



June 12, 2024

Tracey L.M. O'Malley
Regional Permit Administrator
New York State Department of Environmental Conservation
Division of Environmental Permits, Region 3
21 South Putt Corners Road
New Paltz, New York 12561-1620

**Re: Taylor Facilities
Town of Montgomery, Orange County
DEC Permit ID 3-3342-00105/00009 – Part 360 Solid Waste Facility
DEC Permit ID 3-3342-00105/00012 – Air Title V
May 21, 2024 DEC Comment Responses
TRC Project No. 531607.0000.0000**

Dear Ms. O'Malley:

TRC Environmental Corporation (TRC) submits the following responses on the behalf of Taylor Holding Group, LTD (Taylor) to the May 21, 2024 comments provided by the New York State Department of Environmental Conservation (NYSDEC) on the draft response provided by Taylor on April 5, 2024 to the NYSDEC's February 8, 2024 Notice of Incomplete Application (NOIA) for the Air Title V Permit Application submitted by Taylor on October 10, 2022 for the existing Montgomery Wallboard Processing Plant and the proposed Taylor Biomass Gasification Facility in the Town of Montgomery, Orange County, New York (the Facility).

MAY 21, 2024 COMMENT RESPONSES

The following are Taylor's responses to the comments provided by the NYSDEC by email on May 21, 2024. Attachment A is a revised CLPCA Analysis which incorporates the information provided in the April 5, 2024 draft NOIA response as well as changes related to the comment responses provided below.

1. Regarding the discussion of waste displacement, page 2 discusses emission reductions that will occur both as a result of this facility displacing power produced by other means and by displacing waste that would otherwise be landfilled. These reductions appear to be factored into the calculations table at the end as well. Please address the following:

- a. The statements about displacement of power generated by others should be removed, as the Department does not consider actions that others might take because of a proposed project. These actions would be outside of Taylor's control and therefore may or not happen.

Taylor Response: The displacement of power generated by others is within Taylor's control. Taylor has a 20-year long term contract with renewal rights for the sale of electricity plus any/all of the environmental attributes for the benefit of Stewart Airport with the New York Power Authority (NYPA) for its customer, the Port Authority of NY & NJ (PANY&NJ). According to the contract, Taylor must sell all of its approximately 20.2 MW of electricity and any/all of its environmental attributes earned during the life of the contract to NYPA for the benefit of the PANY&NJ. The contract between Taylor and NYPA guarantees that the emission reductions from power generation detailed in the CLCPA analysis will occur as a result of the Facility displacing power produced by other means.

- b. The statements about waste that would otherwise be landfilled can remain, but Taylor should indicate that the potential reduction in emissions is included for informational purposes (e.g. as a footnote to Table 1 and in the text). Please note that DEC does not give the applicant "credit" for the potential calculated reduction because this reduction would rely on the actions of others outside Taylor's direct control.

Taylor Response: The displacement of waste that would otherwise be landfilled is also within Taylor's control. Taylor has a 20-year long term solid waste contract with several five-year renewal options with nine municipalities (Town of Cornwall, Village of Cornwall, Village of Maybrook, Town of Monroe, City of Middleton, Village of Montgomery, City of Newburgh, Town of New Windsor, Village of Walden) and a non-municipal, public traded "Spot Market" entity known as County Waste, locally owned by Waste Connections. The Town of Monroe contract also includes solid waste for the Village of Monroe and the Village of Kiryas Joel. Once operational, the signatory municipalities are legally obligated to bring all of their MSW "acceptable waste" to the Facility. The contract between Taylor and these municipalities guarantees that the emission reductions from MSW processing detailed in the CLCPA analysis will occur as a result of the Facility using the Taylor gasification technology for waste that would otherwise be landfilled.

2. In the 'Potential Project Contribution to Existing Pollution Burdens' section, there's mention of approximately 35 tons of waste that needs to be hauled away for every 100 tons that is brought to the facility. That does not appear to have been accounted for in the CLCPA analysis to date. The emissions from the trucks hauling that material should be added to the indirect emissions calculations.

Taylor Response: The emissions from trucks hauling material to and from the Facility were summarized on Exhibit C of the CLCPA and included as a line item as "Potential Vehicle Emissions (CLCPA Exhibit C) on Table 1 in the April 5, 2024 draft NOIA response.

3. The 7th bullet at the top of page 3 under 'Home Energy Affordability (Montgomery Village)' indicates "The facility will only have a positive impacts on the affordability of energy in Montgomery Village by generating electricity locally". This statement should be removed, as it is speculative in nature.

Taylor Response: Taylor has revised the referenced statement to clarify that while it is anticipated that the Project will have a positive impact on Home Energy Affordability, such an impact would result from actions taken by others outside of Taylor's control.

4. The proposed mitigation includes 6 charging stations and the installation of rooftop solar at the facility. An implementation agreement or commitment with the Town should be provided for the charging stations, as well as an implementation schedule.

Taylor Response: Taylor understands that the Air Title V Permit approval will include a condition that an implementation agreement with the Village and an implementation schedule will be required to be provided by Taylor to the DEC prior to initiating Project construction.

5. Further clarification is required regarding the first paragraph at the top of page 5 that states "Third, in conjunction with the project, Taylor has committed to providing payments in lieu of taxes to the Village of Maybrook". Please expand on these payments, and how this could be a potential benefit to the community.

Taylor Response: The referenced statement was incorrect and should state that Taylor has committed to providing payments in lieu of taxes to the Town of Montgomery, which includes the Village of Maybrook, the Village of Montgomery, and the Village of Walden. The annual "Host Fee" is \$175,000 per year and effective January 1, 2025, will increase annually by 2.25% each year. While the funds provided by Taylor through the "Host Fee" could be used for energy efficiency programs and projects which are intended to reduce greenhouse gas emissions, Taylor has no authority or control over how the Town of Montgomery will disburse those funds.

6. Lastly, please submit an all-inclusive "clean" copy of the entire CLCPA analysis that incorporates all of the various iterations into one comprehensive document. This is required as part of the complete application.

Taylor Response: Attachment A is a revised CLPCA Analysis which incorporates the information provided in the April 5, 2024 draft NOIA response as well as changes related to the comment responses provided above.

CONCLUSION

It is our understanding that upon receipt of this submission, the DEC is prepared to call the application complete and will proceed to public notice. If you have any questions, or if you require any additional information, please contact me at (781) 419-7749 or mfeinblatt@trccompanies.com.

Sincerely,

TRC ENVIRONMENTAL CORPORATION



Michael E. Feinblatt
Project Director

C: James W. Taylor, Jr., Taylor Holdings Group, LTD

Attachment: Revised CLCPA Consistency Analysis

Appendix A: Revised CLPA



404 Wyman Street, Ste. 375
Waltham, MA 02451

T 871.419.7696
TRCcompanies.com

June 12, 2024

New York State Department of Environmental Conservation – Region 3
Division of Air Resources
21 S Putt Corners Road
New Paltz, NY 12561-1620

RE: Taylor Biomass Facility, Town of Montgomery, Orange County
CLCPA 7(2) Consistency Analysis (Rev'd)

To Whom It May Concern:

Taylor Holdings Group, Ltd. (Taylor) is submitting this analysis in response to a request by the New York State Department of Environmental Conservation (NYSDEC) that Taylor provide additional information in support of its assessment of the consistency of the Taylor Biomass Facility (the “Project”), which was initially permitted at the Taylor facility (the “Facility”) more than a decade ago, with the greenhouse gas (GHG) emission limits of the 2019 Climate Leadership and Community Protection Act (CLCPA or “Act”) pursuant to Section 7(2) of the Act. This additional information also supplements Taylor’s assessment of whether the Facility imposes a disproportionate burden on disadvantaged communities under Section 7(3) of the CLCPA.

Taylor submitted its initial CLCPA analysis on October 10, 2022 as part of the Title V air permit application requested by NYSDEC. By letter dated January 13, 2023, Taylor submitted additional information on CLCPA consistency as part of its response to NYSDEC’s November 9, 2022 Notice of Incomplete Application (NOIA). In a February 6, 2023 email from John Petronella, NYSDEC requested still further clarification on CLCPA issues and asked that Taylor “submit the revised CLCPA analysis as a single document that includes all the various changes” once the issues identified in the email were addressed. In accordance with that request, Taylor prepared a consolidated CLCPA consistency analysis in March 2023 that incorporated its responses to the NOIA and February 6, 2023 email into a single document. By memorandum from John Petronella, dated April 7, 2023, NYSDEC asked Taylor to provide additional information relating both to its CLCPA consistency analysis and its assessment of potential impacts on disadvantaged communities. Taylor responded to that request with a submission dated May 26, 2023. On June 23, 2023, John Petronella forwarded a memorandum from Alyssa Carbone, DEC Region 3, Professional Engineer 1, asking Taylor to address alternatives and mitigation relating to all equipment at the Facility, not just process equipment, and identify measures outside the Facility if alternatives/mitigation measures inside the Facility are determined not to be feasible. Ms. Carbone also requested that Taylor omit the term “nearby” from its discussion of disadvantaged communities. Taylor submitted a revised version of the CLCPA on July 7, 2023. On February 8, 2024, the NYSDEC issued another NOIA requesting Taylor to discuss the feasibility of additional design considerations to ensure the project will not disproportionately burden the disadvantaged community and to provide detailed discussion of their feasibility. Taylor provided a draft response on April 5, 2024, detailing the GHG mitigation assessment completed in response to the February 8, 2024 NOIA and proposing additional GHG mitigation measures. The NYSDEC provided emailed comments on the April 5, 2024 draft response on May 21, 2024 and requested an all-inclusive “clean” copy of the entire CLCPA analysis that incorporates all of the various iterations into one comprehensive document. This final version of the CLCPA analysis incorporates the information provided by Taylor in the April 5, 2024 draft NOIA

response as well as responses to the comments received from the NYSDEC on May 21, 2024 on the draft NOIA response. For ease of review, Taylor is submitting both a clean version of its response and a version that has been tracked to show changes from Taylor's July 7, 2023 submission.

In preparing this revised consolidated CLCPA consistency analysis, Taylor asks DEC to note the following:

- Taylor's original CLCPA analysis was conducted in accordance with NYSDEC's draft Program Policy DAR-21, *Climate Leadership and Community Protection Act*, which provides guidance for air permit applications in assessing the consistency of the Project with the GHG emission limits of the Act. After Taylor's original submission, NYSDEC issued the final version of DAR-21, which was used in preparing both Taylor's January 13, 2023 submission and its original and revised consolidated CLCPA analysis.
- Taylor's original CLCPA submission included information and analysis from the Climate Action Council's draft Scoping Plan, particularly as it relates to the GHG implications of managing solid waste. The Climate Action Council finalized the Scoping Plan in late December 2022. This revised consolidated CLCPA consistency analysis references the final Scoping Plan.
- In its April 7, 2023 Memorandum, NYSDEC indicated that "the CLCPA analysis needs to be revised to include a discussion of potential alternatives/mitigation measures for the project as that has not been addressed." Consistent with that request, Taylor has added an alternatives/mitigation discussion.
- In its April 7, 2023 Memorandum, NYSDEC indicated that "The CLCPA analysis needs to be revised to discuss potential impacts from the facility's operation on the disadvantaged communities where the facility is located pursuant to Section 7(3) of the CLCPA." In response, Taylor has significantly expanded its discussion of environmental justice-related information and analyses to show that the Project will not impose a disproportionate burden on disadvantaged communities and address co-pollutant emissions.
- In its February 8, 2024 NOIA, NYSDEC indicated that "The revised CLCPA analysis does not include sufficient project design considerations to ensure that the project will not disproportionately burden the disadvantaged community. Please discuss the feasibility of additional design considerations and provide detailed discussion of their feasibility." In response, Taylor has assessed the feasibility of additional design considerations and is proposing to adopt additional GHG mitigation measures to further ensure that the project will not disproportionately burden the disadvantaged community.

As set forth in greater detail below, Taylor believes that the Project is consistent with the GHG emission limits in the CLCPA. The increased GHG emissions from the Facility associated with the biomass gasification project are approximately 66% lower (measured on a carbon dioxide equivalent basis) than those that would otherwise occur if the same amount of municipal solid waste is landfilled. Also, the Project will reduce emissions associated with waste transportation by allowing the materials to

be handled locally. The Project is also consistent with the Climate Action Council’s Scoping Plan, which calls for a significant reduction in the landfilling of solid waste.

In a recent discussion, NYSDEC staff has indicated that because GHG emissions from the Facility will increase as a result of the new biomass gasification process the Project is not necessarily consistent with the CLCPA, and it must therefore consider whether sufficient justification for the project exists. Toward that end, NYSDEC has asked Taylor to identify alternatives to the Project to reduce GHG emissions, and—if no feasible alternatives to the Project exist—to identify options for mitigating GHG emissions from the Project. As set forth in greater detail below, the vast majority of GHG emissions from the Project are attributable to the biomass gasification process, which is already designed to operate at maximum efficiency, making the achievement of further reductions through design changes impracticable. The only alternative for lowering GHG emissions from the biomass gasification process would be to reduce the amount the Facility operates, which would decrease the GHG emission benefits of the Project associated with diverting MSW from landfills and reduce the quantity of non-fossil fuel-fired electricity generated. As part of its review, Taylor investigated options for mitigating GHG emissions from the Project and determined that there are no technologically feasible or cost-effective measures for mitigating GHG emissions from the biomass gasification process itself. Taylor has, however, committed to measures to mitigate GHG emissions from Facility operations generally, to purchasing six (6) solar powered EV charging stations at the Maybrook Government Center, and to installing rooftop solar panels on its buildings. Overall, Taylor believes that “sufficient justification for the project exists” to warrant approval under the CLCPA based on the GHG emission benefits associated with diverting solid waste from landfills and generating electricity for the benefit of downstate electricity users.

With respect to CLCPA Section 7(3), as set forth below, the Taylor Facility has not and will not have a disproportionate impact on disadvantaged communities. Available air emissions data shows that potential co-pollutant (i.e., hazardous air pollutant or HAP) emissions from the Facility are not significant. Moreover, the estimates of HAP emissions prepared for the Title V application are likely to be conservative owing to various factors, including the relatively clean nature of the material generated and combusted relative to the materials relied upon to estimate emissions. Also, past and recent modeling of criteria pollutants shows that emissions from the Project will not exceed the NAAQS, and thus will not disproportionately burden the disadvantaged communities. To ensure that emissions are minimized, Taylor will install extensive air pollution controls and monitor key emissions and performance parameters continuously. These requirements will be incorporated into Taylor’s Title V air permit to ensure they are fully enforceable. Finally, studies of traffic, fugitive dust, odor, and noise show that the Facility will not adversely impact nearby communities, let alone disproportionately burden disadvantaged communities.

I. Overview/History of the Facility

A. Facility Description

Taylor received a permit from NYSDEC in 2010 to construct a biomass gasification facility at the existing Taylor Construction and Demolition (C&D) Processing Facility located at 350 Neelytown Road in the Town of Montgomery, Orange County. The Taylor Biomass Facility will receive up to 450 tons per day of C&D material, up to 100 tons per day of unadulterated wood waste, and up to 500 tons per day of municipal solid waste (MSW), which will be processed through an innovative mixed MSW waste

separating system that separates recyclable materials from biomass. The resulting biomass material (estimated at approximately 300 tons of per day) will then be used as feedstock/fuel for the gasification system. All received waste will be processed and separated in enclosed buildings to capture and remove non-organic material suitable for recycling. The remaining waste (i.e., feed material) will be transported via an enclosed conveyor to a biomass fuel storage area located within the Post Collection Separation Structure and then to the gasifier, which converts the feed material into a gaseous fuel by reacting it at high temperatures in an oxygen-free environment. The gaseous fuel (otherwise known as synthesis gas or syngas), will, in turn, be routed to a combustion turbine generator (CTG) capable of producing between 20 and 24 Megawatts (MW) of power base-load. Approximately 3 MW will be used to power the Taylor Biomass Facility while the remainder will be conveyed to the electric grid via an existing Central Hudson Gas and Electric substation located adjacent to the Taylor property.

