

Sharp develops intelligent power conditioner

February 22 2011



Sharp Corporation has developed the Intelligent Power Conditioner that enables batteries in electric vehicles to be used as storage batteries for the home. Sharp will be conducting exhaustive tests to confirm the safety and reliability of this system, with the aim of making this device commercially available in the near future.

Sharp has a goal to make its Eco House concept a reality. This next-generation house will contribute to reducing CO2 emissions by conserving energy and reducing the amount of electrical power consumed in the home. Under this concept, Sharp is focusing on three themes: [solar cells](#), storage batteries, and DC (direct-current) appliances. In particular, activities have been intensifying to develop a practical [storage battery](#) specifically intended to temporarily store electrical energy generated by solar cells, which can then be used to provide power

for use in the home, for example, during nighttime hours when no photovoltaic (PV) electricity is being generated. In order to make full use of the energy generated by solar cells, it is necessary to use storage batteries to compensate for the deficiency or excess of that energy, which is affected by weather conditions. It is thus important to effectively control multiple energy sources and utility power and supply the home with a stable source of power.

Sharp has now developed the Intelligent Power Conditioner (power inverter/controller) based on power control technology that it has cultivated over the course of developing power conditioners for PV generation systems. With the Intelligent Power Conditioner, solar cells and storage batteries operate in conjunction with utility power to supply electrical energy on a consistent basis. In anticipation of future DC home appliances, this system can also supply DC electricity.



With [electric vehicles](#) (EVs) expected to see widespread use in the coming years, this technology can make use of EV traction batteries as part of a residential power storage system. In proof-of-concept trials, Sharp succeeded in using a battery pack in a commercially available EV

to supply 8 kW of power, which is enough to power electrical appliances in an average household. In addition, the charge controller in the Intelligent Power Conditioner was able to deliver 4 kWh of energy to recharge the electric vehicle battery pack in approximately 30 minutes.

Initiatives to make effective use of renewable energy will become increasingly important as PV generation systems become more widely used. Sharp will be pursuing R&D aimed at the early commercialization of this Intelligent Power Conditioner.

Source: Sharp Corporation

Citation: Sharp develops intelligent power conditioner (2011, February 22) retrieved 18 July 2024 from <https://phys.org/news/2011-02-sharp-intelligent-power-conditioner.html>

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