Alternative Technology Advisory Subcommittee
Los Angeles County Solid Waste Management Committee/
Integrated Waste Management Task Force

August 15, 2024

Los Angeles County Public Works
900 South Fremont Avenue
Alhambra, CA 91803

SUBCOMMITTEE MEMBERS PRESENT:
Siya Araumi, rep by Kawsar Vazifdar Los Angeles County Public Works
Steve Cassulo, Waste Connections
William Chen, Los Angeles County Sanitation Districts
Karen Gork, Los Angeles County Department of Public Health
Rachelle Huber, Republic Services
Wayde Hunter, North Valley Coalition of Concerned Citizens, Inc.
Ron Kent, rep by Ethan Simonoff, Southern California Gas
Ben Lucha, Antelope Valley Resident
Barbara Romero, rep by Ron Milo, City of Los Angeles Bureau of Sanitation
Heather Williams, California Department of Resources Recycling and Recovery (CalRecycle)

SUBCOMMITTEE MEMBERS NOT PRESENT
Kay Martin, Bioenergy Producers Association
Kevin Mattson, Waste Management
Mike Mohajer, Los Angeles County Integrated Waste Management Task Force
Eugene Tseng, UCLA Solid Waste Program

OTHERS PRESENT:
Basil Cantu, Long Beach Public Works
Paul Fukumoto, FuelCell Energy
Cesar Leon, Tetra Tech
Michael Stewart, Republic Services
Siya Araumi, Los Angeles County Public Works
Omar Carrillo Maldonado, Los Angeles County Public Works
Carol Saucillo, Los Angeles County Public Works
Kim Yapp, Los Angeles County Public Works
Caleb Yun, Los Angeles County Public Works

I. CALL TO ORDER

Ms. Kawsar Vazifdar called the meeting to order at 10 a.m.

II. APPROVAL OF JULY 18, 2024, SUBCOMMITTEE MINUTES

Mr. Wayde Hunter made a motion to approve the July 18, 2024, minutes, and Mr. Ethan Simonoff seconded. Motion passed with one abstention.

III. UPDATE ON CONVERSION TECHNOLOGY PROJECT DEVELOPMENT

Mr. Cesar Leon from Tetra Tech stated that they:

- Are preparing a presentation for the next Subcommittee meeting on how jurisdictions can procure renewable natural gas-derived electricity to meet their Senate Bill (SB) 1383 procurement requirements.
- Are preparing a presentation for the November Task Force meeting, which will provide a broad perspective on organic waste management challenges, anaerobic digestion (AD) technologies and AD industry in California.
- Are compiling a grant application package for submittal to the Department of Energy Waste Analysis and strategies for Transportation End Uses. This grant would be for the proposed Calabasas Anaerobic Digestion facility.
- Have submitted a first Draft AD White Paper which provides an objective overview of AD technologies and the state of the industry.
- Have submitted a Draft countywide Siting Evaluation for the development of AD and/or thermal conversion technology (CT) facilities within the unincorporated County.
- Have submitted a Draft Long-Term Solid Waste Disposal Needs Study for Antelope Valley in compliance with Lancaster Landfill Conditional Use Permit, Condition 92, which includes the performance of a high-level review of economic, environmental, and technical considerations for CT facility options.
- Are performing a detailed feasibility evaluation of three closed landfill sites that will evaluate limits of waste and surrounding utilities for the potential development of AD and/or thermal CT facilities.

IV. UPDATE ON CONVERSION TECHNOLOGY POLICY AND LEGISLATION

Ms. Kim Yapp provided the following update:

- The upcoming CalRecycle monthly meeting is scheduled for August 20, 2024.

Recent Developments for Assembly Bill (AB) 2514

- AB 2514 was amended by the Senate Committee on Environmental Quality on July 3, 2024.
- The amendments removed hydrogen as an allowable product that local jurisdictions can procure to satisfy the SB 1383 requirements, but pipeline biomethane would still be allowed.
- The amendments would allow products to be created from organic waste recovered from mixed waste.

V. UPDATE ON CONVERSION TECHNOLOGY EVENTS/MEETINGS/OUTREACH ACTIVITIES

Mr. Omar Carrillo Maldonado provided an update on upcoming CT events and conferences, which may also be found in the CT Newsletter and Subcommittee minutes:

- California Resource Recovery Association Conference and Trade Show: August 18 - 21, Anaheim, CA
- Southern California SWANA Fall Workshop, September 12, Santa Ana, CA
- The National Zero Waste Conference: October 2 – 3, 2024, Virtual

VI. PRESENTATION BY FUELCELL ENERGY

Mr. Paul Fukumoto from FuelCell Energy provided a presentation on the Tri-gen Project at the Toyota Logistic Services facility at the Port of Long Beach.

