

Renewable Energy Storage

- ✓ Increases grid reliability, resiliency, integrity, and stability
- ✓ Helps residents and businesses manage electricity use, lowering costs
- ✓ Lowers costs to ratepayers by reducing electricity demand during peak periods when additional supply is needed
- ✓ Helps avoid costly distribution and transmission infrastructure upgrades, reducing costs to ratepayers
- ✓ Provides backup power when the grid is offline
- ✓ Replaces fossil fuel powered backup generators
- ✓ Reduces greenhouse gases
- ✓ Maximizes use of VT produced renewable energy
- ✓ Supports economic growth



OTHER STATES INCREASING RENEWABLE ENERGY, JOBS, & CLIMATE ACTION



- ✓ Massachusetts, New York, California, Nevada, Oregon require energy storage procurement
- ✓ Arizona requires energy storage in utility IRPs / energy modernization plans
- ✓ New Jersey, New York, Maryland, Hawaii, Washington and California offer incentives for energy storage
- ✓ Energy storage qualifies for energy efficiency incentives in Massachusetts

Behind-the-meter policy and market developments, Q4 2018

Nevada

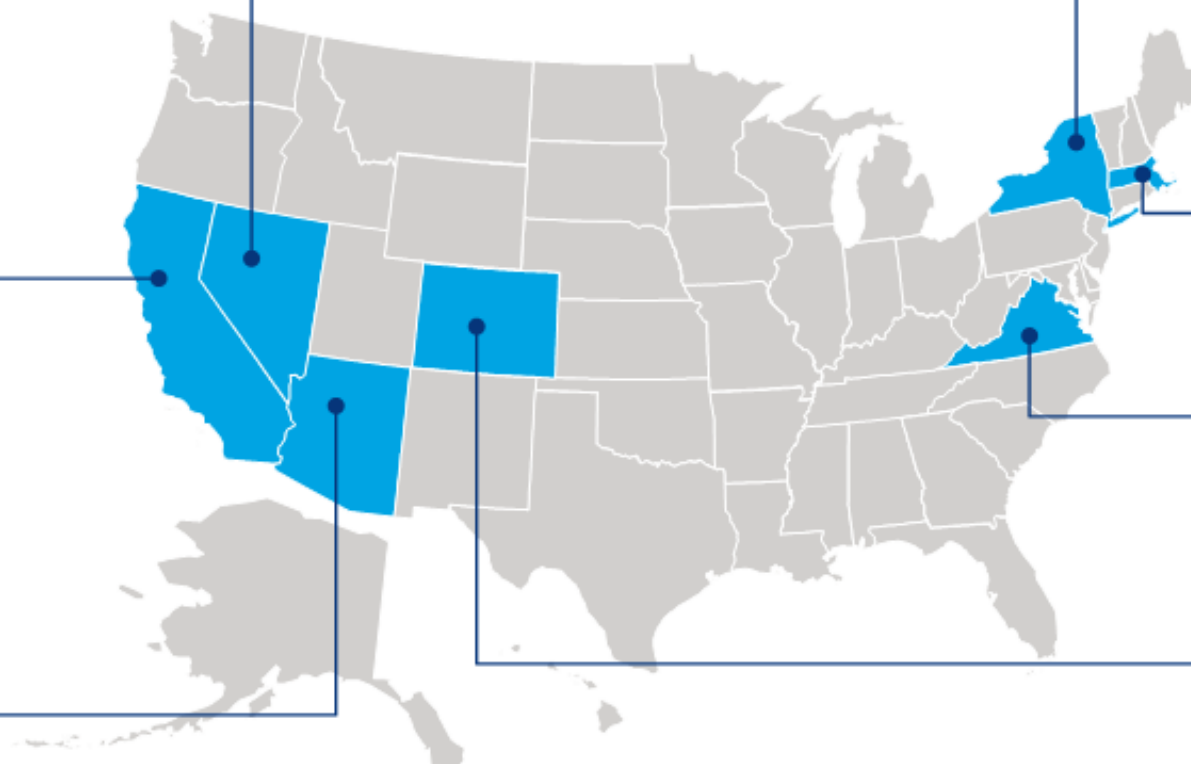
NV Energy launched a storage incentive for both residential and non-residential systems.

California

The **California Building Standards Commission** issued new fire code regulations that greatly impact non-residential storage deployments. The **GHG Working Group** issued a report outlining proposals for the GHG signal under SGIP. **CPUC** denied a proposal for changes to metering requirements of NEM generating facilities with paired storage; it also approved 175 MW worth of storage contracts split between SCE and PG&E. **Governor Brown** signed SB 700 into law, which reauthorizes the Self-Generation Incentive Program through the end of 2025.

Arizona

APS announced its Storage Rewards program to support adoption of residential storage in its territory.



New York

Governor Cuomo announced \$40 million under the NY-Sun program to support storage deployment. **NY PSC** accepted environmental review of the state's storage roadmap.

