



# AGENDA

## SECOND ANNUAL CCS Stakeholders' Meeting:

*Deployment of Carbon Capture and Storage  
Through Public-Private Partnerships*

Date: December 9, 2008  
6:00 p.m. – 10:00 p.m.

Location: **Fifth Floor Restaurant**  
**Hotel Palomar**  
12 Fourth Street  
San Francisco, CA 94103

**6:00 p.m. – 7:00 p.m.**

**Cocktail Reception:** Fifth Floor Lounge

**7:00 p.m. -10:00 p.m.**

**Dinner:** MOMA Room, Ninth Floor

Introductions: *Will Johnson, President, Visage Energy*

*Michael Peevey, President, California Public Utility Commission (CPUC)*

*Scott Klara, Director, Director, Strategic Center for Coal, DOE National Energy Technology Laboratory (NETL)*

Presentation: **Feasibility of CCS as a Carbon Mitigation Tool in California**

*Julio Friedman, Lawrence Livermore National Laboratory (LLNL)*

- Discussion of balanced "Carbon Neutral Generation Portfolio" which will need to include back-up fossil fuel generation with CCS, given the intermittency of renewable energy.
- Discussion of California Sequestration Capacity and EOR potential.
- Given California's substantial petroleum coke output, discussion of the quantifiable potential for utilizing this refinery by-product for electric generation with CCS instead of exporting abroad.



# AGENDA

Date: December 10, 2008  
8:30 a.m. – 12:00 p.m.

Location: California Public Utility Commission  
505 Van Ness Avenue, Room 5305  
San Francisco, CA 94102

<b>8:45 a.m. – 9:00 a.m.</b>	<b><u>Welcome &amp; Opening Remarks:</u></b> <i>Will Johnson, Visage Energy</i> <ul style="list-style-type: none"><li>• Discussion of CCS Commercialization and Key Stakeholder Involvement.</li></ul> <i>Michael Peevey, CPUC</i> <ul style="list-style-type: none"><li>• Role of CCS in California’s portfolio of carbon mitigation tools.</li></ul>
<b>9:00 a.m. – 9:30 a.m.</b>	<b><u>Electricity Supply/Demand Observations:</u></b> <i>Scott Klara, DOE NETL</i> <ul style="list-style-type: none"><li>• Can CCS lower the cost of electricity to California Ratepayers in a carbon constrained environment?</li></ul>
<b>9:30 a.m. – 11:30 a.m.</b>	<b><u>CCS Stakeholders’ Roundtable Discussion:</u></b> <ul style="list-style-type: none"><li>• Given AB 32 &amp; SB1368, what should be the role of CCS as a possible carbon mitigation tool in California?</li><li>• Discussion of IOU participation in CCS Demonstration Projects.</li><li>• Accelerating the current timeline and addressing barriers to deployment of CCS in California.</li><li>• Discussion of PG&amp;E’s, SCE’s &amp; Hydrogen Energy’s, and SDG&amp;E’s &amp; SCG’s CCS strategy.</li><li>• Developing CCS for back-up fossil fuel generation, given the intermittency of Renewable Energy.</li><li>• Potential of petroleum coke for electric generation with CCS and EOR.</li></ul>
<b>11:30 a.m. – 12:00 p.m.</b>	<b><u>Discussion Recap:</u></b> <i>Will Johnson, Visage Energy &amp; Dan Adler, President, California Clean Energy Fund</i> <b><u>Next Steps &amp; Closing Comments:</u></b> <i>Michael Peevey, President CPUC</i>

## 3<sup>rd</sup> CCS Stakeholders' Meeting: *Deployment of Carbon Capture and Storage in California*

Date: March 24, 2009  
9:00 a.m. – 2:30 p.m.

Location: California Energy Commission  
1516 9<sup>th</sup> Street, Sacramento CA  
Third Floor Conference Room

