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June 23, 2022

Rajinder Sahota
California Air Resources Board
1001 I St.
Sacramento, CA 95814

Re: True North Renewable Energy Comments on 2022 Scoping Plan

Dear Ms. Sahota:

True North Renewable Energy, LLC (TNRE) appreciates the opportunity to comment on the Draft 2022 Scoping Plan Update. We appreciate recognition of the need to do more to cut potent short-lived climate pollutant (SLCP) emissions, especially methane, and we encourage you to take additional steps to do so, especially from landfills and organic waste management. In particular, we encourage you to highlight the benefits associated with anaerobic digestion and advance proposals to ensure that sufficient anaerobic digestion infrastructure is developed to meet the State's goals and timelines for organic waste diversion, renewable gas procurement, and overall greenhouse gas reductions.

About True North Renewable Energy, LLC

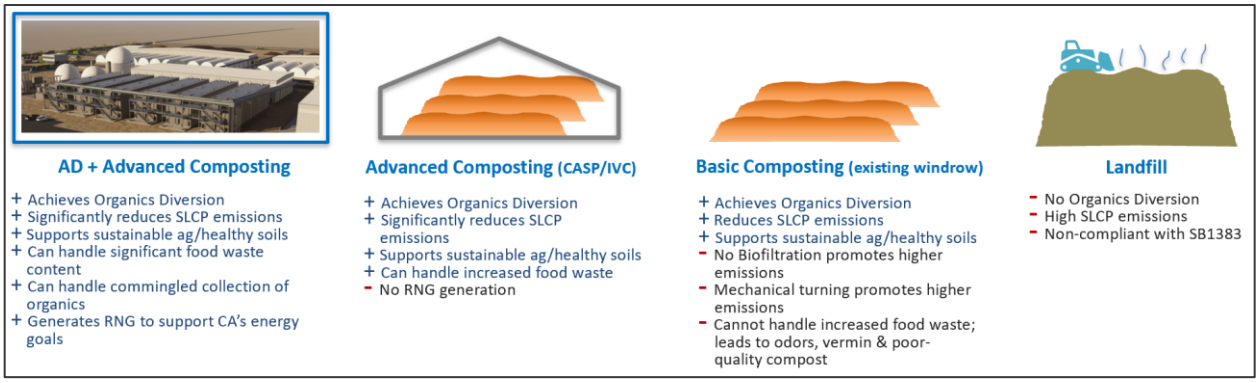
TNRE develops, builds, and operates state-of-the-art organics-to-renewable energy facilities, including large scale, regional high-solids anaerobic digestion infrastructure. These facilities reuse and repurpose organic resources diverted from landfills to create beneficial, sustainable products, including biomethane and soil-amending compost. TNRE is focused on partnering with communities in California to meet local and state requirements for diverting organic waste from landfills and cutting SLCP emissions, while generating renewable natural gas and compost to help decarbonize other sectors of the economy and meet California's climate goals.

Anaerobic Digestion with Composting Offers Highest Value Organics Solution
Prioritize Anaerobic Digestion as the Highest Value Organics Diversion Strategy

As California considers organics waste management, there is a clear hierarchy of value, as illustrated in the figure below. Landfilling, of course, offers the lowest value. Landfilling is a source of SLCP emissions and other nuisances, although well-controlled landfills may provide renewable natural gas to help decarbonize hard-to-abate sectors. Composting is better, which supports SB 1383 goals and provides compost for healthy soils. Conventional windrow composting is not well-suited to managing food waste, however, and only offers a partial solution for achieving the diversion requirements under SB 1383. Anaerobic digestion provides a

