



DRA

*Division of Ratepayer Advocates
California Public Utilities Commission*

Joe Como, Acting Director

505 Van Ness Avenue
San Francisco, CA 94102
Phone: (415) 703-2544
Fax: (415) 703-2057

<http://dra.ca.gov>

September 1, 2010

Mr. Carl Bauer
Chairman, CCS Review Panel
In care of John Reed
California Energy Commission
Energy Research & Development Division
Public Interest Energy Research Program
1516 Ninth Street, MS 43
Sacramento, CA 95814-5512

Re: California Carbon Capture and Storage Review Panel Meeting on August 18, 2010

Dear Mr. Bauer:

The Carbon Capture and Storage (CCS) Review Panel has made significant progress thus far, and the Division of Ratepayer Advocates (DRA) commends the process for obtaining the scientific, technical, regulatory, and consumer perspectives that are all needed to inform a forward path for CCS technology in California. DRA is encouraged by the prospects of CCS as a potential cost-effective strategy in reducing greenhouse gas (GHG) emissions in California and worldwide.

This is a follow up to the DRA presentation regarding ratepayer's perspective at the CCS Review Panel workshop of August 18, 2010. DRA appreciates this opportunity to submit comments to the CCS Review Panel to address panelist questions that arose from the presentation.

The California Air Resources Board (ARB) has set a plan for achieving the GHG emissions reductions required under Assembly Bill (AB) 32 and California's cap-and-trade program. This AB 32 Scoping Plan lays out specific reduction measures and their expected emissions reductions counted towards the 2020 target. The expected reductions are estimated as a combination of the cap-and-trade program and each complementary reduction measure. AB 32 also sets more ambitious goals for achieving an 80 percent reduction of GHGs from 1990 levels by 2050.

Where does CCS fit in the AB 32 Scoping Plan?

The reduction measures for capped sectors laid out in the AB 32 Scoping Plan provide 112.3 million metric tonnes (MMT) of carbon dioxide equivalent (CO₂e) of emissions reductions in 2020 through a mix of direct regulation and other complementary policies, such as the Pavley

Standards, Energy Efficiency, and the 33% Renewable Portfolio Standard. The additional 34.4 MMT CO₂e of emissions reductions that are needed in 2020 to achieve the cap are accomplished through price incentives created by emissions allowance prices. Therefore, both required measures and other cost-effective actions will contribute towards the achievement of the 2020 emissions cap.

Uncertainties with CCS

The costs of CCS are uncertain in the current stage of research and development, as there are few large-scale CCS projects to base cost estimates on. Based on a recent study by the U.S. Government Accountability Office (GAO), CCS is less mature than other efficiency technologies.¹ The study noted that only one fully integrated CCS project operating at a coal plant exists in the U.S. - the Mountaineer Plant in West Virginia. The plant aims to capture and store approximately 100,000 metric tonnes of carbon dioxide (CO₂). According to GAO, that project captures CO₂ from only a portion of the plant's exhaust - 20 megawatts (MW), or about 4 percent the size of a typical 500-MW coal plant. Other projects that are being planned are still early in development and therefore the levelized costs over the life of the project are unknown.

There is also uncertainty regarding the application of CCS technology to natural gas peakers, which California will increasingly rely on as we obtain a larger renewable resource portfolio. Additionally, there is the risk of CO₂ leakage at CCS projects and hence that the expected CO₂ reductions are not met in the long term.

DRA does recognize the significant financial challenges present for CCS projects, including the uncertainty about future CO₂ policies and whether there will be an adequate regulatory framework to ensure that CCS projects are given the appropriate credit. Until the ARB cap-and-trade program is implemented in 2012 and the carbon market progresses, there is some additional uncertainty regarding the commercial feasibility of CCS. At this point, since it has not been demonstrated that CCS can be done on a commercial level, research and development funding for large-scale CCS projects should come from a combination of government grants (e.g. DOE, PIER), private industry investments, and shareholder contributions. Given the significant technological risks and uncertainty regarding CCS, DRA supports funding in the form of research and development from all electric utility ratepayers equally. Furthermore, a level of shareholder funding will encourage more prudent investments, and could be used as an additional metric to assess the risk of financing CCS technology or projects.

The cap-and-trade program provides the regulatory framework to allow CCS to compete with other emissions-reducing strategies. Because there is no required measure to reduce emissions through CCS in California, CCS needs to be cost-competitive under a cap-and-trade framework compared against other technologies. If there are other more cost-competitive technologies available to achieve the additional reductions needed to reach the cap, the market created by the

¹ Source: <http://www.gao.gov/new.items/d10675.pdf>

cap-and-trade program, or the price of emissions allowances, will dictate which projects should occur. DRA supports CCS as a strategy to compete with other emissions-reducing strategies.

RESPONSE TO SPECIFIC PANELIST QUESTIONS

In response to presenting some of these positions at the August 18, 2010 CCS Review Panel meeting, DRA was asked to consider and respond to the following clarifying questions:

- What criteria will make CCS projects more palatable to DRA?
- What does DRA need to see in order to support CCS projects in the future?

1) Support for a CCS project needs to be considered within the needs of the system-wide resource portfolio. DRA strongly contends that there must be an operational need for building the power plant. The system demand for the energy that will be produced must be present. The need should be assessed in terms of renewable integration, resource adequacy, and the need for quick-ramping resources. Therefore, criteria that would make projects more acceptable to DRA are contingent upon and related to the system demand for that type of power in California and the CCS projects that have demonstrated to be operationally useful in the context of renewable integration, resource adequacy, and quick-ramping capability.

2) AB 32 provides an opportunity for CCS if it is cost-competitive compared against other generation technologies in conjunction with the cost of GHG emissions reductions costs. To ensure a level playing field, the cost of CCS should be compared to other carbon emissions-reducing technologies using the levelized price of generation produced and in addition, adding the economic benefits of carbon-emissions reductions.

3) The risk to ratepayers of stranded carbon emissions-reducing investments or duplicate investments should be mitigated. Ratepayers should not be obligated to provide additional reductions if they have been obligated to support a project that results in less than expected carbon emissions reductions. One way to do this would be through risk mitigation in the Air Resources Board's reduction requirements for the electricity sector. If the CCS project is not successful and GHG-reducing benefits are not realized, ratepayers should not have to pay twice to achieve those expected reductions. Funding of a CCS project should be treated as an invested expenditure towards meeting California's expected GHG reductions.

DRA is encouraged by the potential of CCS technology to meet California's long-term GHG emissions targets and looks forward to following the development of cost-effective CCS technologies as a strategy to provide low cost carbon emissions reductions.

If you have any questions or would like to discuss this matter further, please call me at (415) 703-1977 or Jordan Parrillo at (415) 703-1562.

Respectfully,

A handwritten signature in blue ink, appearing to read "David Ashuckian", with a long horizontal flourish extending to the right.

David Ashuckian, Deputy Director
Division of Ratepayer Advocates
California Public Utilities Commission