



**Interim Report – Part A.2**  
**Study on promoting multi-level governance in support of Europe 2020**  
(contract number CCI 2013CE16BAT019)

**Vrhnika:**

## **New approach to Local Energy Concepts**

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Disclaimer: The information and views set out in this study are those of the authors and do not necessarily reflect the opinion of the Commission.

### List of abbreviations

ERDF	European Regional Development Fund
NEP	National Energy Programme
LEK	Local Energy Concept
SEAP	Sustainable Energy Action Plan
ZRMK	Building and Civil Engineering Institute

# 1 Introduction

Many regions and cities in Europe contribute directly or indirectly to achieving the aims and objectives of the Europe 2020 Strategy. To gain more insights on the governance mechanisms at play when cities and regions deliver contributions to Europe 2020 objectives, DG Regio launched a study on “promoting multi-level governance in support of Europe 2020”. This study aims to document case studies, test the possibility to transfer learning on governance and to generate lessons from policy experiences.

The study focuses on two specific policy fields linked to the Europe 2020 Strategy, namely Energy Efficiency measures with a special focus on the existing building stock and Social Inclusion in urban areas.

The present case study is one of eight reports detailing examples of how policy actors pursue their objectives, explicitly or tacitly in support of Europe 2020, in the context of the different multi-level governance frameworks they find themselves. The reflections and lessons presented in this and the other reports form an important input to the conclusions of the overall study and for a series of networking and transfer meetings between local and regional representatives from various parts of Europe. The final results of the study, will highlight the processes and success factors leading to strong, high quality political and administrative partnerships across levels of governance and the lesson to be drawn on testing the transfer of experience in good governance.

This study on promoting multi-level governance in support of Europe 2020 is led by Spatial Foresight GmbH and carried out in support of a wide range of collaboration partners.

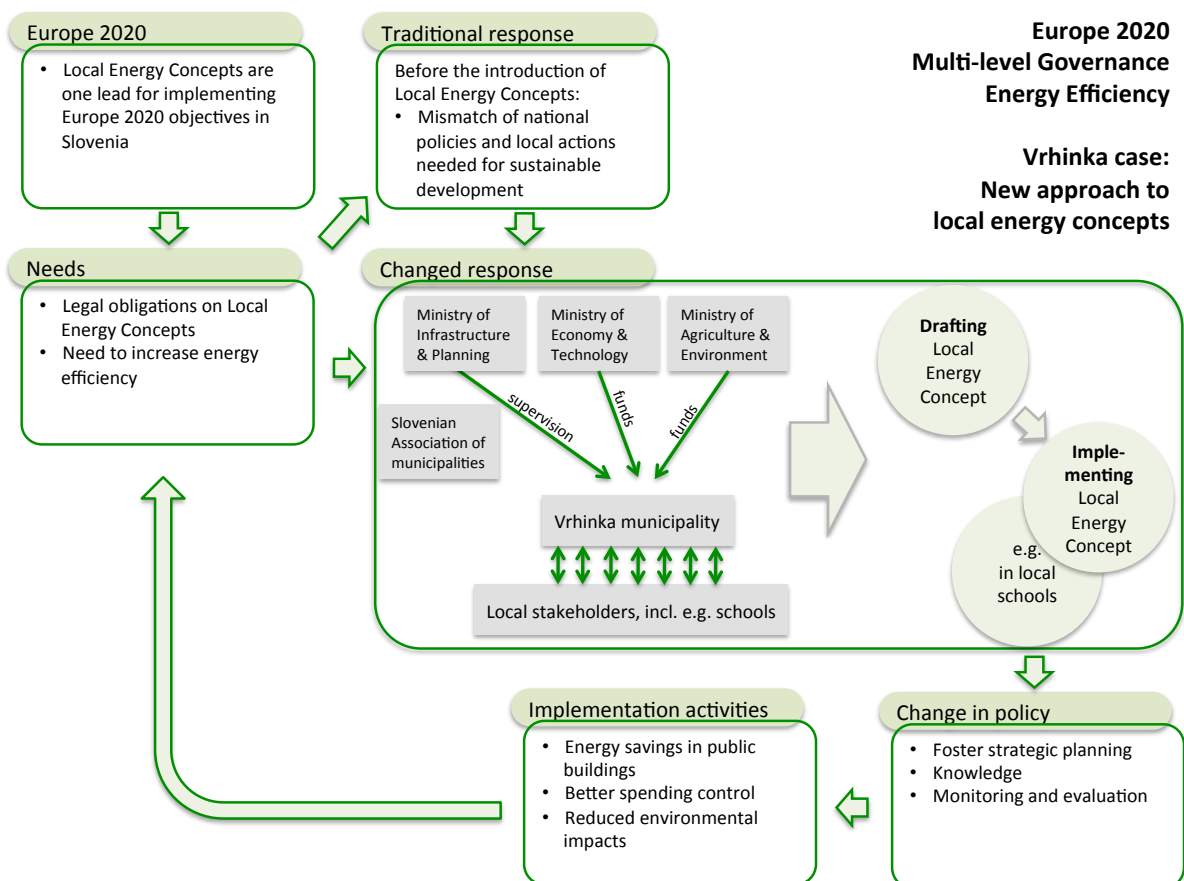
Further details on the study and the progress made are available at <http://www.spatialforesight.eu/mlg.html>

## 2 Summary

Vrhnika is a municipality in Slovenia, where the Local Energy Concept (LEK) has been introduced to help implement the National Energy Programme and stimulate a more strategic approach to the management of energy supply and demand at the local level. This is one of the ways in which the Europe 2020 objective, focusing on increased energy efficiency, has been translated into activities at the local level by making use of multi-level governance mechanisms.

