



September 1, 2015

Shelby Livingston
Chief, Climate Investments Branch
Air Resources Board
1001 I Street
Sacramento, CA 95814

Re: Comments on Cap-and-Trade Auction Proceeds Second Investment Plan: Draft Concepts for Public Discussion

Dear Ms. Livingston:

AECA appreciates the opportunity to comment on the “Cap-and-Trade Auction Proceeds Second Investment Plan: Draft Concepts for Public Discussion,” hereafter (Investment Plan).

AECA represents the collective energy interests of the state’s leading agricultural trade associations, agricultural water agencies and over 40,000 growers. Formed in 1990, AECA has been at the forefront of developing renewable and clean energy opportunities for the agricultural community in California.

AECA recognizes the importance and urgency of reducing greenhouse gases (GHGs) in California and elsewhere as a strategy to slow climate change. Efficient and effective investments of Cap-and-Trade auction proceeds via the Greenhouse Gas Reduction Fund (GGRF) are an essential part of the strategy to reduce these emissions while maintaining a sustainable business climate in California.

AECA’s comments on the Investment Plan are focused generally on prioritizing effective and efficient investment of GGRF resources and specifically on investment strategies for the agricultural sector including dairy digesters and the conversion of diesel agricultural irrigation engines to electric motors.

AECA’s comments will focus on the following:

- Prioritizing GGRF investments on projects and programs that maximize overall return on investment, i.e. provide “maximum GHG reduction for the GGRF buck.”
- Prioritizing GGRF investments on projects and programs that target and reduce Short Lived Climate Pollutants (SLCPs).
- Increasing GGRF funds for dairy manure digesters, which provide a tremendous overall return on investment, and are necessary to achieve not only the state’s

overall AB 32 goals, its SLCP reduction goals under Senate Bill 605 (Lara) but also help meet the mandate to provide substantial benefits to disadvantaged communities (DACs) as required by Senate Bill 535 (DeLeon).

- Initiating funding to maximize the opportunity to convert diesel agricultural water pumping engines to electricity. Like digesters, conversion of diesel irrigation pumps provides substantial benefits to help the state meet its overall AB 32 goals, its SLCP goals by reducing black carbon (diesel PM) and providing substantial benefits to DACs in the San Joaquin Valley.

Prioritizing Projects That Maximize Overall Return on Investment

According to the State Legislative Analyst's office (LAO), in order to minimize the negative impact of Cap-and-Trade, it is important the GGRF proceeds be invested in projects and programs that "maximize GHG emission reductions for a given level of spending." The Investment Plan also identifies legislative goals for investment of GGRF proceeds and outlines several "Overarching Themes" that should guide investments. Equally important, the Administration has identified "pillars" that are driving the state's comprehensive climate change reduction efforts, including:

- 50% renewable electricity by 2030
- 50% reduction in petroleum by 2030
- Double energy efficiency savings at existing buildings and make heating fuels cleaner
- Carbon sequestration in natural and working lands
- Reduce methane, black carbon and other potent short-lived climate pollutants

The Investment Plan should seek to balance and address these goals while maximizing return on investment to minimize the negative consequences for the business community, including the agriculture sector. As discussed below, investments in dairy manure digesters and diesel-to-electric irrigation pump conversions achieve nearly all of these goals and objectives and effectively and efficiently help the state dramatically reduce GHGs and achieve its overarching climate change policies.

Prioritizing Projects That Target and Reduce SLCP

According to the Investment Plan, although carbon dioxide is the dominant greenhouse gas, "other short-lived climate pollutants may be responsible for as much as 40 percent of global warming experienced to date." Prioritizing investments in projects and programs that target SLCPs will provide climate benefits faster while helping the state realize AB 32 and SB 605 requirements. CARB is in the process of finalizing its SLCP strategy and it is critical that the Investment Plan recognize and provide necessary funding for those strategies identified in the SLCP process.

As discussed in the next sections, both dairy manure digesters and diesel-to-electric irrigation pump conversions target SLCPs, including methane and black carbon. Methane is

not only a SLCP but the second most potent greenhouse gas and should remain a top priority for GGRF investment to reduce its impacts and provide near-term climate benefits. Black carbon is also an important climate actor and reduction efforts not only provide near-term climate benefits, but substantial air quality and public health benefits.

GGRF investments in projects that target and reduce SLCPs, such as dairy manure digesters and diesel-to-electric irrigation pumps, should be a top priority for the Investment Plan.

