

STRAW PROPOSAL

Fiscal Year 2014 Energy Storage Program January 28, 2014

Background and Context

In August 2012, the New Jersey Board of Public Utilities (NJBPU) released a study it had commissioned from Navigant Consulting, Inc. titled “Market Assessment Services to Characterize the Opportunities for Renewable Energy”. In the study, Navigant identified two potential opportunities for energy storage in the near term based on the amount of intermittent renewable energy (RE) installed or anticipated to be installed in New Jersey:

- Shifting renewable generation to more optimal times of the day; and
- Providing some of the additional frequency regulation that may be required with higher levels of intermittent RE

Navigant estimated that the current technical potential¹ for storage associated with load shifting for solar PV is 500 megawatts (MW), with an additional 45 MW of storage representing the current technical potential for frequency regulation².

Two months after the release of the Navigant study, a third important motivation emerged in support of energy storage market development. With Superstorm Sandy knocking out power to millions of New Jersey residents and businesses – and thousands of critical facilities – energy storage is seen as a way of hardening the state’s electric infrastructure and allowing essential services to continue operating during grid outages.

NJBPU Staff recommended through the Comprehensive Resource Analysis³ (CRA) that \$2.5 million be allocated for energy storage incentives in the FY2014 New Jersey Clean Energy

¹ The current technical potential for storage is defined as the amount of storage that is technically feasible to install based on the opportunities generated by the total installed amount of intermittent RE in New Jersey through 2016.

² The Navigant study examined the potential for energy storage in both solar PV and offshore wind development. For purposes of this solicitation, however, the offshore wind numbers have been deducted from the totals, leaving only the solar PV amounts.

³ Adopted in the Board Order dated June 21, 2013 In the Matter of the Comprehensive Energy Efficiency and Renewable Energy Resource Analysis for Fiscal Years 2014-2017 Clean Energy Program, Docket No. EO11050324V. The CRA is a statutorily defined method for the NJBPU to establish clean energy program funding levels via ratepayer contribution through the Societal Benefits Charge.

Program budget. In its FY2014 Compliance Filing⁴, the Honeywell Market Manager Team proposed the following to establish an incentive program for energy storage:

During the 3rd quarter of 2013, Board Staff and the Market Manager will hold discussions with interested stakeholders to develop program guidelines, incentive structure and target market. The findings of these stakeholder meetings will provide valuable input which will be utilized to develop a competitive solicitation process...The proposed solicitation design, incentive levels and schedule that are developed through the stakeholder process will be presented to the Board for its review and approval at one of the regularly scheduled Board Agenda meetings.

To that end, NJBPU Staff and the Market Manager Team convened the inaugural meeting of the Energy Storage Working Group on July 23, 2013 to obtain stakeholder input into the design, timing, process, incentive structure and eligibility criteria for the competitive solicitation. Written comments were requested by August 5, 2013. A second Working Group meeting was held on September 20, 2013 to review the five written comments submitted⁵ and further discuss the elements of the solicitation.

This straw proposal is the result of the ideas and recommendations expressed at those meetings and in the comments. In keeping with the transparent and inclusive nature of NJCEP program development, public comments on this straw proposal will be welcomed and considered. Based upon that input, a final version of the competitive solicitation will be presented to the NJBPU for its review and approval at one of its regularly scheduled agenda meetings. It is the intent of the Market Manager Team to issue the first round solicitation in the second quarter of 2014. The schedule below highlights specific dates in the timeline for issuing the solicitation:

- Jan. 28, 2014: Market Manager issues straw proposal for solicitation concepts; public comment period begins
- Week ending 1/31/14: Market Manager posts a Request for Information (RFI) survey on the NJCEP website with an announcement to the Energy Storage distribution list
- Feb. TBD, 2014: Energy Storage Working Group meeting
- Feb. 27, 2014: Comments due from stakeholders on the straw proposal (Send to publiccomments@njcleanenergy.com)
- Mar. 21, 2014: Market Manager submits solicitation document to NJBPU for approval
- Apr. 23, 2014: NJBPU agenda meeting; Board will vote on final program proposal
- May 2014: Roll-out of first solicitation.

