

March 30, 2017

Energy Storage Subcommittee Report
Activities and Plans

Presented by the Subcommittee Chair, Merwin Brown, CIEE
To the Electricity Advisory Committee, September, 29, 2016



Energy Storage Subcommittee 2017-2018 Plans

1. Update on High Penetration of Energy Storage Work Product
 1. Face-to-Face Working Meeting March 30-31, 2017
 2. Finish 2017
2. Proposed and Scheduled New Work Products
 1. Thermal Storage: Opportunities and Challenges – Ake Almgren (2017)
 2. Rate, Tariff, and Regulatory Design for Energy Storage: Lessons Learned – Ramteen Sioshansi (2017)
 3. Energy Storage's Role in Modernized Electric Grid "Security" – Janice Lin (2017)
 4. 2018 Biennial Storage Assessment – TBD (9/2018)

Energy Storage Subcommittee

Proposed and Scheduled New Work Products

1. Thermal Storage: Opportunities and Challenges – Ake Almgren (2017)
 1. Consistent with ES subcommittee expansion of energy storage scope from *electricity-in, electricity-out* to *energy storage that interacts with the grid*
 2. First focus on thermal energy storage
 3. Status: Scope defined
2. Rate, Tariff, and Regulatory Design for Energy Storage: Lessons Learned – Ramteen Sioshansi (w/Tom Sloan, volunteer) (2017)
 1. Past EAC work products* have raised an issue: Traditional market- or rate-based approaches present barrier to energy storage.
 2. Purpose is to revisit the issue, survey current practices and proposals, and recommend further work or study.

* Ex: *ARRA Accomplishments and Recommendations for Moving Forward*, published September, 30, 2015

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Proposed and Scheduled New Work Products (continued)

3. Energy Storage's Role in Modernized Electric Grid "Security" – Janice Lin (2017)
 1. Past EAC work product* and others identified energy storage as an element of interest as a special asset class for modernization the electric grid.
 2. The ES subcommittee proposes to examine the potential role for energy storage to provide backup/resiliency/reliability services when the grid is down, and also provide necessary grid operations services to the grid when the grid is up.
 3. Core Work Product Activity: Conduct a facilitated, discussion-oriented session with invited expert speakers, along with industry, academic and public-sector participants from the DOE, Department of Homeland Security, and other federal agencies. The session would be conducted as part of a regular DOE EAC meeting, taking the majority of a "day," probably the June 2017 meeting.

* Ex: *ARRA Accomplishments and Recommendations for Moving Forward*, published September, 30, 2015

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Proposed and Scheduled New Work Products (continued)

4. 2018 Biennial Storage Assessment – TBD (9/2018)

1. Energy Independence and Security Act of 2007 (EISA)

1. Energy Storage (Technologies) Subcommittee of EAC formed in March 2008 in response to Title VI, Section 641(e)

2. Title VI, Section 641(e) has two parts pertaining to this subcommittee

1. Section 641(e)(4): "... every five years ... the Council [i.e., the Energy Storage Technologies Subcommittee, through the EAC], in conjunction with the Secretary, shall develop a five-year plan for ... domestic energy storage industry for electric drive vehicles, stationary applications, and electricity transmission and distribution."

2. Section 641(e)(5): "... the Council shall (A) assess, every two years, the performance of the Department in meeting the goals of the plans developed under paragraph (4); and (B) make specific recommendations to the Secretary on programs or activities that should be established or terminated to meet those goals."

3. The "2016 Storage Plan Assessment Report," approved by the EAC 9/2016, most recently fulfilled both "requirements of EISA Title VI, Section 641(e)(4) and (e)(5)"

4. Approval for 2018 Biennial Storage Assessment slated for September 2018 EAC meeting

EAC Discussion and Suggestions



History of Biennial Storage Program Assessment

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 - a. Energy Storage (Technologies) Subcommittee of EAC formed in March 2008 in response to Title VI, Section 641(e)
2. Title VI, Section 641(e) has two parts pertaining to this subcommittee
 - a. Section 641(e)(4): "... every five years ... the Council [i.e., the Energy Storage Technologies Subcommittee, through the EAC], in conjunction with the Secretary, shall develop a five-year plan for ... domestic energy storage industry for electric drive vehicles, stationary applications, and electricity transmission and distribution."
 - b. Section 641(e)(5): "... the Council shall (A) assess, every two years, the performance of the Department in meeting the goals of the plans developed under paragraph (4); and (B) make specific recommendations to the Secretary on programs or activities that should be established or terminated to meet those goals."
3. The "2012 Storage Report: Progress and Prospects: Recommendations for the U.S. Department of Energy," approved Jan. 24, 2014, fulfilled both "requirements of EISA Title VI, Section 641(e)(4) and (e)(5)"
4. The 2014 Storage Plan Assessment Recommendations of the EAC Report, approved Sept. 25, 2014, fulfilled Title VI, Section 641(e)(5)