International Renewable Energy Academy

Perspectives from Vote Solar

June, 2017

VOTE SOLAR

Vote Solar

- Non-profit U.S. based advocacy organization working to make solar a mainstream energy resource
- Work focused at state legislatures and at utility regulatory commissions
- Formed in 2002, with team members located in California, Colorado, Georgian, Massachusetts, Maryland, Illinois and Washington DC
- www.votesolar.org

Key Issues for Vote Solar

- Protecting consumers right to self supply electricity from solar
- Promoting rate design and compensation mechanisms that support customer economics for solar
- Advancing solar integration on the grid to minimize curtailment and reduce greenhouse gases
- Modernizing the grid to assure growth in distributed energy resources to provide local and system value

Recent Successes

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- Settlement agreement in Colorado requires Xcel Energy to expand consumer access to solar, particularly among low-income communities
- Recent multi-party settlement agreement with Arizona Public Service that assures growth in behind-the-meter solar in greater Phoenix area
- New York extended net metering for residential customers in the first phase of its Value of DER proceeding and opened up new opportunities for community solar projects based on a value stack that includes social cost of carbon adder.
- Georgia Power IRP will result in the installation 1,050 MW of renewable resources by 2021.
- Property tax exemption for solar adopted through ballot measure in Florida
- Community solar bill passed by Nevada legislature to increase access to affordable solar
- California Senate passed Renewable Energy for All bill that will create access to solar for low-income consumers

Principles for Solar Rate Design

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- Rate design should encourage sustainable, cost-effective investments in solar and complementary technologies
- Rate design that emphasize temporal cost-causation are usually consistent with solar deployment
- Rate designs that emphasize high fixed charges generally do not reflect cost causation and disproportionately impact low and moderate income customers
- Value of solar compensation should take into account both short term and long term (life of system) benefits
- Buy all/sell all compensation should be at the option of the retail seller
- Compensation methods should take into account the efficacy of integrating solar with other forms of distributed energy resources (storage)

Solar Trends

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- Installed solar capacity doubled in 2016 (14,762 MW)
- 40% of new generating capacity in 2016 was solar
- 22 states adding more than 100 MW of solar in 2016
- Installed solar capacity expected to triple by 2022
- Rapid growth in solar-by-wire for commercial customers
- Amount of solar currently installed in U.S. – 42.4 GW

Top Solar Markets in U.S.

State	2016 Additions (MWp)	Cumulative Solar (MWp)	Utility Scale GWH in 2016	DG PV GWH in 2016	% of State Production
California	5,096	17,084	16,610	8,402	12.1%
Utah	1,241	1,489	874	150	2.6%
Georgia	1,023	1,432	907	169	0.8%
Nevada	984	2,017	2,302	372	6.4%
N. Carolina	923	3,016	3,854	161	3.0%
Texas	672	1,215	751	357	0.2%
Arizona	657	2,700	3,109	1,655	4.3%
Mass.	406	1,487	707	1,242	5.9%
Florida	404	606	273	249	0.2%
Colorado	382	926	548	471	1.9%

Sources: GTM Research - 2016 Year in Review; February 2017 EIA Monthly Electricity Report

The Future of Solar Integration

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- More complex retail pricing that better differentiates the location and time-based values associated with buying, selling and storing energy
- Greater use of customer resources – motors, pumps, water heaters, air conditioners, electric vehicles – to balance the system
- Retirement of inflexible generation and better use of the existing fleet of power plants, including renewables to provide ancillary services
- Balancing area consolidation for wholesale power markets to increase diversity of resources
- Coordination of transmission and distribution operations in high distributed resource grid.