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Resource Efficient Cities Implementing Advanced Smart City Solutions - READY



Smart Cities
and Communities



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Dissemination level		
PU	Public	X
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

Scope of deliverable

This deliverable describes the process and status in Växjö and Kaunas, when it comes to the updating of the Sustainable Energy and Climate Action Plans (SECAPs) within the framework of the Covenant of Mayors for Climate and Energy.

Context of deliverable

This deliverable elaborates briefly on the linkage between the READY project and the cities' overall policy making and reporting.

Perspective of deliverable

Both Växjö and Kaunas are signatories to the Covenant of Mayors for Climate and Energy. Within this initiative, cities commit to develop SECAPs and report on the progress of those. The SECAPs can either be a specific document, as in Kaunas, or a number of documents, as in Växjö.

Involved partners

The City of Växjö has written the deliverable. The City of Växjö and the City of Kaunas have had responsibilities for updating the SECAPs. However, the City of Kaunas is not a partner of the READY project, hence, the Lithuanian Energy Institute has been responsible for retrieving information from Kaunas to the project.

Summary

Within the framework of Covenant of Mayors for Climate and Energy, so called "Sustainable Energy and Climate Action Plans" (SECAPs) are developed and reported to the Covenant secretariat. These SECAPs describe the energy and climate goals of local authorities, as well as actions to be carried out to reach them. Reports are made frequently, both on the progress of the actions, and on the overall energy and emission data.

Within task 6.6 of the READY project, Växjö and Kaunas shall update their SECAPs and report them to the Covenant, based on the learnings from the READY project. Since such learnings are not always in line with the updates of steering documents, learnings will be incorporated also in the future.



Deliverable 6.7

Updated Sustainable Energy Action Plans (SEAPs) for Växjö and Kaunas

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Table of Contents

1. Introduction.....	1
1.1 Connection to the READY project	1
2. Växjö.....	2
2.1 The SECAP of Växjö	2
2.2 The reporting of Växjö.....	4
3. Kaunas.....	5
3.1 The SECAP of Kaunas	6
3.2 The reporting of Kaunas	6

1. Introduction

The Covenant of Mayors for Climate and Energy (www.eumayors.eu) was launched in its first form in 2008 and reached out to local authorities who had adopted ambitious climate goals, more ambitious than the ones of the European Union. The initiative has gained popularity among local authorities in Europe and the surrounding regions over the years. In late 2019, there are over 10,000 signatories in nearly 60 countries.

The City of Växjö became a signatory to the Covenant in 2008, and the City of Kaunas in 2009.

At first the Covenant of Mayors for Climate and Energy was only about climate mitigation, but in 2015, also climate adaptation was embraced and incorporated.

Within the framework of Covenant of Mayors for Climate and Energy, so called “Sustainable Energy and Climate Action Plans” (SECAPs, previously known as SEAPs) are developed and reported to the secretariat. The SECAPs describe what actions the local authority is planning to do to move closer to its energy and climate goals, as well as regularly follow-ups. There are no direct rules on what a SECAP should look like, more than it should include the energy and climate goals, include a plan for the progress towards the goals, and it must be politically approved.

Another important responsibility for the signatories is the reporting of energy and emission data, and information on risks related to climate change. All local authorities signing up to the Covenant commit to make updates and reports frequently.

1.1 Connection to the READY project

The READY project includes **Task 6.6 – Integration of READY experiences into the energy steering documents of Växjö and Kaunas**. In this task, new knowledge and experiences from the READY project will be included in revisions of the SECAPs of Växjö and Kaunas within the framework of the Covenant of Mayors for Climate and Energy. It should be noted though, that also the READY project partner Aarhus is a signatory to the Covenant since 2009.

Actions that are carried out within the READY project demonstrate solutions that can contribute to the achievement of local energy and climate goals when the experiences are scaled up outside the project sites.

Exactly how this task was to be fulfilled can be interpreted quite openly. This deliverable describes a few things that has been done during the project time.

2. Växjö

Växjö became a signatory to the original Covenant of Mayors in 2008. Växjö also signed up to “Mayors Adapt” (an initiative for climate adaptation) in 2014, and when the both initiatives merged, Växjö signed up to that as well. Växjö is also often invited in activities that aim to evaluate and develop the Covenant of Mayors and its reporting platform.

