The electric car charging market

The players in the electric car charging market can roughly be divided into 3 different categories: Electric car manufacturers, Electricity companies and Electric car charging companies.

As the set-up of an electric car charging network requires a very high initial investment, it is a relatively risky business to get into. Since the beginning of the modern electric car era, there have been several large charging companies that have had to apply for bankruptcy, the most famous probably being Ecotality in the USA and later Better Place in Israel. The bankruptcies were mainly due to wrong management and investment strategies.

At the time of writing, there is not yet one set standard for electric car charging. There are many different charging methods, each taking different amounts of charging time and requiring different initial investments.

Several countries have started to set up a network of charging points for electric cars. In the USA the market, at the moment, is dominated by Chargepoint. In Estonia, the government has chosen to work with ABB to set-up the network, which is now run by KredEx and NOW.

There are not only many different types of charging stations, different companies also have different standard plugs. To lower their own, as well as consumers risks, car and electricity companies have chosen to work together in associations concerning charging plugs.

The largest and most well known of these organizations is CHAdeMO, on which a more in-depth study is given later in this report. CHAdeMO was founded in Japan, initially led by energy producer TEPCO. The association first expanded in Japan and now has members throughout the world.

As an answer to the Japanese near-monopoly in the charging plugs, Western car manufacturers founded Combo. Combo includes big players such as BMW, Mercedes and General Motors. At the moment this is the standard recognized by the EU.

The plugs used by both different standards are very similar, and many car manufacturers have chosen to integrate both systems in their cars, or produce the cars in such a way that the systems can easily be interchanged. This partiallly to limit the manufactureres own risks, as well as the risk for their customers, whom may fear their standard may otherwise phase out in due time.

As electric car owners will always need to be able to charge their car at home, or at it’s main parking place, many electric car manufacturers, such as Tesla, Opel Ampera and Nissan Leaf offer the opportunity to purchase a home charging point with the purchase of a new vehicle. Nissan Leaf even requires this, as it has a special type of charging station, although it also gives to possibility of a waiver if the new owner has a compatible charging point installed by a third party.

Most European countries have a relatively extensive network of charging stations, especially around the big cities. It may come as a surprise that only Estonia has a full, country-wide network in place at the moment. Leading countries in the EV market, which are also the countries with the most charging opportunities are Estonia, Norway and The Netherlands.

Outside of Europe, the only area’s where electric driving is very wide-spread are Japan and California. In the less populated area’s of the USA, we see hardly any electric vehicles, something that also counts for states with less financial incentives for electric driving.

We can clearly see that the amount of charging stations a country or region has, is closely related with the amount of electric vehicles owned in the region.

This interdependency can be clearly seen in the Better Place case, which is described in more detail later in this report. The company tried to set-up a contract based battery swapping system for electric cars, but as there were less than 1.500 cars sold, the only users of the system, the company eventually went bankrupt.

One of the main problems for the users in the car charging market is the diversity of charging networks. Due to lack of collaboration and membership requirements, companies try to limit users to use only their chargers. As customers are mostly required to use multiple companies due to logistic reasons, they need (sometimes prepaid) memberships to multiple suppliers. This leads to an overload of cards and paperwork for the user. Standardization of payments systems or collaboration between companies could solve these issues.









 