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Newsletter IEA Bioenergy Task 37: 11/2023

Biogas deployment & policy in the Americas

Topics:

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The 2023 edition of the World Energy Outlook is out

The latest edition of the *World Energy Outlook (WEO)* describes an energy system in 2030 in which clean technologies play a significantly greater role than today. This includes almost 10 times as many electric cars on the road worldwide; solar PV generating more electricity than the entire US power system does currently; renewables' share of the global electricity mix nearing 50%, up from around 30% today; heat pumps and other electric heating systems outselling fossil fuel boilers globally; and three times as much investment going into new offshore wind projects than into new coal- and gas-fired power plants. All of those increases are based only on the current policy settings of governments around the world. However, even stronger measures would still be needed to keep alive the goal of limiting global warming to 1.5 °C. As things stand, demand for fossil fuels is set to remain far too high to keep within reach the Paris Agreement goal. The *WEO-2023* proposes a global strategy for getting the world on track by 2030 that consists of five key pillars: tripling global renewable capacity; doubling the rate of energy efficiency

improvements; slashing methane emissions from fossil fuel operations by 75%; innovative, large-scale financing mechanisms to triple clean energy investments in emerging and developing economies; and measures to ensure an orderly decline in the use of fossil fuels, including an end to new approvals of unabated coal-fired power plants.

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Deployment of biogas in the Americas

HZI has been awarded a major RNG project by 3 Rivers Energy Partners

Hitachi Zosen Inova USA has entered into an agreement with 3 Rivers Energy Partners to design and construct a new anaerobic digestion plant, which will utilize spent stillage from the bourbon industry and turning waste into energy. In the future, the renewable natural gas produced will power an adjacent distillery. The plant is consisting of a 648,000 gal/day Wet Anaerobic Digester, an amine biogas upgrading system and integrated process piping and controls for 3 Rivers Energy Partners. The facility will be fed with spent stillage as the feedstock allowing the plant to turn waste into energy. The AD system will power an adjacent distillery with RNG, providing 65% of its gas needs. Importantly, the RNG facility will help to reduce overall greenhouse gas emissions by 50%.

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Shell Starship 3.0 to explore potential of RNG

As Shell continues to demonstrate a commitment to the decarbonization of the transport industry, the Shell Starship initiative has led the way forward since 2018. Like the first two versions, the new Starship 3.0 will capitalize on some of the latest available technology, including being powered by renewable natural gas (RNG). The truck will now be powered by a Cummins X15N™ engine that will run on Shell's RNG, which is commercially available and has a low carbon intensity rating. Starship 3.0 will include components and features that promote lightweighting and low aerodynamic drag, along with low rolling resistance tires from Bridgestone. The interior of the truck has been updated to make it comfortable for the driver on the road and inviting for passengers along for the ride.

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California fleets fueled with RNG achieved carbon-negativity in 2022

Natural Gas Vehicles for America (NGVAmerica) and Coalition for Renewable Natural Gas (RNG Coalition) announced that California fleets fueled with bio-CNG achieved carbon-negativity in their transportation operations last calendar year for the third straight year. RNG accounted for 97% of all on-road fuel used in natural gas vehicles in California in 2022. According to data from the California Air Resources Board (CARB) the annual average carbon intensity score of bio-CNG in that mix was -98.98 gCO2e/MJ. RNG can produce carbon-negative results when fueling on-road vehicles like short- and long-haul trucks, transit buses, and refuse and recycling collection vehicles.

The use of RNG as a transportation fuel in California grew 169 percent over the last five years. NGVAmerica and RNG Coalition report that in 2022 a total of 197.45 million gallons of natural gas were used as motor fuel in the state. Of that, 190.46 million gallons (DGE) were from renewable sources.

