e-Mobility in Estonia

Overview of achievements in different areas of e-mobility in Estonia:

- **E-cars:** It was possible to apply for a grant to purchase electric cars from 18 July 2011 until 07 August 2014. Without subsidies the sales of e-vehicles reduced almost to zero. E-cars have to become competitive on the market, but at the moment only a few benefits related to parking and traffic lane usage issued by municipalities are supporting them. The largest asset supporting the use of e-cars is a country-wide fast charging network introduced by the government through the ELMO project from 2011. In 2018 about 100 electrical cars were sold out of 25,000 cars so the share of electrical cars is less than 1%. The fleet of electrical cars consists of 1500 vehicles in Estonia[1]. The first local e-car producer Nobe Cars announced that they will introduce to the market a three-wheel car by 2020[2]. Interest to e-cars is increasing due to new models with increased operational range like Tesla Model 3, Hyundai Kona Electric, Kia Niro Electric etc.
- **E-buses:** One e-bus is currently tested in Tartu and further steps are planned based on the results. Tartu intends to use CNG buses until 2029.

  In Tallinn new tests are planned together with the local energy producer Eesti Energia AS to balance the electrical grid with the help of e-bus batteries. From 2035 full application of 650 electrical buses is envisioned in Tallinn. Feedback and first experience regarding electrical buses can be obtained from Tartu in 2019 and later from Tallinn as well.
- **E-Bikes:** A bicycle-sharing system will soon be launched in Tartu. This includes 500 electrical bikes and 250 regular bikes with 63 bike racks with integrated charging systems. The first hour of renting a bicycle is free of charge and the next costs 1 EUR/h. E-bikes will be operated during the spring, summer and autumn.

[1] https://majandus24.postimees.ee/6492502/automuuja-diisel-lahkub-peagi-areenilt-ja-algab-elektriautode-voidukaik

[2] www.mynobe.com, 02.10.18

The founders of foldable e-bike Stigobike
are from Estonia, but their products are sold worldwide. Stigobike is an ultralight foldable e-bike, which could be taken along to a shopping mall or office thanks to its low weight and additional wheels to carry it like hand luggage.

Figure 1 Stigobike example[3]

Besides this company several other e-bike producers also exist. Some of them convert ordinary bikes to e-bikes for ca 800-1,000 EUR investment.
Estonian company Taxify develops besides ordinary taxi service also rental systems of electrical scooters worldwide, including in Estonia.
Another local company called Ampler Bikes hides all the accumulators to bicycle body providing the look of an ordinary bike[4]

- **E-logistics:** No pilot projects nor any actions found yet.
- **E-scooters:** No pilot projects nor any actions found yet.
- **E-ferries:** No pilot projects nor any actions found yet. There are preliminary discussions about e-ferry usage between the main land and some islands.

Key ideas from Estonia:

1. The ELMO project is a comprehensive approach that could serve as an example for countries willing to introduce e-mobility systematically and quickly. The most important is to combine all aspects like charging infrastructure, vehicles, usage, rent under one management.

[3] https://stigobike.com/wp-content/uploads/2017/11/stigo-01.png, 02.10.18
[4] www.amplerbikes.com, 02.10.18

2. The unique experience of two large electrical taxi companies Välk and Elektritakso, which have operated e-cars daily for several years competing with gasoline powered taxis.
3. Emerging small producers of e-bikes like Stigo, Ampler and others makes difference on the market and provide solutions for every taste.
4. One general suggestion is to start from real life tests of various e-mobility solutions in cities because conditions in each area are a bit different and aim is to tailor e-mobility solutions to local specific needs.

A more detailed analysis of different e-mobility solutions in Estonia is available at https://bsr-electric.eu/materials.