Solar photovoltaic power generation household air conditioning

Does photovoltaic drive air conditioning potential in cooling season in China?
A generalized study of photovoltaic driven air conditioning potential in cooling season in mainland China. Renewable Energy, 223: 120048. Lygouras JN, Botsaris PN, Vourvoulakis J, et al. (2007). Fuzzy logic controller implementation for a solar air-conditioning system. Applied Energy, 84: 1305-1318.
Can PV generation reduce energy consumption from utility grid?
In this paper, PV generation is utilized with a battery energy storage (BES) for an air conditioner to reduce the impact of energy consumption from utility grid. Recently, air conditioning units are adopted with variable speed drive (VFD) that creates peaky nature of the input grid current due to the AC-DC conversion.
How solar panel cost has accelerated the use of solar photovoltaic (SPV)?
Abstract: The drop in solar panel cost over past decade has accelerated the usage of solar photovoltaic (SPV) in various applications. In tropical countries, air conditioning unit is extensively used for cooling comfort.
Can PV array and Bes reduce power consumption of air conditioning unit?
In this paper, considering such facts and taking the benefit of the VFD technology, an energy management methodology is proposed using PV array and BES to reduce the power consumption of air conditioning unit as well as it feeds excess PV generation to the grid with improved power quality.

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