

eRoute71 AS

eRoute71 AS is a company aiming to establish a robust charging-infrastructure for electric cars in Norway and the Nordic countries, and thus assist Norway and the EU in achieving their targets for



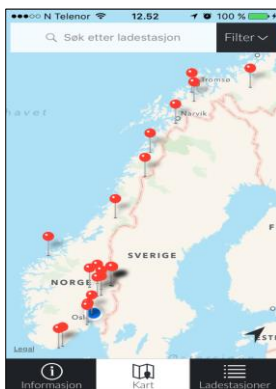
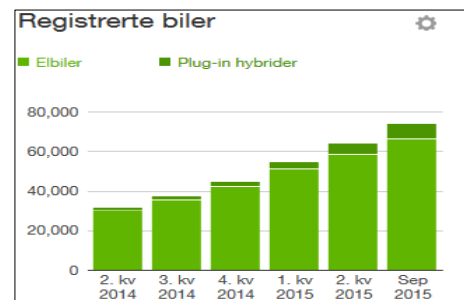
CO₂ emissions and air pollutants.

eRoute71 is owned by the Bellona Foundation together with Salto Ladestasjoner AS. eRoute71 serves as a testing arena for the implementation of new technology and charging solutions for EVs and other climate-friendly vehicles. This in turn contributes to the decarbonisation of society

towards 2050. eRoute71 focuses mainly on establishing cost-effective semi-rapid charging points with a power range between 6- 22 kW, which is equivalent to between 25- 100 km charged/hour). eRoute71 offers a flexible charging mechanism that allows as many cars as possible to charge with a limited electricity source. This also involves a charging mechanism that considers the prices of power from local utilities.

Background

Compared with the rapid increase of EVs in Norway, the roll-out of charging stations has been too slow. The effort to increase charging points and develop a robust infrastructure must be intensified to benefit both the local environment and the global climate. In addition, the increasing number EVs on the road in Norway place a higher demand for an excellent charging infrastructure.



In the summer of 2014 Bellona, Salto and Sønnico completed phase 1 of the eRoute71 project by completing a charging corridor between Trondheim and Nordkapp in Norway. This experience gave the company valuable experience for further development of cost-effective charging points. During 2014/15 another 13 charging stations with a total of 59 charging points were established with support from local municipalities, local enterprises and state-funded Transnova. Latest figures from November 2015 indicate that eRoute has constructed 21 charging stations with 74 charging points and now aims to expand its re-charging infrastructure across all of Norway.

However, there is currently no viable business case for installing EV-charging stations. The market is expected to mature as sales of EVs in Norway continue to soar: in September 2015 there were in total 66.276 EVs on Norwegian roads, and the market share for EVs until Q3 is at an average of 17,6%, the equivalent to every fifth new car sold in Norway being electric. At present EV-owners enjoy free charging at many sites, but in a long-term perspective EV-owners will have to accept that charging is a service that must be paid for. This in turn creates the market needed for building charging infrastructure. Bellona aims to take a leading role in this field and establish charging stations with integrated payment systems at large traffic junctions and other convenient stopping

places for drivers. By establishing charging infrastructure at already established commercial sites, affiliated companies benefit by enjoying customers with relatively longer time to spare.

Charging Stations

Today, the main type of charging solutions deployed in Norway are of Mode 3 with Type 2 retreats coupled together with both power and energy management systems. 3-phase AC-charging is the standard to invest in for the future; large European car manufactures have already signalled the introduction of vehicles with 3-phase charging systems. In addition, Type 2 has been established as the standard AC-charging for modern EVs. Type 2 can be used by all EVs and significantly improves the charging-time needed.

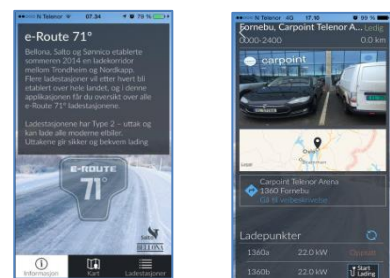
It is essential that modern charging infrastructure is economically feasible. Charging-tariffs will therefore be subject to difference of costs based on parking time and energy charged. Charging times and prices can also be flexible.



Lillesand charging station with eight charging points



Opening of the Lillesand charging station with the State Secretary Bård Hoksrud



eRoute71 app - All charging stations with route calculation, status, pictures etc

Financial support

The investment cost for the different locations of charging stations across Norway are dependent on access and distance to power supply. We aim to identify and establish the most cost-effective charging solutions. In order to move forward, we are currently looking for strong supporters to collaborate on realising these charging stations. We are also applying for government support from Enova, however financial support is not guaranteed at this point.

Company founders:



The Bellona Foundation is an independent non-profit organization that aims to meet and fight the climate challenges, through identifying and implementing sustainable environmental solutions. We work towards reaching a greater ecological understanding, protection of nature, the environment and health. Bellona is engaged in a broad specter of current national and international environmental questions and issues around the world.



Salto's vision is to contribute to the electrification of new infrastructure for electric vehicles throughout Scandinavia. Our goal is always to produce and develop competitive, secure and reliable systems. We focus on products that can withstand being placed out in public environments and a northern climate. This means solid materials, good design and proven features.

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