhos | Nazaré | Torres Vedras |
| **NETHERLANDS** | | |
| Assen | Emmen | |
| Groningen | Leeuwarden | |
| **FRANCE** | | |
| CCMDL - Communauté de Communes des Monts du Lyonnais (32 municipalities) | COR - Communauté d'agglomération de l'Ouest Rhodanien (31 municipalities) | |
| CCSB - Communauté de Communes Saône-Beaujolais (42 municipalities) | SOL - Syndicat de l'Ouest Lyonnais (41 municipalities) | |

# ANNEXE 2: INTERVIEW GUIDELINES

## PATH2LC: Interview with Local Partners December 2020/January 2021

Interview-No: .....

Date: ..... Interviewer: ..... Interviewee: ..... (name is confidential)

Hello/Good morning.

In order to better support public authorities within the Learning Municipality Networks, we want to learn more about barriers for the implementation of SECAP measures. Another object is to learn more about the decision processes within the municipalities. Therefore, we are interested where you as network operator see important barriers as well as need for support within the PATH2LC project.

Thank you for giving your time for this interview. It will last about 30 minutes. As mentioned in our email, we will not attribute anything that you say to you personally, nor to the organization for which you work.

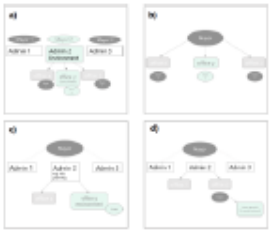
### About the municipalities

In the xx network xx municipalities take an active part in the PATH2LC project.

1. We characterized them from data collection as: [see ppt slide]
    a. Do you agree? Do you want to add something? [information is added live at the ppt slide]

### Decision processes

2. [show example of Karlsruhe and other graphs of exemplary organization structures in the ppt] Do you have an idea of the rough organisation structure of the municipalities? [=> high influence + high interest => very relevant; is action taken bottom up or top down or both?]



3. What is the political colour of the mayors? Do you expect this to be a barrier or a driver?
    a. How can we meet that?
4. What are typical titles of local stakeholders that are linked to the PATH2LC project (e.g. the persons you invite for the network meetings)? Do they have the power to decide about measures or do they have to get permission from their superiors?
5. Do you have concrete issues to motivate stakeholders from the municipalities to take part in the PATH2LC network meeting? Or to identify the right people?

**(Other) Barriers**

6. How is the ranking of energy efficiency / climate protection issues for the municipality compared to other topics?
    a. How could the ranking be influenced?

7. There is a national obligation to develop SECAPs and specific transition roadmaps of how to get rid of natural gas by December 2020. And even more. All Dutch municipalities must develop a heat transition plan for the built environment by the end of 2021. Do you think mandatory SECAPs motivate municipalities to take action?] => Similar concrete question for other networks

8. Have SECAP measures already been implemented?
    a. If yes: Do you know if barriers had been overcome? Have measures been implemented as planned?
    b. If no: Do you know what are the measures on the top of the agenda of the municipalities?
    c. If no: Do you know about measures that have been started and failed?

9. Do you have an idea of other barriers to come up for SECAP measures?
    a. Which might be solutions to minimize or overcome these barriers?

**The end**

10. The first tool developed in PATH2LC will be the knowledge platform, a collection of tools, guidelines and other sources about topics relevant for the municipalities. What do you think: who will be the users and uses of the platform?

11. What (else) has to be considered when energy efficiency and climate protection measures are implemented in your network?

Conclusion of the interview:

Thank you for participating in our interview. We will use the results for the preparation of interviews you will conduct with public authorities from the municipalities. A summary of the results of this interview and the interviews you will conduct will also be presented at the next network meeting.

