

DESIGN, SIMULATION AND COMPARISON OF SINGLE PHASE BIDIRECTIONAL CONVERTERS FOR V2G AND G2V APPLICATIONS

GANESH M¹, DARSANAM. NAIR², POLLY THOMAS³ & SREEKANTH P K⁴

^{1,2,3}SAINTGITS College of Engineering, Kottukulam Hills, Pathamuttom, Kottayam Kerala, India

⁴Sree Buddha College of Engineering, Pattoor, Padanilam, Kerala, India

ABSTRACT

Meeting peak demand is a major challenge faced by our power sector. Electric vehicle penetration, having V2G capability can reduce the impact of this peak deficiency and can facilitate DSM. Bidirectional converters are the most important part of this V2G capable vehicles. So this paper contains the design, simulation and comparison of 2 types of single phase bidirectional converters suitable for V2G and G2V applications. Simulations are performed using Matlab – Simulink background.

KEYWORDS: DSM, EV, G2V, Mahindra Reva, PWM, SOC, THD, V2G