In Vrhnika there was not only a legal obligation to set up a local energy concept, but also an actual need to increase energy efficiency. Before the introduction of the local energy concept this need was poorly addressed.

As can be seen in the figure below, the traditional response to the need of improved energy efficiency and legal obligation resulted in a mismatch between national policies and local needs. Before the LEK was introduced, no measures had been taken to manage energy supply strategically at the local level, something which was seen as a problem for the implementation of national policies. Neither the national level nor the municipalities collected or tracked the energy consumption data that could lead to the promotion of measures in respect of greater energy efficiency or the better use of renewable energy sources at the local level.



Vrhnika began to approach sustainable energy policies systematically in 2008 when preparing its local energy concept. As the main box in the graph above shows, work at municipal level has been supported by the Ministry of Infrastructure and Spatial Planning, the Ministry of Agriculture and the Environment and the Ministry of Economic Development and Technology, which together provided the regulatory framework and the necessary funding. The local energy concept was elaborated in tandem with a wide range of local stakeholders. Politicians played a key role in this. All key political decisions are taken by the mayor and the municipal council. The municipality naturally played the most important role in the implementation of LEK; it motivated stakeholders at the local level

Other involved stakeholders included public sector actors (such as schools), private companies and citizen groups. Although the municipality focused very much on energy efficiency in public buildings, it also encouraged its citizens and companies to consider similar measures in the home and the workplace following the good results achieved by the municipality.

Not only did the elaboration of the concept involve a wide range of new governance arrangements but its implementation did as well. Municipal public utility services undertook a large number of the actions planned in the local energy concept. One example is the work done in schools relating both to the improvement of buildings and to education and awareness raising among staff and pupils.

The improved governance arrangements led to improvement in policy delivery. Through working with the local energy concept, the municipality gained useful knowledge and skills with regard to energy efficiency measures. This extends beyond officials working within local administration to local politicians and principals of public institutions. The work also fostered a better appreciation of the need for strategic planning and monitoring as well as for evaluation related to energy efficiency. The local energy concept work enabled a better overview of the key challenges with regard to energy at the local level and helped to achieve sustainable energy savings in public buildings. In so doing, it helped the municipality to gain better control over its spending while, at the same time, reducing its environmental impact.

Key success factors of the introduction to Local Energy Concepts strengthening multi-level governance in support of Europe 2020's energy efficiency target are summarised in the table below by pointing out the LEK's key ideas and concrete methods that may be potential elements to transfer to other regions.

## Key aspects of local energy concepts strengthening multi-level governance approaches to Europe 2020:

Key ideas	Concrete methods and techniques
Clear strategic vision of the municipality stemming from the real needs of the community.	Public participation, networking and collaboration at the regional level, cross-sector coordination and collaboration.
Secure broad ownership with an open and transparent preparation and implementation supported by reliable data.	Transparent processes and clear leadership, motivation of individuals in leading positions, raising awareness among the public.
Involvement of schools in the implementation phase of the policy.	Citizen involvement and counselling also involving schools as they both use a large number of buildings where energy efficiency measures can be implemented and are good multipliers as they can reach out to children and their parents. Action plans could structure this process.
Secure good quality data in relation to monitoring and evaluating the policy results.	Reporting at multiple levels, involving key stakeholders, not only to the municipal council, but also to the general public through, for example, mass media.

### 3 Methodology

The two main methods used were interviews and document analysis – analysis of primary and secondary sources.

The document analysis was based on two types of documents, the first type being the legal documents that provide the legal framework for local energy concepts in Slovenia while the second type refers to documents directly linked with the actual Local Energy Concept of Vrhnika.

The main criterion for the selection of interviewees was that they were well versed in the details of the local energy concept. They were either directly involved in the process of creating the Local Energy Concept and representatives of local, regional or national government, or they were stakeholders (municipal representatives, users of public buildings) in the process. The ‘snowball’ method was also used to generate an interviewee list as a representative of the Municipality of Vrhnika initially recommended some of the interviewees on the basis of the stakeholders they had been working with during the preparation and implementation of the Local Energy Concept.

The mayor of Vrhnika has been one of the interview partners to include the perspective of a politician in the analysis.

The interviewees were contacted via e-mail and telephone to set a date for the interview. Eight stakeholders were contacted with seven responding and subsequently agreeing to be interviewed. Five interviews were conducted face-to-face while a further two were carried out by phone. The interviews were conducted on a semi-structured and in-depth basis.

## 4 Situation prior to the governance change

In order to analyse the multilevel governance developments and changes related to the new approach to local energy concepts in Vrhnika it is necessary to understand the principal and strategic context in which the municipality is embedded. This strategic context consists of the three following elements, which are discussed in greater detail below:

- local socio-economic and territorial development aspects, closely linked with energy efficiency issues, which urged the stakeholders to become active;
- relation to the Europe 2020 Strategy and its implementation in the area; and
- stakeholder and governance constellations in place of local energy policies.

