

Energy Storage – Implementation Challenges

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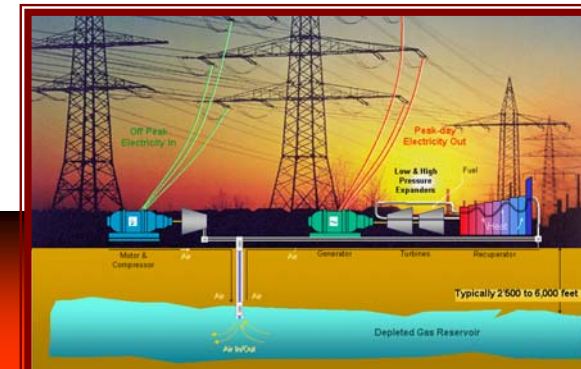
Policy Challenges in Energy Storage Development

- Lack of incentives for development and commercialization
- Uncertain federal and state regulatory terrain

Government can help get this industry off the ground by helping to reduce development risks

PSEG is Developing Energy Storage

- Energy Storage and Power: a strategic alliance between:
 - Public Service Enterprise Group
 - Dr. Michael Nakhamkin, a leader in the compressed air energy storage field for nearly two decades
- Technology and engineering platform to market and deliver second generation compressed air energy storage (CAES2).
- Available to participate in all stages of CAES2 execution from conceptual evaluation to delivery of plant on turnkey basis with business partners.
- Two customers have received DOE funding to develop ES&P technology



DOE Role

- **American Recovery and Reinvestment Act of 2009**
 - \$200M targeted to various storage technologies, 16 projects
 - \$50-\$60M targeted specifically to CAES
 - Loan guarantees available for storage technologies
 - Project financing at competitive rates
 - Projects must have 20% equity contribution
 - Energy Storage and Power (ES&P) had a number of customers apply for CAES projects using our technology ranging from 15MW to 300 MW.

DOE incentives help “kick start” the industry, but more is needed to move new technologies to commercialization

Congress Role

- Federal legislation can provide storage developers with structured, longer term incentives on par with incentives provided to renewable energy developers
 - Incentives that reward low and zero carbon technologies
 - Direct incentives to help advance commercialization
 - S. 1901 /HR 2410 – Storage Technology of Renewable and Green Energy Act of 2009 (STORAGE Act) provides targeted incentives for energy storage systems
 - Removal of disincentives that hinder direct storage development



State Support

Close partnership with states is crucial

- Many permitting and regulatory hurdles are at the local and state level
- State agencies can act as advocates for projects
- The energy and economic development benefits will be realized by states

Conclusion

- Energy storage is an under-appreciated “*piece of the energy puzzle*” that is critical to *enabling the widespread deployment of renewable energy*
- What the industry needs:
 - Investment Tax Credits
 - Removal of Wind Production Tax Credit (PTC) Disincentive
 - Climate change legislation - certainty through a price on carbon
 - Clean Energy Deployment Administration – access to financing for investments in new technology

