

Building a charging station for electric cars in Moscow

1. Introduction

1.1. Background

Moscow is the major political, economic, cultural, and scientific center of Russia and Eastern Europe, as well as the largest city (both by population and by area) entirely on the European continent. It is a very fast-growing metropolis, but integration of new technologies into society is difficult for some reasons. Mainly, it is because the majority of people prefer to live here and now. They don't tend to look into the future, make investments or seek for future benefits. Let us clarify this point on an economic example. Only 1.5% of the population in the country has brokerage accounts on the Moscow Exchange. This is about 2.2 million people. But only 180 thousand of them are active (1 deal per month) - 0.12% of the country's population. For comparison: according to the results of social surveys in the USA 55% of the population own shares. Nevertheless, new technologies eventually come into play and you have to deal with it. That is why I would like to consider a problem of building an electric car charging station in Moscow.

Here are some statistics. As of January 1, 2017, there were 920 electric vehicles in the Russian Federation. For July 1, 2018, there were 2,530 units. As of January 1, 2019, there were already 3,600 of them. Moreover, sales in 2019 increased three times over the same period of 2018. The government actively supports electric vehicles and motivates people to buy them. For example, recently parking became free for electric vehicles while the owners of gasoline cars pay from 1 to 6 \$ per hour. Thus, for a month of parking (if we consider only the working day - 9 hours a day, 22 days a month) you will have to pay from 200\$ to 1200\$ whereas the average salary in Moscow for 2018 was about 1300\$. In addition, the owners of electric cars are exempt from paying transport tax and can use toll roads for free.

1.2. Problem

The benefits of owning an electric vehicle in Russian Federation are obvious. Consequently it is justified to expect a sharp increase in demand for electric cars. I will try to set up some recommendations for building an electric vehicle charging station.

1.3. Interest

Given the interest of the government in the promotion of environmental modes of transport, this study can serve as a guide to action for them. Moreover, this report may be of interest to private entrepreneurs who wish to link their business with new technologies or big companies (such as Tesla) looking forward to gain a foothold in Russia.

2. Data

For this purpose I will use a dataset with coordinates of all existing electric vehicle charging stations in Moscow from Portal of open data of the Government of Moscow (<https://data.mos.ru/opendata/7704786030-electric-vehicle-charging-stations>) and Foursquare location data. I will try to search for patterns between the location of charging stations and

popular venues nearby. Also I will come up with my own ideas of where to build a new station after studying suitable places and based on personal experience as I am a resident of Moscow myself.