

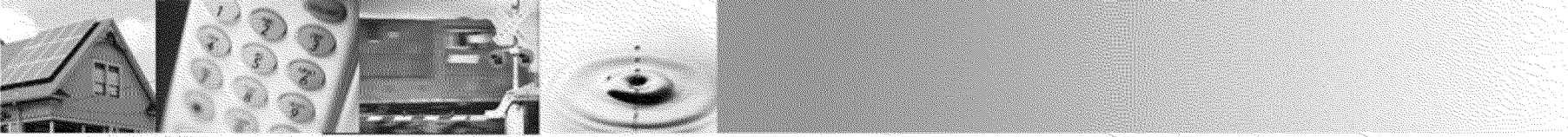


Energy Storage R.10-12-007 Revised Use Cases and Cost-Benefit Analysis Models



Arthur O'Donnell & Alope Gupta
Energy Division
Grid Planning & Reliability
December 3, 2012





Remote Access

WebEx Information

Meeting Number: 744-813-905

Meeting Password: storage

Go to:

<https://van.webex.com/van/j.php?ED=194641317&UID=491292852&PW=NMTc2MmMxMmU2&RT=MiM0>

Call in #:

877-930-0524

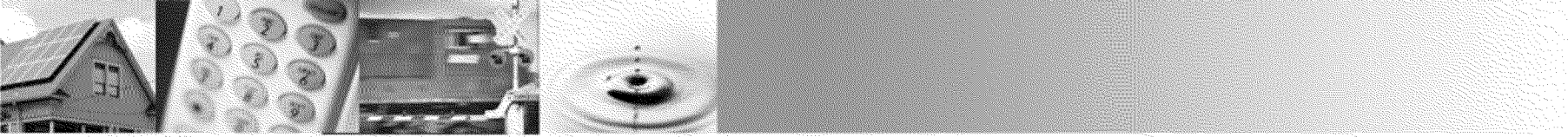
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*Note: *6 to mute/unmute*

Upon entry to the call, please place yourself on mute, and remain on mute unless you are asking a question





Workshop Goals

- To review and finalize Draft versions of Energy Storage Use Cases
- To discuss how to employ models and tools for conducting cost-benefit analysis of specific energy storage Use Cases:
 - DNV KEMA ES Select/Distribution/Storage Modeling
 - EPRI/E3 Energy Storage Valuation Tool (ESVT)
- To review and discuss operational considerations and assumptions that should be incorporated in the analysis.





Agenda for the Workshop

Action Item	Time Allotted	Clock
Introductions and Update	10 minutes	9:30 am – 9:40 am
Demand-Side Use Cases	80 minutes	9:40 am – 11:00 am
Break	15 minutes	11:00 am – 11:15 am
Bulk Use Cases	45 minutes	11:15 am – 12:00 pm
Lunch	60 minutes	12:00 pm – 1:00 pm
On-site Gas-Fired VER Sited	20 minutes 20 minutes	1:00 pm – 1:20 pm 1:20 pm - 1:40 pm
Distribution Use Cases	50 minutes	1:40 pm – 2:30 pm
Break	15 minutes	2:30 pm – 2:45 pm
DNV KEMA presentation	60 Minutes	2:45 pm – 3:45 pm
Discussion and Wrap Up	15 minutes	3:45 pm – 4:00 pm

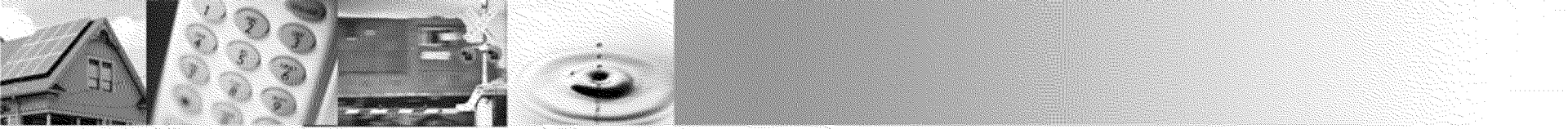




Prioritized Scenarios/Use Cases

<u>Scenario/Use Case</u>	<u>Primary End Use</u>	<u>Lead</u>
<ul style="list-style-type: none"> • Demand-Side Applications <ul style="list-style-type: none"> – PV Charging – Permanent load shift – On-site renewables with storage – Utility Controlled Behind the Meter 	<ul style="list-style-type: none"> End-use bill management Peak shaving, Distribution deferral Peak shaving, bill management With and w/o Market Participation Market Participation 	<ul style="list-style-type: none"> CESA CPUC/Green Frog CESA CESA CESA
<ul style="list-style-type: none"> • Bulk Storage <ul style="list-style-type: none"> – Bulk Storage – Ancillary Services – On-Site Generation Storage – On-Site VER Storage 	<ul style="list-style-type: none"> Energy/Ramping Ancillary Services Energy/Ramping/AS Renewables integration 	<ul style="list-style-type: none"> PG&E SCE
<ul style="list-style-type: none"> • Distributed Storage <ul style="list-style-type: none"> – Distributed Peaker – Distribution Storage – Community Energy Storage 	<ul style="list-style-type: none"> Energy cycling to meet peak Defer upgrades Local service reliability 	<ul style="list-style-type: none"> SDG&E





Elements of Energy Storage Use Cases

1. Overview Section
2. Use Case Description
3. Cost/Benefit Analysis
4. Barriers Analysis & Policy Options
5. Real World Example
6. Conclusion and Recommendations



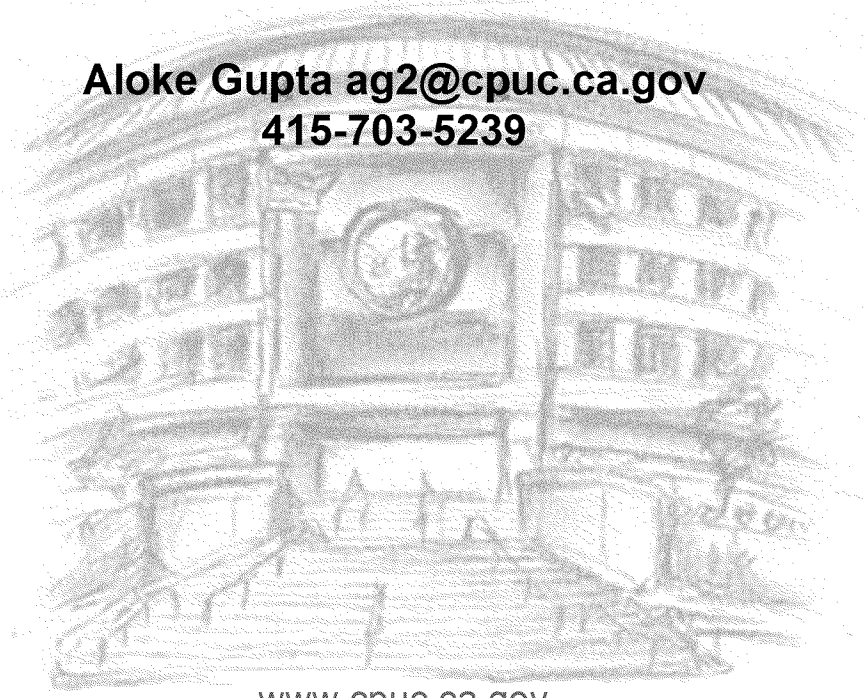


Thank You!

For further information related to R.10-12-007
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