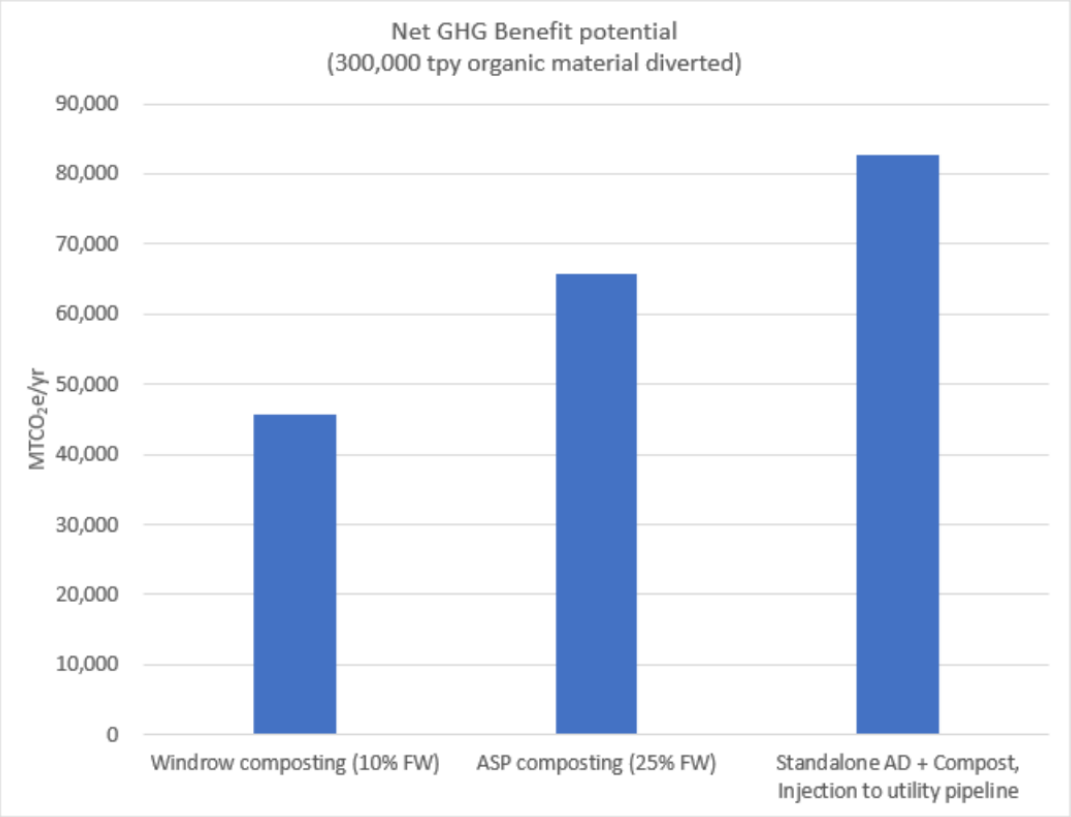
more flexible approach – which can accommodate high levels of food waste and produce renewable natural gas to meet the State's Renewable Gas Standard under SB 1440 and help to decarbonize industry and other hard-to-abate sectors.

The highest value use of organics comes from anaerobic digestion with composting, like the systems TNRE develops. TNRE's project can accommodate any mix of organics – with variable and high or low levels of food waste – and offers a complete solution to SB 1383's organics diversion requirements, while also producing renewable natural gas and compost to decarbonize other sectors. TNRE also develops large, enclosed projects with state-of-the-art emissions and odor controls. This supports economies of scale and means that the State could meet its SB 1383 goals with just about a dozen new facilities of the type TNRE develops, rather than the 50-100 identified in the SLCP Reduction Strategy.



Hierarchy of disposition and use of organic waste, from most preferred (left) to least preferred (right).

In order to better understand these differences, TNRE recently completed CARB's greenhouse gas quantification calculator for the State's organics programs. The results clearly demonstrate anaerobic digestion to provide the most beneficial greenhouse gas and criteria air pollutant outcomes among organics diversion strategies (see Figure below). For example, a project like TNRE's that would produce renewable natural gas via anaerobic digestion of organic waste, inject the gas into the pipeline, and also produce soil amending compost would deliver nearly twice as many greenhouse gas (GHG) emission reductions as conventional windrow composting, using CARB's baseline assumptions, and about 30% more GHG emission reductions than aerated static pile (ASP) composting, assuming practical food waste limitations with windrow composting and ASP composting. What's more, the anaerobic digestion solution would also deliver approximately 4-12 times greater NOx reductions than ASP or windrow composting, respectively. Even assuming similar amounts of food waste in each process (although composting may not be well suited for handling high amounts of food waste), anaerobic digestion performs better on these metrics.



