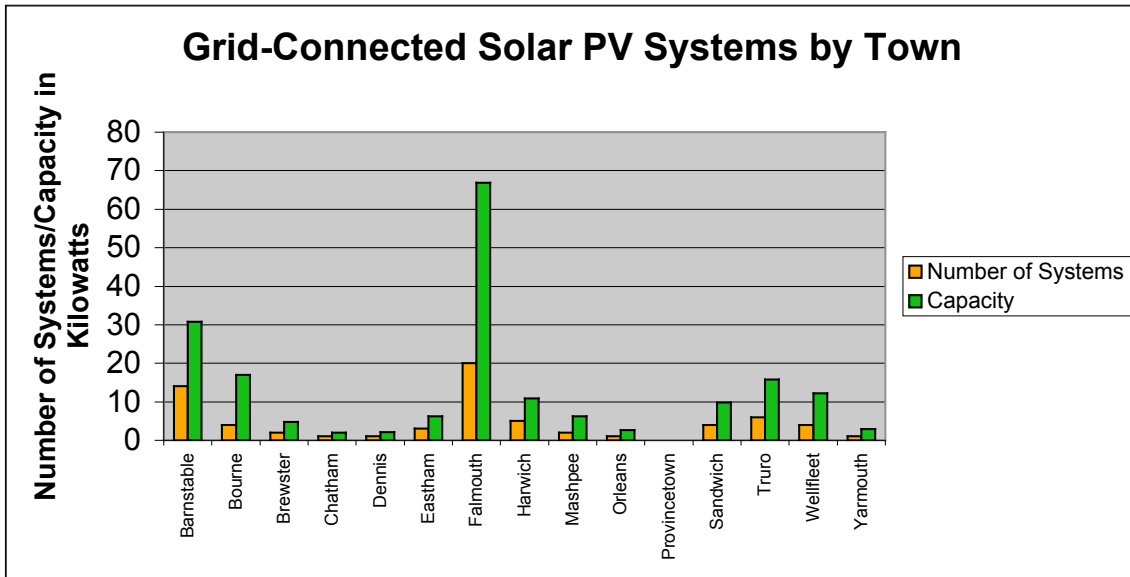
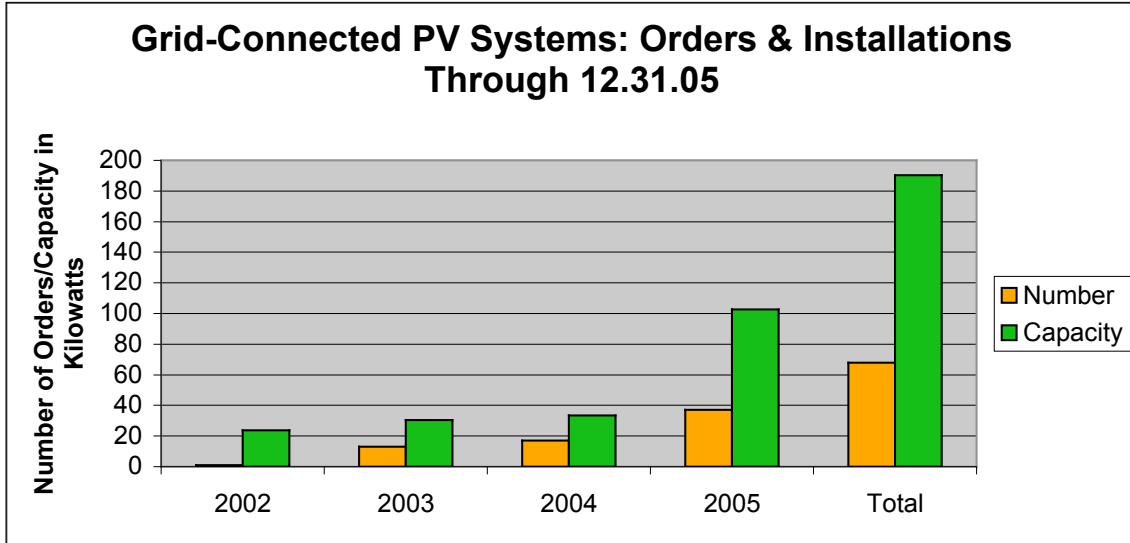


# Grid-Connected Solar Photovoltaic (PV) Systems: Market Penetration and Distribution

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**Summary:** Solar PV systems are helping an increasing number of homeowners, businesses and institutions reduce their dependence on electricity generated by fossil fuels and, when conditions are right, spin their electric meters backwards and infuse Cape Cod's power grid with green electrons. By the end of 2005, 68 grid-connected systems had either been installed or ordered, and their aggregate capacity approached 200 kW. The Woods Hole Research Center's PV array was the first to be ordered, and it remained the largest by far, accounting for more than 10% of Cape Cod's total solar electric capacity and for Falmouth's huge capacity advantage over other towns. A comparably sized 2006 installation at

Cape Cod Community College's new green building promises to change this dynamic. The long-term contribution of PV technology to the region's overall electricity supply portfolio remains uncertain - but for now, it represents the best way for most local consumers to transform natural energy flows into green power.

The local PV installation base is expanding due to a number of factors. These include the growing interest in sustainable energy solutions among consumers, the rising price of electricity, the availability of rebates and tax incentives and the initiative of participants in the Cape & Islands Renewable Energy Collaborative, who are leading multifaceted education, training, deployment and installation programs. For the trend to be sustained, substantial subsidies for this inexhaustible, emissions-free source of power will continue to be required because PV technology remains expensive and the price of electricity generated by conventional sources does not reflect "true cost" considerations.

Sources: Data from Cape & Islands Self-Reliance, Massachusetts Technology Collaborative, and Woods Hole Research Center; analysis by WEEinfo Services.