### Local energy concept – Vrhnika

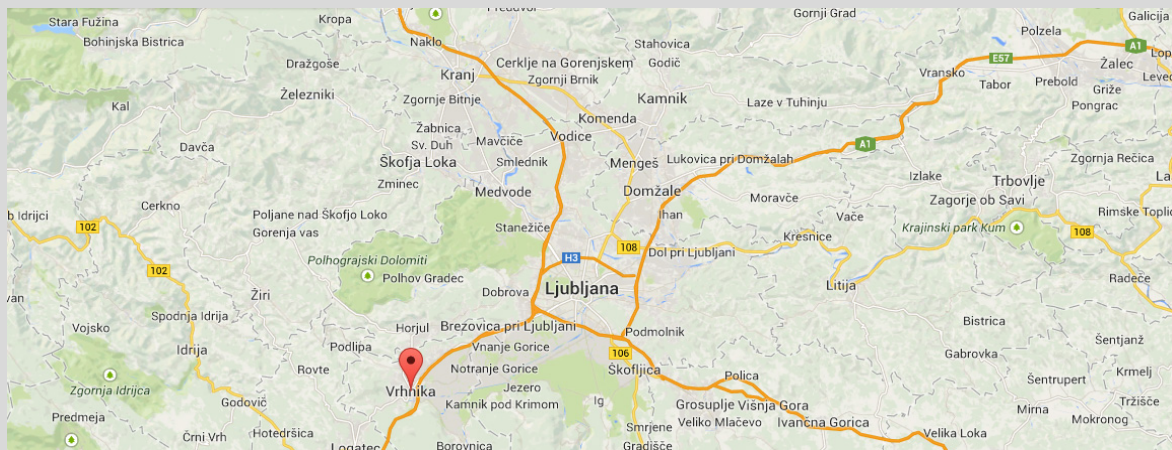
Population	16,277 inhabitants
Area	115.2 km <sup>2</sup>

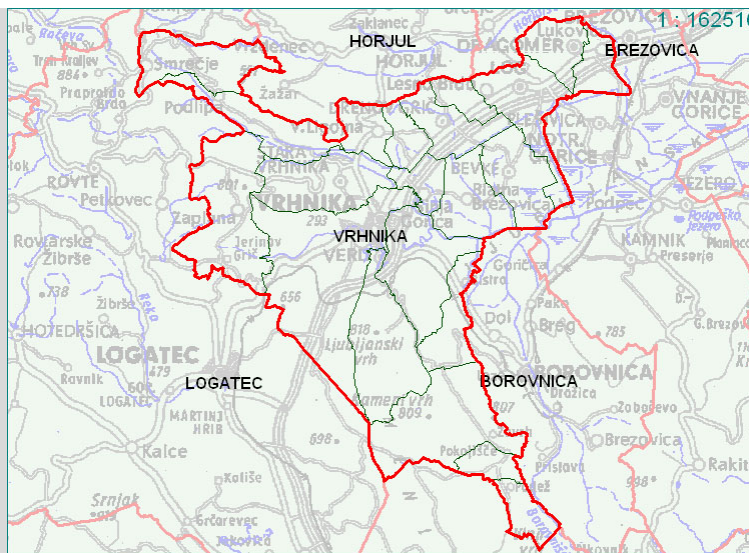
#### *Europe 2020 targets related to climate change and energy efficiency at national level*

Energy consumption (until 2030)	20% increase in energy efficiency – at local level no specific targets were defined
Renewable energies (until 2030)	20% of energy from renewables – at the local level no specific targets were defined

#### *Key governance stakeholders for energy policies*

National level	Ministry of Infrastructure and Spatial Planning; Ministry of Economic Development and Technology; Eco Fund - Slovenian Environmental Public Fund, Ministry of Agriculture and the Environment
Regional level	Regional Development Agency of Ljubljana Urban Region – RRA LUR
Local level	Municipality of Vrhnika; ZRMK, Building and Civil Engineering Institute; Enekom, d.o.o., Energy Advisory Institute; schools; public utility services





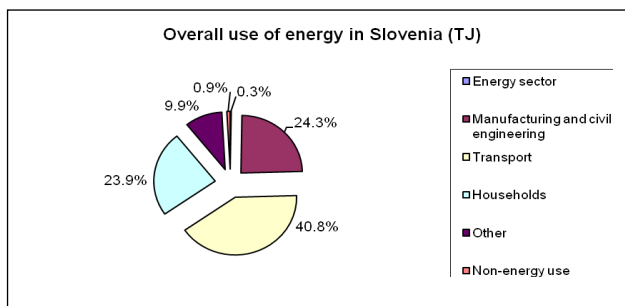
(Sources of maps: Google Maps, geopedia.si)

#### 4.1 Socio-economic development context and challenges

The Municipality of Vrhnika is part of the Osrednjeslovenska statistical region and consists of 25 settlements. The municipality belongs to the functional urban area of Ljubljana, the capital city of Slovenia. The population density is 141 people per square kilometre, which is higher than the national average of 102 people per square kilometre. In the last five years (2008-2013) the population in the municipality has increased by 8.8%. This is mainly due to natural increase, which is relatively larger than the national average. Only 29% of the working age population living there is also employed in the municipality. In the last 10 years, the share of the working age population working outside the municipality has been constantly increasing. The main destination of these migration flows is the city of Ljubljana, where half of Vrhnika's working age population is employed.

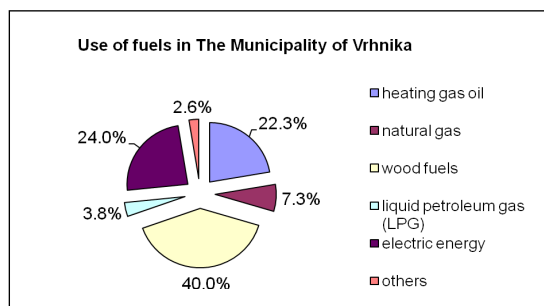
The largest share of final energy in Slovenia is used in transport – almost 41% in 2013 – and this is a figure that is still rising. Household usage, as well as that for manufacturing (including civil engineering) is each around 24% of all final energy (SURS, 2014).