⁴ Adopted in the Board Order dated June 21, 2013 In the Matter of the Clean Energy Programs and Budgets for the Fiscal Year 2014, Docket No. EO13050376V.

⁵ Comments may be viewed at:

http://www.njcleanenergy.com/files/file/public_comments/PublicCommentsSubmittedResponseto72313ESWGmeeting.pdf

The RFI survey step is intended to provide input on anticipated demand for incentives to the NJBPU Staff in the CRA development process that will begin in early 2014 for Fiscal Years 2015 through 2017, as well as into the development of the Solicitation itself. Project developers will be asked to provide information on the type of projects they are proposing, and how those projects meet the evaluation criteria.

Program Goals

- Focus on energy storage projects integrated with existing or proposed behind-the-meter Class I renewable energy resources that can be completed as expeditiously as possible.
- Establish maximum incentive amounts which will allow the limited amount of funds to be committed to a broader number of projects.
- Prioritize facilities that are defined as “public and critical” with the goal of keeping critical public functions operational during power outages.⁶
- Promote the future integration of energy storage technology into renewable energy systems.
- Prioritize energy storage projects which offer the greatest benefit to the New Jersey ratepayer.
- Demonstrate energy storage technology benefits and revenue streams toward developing markets that can be sustained without further ratepayer contribution.

Program Eligibility

The energy storage incentive is funded through the NJCEP’s Renewable Energy Incentive Program (REIP) and thus requires Applicants to meet eligibility standards that are common to that Program regardless of the technology involved. These common standards include:

- The underlying renewable energy system to which the energy storage project is integrated must be interconnected to the New Jersey electric distribution system pursuant to N.J.A.C. 14:8-2.9, and must be a behind-the-meter, net metered project

⁶ NJBPU Staff is in the process of finalizing a definition for public and critical facilities for purposes of developing incentives for CHP and other distributed generation. For the purpose of this solicitation, the following definition will be used which may be subject to change in subsequent proceedings or the next solicitation round: “Critical facilities” means public facilities, including federal, state, county or municipal facilities, non-profit and/or private facilities, including hospitals and communication centers determined to be Tier I or critical infrastructure facilities by the Office of Emergency Management and/or Office of Homeland Security and Preparedness.

sized to produce no more than 100% of the host facility's historic annual electric consumption. (Note: The energy storage system may either be integrated with an existing renewable energy installation or with a yet-to-be-installed renewable energy system that has been approved under either the SRP or REIP.)

- The customer must contribute to the Societal Benefit Charge (SBC) through their utility bills, i.e., as a customer of an Electric Distribution Company (EDC) or Local Gas Distribution Company (LDC) regulated by the Board of Public Utilities.
- The energy storage project provides the greatest benefit to the New Jersey ratepayer.
- NJCEP incentives are contingent upon the Applicant meeting all other program requirements, including but not limited to compliance with the host Electric Distribution Company's interconnection requirements and compliance with all applicable local state and federal laws, permit requirements and regulations.
- Applicant must supply cost information that is accurate and based upon the actual as-built installation cost. Eligible installed system cost includes all key system components, installation, and applicable interconnection costs before *New Jersey's Clean Energy Program* incentive, less any other direct incentives.
- Applicant must provide the source of funds and amount of any other direct incentives received for the project. Staff may recommend that the Board continue the practice of deducting other direct incentives from total installed cost in the calculation of final incentive amounts.

Technology Eligibility

- Storage system must be capable of charging and discharging electricity only. Thermal storage systems (i.e., those that store energy in the form of ice or hot water) are ineligible.
- Electricity placed into storage must be generated by the renewable energy system to which the storage is integrated. The storage device may not be charged by electricity imported from the distribution system or generated by other on-site fossil fueled generators.
- For purposes of load shifting or emergency backup, the storage system must be capable of providing the host facility's full electric demand for a minimum of one hour and a maximum of four hours. Stakeholders are encouraged to offer comments on the maximum time threshold and whether a longer threshold should apply to facilities that are defined as "public and critical".

- Storage systems must utilize proven and commercially available technology. Although the program is technology agnostic, Applicants must provide proof that the energy storage system being proposed will be able to operate for at least 10 years.
- Applicant must be able to demonstrate that the energy storage project submitted under this solicitation can be replicated at other sites; is scalable and can be added to if necessary; and can be able to support different types of renewable energy systems (i.e., solar, wind or biopower); and may provide opportunities for future applications.

