



December 14, 2010

Via Electronic Posting

Kevin Kennedy
California Air Resources Board
1001 I Street, P.O. Box 2815
Sacramento, CA 95812

Subject: Proposed Regulation to Implement California Cap-and-Trade Program
Agenda Item 10-11-1
Comment List: capandtrade10

Dear Mr. Kennedy:

Hydrogen Energy California LLC (Hydrogen Energy) supports the use of cap and trade as a key component of California's comprehensive plan to reduce greenhouse gas (GHG) emissions and appreciates the opportunity to comment on the proposed Cap and Trade Regulation (Regulation). However, the Regulation does not currently recognize or acknowledge the value and contribution Carbon Capture and Storage (CCS) can play in achieving California's AB 32 goals.

CCS is a viable greenhouse gas (GHG) mitigation technology that can be operating in California by 2016 and permanently sequestering CO₂ in significant quantities by 2020. With the correct regulatory structure, this important technology can properly play an important role in California by helping to achieve the state's longer-term goal of reducing emissions by 80% in 2050.

The Board recently released California's "Clean Energy Future" plan in collaboration with the California Energy Commission, the California Public Utilities Commission, California Environmental Protection Agency and the California Independent System Operator. This important policy document, intended to guide the next decade of coordinated strategic planning in the state for the electrical power industry, recognized the value of carbon capture and storage technology by including CCS as one of only five consensus recommendations to emerge after a year of inter-agency work on the document.



I – Background

Hydrogen Energy is developing an alternative energy solution in the form of a low carbon energy project. Hydrogen Energy's initial project will combine a number of existing technologies in a unique way to reduce carbon dioxide emissions from fossil fuel power generation by up to 90 percent when compared with existing plants. The carbon dioxide will be extracted from fossil fuels and transported for use in enhanced oil recovery resulting in sequestration deep underground, leaving hydrogen to be used as the fuel to generate low-carbon energy

Carbon capture and sequestration is a critical tool in the effort to reduce the concentration of global warming gases in the atmosphere. Most experts agree that pursuing this viable, safe and proven means of addressing global warming is essential to the development of a comprehensive strategy to successfully confront the most serious environmental issue of our time. According to the United Nations Intergovernmental Panel on Climate Change (IPCC) Special Report on Carbon Dioxide Capture and Storage (www.ipcc.ch), CCS can play a vital role to help reduce CO₂ emissions globally, contributing around 25% of the emissions reduction required to control global warming.

II – Hydrogen Energy Comments

California is recognized as a leader in the field of climate change policy. This includes its current efforts to support the development of CCS, such as the California CCS Review Panel. Due to the long lead times necessary to design, obtain approvals and build a CCS plant in California, it is vitally important that the initial approved cap and trade regulation acknowledge the valuable role of CCS. Hydrogen Energy is committed to supporting and implementing the goals of AB 32, which we believe includes promoting new technology to reduce the global impact of providing energy to a growing California. Under the spotlight of AB 32, Hydrogen Energy is poised to demonstrate that CCS can be achieved on a utility-level scale to permanently sequester the carbon associated with providing the economy the energy it needs.

With this as a backdrop, Hydrogen Energy respectfully submits the following recommendations that are critically important to the success of promoting reductions in GHG emissions and the advancement of CCS technology in California:

- Recognize Carbon Capture and Storage explicitly within the Regulation by including a definition of CCS in Section 95802;



- Acknowledge that electrical utilities purchasing low or near-zero power generated at power plants using CCS technology provide a ratepayer benefit;
- Prioritize as an early mover technology CCS projects for use of auction proceeds intended to promote low and near-zero GHG technologies.

Detailed Comments

Added definition of Carbon Capture and Storage

A definition of CCS within the regulation is clearly necessary so that as the cap and trade program develops, there is an accepted standard stakeholders can reference. It also provides acknowledgement by the Board that CCS is an accepted strategy in achieving the short- and long-term goals of the program. Hydrogen Energy suggests the following definition as used by the California CCS Review Panel:

Carbon capture and storage (CCS) refers to the capture, or removal, of carbon dioxide (CO₂) at large industrial sources and its subsequent compression, transport, and injection into the subsurface for long term or permanent storage.