The public information about Växjö’s commitment, SECAP, baseline report and monitoring can be viewed [here](#). The City of Växjö reports to the Covenant frequently. Core parts of the reports are the data on energy use and carbon dioxide emissions. But also the progress on the various actions are reported. New actions are also added regularly, hence making the reporting a living platform.

The overall goals related to Växjö are that the emissions of carbon dioxide emissions shall be zero by year 2030, and that the emissions per capita shall be reduced by 65 % until 2020 compared to levels of 1993.

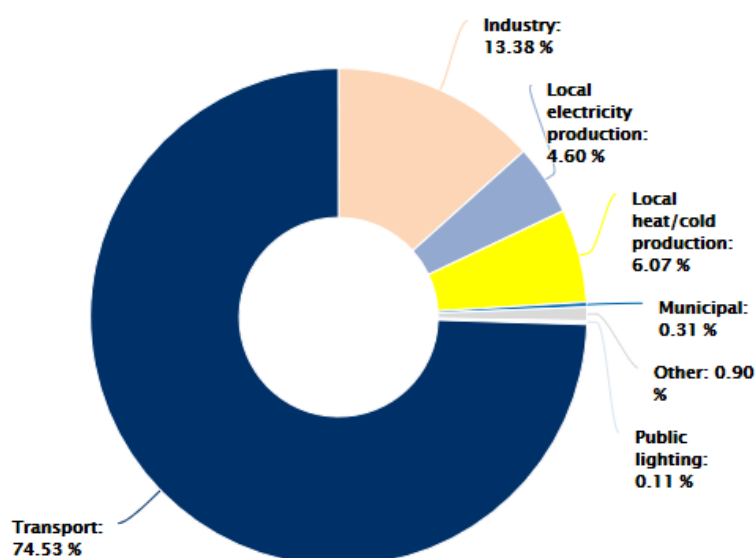


Image 1. Estimated CO2 reductions until 2020 in Växjö. Source: www.eumayors.eu

2.1 The SECAP of Växjö

In Växjö, there is not only one steering document referred to as the SECAP. Instead, Växjö’s SECAP consists of the Energy Plan from 2016, the Transport Plan from 2014 and the Climate Adaptation plan from 2013. These documents have been uploaded to the Covenant of Mayors web platform. The Energy Plan and the Transport Plan rather includes “strategies” than actions described in detail. For instance, it is not mentioned in the Energy Plan which or how many apartments are to be refurbished. Instead the plan describes what strategy Växjö shall use when refurbishing any apartment. On a shorter term, cleaner vehicles are estimated to contribute the most to the reduction of greenhouse gases.

In 2016, Växjö adopted a revised Energy Plan, which can be considered as a contribution to task 6.6. Since the new Energy Plan was adopted in the early stage of project READY, the linkage between learnings from READY and the Energy Plan is therefore not that clear. However, there is a clear link between the main “cornerstones” of the Energy Plan, and the priorities of the READY project. This can be seen in image 2, where for instance energy efficient renovations, district heating and cooling and electrification of the transport sector are mentioned.