# PATH2LC: Interview with Municipalities February/March 2021

## Guideline

**General information**

Rules to conduct an interview:

- Don't judge! Everything the interviewer says is true (at least for him).
- The interviewee should speak more than you.
- Don't bring your own opinion into the interview (that can be done afterwards).
- Don't assume you already know the answer to a question. You might be surprised…
- Stay open minded for everything the interview speaks about.
- Ask directly if you didn't get a point.
- Encourage responses with occasional nods of the head, "uh huh"s, etc.
- You are free to follow a topic if you feel that necessary but have time restrictions in mind.
- Wording should be open-ended.
- Ask questions about the present before questions about the past or future. It's usually easier for them to talk about the present and then work into the past or future.
- Questions should be asked one at a time and be worded clearly
- Don't lose control of the interview. This can occur when respondents stray to another topic, take so long to answer a question that times begins to run out, or even begin asking questions to the interviewer.

Before the interview

- Choose a setting with little distraction.
- Explain the purpose of the interview.
- Address terms of confidentiality (send the "interview contract" via Email in advance to the interview)
- Indicate how long the interview usually takes.
- Tell them how to get in touch with you later if they want to.
- Ask them if they have any questions before you both get started with the interview.
- Get the respondents involved in the interview as soon as possible.

[information in brackets]: Instructions for the interviewer

*We recommend to use a recorder or take another person with you that writes the answers down. You will miss information if you solely rely on your memory to recall the answers.*

## PATH2LC: Interview with Municipalities

Interview-No: .....

Date: ..... Interviewer: ..... Interviewee: ..... (name is confidential)

Hello/Good morning...

In order to better support public authorities within the Learning Municipality Networks, we want to learn more about barriers for the implementation of SECAP measures and the decision processes within the municipalities. Therefore, we would like to know where you as [fill in the stakeholders role in the municipality] see important barriers as well as need for support within the PATH2LC project.

Thank you for accepting to take part to this interview. It will last about 15 minutes. As mentioned in our email, we will not attribute anything that you say to you personally, nor to the organization for which your work.

### About the municipalitiy

[Say a few words about the general characteristics/some facts regarding SE(C)APS of the municipality in order to set a baseline for the interview.]

1. Do you agree? Do you want to add something?

### Decision processes

2. [use graphs of exemplary organization structures if necessary]
   What would you say: Where are environmental topics located in the organisational structure of your municipality?
   a. Do you expect this to be a barrier?
   b. When SEAP measures are implemented, do they start bottom up or top down or both?
3. How do energy efficiency / climate protection issues rank among the municipality priorities compared to other topics?
   a. Do you personally agree with this ranking?

### (Other) Barriers

4. Have SECAP measures already been implemented?
   a. **If yes**: Which ones and when? Do you know if barriers had been overcome? Have measures been implemented as planned?
   b. **If no**: Why not? Do you know what are the measures at the top of the agenda of your municipality?
   c. **If no / partly**: Do you know about measures that have been started and failed?

5. Can you think of other barriers that could hinder the implementation of the SECAP measures?
    a. How can we as a project team help to overcome these barriers?

*[for the interviewer: find examples of barriers at the end of the guideline. Only use them if the interviewee does not have any idea of barriers or if you have the feeling he could talk more about one kind of barrier. If you want to address a specific fact you are not sure if it is a barrier, please explain it here without judgement and ask:* Do you expect this to be a barrier?*]*

**The end**

6. The first tool developed in PATH2LC will be the knowledge platform, a collection of tools, guidelines and other sources about topics relevant for the municipalities in the form of a website. Do you think you would use this platform?
    a. **If yes**: For which purpose?
    b. Do you have any specific request concerning the resourcces that you would like to find there?

7. What else has to be considered when energy efficiency and climate protection measures are implemented in your municipality?

Conclusion of the interview:

Thank you for taking the time to participate in our interview. The PATH2LC will use the (anonymized) results for the preparation of input to the network meetings and other supporting material. A summary of the results of this interview and the interviews will also be presented at the next network meeting.

