

Dairy and Livestock Working Group
 Digester Subgroup
 DRAFT Working Recommendations for Discussion
 September 20, 2018

Commented [A1]: Note: Draft has been reorganized to logically incorporate additional input. Now, the first three items address funding, in the order as follows: (1) general transportation funding, (2) NG/NZE vehicles, and (3) Emerging fuel/vehicle tech. We purposefully did not track changes where material was moved but not materially edited.

Deliverable #4: Transportation Fuel Markets: Recommendations to increase biomethane access to all vehicle fuel markets, including market development incentives, policy development, regulatory or legislative action, and strategies to identify potential fleets and fuel networks/retailers.

Issue	Discussion	Recommendation
A) Many current and emerging attractive pathways exist to replace conventional vehicle fossil fuels with sustainable alternatives derived from dairy manure outputs and emissions.	CARB has established a three-year investment plan for Medium- and Heavy-Duty Vehicles (MHDV) in the Low Carbon Transportation which calls for approximately \$685 million/year. Such funding covers demos, pilots, and commercial incentives and includes ZE and NZE technologies CARB, 2017).	<ol style="list-style-type: none"> 1) The legislature should allocate around \$700 million annually in a multi-year application for MHDVs in the Low Carbon Transportation program consistent with CARB's investment plan 2) Funding for vehicles that use renewable fuels should first benefit fuels that are developed from in-state projects. 3) Scrappage and outgoing vehicle age requirements should be relaxed when possible.

Issue	Discussion	Recommendation
B) The conversion of dairy biomethane to transport fuel is an essential strategy for expanding dairy digesters due to the financial conversion of LCFS credits and Renewable Identification Number (RIN) credits. At this time, the revenue from the sale of the credits associated with vehicle fuel is required in order to develop projects not reliant on state subsidization of energy prices. However, this strategy requires expanding the market for RNG in transportation in California, which today	<p>Commercializing the market for NG trucks requires establishing a “fully functioning” NG truck market. This means a market that has the same elements as the market it is intending to replace.</p> <p>The NG truck market currently lacks both a well-functioning secondary market and state programs that support the maintenance of NG truck assets on a broad and programmatic scale. Each of these market elements must be considered and accounted for by regulators to ensure the successful long-term commercialization of the NG truck market.</p>	<ol style="list-style-type: none"> 1) CARB should ensure that funding for Low NOx trucks fully covers the incremental cost premium over new diesel trucks for in-state fleets from diesel to NG. 2) CARB and other state agencies should establish a multiyear investment framework to expand the market for California-produced dairy RNG in the transportation sector, and encourage that RNG used for transportation fuel in California be sourced from California. Such a framework should aim to expand market demand to at least match the volume of RNG that can be produced by the California Dairy industry as soon as possible. 3) Such funding should be restricted to only funding NG trucks equipped with engines

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<p>can be done by increasing the use of CNG/LNG trucks. Such trucks come with an initial purchase “premium” over and above diesel which discourages fleet operators from converting their operations from dirty diesel to much cleaner NGVs. To ensure that the market for RNG in transportation expands, which must occur if Dairy biomethane projects are to succeed, fleet operators should be compensated for the premium associated with the first-time purchase of CNG/LNG vehicles.</p>	<p>Commercial vehicle operators must provide competitive transportation rates to be successful. If forced to absorb the premium associated with the purchase of medium and heavy-duty NGVs, it is difficult for commercial fleets to charge competitive shipping rates compared to their diesel-fueled competitors. To ensure that commercial fleets that choose RNG remain competitive, thus increasing the demand for dairy RNG, mechanism should be put in place to level the purchase costs of NGVs.</p>	<p>that meet or exceed the ARB Optional Low NOx standard. Priority should be given to the lowest emission technologies available for each vehicle category.</p>
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<p>C) Expanded use of dairy methane for electric and hydrogen technologies that achieve greater benefits than natural gas are possible given current technology and expanded LCFS credits available, and should be given further public investment and support.</p>	<p>It is important to build out advanced technology to make further improvements in the later years of the regulation period.</p>	<p>1) Strategies should be developed to incentivize investments for the production and delivery of dairy-manure-derived renewable electricity, hydrogen, DME, and other biofuels, as well as to allow those technologies to generate LCFS credits if and when they become sufficiently commercialized.</p>

Issue	Discussion	Recommendation
<p>D) Currently, NZE and ZE trucks weigh up to around 2,000 pounds more than conventional diesel trucks</p>	<p>Current legislation for a 2,000-pound weight exemption for ZE and NZE trucks is pending in the legislature, co-sponsored by CALSTART and CNGVC (AB 2061, Frazier)</p>	<p>1) The state should provide and expeditiously implement a 2,000-pound statutory weight exemption for ZE and NZE trucks.</p>

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<p>E) RNG markets in California are approaching saturation. In order to further increase utilization and foster the capture of dairy manure emissions and conversion into fuel in the near term, more demand is needed. However, the state is pursuing policies that are depressing NG demand markets in transportation. For example, ARB is considering a 100% zero-emission procurement requirement for transit bus purchases that, if approved, would reduce the current demand for RNG from natural gas buses.</p>	<p>Heavy-duty diesel trucks are responsible for a vast portion of NOx and particulate pollution in the SJV. NZE 12L trucks are commercially available now and can reduce this problem by 90%. ZE alternatives with the same range are not yet commercially available.</p> <p>The ultimate goal is to reduce NOx emissions and improve air quality in California. It is important to act quickly and adopt available and commercially viable clean technologies (Near-Zero CNG engines with RNG fuel) now. This does not eliminate the need for continued investment in other technologies, but does provide the most air quality benefits today.</p> <p>This issue is very important as incentivizing supply through digester grants without incentivizing demand could have negative consequences for the RNG market. Incentivizing demand through conversions from diesel to CNG is an obvious solution. Taking it a step further, new CNG equipment vouchers could stipulate locally sourced RNG. More conversion funding through the local air districts with this stipulation could be helpful.</p>	<ol style="list-style-type: none"> 1) If and when the state requires MHDVs using natural gas to become zero-emission, and if that transition causes significant loss of RNG demand, the state shall seek opportunities to make up the lost RNG demand with other vehicle categories or uses that create beneficial emissions reductions. 2) CARB shall bolster demand for RNG in transportation in the near term by supporting funding to cover the incremental cost of NZE MHD NGVs, and over the long term by supporting the development of policies and strategies to enable dairy RNG to produce LCFS and RIN credits when the RNG is used to generate electricity or hydrogen for transportation applications in the long term

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F) Investors discount the potentially high value of LCFS credits for fuels derived from dairy manure, citing market uncertainty. This diminishes prospects for in-state projects to capture dairy emissions and generate renewable fuels. The issue is addressed in deliverable 3.	See deliverable 3.	See deliverable 3.