Handout for 2018 International Energy Summit

-Electric Vehicle: Out of Gas and Driving on E

**1. Introduction**

Continuous growing number of motor vehicle inevitably results in the increasing demand of fossil fuel and, consequently, leads to more CO2 emission. Renewable energy has already been introduced to many industries, including motor vehicle industry. Dislike traditional motor vehicle, battery-electric vehicles (EVs) could provide higher efficiency and emit zero tailpipe. Though the technique of EV being prove to be beneficial to both consumers and environment, there are still many obstacles, such as the limitation of EV technique (smaller cruise range than motor vehicle), consumers’ possible reluctant acceptance, current policy and the electric infrastructure development. We have conducted a research focused on the development of electric infrastructure: charging stations for EVs. In this handout, we will present significant factors which will influence the schedule of banning motor vehicles and the building of charging stations in order to migrate motor vehicles to EVs.

**2.Findings from Our Research**

After having studied on planning charging station network in three different types of country: the United States, South Korea and Australia, we can conclude there are three factors concerning with developing nationwide charging station network:

* Population
  + The distribution of population
  + The density of population
  + Vehicle per person
* Traffic network
  + Traffic flow
  + Tendency of residents’ movement
* The Average Performance of EV
  + Cruise Range
  + Charging Time

In addition, there are key factors that influence the planning schedule for migrating the motor vehicles to EVs:

* Wealth distribution
  + Monthly income per capita
  + Average EV price
  + Cost of recharging
  + Subsides from government
  + Sales rate of EV
* Development of electric charging infrastructure
  + Coverage rate of charging stations network
* Current policy

3.Summary

In conclusion, to successfully migrate personal transportation to all-electric cars, two aspects are mainly considered. First, to develop reasonable charging station network, population, traffic network and property of EV are key factors. A strong charging electric power support is an essential condition for complete transformation from traditional to environmental lifestyle. Secondly, developing schedule depends on local financial condition, construction period and policy. Based on these factors, a proper plan could be arranged according to specific circumstance. Reasonably, efficiently and systematically to expand advanced trip mode is current pursuit and efforts are taken for a better place. The gas vehicle-ban date is set when evolution of migration reaches 96%.