Increase Funding for Dairy Manure Digesters

Dairy manure digesters are already an integral component of the Investment Plan's Natural Resources and Waste Diversion sector goals. Expanded development of dairy manure digesters will help the state achieve three identified core waste diversion and utilization goals, as follows:

- Reduce methane emissions by 40% by 2030
- Significantly cut methane emissions from dairies
- Utilize organic waste to help meet the state's renewable electricity and bioenergy targets

The Investment Plan should prioritize and recommend substantial long-term funding to build 100-200 new dairy digesters in California over the next five to seven years. There is a direct relationship between the amount of GGRF investment and the number of dairy digesters that can be built to capture and destroy methane. Going forward, the Investment Plan should align its goals for reducing dairy methane emissions to meet AB 32 and SB 605 goals with the appropriate amount of GGRF investment to achieve that goal.

Dairy manure digesters are a proven technology that provides substantial methane reduction. Dairy manure digesters are also one of the most cost-effective methods to reduce GHGs and provide a tremendous return for each dollar of GGRF investment. Moreover, dairy digesters provide substantial other benefits to the state. As a result, dairy manure digesters should receive a commitment of 50-100 million dollars per year for five years (2016-2020 to 2021-2025). The benefits of such a long-term commitment and investment will include, but not be limited to, the following:

- Dairy digesters provide unparalleled return on investment. Dairy digesters return one ton of CO₂e GHG reduction over the life of the project for each \$4 to \$8 of GGRF investment. When the SLCP benefits of methane reduction are also included, the return on investment can be below \$2 per ton over the expected 20 year life of a typical dairy digester project.
- Dairy digesters capture and destroy methane, a SLCP, so additional GGRF investment in this technology will produce climate benefits faster while helping the state achieve a core strategy of the Administration's overall climate policies.

- Dairy digesters provide substantial benefits to DACs and these benefits will increase as digesters are transitioned from waste-to-electricity to waste-to-fuel technologies. Transitioning to waste-to-fuel will maximize digester front-end benefits of capturing and destroying methane with significant back-end benefits of reducing NOx and Diesel PM (black carbon) by replacing diesel fuel with cleaner burning renewable compressed natural gas or RCNG. Dairy waste-to-fuel projects provide a tremendous opportunity to dramatically improve air quality for DACs throughout the San Joaquin Valley.
- Dairy digesters represent an important opportunity to integrate systems across sectors and geographies. As identified in the Concept Paper, funding such integrated strategies will enable the second Investment Plan to obtain the deep reductions needed to achieve the state's long-term climate goals. Investment in dairy digesters not only addresses Natural Resources and Waste Diversion goals, but dairy waste-to-energy and waste-to-fuel technologies also address Investment Plan goals in the clean energy and transportation sectors. These additional benefits include renewable electricity and bioenergy targets as well as reducing the carbon intensity of transportation fuels and furthering CARB's heavy duty and sustainable freight strategies.
- Dairy digesters also provide tremendous benefits to rural communities as a result of their predominant location in the San Joaquin Valley. Additional digester development will bring substantial economic (jobs), air quality and health benefits to rural communities.

Prioritize New Funding for Diesel to Electric Irrigation Pump Conversions

GGRF investment in diesel-to-electric irrigation pump replacement is another innovative strategy to accelerate the advancement of known and proven technologies that reduce greenhouse gas emissions, including SLCs and improve air quality and public health in DACs throughout the Central Valley. Diesel-to-electric irrigation pump conversion was first initiated about ten years ago with the adoption of the Agricultural Internal Combustion Engine or AG-ICE program by the California Public Utilities Commission. Under the AG-ICE program, over 2,400 internal combustion engines were converted to electricity and achieved substantial GHG and criteria pollutant reductions. According to the San Joaquin Valley Air Pollution Control District (SJVAPCD), more than 2,000 additional diesel engines currently remain in operation in the San Joaquin Valley. Conversion of these remaining engines represents a tremendous short-term opportunity that will provide substantial long-term GHG and criteria pollutant benefits as follows:

- Estimated GHG reductions of 500,000 tons per year
- Estimated Diesel PM (black carbon) reductions of 215,000 tons per year
- Substantial NOx reductions and other criteria pollutant benefits

GGRF investments could provide incentives including electrical line extensions and distribution system upgrades needed to facilitate conversion. AECA is committed to working with CARB, SJVAPCD and the state's investor owned utilities to identify specific costs and benefits of GGRF investments as the Investment Plan progresses over the next several months.

Conclusion

As CARB develops this important second GGRF Investment Plan, it is critical that return on investment and projects that provide SLCP reductions be prioritized. Dairy digesters and diesel-to-electric irrigation pump conversions are two such programs. GGRF investment in dairy digesters should be expanded and a five-year funding commitment of 50-100 million dollars per year be made. Diesel-to-electric irrigation pump conversions should be specifically identified in the Investment Plan as a priority strategy while additional cost benefit analysis is conducted and a specific program is developed.

Respectfully submitted,



Michael Boccadoro
Executive Director