Ratepayer benefits to purchasing near-zero carbon electricity

Section 95892(a)(3) states that auction proceeds by an electrical distribution utility shall only be used for the exclusive benefit of retail ratepayers. Hydrogen Energy recommends that the concept of “ratepayer benefit” include assistance in the purchase of advanced near-zero carbon electricity, such as that produced at a power plant employing CCS.

Though California is a leader and the first state to adopt an economy-wide carbon reduction program, others are sure to follow its lead in putting a price on carbon. This change in the basic economic structure of electrical generation creates a financial liability to those utilities that continue to purchase higher-carbon electricity. Therefore, purchasing near-zero carbon electricity has a direct benefit to a utility’s ratepayers and should be eligible under the provisions of section 95892(a)(3) and the Board should require that a portion of these revenues be dedicated to offset ratepayer costs associated with CCS power purchases.

Hydrogen Energy recommends that specific language be placed in either the Regulation or adopting Resolution allowing acquiring utilities to use a portion of their consigned auction revenues to reduce the costs associated with near-zero electrical generation. This policy element will provide for revenues to promote



cleaner, more advanced technology in this major emissions sector without the need to alter the distribution of allowances as outlined in the Regulation. This guidance will also provide the CPUC or Publicly Owned Utilities' Governing Boards the ability to approve such actions.

Prioritize CCS for auction revenues disbursement

The Initial Statement of Reasons (ISOR) contemplates a set-aside of allowances into the Air Pollution Control Fund. The revenues from the auction of these allowances are subject to appropriation by the Governor or the Legislature for AB 32 purposes. The ISOR explains that the auction proceeds could be structured as a competitive grant program administered by ARB or another entity for RD&D projects in zero or low-GHG technologies. Hydrogen Energy supports the Board's proposal for a Low-Carbon Investment Fund if so structured.

Technology is an important element to the AB 32 Scoping Plan and to California's climate change program. A Low-Carbon Investment Fund endowed with these increasing revenues and specifically dedicated to advancing GHG reduction technology would be a shining example of how the cap and trade program could deliver secondary economic and environmental benefits. This is also a tremendous opportunity to showcase California's innovation and high-tech leadership.

Hydrogen Energy recommends that the Board specify that revenue from allowances auctions be set-aside annually to fund the Low-Carbon Investment Fund in general and for CCS projects specifically. Having the acknowledged support of the Board will provide future governor's and legislative members guidance on how these new funds would best be expended in pursuit of the goals of AB 32.

Why Now?

Hydrogen Energy is in the process of a comprehensive regulatory review process to construct the nation's first industrial-scale low carbon power plant with carbon capture and sequestration. The proposed facility will use Integrated Gasification Combined Cycle (IGCC) technology to manufacture hydrogen from petroleum coke (a by-product of the refining process) or blends of petroleum coke and coal, as needed. The hydrogen will be used to generate nearly 400 gross megawatts of base-load low-carbon electricity—enough to power 150,000 homes in the region. Over 2 million tons of carbon dioxide (CO₂) is expected to be captured annually and used for EOR where it will result in sequestration in deep underground geological formations.



Hydrogen Energy is siting this new facility in California because of the State's leadership role in requiring greenhouse gas emission reductions in policy initiatives supported by the Governor, Legislature, and energy regulatory agencies, including the California Public Utilities Commission and the California Air Resources Board. In order to account for and recognize the benefits of a bold project like the Hydrogen Energy project in California, and to send the policy signals that will lead to further investments in low-carbon power with CCS, CARB should specifically acknowledge the benefits of carbon capture and storage.

The sooner CCS is available, the greater the cumulative benefit to the atmosphere. The need for early deployment of CCS is particularly pressing because of the long lead times in the power generation industry. Several years are required to design, permit and build a power plant, with Hydrogen Energy expected to be operational in California during the middle of this decade.

These long time scales mean that the time required to get the technology down its cost curve is correspondingly long. If the first CCS projects are not begun now there will be reduced time for such cost reduction to occur. This will in turn lead to technology being less advanced with higher costs when very large scale deployment is required in the future. Costs are thus likely to be higher for widespread deployment if the first deployment of CCS is delayed.

Thank you for the opportunity to provide these comments on behalf of Hydrogen Energy California. Please contact Tiffany Rau, Policy and Communications Manager-Hydrogen Energy California LLC, at tiffany.rau@hydrogenenergy.com or (562) 276-1510, if you need further information or discussion.

Sincerely,

Handwritten signature of Tiffany Rau

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