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⇨ See also additional material ("prompts") if needed:
- Graphs of organization structure
- List of typical barriers regarding the implementation of SE(C)AP measures

# ANNEXE 3: EXEMPLARY STATEMENTS FROM THE INTERVIEWS PER STAGE

| STAGE 1: AVAILABILITY OF HUMAN RESOURCES INCLUDING MOTIVATION AND KNOWLEDGE | |
|---|---|
| **CATEGORY** | **STATEMENT** |
| Lack of Human Resources | The local city may not have the internal capacity to write a proposal or to create a joint venture. (IT)<br>Studies cannot become mature enough to become ready for investment as there is lack of executive personnel at the municipality. (GR)<br>Grown population means a lack of human resources to meet the demand for services. So, workload is big, and the number of staff is low, and this makes difficult to implement projects which are more complex. (PT)<br>Sometimes you as a municipality have to take the lead in it and help your citizens in the jungle of the market. You cannot leave them on their own. You have to help them, but for helping them you need more people. (NL)<br>The local government do not have enough human resources to do a precise monitoring and the evaluation (FR) |
| Lack of Skilled Stakeholders | If we look at the municipalities, the heads of department don´t have a big knowledge on sustainability and energy. They went to university 30 years ago and back then sustainability was not a big issue. (IT)<br>Lack of best practice: There are no adequate capacities for maturing projects. (GR)<br>Citizens have low understanding of environmental and energy-related issues. (PT)<br>The “SECAP” is unknown by the majority of the population, only the already-convinced citizens understand this term. (FR) |
| Motivated Stakeholders: Mayors | The mayors have an awareness of how important climate commitments are but, on their minds, on their daily schedules it´s not an emergency. (PT)<br>The mayor has the package of safety for the city, so this is his domain. So, he’s not super interested in sustainability. Maybe he knows about it, but it's not his main topic. (NL)<br>Elected representatives are the not convinced by the priority of environmental topics and you have to convince them (it is less the case now, though). (FR) |
| Motivated Stakeholders: Municipal Staff | The program manager for sustainability oversees all the activities of all the other employees. He is a visionary. (NL)<br>There is a good dynamic to implement SECAP measures. (FR) |
| Motivated Stakeholders: Institutions | Sister cities that are in our area and will be followers to us as we go along the project have already been identified by UCSA. (IT)<br>The [OesteSustentavel] agency has regular board meeting with three out of the 12 mayors. (PT) |
| Networked Stakeholders | It would be great to involve neighbouring municipalities to spread the importance of acting jointly especially on climate change adaptation measures. (IT)<br>The municipalities of the network are like an association of 12 municipalities that are part of a statistical subregion. (PT)<br>There is another little barrier. Some projects like windfarms or biogas are at the frontier of two municipalities. So, it’s important that they work together and that’s a challenge. (FR) |

| STAGE 2: DECISION MAKING STRUCTURES AND AGENDA SETTING OF THE MUNICIPALITY (GOVERNANCE) | |
|---|---|
| **CATEGORY** | **STATEMENT** |
| Description of Decision Making Structure in General | Proposals on energy come from administrators with mandates on that specific area. Sometimes this can be a barrier as a difficulty to "convince" all the others also in terms of time for the procedure. (IT)<br>Long administrative procedures for approval of decisions/actions. (PT)<br>There are different vice mayors for different subjects. So, in some municipalities we have oner or two vice mayors being present, depending on their interests for e. g., European affairs or environment. So, it's a mayor plus one or two vice mayors and a general manager of the municipalities. The general manager is responsible for all operations within the municipalities. the general manager is the one who is going to push forward the operations. The mayors and the vice mayor have the political perspective of the project and the political support. Usually the EU affairs office (responsible for resources of the municipality) coordinates with the general manager. And then the general manager assigns different departments to do activities. (GR)<br>Time restrictions: The political and administrative time is quite slow: implementing actions do not go as fast as what they thought. (FR)<br>You have a mayor and maybe what we call a "wethouders" (in English: municipal executive), that is someone under the mayor. There is a department, we have managers and all of the bottom there's a team working on sustainability. (NL) |
| Special issues of Small Municipalities | The bigger municipalities have different internal structures, much bigger than the others. They are much more structured and defined in their internal organization than the smaller ones. There, every small department sometimes responds and addresses directly to the mayor or the mayor´s office. (PT)<br>But it´s not like the structure is used by all the municipalities in the Netherlands. We have some smaller ones in Freisland, our province. They have like one guy (or half a guy) responsible for all the sustainability who uses probably two days a week for the subject. (NL)<br>The smaller the town, the less important the political agenda/party/colour, because a smaller scale is more like: There are some people that are motivated to make the town better, they commit and do stuff. (FR) |
| Availability of Vertical Integration Climate Issues in the Municipal Structure | Environmental topics are currently managed by the urban planning and environmental office. This is not a barrier. (IT)<br>There is the Department of Environment, Urban Planning and Applications. Decision making is taken from the top of the leadership hierarchy towards the bottom. (GR)<br>The municipality structure is rather small in terms of staff number, with one person responsible for energy-related issues and some others who might collaborate, and tasks are often outsourced. (PT)<br>The municipal organization separates the different topics (buildings, social, culture, tourism etc.) and sustainable development is considered being part of the economic development. The fact that environment is separated from the other topics is a barrier. (FR) |
| Availability of Horizontal Integration Climate issues in the Municipal Structure | It is very difficult to ask the local mayors and the local head of departments to keep together public lighting with public buildings. (IT)<br>Environmental topics are included in two different divisions/ areas: one is the area/division of energy management and the other one is the area/division of |