B. SEQRA Review and Air Permit

As set forth below, the process of obtaining approvals for the Taylor Biomass Facility began in 2008 with the submission of a request by Taylor to amend the Town of Montgomery's Zoning Code and Zoning Map to permit construction of the Project. Thereafter, the Project underwent a comprehensive review under the State Environmental Quality Review Act (SEQRA), with the Town Board of Montgomery acting as lead agency. Taylor submitted a proposed Draft Environmental Impact Statement (DEIS) to the Town Board on April 13, 2009. Over the next 14 months, Taylor submitted two revised DEISs in response to a pair of notices of deficiency and made further revisions to the DEIS in response to comments from the Town Board. The Town Board adopted the revised DEIS for purposes of public review on June 17, 2010, and a public hearing was conducted on July 15, 2010. The Town Board received comments from involved and interested agencies, including NYSDEC, and from members of the public, including environmental groups and community members. A Final Environmental Impact Statement (FEIS) for the Project was issued in November 2010 that incorporated the DEIS and contained responses to substantive comments received during the public comment period. The Town Board issued a Findings Statement on December 3, 2010 and an amended Findings Statement on September 26, 2012 following a decision by the Board not to require a Supplemental EIS (SEIS).

Following completion of the SEQRA review, the NYSDEC issued SEQRA Findings and various permits to Taylor required to construct the Project, including Air State Facility Permit No. 3-3342-00105/00012 issued December 3, 2010. The Air State Facility Permit, which was issued with no expiration date, authorized Taylor to construct and operate the Facility and required Taylor to submit a complete Title V air permit application within one year of commencing operation. Thereafter, Taylor undertook numerous on-site construction activities and purchased equipment needed for the Project. However, funding issues have delayed Project completion.

C. SEQRA Climate Change Review

A comprehensive review of the climate change implications of the Facility was completed as part of the SEQRA process. The review quantified direct GHG emissions from the Facility, compared emissions from the biomass gasification process with those associated with landfilling the waste, and examined indirect emissions associated with the trucks needed to transport waste. Based on that review, Section 4 of the SEQRA Findings issued by the lead agency in 2010 and 2012 declared that:

The assessment of potential greenhouse gas (“GHG”) emissions from the Taylor Biomass Facility in the Draft EIS (Draft EIS Section 7.5) demonstrates that the Taylor Biomass Facility is consistent with regional policies. Additionally, Taylor has incorporated GHG mitigation measures into the design of the project including but not limited to, the design of energy efficient buildings, green roof on the scale house, collection and reuse of rainwater, use of materials with recycled content, and utilization of energy efficient boilers and generators. The Taylor Biomass Facility will also reduce the overall transportation/long distance hauling of solid waste providing significant indirect GHG emission reductions. Moreover, the Taylor Biomass Facility will provide a source of renewable energy that will help support New York State’s renewable energy development and GHG emissions reduction goals, will help reduce reliance on fossil fuels such as oil and natural gas that are a predominant source of GHG emissions, and will provide a beneficial use of waste materials to help reduce GHG emissions from landfills and less efficient waste combustion incinerators.

Section 2 of the Findings Statement, entitled “Consistency with New York State Energy Plan” explains how the Project is consistent with the State Energy Plan and Climate Goals and concludes as follows:

Based on the State Energy Plan, the public benefits of the Taylor Biomass Facility include the following: production and use of in-state energy resources can increase the reliability and security of energy systems, reduce energy costs, and contribute to meeting climate change and environmental objectives. To the extent that renewable resources are able to displace the use of higher emitting fossil fuels, relying more heavily on these in-state resources will also reduce public health and environmental risks posed by all sectors that produce and use energy.

Thus, as part of its extensive review of the Project, the lead agency reviewed the Project with respect to both GHG emissions and the State’s energy policy and concluded that the Project was an asset from the climate change perspective.

D. Evaluation of Zoning/Environmental Justice Issues

At the time the Project was initially proposed, the land adjacent to the north, east, and south was vacant, while a large commercial facility existed immediately to the west. Beyond the adjacent parcels and within one (1) mile of the site were additional vacant, agricultural, and industrial land uses, as well as some commercial, office, residential, park, and community service uses. Residential land uses comprised only 13% of the acreage within one mile of the site. At the time of the application, much of the site and surrounding land were zoned for industrial use, which resulted in the development and planned development of compatible industrial uses nearby, including several major distribution centers. The

expansion of the Facility to include the biomass gasification project was consistent with the Town's Master Plan, which identified the site as an industrial park area.

At the time the Project was developed, the majority of the 95-acre site was zoned as Interchange Development (ID); also, approximately one-third of the total acreage within one mile of the site was in the ID district. Although the ID zone permitted recycling handling and recovery, C&D processing, and post-collection separation by special exception, the Town's zoning law arguably did not address the biomass gasification process, prompting Taylor ask the Town to amend its existing zoning law to accommodate the Project. The Town Board enacted a "biomass gasification floating zone" on the 95-acre parcel within the ID zone. In addition, approximately 13.3 acres located in the southern corner of the site was zoned Residential Agriculture (RA-3), prompting Taylor to ask the Town to rezone acreage to ID to bring the entire site within the ID zone and under the biomass gasification floating zone. These requests, which were granted, were consistent with the overall character of the adjacent properties and with the vision for the Town articulated in its Master Plan. See DEIS Section 8.0 for an analysis of land use and zoning-related issues relating to the Project.

As part of the original application, Taylor conducted an environmental justice evaluation consistent with NYSDEC Policy CP-29, *Environmental Justice and Permitting*. Consistent with that policy, Taylor identified the census blocks surrounding the proposed facility and assessed minority and low-income populations within the identified census blocks for purposes of identifying potential environmental justice areas. Using the guidelines for rural areas, Taylor's consultant found that none of the potential environmental justice areas identified exceeded the minority or low income thresholds for rural areas and so did not meet the criteria for environmental justice areas. See DEIS, Appendix L, for Taylor's original environmental justice analysis. Per the FEIS, there were no comments concerning environmental justice raised during the public comment period, indicating that environmental justice was not a significant concern within the community.

As the above summary shows, the site is located in an industrial area. At the time Taylor received the initial NYSDEC permits for the biomass gasification project, the Town amended its zoning law to specifically accommodate the changes required for the Project, reflecting a belief that the biomass gasification project was an appropriate use of the site. Taylor also reviewed the biomass gasification project under NYSDEC's environmental justice policy and determined that minority and low-income individuals would not be disproportionately impacted by the Project, and that no further environmental justice review was required.

E. Recent Air Permitting-Related Developments

In June 2021 the NYSDEC requested that the Facility prepare and submit a renewal application in accordance with the 10-year permit expiration window that NYSDEC asserts is now in effect (notwithstanding that the existing permit does not have an expiration date). In addition, NYSDEC staff informed Taylor that a new Title V air permit would be required for the Facility based on changes to New York's Title V air permitting regulations at 6 NYCRR Part 201 (notwithstanding that the existing permit requires the Title V permit one year after commencement of operations). NYSDEC staff also required Taylor to submit a consistency analysis under Section 7(2) of the CLCPA (even though it is an existing facility). While Taylor disagrees with those decisions, it agreed to submit the requested documents. This

letter and the accompanying attachments constitute Taylor’s CLCPA consistency analysis, incorporating its response to issues raised by NYSDEC in its November 9, 2022 NOIA as well as responses to the February 6, 2023 email and April 7, 2023 memorandum from NYSDEC seeking additional information/analysis, and its February 8, 2024 NOIA and its May 21, 2024 draft NOIA response comments.

II. CLCPA Requirements and Guidance

The 2019 Climate Leadership and Community Protection Act, Chapter 106 of the Laws of 2019 (codified primarily at New York Environmental Conservation Law [ECL] Article 75), requires a 40% reduction in statewide GHG emissions from 1990 levels by 2030 and an 85% reduction by 2050. In 2020, the State adopted regulations translating the percentage reduction goals into numeric emission limits. *See* 6 NYCRR Part 496. Consistent with ECL § 75-0101(13), the statewide GHG emissions include emissions of GHGs from sources within the State as well as GHGs “produced outside of the State associated with either the generation of electricity imported into the State, or the extraction and transmission of fossil fuels imported into the State.”

To develop a program to achieve the goals of the Act, the Legislature established a Climate Action Council (the “Council”), which was tasked with developing a Scoping Plan to provide recommendations for regulations and other measures to reduce GHG emissions. After reviewing the work of a series of sector-specific advisory groups, the Council issued its Draft Scoping Plan in late December 2021; the Final Scoping Plan was issued in late December 2022. Under the CLCPA, the NYSDEC is expected to adopt regulations to reduce GHG emissions based on the recommendations in the Council’s Final Scoping Plan.

On the specific issue of permitting, Section 7(2) of the CLCPA requires state agencies reviewing permits and other decisions to consider “whether such decisions are inconsistent with, or will interfere with, the attainment of the statewide GHG emission limits established” under the CLCPA. Where such decisions are inconsistent with or will interfere with attainment of the statewide limits, the agency must also provide a detailed statement of justification for its action notwithstanding the inconsistency and consider alternatives and/or GHG mitigation measures.

In late 2021, NYSDEC issued for comment draft Program Policy DAR-21, *The Climate Leadership and Community Protection Act* (DAR-21). The final version of DAR-21, which was issued on December 14, 2022, “outlines the requirements for analyses developed pursuant to Section 7(2) of the . . . CLCPA in support of air pollution control permit applications.” NYSDEC staff provided some additional direction on preparing a consistency analysis for the Facility. In particular, NYSDEC staff indicated that the analysis may include: a discussion of the GHG emission benefits of disposing of waste via gasification rather than landfilling (which results in emissions of methane, a powerful GHG); a discussion of the reductions in transportation-related GHG emissions attributable to replacing landfills (many of which are located out-of-state) with in-state waste management capacity; and addressing how the Taylor Facility fits within the framework articulated in the Climate Action Council’s Scoping Plan for waste management.

Based on this written and verbal guidance, the analysis below includes the following information:

- Direct GHG emissions associated with operating the Facility measured in tons per year on a potential-to-emit (PTE) and estimated actual basis. These calculations were performed using appropriate emission factors such as those found in USEPA’s *AP-42: Compilation of Emission Factors* document, facility process engineering calculations, manufacturer’s data, or emission test results. These calculations reflect all aspects of the Project, including any GHG emissions that may result from operation of control equipment and exempt activities.
- Upstream GHG emissions attributable to the Project resulting from the extraction, transmission, and use of fossil fuels or electricity imported into the State. Consistent with DAR-21, these amounts were calculated using emission factors in the most recent version of the Preliminary Interim Draft Emission Factors for Use by State Agencies and Project Proponents document developed by NYSDEC.

Note: As set forth below, because the Facility will use very little fossil fuel, the GHG emissions associated with this component of the Project are comparatively minor.

- Reasonably foreseeable downstream emissions attributable to the Project (e.g., GHG emissions resulting from the transmission and use of the Facility’s products).
Note: The Facility’s primary product is electricity, which will not generate any GHG emissions when consumed.
- Reasonably foreseeable indirect emissions attributable to the Project (consisting of emissions associated with trucks transporting waste to the Facility).
- GHG emissions displaced by the Project, including reductions in methane emissions from replacing landfilling of MSW with biomass gasification and reductions in indirect emissions associated with avoidance of long-distance trucking of waste for disposal.
- An assessment of the Facility in relation to the issues/recommendations identified by the New York State Climate Action Council’s Final Scoping Plan relating to climate change and waste management.
- Projected future GHG emissions for the years 2030, 2040 and 2050, including any proposed future emissions reduction strategies.
- At DEC’s request, a statement of justification for the Project that includes, among other things, an assessment of alternatives and mitigation measures considered and whether they were found to be feasible.

Consistent with DAR-21, all calculations were performed using the 20-year global warming potentials (GWP) found in 6 NYCRR § 496.5. Where appropriate, the amounts are reported on both a ton per year (tpy) and carbon dioxide equivalent (CO₂e) basis. Note that GHG emissions related to the Project are limited to CO₂, methane, and very small quantities of nitrous oxide (N₂O). The remaining three GHGs identified in 6 NYCRR Part 496 (hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride [SF₆]) are not expected to be emitted from the Facility and so are not included in the analysis.¹ In addition, no natural gas will be used in the primary process components (gasification reactor, combustion reactor, CTG and flare).

¹ In its November 9, 2022 NOIA, NYSDEC inquired whether there would be high voltage transformers onsite to facilitate electricity generation and whether Taylor anticipated possible SF₆ emissions from that activity. Taylor replied that that the design for any transformers onsite has not been finalized, but any transformers used will not contain SF₆.

III. CLCPA Consistency Analysis

Below is the analysis of Project-related GHG emissions based on the guidance provided by DAR-21 and Department staff.

A. Direct GHG Emissions Associated with the Project

Direct GHG emissions (both PTE and estimated actual) from the biomass gasification process and related equipment are summarized below. Detailed calculations are included as Exhibit A attached.

The Facility will consist of three major process areas. The first process area, Sorting and Separating, will produce no GHG emissions since this is a strictly mechanical process and all equipment is electric with no fuel conversion taking place. The second process area, Gasification, converts the sorted, prepared biomass into a syngas that is used as fuel for the third process area, Power Generation. In the Gasification process area, potential minor sources of GHG emissions are startup equipment (boiler and heater) and the emergency flare. The primary source of GHG emissions in the Gasification area is the process combustor within the gasification reactor system. In the Power Generation process area, the CTG is the only source of potential GHG emissions. For purposes of calculating the PTE Taylor assumed that equipment will be operated at nameplate capacity 365 days per year, 24 hours per day, except for the startup boiler, startup heater, and flare, which are discussed below.

1. Combustion Turbine and Process Combustor

The CO₂ emission factors used for the combustion turbine and process combustor were determined by the design engineer using a mass balance of carbon-in equals carbon-out.² Although the gasification system will be processing MSW, the AP-42 emission factors for “wood residue combustion” are more representative of potential emissions from the gasifier with respect to methane and N₂O than those for MSW. In the sorting process for the facility, contaminants commonly found in MSW will be removed from the biomass (heavy metals, hazardous materials, plastics, glass, etc.). The prepared biomass fuel will then be used as the feed to the gasification reactor where it will be converted into syngas. The syngas will later be used as fuel for the turbine. There are no emissions from the gasification reactor, which is a closed vessel with no stack. A small amount of char (15-20% of the incoming biomass fuel) will be separated from the syngas and used as fuel in the combustion reactor. The char is essentially carbon with no materials present other than mineral ash and thus is more akin to wood waste than MSW. Accordingly, using the AP-42 emission factor for wood waste is appropriate in light of the nature of the biomass gasification process and the composition of the char generated by that process. The NYSDEC previously authorized Taylor to use the AP-42 emission factors for wood waste rather than MSW when it issued the existing air permit and its use for the CLCPA consistency analysis is consistent with that previous NYSDEC authorization. Note, however, that the emission calculations for direct emissions from the gasification

² In its November 9, 2022 NOIA, NYSDEC asked for additional information concerning the source of CO₂ emission factors identified in Taylor’s October 10, 2022 CLCPA submission as the “Taylor Biomass Energy LLC design engineer”. NYSDEC also questioned Taylor’s decision to use the process combustor factors for methane and N₂O from the AP-42 section for “wood residue combustion” since the facility intends to process MSW, suggesting that a better source of emission factors might be the tables in 40 CFR 98 Subpart C. This portion of the discussion is based on Taylor’s response to these concerns.

process revised were revised per NYSDEC's request to include the methane and + N₂O emission factors in Subpart C of Part 98. [Table C-2 – Default CH₄ and N₂O Emission Factors for Various Types of Fuel, Biomass Fuels - Solid (All fuel types in Table C-1, except wood and wood residuals).] These revisions are reflected in Exhibit A attached.

