

# E.Connect

## What problem are you trying to solve?

Demand for electric vehicles (EV) is growing at an exponential rate with amount of units increasing to more than 7 million units worldwide in 2020. This number is soon to grow due to increase in demand for personal space attributed to COVID19.

Current EV charging infrastructure has many issues like presence of different standards which are incompatible with each other, low utilization rate of the chargers, poor customer support and low profitability which is a huge hindrance for EV adoption.

E.Connect, with its range of innovative chargers, solves these and many other problems related to charging stations and tries to make them future proof, cheaper and consumer friendly.

## How do you plan to solve the problem?

E.Connect aims to tackle this issue by targeting three different market segments- Public, Workplace and Private.

1- Public Charging- These types of chargers are mainly available for public use and as such are installed on government property like highways or semi-public places like shopping malls, etc. E.Connect plans to develop Universal charging stations, which will cater to all charging standards available by making them in a modular way. This allows the entity in charge of the product to simply replace the existing standard to a new one without any major replacement costs. This feature makes the model future proof, as it is able to adapt to changing technologies, without costing too much for the customer. This charging station will also allow customers to install the product with lower power rating modules and upgrade them to more powerful ones as the demand increases. This makes it even more feasible for small businesses.

2- Workplace charging- These types of chargers are installed in parking lots of companies, cinema halls, or places where on average, each vehicle is parked for about five to ten hours in such parking spots. Thus, E.Connect plans to introduce movable robotic chargers, which can charge multiple cars without human intervention. This will require installment of one charger instead of 7 to 8 chargers, which will significantly reduce the investment costs.

As an EV user is only interested in having a fully charged vehicle when they need it, this charger will be able to charge multiple vehicles in the given period. This will not only lead to lower peak demand charges, but also improve demand side management as it will increase certainty in the use of the charger. These benefits result in reduced initial investment costs while saving the company a lot of money in energy consumption.

3- Private Charging- These types of chargers are installed in residential places and as such are only available to members of that household. E.Connect wants to augment the charger functionalities by improving PV penetration into the grid. With the current trend towards PV installation at homes, this charger will definitely be appealing and economic for the customer.

## **How do you plan to make this solution a reality? Do you have an action plan?**

E.Connect started from my Bachelor theses in Electric Vehicle Chargers. E.connect has developed a Minimum Viable Product (MVP) and has contacted potential customers and developed a business model as well. E.connect will start working on the prototype as part of the Master Theses at KTH in collaboration with a company.

The main operation plan of E.connect is to establish a manufacturing plant in India, as it will be easier for me since I am an Indian national. E.Connect will outsource the components to OEMs from China, assemble them in India and then ship them to Europe.

The EV charging market is still in an emerging phase, and E.Connect aims to be one of the forerunners in this market.

## **Why is your solution innovative?**

E.Connect's All in one charging station which removes the main hurdle of compatibility.

- 1- Modular design => easier to update/upgrade. Can be installed by small to medium and large businesses.
- 2- Reduced number of chargers and reduced cost at workplace charging stations by up-to 55%
- 3- Data analytics for customer (consumers) => provides customized optimal charging schedules
- 4- Data analytics for grid operators => uses the demand flexibility provided by EVs to support grid operation.
- 5- Boost in charging infrastructure will trigger the mass adoption of EVs and their flexibility when transferred to grid operators, will boost incorporation of renewable energy in the grid.

E.Connect takes a different approach to solve the problems of mobility infrastructure. While most of the competitors in this field are only focused on making the chargers fast and improving efficiency, E.Connect tackles this issue through the customers perspective.

## **How scalable is your solution?**

According to McKinsey's research based on charging profiles and available technologies, the EV industry could require approximately 40 million chargers across China, Europe, and the United States, representing an estimated \$50 billion dollars of cumulative capital investment through 2030.

The European Union will need a cumulative 25 million chargers and roughly \$15 billion dollars of investment during the same period.

Estimating a market share of about 2% and the same growth rate as the market, E.Connect aims to have a revenue of about 300 million dollars by 2030. The main sources of revenue are from sales of charging station, a subscription fee for Data Analytics and fee for upgrades.

E.Connect will start from workplace chargers and will scale to public charger market and then to private charger market.

## **How does your solution make an impact?**

E.Connect with its range of innovative chargers will improve utilization rate of the chargers, lower investment costs, improve customer support and overcome the main hurdle of compatibility. This will in turn make the charger profitable and attract more investment.

E.Connect aims to boost the Electric Vehicle Charging Infrastructure which will improve the penetration of Electric Vehicles and hence will lead to a greener future for us and future generations.

## **Is your solution built on prototype or is it a conceptual solution?**

Conceptual

## **Link to your pitch video (on Youtube, Google Drive or Vimeo)**

[https://youtu.be/Y0Ehw3\\_hxBw](https://youtu.be/Y0Ehw3_hxBw)