<b>9:00 a.m. – 9:15 a.m.</b>	<p><b><u>Welcome:</u></b> <i>Jim Boyd, Commissioner, California Energy Commission (CEC)</i></p> <p><b><u>Opening Remarks:</u></b> <i>Michael Peevey, President, California Public Utility Commission (CPUC)</i> <i>Jeffrey Byron, Commissioner, California Energy Commission (CEC)</i> <i>Will Johnson, President, Visage Energy, Facilitator</i> <i>Carl Bauer, Director, DOE National Energy Technology Laboratory (NETL)</i></p>
<b>9:15 a.m. – 10:15 a.m.</b>	<p><b><u>Carbon Management: Potential R&amp;D Pathways</u></b> <i>Carl Bauer, NETL</i></p> <ul style="list-style-type: none"> <li>• Exploring a carbon management partnership between California and NETL</li> <li>• Need for NGCC demonstration sites to demonstrate novel capture technologies</li> <li>• Challenges for capture and sequestration and coal-based IGCC</li> <li>• Sequestration feasibility partnership</li> </ul>
<b>10:15 a.m. – 11:15 a.m.</b>	<p><b><u>Deploying CCS in California- Opportunities and Challenges</u></b> <i>Martha Krebs, Director of Research, (CEC)</i></p> <ul style="list-style-type: none"> <li>• Discussion of California Sequestration Capacity and EOR potential</li> <li>• NETL/CEC sponsored research through the Western Regional Carbon Sequestration Partnership             <ul style="list-style-type: none"> <li>◦ Large terrestrial and geologic sequestration technical potential</li> <li>◦ Phase II pilot and Phase III commercial demonstration projects</li> </ul> </li> </ul> <p>Addressing key legal and regulatory challenges</p>
<b>11:15 a.m. – 11:30 a.m.</b>	<b>Break</b>
<b>11:30 a.m. – 12:30 p.m.</b>	<p><b><u>CCS as a critical carbon mitigation tool:</u></b> <i>Julio Friedmann, Lawrence Livermore National Laboratory (LLNL)</i></p> <ul style="list-style-type: none"> <li>• Discussion of optimal "Carbon Neutral Generation Portfolio" which should include back-up fossil fuel generation with CCS, given the intermittency of Renewables</li> <li>• Discussion of California Sequestration Capacity and EOR potential</li> <li>• Discussion of technology options suited to the state's generation needs</li> </ul>
<b>12:30 p.m. – 2:00 p.m.</b>	<p><b><u>CCS Stakeholders' Roundtable Discussion (Working Lunch):</u></b></p> <p>Accelerating the current timeline and addressing barriers to deployment of CCS in California</p> <ul style="list-style-type: none"> <li>• Role of CCS in achieving the 2020 greenhouse gas reduction goal</li> <li>• Importance of regional cap and trade negotiations through WCI</li> <li>• Allocation of additional carbon credits for early CCS demonstration projects</li> <li>• Exploring a capture R&amp;D relationship with NETL</li> <li>• Discussion of industry, (utility, cement, refinery) participation in CCS Demonstration Projects</li> </ul>
<b>2:00 p.m. – 2:30 p.m.</b>	<p><b><u>Next Steps &amp; Closing Comments:</u></b> <i>Jim Boyd, Commissioner, CEC</i> <i>Michael Peevey, President, CPUC</i></p>

**CALIFORNIA ENERGY COMMISSION**

1516 Ninth Street Sacramento, California 95814  
Main website: [www.energy.ca.gov](http://www.energy.ca.gov)

**CALIFORNIA PUBLIC UTILITY COMMISSION**

505 Van Ness Avenue San Francisco, CA 94102  
Main website: [www.cpuc.ca.gov](http://www.cpuc.ca.gov)



March 10, 2009

Commissioner Rachelle Chong  
California Public Utility Commission  
California State Building  
505 Van Ness Ave San Francisco, CA 94102-3298

Dear Commissioner Chong:

The California Energy Commission (CEC) and the California Public Utility Commission (CPUC) invites you to join us for the Third Carbon Capture and Storage (CCS) Stakeholders' Meeting: *Deployment of CCS in California* on March 24, 2009 at the California Energy Commission.

The objective of this meeting is to foster dialogue regarding the role of CCS in achieving California's greenhouse gas (GHG) emissions reduction goals as well as the key technical and policy drivers that ultimately will affect deployment of this technology in California.

Large industrial facilities such as power plants, refineries, and cement plants constitute California's second largest source of CO<sub>2</sub> emissions. Geologic sequestration, also known as carbon capture and storage, involves modifying industrial facilities to remove CO<sub>2</sub> from process or exhaust gases before emission and injecting it into secure geologic formations for long-term storage. In the electricity sector, California is aggressively pursuing energy efficiency and renewable energy. As a "bridging" option, CCS could complement these efforts by significantly reducing CO<sub>2</sub> emissions from fossil-based combustion while other long-term sustainable energy solutions are being developed.