Figure 1: use of energy in Slovenia



Source: SURS, 2014

Figure 2: Use of fuels in Vrhnika



LEK Vrhnika, 2014

In 2011, households in Slovenia used most of the final energy they consumed for heating – 61.8%; 19.5% of this energy was used for heating household water, 14.1% was used for



lighting and electrical devices, while almost 4.6% of all energy was used for cooking (LEK Vrhnika, 2014, 26–27).

In 2011, there were 355 dwellings per 1,000 inhabitants in the municipality of Vrhnika. The largest percentage of the energy generated for residential use is derived from wood fuels – 40%. The share of electric energy is 24% with about 22% coming from heating gas oil (LEK Vrhnika, 2014, 33).

The structure of fuel use in Vrhnika has however been changing in a similar fashion to that for Slovenia as a whole. The last decade has seen a change in favour of environmentally-friendly fuels which promote higher efficiency, while the use of renewable energy sources is also rising. The use of heating gas oil in particular has dropped significantly while the use of solar and geothermal energy, as well as gas, have risen (LEK Vrhnika, 2014, 27–28).

## **4.2 Link to Europe 2020 Strategy**

Local Energy Concepts (LEKs) as introduced in Vrhnika are intended to increase awareness of energy saving and environmental concepts among energy users, to prepare the way for the adoption of energy efficient measures and to promote the introduction of new energy solutions. As such, they are linked to the resource efficiency targets outlined in the Europe 2020 strategy and linked to the flagship initiative for a resource-efficient Europe, which supports the shift towards a resource-efficient, low-carbon economy designed to achieve sustainable growth. This provides a long-term framework for actions in many policy areas, supporting policy agendas for climate change, energy, transport, industry, raw materials, agriculture, fisheries, biodiversity and regional development.

In Slovenia, the Europe 2020 Strategy in this field is currently implemented primarily through the Energy Act and the Environmental Protection Act (Ziherl, 2014). Below this, a range of more specific measures are then used to promote the implementation of EU-wide targets at the local level. These measures include not only LEKs, but also the establishment of Eco Fund and more recently the Climate Fund (Ziherl, 2014), both of which can be used to support measures at the local level. In addition, the availability of ERDF funding for energy efficiency measures in public buildings also gave a very important boost to the implementation of this type of measure at the municipal level (Černetič, 2013; Jakin, 2013). These measures, moreover, have a direct link to EU policies through Operational Programmes and the National Strategic Reference Framework 2007-2013.

The actors involved in the local energy concept in Vrhnika are aware of the more general targets associated with the Europe 2020 Strategy. As the Mayor of Vrhnika emphasised, these targets are generally in line with what can be seen as the ‘responsible behaviour’ of local level actors (Jakin, 2013). Although LEKs were created prior to the Europe 2020 strategy coming into force, their aim is closely aligned as they constitute and promote one part of what will be a long-term shift towards a more energy-efficient society. Interestingly, local-level actors, such as the headmaster of the Anton Martin Slomšek primary school in Vrhnika, are also intimately aware of the general targets of the strategy and consider the measures for more energy efficient school buildings to be part of the learning process for their students and, ultimately, through them also for their parents (Guzelj, 2013).

### **4.3 Governance context**

In Slovenia, energy policy is planned and implemented at both the national and municipal levels. National policy is set by the National Energy Programme (NEP), while Local Energy Concepts (LEK) - the subject of this report - have gradually been introduced in the last decade as key policy documents at the municipal level.

The national level is responsible for the formulation and implementation of energy policy as well as for spatial and regional development policies. As there is no administrative level between the national and municipal levels in Slovenia, regional development policy is implemented through inter-municipal cooperation. National legislation stimulates the formation of common inter-municipal institutions, whose competence is defined along the delimitation of statistical regions on the NUTS 3 level. According to the national policy framework the Regional Development Agency of the Ljubljana Urban Region has the responsibility for the formulation and implementation of the regional development policy in an area, coinciding closely with the functional urban area of Ljubljana. It represents a link between the 26 municipalities in the region and the national level. One critical remark in respect of regional policy however notes that, due to the lack of formal powers at the regional level, regional programming is often, in effect, simply the sum of local projects (Gjerkeš, 2014).

At the local level, Slovenian municipalities are the basic self-governing units, governing their own affairs and carrying out specific regulatory tasks in the areas assigned to them. One of the main competences of the municipalities is spatial planning, which also includes local transport; the municipal spatial plan is the key policy document in relation to this.

The mayor and the municipal council take all key political decisions, also in relation to the spatial plan and the LEK. The municipality plays the most important role in the implementation of the LEK. For example, it motivates stakeholders at the local level.

Before the LEK was introduced, no measures had been taken to manage energy supply strategically at the local level, something which was seen a problem for the implementation of the national policies, because sustainable development actually takes place at the local level. As such, neither the national level nor the municipalities collected or tracked the energy consumption data that could lead to the promotion of measures in respect of greater energy efficiency or the better use of renewable energy sources at the local level. In this light, a general need was identified for the thorough and periodic monitoring of energy use and energy efficiency at the municipal level (Černetič, 2013).

## **5 A new approach to local energy concepts**

LEK is perceived as the first step towards the creation of a local strategy on sustainable development, with particular reference to energy efficiency. Due to LEK (see a more detailed overview of its objectives and content in the textbox) energy policies in Slovenia are more structured and coordinated between the national and local level. The municipalities have the responsibility to prepare LEKs and refresh them at least every ten years. This enables systematic monitoring of energy use and of effects of introduced measures to take place. If regulations on the national level change, or there are changes in local spatial plans, LEKs have to be harmonised with those documents as soon as possible.