2. Startup Boiler and Startup Heater

To calculate potential direct GHG emissions from the startup boiler and startup heater, Taylor relied on the conditions set forth in its existing State Facility Permit, which limit the emissions from the startup boiler (Permit Condition 77) and the startup heater (Permit Condition 69) to a maximum of 120 hours each over any 12 consecutive month period. *See* Exhibit A attached. For the purposes of calculating projected actual GHG emissions from the startup boiler and startup heater, Taylor anticipated that at most two startup events (maximum of 30 hours per event) will be required for each piece of equipment for a maximum of 60 hours of operation for the startup boiler and 60 hours of operation for the startup heater per year. This assumption was relied on to calculate the projected actual emissions from the startup boiler and startup heater in Exhibit A attached.³

3. Emergency Flare

The CO₂ emission factors used for the emergency flare was determined by the design engineer using a mass balance of carbon-in equals carbon-out. Both potential and actual direct emissions from the flare were calculated consistent with Permit Condition 73 of Taylor's existing Title V permit, which limits operation of the flare to 100 hours during any 12 consecutive month period. *See* Exhibit A attached.

4. Estimated Potential and Actual Emissions from Biomass Gasification Operation

As shown in detail in Exhibit A, potential direct GHG emissions from the biomass gasification operation will total 178,030 tons/year (CO₂ + methane + N₂O) and 179,415 tons/year as CO₂e. Estimated actual GHG emissions will total 160,066 tons/year and 161,477 tons/year CO₂e, respectively.

There will also be a significant reduction of up to 176,369 tons per year in GHG emissions from local power production resulting from the use of biogenic carbon as the fuel source for the Project, displacing power currently being produced by non-biogenic power sources. Biogenic carbon is absorbed, stored, and emitted by organic matter such as soil, trees, plants, and grasses. Non-biogenic carbon comes from all other sources, including fossil fuels. The climate change impact of the use of non-biogenic carbon is considered much more damaging than the use of biogenic carbon because it can be replenished when new trees or plants are planted. Therefore, the emissions from the combustion of biogenic carbon fuels are considered carbon neutral, since a proportional amount of the greenhouse gas will be consumed by the organic matter which replaces them. By contrast, non-biogenic carbon releases a significant amount of carbon and it takes millennia or more to form fossil fuels, so their use is unsustainable from an environmental perspective.

³ This discussion incorporates the clarifications provided by Taylor in response to Item 3 of the November 9, 2022 NOIA relating to the method used to calculate direct emissions from the startup boiler and startup heater.

The emissions from the Project are summarized on the attached Exhibit G. As shown on Exhibit G, when you consider the potential reductions in GHG emissions due to the use of biogenic carbon as a fuel source, and the GHG emission reductions associated with gasification versus landfilling, the Project will result in a reduction of nearly 350,000 tons of GHG emissions per year.

The displacement of power generated by others is within Taylor's control. Taylor has a 20-year long term contract with renewal rights for the sale of electricity plus any/all of the environmental attributes for the benefit of Stewart Airport with the New York Power Authority (NYPA) for its customer, the Port Authority of NY & NJ (PANY&NJ). According to the contract, Taylor must sell all of its approximately 20.2 MW of electricity and any/all of its environmental attributes earned during the life of the contract to NYPA for the benefit of the PANY&NJ. The contract between Taylor and NYPA guarantees that the emission reductions from power generation detailed in this CLCPA analysis will occur as a result of the Facility displacing power produced by other means.

B. Upstream GHG Emissions Associated with the Project Resulting from Extraction and Transmission of Fossil Fuels or Electricity Imported into State

The only processes at the Facility that will utilize fossil fuels are the natural gas-fired startup boiler and startup heater. These units have maximum heat input ratings of 20 million Btu/hr (MMBtu/hr) and 37 MMBtu/hr, respectively, equivalent to small commercial or industrial-sized units. The current permit limits the startup boiler and startup heater to 120 hours per year. These limits were used to calculate potential upstream GHG emissions associated with the Facility. Consistent with the discussion above, estimated actual upstream GHG emissions were calculated assuming that there would be two startups per year with a total duration of no more than 60 hours per piece of equipment. *See Exhibit B attached for details.*

As shown in detail in Exhibit B, the upstream potential GHG emissions from extraction, transmission and use of the natural gas imported into the State for use in the startup boiler and heater will total 94.2 tons/year (CO₂ + methane + N₂O) and 318 tons/year as CO₂e. Projected actual GHG emissions will total 47.1 tons/year (CO₂ + methane + N₂O) and 159 tons/year CO₂e, respectively.⁴

As noted above, the Project, when completed, will generate electricity that will be used to operate the Facility. The only time when offsite electricity will be consumed is during startup and when the gasification process or gas turbine are shut down, which are both projected to be infrequent events. Accordingly, Taylor does not anticipate using significant amounts of electricity generated off-site during its operations. Of the small amount of off-site electricity potentially used, little or none of it is expected to be imported from out-of-state, and the GHG emissions associated with its use will not affect the result of this CLCPA consistency analysis. (A detailed analysis of the emissions associated with off-site electricity use at the Facility can be found in FEIS, Section 1.7, p. 64, Response to Comments).

C. Reasonably Foreseeable Downstream Emissions Associated with the Project

⁴ This discussion incorporates the revisions provided by Taylor in response to Item 7 of the November 9, 2022 NOIA. As requested by NYSDEC, Taylor recalculated upstream emissions using the Appendix A Emission Factors supplied by NYSDEC.

As described in DAR-21, downstream emissions “include emissions of GHGs resulting from the transmission and use of products such as RNG [renewable natural gas] or fossil fuels.” *Id.* at 4. In this case, the Facility will generate electricity, which does not produce emissions when used. Accordingly, there are no reasonably foreseeable downstream emissions associated with the Project.

D. Reasonably Foreseeable Indirect Emissions Associated with the Project

As described in DAR-21, “[i]ndirect emissions are emissions that are a consequence of the activities of the reporting facility but may occur at sources owned or controlled by another entity. For example, a project that will increase truck traffic associated with the facility would have indirect GHG emissions associated with that increase. Indirect emissions do not include upstream and downstream emissions already accounted for” in the guidance. *Id.* at 4.

An analysis of the increase in indirect GHG emissions associated with the biomass gasification project is found in Exhibit C. The analysis is based on information provided in the DEIS accompanying Taylor’s original application that an additional 500 tons/day of MSW will be trucked to the Facility in conjunction with the biomass gasification project. Exhibit C calculates the increased emissions associated with transporting the MSW to the Facility based on assumptions spelled out there relating to, among other things, the amount of solid waste transported per truck (25 tons) and the average estimated round trip traveled (200 miles). The analysis estimates the increase in indirect GHG emissions associated with transporting MSW to the Facility following construction of the Project at 2,334 tons of CO₂/year.⁵

Note, however, that attributing these additional indirect emissions to the Taylor facility is artificial since it assumes that the truck trips would not occur if the Taylor biomass gasification system were not constructed, and the Facility did not accept the MSW. In fact, however, the MSW will be generated regardless of whether the Facility is constructed and will necessarily need to be transported somewhere. Currently, much of Orange County’s MSW is being transported to Seneca Meadows Landfill, which requires a round trip of approximately 480 miles. As set forth in greater detail in Section E below, the biomass gasification system will allow this waste to be managed within the County, reducing GHG emissions associated with transportation.

E. Reductions in GHG Emissions Associated with Diverting MSW and Other Waste from Landfills

Although the biomass gasification project will increase both direct and indirect GHG emissions from the Facility, the consistency of the Project with the CLCPA cannot properly be assessed without examining the role the Project in the larger solid waste management context.

⁵ Item 4 of NYSDEC’s November 9, 2022 NOIA suggested that Taylor’s analysis of indirect emissions was incomplete. This comment appeared to stem from confusion about the way in which information about indirect emission impacts was presented/organized. In response, Taylor supplied extensive new information in its January 13, 2023 response to the NOIA explaining how the information was presented originally and providing additional discussion. Taylor also provided a new exhibit that more clearly identified the indirect emission increases associated with the transportation of additional quantities of MSW to the Facility as a result of the Project.

The displacement of waste that would otherwise be landfilled is within Taylor’s control. Taylor has a 20-year long term solid waste contract with several five-year renewal options with nine municipalities (Town of Cornwall, Village of Cornwall, Village of Maybrook, Town of Monroe, City of Middleton, Village of Montgomery, City of Newburgh, Town of New Windsor, Village of Walden) and a non-municipal, public traded “Spot Market” entity known as County Waste, locally owned by Waste Connections. The Town of Monroe contract also includes solid waste for the Village of Monroe and the Village of Kiryas Joel. Once operational, the signatory municipalities are legally obligated to bring all of their MSW “acceptable waste” to the Facility. The contract between Taylor and these municipalities guarantees that the emission reductions from MSW processing detailed in this CLCPA analysis will occur as a result of the Facility using the Taylor biomass gasification technology for waste that would otherwise be landfilled.

1. Reduced Direct Emissions Associated with Biomass Gasification Versus Landfilling MSW and Other Waste Disposal Methods

MSW placed in landfills generates significant quantities of methane—a powerful GHG—when the waste decomposes. The Climate Action Council recognized the important role played by waste management in the climate change problem when it established an advisory panel to study waste management issues and make recommendations to the Council for inclusion in the Scoping Plan. The original DEIS/FEIS issued for the Project included a comparison of the GHG emissions from landfilling versus biomass gasification that clearly showed that gasification was preferable to landfilling from a climate-change perspective. *See* DEIS (June 2010), Sections 7.5.2, 7.5.3, 7.5.4.

The 2010 DEIS also compared GHG emissions from biomass gasification and incineration. *Id.* Sections 7.5.2, 7.5.3 and 7.5.5. This analysis also showed that gasification was preferable to incineration, reducing GHG emissions by over 50% (1,678 lbs CO₂e/MWh for gasification compared to 3,509 lbs CO₂e/MWh for incineration).

As shown in detail in Exhibit D, the comparison presented in the DEIS/FEIS has been updated as part of this application to reflect current NYSDEC guidance. The updated comparison also shows that biomass gasification is preferable to landfilling and incineration.

In summary, assuming the Facility processes 500 tons per day of MSW (the maximum rate contemplated by the permit), the biomass gasification process would result in approximately 179,599 tons per year of direct GHG emissions, measured in CO₂e, while landfilling the same quantity of MSW would generate approximately 526,607 tons per year of CO₂e in direct GHG emissions. Accordingly, gasification of MSW results in significantly lower GHG emissions than landfilling. *See* Exhibit D for a comparison of annual potential CO₂e emissions from biomass gasification versus landfilling.

Also, as shown in Exhibit E, gasification of MSW results in fewer GHG emissions than incineration (176,369 tons per year CO₂ GHGs vs. 179,763 tons per year CO₂ GHGs). Note, however, that assessing the relative merits of biomass gasification versus incineration on a mass basis does not capture the full climate change benefits of gasification. Incineration can be used as a simple disposal method (that is, no product other than waste heat energy is generated) while gasification is an intermediate conversion step leading to higher value end products. In the 2010 DEIS, both gasification and some

incineration processes were designed to produce electric power. Accordingly, the GHG emissions were measured on a CO₂e per unit of product basis (i.e., CO₂e/MWh). This analysis shows that biomass gasification reduces GHG emissions by over 50% when compared to incineration. With the increased emphasis on electrification of transportation and industrial processing, reduced GHG production per unit of power generated is a more appropriate comparison of the benefits of gasification versus incineration.

Also, as noted in the June 2010 DEIS, a significant portion of the GHG emissions from MSW are generated from biogenic materials such as paper, cardboard, wood, and cotton. In addition, the Facility will derive a significant portion of additional fuel from wood found in unadulterated woodwaste and construction and demolition debris. These materials come from plants and trees, which absorb carbon while growing and thus serve as carbon “sinks,” pulling carbon out of the air and storing it. Per established GHG reporting protocols, these materials participate in the short-term climate cycle and so do not contribute to global climate change. Although Taylor has included all direct GHG emissions in its analysis to minimize the number of assumptions and provide a uniform basis for comparison, the actual climate change impacts associated with management of biogenic wastes are significantly lower than the direct emission numbers would suggest.

Finally, it is worth noting that unlike many of the projects under review by NYSDEC, the Taylor Project will not facilitate the expanded use of fossil fuels through infrastructure development. Although the Facility will use small amounts of natural gas during startup, the primary fuel source is waste, much of which would otherwise be landfilled, generating methane emissions. The waste is gasified to produce electricity, which could potentially displace electricity generated by a fossil fuel-fired power plant. As NYSDEC is aware, much of the electricity generated in the New York City metropolitan area comes from burning fossil fuel. Although the State is expanding renewable energy generation, much of the development is occurring upstate, and delivery downstate is hampered by a lack of adequate transmission facilities. Although efforts are underway to rectify the transmission problem, in the short term, the state would benefit from the development of downstate energy generation sources, such as the Taylor facility, that produce electricity without fossil fuel for local consumption.

The New York Power Authority and Port Authority of New York and New Jersey recognized the environmental benefits of the Taylor biomass gasification project at the time it was permitted when they entered into contract with Taylor for the purchase of renewable energy credits (RECs) and other environmental attributes from the electricity to be generated from the biomass facility. The decision was lauded by New York Senators Schumer and Gillibrand and others as a source of clean, renewable energy.

2. Reduced Indirect Transportation-Related GHG Emissions Associated with Biomass Gasification Versus Landfilling

In addition to significantly higher direct emissions, disposal of MSW in landfills also presents significantly higher indirect GHG emissions from truck activity. There are currently no operating landfills in southern New York, including Orange County. *See* Map of Active MSW Landfills in New York State at: <https://www.dec.ny.gov/chemical/32501.html> (visited May 22, 2023). Accordingly, all MSW generated downstate must be transported a significant distance for landfilling. Although there are currently an estimated 25 active MSW landfills in New York, most do not accept waste from communities outside their service area. As a result, a significant percentage of MSW generated in New York is exported out-

of-state for disposal. Within New York State, one of the largest landfills that generally accepts MSW and C&D debris from non-local municipalities is the Seneca Meadows Landfill located in Waterloo, New York, over 200 miles from the Taylor facility.

An assessment of the indirect transportation-related GHG emissions associated with biomass gasification versus landfilling is included in Exhibit C. The analysis compares the indirect GHG emission impacts of transporting 500 tons/day of MSW to the Facility for gasification (assuming a 200-mile round trip) with the emissions associated with transporting the same amount of waste to the Seneca Meadows Landfill in Waterloo for landfilling (assuming a 436-mile round trip). This analysis shows that the Project will reduce transportation-related CO₂ emissions by more than half when comparing local gasification of waste with transportation of the same waste stream to Seneca Meadows for landfilling (2,334 tons per year for gasification versus 5,087 tons/year for landfilling at Seneca Meadows).