Assembly Bill 32 mandates reducing GHG emissions to 1990 levels by 2020 thereby establishing California as a leader in climate change policy. Long-term stabilization of global climatic effects however, will require GHG mitigation in line with Governor Schwarzenegger's goal (Executive Order S-3-05) of an 80% reduction in emissions by 2050. Initial screening of potential geologic storage sites and estimates of geologic storage capacity indicate that California's deep sedimentary basins, particularly those underlying the Central Valley, could store hundreds to thousands of years' worth of the state's industrial CO<sub>2</sub> emissions. Currently, California is involved in a number of ongoing CCS activities: (1) CEC's co-sponsorship of the West Coast Regional Carbon Sequestration Partnership (WESTCARB), which is exploring CCS opportunities in

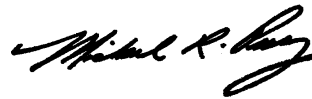
seven Western states and one Canadian province (2) CPUC's approval of Southern California Edison's request to conduct the nation's first feasibility study combining several advanced coal technologies at full commercial scale in conjunction with the Department of Energy and the Southwest Regional Partnership and (3) CPUC's approval of Southern California Edison's request to conduct joint research with Hydrogen Energy International to explore the feasibility of a new Integrated Gasification Combined Cycle (IGCC) power plant that utilizes petroleum coke and captures CO<sub>2</sub> to be transported by pipeline to nearby oil fields for enhanced oil recovery and permanent underground storage.

Attached for your information is the Third CCS Stakeholders' Meeting Agenda. Please RSVP at your earliest convenience to Marlena Elliott, Executive Assistant to Commissioner James Boyd, at [melliott@energy.state.ca.us](mailto:melliott@energy.state.ca.us) or (916) 654-3787 as to whether you will be available to attend.

Sincerely,



James D. Boyd  
Commissioner and Vice Chair  
California Energy Commission



Michael Peevey  
President  
California Public Utilities Commission

Attachment

## Revised Agenda

# California Stakeholders' Collaborative Smart Grid Workshop

*Putting Smart Technologies to Work for California and the Nation  
A Workshop to Design the Roadmap for Applying Smart Grid Simulation and Analysis*

**Date:** March 8, 2011: 3:00 p.m. - 8:30 p.m.

**Meeting Location:** California Public Utilities Commission  
505 Van Ness Ave. Room 5305, San Francisco, CA 94102

**Dinner Location:** Jardinière Restaurant  
300 Grove Street, San Francisco, CA 94102

3:00 p.m. – 3:30 p.m.	<p><b>Welcome/Introductions</b></p> <ul style="list-style-type: none"> <li>• President Michael Peevey, <i>California Public Utilities Commission (CPUC)</i></li> <li>• George Miller, <i>Director, Lawrence Livermore National Laboratory (LLNL)</i></li> <li>• Will Johnson, <i>President, Visage Energy (facilitator)</i></li> </ul>
3:30 p.m. – 4:00 p.m.	<p><b>Designing the Roadmap:</b> <i>High Performance Computing (HPC) and the Smart Grid</i></p> <ul style="list-style-type: none"> <li>• Tomás Díaz de la Rubia, <i>Deputy Director for Science &amp; Technology, LLNL</i></li> </ul>
4:00 p.m. – 5:00 p.m.	<p><b>California Leaders' Call to Action Roundtable Discussion:</b></p> <ul style="list-style-type: none"> <li>• Timothy Simon, <i>Commissioner, CPUC (moderator)</i> <ul style="list-style-type: none"> <li>○ James Boyd, <i>Vice Chair, CEC</i></li> <li>○ Christopher Johns, <i>President, Pacific Gas and Electric Company</i></li> <li>○ Ronald Litzinger, <i>President, Southern California Edison</i></li> <li>○ Jessie Knight, <i>Chairman/CEO, San Diego Gas &amp; Electric</i></li> <li>○ Robert Foster, <i>Board Member, California ISO</i></li> </ul> </li> </ul> <p><u>Discussion Topics:</u></p> <ul style="list-style-type: none"> <li>• Physical Security &amp; Cyber Security on the Grid</li> <li>• Renewable and Intermittency Loading Under AB 32</li> <li>• Smart Grid Integration and Improved End-Use Management</li> <li>• Energy System Analysis for the State of California</li> <li>• Livermore Valley Open Campus and HPC Innovation Center <ul style="list-style-type: none"> <li>○ Workforce Development/Diversity</li> </ul> </li> </ul>
5:00 p.m. – 6:00 p.m.	<p><b>Modeling to Enable Transformation:</b></p> <ul style="list-style-type: none"> <li>• Steven Koonin, <i>Undersecretary for Science, DOE</i></li> </ul>
6:00 p.m. – 6:15 p.m.	<p><b>Closing Remarks</b></p> <ul style="list-style-type: none"> <li>• President Michael Peevey, <i>CPUC</i></li> <li>• George Miller, <i>LLNL</i></li> </ul>
6:30 p.m. – 8:30 p.m.	<p><b>Reception &amp; Dinner</b></p>