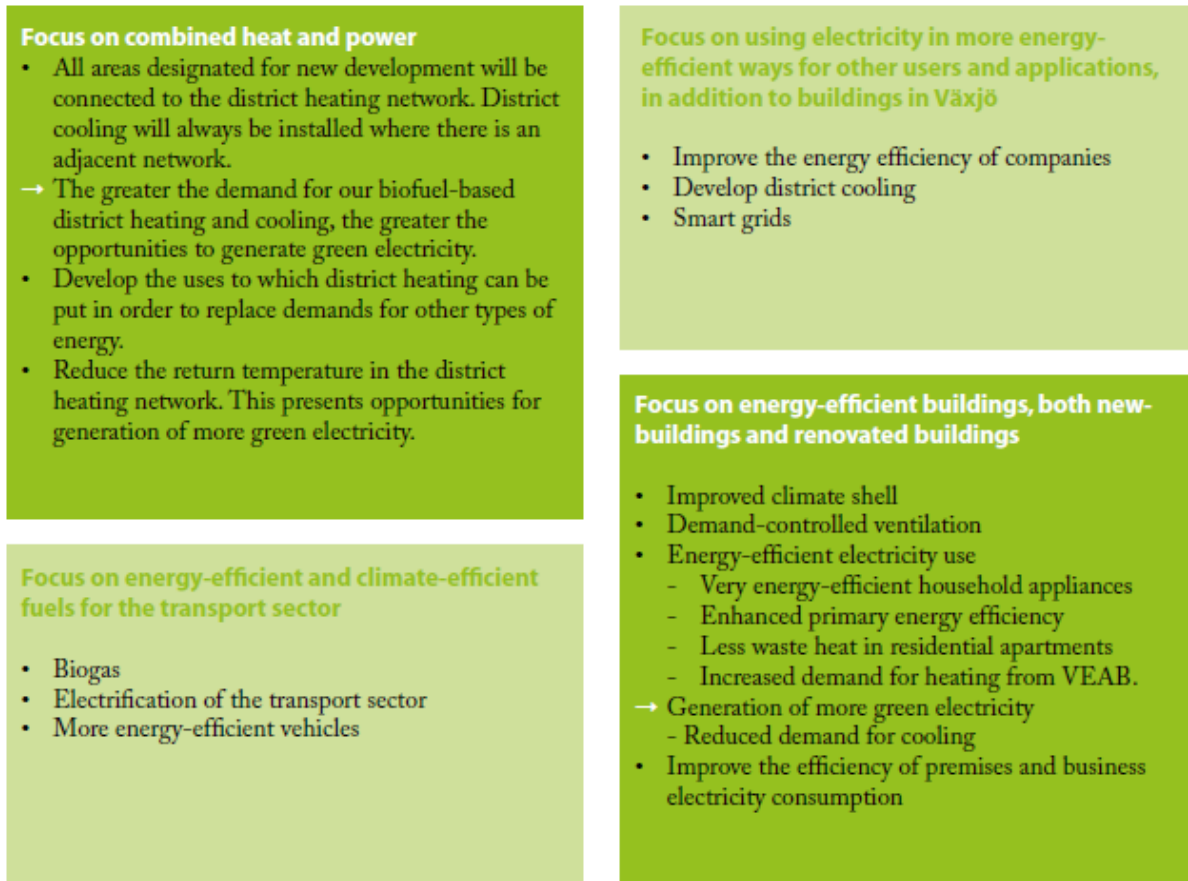


Image 2. Cornerstones of the Energy Plan of Växjö, 2016.

The strategies and actions in the strategic documents are followed up on a regular basis by simply asking the responsible bodies (departments or municipal companies) on how they have worked on the tasks during the year. This information is fed into the reporting to the Covenant of Mayors for Climate and Energy where applicable.

During 2020-2021, the Energy Plan and the Transport Plan will be revised again, hence making it possible to incorporate learnings from the READY project.

2.2 The reporting of Växjö

Växjö reports follow-up of actions, energy use and emission data every year. The last report was made in spring 2019. When Växjö reports specific actions to the Covenant, and the achieved (or expected) results, they are based upon the strategies described in the above mentioned strategic documents. At the same time, new actions are added, and previous ones are sometimes revised based on new experience and knowledge. This also means that the learnings of the READY project will continuously feed into new reporting to the Covenant platform.

The annual follow-up of energy and emission data are always distributed to the politicians. Not at least because they are using it in their presentations and dissemination of Växjö's environmental work. The data forms a solid ground for analysis of challenges and decision-making of further actions. The graphs presented below are examples on how this is being presented. These could be broken down in numerous versions depending on what we want to highlight.