F. Assessment of Facility in Relation to Issues/Recommendations Identified in Final Scoping Plan

As previously noted, the CLCPA called for establishment of a Climate Action Council, which was tasked with preparing a Scoping Plan to identify recommendations for laws/regulations to achieve the goals of the Act. To assist in the development of the recommendations, the CLCPA specifically called for the creation of six advisory panels covering various sectors including transportation and power generation. Although not required by the CLCPA, the Council also established an advisory panel on waste in recognition of the significant impact of waste management choices on climate change. The recommendations of the Waste Advisory Panel were reviewed by the Council in preparing the final New York State Climate Action Council Scoping Plan (“Final Scoping Plan” or FSP). According to the Final Scoping Plan, GHG emissions from the waste sector represent about 12% of statewide GHG emissions including landfills (78%), waste combustion (7%) and wastewater treatment (15%). Most of these emissions arise from the long-term decay of organic materials buried in landfills (FSP, p. 316). Consistent with that finding, the “Vision for 2030” notes that the major contributors to emissions are associated with landfill emissions, and that “[t]o reduce emissions to achieve the required 2030 GHG emission reductions, significant increased diversion from landfills as well as emissions monitoring and leak reduction will be needed.” *Id.* at 319. Achieving the Act’s 2050 GHG emission goals will “necessitate a dramatic shift in the way waste is managed, to the point that landfills and combustors are only used sparingly for specific waste streams and reduction and recycling are robust and ubiquitous.” *Id.* Nevertheless, the FSP recognizes that combustion and landfilling of some waste components will exist beyond 2050. *Id.* at 323. After reviewing the existing sectoral mitigation strategies (i.e., measures implemented to date that directly or indirectly reduce GHG emissions associated with waste management), the FSP identifies nine key strategies for achieving the goals of the CLCPA as they relate to waste management. The first three strategies fall under the heading of “Waste Reduction, Reuse and Recycling” and focus on methods of diverting waste (particularly organic waste) from landfills. They are:

- **W1. Organic Waste Reduction and Recycling.** This strategy focuses on reducing disposal of organics (particularly food scraps) in landfills by expanding the existing food scrap recycling law, expanding existing organics collection programs, and other measures.
- **W2. Waste Reduction, Reuse and Recycling.** This strategy focuses on reducing methane and CO₂ emissions at landfills and combustion facilities by avoiding disposing of waste in

the first place through a wide range of measures (including a fee per ton on waste, phaseout of single use packaging, container deposit programs, and textile recycling programs, among many other initiatives.)

- **W3. Extended Producer Responsibility/Product Stewardship.** This strategy calls for enacting legislation to establish extended producer responsibility (EPR) or product stewardship programs (which currently cover beverage containers, electronic waste, cell phones and other products) to packaging and printed paper, carpet, tires, solar panels, batteries, etc.). The FSP notes that paper and wood comprise more than a third of the waste stream and produce methane as they degrade in a landfill, making EPR and other means to recycle these materials crucial to achieving the goals of the Act. FSP, pp. 324-29.

The Taylor Facility is consistent with the goals and recommendations articulated in the Final Scoping Plan for the waste sector. As set forth above, organic waste that would be otherwise be landfilled would instead be managed via gasification, emitting significantly less GHGs on a CO₂e basis and producing up to 24 MW (base-load) of clean, renewable electricity. This approach is consistent with the “Vision for 2030” which contemplates “significant increased diversion from landfills” to “achieve the required 2030 GHG emission reductions.” FSP, p. 319.⁶ More generally, regardless of the mandates of the CLCPA, the State has an obligation to manage the waste it generates. Projects such as the Taylor biomass gasification facility increase New York’s in-state waste management options while reducing climate change impacts and adding in-state jobs.

The solid waste measures identified in the FSP to stop the generation of waste that requires disposal will take decades to implement. Today, New York City has over 8.8 million residents and has no MSW disposal facilities; all of its waste is sent to either upstate or out-of-state disposal facilities. Long Island (i.e., Nassau and Suffolk Counties) is home to approximately 2.8 million people, four incinerators, and no MSW landfills. The Hudson Valley (stretching from Greene/Columbia counties south to New York City) is home to approximately 2.5 million people, two incinerators, and no landfills. The majority of waste generated in New York State comes from these urban/densely populated areas that offer municipal waste removal services and little, if any, disposal capacity. Densely populated communities provide municipal removal as a health and safety measure—not as a luxury service. Without free/affordable and accessible waste disposal, these densely populated areas risk all forms of unhealthy and dangerous methods of disposal including burn barrels, disposal in abandon lots or alleys, and/or using a neighbor’s refuse container. Until the more than 14 million residents referenced above stop generating waste requiring disposal (which is not likely to occur until sometime long after 2050), these residents will need facilities to manage their waste. The disposal options are limited to in-state landfills, in-state energy recovery facilities and out-of-state facilities. An in-state biomass gasification facility in close proximity to these densely populated communities (such as the Taylor Facility) is the disposal technology most consistent with the strategies of the FSP since it reduces GHG emissions associated with waste management by diverting organic material from in-state and out-of-state landfills.

⁶ In discussing the future role of landfills and combustion in the State’s solid waste management program, the FSP notes that no new solid waste combustion facilities are envisioned, and that renewals of existing facilities will be required to meet Sections 7(2) and 7(3) of the CLCPA. FSP, p. 323. However, the Taylor gasification facility is not a traditional waste combustor. Moreover, as set forth below, the GHG benefits of the gasification process exceed those of traditional waste combustors. For these reasons, the gasification facility should be part of New York’s waste management future.

Over time, the content of the waste diverted from landfills to the Facility may change as the recommendations set forth in the FSP are implemented. For example, in 2019 New York enacted a law requiring large generators of food scraps to donate edible food and recycle remaining scraps. The FSP contemplates extending the existing law to all generators by 2028, effectively banning combustion and landfilling of food scraps. To the extent this effort is successful, the MSW received by the Facility will no longer contain food scraps. Going forward, even if these measures are successful, significant quantities of waste containing organic material requiring disposal will remain. From a GHG emission perspective, managing this waste by gasification at the proposed Taylor facility is the solution most consistent with the FSP.

G. Projected Future GHG Emissions for the Years 2030, 2040 and 2050, Including Any Proposed Future Emission Reduction Strategies

Projected future GHG emissions for the years 2030, 2040 and 2050 are expected to be similar to those anticipated once operation of the Facility commences. Potential GHG emissions are limited by the conditions in Taylor’s air permit and the capacity of the gasification system. It is possible that changes in waste management, driven at least in part by the CLCPA, may change how MSW is managed generally and thus change the composition of the MSW received at the Facility. These changes could, in turn, affect the relative benefits of biomass gasification versus landfilling. However, the precise scope of these changes is impossible to predict. Taylor will implement future GHG emission reduction measures to the extent required by rules adopted to achieve the CLCPA GHG emission limits or as mandated to fulfill obligations under the Title V air permitting program.

IV. The Proposed Biomass Gasification Project is Consistent with the CLCPA 2030 and 2050 Reduction Mandates

CLCPA §7(2) provides that:

In considering and issuing permits, licenses, and other administrative approvals and decisions . . . all state agencies, offices, authorities, and divisions shall consider whether such decisions are inconsistent with or will interfere with the attainment of the statewide greenhouse gas emissions limits established in Article 75 of the environmental conservation law. Where such decisions are deemed to be inconsistent with or will interfere with the attainment of the statewide greenhouse gas emission limits, each agency office, authority, or division shall provide a detailed statement of justification as to why such limits/criteria may not be met, and identify any alternatives or greenhouse gas mitigation measures to be required where such project is located (emphasis added).

The CLCPA thus establishes a two-step process for addressing consistency. During Step 1, NYSDEC must assess based on information provided by the applicant whether its decision (in this case, approval of a Title V permit for a project) “is inconsistent with or will interfere with the attainment of the statewide greenhouse gas emissions limits” under the CLCPA. If the answer to this question is no, the review is complete. If the answer to this question is yes, NYSDEC must then proceed to Step 2—

determining whether the decision is nevertheless justified and considering alternatives or GHG mitigation measures where the project is located. Step 2 of CLCPA §7(2) (an evaluation of alternative/mitigation options) is thus not required unless a determination is made that the permitting of the project is inconsistent with the CLCPA.

In Item 5 of its November 9, 2022 NOIA, the NYSDEC requested that Taylor provide an analysis of alternatives/mitigation (“Step 2 determination”) because “the proposed facility represents an increase in GHG emissions (emphasis added).” NYSDEC reiterated its request for information about alternatives and mitigation in its April 7, 2023 memorandum. However, as noted above, CLCPA Section 7(2) requires NYSDEC, in making any and all administrative decisions (including funding, contracting, employment, land usage, etc.) to assess whether the decision is inconsistent with the statewide GHG emission limits of the CLCPA not the facility. As discussed in Section III above, the available information shows that the decision—issuing a Title V permit for a biomass gasification system that will replace MSW landfilling—is consistent with the statewide GHG emission limits of the CLCPA even if GHG emissions from the facility will increase.

NYSDEC’s recently finalized DAR-21, *The Climate Leadership and Community Protection Act and Air Permit Applications*, confirms the conclusion that an increase in facility emissions alone does not necessarily render a project inconsistent with the CLCPA. The draft of DAR-21, which was the only guidance available when NYSDEC issued the NOIA to Taylor, provided that:

If the applicant concludes that the facility’s CO₂e PTE, including any upstream and downstream emissions known to be attributable to the project, will increase, or if DEC determines that the project would be inconsistent with or would interfere with the attainment of the Statewide GHG emission limits, then an explanation of, and justification for, the increase and any potential alternatives or mitigation measures must be included (emphasis added).

Although the language in the draft guidance deviated from the statute, it nevertheless provided some support for NYSDEC’s position that increased GHG emissions from the facility triggered the need for an assessment of alternatives/mitigation regardless of whether the project would otherwise be inconsistent with or interfere with the statutory GHG emission limits.

NYSDEC’s final version of DAR-21, by comparison, eliminated increased facility GHG emissions alone as a basis for requiring such an assessment. The final guidance document requires applicants to assess alternatives and mitigation measures only if “DEC determines that the project would be inconsistent with or would interfere with the attainment of the Statewide GHG emission limits. . .”

Accordingly, under both the CLCPA statute and NYSDEC guidance when assessing CLCPA consistency, the Department must look not just at the GHG emissions from the facility but at the larger impact of the decision to approve a project on GHG emissions in the State. Applicants must identify alternatives and mitigation measures (i.e., conduct a Step 2 analysis) only if the decision is deemed to be inconsistent with or would interfere with the emission limits of the CLCPA.

In the present case, while the biomass gasification system will emit GHGs, the NYSDEC must consider the broader climate change implications of the Project under Section 7(2) for the purpose of assessing whether its “decision” to approve the project is inconsistent with the statewide GHG emission limits. As shown above, the GHG emissions associated with landfilling MSW are approximately 350,000 tons of CO_{2e} per year greater than those associated with the gasification of the same quantity of MSW at the Taylor facility. A comparison of the emissions associated with gasification versus landfilling measured in CO_{2e} is included in Exhibit D. As this analysis shows, the Taylor biomass gasification project will reduce the GHG emissions associated with handling 500 tpd of MSW in the State by approximately 66% when compared to landfilling the same amount of MSW. More generally, as discussed in Section III.F above, the Project is consistent with the program for solid waste in the FSP, which calls for diverting waste away from landfills. The decision to approve the biomass gasification project is thus clearly consistent with the emission limits of the CLCPA, which call for reducing GHG emissions 40% below 1990 levels by 2030. It is also consistent with the broader goals of the statute as articulated in the FSP. Because the Project is not inconsistent with the limits of the CLCPA, no analysis of alternatives/mitigation is required.

Other aspects of the Project—although difficult to quantify—also have significant climate change benefits. The first stage in the gasification process is waste sorting and separating. During this step, all received waste will be processed and separated in enclosed buildings to capture and remove non-organic material suitable for recycling, such as metal. As noted above, recycling is a key component of the FSP’s GHG emission reduction recommendations. Also, the Project is being constructed on the fully developed 38.6 acre parcel that currently houses Taylor’s C&D debris processing structure. (rather than at a greenfield property). These benefits support the conclusion that the Project is consistent with the goals of the CLCPA.

In order to fulfill its mission, NYSDEC continues to make tens (if not hundreds) of decisions each and every workday that, by implication, require a determination that the decision is “deemed [not] to be inconsistent with the statewide greenhouse gas emission limits.” Because NYSDEC (even without explicitly stating it) does not deem 99% (or more) of its decisions to be inconsistent with the statewide greenhouse gas emission limits, NYSDEC is allowed to proceed with the implementation of its mission (issuing permits, taking enforcement, promulgating regulations, entering into contracts) without making a Step 2 determination (an analysis of alternatives/mitigation “to be required where such project is located”). Almost every decision made by a state agency authorizing or enabling some action or activity has the potential to result in GHG emissions. For the government to continue to function under the umbrella of the CLCPA, it must evaluate its decisions within a larger context to assess whether they are consistent with the CLCPA rather than subjecting every decision that results in any increase in GHG emissions to a Step 2 review. In arguing that the Taylor project is consistent with the emissions limitations of the CLCPA, Taylor is simply asking for NYSDEC to likewise consider the Project within the larger context.

V. The Biomass Gasification Project is Justified under the CLCPA

A. Introduction

For the reasons set forth above, Taylor strongly believes that the Project is consistent with the statewide GHG emission limits established under the CLCPA and that no further justification is necessary. However, in its April 7, 2023 memorandum, NYSDEC staff declared that “[t]he CLCPA analysis needs to be revised to include a discussion of potential alternatives/mitigation measures for the project as that has not been addressed.” In a subsequent discussion with NYSDEC staff, suggested they may need to prepare a statement of justification in support of the Project. To complete that statement, NYSDEC is requiring Taylor to assess alternatives and mitigation for the Project.⁷

As set forth in DAR-21,

If DEC finds that the project is inconsistent with or will interfere with the State’s ability to meet the statewide emission limits, DEC must consider whether sufficient justification for the project exists. If so, a statement of justification must be created before issuing a final decision on the application. Each statement of justification must include the following information:

1. An explanation of any factors or circumstances that provide justification for the project despite the inconsistency with the CLCPA emission limits;
2. An explanation of the alternatives and mitigation measures considered, whether they were found to be feasible, and to what extent they will be implemented; and
3. A description of the environmental, economic, and/or social harm associated with the absence of the project and any benefits to the citizens of the state resulting from the project. *Id.* at 5.

The justification for the Project is spelled out in Sections III and IV above. Consistency of the Project (Item 1) is addressed in Section IV above. The remaining components required for NYSDEC to prepare a statement of justification are set forth below.

B. Alternatives to Project

1. Process-Related Alternatives

As set forth in greater detail above, the Project has only three sources of GHG emissions relating directly to the gasification process. The primary GHG emission source is the process combustor within the gasification reactor (i.e., the CTG). In addition, there are two minor GHG emission sources: the startup equipment (a natural gas-fired boiler and heater and a flare). Below is an overview of alternatives for

⁷ In response to NYSDEC’s request in its November 9, 2022 NOIA, Taylor assessed possible alternatives for reducing GHG emissions from the Project as part of its January 13, 2023 submission. However, in the wake of NYDEC’s issuance of the final CLCPA guidance, Taylor concluded that the Project is clearly consistent with the CLCPA, and that no assessment of alternatives was, in fact, necessary. Accordingly, Taylor dropped its discussion of alternatives from its March 2023 consolidated CLCPA assessment. Taylor has included an expanded discussion of alternatives and mitigation in response to NYSDEC’s April 7, 2023 request.

reducing GHG emissions from these sources, together with a discussion of barriers to their implementation.

