

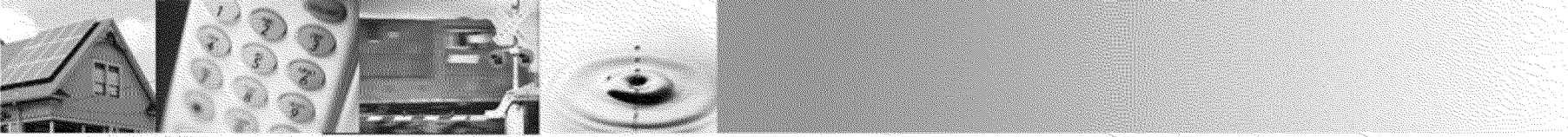


# Energy Storage R.10-12-007 Revised Use Cases and Cost-Benefit Analysis Models



**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>

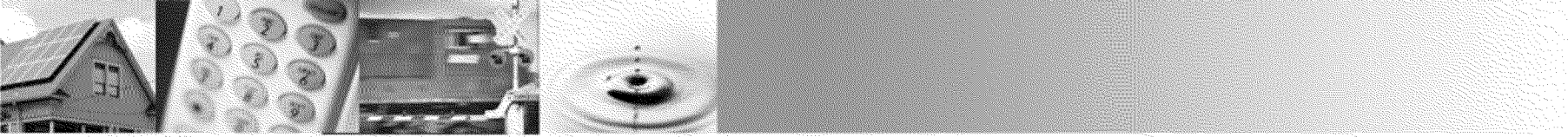
**Call in #:**  
877-930-0524

**Passcode:**  
3494395

*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
<b>Introductions and Update</b>	10 minutes	9:30 am – 9:40 am
Demand-Side Use Cases	80 minutes	9:40 am – 11:00 am
<b>Break</b>	15 minutes	11:00 am – 11:15 am
Bulk Use Cases	45 minutes	11:15 am – 12:00 pm
<b>Lunch</b>	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
<b>Break</b>	15 minutes	2:30 pm – 2:45 pm
DNV KEMA presentation	60 Minutes	2:45 pm – 3:45 pm
<b>Discussion and Wrap Up</b>	15 minutes	3:45 pm – 4:00 pm

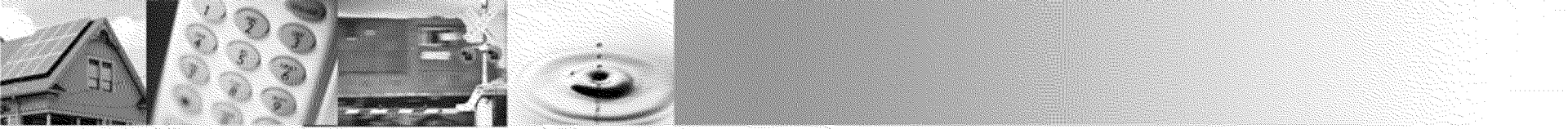




# Prioritized Scenarios/Use Cases

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





# 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



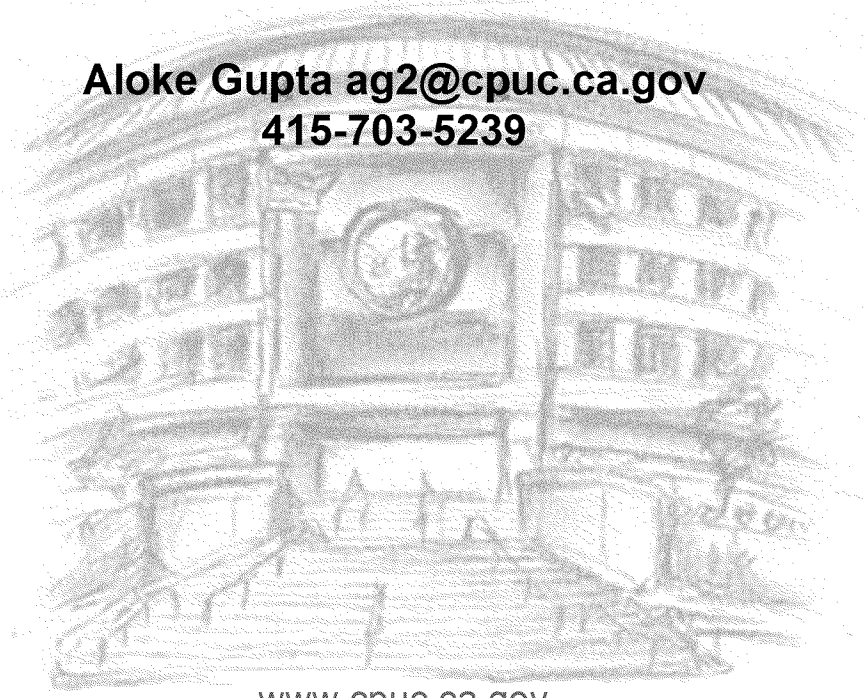


# Thank You!

For further information related to R.10-12-007  
please contact :

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