

Alpe-Adria Clean Transport Alliance - AaCTA

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Supporting the bottom-up road transport decarbonization for local level decision makers

White paper

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DeMS društvo e-mobilnost Slovenija



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Abstract

The current state of the decarbonization of road transport in Slovenia at the local level reaches various levels. From the Alpine Valley areas, where local communities are aware of the benefits of decarbonization, to industrially degraded areas, where the consequences of past actions inhibit development and create skepticism. **The solution could be in raising the awareness of local communities, easy access to tenders and subsidies, a knowledge base with examples of good practices, and improving regional and EU policy in tenders.** In this white paper, we will describe the issues, legal background, and recommendations for faster implementation of road transport decarbonization at the local level.

Problem Statement

On the decarbonization of transport, there are different views. Different stakeholders or interest groups have different opinions and solutions. Slovenia's problem is that no governmental authority does not support strategy or way and funds it so that progress can be visible. The state accepted several strategic documents in this field:

1. Strategy for the development of infrastructure for alternative fuels (2017)

<https://e-uprava.gov.si/.download/edemokracija/datotekaVsebina/298735>

- reduce the harmful effects of transport on the environment;
- achieve the goals in the operational program for the reduction of greenhouse gases in the Republic of Slovenia;
- To achieve the objectives in the field of reducing pollutants in transport and contribute to the efficient use of energy and renewable energy

2. National energy and climate plan (2021)

https://www.energetika-portal.si/fileadmin/dokumenti/publikacije/nepn/dokumenti/nepn_5.0_final_feb-2020.pdf

<https://www.energetika-portal.si/dokumenti/strateski-razvojni-dokumenti/nacionalni-energetski-in-podnebni-nact/>

This is a strategic document that must for the period up to 2030 (with a view to 2040) set objectives, policies, and measures for the five dimensions of the Energy Union:

- decarbonization and renewable energy sources,
- energy efficiency,
- energy security,
- the internal energy market; and
- research, innovation, and competitiveness.

On the European level, there are Directives for alternative fuels in transportation. Some alternatives are not on the path of decarbonization, for example, CNG. Hydrogen and electricity in transportation are viable to become decarbonized, but great emphasis must be on the efficiency of using energy.

<https://dems.si/primerjava-energetske-ucinkovitosti-baterijskega-elektricnega-vozila-in-vozila-na-vodik/>

Why is efficiency so important?

With higher efficiency you use less energy for transport, you can achieve that with fewer resources used in the process. If fewer resources are needed thus the smaller the environmental impact, the less carbon, and other pollutants are emitted into the environment.

If we focus on efficiency and decarbonization in transport, only electricity or e mobility is a viable solution, and we have to focus and build on that foundation.

But in that field we have some existing problems:

Public transportation by rail is mostly electrified, but some local rails aren't. Usually slow and not well connected between local communities and urban centers.

Road public transport is still based on internal combustion with diesel and CNG, but some small-scale examples are in Koper and private in BTC Ljubljana. The problem is high costs and not enough options for electrified buses. Road transport better covers local communities and urban centers but is still not used enough.

Bicycling is a common sport in Slovenia, but it is not widely used for transport or commuting to work. Significantly longer distances or inter municipality daily commuting is very small. It would need many incentives to cyclists and large promotional campaigns to upgrade the bicycle roads divided from vehicle traffic to be healthier and safer for them.

Slovenia is widely populated with many small settlements all around, and public transport can't efficiently and, on a timely basis, connect them to economic centers; therefore, the population mostly relies on individual personal transportation. There are around 1,1 million personal vehicles registered in Slovenia, and they cause pollution, congestion on all roads leading to and from economic centers.

Electric vehicles are the solution for decarbonized or less carbonized personal transportation with a 3 to 5 times higher energy efficiency rate. If electric cars are combined with home or local electricity production (solar or wind) and energy storage, this mode of transport could add to decarbonization.

Users of EVs have huge problems because of several different charging providers who have no interstate roaming. Users have to have several contracts or cards to cover charging needs while traveling. The problem is also unreliable charging infrastructure because they do not work at all or do not support charging for all EVs.

Many Municipalities invested in some charging infrastructure, but most of those investments resulted from charging infrastructure providers' marketing push.

<https://dems.si/preverili-smo-112-polnilnih-postaj-po-sloveniji/>

Many locations, charging equipment, and connected power do not correspond to the users, guests, or tourists' needs. They just sold and set up the chargers without thorough consulting with local authorities regarding their wishes, conditions, and needs of EV users. Some of this local charging infrastructure is not adequately maintained, and it has a lot of downtimes and therefore not reliable for potential users.