- **Process combustor (CTG).** No reasonable alternatives exist for reducing emissions from the process combustor.
 - The Facility cannot use lower emitting process materials (i.e., cleaner burning inputs) to reduce downstream GHG emissions (comparable to switching from an oil- to a natural gas-fired boiler). The entire purpose of the Facility is to divert MSW from the waste stream and use it as an input to produce a comparatively clean gaseous fuel (syngas) that can be combusted to produce electricity. Switching to a different input would undermine that purpose.
 - In theory, Taylor could reduce the amount of MSW processed at the Facility to reduce GHG emissions. However, consistent with the discussion above, the diverted waste would likely be landfilled, increasing overall GHG emissions.
 - Taylor cannot modify the process to reduce GHG emissions. The entire biomass gasification system is designed to operate at peak efficiency, thus minimizing the quantity of GHGs generated by eliminating the sources of GHGs that would otherwise go to the landfill. Any other modification would alter the process chemistry and produce higher amounts of methane and other unwanted pollutants.
- **Startup boilers/heaters.** DAR-21 offers as an example of potential alternatives the “use of an electric heater instead of a proposed natural gas-fired boiler.” However, the process temperatures required in the startup boiler and startup heater could not be achieved using conventional electrical heat sources. Moreover, as shown in Section III.A of this submittal, only 723 tons of potential GHG emissions from the Project are attributable to the startup boiler and startup heater. This includes both direct emissions from the on-site combustion of natural gas as well as the upstream emissions associated with the extraction, processing, and transport of the natural gas to the Project. The potential GHG reduction benefits of switching from natural gas to electric startup boiler and startup heater would be miniscule, as the potential GHG emissions from this equipment represents only 0.4% of the total potential GHG emissions from the Project. The same conclusion applies to Project actual emissions.
- **Flare.** The flare is a crucial safety device that is necessary to prevent the explosion of unburned gases during startup and shutdown. If the gasification system stalls or chokes during startup and shutdown, the gases are diverted to the flare where they are burned in a controlled environment to prevent build up and possible explosion. There are no alternatives to this device that would fulfill this purpose while reducing the quantity of GHGs emitted. Moreover, as shown in Section III.A of this submittal, only 1,257 tons of potential GHG emissions from the Project are attributable to the flare. The potential GHG reduction benefits of eliminating the flare would be minimal because the potential GHG emissions from this equipment represents only 0.7% of the total potential GHG emissions from the Project. The same conclusion applies to Project actual emissions.

As the above summary shows, there are currently no technically and economically feasible alternatives for reducing emissions from the process equipment associated with the Project.

2. Alternatives for Other New and Existing Facility Operations

The memorandum provided in NYSDEC’s June 23, 2023 email provides as follows:

Taylor Biomass needs to address all potential alternatives and mitigation measures as required by CLCPA. These measures should consider potential emissions reductions for all equipment at the facility, not just the process equipment. If no such measures are found to be feasible, a discussion of potential projects outside the facility and their feasibility should be included (emphasis added).

The memo goes on to provide a suggested list of possible mitigation measures. As set forth above, DAR-21 requires an explanation of alternatives and mitigation if NYSDEC finds that the “project” is inconsistent with the CLCPA and an assessment of the justification for the “project” is therefore required. Given the project-specific focus of the statement of justification, Taylor believes that the analysis of alternatives and mitigation should be limited to the project and does not extend to existing facility operations that are unaffected by the project. However, NYSDEC has specifically requested that Taylor evaluate alternatives and mitigation for all equipment at the “facility.” Accordingly, Taylor has expanded its alternatives and mitigation analysis to cover all areas of its operations including vehicles and mobile equipment, waste management and recycling operations, and buildings and other structures. The analysis covers both existing and new operations.

a. Existing Vehicles and Equipment

The following mobile equipment currently operates at the facility: trucks transporting material to and from the Facility that are owned by third-parties; trucks owned/operated by Taylor; and mobile equipment used to manage waste on-site. Information about and possible alternatives for these GHG emission sources are set forth below:

- **Third-party trucks:** Numerous trucks owned/operated by third parties enter and exit the Taylor facility during day-to-day operations. These include customers delivering waste to the site, businesses delivering materials and equipment to the site, customers picking up products such as landscape decorative mulch produced by Taylor from the material it recycles, and companies removing residues or recyclables designated for landfilling or further recycling, etc. Taylor has no control over the types of trucks owned/operated by third parties that enter the site. Accordingly, there are no feasible alternatives for reducing GHG emissions from these trucks.
- **Taylor-owned trucks:** Taylor currently operates a fleet of trucks that consists of the following:
 - One private passenger vehicle
 - Four ¾-ton pickup trucks
 - Seven 58,000 lb. gross vehicle weight (GVW) roll-off container tandem axle trucks
 - One 80,000 lb. GVW tandem-axle truck-tractor
 - Two 102,000 lb. GVW tandem-axle truck-tractors
 - Two 107,000 lb. GVW tandem-axle truck tractors
 - Two 28,000-30,000 lb. GVW special-use single-axle trucks.

None of these trucks are currently near the end of their useful life, and Taylor cannot afford to replace its trucks before they are ready to be retired. While the market for electric trucks has improved in recent years, they are still significantly more expensive than their fossil fuel

counterparts. Taylor understands that California expects to roll out the first EV roll-off waste container truck later this year and according to the local Mack dealer it will be several years before this truck is commercialized and readily available for long-term order.

Even assuming Taylor could afford to replace trucks before the end of their useful life, it would make little sense from an environmental or climate change perspective to “scrap” a working truck, and if the truck were sold, it would simply be used by someone else, resulting in no GHG emission benefits.

- **Taylor-owned mobile equipment:** As set forth in greater detail below, most of the equipment used by Taylor to process C&D debris and other waste managed at the Facility is electric powered. Fossil fuel-fired equipment is limited primarily to equipment such as loaders and excavators that are used to move larger amounts of material around the Facility. This equipment is shifted from one part of the Facility to the other in support of the various material management processes described below. The following fossil fuel-fired equipment is currently in use at the facility:
 - One two-cylinder gasoline-powered portable trailer mounted water pump
 - One diesel-powered forklift
 - One propane-powered forklift
 - One 37 HP diesel-powered generator
 - One diesel-powered manlift
 - One off-road utility vehicle
 - Five diesel-powered loaders
 - Six diesel-powered track excavators

Consistent with the discussion of trucks above, none of this equipment is currently near the end of their useful life and Taylor will favor end of life equipment replacement or new purchases as it occurs with electric motor driven..

b. Existing Waste/Debris Processing Operations and Buildings

Taylor’s existing Facility maintains the following waste processing operations:

- C&D processing plant (20,000 square foot (SF) enclosed structure)
- Wallboard processing plant (15,000 SQ enclosed structure)
- Recyclables handling and recovery plant (20,000 SF enclosed structure)
- Maintenance shop (small enclosed structure)
- Outdoor C&D debris receipt operations (receipt of customer source-separated concrete, asphalt, rocks and bricks (CARB)).
- Outdoor soil screener processing area
- Outdoor unadulterated wood waste (UWW) processing operation.

With one exception, all of the waste processing activities associated with these activities are operated via electric motors. The only exception is the UWW operation, which uses two 650 HP, diesel-powered trailer-mounted portable grinders and one diesel-powered topsoil/aggregate screener. The only building at the Taylor facility that is heated is the office, which uses electricity for heating purposes. As this summary shows, with the exception of the UWW process, the existing waste processing operations already use only electric equipment. The fossil fuel-fired equipment associated with the UWW operation is not

near the end of its useful life and thus does not provide an opportunity for substituting electric equipment (assuming it is available and reasonably cost-effective). Accordingly, there are no technically feasible and/or cost effective alternatives for reducing GHG emissions from existing operations since the emissions from the existing operations are minimal.

c. New Vehicles/Equipment

When the gasification process begins operating, Taylor anticipates using its existing mobile equipment to manage MSW associated with that process at least in the short term. Taylor will reevaluate its equipment needs once the gasification system is fully operational and it has the information necessary to decide whether additional equipment will be useful. Accordingly, it is premature to identify vehicle/equipment alternatives associated with the gasification process since Taylor does not yet know whether additional equipment will even be needed and, if so, what that equipment might be.

d. New Waste/Debris Processing Operations and Buildings

In addition to the gasification-related equipment/processes discussed in Section ___ above, the Project calls for a new MSW processing structure, which will house the post-collection separation process, which separates recyclable material from the material proposed to be fed to the gasification system. Like the other indoor waste processing activities at the facility, Taylor anticipates that this new process will use only electric motor driven equipment; the building will be unheated.

Other new operations/structures are described below:

- New scale house/office: Electric equipment; no heat;
- New maintenance shop: Electric equipment and heat (if available);
- New corporate office building: Electric powered and heat (if available);
- Power generation structures (power island and electric grid/wire conductors for interconnection to grid): Electric equipment; no heat.

As this summary shows, the only buildings/processes associated with the Project that will emit significant quantities of GHGs and/or utilize fossil fuels are associated with the actual gasification process. As a result, there is no need to identify alternatives for the above-listed processes and buildings under the CLCPA.

C. Mitigation Measures

Taylor is an existing facility with permits and has been through a complete SEQRA process, and NYSDEC has specifically issued SEQRA Findings that all adverse environmental impacts have been mitigated to the extent practical. Nevertheless, NYSDEC is requiring Taylor to identify GHG mitigations under CLCPA Section 7(2). Below is a discussion of potential mitigation options.

Exhibit G summarizes the results of the GHG mitigation assessment conducted by Taylor at the request of the NYSDEC. Exhibit G includes a summary of the Project's GHG emissions, a list of all of the GHG mitigation measures being proposed by Taylor with an estimate of the number of tons of GHG emissions which will be mitigated per year for each measure for which a GHG reduction calculation

methodology was identified, and a listing of the potential GHG mitigation measures considered but not being proposed by Taylor with a brief rationale as to why each potential GHG measure is not being proposed.

1. Operational Mitigation

Options for mitigating emissions at the Facility by changing facility operations are limited. As noted above, the Project uses very little fossil fuel—it is limited to the startup boiler/heater, which are allowed to operate only 120 hours per calendar year (and will likely operate only 60 hours per year). Further limiting the fossil fuel combusted at the Project will not significantly mitigate GHG emissions. Also, operation of the startup boiler/heater cannot be further limited without also significantly limiting operation of the process combustor.

Reducing the allowable hours of operation of the gasification system as a whole would reduce GHG emissions from the Facility. However, as discussed in Section III above, this reduction would not, in fact, result in a climate change benefit since the MSW that would have gone to the Facility would likely be sent to a landfill, resulting in greater GHG emissions measured on a CO₂e basis. Taylor cannot reduce the hours of operation of the equipment independently, since the system is designed to operate as a unit.

Also reducing the hours of operation of the biomass gasification facility would reduce the quantity of electricity generated by the facility at a time when the State needs additional sources of power, particularly downstate. The New York Independent System Operator recently issued its *2022 Reliability Needs Assessment (RNA)*, which evaluated the reliability of the New York electric grid from 2026 through 2032 considering forecasts of peak power demand, planned transmission system upgrades, and changes to the generation mix anticipated over the next decade. The document contains a “base case” set of assumptions addressing projected impacts driven by limitations on generator emissions as well as scenarios designed to assess the implications of various policy goals in the CLCPA.

Per the 2022 RNA, “[t]he margin to maintain reliability over the next ten years could be eliminated based on likely changes in planned system conditions” with the reliability of the New York City area facing “the greatest risk due to limited generation and transmission to serve forecasted demand.” *Id.* at 7. Among other things, the planned elimination of so-called “peaker plants” used to provide electricity to New York during the hottest summer days when electricity demand is highest are scheduled to be retired by 2025. At the same time, the planned electrification of heating and transportation is expected to increase demand for electricity, putting the reliability of the system downstate at risk. *Id.* Short-term, the reliability of the grid downstate depends largely on whether the Champlain Hudson Power Express (CHPE) project—which will transmit electricity from Quebec to New York City—is completed by 2026 as planned. If the CHPE project is delayed or other events occur (unplanned shutdown of existing generating facility or hotter than normal weather), the system may have difficulty meeting New York City’s electricity needs.⁸

⁸ The Public Service Commission (PSC) recently issued an Order Initiating Process Regarding Zero Emissions Target, Case 15-E-0302 (May 18, 2023) acknowledging the impending gap between the capabilities of existing renewable energy technology and expected future system reliability requirements and initiating a process to identify technologies that can close this gap and attain the target of zero emission from electricity target by 2040. The notice is seeking comment from the public on technologies that could potentially qualify as “zero emission” while helping to ensure the reliability of the electric system.

In the face of these developments, the State needs clean, reliable sources of electricity generated in the New York City area to serve the New York City market. The approximately 24 MW of base-load electricity generated by Taylor’s proposed biomass gasification system would help fill this need. Although the system generates GHGs, it does so with only a very limited quantity of fossil fuels (associated with the startup boiler/heater). Moreover, as set forth above, these emissions are more than “offset” by the reductions in methane emissions associated with diverting MSW from landfills. Thus, limiting the hours of operation of the facility to “mitigate” emissions would harm not help the State’s climate change efforts.

As set forth above, with one exception (the UWW operation), the other buildings and processes at the Facility do not use fossil fuels or otherwise generate GHG emissions and so do not provide meaningful opportunities for operational GHG mitigation.

2. Technological Mitigation of GHGs Relating to Biomass Gasification Project

a. Installation of Emission Controls

Currently, there are no controls that can be installed to reduce GHG emissions from the gasification process. As noted above, the system is already designed to operate at peak efficiency, and there is no equipment that can be installed to prevent the generation of CO₂ emissions from the gasification process.

In theory, Taylor could attempt to capture CO₂ emissions from the gasification process and either transmit them offsite as product or sequester them underground. However, preliminary research indicates that capturing GHGs and injecting them on-site would be cost-prohibitive particularly given the comparatively small quantity of GHG emissions generated by the gasification process relative to the sources for which carbon capture, utilization, and storage (CCUS) has been proposed/implemented. Also, there are numerous practical obstacles to CCUS, several of which are set forth below:

- Not all sites are suitable for carbon sequestration. Taylor would need to determine whether underground injection is appropriate at the site. Even assuming on-site sequestration is possible, the decision would likely trigger opposition from neighbors concerned about the impact of sequestration on groundwater and other resources.
- If underground injection is not appropriate at the site, Taylor would need to identify an appropriate offsite location. Utilizing the location would necessitate identifying or constructing infrastructure to transport the gas to the sequestration location. Recent experience with natural gas transmission pipelines suggests that constructing a pipeline through densely populated areas such as northern Orange County will be difficult, if not impossible.
- Carbon capture technology typically requires significant water usage and results in the generation of additional waste streams that require disposal.
- Installing a carbon capture system at the facility would require Taylor to obtain a underground injection control permit from the U.S. Environmental Protection Agency under the Safe Drinking

The Order reflects an awareness that the definition of “zero emission” may need to be expanded and that biofuels and other sources may have a role to play in helping the State achieve its climate change objectives.

Water Act. *See* 40 CFR Parts 124 and 144 to 147. The delays associated with this process would complicate efforts to obtain funding for the Project, further threatening its financial viability.

For the foregoing reasons, CCUS is not a practical GHG mitigation option for the Facility.

b. Building Design and Operation Measures

As part of the original permitting process, Taylor identified and committed to a variety of measures at the Facility to improve energy efficiency, reduce environmental impacts, and minimize GHG emissions. In other words, NYSDEC has already determined that the Taylor project, as permitted, mitigates the adverse impacts to the environment. The Project, as approved, includes the following building design and operation measures targeted at reducing energy usage and/or GHG emissions:

- Design an energy efficient building envelope to reduce cooling/heating requirements
- Install high-efficiency HVAC systems
- Construct green roofs on the scale house
- Maximize interior daylighting
- Incorporate window glazing to optimize daylighting, heat loss and solar heat gain
- Incorporate motion sensors and lighting and climate control
- Use efficient, directed exterior lighting
- Use building materials with recycled content by using processed C&D Debris for road and building sub-bases
- Use building materials that are extracted and/or manufactured within the region

While it is difficult to quantify the GHG reduction benefits associated with these measures, they reflect Taylor's long-standing commitment to ensuring that its facility minimizes its impact on the climate. Taylor has agreed to implement these measures as part of the Project and will accept appropriate conditions as part of this permitting process.

