**Update to the electric mobility stakeholder analysis in Finland**

**21.10.2019**

**BSR-electric project**

Ilkka Aaltio

Green Net Finland, Kuortaneenkatu 2, 00510 Helsinki

## Introduction

[BSR-electric project](https://bsr-electric.eu/) produced a stakeholder analysis of E-mobility in the Baltic Sea region in 2018. The stakeholder analysis of the current status was based on research and interviews and it is published in electronic form.

E-mobility scheme in Finland is evolving rapidly. It is interesting to collect some changes and trends that have appeared after the completion of the stakeholder analysis, for obtaining a more up-to-date view of the current situation in Finland. This short insight follows the thematic structure of the BSR-electric stakeholder analysis where the different E-mobility sectors were presented.

BSR-electric project is funded by the Interreg Baltic Sea Region program of the European Union.

## E-cars

The limited subsidy of EUR 2.000 for new electric car purchases in Finland continues to be available and it is in force between 01.01.2018 and 31.12.2021[[1]](#footnote-1).

A new Finnish governmental program[[2]](#footnote-2) was published in June 2019. It states that the government support for electrical car charging infrastructure will be continued by an investment of 15 MEUR budgeted for 2020-2022. In addition, the program promises an e-mobility related income tax deduction to employees. It states that charging of e-cars at workplaces as a part of salary will be free of tax. It is also promising that there will be regulations for increasing the charging infrastructures at housing companies and service stations in Finland. Housing companies are numerous, since they are a standard administrative way for blocks of flats and rowhouses in Finland.

## E-buses

The number of electric buses is increasing in Finland, however still large majority of buses in the country, particularly outside the largest cities, still operate on diesel fuel. However, progress in e-buses is obvious.

In 2019 autumn, 30 new electric buses were taken into use in the greater Helsinki region by the local public transport authority HSL[[3]](#footnote-3). The new buses operate in the closely located cities of Helsinki, Espoo and Kerava. These new buses, which are of Chinese origin, are charged in the night-time for full day’s capacity. HSL has announced a new strategical goal to have 400 electric buses operating in the greater Helsinki area in 2025.

Electric buses are in use also in Turku since 2016 on bus line nr. 1 which is fully electric. These buses, which are of Finnish origin, use charging stations in the city at specific end stops. By spring 2019 these e-buses had reached 1 million km mileage. Also, city of Tampere has tested e-buses[[4]](#footnote-4) for more than 2 years in experiments on bus line 2. It is the aim to gather experience of their use for making further decisions of sustainable public transport solutions in Tampere area.

In addition to electric operation, an alternative concept for reducing the use of fossile fuels is the use of 100 % waste-based fuel in the diesel-engines instead of the conventional fossil fuel. The urban public transport authority of Helsinki region HSL has announced in May 2019 that they will convert all their present diesel bus traffic into waste-based biofuel by 2025[[5]](#footnote-5). This action is related to BioSata project, which is funded by the Ministry of Economy of Finland.

Autonomous buses are studied in an Interreg project Sohjoa-Baltic[[6]](#footnote-6) which is operating until 2020. In 2019 there have been experimental tests of autonomous buses in a specified area in Helsinki region in Aurinkolahti and Kalasatama areas.

## E-bikes

The sales of privately owned electrically assisted e-bikes has rapidly grown in Finland. In 2018 26% of the sold bicycles in Finland were e-bikes, compared to 13 % in the previous year[[7]](#footnote-7). As the share of e-bikes doubled in 2018 and the average price of e-bike is significantly higher than that of a standard bike, the market growth is remarkable. One factor for the increased sales is obviously the increase in the selection of available e-bikes. E-bike has become an inspiring and practical mobility alternative for many citizens.

A discussion of subsidizing e-bike purchases in Finland occurred in 2018, but despite of the ideas presented by the Minister of Transport, the support was not implemented. Presently there is no financial support for E-bike purchases in Finland.

An interesting phenomenon is also the re-established domestic e-bike manufacturing as one of the Finnish bike manufacturers transferred their e-bike production back to Finland in 2019.

BSR-electric project is implementing case-studies for a mutually used cargo-e-bike in selected housing associations in the Helsinki area. In these case studies, a cargo e-bike has been provided for a specified period to the housing association and the storage location has been set up for the bike. The case-studies have been set up by HSY in Helsinki. The cargo-bikes have been warmly welcomed by the inhabitants. Despite of some minor technical problems with the mutually used e-bike system the users have been satisfied and actively using the bikes.

## E-logistics

E-logistics is at early stage, but some activities have emerged in Finland. 2 electric battery-operated delivery lorries are presently in test use in Helsinki city[[8]](#footnote-8). The delivery company Niinivirta European Cargo is testing the tailor-made trucks which have been converted from combustion engine to e-vehicles in the Netherlands. The estimated price of the electric truck is 2.7 times compared to a diesel-engine truck according to a study made by Niinivirta corporation. However, the usage costs are maximally about one third of the diesel operated costs, including service and usage power. The range is 250 km with a single charging. The company is also developing a fast charging system with Tampere Univ. of Applied Science. The first electric truck in this test was taken to use 5 years ago. The decision for the investment was made because of the strategy of the international group of companies where Niinivirta belongs to. According to the users, the e-truck is quieter than the diesel version and it accelerates faster. An interesting question regarding the electric truck investment was how the trucks work in winter conditions in Finland. The experience in winter 2019 showed that the frost was not a problem and the truck worked well. However, exceptionally hot weather in summer (+30 °C) caused the charging safety control to temporary stop charging the truck. The charging behaviour was later improved by temperature control system. Another issue was the salty water on the roads in wintertime which caused electric problems, which were succesfully solved by new cabling. In addition, the company is planning to implement RFID technology to the trucks for enabling automatic tracking of deliveries.