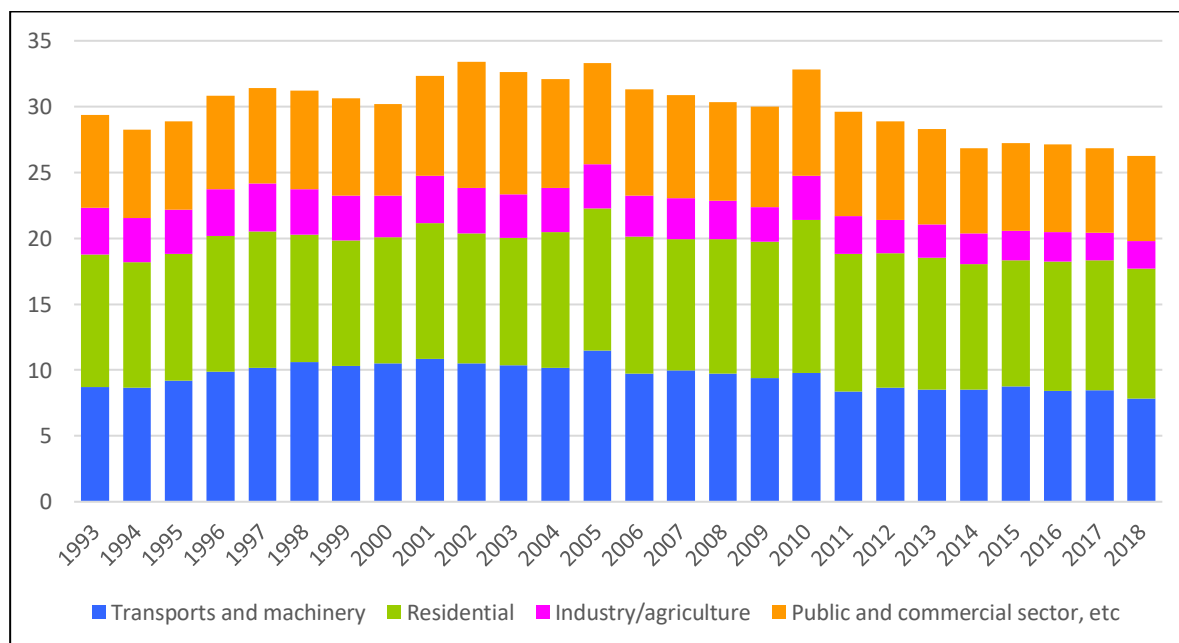


Image 3. Energy use in Växjö, MWh/capita. Source: City of Växjö.

Image 3 shows that the energy use per capita in 2018 was the lowest during the last 25 year period. It should also be mentioned that in the same time, the share of renewable energy supply has increased from 33% in 1993 to 67% in 2018, including energy for transportation.

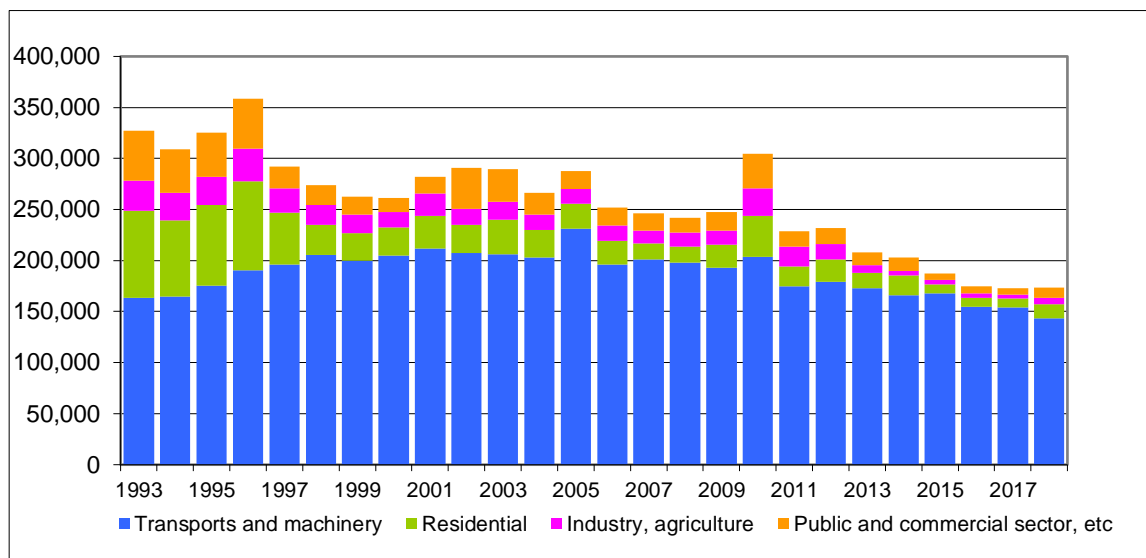


Image 4. Carbon dioxide emissions in Växjö, tons. Source: City of Växjö.