In addition, Taylor is also now proposing to install rooftop solar panels on its buildings to help power the Facility and potentially providing lower cost energy to the local community.

Taylor understands that the Air Title V Permit approval will include a condition that an implementation agreement with the Village and an implementation schedule will be required to be provided by Taylor to the DEC prior to initiating Project construction.

c. On-site Transportation and Mobile Equipment Mitigation Measures

In conjunction with its original permit, Taylor committed to incorporating idling reduction policies to reduce GHG emissions associated with the operation of trucks and other fossil fuel-fired mobile equipment at the facility. Taylor remains committed to this measure. Taylor's existing fleet of short-haul and long-haul vehicles are equipped with automatic engine shut-offs, the timing of which can be set by the vehicle owners. Taylor's fleet is set to turn off after two minutes of idling.

As set forth above, Taylor operates fossil fuel-fired vehicles and other mobile equipment such as loaders and excavators at the Facility. However, none of this existing equipment is near the end of its useful life. As a result, it would be expensive (and borderline wasteful) to replace this equipment as a means of mitigating GHG emissions from the Facility. Going forward, Taylor has not yet determined precisely what type of additional mobile equipment, if any, will be needed to handle MSW associated with the gasification operation. However, as Taylor replaces its transportation and mobile equipment fleet, it intends to purchase commercially available, environmentally sustainable vehicles to the fullest extent practicable given its equipment needs and the relative costs of electric versus fossil fuel-fired vehicles.

Taylor also has evaluated the possibility of installing electric vehicle charging infrastructure on-site to mitigate GHG emissions from the Project. To the best of our knowledge, however, none of Taylor's employees currently drive electric cars/trucks and none of the third parties delivering material to the Facility or picking up material from the Facility drive electric vehicles. Moreover, Taylor does not currently own/operate any electric-powered vehicles/trucks. As a result, installing electric vehicle charging infrastructure at the Facility would not result in any GHG emission reductions now or in the foreseeable future. While usage of electric vehicles may eventually increase, it is not sensible to install charging infrastructure on-site now since the quality/cost of such infrastructure is likely to improve in the coming years as electric vehicles become more common.

d. Off-Site Mitigation Measures

As requested by the NYSDEC in the February 8, 2024 NOIA, Taylor has evaluated the following potential off-site mitigation options listed in the June 23, 2023 NYSDEC information request and in DEP 23-1:

- Working with the local transit authority to fund electric buses/expand charging infrastructure/expand routes served by EVs in the DAC
- Working with the local school system to fund electric school buses/expand charging infrastructure/expand routes served by EVs in the DAC
- Designing truck travel routes that avoid, or minimize impact to, disadvantaged communities
- Adding EV charging stations at the Facility or in the DAC
- Physical mitigation, such as planting and upkeep of trees, green infrastructure, or other means of carbon sequestration.

The attached Exhibit G summarizes the results of the GHG mitigation assessment conducted by Taylor at the request of the NYSDEC. Exhibit G includes a summary of the Project's GHG emissions, a list of all of the GHG mitigation measures being proposed by Taylor with an estimate of the number of tons of GHG emissions which will be mitigated per year for each measure for which a GHG reduction calculation methodology was identified, and a listing of the potential GHG mitigation measures considered but not being proposed by Taylor with a brief rationale as to why each potential GHG measure is not being proposed.

In its original CLCPA Analysis, Taylor proposed to purchase a two-port commercial charging station for the benefit of the Town of Montgomery. Taylor subsequently met with Mayor Dennis Leahy

of the Village of Maybrook and learned that the mayor is currently investigating the possibility of locating several EV solar powered charging stations for the Village Government Center, which abuts the Danny Meyers Memorial Park. Installing EV charging stations at this location could potentially attract local families and residents of the Village for government business and after school sports activities.

Based on this discussion with Mayor Leahy, Taylor is instead proposing to install six (6) solar powered EV charging stations at the Maybrook Village Government Center (rather than one two-port commercial charging station in the Town of Montgomery). The installation of the proposed EV charging stations in Maybrook Village will provide a significant GHG and co-pollutant emissions mitigation benefit to the DAC of up to 208 tons per year (see Exhibit G), provide an incentive for more residents to invest in EV vehicles based on the convenient location of the charging stations, and also provide a significant potential revenue stream to the Village to invest in other projects designed to mitigate GHG emissions and/or decrease the existing burdens on the DAC.

A charging station at a public location will maximize the potential climate benefit by increasing the number of vehicles with access to the charging station. Over time, use of the charging station will likely increase as the number of electric vehicles in the state's motor vehicle fleet increases. Thus, unlike an on-site charging station, a public charging station has the potential to provide direct and immediate climate change benefits that will increase over time.

As shown on Exhibit G, Taylor has proposed more than 451 tons per year of quantifiable GHG mitigation, based on the measures proposed for which a GHG reduction calculation methodology has been identified and which have been determined to be technically and economically feasible. The actual GHG emissions reductions associated with mitigation being proposed by Taylor is significantly higher, given the number of additional GHG mitigation measures being proposed for which a calculation methodology has not been identified.

D. Environmental, Economic, and/or Social Harm Associated with the Absence of the Project and Any Benefits to Citizens from the Project

As set forth in DAR-21, in preparing its statement of justification for a project found to be inconsistent with the CLCPA, DEC must include a "description of the environmental, economic, and/or social harm associated with the absence of the project and any benefits to citizens of the state resulting from the project."

As discussed in Sections III and IV above, the environmental harm associated with the absence of Project is clear. The gasification process is an environmentally-beneficial substitute for landfilling. If the Project is not constructed, the MSW that would otherwise have been managed at the Facility will likely be landfilled, resulting in greater GHG emissions. Also, as discussed above, managing the waste at the Facility will decrease the distance the MSW must travel, reducing transportation emissions. Finally, managing waste at the Facility will decrease pressure on existing landfill capacity at a time when the state's landfill system is under stress and a significant percentage of the State's MSW must be shipped out-of-state for disposal.

The Project includes a major waste separation component. Before the waste is sent for gasification, it will be separated to remove metal, glass and other materials that can be reused or recycled into useful products, further benefiting the environment.

As discussed in Section 13 of the DEIS, the Project will create almost 200 direct construction jobs and more than 100 indirect and induced construction-related jobs, generating many millions of dollars of income and related economic impacts. Once operational, the biomass gasification project was estimated to directly create 82 new jobs, most of which are expected to come from the local labor pool. An additional 54 indirect and induced jobs are anticipated to be created as a result of the Project, collectively generating millions of dollars in annual labor income. The DEIS estimated the overall economic output impacts of the Project at \$384.8 million from 2012 to 2019. Also, as outlined in the DEIS, the Project will increase the assessed value of the Taylor property many times over, resulting in the generation of significant additional revenue for Orange County even after costs are considered. Also, the Town of Montgomery has completed a \$1.0 million per year payment-in-lieu of taxes agreement and a secondary host community agreement in the amount of \$150,000 annually. These economic benefits are lost if the biomass gasification system is not constructed. The disadvantaged community discussed below is part of the Town of Montgomery and so will benefit from the Project financially.

Also, as noted above, the Project will generate electricity near New York City, where it is desperately needed. This electricity—while not emission free—is cleaner than that generated by the existing downstate fossil fuel-fired power plants. Generating the electricity downstate also decreases the pressure on existing transmission lines, which currently lack the capacity to transmit needed electricity from upstate to downstate. Denying approval will deprive the state of these benefits.

Finally, Taylor has committed to mitigating the GHG emissions from the Project by installing a two port charging station on public property in the Town of Montgomery, which will benefit the larger driving public.

VI. Disadvantaged Communities Analysis

In its November 9, 2022 NOIA, NYSDEC indicated that Section 7(3) of the CLCPA relating to disproportionate burdens on disadvantaged communities must be addressed. In response, Taylor included a discussion of Section 7(3) in its January 13, 2023 submission to NYSDEC that addressed the location of the Project in relation to disadvantaged communities and concluded that it would not impose a disproportionate burden on disadvantaged communities. NYSDEC's February 6, 2023 email did not specifically comment on Taylor's submission but instead simply expanded on its November 9, 2022 request, declaring that the Facility is "in a draft disadvantaged community as identified by the climate justice working group" and asking Taylor "to discuss how emissions will be limited to meet the requirements of Part 212 and to minimize any disproportionate burden on the disadvantaged community in accordance with Section 7(3) of the CLCPA," including a discussion of alternatives to the project that would minimize impacts on the community and mitigation measures if no feasible projects are identified. Taylor responded to that request in its March 2023 consolidated CLCPA submission. At NYSDEC's request, Taylor revised the consolidated submission in response to the following comment in its April 7, 2023 memorandum: "The CLCPA analysis needs to be revised to discuss the potential impacts from the facility's operation on the disadvantaged community where the facility is located pursuant to Section 7(3)

of the CLCPA.” In this submission, Taylor has revised the Section 7(3) submission to delete references to the “nearby” disadvantaged community in response to the request contained in NYSDEC’s June 23, 2023 email.

Section 7(3) provides that:

“In considering and issuing permits, licenses, and other administrative approvals and decisions . . . pursuant to article 75 of the environmental conservation law, all state agencies, offices, authorities and divisions shall not disproportionately burden disadvantaged communities as identified pursuant to subdivision 5 of section 75-0101 of the environmental conservation law. All state agencies, offices, authorities and divisions shall also prioritize reductions of greenhouse gas emissions and co-pollutants in disadvantaged communities as identified pursuant to such subdivision 5 of section 75-0101 of the environmental conservation law.”

As discussed in Section I.D. above, the Facility is located in an industrial area. At the time Taylor received the initial NYSDEC permits for the biomass gasification project, the Town amended its zoning law to specifically accommodate the changes required for the Project, reflecting a belief that the gasification project was an appropriate use of the site and that it would not adversely impact those living and working nearby. Taylor also reviewed the biomass gasification project under NYSDEC’s environmental justice policy and determined that minority and low-income individuals would not be disproportionately impacted by the Project and that no further environmental justice review was required.

NYSDEC is now asking that Taylor conduct a new disadvantaged communities assessment to address the requirements of the CLCPA in the wake of the recent adoption by the Climate Justice Working Group (CJWG) of disadvantaged community criteria and maps. TRC has reviewed the disadvantaged communities identified by the CJWG (available at <https://climate.ny.gov/resources/disadvantaged-communities-criteria/>) and mapped the Facility in relation to those communities. A copy of the map is included as Exhibit F. As set forth in greater detail below, although the Facility is located in a disadvantaged community, it has not and will not disproportionately burden that community.

According to the New York State Climate Justice Working Group’s Draft Disadvantaged Communities Criteria and List Technical Documentation, dated March 9, 2022, and the Technical-Documentation-Appendix-Final-Disadvantaged-Communities-Indicator-Workbook, the highest ranked DAC criteria for the Maybrook Village and Montgomery Village DACs are as follows:

Maybrook Village DAC

1. Traffic Truck Highways
2. Risk Management Program Sites
3. Drive Time Healthcare
4. Remediation Sites
5. Agricultural Land Use

Montgomery Village DAC

1. Drive Time Healthcare
2. Myocardial Infraction (heart attack) Hospitalization Rate
3. Rent Percent Income
4. Agricultural Land Use
5. Home Energy Affordability

The Project will not contribute to the existing burdens on the local DACs as follows:

- Traffic Truck Highways (Maybrook Village) –The existing Taylor Facility does not include any truck routes that go through Maybrook Village, and the Project will not change that fact. Section VI.C.1 of this CLCPA Analysis summarized the potential traffic impacts resulting from the Project on DACs based on the Draft Environmental Impact Statement (DEIS) and showed that the Project would have a minimal impact on traffic in the area both during construction and operation and will therefore not contribute to or otherwise impose a disproportionate burden on nearby communities, including the Village of Maybrook. More generally, the Project will result in a significant reduction in the number of trucks required to transport MSW to landfills, because for every 100 tons of MSW trucked in, only 35 tons will need to be trucked out for disposal because 65 tons will remain on-site to be gasified to generate electricity and leaves the site as electricity through the Central Hudson Gas & Electric transmission grid system.
- RMP Sites (Maybrook Village) – The Facility will have no impact on the number of RMP sites in Maybrook Village.
- Drive Time Healthcare (Maybrook and Montgomery Village) – The Facility will have no impact on the drive times from Maybrook Village or Montgomery Village to healthcare facilities.
- Remediation Sites (Maybrook Village) – The Facility will have no impact on the number of remediation sites in Maybrook Village.
- Agricultural Land Use (Maybrook Village and Montgomery Village) – The Facility will have no impact on the amount of agricultural land use in Maybrook Village or Montgomery Village.
- MI Hospitalization Rate (Montgomery Village) – The Facility will have no impact on the MI hospitalization rate in Montgomery Village as its predicted air quality impacts are below the National Ambient Air Quality Standards (NAAQS), which have been established to provide public health protection, including protecting the health of “sensitive” populations such as asthmatics, children, and the elderly.
- Rent Percent Income (Montgomery Village) – The Facility will have no impact on rents in Montgomery Village.
- Home Energy Affordability (Montgomery Village) – While it is anticipated that the Facility will have a positive impact on Home Energy Affordability, such an impact would result from actions taken by others outside of Taylor’s control.

A. Air Emission Estimates Show that the Facility, including the Biomass Gasification Project, Will Not Disproportionately Burden Residents of the Disadvantaged Communities

Appendix C, Table 2 of Taylor's Title V permit application estimates potential hazardous air pollutant (HAP) emissions from the gasification operation (encompassing the gas turbine and the process combustion reactor). The Table estimates total potential HAP emissions at approximately 5.8 tons annually. However, this number assumes that the Facility is operating 8,760 hours a year and is not equipped with emission controls. As a result, it significantly overstates likely emissions from the Facility. As set forth below, the Facility will be equipped with emission controls that will significantly reduce emissions of both volatile HAPs and potentially hazardous metals and other particulate.

Also, the HAP emission estimates for both the combustion turbine and process combustor are likely conservative in another important respect. As NYSDEC is aware, the biomass gasification process is comparatively new. As a result, there are no established emission factors for estimating emissions from the process, compelling Taylor to use factors from similar, but not identical, processes. All available information indicates that the emission factors used are likely to overestimate emissions relative to the those from the gasification process. For example, the HAP emissions from the combustion turbines are based on EPA emission factors for the combustion of natural gas, a fuel that contains several hydrocarbons such as methane, propane, and ethane that may form other organic HAPs if incompletely combusted. By comparison, the syngas used by the combustion turbine will be comprised primarily of hydrogen and carbon monoxide which readily oxidize into carbon dioxide and water. Similarly, the HAP emissions for the process combustor are conservatively based on EPA emission factors for burning wood, which contains many complex hydrocarbons such as lignin and cellulose. Any such hydrocarbons contained in the biomass feedstock will be liberated in the gasifier, leaving only a carbon char to fuel the process combustor, which is readily converted into carbon dioxide. NYSDEC reviewed these emissions estimation methodologies and concluded they were acceptably conservative for purposes of estimating maximum HAP emissions from the Project. In light of the above, HAP emissions from the Facility are unlikely to disproportionately impact the disadvantaged community.

