

Local Solar: Commonalities between Communities that Lead their State in Installed PV

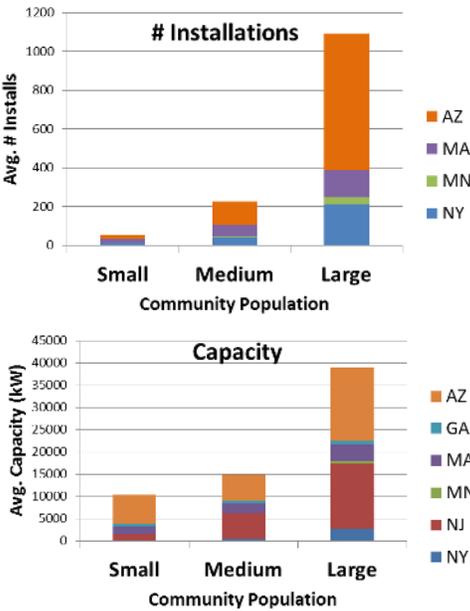
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ABSTRACT

Previous policy research at the National Renewable Energy Laboratory (NREL) shows that strong solar policies at the state level are correlated with higher solar capacity within the state. However, variation in capacity between localities within states indicates the importance of other factors in capacity development. In this analysis, NREL identifies commonalities between communities that lead their state in solar.

RESULTS I

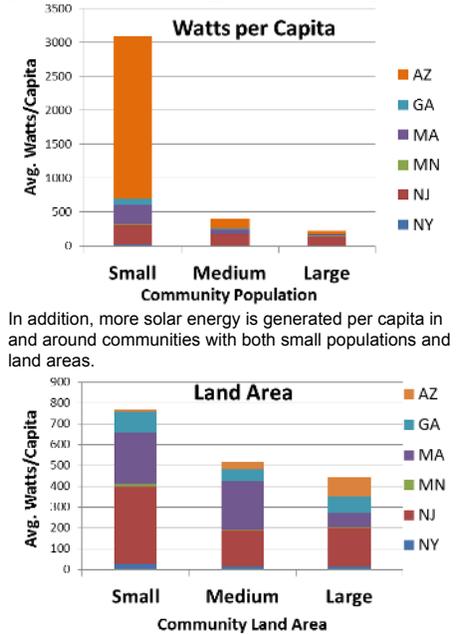
As one might expect, larger cities have more solar installations and generate more solar energy on average than small communities.



"The big push by Georgia Power for solar is just all part of going green. The [3MW] solar farm brings a lot of property tax revenue to the county and has no adverse side effects like pollution, noise, or traffic."
- Ron Garret, Building and Zoning Director, Meriwether County, GA (pop. 21,992) a leading solar community

RESULTS II

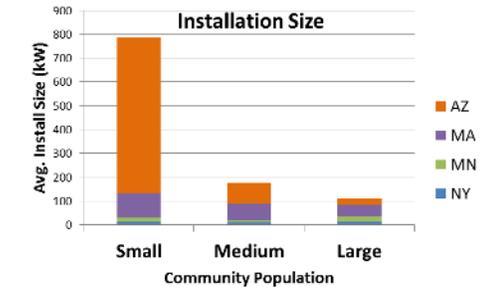
However, on an watts per capita basis, the numbers tell a different story. In each state studied, small communities generate more solar energy per capita than larger cities do.



In addition, more solar energy is generated per capita in and around communities with both small populations and land areas.

Small Communities Have Fewer, but Larger PV Installations

This was the finding in three of the four states where data was available.



Data

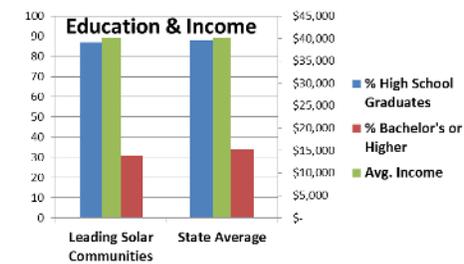
Solar installation data is based on information from state sources and the U.S. Department of the Treasury. Data was grouped by local jurisdiction and compared with local policy data from:

- American Planning Association (APA) Solar Outreach Partnership (SolarOPs)
 - Solar Planning & Zoning Data Search portal
 - American Council for an Energy-Efficient Economy (ACEEE) city rankings
 - Database of State Incentives for Renewables & Efficiency (DSIRE)
 - NREL local policy research
- Data on local population, land area, education, and income is from the U.S. Census Bureau.

Population groups were defined as: **Small:** <20,000, **Medium:** 20,000 – 75,000, **Large:** >75,000

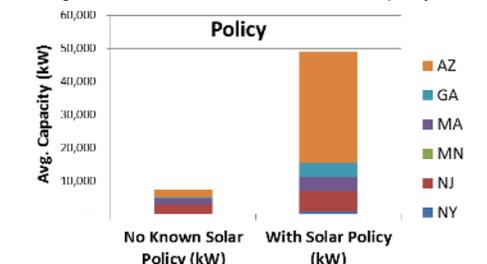
No Correlation between Solar and Income, Education

Communities that lead their state in installed solar capacity or watts per capita were on average at or slightly below state averages in income and education.



Solar Planning Policies Boost Installed Solar

In all six states studied, communities with land use or zoning policy supporting solar had more installed solar on average than communities with no known solar policy.



Case Study: Dartmouth Leads Massachusetts in Installed Solar

The Town of Dartmouth (population 34,032) generates more solar energy than any other community in Massachusetts and twice as much as Boston.

The city set goals to power city operations with alternative energy. When plans for wind turbines encountered barriers, the city found that solar farms were a low impact land use that could provide the needed capacity and were more profitable for the community.

Dartmouth ranks below the state average in income and educational attainment, exemplifying the lack of correlation of wealth or education with leading solar communities.

The city now offsets 100% of municipal electricity use by purchasing generation from two solar farms in town and it funds efficiency projects with surplus solar revenues.



Solar arrays at Dartmouth Solar, the larger of two solar farms that offset the Town of Dartmouth's municipal electricity use. Photo by Dartmouth Solar, LLC.

CONCLUSIONS

- Communities that lead their state in installed capacity and watts per capita do not have higher than average income or educational levels.
- Within the states examined, communities with smaller populations have more watts installed per capita, fewer installations, and larger average system sizes than medium and large communities do.
- Communities known to have land use and zoning policies that support solar development were found to have more installed solar capacity.

Findings suggest local governments achieve the greatest gains in installed PV capacity by focusing on community-scale projects as opposed to rooftop solar.