



## THE FUTURE OF ENERGY STORAGE – BIG BATTERIES!

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“The widespread adoption of storage solutions will be a transformative influence on the current state-of-the-art of solar grid integration and will significantly contribute to an economically viable pathway toward energy efficient and sustainable integration of solar generation at much higher penetration levels than currently possible today”, according to the U.S. Department of Energy.

[HB20-1059 Valuation Of Energy Storage Equipment](#) would provide an incentive for developing more energy storage systems to support our electricity grid in Colorado by enabling the storage infrastructure properties to be taxed similarly to renewable energy (RE) facility properties. It is a League position to support action by appropriate levels of government to encourage RE including through financial incentives.

Energy utilities control the supply of electricity to match the typical daily demand pattern, which is lowest at night, peaks in mid-day, and tapers off again in the late evening. As a greater proportion of energy is supplied by solar generation, the late afternoon supply may exceed demand, meaning solar energy must be managed or curtailed to keep the grid stable, while at night, conventional fuel sources must be used to replace solar. The result is the “duck curve” of solar energy supply compared to demand.

<https://www.youtube.com/watch?v=KwA44fr7apw>

One way to address this timing mis-match of supply and demand is by storing the excess solar energy generated on sunny days. Solar panels or wind turbines provide power for storage in a battery bank for use when the sun isn't shining or wind isn't blowing. Lithium-ion batteries have gained a foothold in the battery market since they are more energy dense, more resilient to excessive discharging and extreme temperatures, and have longer lifetimes than lead-acid batteries [CSU Extension Your Energy Colorado

<https://yourenergy.extension.colostate.edu/grid-vs-off-grid-systems/>].

RE generation systems are valued at 10-50% of actual original cost using non-RE as a reference and a tax rate of 29% times the mil levy is applied. This results in a significant savings in property tax [Colorado Department of Local Affairs,

<https://cdola.colorado.gov/renewable-energy> ]. All RE property is taxable except

residential and business installations and that percent of Community Solar Gardens that are used for residential or government. RE systems with capacity greater than 2MW are assessed by the state; RE systems of less than or equal to 2MW are assessed by local jurisdictions. Local jurisdictions may negotiate fees, taxes and credits or rebates with commercial developers to encourage local installations.

Colorado is considered to be one of the best states for adopting residential and community solar because of tax exemptions and net metering. Wind and solar RE installations currently receive tax incentives that encourage further development

[<https://www.dasolar.com/energytaxcredit-rebates-grants/colorado>].

[<https://www.energy.gov/eere/solar/sustainable-and-holistic-integration-energy-storage-and-solar-pv-shines>].