

Hybrid (Solar + Wind) Power System and Various ESS (Energy Storage System) Applications

Abstract: Around the world, many governments have strived to increase the share of renewable green energy in their power productions. The main interest has mainly been energy security, increasing prices of carbon based energy sources and minimizing global warming. Concerning the second, global shipping is a major contributor to GHG (global greenhouse gas) emissions, being responsible for approximately 3% of global CO₂ emissions.

The IMO (international maritime organization) is now working to start GHG regulations for global shipping, and is under pressure, e.g. from EU and UNFCCC (United Nations framework convention on climate change), to apply regulations that will have a substantial impact on emissions.

In addition, we introduce the second application of stand-alone PV and Wind power hybrid system. The solar and wind power hybrid generation and ESS will be very important in the isolated island and distant place without electrical power supply. So we demonstrate a cold storehouse for fresh fruits with a proto-type stand-alone PV system with ESS by using smart-phone based on internet networking as the next generation solar power system with various new applications.

Furthermore, we have been developed the eco-friendly power supply for various fast charging and discharging applications based on our own developing new ESS (super-capacitor/Li polymer battery/Chemical Battery). And we introduce the future of ESS applications such as new farming system, micro dust removing eco-friendly bill-board system and so on.