

REPORT FROM

OFFICE OF PUBLIC ACCOUNTABILITY

Date: March 27, 2023

To: The Board of Water and Power Commissioners



From: Frederick H. Pickel, Ph.D., Executive Director/Ratepayer Advocate

Subject: OPA Report on Commercial Energy Storage to Grid Pilot
Board Agenda of March 14, 2023
Item L.10 Approval of Commercial Energy Storage to Grid Pilot Program
Guidelines, its Corresponding Standard Offer for Commercial Energy
Storage to Grid Pilot Interconnection Agreement, Energy Storage System
>50 Kilowatts, and Pilot Standard Offer Agreement Distribution Voltage
Energy Storage Supply Service Agreement, with an estimated cost of \$4.5
million, and an amount not to exceed \$32 million.

RECOMMEDATION

The OPA recommends that the Board approve the Commercial Energy Storage to Grid Pilot Program and Distribution Voltage Energy Storage Supply Service pilot standard offer. The pilot standard offer contract rate provides a discounted bill outcome in exchange for distribution resources that may meet the evolving shape of load characteristics in a way that is lower in carbon or faster than other systemwide capacity resources.

OPA has recommended to DWP a suite of parameters, discussed further below, that should help the public and the Board evaluate the fairness and efficacy of the pilot before authorizations are increased in the future. Some caution will be needed to avoid distorting competitive effects in charging businesses, and to obtain lower rates for all when vehicle charging grows.

OPA's support for this pilot is thus contingent on modifications that DWP expressed a willingness to incorporate into its proposed pilot. OPA finds the pilot to be reasonable in its objectives: at pilot scale, the program has reasonable foregone revenue, until such time as actual performance can be more completely studied.

DISCUSSION

DWP's pilot standard offer targets a challenging technical problem with intense use of dispatchable resources called upon when the sun sets, as solar resources rapidly decline. This challenge has both local and system level characteristics. This standard offer will help DWP gain experience with centralized control of relatively small local resources, often called "demand response."

The automated demand response of fleet energy storage will be possible because of bi-directional charging of fleet vehicle batteries. DWP can instantly discharge energy previously used to charge vehicles or batteries, and the energy that went into that storage may have used less carbon earlier in the day. DWP anticipates this can contribute to: (i) a reduction in use of marginal system generating resources, as well as (ii) relieve local distribution line voltage strain. Both of these potential contributions may have value to DWP ratepayers in excess of the standard capacity valuations used for system reliability, which DWP plans already incorporate.

OPA's recommendations and discussions with DWP have involved clarifying and limiting the pilot while experience is gained with discharging these small resources. The pilot contemplates projects with individual storage levels of 3MW or less. The key contract suggestions were to limit the contract to 10 years in term and place a clear upper dollar limit on the credits that could be earned.

In addition, OPA recommended that the pilot program:

1. Preserve diversification of fleets during the pilot, and limit any one customer from subscribing a disproportionate amount of authorized battery resources;
2. Exclude City fleets during the pilot, and prepare for a future cost of service study on the City's master plan for electrification of fleets;
3. Clarify the pilot program's gross revenue expected and the net revenue, after credits for discharging energy stored in batteries.¹ This targeted program outcome will better enable the Board and public to balance the fairness with the functional performance during the first 10 years, during which time additional authorizations may be sought;
4. Specify more clearly the types of information the pilot will be producing, for example;
 - a. Information to help evaluate the performance of the distributed resource, from the perspective of system control (i.e., did discharges meet expectations);

¹ Very rough estimates attend pilot programs, and DWP has provided OPA with a program revenue estimate of \$45M, program costs, including discharge credits, of \$32M, for a net \$13M and foregone revenue of 71%. Experience will help inform DWP of how to improve the revenues retained in later editions of this new program.

- b. Information to help evaluate the degree of assistance in managing net peak conditions, both locally and systemwide (i.e., did discharges help);
- c. Information to quantify the degree to which overloads were more economically resolved at distribution (i.e., did it reduce distribution upgrade costs to other ratepayers); and
- d. Information to guide the Board's evaluation of the efficacy of carbon reduction compared to revenue foregone (i.e., was it a good deal for the carbon reduced).²

cc: The Honorable Karen Bass, Mayor
Martin L. Adams, General Manager & Chief Engineer, Department of Water and Power

² OPA has encouraged DWP to use the Energy Imbalance Market data for metric tons carbon per megawatt hour during the pilot, as a readily available proxy for DWP system data under development.