

Topic: Grid Interaction of Zero Energy Buildings (ZEBs): A Case Study of Southern Norway ZEBs

Abstract: These ZEBs have Building Integrated Photovoltaic (BIPV) system. The energy efficient housing development should consider that a building should produce the same amount of electrical energy as its annual requirements (i.e. ZEB). In future, ZEBs are going to play a significant role in the upcoming smart grid development due to their contribution on the on-site electrical generation, energy storage, demand side management etc. In Southern Norway, a smart village Skarpnes is developed for ZEBs. In this work, the usefulness of ZEBs for load matching with BIPV generation profiles and grid interaction have been analyzed. Impact of building integrated photovoltaic (BIPV) system has been investigated on the distributed network power flow as well as on protection and protective relays analysis. This work will provide to the participants on understanding of various grid interaction parameters suitable to describe energy performance of the BIPV.