Image 4 shows that the total carbon dioxide emissions have dropped by 47% in 25 years. When looking at the per capita emissions it corresponds to 59% reduction, down to an emission level of 1874 kg per capita in 2018. Over 80 % of the remaining emissions comes from the transport sector.

In 2015, a new compined heat and power plant was taken into operation in Växjö, which phased out the use of fossil oil. Before the end of 2020, also peat will be phased out as energy source from the district heating system in Växjö. After this phase-out, all heat and power produced in Växjö will be renewable. This will be the biggest isolated action to reduce emissions in near time, contributing to approximately 21,800 tons lower emissions (235 kg per capita). This, combined with reductions in the transport sector, means that Växjö will reach the intermediate climate goal to reduce the carbon dioxide emissions by at least 65% per capita between 1993 and 2020.

When scaled up to a bigger implementation, the outcomes of the READY project will most likely have its biggest impact on the energy efficiency, due to the refurbishment of dwellings.

3. Kaunas

Kaunas became a signatory to the original Covenant of Mayors in 2009 but has not signed up to any of the other initiatives.

The public information about Kaunas' commitment, SECAP, baseline report and monitoring can be viewed [here](#). The overall goal for Kaunas is to reduce its carbon dioxide emissions by 30 % until 2020 compared to the levels of 1990.

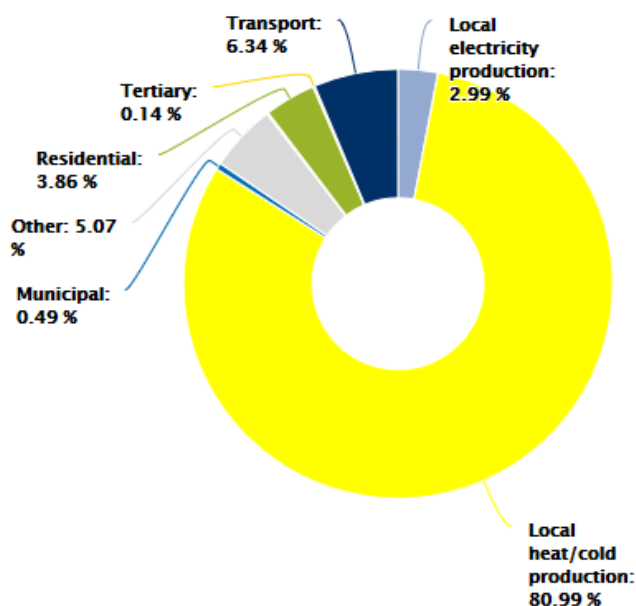


Image 5. Estimated CO₂ reductions until 2020 in Kaunas. Source: www.eumayors.eu

3.1 The SECAP of Kaunas

Instead of an energy plan or similar, the SECAP of Kaunas consists of a report, describing the energy situation in the various sectors within the framework of the Covenant. It is basically a background report to the data and actions that have been reported to the Covenant. For each sector, the report describes various actions that are supposed to be carried out until 2020 in order to achieve the reduction goals. The most important actions are related to investments in the energy production and waste incineration units, but also in renovation of buildings.

3.2 The reporting of Kaunas

Kaunas has reported the progress of its actions once, in 2015. However, the only public information related to this are three so called “key actions”. There is no information on the overall changes in energy use or carbon dioxide emissions available at Covenant of Mayors platform. Another challenge has also arisen in Kaunas. After the election in 2015, the new political majority made new priorities. Reporting to the Covenant of Mayors has not been one of them.

Nevertheless, it is interesting to report on a few activities that has been carried out lately, even if they do not correspond to an update of the SECAP, because they give an insight on the rapid changes in Kaunas.

In 2012, changes in the legislation of Lithuanian heat sector made it favourable to invest in construction and reconstruction in heat production facilities. In Kaunas, the energy company

Kauno Energija AB invested over 52.2 million Euros in reconstruction and pipelines, contributing to making production more efficient, and emissions and cost to be reduced.