This unreliable infrastructure **has an influence on a negative experience of** e-mobility in the municipality establishment and is one of the barriers to broader adoption of EV usage in the local authorities.

The same situation is in the field of usage of EVs by the local authorities. In 2018 and 2019, some companies pushed a large push to offer EVs for rent or purchase to local authorities without thorough consulting and analysis of their needs and traveling patterns. They got EVs that did not correspond to their needs (the range was too low or too expensive for local travel). An additional problem was the education of the employees or users. Most of them did not accept the behavioral changes necessary to use EV and grow resistance to EV usage.

Slovenian local authorities have mainly minimal employment as possible. It is hard for those few employees to get adequate and relevant knowledge and independent consulting in charging infrastructure and EV usage, local electricity production, and storage. Locally decarbonized energy production, storage, and decarbonized local transportation is a massive opportunity for local authorities.

https://en.wikipedia.org/wiki/Municipalities_of_Slovenia

Some EU countries have known best practices and existing local authorities' solutions, but knowledge is not disseminated correctly. The state is too passive in this field and should collect them and share local authorities' knowledge.

Background

Slovenia set up its first EV charger in Ljubljana in 2009 and was a local DSO's private investment (Distribution System Operator) Elektro Ljubljana. Several local DSO followed the example and set up a couple of chargers in main cities in Slovenia. Slovenian hydroelectricity producers set up three fast chargers before 2013.

Slovenia was among the world's first countries, which introduced incentives for EV purchase of 5.000 EUR. Later in the year, 2015 increased to 7.500 EUR. In march 2020 was lowered to 6.000 EUR and again in October 2020 to 4.500 EUR.

There were no strategies or plans by the government, local authorities, DSOs, or private companies to set up charging infrastructure or promote EV usage.

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The Ministry for infrastructure has set up a plan to cooperate in EU projects with several EU countries to establish connected fast-charging infrastructure between cooperating countries known as Central Green European Corridors (CEGC) and set up in 2015 26 fast-charging stations across highway network every 50 km.

The next significant push from the government side was public tender for financing charging infrastructure in Natura 2000 municipalities. They set up more than 200 charging stations outside of urban centers.

Slovenia accepted the state Strategy for setting up the infrastructure for alternative fuels in 2017 and set up the bold goal to ban the registration of new 100% internal combustion vehicles in 2030. And set up plans for the number of chargers until 2025.

At the beginning of 2020, Slovenia accepted the National Energy and Climate Plan (NEPN), which set goals of decarbonization of energy field including transportation, until 2030.

Slovenia is also cooperating in the European project IDACS to prepare and establish a public database of all public charging stations, locations and connect them with other partners in the pan European project to get a comprehensive database that can be used by charging providers and users to get information about charging possibilities, locations, available power,...

Primary Slovenian charging infrastructure providers, which are also charging service providers, are Petrol, Elektro Energija Ljubljana, Implera, Moon, Ionity, Tesla. The biggest charging service provider without its infrastructure is Gen-i.

Petrol manages 26 fast chargers from the CEGC project. It added additional fast chargers and ultra-fast chargers to density the fast-charging network and develop AC charging infrastructure.

Elektro Energija Ljubljana developed an App GNE (Gremo Na Električno) and cooperated with other DSO partners, and their charging network consists just of AC chargers.

Implera developed their one charging stations with a combination of low to high power DC chargers and some AC chargers.

Moon is Porsche Slovenija's brand, and their network offers AC charging and DC chargers across all of the countries at VW & ŠKODA dealerships.

Tesla and Ionity have a small number of ultra-fast chargers but are essential for transit travel and main corridors' connectivity.

Lack of a central infrastructure register is responsible for not knowing the country's exact number of public chargers. According to official EU data (EAFO) there should be only 747 charging points in Slovenia but it is estimated (public database site Plugshare.com) that there are over 1300 public chargers, including fast DC chargers from 50-350kW to AC chargers ranging from 22kW to 2kW.

[EAFO | European Alternative Fuels Observatory](#)

[PlugShare - EV Charging Station Map - Find a place to charge your car!](#)

NGO Slovenian e-Mobility Society DEMS set up the page regularly for consumers and EV users. DeMS can inform EV users about different Slovenian charging service providers' charging fees and compare them.

At the end of the year 2020, around 3.530 EVs were registered in Slovenia. According to the Slovenian strategic plans, there should be 10.000 EVs registered at this time.

Recommendations

Establishing independent knowledge centers on the state level for supporting local decision-makers. They should disseminate the best European practices and best-used cases for decarbonization of local transportation. They should prepare independent materials on e-mobility and educate decision-makers that they can promote and lead by example.