| | |
|---|---|
| | sustainability which has a focus on climate but not directly on energy consumption. This articulation in terms of municipal structure is not a barrier as there is a lot of collaboration between colleagues. (PT)<br>But now, apart from those lines going up to down in like sectors, we have a Sustainability Program. And the program cuts through all those lines because we have somebody from the sector of economics, and he works on sustainability. Every sector delivers one or two people for the sustainability program. They work one or two days on the program. All the sectors are combined in that program and then we have a program manager who has direct contact to the mayor or the "wethouders". (NL)<br>The environment team tries to connect with the others, but there is no formal channel for that. It's more like an informal connection (more or less) or some "Inter-team meetings" that are not pushed by the hierarchy. It is more of an initiative of the workers. (FR) |
| Regular Meetings of Decision Makers | The situation is that the four mayors for environment meet regularly (organized by UCSA) to discuss strategies for the whole territory. (IT)<br>The mayors of these 12 municipalities get together for a meeting every 15 days, every two weeks. At these meetings they decide on several subjects and several topics of common interest. Climate and energy topics are among these. (PT)<br>We have like a core group for the Sustainability Program, and they meet each other every three weeks. And every three weeks we meet with the "wethouders". (NL) |
| Governance / Agenda Setting | One barrier could be the duration of political mandate. (IT)<br>Environmental topics are ones of the priorities, but also social topics are very important for us. Energy efficiency and climate are at the top of our political agenda. (IT)<br>The reason that obvious projects have not been implemented is maybe because of the strong interest from different parties and then competition remains (negatively) stable. There is an idle. So, we have to see how we can „unlock" this idleness/inactivity. (GR)<br>If you work with politicians and they probably would think "ok, this is a deadline or target for 2030: I don´t care, I would not be here in 2030, I just commit myself today because I can use this as a political instrument and in 10 years, someone will just work with this". (PT<br>The luck we have is that we have the climate agreements. So, the national government already signed it so there is not a lot of space within the climate agreement to do different things. It´s like a roadmap to 2050, we have to make it. (NL)<br>Councillors have difficulties to prioritize SECAP measures: they want to implement everything at the same time. When they have the choice between 'I do what I want to or I do something else that is more expensive but good for the environment', at that moment the decision is not that simple and old traditions can come back. (FR) |
| Relevance of SE(C)AP for the Municipality | The SEAP document is not a matter of political vision of the mayor it is more a matter of the municipality. (GR)<br>We want to make a small SECAP for every part of the town. (NL)<br>A coordination tool is missing: the SECAP is supposed to take the partners actions into account but in facts, partners have no obligation to do so. And even if they implement measures, everyone acts in its own corner and the local government do not have enough human resources to do a precise monitoring and the evaluation. (FR) |
| Relevance of External Consultants for the Municipality | Every city has some external consultants that are needed for some advice. (NL)<br>Indeed, the local authority prefers having internal skills for economic reasons (cheaper than paying external consultants) and to capitalise as much knowledge as possible internally (unavoidable loss of knowledge when the mission of the consultant finishes). (FR) |

