2. Assumptions and Related Notations

2.1 Model Assumptions and Justifications

In order to simplify the process of modelling and draw a reasonable conclusions with main factors, we make assumptions as follows:

* The data we use for numerical analysis and future prediction is reliable. The results processed by statistics methods are used for evaluation of current situation and to predict future trend.
* To predict future quantity of chargers of America, we use average increasing rate according to the present number of charging stations and the number of coming soon ones.
* When considering the chargers distribution, we assume each one we design works normally.
* All chargers could work for 24 hours in each station.
* Since it is additional chargers to consider, we consider the situation that each user has an at-home charger and electric cars would be charged to 100% before setting off.
* Queuing time is not taken into account in our circumstance.
* Along the electric cars’ evolution, we consider there are sufficient products for commands and we assume the resource to build up charging stations is abundant.

2.2 Notations

In the table (Table 1) below, we list several notations used in this paper. Some of them will be defined and explained in the following sections.