In consequence, LEKs form a framework of actions at the local level, collect and monitor energy related data at the local level and translate national and European energy related policies to a local context. Regarding their implementation local energy concepts then serve as legal documents, or as a foundation for informed decisions on energy issues, and enable the actual implementation of national and European policies on energy efficiency.

It is generally believed that LEKs enable decisions that promote effective, efficient and environment-friendly implementation of energy solutions in households, companies and public institutions.

LEK was first introduced, by the Slovenian Energy Act in 2004, as a tool for the implementation of local energy policies. In 2009, the Regulation on Methodology and Obligatory Contents of Local Energy Concepts, which defined the aim and contents of LEK more specifically, was adopted by the responsible minister. To promote the use of this new instrument a certain number of LEKs were co-financed, as pilot cases, by the national level.

### **Local Energy Concepts**

LEKs comprehensively assess the possibilities and propose solutions in relation to local energy policy. They consider existing energy capacities as well as the long-term development of the municipalities in different fields.

The objectives of Vrhnika's LEK are:

- efficient use of energy in all areas,
- reducing the burden on the environment,
- exchanging fossil fuels for renewable energy sources,
- reducing the consumption of end-use energy,
- reducing the use of energy in industry, households and in relation to traffic.

These objectives should be achieved through an increase in the use of local renewable energy sources (wood biomass, solar energy etc.), the promotion of the introduction of co-generation, the introduction of district heating, the introduction of energy audits for public and residential buildings, the introduction of energy book-keeping and public building management, the introduction of energy counselling and a broad programme of information promotion and awareness raising.

The LEK document includes an analysis of the existing situation in the field of energy use and energy supply (with a specific emphasis on public buildings), an assessment of the potentials for the use of local renewable sources, an agreement on goals in the energy field in the municipality (in accordance with the National Energy Programme - NEP) and an action plan, including activities or projects and a time schedule.

The efficiency measures introduced focus primarily on public buildings and include some rather ambitious investments. Those measures targeted specifically on households are mainly 'soft' in nature (information, education and awareness raising). The total sum of the funds invested in relation to the efficient use of energy and renewable sources of energy for the period 2009-2014 was estimated to be 356,500 €. The individual measures were relatively modest in nature as the notion of 'feasibility' was emphasised.

Already prior to the Energy Act did the responsible officials and local decision-makers in Vrhnika see the need for the municipality to take a more active role in relation to energy efficiency and in relation to promoting the direct benefits for the municipality of such savings (Černetič, 2013; Jakin, 2013). Nevertheless, preparation of the LEK did not commence until

the state provided co-financing for it in the pilot phase 2008-2009, which provided the necessary incentive for local decision-makers to approve the preparation of the document (Černetič, 2013). At this time, the municipality first tackled sustainable energy policies systematically. In consequence, the municipality of Vrhnika became one of the LEK pilot cases. The initiative at the local level was held by the responsible official at the Department for Social Services and Economy. The Municipality of Vrhnika decided to introduce the LEK in this phase in order to help it draw up a legal document containing all the useful information relating to potential projects or funding that the municipality could subsequently apply for. In addition, the LEK also offered an evidence base for convincing other local actors, such as local utilities services, that action on energy saving was required. The document was elaborated throughout 2008 and was finally adopted by the Municipal Council in January 2009. This first generation LEK (2009-2014) was prepared when the parameters had not yet been firmly established. The ministry supervised the preparation process, mostly through direct contact with the company *Eco Consulting* who were in charge of the preparation of Vrhnika's LEK on the one hand and collaborating with the state in the preparation of the regulation on LEK on the other (Gjerkeš, 2014; Černetič, 2013). These first LEKs are currently in the process of concluding its implementation phase while, at the same time, preparation of the next generation LEK is already underway (Černetič, 2013).

## 5.1 Key stakeholders and their motivation

Given the administrative structure of Slovenia, the key actors are clearly located at the national and local levels, as have been the case before the introduction of local energy concepts as well. The LEKs, however, increased the coordination between the two levels.

At the national level these encompass the ministries of the Republic of Slovenia that are seen as important in relation to energy efficiency. These include the Ministry of Infrastructure and Spatial Planning, the Ministry of Agriculture and the Environment and the Ministry of Economic Development and Technology. Together they provide the regulatory framework while the latter two also provide the funding. The Ministry of Economic Development and Technology offers funding for the energy efficient refurbishment of public buildings (Jakin, 2013). The Ministry of Agriculture and the Environment is the ministry responsible for managing the Eco Fund – Slovenian Environmental Public Fund, providing various subsidies for energy efficiency measures, mostly directly targeting citizens.

The key actor with regard to the initiation of LEK was the ministry responsible for energy – then the Ministry of Economy, now the Ministry of Infrastructure and Spatial Planning – which first envisioned the preparation of LEKs in the Energy Act as a tool for the implementation of local energy policies in the municipalities and later encouraged the preparation of the first generation of LEKs in the pilot phase.

The main implementing body of the LEK is the municipality, in this case the municipality of Vrhnika. Within the municipal administration, the preparation and implementation of the LEK are carried out by the Department for Social Services and Economy, but all key political decisions are taken by the mayor and the municipal council. The municipality naturally plays the most important role in the implementation of LEK; it motivates stakeholders at the local level – municipal public institutions, situated in municipal buildings, it commissioned energy surveys and it attempts to promote the measures proposed by the LEK to both individual households and private companies. Municipal public utility services

execute many of the actions planned in the municipality's LEK. In Vrhnika the local gas distributor was supported by the municipality as the main energy supplier (Jakin, 2013).