In five years, the energy company built nine biomass heating boilers, with a total capacity of 85.3 MW. The impact of the combined efforts of new boilers, efficiency measures in the systems, and more district heating connections can be seen in the graphs below. The change of energy sources contributed to a reduction of CO2 emissions by nearly 28% between 2012 and 2018. The graphs do not include the replaced energy in newly connected buildings.

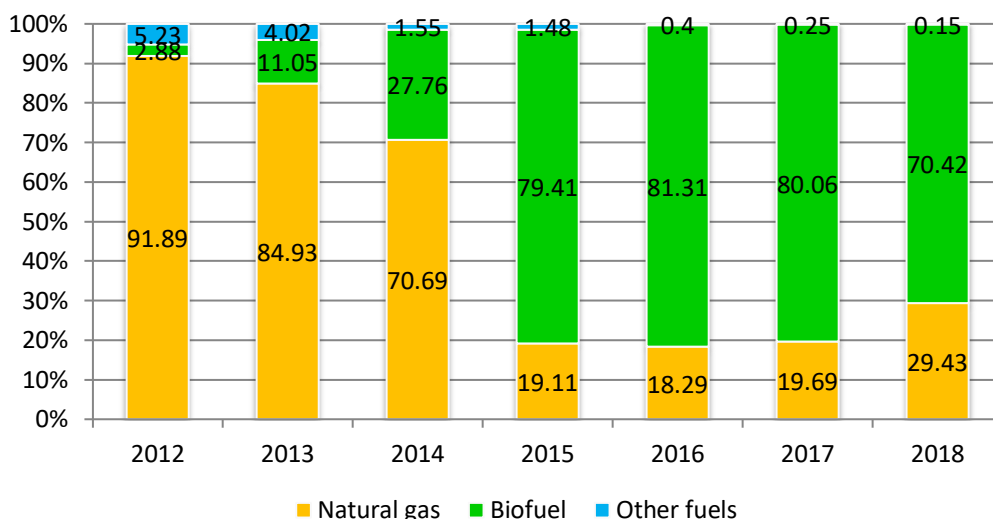


Image 6. Fuel mix for heat production in Kauno Energija AB, %. Source: LEI

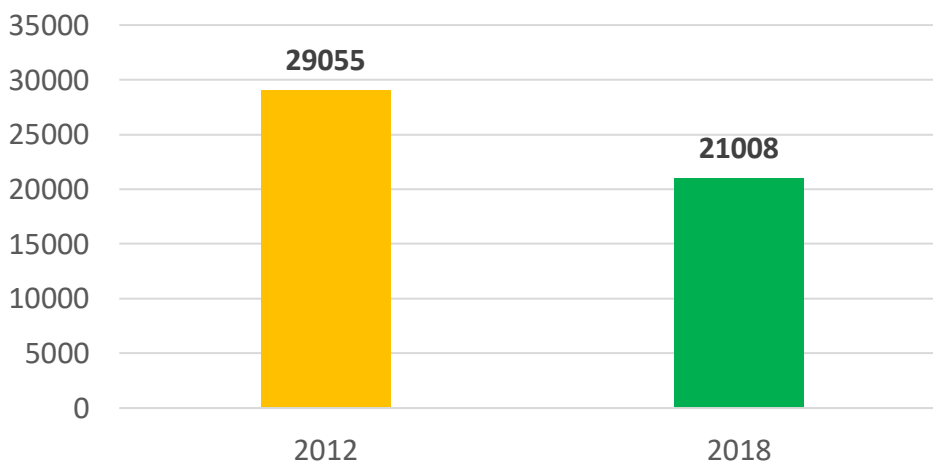


Image 7. CO2 emissions from heat production in Kauno Energija AB, tonnes. Source: LEI

At the same time another nine independent heat producers have built biomass heat productions plants, to a total capacity of 198 MW.

It is indicated in EU Directive of renewable sources and in Lithuanian national legal acts, that a part of renewable sources in total end energy consumption must consist not less, than 23%



until the year 2020, and the part falling on heating – up to 40 per cent. Meanwhile in Kaunas this indicator exceeds 80% already.