Incentive Structure and Maximums

Incentives are a representation of the energy, environmental and societal benefits a project brings to the ratepayers who are funding it and, in essence, place a dollar value on those benefits. At the same time, if properly structured, incentives should provide only the incremental amount required to motivate investment, the tipping point at which a project becomes economically feasible without creating a ratepayer-financed windfall for the developer or end-user.

Creating an optimal incentive structure is a challenging task, particularly when it involves a technology like energy storage that is new to the NJCEP and for which few other state incentive programs exist. An administratively determined incentive in a fixed structure provides some Applicants with more incentive than required and many with too little. Thus, Board Staff proposes to conduct this program as a competitive solicitation, placing the onus on the Applicant to specify the incentive amount necessary to make the project economically viable while recognizing that they are contending with other Applicants for a limited amount of funds.

The limited funding compels Board Staff to establish maximum incentive amounts in order to ensure the widest and most equitable distribution of funds while encouraging Applicants to request only the minimum incentive required for their projects. Applicants may request incentive payments no greater than \$500,000 per project or 30% of the project's total installed cost after deducting any other incentives, whichever is less. Although an entity may submit more than one project, the total incentive request for each NJCEP fiscal year is limited to \$750,000 per entity. For purposes of the per-entity maximum, an entity is defined as the business, institution or public agency that is the site host for the energy storage project(s). The per-entity maximum does not apply to project developers. It will remain in effect for all solicitation rounds within a single fiscal year. Projects that are granted incentive commitments in one solicitation round of a fiscal year may not reapply in the following round, although they are eligible to reapply in a round thereafter.

Although the program does not feature a structured, administratively set, capacity-based rebate, Applicants will propose a fixed incentive amount for their projects. This proposed

incentive amount will be used to adjust their actual incentive in the event that a project is ultimately sized below the capacity level stated in the initial application. For example, an Applicant requesting a \$100,000 incentive for a 100 kW storage system is effectively establishing a \$1.00 per watt incentive for their project. If the system that is eventually installed is only 90 kW, the incentive would be calculated at \$1.00 per Watt times 90,000 Watts = \$90,000.

Applicants will be required to submit a list of additional incentives they anticipate applying for, may have applied for or have received. These additional incentives will be considered in calculating the final REIP incentive for which the project may be eligible.

To encourage the completion of projects as expeditiously as possible, storage systems must be installed within the 12-month approval period to qualify for 100% of the approved incentive amount. Applicants may request one six-month extension beyond the initial approval period due to unforeseen or extenuating circumstances, but will forfeit 10% of the approved incentive amount if project completion exceeds 12 months.

Solicitation Structure and Timing

Based on the program design, approval and implementation schedule proposed on Page 2 of this proposal, there will be only one solicitation round for energy storage in Fiscal Year 2014. Therefore, the entire \$2.5 million budget will be available for that round. In the event the budget is not fully committed, the Market Manager will recommend that the Board carry over any uncommitted funds to the Fiscal Year 2015 solicitation.

The solicitation process will last approximately 60 days. The timeline for each round will be structured as follows:

- Day 1: Posting of solicitation document on NJCEP website and email distribution through energy storage listserv. Written question submittal period opens.
- Day 5: Written question submittal period closes.
- Day 10: Market Manager distributes answers to previously submitted questions to Energy Storage listserv and posts them on NJCEP website.
- Day 30: Deadline for submitting completed applications to Market Manager.

Days 31-40: Market Manager conducts preliminary review of applications for completeness; identifies incomplete applications as such prior to forwarding all applications to the Solicitation Evaluation Committee⁷.

Days 41-58: Solicitation Evaluation Committee meets to review all applications; determining whether incomplete applications should be included in the evaluation process, ranking all applications on the basis of evaluation criteria and recommending incentive awards.

Day 58+ (TBD): NJBPU Staff presents Evaluation Committee recommendations to the NJBPU Board Commissioners for approval at the next regularly scheduled agenda meeting.

