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November 12, 2015

Mary Nichols, Chair

California Air Resources Board

1001 I Street

Sacramento, CA 95814

**Re: Draft Concept Paper for Cap-and-Trade Auction Proceeds Second Investment Plan, Support for CCS Demonstration Project**

Dear Chair Nichols:

On behalf of the Clean Air Task Force, I am pleased to submit the following concept paper supporting Cap-and-Trade Auction Proceeds being designated to a carbon capture and sequestration (CCS) demonstration project. CATF was very pleased to see this concept discussed in the ARB’s Draft Investment Plan, released on October 27, 2015, on page 37:

“Carbon capture and sequestration is a potential means to reduce GHG emissions and mitigate climate change, whereby large amounts of carbon dioxide are captured, transported, injected, and stored underground in geological formations such as depleted oil and gas reservoirs and saline formations. Carbon capture and sequestration may be able to divert millions of metric tons of carbon dioxide from emission into the atmosphere and store them underground. Support for carbon capture and sequestration could be used to fund a demonstration project in California to capture a partial stream of carbon dioxide from an industrial facility, like a power plant, and inject the stream into an underground geologic formation.”

As I’m sure you are aware, Clean Air Task Force is a nonprofit environmental organization with offices across the U.S. and in China. CATF works to help safeguard against the worst impacts of climate change by catalyzing the rapid global development and deployment of low carbon energy and other climate-protecting technologies through research and analysis, public advocacy leadership, and partnership with the private sector. We see California as a key leader in this initiative and are eager to be engaged as the Investment process moves forward.

Again, we appreciate your consistent support for deployment of CCS in California as a key tool in meeting our long-term greenhouse gas (GHG) reduction goals. At the Clean Air Task Force, we are excited to partner with you on this effort.

Regards,

John Thompson, Director

Fossil Transition Project

**Carbon Capture & Storage in California**

**Rationale for creating a special project category for natural gas with CCS demonstration support**

Context

California has the nation’s most advanced and ambitious decarbonization program. The State’s leadership in areas such as deployment of wind and solar technologies, demand side management, and low carbon fuels has resulted in substantial progress in demonstrating the commercial viability of these low-carbon technology pathways and has significantly reduced the costs of these options for California consumers. In addition, California’s leadership approach has lowered the costs of these systems for energy users around the world. In this respect, the California policy approach will yield climate dividends on a scale much larger than the CO2 reductions ultimately captured by its programs directly. Leveraging its strategy to enable global reductions is an explicit goal of the State’s climate policy agenda, and so far the results have been promising.

Going Forward

These initial steps from California have resulted in promising technology developments. However, the tasks associated with deep decarbonization (i.e. >70% reduction in CO2) from all sectors will require additional measures that enable the cost effective deployment of a suite of technologies beyond those that are the focus of today’s programs. Pushing the state’s RPS to 50% will continue to drive construction of zero carbon renewables, but without a strategy to eliminate CO2 from nearly 100% of its power sector and a parallel plan to continue driving low carbon fuels and a carbon free industrial sector, California could face a steep challenge in maintaining the pace (and cost-effectiveness) of its progress.

Natural Gas Power Plants with CCS

California must identify complementary technology areas that offer additional CO2 reduction options beyond those exploited by the variable renewable technologies it relies on today. The most promising of these is offered by the application of commercially available carbon capture and storage (CCS) systems on natural gas combined cycle generating stations (NGCC). While no NGCC plants have large CCS systems installed, there is widespread agreement that such technologies could be transferred from other industrial applications (e.g. gas processing, steam methane reforming, coal power CCS) and that such deployment is ready for demonstration. In fact, the California Energy Commission has been researching this topic and its work suggests that that NGCC with CCS is a strategic area of future technology development for the state.[[1]](#footnote-1) Furthermore, the development of such a project is underway in Scotland with Shell and SSE.[[2]](#footnote-2)

Because over 60% of in-state power generation comes from natural gas, focusing on decarbonizing this segment of the system warrants a strong focus by state policy makers. Because the technologies to reduce emissions from NGCC units are commercially available, but not yet demonstrated, investing some of the state’s funds reserved for strategic technology development is sound policy.

*Proposal*

* *Dedicate $100-$500M from the state’s $2.7B allowance fund for large scale NGCC with CCS projects*
* *Leverage this capital in combination with CPUC power purchase agreements as successfully demonstrated with first generation solar projects*
* *Use these projects to drive the completion of a workable regulatory regime that manages the storage elements of CCS.*
* *These actions will enable future projects in the state – by driving down first of kind technology costs – and clear the way for NGCC with CCS to be deployed elsewhere, further reinforcing CA’s global leadership in climate policy.*

1. <http://www.energy.ca.gov/research/notices/2015-04-16_workshop/presentations/> [↑](#footnote-ref-1)
2. <http://www.shell.co.uk/energy-and-innovation/the-energy-future/peterhead-ccs-project.html> [↑](#footnote-ref-2)