

Solar for the Rest of Us

The continuing evolution of New Jersey's solar market

ANJEC's 43rd Annual Environmental Congress
September 30, 2016



Pamela G. Frank, VP
Pam.frank@gabelassociates
t. 732-296-0770

www.gabelassociates.com

Overview of Gabel Associates



Gabel Associates is a New Jersey based energy, environment and public utility consulting firm, founded in 1993. The firm serves a highly diverse client base: renewable, energy efficiency, CHP and generation project development; acts as Customer Representatives for public and private sector clients with energy projects; procures electricity and natural gas on behalf of large aggregated energy users; and provides analytical support and expert testimony on legislative and regulatory matters for clients throughout the country.

Highlights:

- Unique economic, marketplace, financial, regulatory, policy, analytical, and technical services in energy and environmental matters;
- Commercially-tested economic and forecasting to support project development and policy analysis;
- Transaction and analytical support to thousands of energy market transactions and over 300 renewable, energy efficiency and traditional generation projects;
- Extensive expert testimony in electric, natural gas and water proceedings: revenue requirements, cost of service, tariff design, policy and industry restructuring;
- Personnel with strong technical, analytical, engineering, and project development experience.
- Developed over 200 solar projects.

Why do we have 59,105 solar systems in NJ? (1.9 GW of solar generation capacity)

Three ingredients:

- Federal tax incentives (FITC + depreciation);
- Full retail rate capture through net metering;
(savings based on retail rates)
- Renewable Portfolio Standard (RPS) enabling an SREC market
(economic value capture of societal benefits)

With over 3.5 million utility accounts, why **ONLY** **59,105** utility accounts enjoying solar?



New Jersey has been at this for almost 15 years.

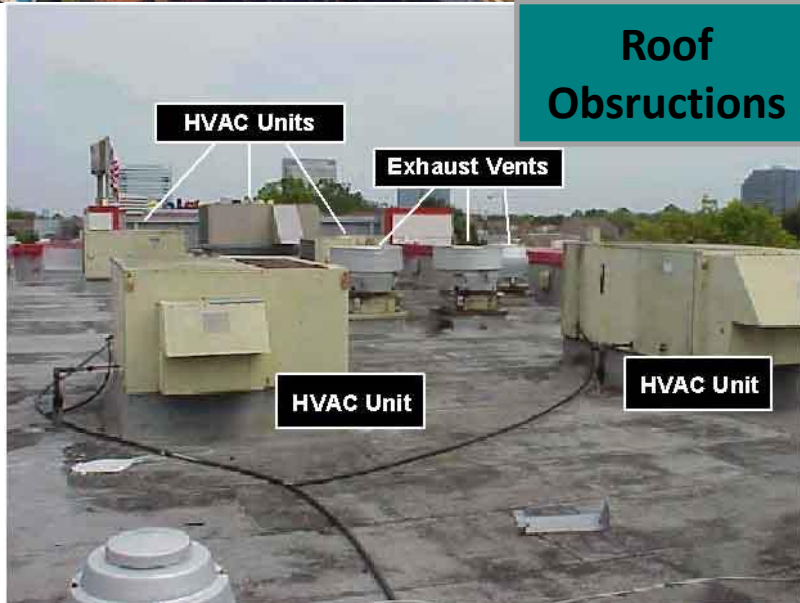
So why only 1.6% adoption?

First and foremost, recognize that the New Jersey solar market is limited by how much solar PV the Renewable Portfolio Standard (RPS) requires in each energy year.

What else limits solar growth today?



Shade



**Roof
Obstructions**



**Orientation,
structural**

RPS, physical barriers and current rules limit access, and adoption. Only 30-40% of buildings can do solar, and many of them not optimally.

What's the solution?

Solution 1: Enable more economic “grid supply” solar in New Jersey

Wholesale solar power plants that sell electricity directly into the wholesale market. Larger systems are most cost effective, and serve everyone.

- Issues:
- +Today SRECs for wholesale projects are restricted to landfill, historic fill and brownfield projects, and at discretion of BPU (RPS is shallow pond);
 - +Wholesale projects tend to be very large, and invoke land use issues and local community opposition.
 - +Electricity value is limited to wholesale rates.
 - +Consumers do not feel “direct benefit” of renewable energy use;\.

What's the solution?

Solution 2: Green up the Government Energy Aggregation product

GEA programs, as they are known in New Jersey, allow the municipality to act as an aggregation agent for residential and small commercial customers in their municipality. Renewable energy can be included as part of energy supply.

- Issues:
- + Additional cost for a greener product
 - + Opt out program, political considerations
 - + Traditional generation still involved; RE comes from out of state.
 - + Not widely available

What's the solution?

Solution 3: Enable Community Solar through billing aggregation

Allow a “shared solar field” to be built in one location and aggregate a number of meters (customers) to “match” the output of the solar field. Use billing credits to allow solar offsets of consumption of participating customers. This allows the economics of larger scale (potentially better than wholesale), medium –sized systems that could be more acceptable to local communities, access for solar energy to all consumers (even if their site conditions don't allow) and a more direct feeling of participation by members.

Best of all worlds, strong economics, local generation, access by all:

Issues: This requires use of the distribution system whenever the solar is generating. Need to ensure the utility is compensated for this use.

Community Solar Trending in US

Maine
New Hampshire
Vermont
New York
Massachusetts
Long Island
Connecticut
Delaware
Maryland
Minnesota
Colorado
Oregon
Washington
Washington DC
California
Hawaii



- Access
- Customer Savings
- Partnerships
- Climate Leadership
- Environmental Justice
- Jobs
- Conservation
- Utility Savings
- Resiliency