| STAGE 3: FINANCIAL RESOURCES AND GENERAL REGULATIONS | |
|---|---|
| **CATEGORY** | **STATEMENT** |
| Fund Raising | UCSA works also for direct participation in EU calls, applies for funding. The local city may not have the internal capacity to write a proposal or to create a joint venture. (IT)<br>You could implement all of that in 6 years if you have all the needed money but at the end of the deadline, we realized that we were only able to implement those actions that were more feasible. Part of it was with national and European funds and a huge part with private funds. (PT)<br>Another important barrier that we didn`t speak about is the public tender processes. It´s always interesting to get to know how different countries cope with that, because the public tendering legislation is always different from country to country. First you need to identify what the process has to be used: is it an international tender, a national ESCO program or legislation or maybe just a private public partnership. (PT)<br>No fund dedicated to energy transition, that is, the local government does not receive specific funds to lead this policy even though it is an obligation to have one. That means the budget has to be reduced on other policies. (FR)<br>ALTE69 for example helps private persons to choose the right thing to fund with the money, that could be that people get money when they use renewable energy sources when they renovate their house, otherwise they don't. (FR) |
| Energy & Climate Action Budget | It is not clear, yet how much money it is foreseen for environmental issues. (IT)<br>There is a need of having budget to pay the working time of the mayors etc. regarding SEAP implementation. (GR)<br>Even though we have a lot of money to spend on our SECAP, financing is always one of the barriers. (NL) |
| Government as a Role Model | Regarding energy communities the Italian government has been really fast. In the first six months of 2020 they approved almost all laws and rules that were in the EU directive on energy community. (IT)<br>Sometimes you as a municipality have to take the lead in it and help your citizens in the jungle of the market. (NL)<br>The grants from the State dedicated to environmental topics carry weight in the elected members' position on these topics. (FR) |
| Bankability | It's difficult to create projects that are bankable behind the background of a country that is not regarded as bankable. (GR)<br>Investment is not such a problem for countries or municipalities that don`t have some credit rating issues on the banking system or if they have funds by the government. Probably the barriers what we have identified are very related to countries like Portugal are more connected to countries in the south of Europe that also face a banking rating problem. It`s a lot about the banking rating because the same solar project would be cheaper in Germany than in Portugal. The potential and yield in Portugal for solar energy production would be higher but it would be cheaper in Germany because the banking rating system is much favourable for financing. (PT)<br>We are working on trying to find some feasible projects and solutions. If they are feasible and have some financial guarantee to be a bankable project, then they get more credit. (PT) |

| | |
|---|---|
| Attract investors | SEAPs are not written/not seen as a tool to find investors. We need to rewrite SEAPS so that they can be used as guidelines to financial investment. (GR)<br>And we had to develop some new model of contracting in order to make it possible and make it attractive for investors and with benefits for the public side. (PT)<br>I don't think it's really a problem to find investors. (NL) |
| Investment-intensive Measures / Payback Time | We need to find projects to start with, with a duration of 2-3 years. (GR)<br>Some of the measures have not been implemented because they required a high source of financing. (PT) |
| Other Aspects (land use regulations, architecturally protected buildings, feed-in tariffs, risk perception, public procurement) | In core for the solar fields, it was a placing issue but now it´s also getting an issue on province level and it's getting a bureaucracy problem. The province has new rules and almost all the solar fields are prohibited. It´s not possible anymore and you have to have really good arguments to make it possible. (NL)<br>There also the barriers of missing laws or rules. The urban planning documents are checked by the state administrations and sometimes it is impossible to install some renewable energy sources like windfarms, solar parks etc. because on the documents it says this place has to be for agriculture or whatever. The state can block projects administratively. (FR)<br>Risk perception of new technologies (sometimes a technology is innovative, but it does not work). (PT)<br>Public procurement and innovation: complying with public procurement is time-consuming and slows down the execution of projects especially the ones which are innovative or pioneering. For instance, if a company is interested in offering an innovative product/project but its value surpasses a specific one then is mandatory to open a public bid for a very specific/innovative project which is new to the market, and this makes other companies not being able to compete and it discourages innovation. (PT)<br>There are regulation constraints due to architecturally protected buildings. (FR)<br>Feed-in tariffs do not evolve in the right direction and that makes the administrative part of projects more complicated to find an economic balance. (FR) |

