

AN ANALYSIS OF ENERGY TIME SHIFT PV APPLICATION FOR PREVENTING UNEXPECTED CURRENT ABSORPTION FROM GRID

Chaho Ahn¹

¹OCI, Republic of Korea

A growing attention on energy storage system integrated with PV power generation attracts many system integrators in many countries. Recent South Korea government’s incentive policy for energy shifting operation with battery system has its characteristics in operation aspects. The system should target to charge and discharge PV energy into battery during certain time window. It consists of three major components including battery system with PCS (Power Conditioning System), solar power generation with PV Inverter and national grid. The duplex transmission can be possible between the grid and the battery integrated PV system. At this point, the way forward to grid from battery can only be permitted by the regulation due to securing national grid stability. System provider should prevent this current flow by controlling battery charging with reasonable data communication speed. To counter this issue, battery charging set-power should be varied considering real time PV generation; thus, certain amount of buffer should be taken to charge PV power without reverse current flow. In addition, the performance analysis with different control signal interval of PCS is done to minimize this reverse current issue.

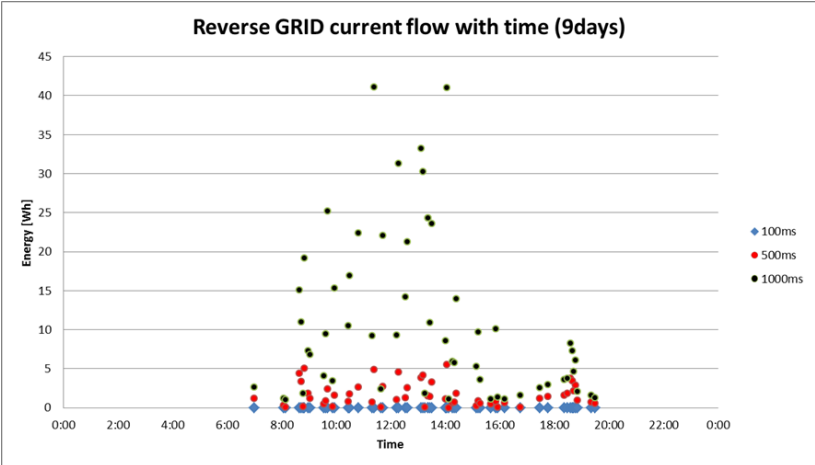


Figure 1: unexpected current absorption with different communication speed of PMS