

## INVESTMENT TAX CREDIT (ITC) AND BULK ENERGY STORAGE

- Grid operators facing high penetration of renewable energy need flexible, economical systems that offer large increments of capacity in order to integrate these carbon-free sources without impacting reliability of service to millions of customers. Bulk energy storage will bring more renewable energy to more people more of the time at less cost than competing options.
- Bulk, or large-scale storage systems, including compressed air energy storage (CAES) and pumped hydroelectric storage (PHS), are commercially-ready technologies and are technically financeable because of their low or negligible technology risk and reliability characteristics; however, the ITC is necessary to prove the economic case and accelerate the development and construction of such projects, and to demonstrate incremental technology advances that improve efficiency, add flexibility, and lower costs.
- The ITC should recognize that bulk storage will play a different role than distributed storage for grid operators. Bulk storage will integrate massive quantities of renewable energy at transmission-level voltages, enhance regional electricity infrastructure operations, and provide ancillary services. Unlike most distributed storage options, the ITC is necessary for bulk storage to kick-start immediate investment in commercial projects, not to reduce technology risk.
- The Texas electric market, which leads the nation in wind generation, illustrates the role for a storage ITC. Renewables integration issues are increasing as Texas' ERCOT power region adds new wind resources resulting in high ancillary service values and in "negative prices" as wind competes with other generation for scarce transmission capacity. While storage can address these issues, the lack of long term off-take contracts with credit-worthy customers undermines the economic case for storage. An ITC would allow for the construction and operation of storage facilities in Texas that could improve these markets.
- The ITC should be structured so that it does not favor one storage option over another. We urge Congress to refrain from putting dollar limitations on projects and avoid technical constraints such as round-trip efficiency. Once the ITC kick-starts the immediate commercial investment, the marketplace will determine which technologies demonstrate the best *economic efficiency*.
- In the U.S., 24,000 MW of PHS currently operates, as well as a 110-MW CAES plant in Alabama. Most of the PHS capacity was added because of the rapid nuclear power build-out of the 1970s. Nuclear units are prohibited from cycling so bulk storage was a means of providing day to day flexibility to utilities faced with constant output from nukes. The rapid build-out of renewable energy facilities poses a different problem. Output is highly variable. Bulk storage will smooth out such fluctuations for the benefit of grid operators and electricity customers.