| STAGE 4: STAKEHOLDER INVOLVEMENT | |
|---|---|
| **CATEGORY** | **STATEMENT** |
| Involvement Campaigns Running/Completed | Starting to create energy communities [A group of people that produce and share the energy produced.] (IT)<br>We have some programs with schools for the behavioural aspects of consumption. (PT)<br>It´s quite hard to find spaces and citizens to cooperate with the implementation of the big solar fields in the Netherlands. We had this goal to place those fields and we managed to do that. We succeeded in it. (NL) |
| Assessment of Stakeholder Involvement | The perception of people is a thing that needs to be managed well and to hear their voices. (GR)<br>The involvement of the population in energy and climate project can be a facilitating factor or a barrier depending on the topic and the place. (FR) |
| Need for Awareness Raising Campaigns | Some of the issues we are dealing with is, that we are the only one bringing these topics up. Nobody else is taking care of anything. Climate was not a topic in the elections before 2020. (IT)<br>PATH2LC already raised awareness of the mayors on environmental topics. The priority of the SEAPs has already been elevated. But there is still room for more. (GR)<br>Wind turbines are not well accepted at all: elected representatives (and citizens) have a negative opinion about them (or at least, opinions differ), and the energy potential is not that important. (FR)<br>It is also very difficult to raise awareness among citizens and to implicate them. The "SECAP" is unknown by the majority of the population, only the already-convinced citizens understand this term. (FR)<br>So, we have first to open the eyes of the politicians then stopping them being focused on their little place and realizing that to look what`s happening around is a good thing anyways. (FR) |
| Need of Participatory Processes | Environmental education for youth would help increasing participation in public choices. (PT)<br>You cannot just say that. You have to talk with your citizens from the part of the town. So, it´s a pretty big deal. (NL)<br>Moreover, it is important to include citizens in the process because once they got the information etc., it should go faster to implement measures. (FR) |
| Experience with Resistance to Climate Actions | That's maybe the main barrier with everything we do in the 'outside world' is the landscape and people say: 'not in my backyard!'. So, the people are fighting against measures. We have like a political party, and they don't want anything sustainable defiling their landscape. (NL)<br>Citizens, who are often opposed to energy projects, mainly because of ignorance about renewable energies. (FR) |

| STAGE 5: EXECUTION OF SE(C)AP MEASURES | |
|---|---|
| **CATEGORY** | **STATEMENT** |
| Lack of Qualification | The offer for specific, high-quality actions like the full renovation of buildings is not always very qualified. It's work in progress. We do have some skilled companies but sometimes they are also a challenge to work with the companies. They have most skills and educate their employees, but it is not a priority to do that because, you know, it's the private sector. It's more when training is provided on state level or when the state forces people to show some quality standard. So, it's more a national thing. (FR) |
| Availability of Technology | Technology is available, it works and is not too expensive. We just have to launch more projects for a higher demand. (FR) |
| Next Steps | It is important to put more and more goals as soon as one has been reached. (IT) |

| STAGE 6: EXTERNAL FACTORS | |
|---|---|
| **CATEGORY** | **STATEMENT** |
| Media | For politicians it´s a key driver to get the media's attention. (PT)<br>Communicating about implemented measures is missing. Little towns or villages don't always have a good website and mayor's secretaries are often overwhelmed (lack of human resources and skills). (FR) |
| Path Dependency | Bad experiences: even though half of the public lighting was replaced with led technology and generated savings, the municipality costs increased because more lights were installed in streets where they lacked for safety reasons. (PT)<br>"Path dependency" for mobility to the infrastructures built until now for example highways. (FR) |
| Pandemic | Some financial resources had to be redirected for supporting families and enterprises and some activities had to be suspended. Pandemic slowed down many activities. (PT)<br>Currently, the municipal priorities have been 'reshuffled' because of the pandemic, but sustainability in its social and environmental dimensions will be still a focus in the future with a different look because of the pandemic. (PT) |