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Cc:

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Subject: R.10-12-007 Storage Cost-Effectiveness Workplan - Conference Call Invite

Storage OIR Parties:

Staff plans to host a call next week (on Tue 2/12 at 1-3p) to update interested stakeholders on the planned efforts (previously referenced in the Staff Interim Report and Jan 14th Workshop) to assess storage cost effectiveness for selected use cases.

During the call, we will discuss:

- scope of the effort
- the approach to be used in analyzing cost-effectiveness with the help of available tools
- brief summary of the modeling tools to be used and their capabilities/limitations
- input assumptions to drive the modeling/analysis effort
- any feedback from stakeholders on above topics

Please note that no actual cost-effectiveness results will be discussed at this time (that will come later in March).

It is anticipated that the subject matter of the call may get somewhat technical and detailed. We will not have time to cover the basic background and the expectation is that the participants have a good familiarity with cost-effectiveness modeling issues in general and concepts involving avoided costs and wholesale market valuation. This is an opportunity for parties to review the overall CE framework (see a brief summary attached below) and major assumptions in advance of the actual analysis.

If you are interested in participating in the call, please RSVP by emailing me directly (please do NOT "Reply All") by Fri 2/8 noon. Additional details and call information will be sent to confirmed RSVPs over the weekend.

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Cost Effectiveness Framework

This section describes the proposed cost effectiveness (CE) “framework” to be used for assessing the CE of selected usestorage cases.

The framework is based on assessing costs and benefits of a proposed use case solution from a “Total Resource Cost (TRC)” perspective using the following approach:

1) Determine and compare lifecycle net benefit on a CDCF[1] basis associated with “operational flexibility” of two “comparable” solutions for a “use case” (one based on conventional technology and the other based on storage technology) using an available modeling tool, subject to model limitations (such as any benefit or cost factors not considered by the model).

2) 2) Make adjustments to modeling input values, if/where possible, for benefits or costs not considered by the model, or qualitatively note the potential impact of these factors.

3) Separately consider, via stakeholder comments, other potential benefits or costs associated with attributes not already considered above.

Net Benefits Comparison: means comparing net benefits (NB) of two “comparable” solutions for a “use case”, with one solution based on conventional technology and the other solution based on storage technology, where NB_A of solution A = TB_A (total lifecycle benefits of solution A) – TC_A (total lifecycle costs of solution A). This is further illustrated below:

	← Time →		
	Yr1	Yr2	YrN

Benefits			
Capacity Revenues for RA contributions			
Energy Market Revenues (includes arbitrage)			
Ancillary Service Market Revenues (regulation, spin, non-spin, ramping, black start)			
Other			
Costs			
Fixed Costs (capital costs, labor, financing, ROE, etc.)			
Fixed O&M (staff, etc.)			
Variable O&M (charging fuel, efficiency losses, emissions, wear & tear, start-up, operations, maintenance, etc.)			
Net Benefit = Benefits - Costs			

Note the following observations regarding NB (net benefits):

- If NB of a solution equals or exceeds zero, the solution is considered cost-effective.
- If $NB_A \geq NB_B$ (even if negative), solution A is considered superior to solution B in terms of CE. However, it should be noted that procurement decisions often involve additional considerations beyond CE in determining the best solution.

[1] CDCF = cumulative discounted cash flow