This organization should prepare public discussion forums and events on e-mobility, sustainable transport, local energy production and storage, and their benefits on communities and their people. They should disseminate their studies of the influence of transportation pollution.

We recommend that every local community should establish a network of working AC chargers. To know where to put charging infrastructure, local communities should make detailed surveys of the local population's needs and then prepare charging locations. Local authorities should make regional and cross-regional corporations on public procurement projects (EV, charging infrastructure, eBike, and cycle roads).

By adopting new acts and ordinances, the state should implement a mandatory charging infrastructure register and enforce a publicly accessible database that users can get online real-time information on the charging infrastructure status.

All the Ministries should pursue common goals in e mobility and actively guide all stakeholders according to accepted strategies. It is suggested for local authorities that they should do the public tenders for incentives based on broad discussion and consensus with local communities about their needs and the state strategic goals.

The state should establish state long-term multi-year financial instruments to finance charging infrastructure if it enables state roaming and transparent billing. State financing should focus on setting up charging infrastructure in underdeveloped and less populated regions and less in densely populated areas with existing charging infrastructure.

Table 1 Barriers and needs concerning infrastructure for local decarbonization of road transport

Infrastructure for alternative fuels on the local level	
Barriers	Needs
<ul style="list-style-type: none"> • Lack of vision and boldness in further steps in local decarbonization • Lack of independent information for the end-customer and local decision-makers • Not enough working AC chargers with simple use to use-activation and even distribution thru all regions, towns and villages, and settlements • Lack of knowledge of the general public • Misunderstanding and resistance of existing structures • Stable and long term incentive system with clear goals in the field of e mobility • Lack of public central database for public charging infrastructure with geotags • Lack of adequate communication between stakeholders and ministries responsible for e mobility • Technical barriers for common state roaming system • State does not implement its accepted legal framework and the strategic documents that clearly define the road the decarbonization strategy and goals • General awareness of the citizens about the pollution from ICE cars • Public infrastructure is set up without any surveys of the needs of the local population. 	<ul style="list-style-type: none"> • Education of best European practices and best-used cases for decarbonization of local transportation • Establishing independent knowledge centers on the state level for supporting local decision-makers. • Working AC chargers in every local community. • independent materials on the topic of e mobility and top-down promotion by decision-makers • More public discussion forums and event on electromobility and its benefits • Adoption of new acts and ordinances that will regulate charging infrastructure register and implementation public accessible database • different ministries should pursuit common goals in the field of e mobility and actively guide all stakeholders • The state should finance charging infrastructure if it enables state roaming and transparent billing • The state should finance charging infrastructure in underdeveloped and less populated regions if it enables state roaming and transparent billing • Studies of the influence of transportation pollution should be disseminated • Detailed surveys of the needs of the local population should be made.

References: Internal documents, survey results, direct communication with local authorities. expert opinion

Table 2 Barriers and needs concerning green public procurement

Public procurement	
Barriers	Needs
<ul style="list-style-type: none"> Public authorities are procuring EVs just to comply with legislation. They have prejudices about using EVs. Unstable incentive system, lack of long-term policy with exact goals. Lack of choice of the latest generation of EV with long-range batteries and affordable prices. Dispersed legislative framework and lack of good procurement practice and defined terms of reference Lack of knowledge of how to access different EU and state funds Monopoly of local DSO regarding connections of charging infrastructure to the grid. Lack of competition between charging infrastructure providers and maintenance of infrastructure. Resistance to change 	<ul style="list-style-type: none"> Awareness of good examples and practices about using EVs to discard their prejudice. More market choices of the latest generation of EV with long-range batteries. Multi-year public tenders with fixed incentives so that the incentives are known upfront for a longer period of time. Short public document with examples of good practice and the possibility of some public funding for setting up such infrastructure and procurement of EVs Local authorities should make regional and cross-regional corporations on public procurement projects (EV, charging infrastructure, eBike, and cycle roads). More competition on the market of charging infrastructure with different brands and back-office options with maintenance.

References: Internal documents, survey results, direct communication with local authorities. expert opinion

Conclusion

Regional authorities should establish knowledge centers with broad knowledge and data about decarbonization, e-mobility, local electricity production, and storage to independently consult local authorities in that field. Knowledge centers should also help local communities transfer knowledge to the general public and decision-makers in the local communities.

Local communities should cooperate to establish broader and more extensive projects to cooperate and compete on EU-funded projects.

All state-funded projects or tenders for local communities' incentives regarding decarbonization of transport should be long-term planned together with all stakeholders from ministries, local organizations, and users. Local communities should do every investment according to the user needs and state strategies, and local community plans.

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[Country detail | EAFO](#)

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