The Facility also has demonstrated through the air dispersion modeling conducted for its original permit application and recently as part of the current permit renewal, that its emissions will not cause or contribute to an exceedance of the national ambient air quality standards (NAAQS) for criteria pollutants, including nitrogen dioxide (NO₂), sulfur dioxide (SO₂), particulate matter smaller than 10 microns (PM₁₀), and carbon monoxide (CO). The primary NAAQS provides public health protection, including protecting the health of "sensitive" populations such as asthmatics, children, and the elderly. The secondary NAAQS provides public welfare protection, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings. By demonstrating that it will not cause or contribute to an exceedance of the NAAQS, the Facility, by definition, demonstrated that its impact to air quality both within and outside disadvantaged communities will be at levels deemed protective of public health and public welfare, as defined by the EPA, and will therefore not disproportionately impact disadvantaged communities.

At NYSDEC's request, as part of the current permit renewal, Taylor conducted a new air dispersion modeling analysis for nitrogen oxide (NO_x) emissions from the Facility for the purposes of

determining whether these emissions would cause an exceedance of the 1-hour NO₂ NAAQS. The results of this analysis confirm that the Facility will comply with the 1-hour NO₂ NAAQS and so is protective of nearby communities, including the disadvantaged communities.

6 NYCRR Part 212 applies to “process emission sources” and/or emission points associated with “process operation.” The term “process operation” specifically excludes combustion installations and incinerators and so does not apply to the Taylor biomass gasification plant. Currently, the only process operation regulated under 6 NYCRR Part 212 at the Facility is the wallboard processing plant. The wallboard processing plant is subject to the PM emission standard contained in 40 CFR Part 60, Subpart 000 – Standards for Performance for Nonmetallic Mineral Processing Plants. Per 6 NYCRR Section 212-1.5(e)(1), a process emission source subject to a Federal New Source Performance Standard such as Subpart 000 satisfies the requirements of Part 212 for the air contaminant regulated by the Federal standard if the owner or operator can demonstrate that the facility is in compliance with the relevant Federal regulation. As it operates in compliance with 40 CFR 60 Subpart 000, the Facility is in compliance with Part 212. Moreover, previous studies show that the Facility is in compliance with the PM NAAQS and thus is not disproportionately impacting disadvantaged communities.

B. The Biomass Gasification Facility will be Equipped with State-of-the-Art Air Pollution Controls, Thus Minimizing its Impact on the Disadvantaged Community

The Facility has been designed with extensive air pollution controls to reduce impacts both to communities immediately adjacent to the Facility and to the environment generally. The combustion reactor will be equipped with an oxidation catalyst primarily for the control of CO emissions, but the oxidation catalyst will also effectively control co-pollutants, such as volatile organic compounds and other organic HAPs. Taylor’s biomass separation process will remove metallic compounds from the fuel stream. In addition, the process combustor will be equipped with fabric filters to remove PM, including metals. These controls thus significantly reduce emissions of “co-pollutants,” defined in the CLCPA as “hazardous air pollutants produced by greenhouse gas emissions sources.” ECL 75-0101.3. Key aspects of the Project’s air pollution control program include:

- Sorting, separating, and recycling prior to gasification. The step will reduce the quantity of metals and other contaminants input into the biomass gasification process and, by extension, the quantity of meals emitted from the process combustor and combustion turbine.
- Selective catalytic reduction (SCR) systems utilizing aqueous ammonia injection to reduce NO_x emissions from both the combustion turbine and process combustor.
- Oxidation catalysts to reduce CO and VOCs—including volatile HAPs such as benzene—from both the combustion turbine and process combustor.
- Fabric filter (“baghouse”) to reduce PM emissions from the process combustor. PM includes potentially hazardous metals such as lead.

Also, Taylor’s gasification technology and syngas cleanup train will prevent emissions of SO₂, VOCs and metals. The biomass gasification process produces clean syngas consisting primarily of hydrogen and carbon monoxide, thus avoiding the incomplete combustion (and accompanying emissions) that occurs in the mass burning chamber of a traditional MSW incinerator. *See* the following sections of the DEIS for detailed information about emissions and air pollution controls associated with each emission source

related to the biomass gasification project. DEIS Sections 7.2.1 (combustion turbine), 7.2.2 (process combustion reactor), 7.2.3 (emergency flare), 7.2.4 (startup boiler and startup heater).

To ensure that the facility is operating in accordance with all applicable requirements, it will be equipped with continuous emission monitoring systems (CEMS) and continuous parametric monitoring systems to provide it with a constant flow of information concerning the performance of the gasification system. Key monitoring systems include: steam flow meter or feedwater flow meter (to ensure facility does not operate above its permitted capacity); temperature (to determine compliance with the maximum particulate matter control device temperature requirement); CEMS measuring SO₂ emissions; CEMS measuring NO_x emissions; and a continuous opacity monitoring system (COMS). In addition, the facility must perform periodic emission performance tests to confirm that it is meeting emission limits for specific parameters and monitor the sulfur content of the “char” fed to the combustion turbine to confirm it does not exceed applicable limits.

In addition, as set forth in Section C.2 below, Taylor has implemented numerous best management practices and other measures to reduce fugitive dust and odors with the goal of minimizing the impact of the Facility on its neighbors.

As the above summary shows, the Project will be equipped with extensive air pollution controls and monitoring systems all of which will ensure that emissions are well controlled. These measures, which will be incorporated in the Facility’s new Title V air permit, will ensure that emissions from the Facility do not disproportionately impact disadvantaged communities.

C. The Facility Has Not and Will Not Otherwise Impose a Disproportionate Burden on Disadvantaged Communities

In its 23 years of operating a NYSDEC-permitted solid waste facility, Taylor has accumulated an admirable operating record and maintained excellent relations both with its neighbors and with the Town of Montgomery. The Facility has never received a Notice of Violation from NYSDEC and has never otherwise been the subject of an environmental enforcement action. To the best of our knowledge, NYSDEC has received few, if any, complaints from Taylor’s neighbors concerning its day-to-day operations, a rarity among facilities managing C&D debris. As NYSDEC is aware, since opening, NYSDEC has maintained a part-time on-site environmental monitor at the site to oversee facility operations. Until recently, the monitor was a NYSDEC employee. Approximately, a year ago, the employee was replaced with a third-party contractor hired by NYSDEC. The monitor must prepare periodic reports concerning on-site operations, which it provides to NYSDEC and Taylor. These reports confirm that the Taylor facility is meeting its commitments under its existing permit and is otherwise fulfilling its obligations under the Part 360 regulations to minimize the impact of its operations on its neighbors.

As part of its original SEQRA review, Taylor prepared a full EIS that evaluated the environmental impacts of the biomass gasification project on the surrounding area, including the disadvantaged communities identified by the CJWG. That analysis showed that the Project would not have a significant adverse environmental impact nor would it disproportionately burden the disadvantaged communities. The key components of that analysis are summarized below:

1. Traffic

As set forth above, the increase in the quantity of waste delivered to the Facility because of the Project will increase the number of truck trips to and from the Facility. However, this change will not disproportionately burden the disadvantaged communities identified by the CJWG.

Taylor included a detailed analysis of the traffic and transportation and the potential impacts of constructing and operating the biomass gasification project in its DEIS. The analysis describes the roadway and traffic characteristics in the vicinity of the Facility, providing the basis for assessing the traffic to be generated by the Project and the potential impacts additional traffic may have on the surrounding roadway network. DEIS, Section 3.0 Traffic and Transportation. The DEIS concluded, among other things, that: (1) The level of service (LOS) at the key signalized intersections was not projected to change as a result of the Project; (2) the LOS at the employee driveway was expected to worsen (due to increased employment because of the Project); (3) the LOS for the new truck driveway required to service the gasification project was anticipated to operate at LOS C the weekday peak hour and LOS B during the weekday PM peak hour; (4) there was no observed impact to Beaver Dam Road as a result of the Project; (5) there was not projected to be an appreciable increase in vehicles queued on the northbound approach to New York State Route 208 at its intersection with Neelytown Road/Interstate 84 ramps; (6) average construction truck traffic volume would only result in approximately one truck trip per construction day; and (7) during construction, at most 150 workers were expected to be onsite at any given time and they would typically be arriving and departing the jobsite ahead of the AM and PM peak traffic hours.

Of particular relevance to this Section 7(3) analysis, trucks traveling to and from the Facility do not generally pass through the disadvantaged communities of concern. Primary truck access to the Facility is provided by Interstate 84 (I-84), located less than two miles northeast of the Facility. Exit 208 (formerly known as Exit 5) of I-84 provides direct access to NYS Route 208, which connects to Neelytown Road, providing access to the Facility. The Facility can also be accessed from Exit 6 of I-84 to NYS Route 17K through the Town of Newburgh, and Exit 5A to Route 757, Former Drury Lane. None of these routes require trucks going to the Facility to pass through residential neighborhoods in the disadvantaged communities to access the site.

With respect to Taylor's own trucks, drivers are specifically directed to avoid local roads. As part of its business, Taylor maintains a small fleet of short-haul trucks and a few tractor-trailers (roll-offs) for outbound flow of materials. These trucks are hired by municipalities, homeowners, or contractors to provide a waste disposal container at their designated address. When the container is full, the customer will notify Taylor, who will dispatch a truck to pick up the container. All drivers dispatched by Taylor are required to follow designated routes designed specifically to avoid local streets. The only time Taylor trucks are allowed on local roads is when the driver of the short-haul/roll-off truck is making a local delivery. Taylor has adopted this policy with the specific goal of minimizing the impact of traffic to and from the Facility on its neighbors.

Note also that Taylor is not and will not be a significant contributor to truck traffic in the area. At the time the Facility was initially permitted, the area was already the site of a number of distribution centers and warehouses that generated significant quantities of truck traffic in the vicinity of the Taylor

facility. In the years since the Project was approved, approximately 8 to 10 new distribution warehouses have been constructed on Neelytown Road, resulting in hundreds of additional trucks using the road each day. The additional 20 trucks associated with Taylor's biomass gasification project will not contribute meaningfully to traffic conditions in the area.

As part of DEIS Section 7.0, Taylor assessed air quality impacts relating to traffic generation associated with the Facility. See DEIS Section 7.2.6 (Mobile Sources). Using the New York State Department of Transportation's Environmental Procedures Manual, Taylor conducted a screening of traffic volume and LOS to determine the need for a detailed microscale analysis of air quality impacts. Because the first of the three screening analysis thresholds was not exceeded, no further screening was required. This result shows that traffic associated with the Facility will not significantly impact air quality.

As the above summary shows, the original DEIS concluded that the Project would have a minimal impact on traffic in the area during both construction and operation. The trucks serving the site do not typically pass through the portions of the census tracts encompassing the disadvantaged communities where people actually live. Moreover, trucks owned/operated by Taylor are directed not to use local streets when entering and leaving the Facility. Also, the DEIS confirmed that emissions from the trucks themselves will not significantly impact air quality. As a result, traffic associated with the Project will not contribute to or otherwise impose a disproportionate burden on these communities.

2. Dust and Odor

The existing C&D processing operations are conducted with the goal of reducing dust, odor, litter and other nuisance conditions. Specific measures to control odor, dust and litter include:

- Mixed C&D processing occurs in the fully enclosed C&D Processing Structure to minimize dust, odor noise and litter.
- The C&D Processing Structure is cleared daily and laborers are instructed to control fugitive litter.
- The door openings in the C&D Processing Structure are equipped with high-speed retractable doors which are deployed when materials could potentially leave the confines of the structure or when the facility is closed.
- Access roads and queuing and staging areas are policed periodically for areas in need of attention.
- Any litter that escapes the C&D Processing Structure or other portions of the Facility is contained by a perimeter fence.
- On at least a quarterly basis, the C&D Processing Structure is cleaned to eliminate buildup of material accumulating on places such as structural supports.

The Air Quality section of the DEIS prepared for the biomass gasification project included a detailed analysis of its potential dust and odor impacts. As set forth in DEIS Section 7.2, the facility will employ numerous measures to control potential odor and dust, including:

- Conducting all MSW storing, sorting, loading, and unloading activities within completely enclosed structures;
- Outfitting all large openings in the structure with high-speed retractable doors;
- Using only enclosed covered conveyors to transfer material;

- Using Clean Air Plants (CAP) BioOxidizers (or an approved equivalent) throughout the building to protect against indoor air quality contaminants such as odors, smoke particles, spores, viruses, and bacteria;
- Conducting at least quarterly plant scrubbing of plant structures to address the buildup of material accumulated on places such as structural supports and conveyor rails. Tipping areas will be cleaned daily.

Taylor’s current and proposed odor and dust control measures—together with permit conditions issued by NYSDEC—have and will ensure that the Facility does not impose a disproportionate burden on the disadvantaged communities.

3. Noise

As an existing construction and demolition recycling facility, Taylor is required to conduct an annual noise survey and to report the results to NYSDEC Region 3 pursuant to its existing solid waste permit and the requirements of 6 NYCRR Part 360. These annual reports show that the Facility is not exceeding the applicable noise limits at the property lines. Accordingly, current Facility operations are not imposing a disproportionate burden on disadvantaged communities.

As part of its application for the Project, Taylor conducted a detailed analysis of the incremental noise contribution caused by the biomass gasification project compared to existing baseline conditions. *See* DEIS Section 6.0, Noise. Taylor’s consultants conducted a preliminary noise analysis to assess the noise generated by existing landfill operations and a follow-up study to assess the noise impacts of the new equipment associated with the gasification project on offsite locations. The site and surrounding area are zoned for commercial and industrial uses and are therefore considered suburban. DEIS, p. 6-4. The DEIS compared the anticipated sound levels following installation of the equipment with the noise limits for suburban areas set forth in DEC’s solid waste regulations at 6 NYCRR 360-1.14(p) at six locations surrounding the site. The conclusions of the study as summarized in the DEIS are duplicated below:

Based on the analysis, [sound pressure levels] in residential areas on the north side of Neelytown Road and the residential areas adjacent to Maybrook Road are projected to have no significant increase in nighttime or daytime noise levels. These locations will comply with the noise limits imposed by 6 NYCRR 360-1.14(p). Further, the projected noise levels at these residential receptors, when compared to respective ambient levels, represent changes that are not significant.

With respect to the solid waste management facility noise limits presented in Table 6-1 for adjacent residential use, all perimeter locations satisfy the daytime limit of 62.0 dBA. The nighttime limit of 52.0 dBA is potentially exceeded only at the nearest residences north of Neelytown Road, however this location does not represent a perceptible increase over the background condition and is therefore compliant with 6 NYCRR 360-1.14(p).

The 6 NYCRR 360 permit will require operational noise monitoring at startup and periodically during routine operations. If operational monitoring indicates the operational noise limits of 6 NYCRR 360 are not attained at this location, Taylor will provide additional mitigation by extending the perimeter earthen berm and vegetative screening, and/or providing additional sound screening of the operating equipment. DEIS, p. 6-12.

As this analysis shows, the Facility—including the planned biomass gasification project—will not impose a disproportionate noise burden on the disadvantaged communities.

D. Conclusion

As the above summary shows, the Taylor facility has not and will not have a disproportionate impact on the disadvantaged communities. Available air emissions data shows that potential co-pollutant (i.e., HAP) emissions from the Facility are not significant. Moreover, because of the unique nature of the biomass gasification process, the estimates of HAP emissions are likely very conservative owing to the relatively clean nature of the material generated and combusted relative to the materials relied upon to estimate emissions. Past and recent modeling of criteria pollutants shows that emissions from the Project will not exceed the NAAQS, and thus will not disproportionately burden the neighboring disadvantaged communities. To ensure that emissions are minimized, Taylor will install extensive air pollution controls and monitor key emissions and performance parameters continuously. These requirements will be incorporated into Taylor's Title V air permit to ensure they are fully enforceable. Finally, Taylor's operating history and studies addressing the potential impact of the Project on traffic, fugitive dust, odor, and noise show that the Facility has not and will not adversely impact communities, let alone impose a disproportionate burden on disadvantaged communities.