City of Helsinki has announced that they will convert a used diesel-lorry to ev as a test project[[9]](#footnote-9).

Presently there is a lack of commercially available electric trucks in Finland. A Finnish commercial truck retailer Veho (selling Mercedes-Benz) has estimated that first electric lorries in their products will be available in 2021. Volvo Trucks has announced to start production of electric lorries in 2019 and they are expected to become available in Finland in 2021. Renault is expected to bring electric lorries to the Finnish market in the end of 2019.

## E-scooters

In 2019 light rentable E-scooters (or E-scoots) have been introduced to major cities in Finland by several commercial operators. This trend has landed to Finland after it was been introduced in several cities elsewhere in Europe and Scandinavia. Many persons have liked this new and flexible transport possibility. However, a significant increase of accidents and injuries by e-scooters have been reported by the city hospitals in Helsinki, Tampere and Turku[[10]](#footnote-10). Especially the high speed in the densely populated central city areas has been reported to cause hazards. Also, it has been criticised that the E-scooters are often left by users at random locations and they cause hazards to pedestrians and traffic. The public opinion against E-scooters has therefore recently turned somewhat controversial. The topic has been discussed in the national newspapers at the letters to the editor section. Perhaps as a result of this discussion, some of the commercial operators have used their software and gps solutions to reduce the maximum speed of the E-scooter in the central urban areas for reducing the risk of serious accidents. Also, parking areas of e-scooters have been suggested.

Privately owned small motorcycle size E-scooters have recently become an alternative way of transport[[11]](#footnote-11). The technological development has made them to be a possible alternative to combustion engine scooters, as the E-scooter may have a range of 100 km. However, only first generation of commercial products are appearing to market now.

## E-ferries

Finland uses public ferries for transport at particular sites, such as at the beautiful archipelago near its Baltic seacoast. E-ferries have been used for transport of passengers and vehicles. There has been discussion of taking to use E-ferries in e.g. Helsinki, but so far only the Elektra hybrid ferry in greater Turku region (Parainen-Nauvo) is in use since 2017[[12]](#footnote-12).

There is production of electrical ferry motors and systems in Lappeenranta[[13]](#footnote-13), but their products are so far used only outside of Finland.

In 2019 EU-funded project FLAGSHIP has been started for developing fuel cell technology for use in ships. The international project[[14]](#footnote-14) is coordinated by the Technology Research Centre of Finland VTT and participated by e.g. ABB. It is the aim of the project to develop the fuel cell technology based on hydrogen for the energy source in E-ships. The first test cases are planned to be outside of Finland.

It should be also noted, that even if it is not in the focus of our BSR-electric project, several cities in Finland are currently investing in electrically built tramlines and railways. They also play an important role in the urban transport in Finland.

1. <https://www.traficom.fi/fi/asioi-kanssamme/sahkoauton-hankintatuki> [↑](#footnote-ref-1)
2. <http://julkaisut.valtioneuvosto.fi/bitstream/handle/10024/161662/Osallistava_ja_osaava_Suomi_2019_WEB.pdf?sequence=1&isAllowed=y> [↑](#footnote-ref-2)
3. <https://www.hsl.fi/uutiset/2019/helsingin-seudun-linjoille-tulee-30-uutta-tayssahkobussia-17915> [↑](#footnote-ref-3)
4. <https://yle.fi/uutiset/3-10505563> [↑](#footnote-ref-4)
5. <https://www.hsl.fi/uutiset/2017/kaupunkiliikenne-puhdistuu-hsl-ja-stara-siirtyvat-kokonaan-uusiutuviin-polttoaineisiin> [↑](#footnote-ref-5)
6. http://www.sohjoabaltic.eu [↑](#footnote-ref-6)
7. <https://yle.fi/uutiset/3-10726802> [↑](#footnote-ref-7)
8. Mäki, Elina, Onko tässä tulevaisuus? Helsingin teillä…, Helsingin Sanomat, 25.9.2019 [↑](#footnote-ref-8)
9. Helsingin sanomat, 18.9.2019 [↑](#footnote-ref-9)
10. <https://www.is.fi/kotimaa/art-2000006153079.html> [↑](#footnote-ref-10)
11. <https://www.kauppalehti.fi/uutiset/sahkoskoottereiden-myota-suomeen-odotetaan-uutta-aikuisten-mopomarkkinaa/c3a1f0fd-9892-4b98-aba3-31fd08576c87> [↑](#footnote-ref-11)
12. <http://www.siemens.fi/fi/media/uutiset/suomen-ensimmainen-hybridilautta-lisaa-tehokkuutta-ja-saastaa-ymparistoa.htm> [↑](#footnote-ref-12)
13. <https://navigatormagazine.fi/uutiset/meriteollisuus/maailman-vahvin-sahkolautta-ajaa-suomalaisin-moottorein/> [↑](#footnote-ref-13)
14. [https://www.vtt.fi/medialle/uutiset/vtt-ja-abb-kehittävät-vetyteknologialla-kulkevia-nollapäästöisiä-laivoja-eurooppaan](https://www.vtt.fi/medialle/uutiset/vtt-ja-abb-kehitt%C3%A4v%C3%A4t-vetyteknologialla-kulkevia-nollap%C3%A4%C3%A4st%C3%B6isi%C3%A4-laivoja-eurooppaan) [↑](#footnote-ref-14)