### **Roles and activities of Eco Fund**

The Eco Fund communicates directly with the local level – to municipalities and local residents – in respect of eco-loans for investments concerning efficient energy use and eco-subsidies. It also organises training programmes, workshops and consultancy meetings for companies and cooperates with both Slovenian associations of municipalities, which help them to promote calls – and directly with individuals in relation to the renovation of buildings and with companies in respect of the offering of loan financing. The Eco Fund, functioning at the national level, cooperates with various other actors, such as the Centre for Energy Efficiency at the Institute Josef Stefan, ZRMK and the Faculty of Mechanical Engineering. On some issues an expert opinion is required e.g. in relation to new devices, and here functional collaboration is of great importance. Additionally, in cooperation with ZRMK, the Eco Fund developed the consulting instrument EnSvet which serves to advise individuals on energy-related questions (Ziherl, 2014). This instrument is funded through the Eco Fund and has also recently been implemented in Vrhnika. These instruments also serve a useful function as mediators between the different ministries, in particular between the Ministry of Agriculture and the Environment and the Ministry of Infrastructure and Spatial Planning (Ziherl, 2014). The Eco Fund is clearly then important as regards the implementation of the LEK action plans.

Finally, educational and research institutions as well as public and private companies such as the public sector operators of energy networks, the public and private owners of buildings, industry and service sector companies are also actively involved in the LEK. The municipality sought to directly involve all public institutions with their headquarters in public buildings, as they wanted to implement most of the measures there. One of the most successful stakeholders is the Anton Martin Slomšek primary school which used the opportunity to make savings and use them to make a sustainable impact on the local community among other things.

### **Modes of governance**

Modes of governance are a concept describing the governance arrangements in a multi-level governance context. The most important modes of governance in the case of Vrhnika are governing by authority and governing by provision. The initiative for Local Energy Concepts started with a legal initiative, the Energy Act in 2004, but got later on supported with financial means as pilot case.

- **Governing by authority** – the inclusion in the Energy Act, of an obligation on the part of the municipalities to prepare LEKs by the national level constitutes the direct intervention of national government in local policies and politics; this is a result of the realisation on the part of the national government that the local level is the key to energy efficiency.
- **Governing by provision** – the national government offered financial incentives to the municipalities preparing their LEKs which offered the most proactive officials at this level good arguments for action (Černetič, 2013). Furthermore, the calls through which the Ministry of Economic Development and Technology offers funding for the energy efficient refurbishment of public buildings, supported by the ERDF.

In addition also other modes of governance are at play, however not as important as the ones above for the governance change discussed:

- **Governing through enabling** – information and awareness raising activities, which are implemented, in part, through a partnership between the municipality and the Eco Fund. In addition, the EnSvet project, implemented in various municipalities – including Vrhnika – by ZRMK, is funded by the Eco Fund, as a national institution under the supervision of the Ministry of Agriculture and the Environment.
- **Self-governing** – in the case of the Anton Martin Slomšek primary school, where the school organises courses for their staff to implement energy efficiency measures more effectively.

## 6 Governance reflections – general overview

Vrhnika was one of the first municipalities to draft and implement a LEK according to the guidelines from national law. This implied some changes in the organisational capacity, which was generally perceived as success. The municipality gained important knowledge and skills with regard to energy efficiency measures.

### 6.1 Change of organisational capacity

During the process of preparing and implementing the LEK the municipality gained important knowledge and skills with regard to energy efficiency measures. The LEK is, in many ways, similar to the Sustainable Energy Action Plan (SEAP), promoted by the Covenant of Mayors, suggesting that the theme is a relevant one for many towns and cities. Indeed, most municipalities across Europe face the problem of having limited funds. As a result of the governance change the LEK offers a tool to systematically cut costs where they should be cut, namely, by reducing energy costs, with most of the savings coming from the adoption of non-renewable sources of energy.

LEK also offered the opportunity to foster strategic planning within the local administration, as some of its effects could be easily monitored (e.g. energy savings in public buildings) over a time-span of few years and the results serve as evidence for the positive effects of the measures introduced. This strengthens the incentive for local politicians to think and act responsibly over a longer time-span than the usual 4-year election cycle.

Another positive sign of organisational learning is the successful applications made by the municipality in respect of the calls for the energy-efficient refurbishment of public buildings. As call deadlines are usually far too short to allow for the quality preparation of project proposals from scratch (Gjerkeš, 2014), the availability of LEK with its data and proposed measures was crucial in the preparation of project proposals of the necessary high quality (Černetič, 2013).

In 2009, the Regulation on Methodology and Obligatory Contents of Local Energy Concepts (Regulation, 2009) was adopted setting the standard for newer generations of LEKs. The ministry now also regularly supervises the preparation and implementation of LEKs. Initial experiences showed that the regulation on LEKs (Regulation, 2009) did not by itself ensure the quality of the prepared documents. It was important here that the ministry remained in close contact with both the municipalities and the subcontractors, preparing, after 2009, about a dozen LEKs in the second phase and thus setting the standard for the newer documents (Praper, 2014; Kosec, 2014) while also improving the capacity of Slovenia to produce high quality LEKs.

## 6.2 Major obstacles

Despite the general success of the LEKs, a number of obstacles and challenges were encountered during the preparation and implementation of the instrument. It should be noted here that despite the crucial importance of the calls offered by the Ministry for Economic Development and Technology, in respect of the energy efficient refurbishment of public buildings, the municipalities were not systematically involved in the preparation of the calls (Gjerkeš, 2014). Moreover, the organisational structure of the municipal administration was not well adapted to the implementation of a comprehensive energy policy at the local level. The department responsible for the preparation and implementation of the LEK is focused primarily on public institutions and public utility services, but cannot competently deal with all of the key energy issues, such as transport (Černetič, 2013). Introduction of the LEK forced the municipality to work more comprehensively.

