

September 13, 2021

Mark,

Thank you for the opportunity to provide feedback on E3's "Maryland Building Decarbonization Study Updated Results" from September 3, 2021.

Our comments will focus on Slide 13, "The E3 Biofuels Module models two bookends for RNG Supply".

We strongly urge the Buildings Ad Hoc Group to adjust the projected prices and supply of biomethane, hydrogen, and synthetic natural gas. If E3 moves towards our suggestions below, the cost modeling on both slides 24 and 28 would also need to be substantially adjusted.

Given other projections from throughout the industry, including our own, there are major discrepancies between E3's assumptions and what we believe the market will look like in 2045.

2045 Conservative Estimates

	E3 Cost	WGL Cost	E3 Supply	WGL Greater D.C. Supply
Biomethane	\$12/ mmBTU	Close to projections	3 TBTU	13.8 TBTU
7% H2	\$24.20 / mmBTU	US Department of Energy & BNEF: \$8/ mmBTU ¹²	15 TBTU	
Synthetic natural gas	\$68.60 / mmBTU	<\$20/ mmBTU ³	112 TBTU	

While the biomethane cost projections look reasonable, the hydrogen and synthetic natural gas costs have huge discrepancies.

¹ <https://www.energy.gov/eere/fuelcells/hydrogen-shot>

² <https://data.bloomberglp.com/professional/sites/24/BNEF-Hydrogen-Economy-Outlook-Key-Messages-30-Mar-2020.pdf>

³ <https://washingtongasdcclimatebusinessplan.com/wp-content/uploads/2020/04/200316-WGL-RNG-Report-FINAL.pdf>

The BNEF document cited states “Hydrogen could meet up to 24% of the world's energy needs by 2050. If supportive but piecemeal policy is in place, we estimate that 187 million metric tons (MMT) of hydrogen could be in use by 2050, enough to meet 7% of projected final energy needs in a scenario where global warming is limited to 1.5 degrees. If strong and comprehensive policy is in force, 696MMT of hydrogen could be used, enough to meet 24% of final energy in a 1.5-degree scenario.”

Additionally, published in 2020, WGL commissioned ICF to conduct a “Study on the Use of Biofuels in the Greater Washington, D.C. Metropolitan Area”. Within the biofuels assumptions in the ICF study, sources for production included: landfill gas, animal manure, WRRFs, food waste, and municipal solid waste.

Questions

1. Can you please list which production sources were included in E3s biomethane projections?
2. Can you please provide the underlying assumptions for synthetic gas cost?
3. Can you also please provide the underlying assumptions for hydrogen cost, especially given President Biden’s Hydrogen Shot, which seeks to reduce the cost of clean hydrogen by 80% to \$1 per 1 kilogram in 1 decade ("1 1 1")?
4. We are a bit unclear on how the equipment costs (building shell upgrades) can be \$7.5B for high decarbonized methane and \$4.9B for high electrification, but nominal for electrification with gas backup?

Thank you again, and we look forward to continuing the discussion.

Best,
Brian

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