Within one week of NJBPU Agenda meeting: All Applicants are notified in writing as to whether their applications have been approved, and if approved, at what funding level.

Application Process and Evaluation Criteria

The Market Manager intends to revise the existing REIP forms – the Application Checklist, Application Form and Technical Worksheet – to reflect the nature of energy storage technology and the fact that the program is a competitive solicitation. A complete list of the application packet components will be included in the solicitation announcement.

Since the energy storage program is a competitive solicitation, the Market Manager will not be able to offer individual assistance to potential Applicants in terms of walking them through the process on the phone or scheduling pre-application meetings to ensure that all the paperwork requirements are met. Instead, the Market Manager will use its mailbox at njreinfo@njcleanenergy.com to receive written questions on the solicitation; those questions, along with the Market Manager's answers, will be distributed to the Energy Storage listserv and posted on the NJCEP website on the 10th day of the Solicitation so that all potential Applicants can benefit from the exchange. Individual consultation with Applicants will be permitted following the issuance of incentive commitments.

Copies of applications deemed both complete and incomplete by the Market Manager will be distributed to all members of the Solicitation Evaluation Committee for their review. It will be at the discretion of the Committee to either evaluate or reject the incomplete applications. The Committee will evaluate the applications based on four criteria related to the program's goals.

⁷ The Solicitation Evaluation Committee shall be comprised of representatives from the OCE, Market Manager, Program Coordinator and such other State agencies as may be appropriate (i.e., DEP). Evaluation criteria will be discussed in the following section.

- Economic:** The Committee will evaluate the cost-effectiveness of projects on the basis of the following:
- Incentive per kW of storage system’s capacity (based on the system’s full rated capacity) and per kWh of projected annual discharge
 - Projected cost savings produced, demand response or ancillary service revenues generated by load shifting or other PJM market participation
 - Other incentives for which the project may be eligible
- Project Readiness:** The Committee will evaluate projects on the basis of their readiness to be installed expeditiously, including:
- Projected completion date with realistic schedule and milestones
 - Identifying and obtaining all necessary permits and interconnection approvals including, but not limited to, local permits, land use, CAFRA, National Fire Protection Agency safety requirements, etc.
 - Providing examples of successful projects with similar energy storage technologies at existing sites with which the Applicant was involved
- Technical:** The Committee will evaluate projects based on:
- System efficiency (amount of power lost between charging and discharging)
 - Maturity and proven success of the technology
 - Commercial availability and “track record” of equipment
 - Performance and reliability of the proposed energy storage system relative to cost
- Resiliency:** The Committee will evaluate projects based on whether:
- The host site is defined as a “public and critical facility”
 - The system incorporates islanding capability
 - The project benefits a large number of people as opposed to a single customer (end-user)
 - The underlying renewable energy system and the facility itself are secure in the event of an emergency

Based upon a discussion at the September 20 Energy Storage Working Group meeting, this straw proposal contains Staff’s preliminary recommendation on the evaluation scoring system that will be applied to the solicitation responses. These scoring values are subject to change prior to approval by the NJBPU and are provided at this time to solicit stakeholder comments. The final evaluation scoring system will not be published in the solicitation but will be established by the evaluation committee prior to the release of the solicitation.

The Evaluation Committee shall review applications on the basis of the four criteria categories below. The categories will be weighted, with the weighting based on a possible total of 40

points that can be awarded to any one project. Funds are expected to be committed to the Applicants who are determined to rank highest on the point scoring system. The NJBPU reserves the right to reject all applications for any reason and to terminate this Solicitation round.

The proposed weighting for each category is as follows:

Category	Weight as % of Total	Maximum Point Total
Economic	30%	12
Project Readiness	25%	10
Technical	20%	8
Resiliency	25%	10
Total	100%	40

Each category will include criteria that are specific to that category. The evaluation of each of those criteria will determine the total score for the category.

The Committee will conduct its evaluation even if only one application is submitted in a solicitation round, or if multiple applications submitted in a solicitation round have a total requested incentive that is less than the funds available in that round. The lack of competition or the availability of funds does not mean that projects will be funded by default. In all cases, the Committee must make a determination that a project has met a minimum score in the evaluation process in order to receive a recommendation from the Committee to the NJBPU for an incentive payment.

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