This isn't to say that composting isn't an attractive climate solution, but anaerobic digestion delivers on a greater array of the state's climate priorities and offers better emissions benefits. Given the differentiating factors between these climate solutions and organics diversion strategies, we think is imperative that each time CARB, CalRecycle or others reference "composting" as an SLCP or other climate solution, it should also list and define "anaerobic digestion."

Success Requires Developing Required Infrastructure & Highlighting Diverted Food Waste as an Energy Source

Despite the tremendous promise of anaerobic digestion, and the need for it to meet CPUC's Renewable Gas Standard and deliver renewable gas for industrial decarbonization and other applications, infrastructure development remains a challenge. Many jurisdictions and haulers are opting for the lowest cost compliance options for infrastructure, which primarily includes existing composting facilities. While this is understandable from their perspective, it does not support the new infrastructure needed to meet the goals of SB 1383, CPUC's renewable gas requirement, or industrial decarbonization identified in the draft Scoping Plan. We need jurisdictions, haulers, project developers and state agencies to work together to develop the

dozens of new composting and anaerobic digestion facilities that CalRecycle and CARB have identified will be needed to achieve the State's organic waste and climate change goals.

This should be a state priority, and we hope that CARB will highlight it as such in the final Scoping Plan, including a commitment to work with CalRecycle and other agencies to convene stakeholders to quickly work through challenges and identify solutions to ensure the rapid development of infrastructure needed to successfully implement CalRecycle's and CPUC's regulations.

We also encourage the agencies to work on education and outreach efforts to help support California's households and businesses as many of them begin sorting organic waste from other waste streams for the first time. In particular, while many households are already accustomed to separating yard waste, we believe a targeted effort to ensure households separate food waste as well – which has a higher energy content than other organic waste streams, such as yard waste, and therefore tends to generate more methane in landfills than other organic waste streams – will deliver important, low cost emissions benefits that will support compliance with CalRecycle's regulations and SB 1383. We hope CARB will highlight the need to ensure food waste is diverted from landfills as another key priority in the final Scoping Plan.

Recommendations for Final Scoping Plan

We strongly support recognition in the draft Scoping Plan that diverting organic waste from landfills is the best way to reduce methane emissions from the waste sector, and we appreciate and support many of the proposed *Strategies for Achieving Success* in the waste sector, especially:

- Expand markets for products made from organic waste, including through recognition of the co-benefits of compost, biochar, and other products.
- Invest in the infrastructure needed to support growth in organic recycling capacity.
- Direct biomethane captured from landfills and organic waste digesters to sectors that are hard to decarbonize.
- Implement improved technologies and best management practices at composting and digestion operations.
- Leverage advances in remote sensing capabilities to quickly pinpoint large methane sources and mitigate leaks, and improve understanding of the factors that lead to better capture efficiency, and explore new technologies and practices that can reliably improve methane control.

In the final Scoping Plan, we urge CARB to build on these proposals with additional important strategies, including:

- Ensuring expanded markets for products from organic waste includes recognition of the co-benefits of energy production from anaerobic digestion.
- Ensuring that investments in infrastructure provides a level playing field between compost and anaerobic digestion.

- Streamlining permitting and siting for new anaerobic digestion facilities that deploy best-in-class emissions control technologies and advance the State's goals.
- Tracking progress towards diverting food waste, which is responsible for a disproportionate share of landfill methane emissions, in line with the State's organic waste diversion targets.
- Updating emissions accounting methodologies to reflect the latest science, including updated global warming potential values for methane and revised methane emission factors from landfills.

Thank you again for the opportunity to comment on the draft Scoping Plan. We appreciate your consideration of these comments and are committed to working with you through the ongoing Scoping Plan process to meet the State's climate goals. If you have any questions regarding TNRE, these recommendations, or the status of the market for organics diversion, please do not hesitate to reach out to us.

Thank you,

Gary Aguinaga
President
True North Renewable Energy, LLC