Data from CARB's Low Carbon Fuel Standard program confirms that bio-CNG remains the only net-zero carbon motor fuel in California's alternative motor fuel portfolio, which includes ethanol, biodiesel, renewable diesel, bio-CNG, bio-LNG, electricity, alternative jet fuel, and hydrogen. In addition to their negative greenhouse gas (GHG) emissions, ultra-low NOx medium- and heavy-duty RNG-fueled trucks and buses perform at levels that are 95

percent below the federal nitrogen oxide (NOx) standard and 98 percent below the federal particulate matter (PM 2.5) standard.

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WM launches $35 million RNG facility in Springdale

Texas-based WM has opened a $35 million renewable natural gas (RNG) facility at the company's sprawling Eco Vista landfill in Springdale. The Eco Vista facility spans 14,430 square feet. It is expected to recover and distribute approximately 750,000 metric million British thermal units (mmBtu) per year of RNG, which could serve the equivalent of 25,000 households annually or 650 heavy-duty vehicles. The diesel gallon equivalent is one mmBtu of gas equals 6.81 gallons of diesel. he RNG facility at Eco Vista processes the increasing volumes of biogas collected from the landfill — generated during the decomposition of organic material — into pipeline-quality gas to be delivered to Energy Transfer's Enable Gas Transmission pipeline system.

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Impressive growth in US RNG market

According to a new report from Wood Mackenzie, 'North American renewable natural gas: state of the market', the renewable natural gas (RNG) market saw tremendous growth in 2022, with 60 million ft^3/d of new production capacity added. The number of RNG projects has doubled in the last five years and 66 future projects were announced in 2022. In total, the North American market size sits at 385 million ft^3/d (11 million m^3, with states such as Texas (62 million ft^3/d), California (33 million ft^3/d) and Pennsylvania (33 million ft^3/d), leading the way. Activity has been spurred by recent mandates and incentives aimed at lowering greenhouse gas (GHG) emissions, most notably through investment tax credits (ITC) in the Inflation Reduction Act for RNG development and low-carbon fuel programmes in the EPA's Renewable Fuel Standard programme. Despite the recent growth, the RNG market currently only makes up 0.5% of the North American natural gas market.

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300 RNG facilities now operating In North America

The Coalition for Renewable Natural Gas (RNG Coalition) is proud to announce a landmark sustainability achievement: North America now has 300 operation RNG facilities, up from just over 30 facilities in 2011. This compares with the European figures where more than 1,000 are in operation. RNG Coalition data indicates that 178 more RNG facilities are currently under construction across the U.S. and Canada, with another 303 facilities in planning stages. Long term, RNG Coalition will continue to lead through its SMART initiative to capture and control methane from more than 43,000 organic waste sites across North America by 2050, achieving meaningful benchmarks by 2025, 2030 and 2040.

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ENVITEC builds 15 biogas and upgrading plants in the USA

New York, Connecticut, Minnesota, Indiana and South Dakota – the list of US states where EnviTec Biogas is currently completing anaerobic digestion and biogas upgrading projects is becoming with currently 15 plants under construction. All plants use manure from dairy cattle as input and will inject RNG into the existing natural gas infrastructure after commissioning. If there's no local connection to the natural gas grid, the gas will be trucked to the injection stations. US based production of tank components is a recent development for EnviTec USA.

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Brazil biogas seeks opportunities in bottlenecks

Biogas producer Gas Verde generates 130,000 m^3/d of biomethane from its solid waste Seropedica project in Rio de Janeiro state. That biomethane is then sold to consumers who want to reduce emissions and distributed as compressed gas through distributor's Ultragaz biomethane-fired trucks. That allows the company to reach natural gas consumers that are not connected to the pipeline network. Brazilian piped gas distributor Naturgy has launched large-scale compressed natural gas and biomethane projects to also reach consumers distant from transportation pipelines. The company has been compressing biomethane and natural gas to distribute it via trucks into their concession area in Rio de Janeiro, according to gas distribution director Christiane Delart. That allowed Naturgy to launch a "green cities" initiative, in which it prioritizes the supply of biomethane to cities that are not connected to pipelines. Naturgy sees additional potential for smaller industries that are interested in completely substituting their natural gas demand for biomethane, while more prominent companies opt for partial substitutions.