Furthermore, integration of the LEK with the municipal spatial plan remained weak, often resulting in the documents effectively cancelling each other out. The better integration of these documents therefore remains a significant challenge for the new generation of LEKs (Gjerkeš, 2014).

Another challenge at local level concerns financing, which is perhaps not surprising (Černetič, 2013; Jakin, 2013). Despite long-term savings in energy consumption, some measures nevertheless require substantial investments which can often be difficult to make given the ongoing fiscal tightening of municipal budgets.

Furthermore, the quality of the data is important, both at the municipal level as well as at the level of individual buildings. Data on energy consumption at the municipal level in Slovenia is almost non-existent and where it is available it is often rather dated. Various sorts of approximations had to be made in order to bypass this problem (Gjerkeš, 2014). At the individual building level measurements had to be taken generating a number of technical problems which were eventually solved on an individual basis by the institute conducting energy audits (Guzelj, 2013).

## 6.3 Main results of the governance changes

The impact of the governance changes led to different ways of improved effectiveness of the policy. By preparing and implementing the LEK the municipality gained important knowledge and skills with regard to energy efficiency measures and political relations were established. Knowledge and skills regarding energy efficiency were not only obtained by the officials within the local administration; it also includes local politicians and the principals of public institutions. Key figures in relation to the energy consumption of public buildings are, for instance, now familiar to the elected members of the municipal council, who need to approve the LEK implementation reports at regular intervals. As such, they became very sensitive to the issue of energy consumption in all public buildings, leading to a changing of mindsets as regards the municipal council members (Černetič, 2013).

In 2010, Vrhnika was awarded the accolade of being most energy efficient medium-sized municipality in Slovenia. In this regard it is clear that the LEK has contributed to a higher degree of awareness concerning energy efficiency issues within the municipality with the administration clearly becoming more involved with these questions. The municipality now also participates in the project "*Green Twinning - Capacity building and lessons to be*

*learned for the institutionalisation of sustainable energy policies in the municipalities' operations"*, supported by Intelligent Energy – Europe (IEE).

The LEK has undoubtedly also enabled a better overview to be gained of the key challenges faced with regard to energy in the municipality. In addition, it helped to achieve substantial energy savings in public buildings and it has raised awareness across the wider general public. It has also helped the municipality to gain better control over its spending, lessened its impact on the environment and simultaneously contributed to the key objectives of the Europe 2020 strategy.

Changes in horizontal coordination occurred at the municipal level as the different departments realised that they had to cooperate on certain issues. The municipal administration now understands that the issue of energy efficiency cannot be handled by one municipal department alone and that all departments must endeavour to collaborate as much as possible.

Some changes can also be observed in relation to vertical coordination as the municipality and the national level (ministries) are now working together much more closely. The national level is reviewing local reports on the implementation of the LEKs while the local level has to pay greater attention to policy changes at the national level and to incorporate them into the LEK.

## **6.4 Durability**

Given the legal background of the governance changes, it is expected that the new structures will remain in place. Although changes in governance have been incremental they will imply more coordination between the national and local level regarding energy efficiency and may lead to more comprehensive planning at the local level.

Also when it comes to policy achievements, durability can be expected. There is little doubt that the positive changes with regard to energy efficiency brought about by the LEK will be sustained. Firstly, because the implemented measures are often long term in nature. Secondly, because wide ownership of the proposed measures exists as many stakeholders were involved in their implementation. A good example here perhaps relates to the principal of the above-mentioned primary school, who firmly integrated energy efficiency measures into the overall education process.

Schools and kindergartens across the municipality are now working on saving energy on a daily basis and are actively passing this message on to their pupils. These institutions thus have the opportunity to promote and disseminate the wider notion of sustainability throughout society as a whole. They educate children on how to use energy efficiently and consequently they educate the parents as well. In addition the Anton Martin Slomšek primary school has also organised training sessions for its own employees (Guzelj, 2013).

## **7 Lessons learned – successes and pitfalls**

In this section the lessons learned will be discussed along the stages of the policy cycle. This provides a structured overview of the governance arrangements' successes and pitfalls when using LEKs as new approach in support of the Europe 2020 energy efficiency



target. Along the stages of the policy cycle governance processes and arrangements can be depicted as they evolve over time, starting with the **identification** of needs that feed into the policy **formulation** process and, in an ideal world, are followed by the policy **implementation** stage. The policy cycle concludes with the **accountability** of the described policy.

The policy cycle starts with the **identification** of needs, potential and challenges. The elements that could be learned in this regard are for example public participation. Public participation should be practiced regularly in relation to all questions that are of public concern. In this regard the principal of the primary school highlighted the issue of poor planning in respect of the school building during the building's construction phase. If energy efficiency factors specifically relating to building usage were considered from the outset far fewer ameliorative measures would now be required (Guzelj, 2013). This clearly illustrates that the participation of the relevant stakeholders is crucially important from the very beginning of every project.

Secondly, a broader, regional view is sometimes vital for the identification of potentials and challenges. The size of municipalities can be an obstacle when setting long-term strategic goals, therefore networking between municipalities and collaboration at the regional level should be promoted (Gjerkeš, 2014).

As energy efficiency is a question which clearly impacts many aspects of life and society, cross-sector coordination and collaboration, especially between ministries, should be promoted in order to identify both the inherent potentials and the likely challenges.

