

ESS SoC Optimization System Using EV Control

Yong Hee Park, Lee Su Ho, Seong Gon Choi

Information & Communication Engineering, Chungbuk University, Cheongju-si Chungcheongbuk-do, Korea

yh0360@cbnu.ac.kr, tng506@cbnu.ac.kr, choisg@cbnu.ac.kr

Abstract— Peak shaving is an important technology in power grid. Many studies on peak shaving are being conducted, using ESS, shiftable load, and V2G. However, they do not consider of the ESS SoC and supply power reduction because they are only for peak shaving. ESS SoC is related to battery life which is directly linked to costs. Reduction supplying power causes problems that uncertainty and inconvenience to customers. Therefore, it is necessary to consider the problems of peak shaving. This paper presents ESS SoC optimization by controlling that charging and discharging of EV. It can reduce supplying power and peak shaving.

Keyword—Smart Grid, ESS, Peak Shaving, V2G, SoC



Yong Hee Park received B.S. degree in the College of Electrical & Computer Engineering, Chungbuk National University, Korea in 2019. He is currently a M.S. candidate in School of Electrical & Computer Engineering, Chungbuk National University. His research interests include home network, Smart Grid.



Lee Su Ho received B.S. degree in the College of Electrical & Computer Engineering, Chungbuk National University, Korea in 2019. He is currently a M.S. candidate in School of Electrical & Computer Engineering, Chungbuk National University. His research interests include home network, Smart Grid.



Seong Gon Choi received B.S. degree in Electronics Engineering from Kyeongbuk National University in 1990, and M.S. and Ph.D. degree from Information Communications University, Korea in 1999 and 2004, respectively. He is currently an associate professor in College of Electrical & Computer Engineering, Chungbuk National University. His research interests include smart grid, IoT, mobile communication, high-speed network architecture and protocol.