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Resource Efficient Cities Implementing Advanced Smart City Solutions - READY



Smart Cities
and Communities



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Author: Henrik Johansson (MUN-SE)

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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 is supposed to describe the pilot EV charging infrastructure in Växjö.

Context of deliverable

This deliverable describes the connections between the outcome of Deliverable 4.6.2 (Strategic Plan on EV Charging Infrastructure in Växjö) and Task 6.7 – Installation of pilot EV charging stations in Växjö.

Perspective of deliverable

This deliverable is supposed to describe how pilot EV charging infrastructure is realised in Växjö as a result of the strategic plan on EV charging infrastructure. Pilot charging infrastructure should be the basis for further investments in public EV charging.

Involved partners

The municipality of Växjö has written the deliverable. Throughout the project time, Växjö Energy has been of great importance for the local work. Dialogue has involved E.ON.

Summary

As a result of the READY project, a strategic plan for EV charging infrastructure was to be developed in Växjö. Based on this plan, several pilot charging stations should be realised in cooperation with E.ON. The plan was however delayed, but the number of charging stations in Växjö increased rapidly anyway. This deliverable rather describes how the earlier installations anyway gave important experience to be used in the strategic plan, instead of a documentation of pilot installations.



Deliverable 6.8

Documentation of implementation of EV
charging infrastructure

Date: November 08, 2019

Author:

Henrik Johansson, MUN-SE

Contact: www.vaxjo.se

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1. Introduction

This deliverable is related to Task 6.7 – “Installation of pilot EV charging stations in Växjö” in the READY project plan. The task describes that a strategic plan for EV charging infrastructure (deliverable D4.6.2) would be developed and, based on the plan, several pilot charging stations would be realised in cooperation with E.ON. This deliverable, D6.8, would then be the documentation of these pilot charging stations.

However, as described in D4.6.2, the strategic plan for EV charging got severely delayed, which meant that there has not been any link between the plan and any installations of chargers.

1.1 Current situation

In 2019, there are about 100 public charging points in Växjö. This is a massive increase compared to less than 10 when the READY project started. These are for example available in parking houses, parking lots, at the airport and at grocery stores. They represent a wide range of technologies, modes and types, and they have been installed by various actors.

However, none of these installations can be said to have anything to do with the READY project, since they were installed without the existence of any strategic plan for EV charging infrastructure.

It is possible to get information about the number of chargers and charging points, their ownership, types and modes etc, by using different web platforms, for instance www.uppladdning.nu. What is available on the platforms depends on what someone uploads, so it is unlikely that any of these platforms shows the complete infrastructure. Anyway, this gives a decent overview for the citizens to understand where infrastructure is available.

1.2 Impacts on the deliverable

Since the strategic plan for EV charging was not available when the additional chargers were established, it is not possible for deliverable D6.8 to describe how deliverable D4.6.2 has contributed to pilot charging stations. Therefore, this deliverable rather describes some examples of infrastructure.

2. Pilot installations

For the municipal organisation, it has lately been decided that it is Växjö Energy that has the main responsibility to establish the charging systems. Växjö Energy has in this way mainly helped the organisation to install charging systems for the internally used vehicles, instead of public charging. Växjö Energy has however also installed a few public chargers, as well as given advice to other stakeholders with their installations.

A few of the installations could be considered as some kind of pilot installations anyway. For technical information etc, we are referring to www.uppladdning.nu.

2.1 Speed charging

In 2015, Växjö Energy installed a speed charging station outside their office. This was the first speed charging station in Växjö, and it has become quite popular. It is used about twice a day. Until 2019 it has been free of charge to use it.

Since then, two more speed chargers are available at a grocery store, to be used while the car owners are shopping. Deliverable 4.6.2 points out several places where more speed chargers could be established.

2.2 EV infrastructure at parking lots

There are about 20 public charging points at municipally owned parking lots nowadays. The “pilot installations” in this case, were realised thanks to the project ELMOS under Interreg South Baltic programme. In this project, Växjö carried out the public tender process for all of them and installed two charging stations to start with.

Experiences from these stations have been important for the development of the strategic plan for EV infrastructure:

- These stations are equipped with charging cables for Type 1 and Type 2. After these installations were made, EU decided that Type 2 shall be the standard technology in EU. Therefore, no more stations with Type 1 will be installed. Also, having fixed cables at the stations makes them more vulnerable for damage. Therefore, car owners will have to bring their own cables to use coming EV charging stations.
- The brand that was chosen for Växjö had some problems with the design, that frequently made the systems close down. Therefore, when Växjö Energy became responsible for the entire public charging infrastructure where the municipal organisation has an ownership, the technological requirements could be changed in

the procurement process.

- Another challenge was that even if the parking spaces equipped with chargers were intended for EVs, other cars occupied them. One solution to overcome this will be introduced in 2020. In order to park (and charge) at a parking space with a charging point, there will be a higher hourly parking fee than in parking spaces without chargers. However, there will be no charging fee, as in other locations. This will probably lead to that only cars that actually need charging will occupy those parking spaces.

3. The cooperation with E.ON

According to the READY project plan, the pilot installations in Växjö will be realised in cooperation with E.ON. This has proven to be very difficult though, even if E.ON had a budget for making investments in EV charging systems in Växjö.

Within the geographical territory of Växjö there are two electric grid owners – Växjö Energy and E.ON. Växjö Energy owns the grid in the city of Växjö, while E.ON owns the grid in the surrounding areas. In the early stages of developing the strategic plan for EV charging infrastructure, the issue was discussed. What kind of charger to be installed, and where?

E.ON wanted to focus on a speed charger in the city. However, since charging possibilities already existed there, and since the grid already belonged to Växjö Energy, it was suggested by Växjö municipality that E.ON could invest in charging infrastructure in the villages surrounding Växjö, since E.ON is anyway the grid owner there. This would make it possible for Växjö to achieve a more geographically spread infrastructure.

There was a good dialogue about this issue, and the various partners wanted to find a solution. However, it would soon turn out that the challenge was more of an administrative problem. The participant of the READY project is E.ON Denmark, but it would be E.ON Sweden that would make the investment and be responsible for the operation of the charging station(s) after the project. Within the project time, a solution to this was never found.

4. Conclusion

Finally, the conclusion for EV charging infrastructure in Växjö within the framework of the READY project is that there have been installations of charging stations during the project period. Some of them are more “pilot” than others, but none of them are really a result of READY. Also, they could be installed even without the strategic plan. However, learnings from the “pilot” installations brought in knowledge to the development of the strategic plan for EV charging infrastructure in Växjö.