

A Plan for the Deployment of EV Charging Infrastructure in Korea

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Abstract

The increasing public desire to reduce carbon emissions and transportation dependency on petroleum products is driving public interest and policy to alternative fuel sources and design. Most of the automotive manufacturers are currently producing or planning to produce Electric Vehicles (EV) to address this interest. However, EV charging infrastructure will be required before EV is adopted. This paper briefly presents a plan for the deployment of EV charging infrastructure in Korea.

This paper is broadly divided into four categories:

- (1) Present status of R&D
- (2) Present status of standardization
- (3) Government policy & regulations
- (4) Deployment strategy

First, the R&D of the EV charging infrastructure is one of the five strategic research areas in the national roadmap of smart grid in Korea. So, many research projects on the EV infrastructure are either going on or planning to keep up the pace with the roadmap. This paper summarizes the whole R&D projects on the EV infrastructure which are going on or planning as of February 2010 in Korea.

Second, Korea is planning to develop collective standard, national standard and international standard on the EV charging infrastructure until 2012. International collaborative research on the standardization is also planned. This paper summarizes the whole activities on the standardization of EV charging infrastructure as of February 2010 in Korea.

Third, Korean government declared a vision of “Low Carbon, Green Growth” as the new national vision to lead Korea’s future development for the next 60 years. As an enabler of the vision, green car program is considered as a promising area. So, the government is trying to give many incentives and supports for the EV deployment. This paper summarizes the government policy and regulations to support this area.

Fourth, the census data, the geographical data, the EV deployment plan and the status of EV technology are analyzed in order to make the plan for the deployment of EV charging infrastructure. The architecture on the EV charging infrastructure of six major cities and connections among them is proposed. This paper summarizes the results of the plan for the deployment of EV charging infrastructure.

This paper will be used as the reference for the revision of the rolling plan for the deployment of EV charging infrastructure in Korea.