Mr. Simonoff asked for an explanation of how the process generates zero nitrogen oxide (NOx) emissions. Mr. Fukumoto replied that they have virtually zero NOx because their technology is a non-combustion electrochemical process, but they do pick up background levels of NOx from the incoming air is used in the process. Mr. Simonoff asked about how capacity could be maximized and what the limiting factor is. Mr. Fukumoto replied that the limiting factor is available land. Multiple systems could be built by combining modules, but space is a constraint. The pad size of the actual Tri-gen is 135 feet by 100 feet, but additional space is needed for service access. The modules are remotely operated, and the amount of space needed is roughly half the size of a World Cup soccer field.

Mr. Ben Lucha asked if FuelCell can maintain regular continuous operations of their hydrogen fueling infrastructure, given the frequent outages seen elsewhere. Mr. Fukumoto replied that their contract with Toyota requires that they deliver hydrogen on demand and Toyota is responsible for the fueling station. He also said that the reliability in fueling infrastructure for hydrogen has improved recently with

more investment and involvement of larger component companies, especially industrial compressor manufacturers.

Mr. William Chen asked if FuelCell has a carbon intensity (CI) score for their process. Mr. Fukumoto replied that Toyota, as the fuel dispenser, is responsible for the CI score and they are working with Toyota to determine the CI. They have completed some preliminary analysis, and they are waiting for Toyota to file their applications with the California Air Resources Board (CARB) before the CI score can be made available. Mr. Chen asked if FuelCell is trying to push the Environmental Protection Agency (EPA) to make hydrogen fuel eligible for the generation of Renewable Identification Numbers (RINs) credits under the Renewable Fuel Standard Program. Mr. Fukumoto replied that they have filed an application with the EPA that is currently waiting in queue for evaluation. He pointed out that the current draft of the CARB Low Carbon Fuel Standard includes hydrogen.

Mr. Ron Milo asked if there are other uses for the water created in the process besides washing cars. Mr. Fukumoto replied that the water is deionized water and once it is re-mineralized it can be used beneficially for many uses including for irrigation.

Mr. Hunter asked how they deal with contamination in the biogas. Mr. Fukumoto replied that their Port of Long Beach project receives pipeline quality biomethane which is processed to meet pipeline standards. They also have a proprietary fuel treatment system that removes sulfur and siloxanes if their technology is located at a wastewater treatment plant and is using digester biogas. Mr. Hunter and Ms. Rachelle Huber asked if the project could handle landfill gas. Mr. Fukumoto replied that it depends on the contaminants in the landfill gas because the technology may not be able handle contaminants such as heavy metals. If the landfill gas is upgraded to pipeline biomethane, then additional cleanup may not be needed. He continued that the variability of quality of landfill gas may create challenges in creating hydrogen on-demand.

Mr. Simonoff asked if carbon dioxide (CO2) must be removed from gas before it is processed. Mr. Fukumoto replied that CO2 does not need to be removed and that the technology uses CO2 as part of the process. Mr. Simonoff then asked if the project will be eligible for the federal 45V clean hydrogen production credit provided by the Internal Revenue Service (IRS). Mr. Fukumoto replied that if the gas is already being used for any other beneficial use, it may not be eligible for the 45V hydrogen credit, but that the guidelines should be reviewed.

Mr. Lucha asked if the carbon capture process is considered carbon neutral. Mr. Fukumoto replied that it depends on the life cycle analysis, and they are working with Toyota to conduct the analysis.

Ms. Vazifdar asked where the biogas comes from for the Port of Long Beach project. Mr. Fukumoto replied that it comes from the Victor Valley Wastewater Treatment Plant and is upgraded to pipeline quality biomethane. The biomethane is not actually delivered to the Long Beach project, but the project receives credit for the RNG through the book and claim process.

VII. PUBLIC COMMENTS

Ms. Vazifdar stated that if any Subcommittee members or members of the public have requests for presentations for an upcoming meeting, they may contact Subcommittee staff.

VII. ADJOURNMENT

The meeting adjourned at 10:40 a.m. The next ATAS meeting is tentatively scheduled for Thursday, September 19, 2024.