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EVENSOL commissions North Carolina's first two landfill-to-gas RNG production facilities

EVENSOL LLC, a renewable energy project developer focusing on biogas and methane mitigation, announces that it has developed two renewable natural gas ("RNG") facilities in North Carolina that are now operational. The Foothills Renewables Project in Caldwell County, NC, and the Upper Piedmont Renewables Project in Person County, NC, convert landfill gas from Republic Services' landfills into RNG. EVENSOL and its partners invested in excess of $110 million in the combined projects. The RNG from the facilities will provide clean transportation fuel to commercial fleet vehicles. Each project will initially produce up to 500,000 dekatherms (14.5 Mio m3) of RNG each year.

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Policy

US EPA Recommends Delaying Electric Vehicles Biofuel Program - Sources

The U.S. Environmental Protection Agency (EPA) has recommended delaying a scheme that would give electric vehicle (EV) manufacturers tradable credits under a federal biofuel program, in a final rule that the White House will now review, two sources familiar with the matter said. The plan would have given EV automakers credits for charging vehicles using power generated from renewable natural gas, or methane collected from sources such as cattle or landfills. The EV industry had expected the new scheme to be finalized under a June 14 deadline, along with final biofuel blending obligations for the years 2023-2025. The November proposal foresaw EV manufacturers could generate as many as 600 million credits in 2024 and 1.2 billion of them by 2025. Prices for an equivalent cellulosic biofuels (D3) credit have traded at $2.14 each on Tuesday, traders said. That suggests market participants were concerned about potential oversupply of EV credits in the credit pool if the scheme was finalized.

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EPA's Final SET Rule for the RFS

Environmental Protection Agency's (EPA) final SET Rule for the Renewable Fuel Standard (RFS) Program, shows significant support for the biogas industry. Related to biogas, the final rule includes the renewable fuel volumes for 2023, 2024, and 2025, including renewable natural gas (RNG), guidelines for biogas reform and bio-intermediates, and a new

methodology for biogas systems that accept food waste in addition to agricultural waste or wastewater sludge. RIN values will be strengthened and stabilized with EPA's recognition of the strong, 20-40% RNG market growth the industry is experiencing today; new markets will open related to the RFS with biogas now able to replace conventional natural gas and non-RNG transportation fuels like ethanol, gasoline, and diesel. Small farms will find it easier to build biogas systems to produce RNG by recycling food waste on site; and the RFS will now help close the gap between federal policy on food waste and the more developed, state-based food waste recycling laws. All of this will help the biogas industry scale and achieve greater environmental protection. EPA revealed that it would not implement RINs for electricity (eRINs) as part of today's final rule. As the Renewable Fuels Association noted in oral testimony and written comments to EPA, the agency's initial proposal for incorporating eRINs into the RFS was overly complex and inconsistent with RIN generation provisions for all other renewable fuels.

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Democrats call on EPA to implement credit program for electricity from biomass

A group of nine Democrats in the U.S. House of Representatives sent a letter to the U.S. EPA urging the agency to implement a proposed credit system known as eRINs, or renewable identification numbers for electricity, after it was left out of a recent update to the Renewable Fuel Standard program. The eRINs are expected to allow generators of renewable electricity from biomass to profit from credits sold to petroleum-based fuel manufacturers. RINs were first created as an extension of the RFS program the EPA implemented in the 2000s that has allowed ethanol and biogas manufacturers to boost revenues by selling credits. The letter comes after the EPA decided not to include eRINs in its much-anticipated update to the RFS program in June, following pushback from Republicans and others about the agency's statutory ability to implement the program. Democrats want to see eRINs generated beginning in 2024.

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California LCFS may aim beyond 30pc by 2030

California regulators may push for even greater carbon intensity reductions when it updates its Low Carbon Fuel Standard (LCFS) this fall. The California Air Resources Board (CARB) recently floated the idea of requiring a 30pc reduction in carbon intensity by 2030, compared with the current 20pc. But that may serve as just a floor for the agency's formal proposal, which will be released this autumn.

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