Massachusetts

The state's **Department of Public Utilities** issued the order finalizing the SMART program..

Virginia

Virginia Department of Mines, Minerals and Energy issued an RFP to evaluate the benefits of storage for the state.

Colorado

Xcel Energy published its 2019/2020 Demand-Side Management Plan, which includes a residential storage demand response pilot.

Federal

Senators Scott and Bennet sent a letter to Treasury Secretary Mnuchin seeking additional clarity on Investment Tax Credit eligibility for storage systems.

FERC 841 compliance requirements

The foundational elements of the order were designed to ensure a level playing field for storage

FERC order 841, required ISOs and RTOs to modify their participation rules to ensure energy storage is eligible to participate in all organized electricity markets. The new rules, with four key areas highlighted below, ensure that storage will be competing without a market handicap, as was identified by FERC. The requirements ranged from the relatively simple, such as requiring minimum size requirements lower at 100 kW than is common, to the complex, primarily designing or defending participation models for energy storage and ensure tariffs accommodate the technology directly while acknowledging the ways storage is different. ISOs generally adopt a “technology agnostic” approach, which they say underpins the foundation of their competitive markets by not giving any technology a leg up, but FERC rules that this approach, when applied too broadly to energy storage, does not take into account the technologies unique nature, and must be changed, at least in this one specific example.

Ensure that a resource using the participation model for electric storage resources in an RTO and ISO market is **eligible to provide all capacity, energy and ancillary services** that it is technically capable of providing

Ensure that a resource using the participation model for electric storage resources can be **dispatched and can set the wholesale market clearing price as both a wholesale seller and wholesale buyer** consistent with rules that govern the conditions under which a resource can set the wholesale price.

Account for the **physical and operational characteristics** of electric storage resources through bidding parameters or other means.

Establish a minimum size requirement for participation in ISO markets that does **not exceed 100 kW**. Also requires that the sale of electric energy from ISO markets to an electric storage resource that the resource then resells back to those markets must be at the **wholesale locational marginal price**.

H. 133 Misc. Energy Bill

- Requires a CPG for energy storage sized $\geq 1\text{MW}$ that exports electricity to the grid.
- Requires PUC to update its decommissioning rule to incorporate energy storage.
- Requires PUC, in consultation with DPS, to report recommendations incorporating aims of energy strategies into net metering rule as well as how to track aggregated DER.
- Defines distributed energy resources, energy storage, and microgrids.
- Consolidates various DPS reporting requirements into the Annual Energy Report.



H. 133 Misc. Energy Bill - Amendments

- Legislative findings
- Amends definition of distributed energy resources and plant
- Require PUC to update its interconnection rule
- Request recommendations on establishing an energy storage procurement target
- Request recommendations on encouraging utilization of Vermont manufactured energy storage equipment
- Include all cross references to 248 (CPG process) for energy storage in Act 250 and municipal regulation.



H. 133 Misc. Energy Bill - Amendments

Need to create efficiency in government operations and certainty for Vermonters generating their own renewable electricity by establishing clear timelines / process and certainty for CPG application review and permitting.

REV proposes language mirroring existing statute related the Public Utility Commission's timelines for review of local telecommunications and wireless projects.

PUC Disposition of Net Metering vs. Telecom Cases

FISCAL YEAR 2018 (7/1/2017 -6/30/2018)

Net Metering CPGs (not inc. registrations)				Section 248a Telecommunications CPG			
Total Filed				Total Filed			
80				154			
Time to Disposition	60 days	6	8%	Time to Disposition	60 days	129	84%
	61-90 days	13	16%		61-90 days	21	14%
	91-180	23	29%		91-180 days	2	1%
	181+ days	19	24%		181+ days	1	1%
	withdrawn/dismissed	5	6%		withdrawn/dismissed	1	1%
	Pending on 2/9/2019	14	18%		Pending on 2/9/2019	0	0%

Data from ePUC. Disposition from date of filing to final order/CPG.

Net metering CPGs = "Applications" and "Petitions" under PUC Rules 5.106 and 5.107.

Only 4 of the pending net metering cases were ordered a hearing.

Recommend adding to 30 VSA § 8001:

(a) The General Assembly finds it in the interest of the people of the State to promote the State energy policy established in section 202a of this title by:

(9) Establishing mandatory timeframes for review and approval of renewable energy systems.

(c) Except for net-metering systems for which the Public Utility Commission has established a registration process pursuant to its authority under section 8010 of this chapter, the Public Utility Commission shall issue a final determination on an application filed pursuant to section 8010 within 60 days of its filing or, if the original filing did not substantially comply with the Public Utility Commission's rules, within 60 days of the date on which the Commission notifies the applicant that the filing is complete, unless the Commission determines that the application raises a significant issue. If the Commission determines that an application raises a significant issue, it shall issue a final determination on an application filed pursuant to section 8010 within 180 days of its filing or, if the original filing did not substantially comply with the Public Utility Commission's rules, within 180 days of the date on which the Commission notifies the applicant that the filing is complete.



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