One of the main lessons learned in the identification phase has been to plan ahead. A clear strategic vision of the municipality stemming from the real needs of the community is crucial. Transport should not be forgotten in this regard as it the largest user of energy in Slovenia.

KEY SUCCESS FACTORS: 1) Public participation, 2) networking and collaboration at the regional level, 3) cross-sector coordination and collaboration, especially between ministries.

POSSIBLE PITFALLS: Giving priority to infrastructural needs over social problems and turning revitalisation into aestheticization as a result.

An important fact to be considered in relation to the **formulation of policies** is the importance of motivating individuals in leading positions. In Vrhnika political leaders as well as administrative officials have a significant influence on the early adoption of instruments like LEK. If, for example, the principal of the primary school did not perceive LEK to be a positive instrument and was not personally pro-sustainability, the results would not be as good as they were (Černetič, 2013). For this reason, 'soft' awareness-raising measures specifically relating to environmental issues targeted at political leaders and administration representatives should be considered (Černetič, 2013).

Appropriate policy formulation is only possible if the responsible staff members are sufficiently qualified to consider other framework conditions such as European and national objectives and to develop a clear and coherent strategy. This refers both to the staff at the involved ministries and to the engaged consultants.

Considering the LEK itself, the responsible official at the Municipality of Vrhnika states that the action plan derived from it should be formulated in greater detail while at the same time allowing for the necessary flexibility (Černetič, 2013).

The main lesson learned in the formulation stage of the policy has been to secure broad ownership; open and transparent preparation and implementation as well as reliable data and good results in respect of proposed measures are relevant.

KEY SUCCESS FACTORS: 1) Motivation of individuals in leading positions, politicians; 2) raising awareness among the public.

POSSIBLE PITFALLS: 1) Lack of harmony between LEK and the objectives of Europe 2020 or the national regulations; 2) not enough detail or an action plan which is too restrictive.

Regarding the **implementation** of policies the main lesson to be learned by the stakeholders, the representatives of the administration and the elected political representatives relates to securing necessary financial means. Given the need for large investments and the limited borrowing options available to the municipalities, the identification of new funding sources and mechanisms is vitally important. In Vrhnika the positive changes in energy efficiency are thus also a result of the municipality's success in winning tenders and attracting projects that enabled it to obtain additional financing. They also focus on the need to create consortiums with other municipalities, something which has also worked significantly to their advantage (Černetič, 2013).

Another lesson here is that having expert knowledge across different sectors within the municipality is potentially of significant value. A small and rather diverse team can also, however, be regarded as an advantage as little cross-sector harmonisation within the municipal administration is in reality required.

An action plan is of great use not only for the administration but also for the council because it sets out the necessary lines of action they feel committed to and eases the decision-making process. The annual reports on achieving the LEK objectives can help in this regard as they can help to identify a number of minor (if only statistical) positive changes and persuade the public about the good work done. This can encourage elected politicians to enforce measures that are otherwise not very popular.

To get public opinion on your side and cooperate well with stakeholders, it is important to conduct an open and transparent preparation and implementation process, without hidden agendas (Jakin, 2013). This can ensure trust among various actors and facilitate broad ownership of the proposed measures. Maintaining transparency however requires time and skilled staff both of which have to be provided by the municipal administration.

One particular lesson learned in Vrhnika relates to the advantage of involving schools in the implementation of LEKs. Sustainable changes of citizens' behaviour can be expected as a result of LEKs because awareness campaigns are taking place very locally and very subtly. In Vrhnika, schools and kindergartens are the main actors in respect of knowledge and awareness transfer. The principal of the primary school stressed the transfer of knowledge from children to their parents as one of their priorities with a high potential for inducing change (Guzelj, 2013).

The principal, as a representative of the stakeholder directly implementing the LEK, expressed the importance of counselling. The school was given quality advice in many issues. In her opinion, technical and expert knowledge is indispensable in the implementation phase. Therefore intensive and detailed consulting based on calculations of energy use should be offered and used as extensively as possible. It is important to know the economics of an investment (Guzelj, 2013).

One of the main lessons learned regarding implementation is the involvement of schools in the LEK of Vrhnika. Schools have the potential to use their buildings as learning tools for a wide audience of children and their parents.

KEY SUCCESS FACTORS: 1) Success in tenders and projects that enable financing; 2) creating consortiums with other municipalities; 3) good action plan; 4) open and transparent cooperation, without hidden agendas; 5) counselling, quality advice; 6) raising awareness and involving citizens.

POSSIBLE PITFALLS: 1) Financing; 2) low governing capacity of municipal administrations.

The Regulation on Methodology and the Obligatory Contents of Local Energy Concepts (Regulation, 2009) sets some procedures that should ensure at least a basic level of **accountability** in respect of the whole policy process. The Guidelines for the Elaboration of Local Energy Concepts, which the ministry adopted together with the regulation, define three levels of reporting: on the first level the implementing body – the municipal administration reports to the municipal council, on the second level the municipality reports to Ministry of Infrastructure and Spatial Planning and at the third level the implementing body (e.g. the municipal administration) communicates the measures and results of the LEK to the general public through mass media and other communication channels.

Regular yearly and compulsory reporting to the municipal council, proved to be very beneficial because it raised awareness among the counsellors of energy efficiency issues.

The lesson learned regarding accountability is to secure high quality data, since reliable data is the basis for proper actions. Furthermore reporting should not be underestimated. Reports are key communication tools for involving specific groups of actors

KEY SUCCESS FACTORS: 1) Three levels of reporting; 2) regular yearly reporting to the municipal council

POSSIBLE PITFALLS: 1) Weak reporting procedures.

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