[별첨4_CP 양식]

KOREA INSTITUTE OF ENERGY RESEARCH

CONCEPT PAPER

for KIER International Cooperation project

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	Department	System Convergence Lab.	Title	Senior Researcher
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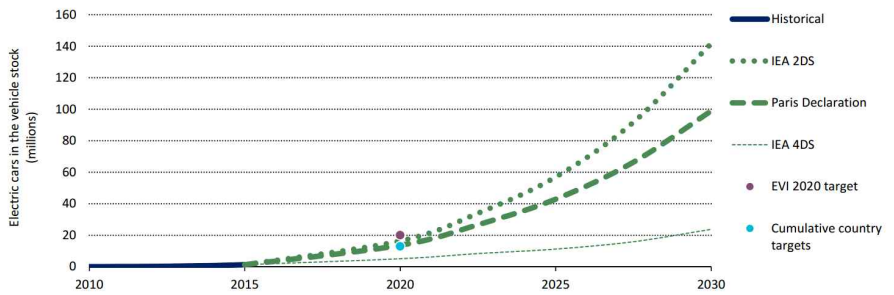
Title	Development of EV pattern analysis and operation algorithm to cope with the new era of electric vehicle			
Description	● EVs are expected to sizeable growth and need a charging infrastructure obviously  Figure 1. Deployment scenarios for the stock of electric cars to 2030 (source : IEA Global EV outlook 2016) ● Difficult to predict EV load depends on various factors(time, location, event, etc) ● Difficult to build a EV charging station with suitable specifications • capacity, charging/discharging rate, etc ● Difficult to operate the power plant including renewable energy with certain strategy • keep control the electric grid with stable operation ● Difficult to build new power plants with limited resources ● EV load pattern analysis in accordance with location, time, events, temperature, etc ● Make an operation algorithm by means of result of EV pattern analysis • Economical solutions(incentive for V2G, premium tickets for charging rate of EV) • Primary solutions to keep run with stable operation(alleviate the peak load, control the charging/discharging rate, etc)			
Outcomes*	● Publications and Patents • EV operation/pattern analysis algorithm with various factors ● Define a standard EV charging station with suitable specification ● Propose a cooperation control for power plant with central/local EV charging stations			