The Project will provide significant benefits to the DACs. First, the Project will generate approximately 300 construction jobs and 45 full-time equivalent permanent jobs, many of which can potentially be filled by residents of the DACs and others in the local area. Second, by providing a local waste management option, the Project will simplify and potentially reduce the cost of managing solid waste in the area, including the DACs. Third, in conjunction with the Project, Taylor has committed to providing payments in lieu of taxes to the Town of Montgomery. Fourth, as detailed above, Taylor has proposed numerous building design and operational measures which will reduce Facility energy usage and GHG emissions within the nearby DACs. Finally, Taylor is proposing to install electric vehicle charging stations in the Village of Maybrook, which will facilitate the area's transition to electric vehicles and reduce GHG emissions and co-pollutants within the DAC closest to the Facility.

The installation of the proposed EV charging stations in Maybrook Village will provide a significant GHG and co-pollutant emissions mitigation benefit to the DAC of up to 208 tons per year (see Exhibit G), provide an incentive for more residents to invest in EV vehicles based on the convenient location of the charging stations, and also provide a significant potential revenue stream to the Village to invest in other projects designed to mitigate GHG emissions and/or decrease the existing burdens on the DAC.

Also reviewing the benefits more broadly, the Project is likely to benefit other DACs as well. Currently, most solid waste is collected by governments or private transporters and delivered to transfer stations,

many of which are located in DACs. Construction of the Project will reduce the need to use transfer stations since waste generated locally can be delivered directly to the Facility, benefiting the DACs in which the transfer stations are located. Finally, as discussed in detail in this CLCPA Analysis, managing waste using gasification rather than landfills greatly reduces overall GHG emissions.

With the proposed additional EV charging stations along with the inherent Project benefits and the proposed GHG mitigation measures, the Project will provide significant GHG mitigation and other benefits, decreasing the burdens on the DAC, as detailed above and on Exhibit G.

VI. Conclusion

We hope that this submission has addressed your CLCPA-related concerns about the Taylor biomass gasification project. If you have any further issues, we welcome the opportunity to talk with you further with the goal of clarifying any remaining issues. Please call me with any questions.

**Taylor Biomass Energy - Montgomery, New York
Facility Greenhouse Gas Emissions Summary**

**Exhibit A to Revised CLCPA
Direct GHG Emissions**

Potential Emissions

Emission Source	Heat Input MMBtu/hr	Operation hr/yr	CO ₂ ¹			CH ₄ ²			N ₂ O ²			GHG (CO _{2e}) ³		
			lb/MMBtu	lb/hr	ton/yr	lb/MMBtu	lb/hr	ton/yr	lb/MMBtu	lb/hr	ton/yr	lb/MMBtu	lb/hr	ton/yr
Combustion Turbine	133.35	8,760	187.0	24,932	109,202	0.0086	1.15	5.02	0.003	0.40	1.75	188.5	25,134	110,087
Process Combustor	30.00	8,760	511.2	15,335	67,167	0.032	0.96	4.20	0.0042	0.13	0.55	515.0	15,449	67,666
Emergency Flare	133.35	100	187.0	24,932	1,247	0.0086	1.15	0.06	0.003	0.40	0.02	188.5	25,134	1,257
Startup Boiler	20.00	120	117.6	2,353	141	0.0023	0.045	0.0027	0.0022	0.043	0.0026	118.4	2,368	142
Startup Heater	37.00	120	117.6	4,353	261	0.0023	0.083	0.0050	0.0022	0.080	0.0048	118.4	4,381	263
Exempt Sources	0.00	0	0.0	0	0	0.0000	0.000	0.0000	0.0000	0.000	0.0000	0.0	0	0
Facility Total				ton/yr =	178,018		ton/yr =	9.29		ton/yr =	2.33		ton/yr =	179,415
				lb/yr =	356,036,826		lb/yr =	18,586		lb/yr =	4,663		lb/yr =	358,829,050

Actual Emissions

Emission Source	Heat Input MMBtu/hr	Operation ⁴ hr/yr	CO ₂ ¹			CH ₄ ²			N ₂ O ²			GHG (CO _{2e}) ³		
			lb/MMBtu	lb/hr	ton/yr	lb/MMBtu	lb/hr	ton/yr	lb/MMBtu	lb/hr	ton/yr	lb/MMBtu	lb/hr	ton/yr
Combustion Turbine	133.35	7,884	187.0	24,932	98,282	0.0086	1.15	4.52	0.003	0.40	1.58	188.5	25,134	99,078
Process Combustor	30.00	7,884	511.2	15,335	60,451	0.021	0.63	2.48	0.013	0.39	1.54	516.4	15,491	61,065
Emergency Flare	133.35	90	187.0	24,932	1,122	0.0086	1.15	0.05	0.003	0.40	0.02	188.5	25,134	1,131
Startup Boiler	20.00	60	117.6	2,353	71	0.0023	0.045	0.0014	0.0022	0.043	0.0013	118.4	2,368	71
Startup Heater	37.00	60	117.6	4,353	131	0.0023	0.083	0.0025	0.0022	0.080	0.0024	118.4	4,381	131
Exempt Sources	0.00	0	0.0	0	0	0.0000	0.000	0.0000	0.0000	0.000	0.0000	0.0	0	0
Facility Total				ton/yr =	160,056		ton/yr =	7.06		ton/yr =	3.14		ton/yr =	161,477
				lb/yr =	320,111,261		lb/yr =	14,119		lb/yr =	6,272		lb/yr =	322,953,125

Notes:

¹ CO₂ Emission Factors: Combustion Turbine, Process Combustor, Emergency Flare - Taylor Biomass Energy, LLC (TBE) design engineer
Startup Boiler, Startup Heater - AP-42, Table 1.4-2
CO₂ Emission Factor = 120,000 lb/10⁶ scf
Higher Heating Value = 1,020 Btu/scf

² CH₄ & N₂O Emission Factors: Combustion Turbine, Emergency Flare - AP-42, Table 3.1-2a
Process Combustor - Table C-2 to Subpart C of Part 98 - Default CH₄ and N₂O Emission Factors for Various Types of Fuel, Biomass Fuels - Solid (All fuel types in Table C-1, except wood and wood residuals)
Startup Boiler, Startup Heater - AP-42, Table 1.4-2
Methane Emission Factor = 2.3 lb/10⁶ scf
N₂O Emission Factor = 2.2 lb/10⁶ scf
Higher Heating Value = 1,020 Btu/scf

³ GHG (CO_{2e}) = (CO₂ * GWP_{CO2}) + (CH₄ * GWP_{CH4}) + (N₂O * GWP_{N2O})
GWP_{CO2} = 1
GWP_{CH4} = 84
GWP_{N2O} = 264

Source: 6 NYCRR 496.5, Carbon dioxide equivalent value for methane and nitrous oxide as provided by the Intergovernmental Panel on Climate Change (IPCC) using 20-Year GWP.

⁴ Operation: Actual hours of operation assumed to be of potential hours of operation for the combustion turbine and process combustor.
Actual hours of operation assumed to be 60 hours per year for start up boiler and start up heater.

**Taylor Biomass Energy - Montgomery, New York
Facility Greenhouse Gas Emissions Summary**

Exhibit B to Revised CLCPA

Upstream potential GHG emissions from extraction, transmission and use of the natural gas imported into the State for use in the startup boiler and heater

Potential Emissions

Emission Source	Heat Input MMBtu/hr	Operation hr/yr	CO ₂ ¹			CH ₄ ¹			N ₂ O ¹			GHG (CO _{2e}) ²		
			lb/MMBtu	lb/hr	ton/yr	lb/MMBtu	lb/hr	ton/yr	lb/MMBtu	lb/hr	ton/yr	lb/MMBtu	lb/hr	ton/yr
Startup Boiler	20.00	120	26.7	535	32	0.7871	15.741	0.9445	0.0003	0.006	0.0004	92.9	1,859	112
Startup Heater	37.00	120	26.7	990	59	0.7871	29.121	1.7473	0.0003	0.011	0.0007	92.9	3,439	206
Exempt Sources	0.00	0	0.0	0	0	0.0000	0.000	0.0000	0.0000	0.000	0.0000	0.0	0	0
Facility Total				ton/yr = 91.5			ton/yr = 2.69			ton/yr = 0.00		ton/yr = 318		
				lb/yr = 182,931			lb/yr = 5,383			lb/yr = 2		lb/yr = 635,696		

CO₂ + CH₄ + N₂O = 94.2

Actual Emissions

Emission Source	Heat Input MMBtu/hr	Operation ³ hr/yr	CO ₂ ¹			CH ₄ ²			N ₂ O ²			GHG (CO _{2e}) ³		
			lb/MMBtu	lb/hr	ton/yr	lb/MMBtu	lb/hr	ton/yr	lb/MMBtu	lb/hr	ton/yr	lb/MMBtu	lb/hr	ton/yr
Startup Boiler	20.00	60	26.7	535	16	0.7871	15.741	0.4722	0.0003	0.006	0.0002	92.9	1,859	56
Startup Heater	37.00	60	26.7	990	30	0.7871	29.121	0.8736	0.0003	0.011	0.0003	92.9	3,439	103
Exempt Sources	0.00	0	0.0	0	0	0.0000	0.000	0.0000	0.0000	0.000	0.0000	0.0	0	0
Facility Total				ton/yr = 45.7			ton/yr = 1.35			ton/yr = 0.00		ton/yr = 159		
				lb/yr = 91,466			lb/yr = 2,692			lb/yr = 1		lb/yr = 317,848		

CO₂ + CH₄ + N₂O = 47.1

Notes:

¹ CO₂, CH₄, and N₂O Emission Factors: Startup Boiler, Startup Heater - Appendix A, Emission Factors for Use by State Agencies and Applicants

Table A1: 2019 Emission Rates for Upstream Out-of-State Sources

CO₂ Emission Factor = 12,131 g/mmbtu
Methane Emission Factor = 357 g/mmbtu
N₂O Emission Factor = 0.14 g/mmbtu

² GHG (CO_{2e}) =

(CO₂ * GWP_{CO2}) + (CH₄ * GWP_{CH4}) + (N₂O * GWP_{N2O})

GWP_{CO2} = 1
GWP_{CH4} = 84
GWP_{N2O} = 264

Source: 6 NYCRR 496.5, Carbon dioxide equivalent value for methane and nitrous oxide as provided by the Intergovernmental Panel on Climate Change (IPCC) using 20-Year GWP.

³ Operation:

Actual hours of operation assumed to be 60 hours per year for start up boiler and start up heater.

**EXHIBIT C TO REVISED CLCPA
TAYLOR BIOMASS ENERGY (TBE)
VEHICLE GREENHOUSE EMISSIONS
AND COMPARISON FOR TRUCKING MSW TO AND FROM THE FACILITY**

MSW TRUCKED TO SENECA MEADOWS LANDFILL (WATERLOO, NEW YORK)

Solid Waste Generated ^a	500 tons/day
Solid Waste Mass for a Single Truck ^b	25 tons/truck
Round Trip ^c	436 miles/truck
Emission Factor ^d	1,450 g CO ₂ /mile
Daily Total ^f	13.9 tons CO ₂ /day
Annual Total	5,087 tons CO ₂ /year

MSW TRUCKED TO TAYLOR BIOMASS ENERGY

Solid Waste Generated ^a	500 tons/day
Solid Waste Per Single Truck ^b	25 tons/truck
Round Trip ^e	200 miles/truck
Emission Factor ^d	1,450 g CO ₂ /mile
Daily Total ^g	6.4 tons CO ₂ /day
Annual Total	2,334 tons CO ₂ /year

Notes:

(a) Potential MSW generated as indicated in Section 1.3 of the June 2010 Draft Environmental Impact Statement (DEIS)

(b) Assume 25 tons per truck for transporting MSW.

(c) As indicated in Section 7.5.4 of the 2010 DEIS, the Seneca Meadows Landfill would be used to dispose the MSW as an alternative. The Seneca Meadows Landfill is 218 miles from the facility, which results to a 436 mile round trip.

(d) Emission factor obtained from USEPA GHG Emission Factors Hub, Emission Factors for Greenhouse Gas Inventories, last modified April 1, 2022, Table 8, Medium and Heavy-Duty Trucks.

(e) Assume a round trip of 200 miles per truck for transporting MSW within the area of the Taylor Biomass Energy facility.

(f) Daily Total = 500 tons/day / 25 tons/truck * 436 miles/truck * 1,450 g CO₂/mile / 453.592 g/lb / 2,000 lbs/ton

(g) Daily Total = 500 tons/day / 25 tons/truck * 200 miles/truck * 1,450 g CO₂/mile / 453.592 g/lb / 2,000 lbs/ton

**EXHIBIT D TO REVISED CLCPA
TAYLOR BIOMASS ENERGY (TBE)
COMPARISON OF ANNUAL POTENTIAL CO₂e EMISSIONS FROM GASIFICATION VERSES LANDFILLING**

GASIFICATION

This Appendix summarizes the annual potential carbon dioxide equivalent emissions from the Taylor gasification facility compared to those from landfilling the equivalent amount of MSW (500 tons/day per the existing permit). It covers direct and indirect emissions as well as upstream emissions (associated with natural gas used in the startup boiler and startup heater).

Direct CO₂e Emissions (Exhibit A)

Combustion Turbine	110,087 tons
Process Combustor	67,666 tons
Emergency Flare	1,257 tons
Startup Boiler	142 tons
Startup Heater	263 tons
Subtotal	179,415 tons/year

Upstream CO₂e Emissions (Exhibit B)

Startup Boiler	112 tons
Startup Heater	206 tons
Subtotal	318 tons/year

Indirect CO₂e Emissions (Exhibit C)

Additional Truck Traffic (500 tpd MSW to Taylor)	2,334 tons/year
--	-----------------

Gasification Total Potential CO₂e Emissions

Total	182,067 tons/year
-------	-------------------

LANDFILLING

Direct CO₂e Emissions (Source: Original CLCPA Submission, Appendix C)

Landfilling 500 tpd MSW	526,607 tons/year
-------------------------	-------------------

Indirect CO₂e Emissions (Source: Original CLCPA Submission, Appendix D)

Truck Traffic (500 tpd MSW to Landfill)□	5,087 tons/year
--	-----------------

Landfilling Total Potential CO₂e Emissions

Total	531,694 tons/year
-------	-------------------

**EXHIBIT E TO REVISED CLCPA
TAYLOR BIOMASS ENERGY (TBE)
GASIFICATION PROCESS GREENHOUSE GAS EMISSIONS
AND COMPARISON TO INCINERATION**

TBE GASIFICATION PROCESS OPERATING PARAMETERS

Daily MSW Process Rate	500 Tons Per Day
Daily Biomass Generation & Consumption	300 Tons Per Day to Gasification Process
Annual Biomass Consumption ^a	109,500 Tons Per Year to Gasification Process
Electric Power Generation	24 MW
Annual Power Generation	210,240 MW-hrs

TBE GASIFICATION PROCESS GHG EMISSIONS

CO ₂ Emission Rate From Turbine ^b	24,932 lbs CO ₂ /hr
Potential Annual CO ₂ Emissions From Combustion Turbine ^c	109,202 Tons CO ₂ Per Year
CO ₂ Emission Rate From Combustor ^b	15,335 lbs CO ₂ /hr
Potential Annual CO ₂ Emissions From Combustor ^c	67,167 Tons CO ₂ Per Year
Total Potential Annual CO ₂ Emissions	176,369 Tons CO ₂ Per Year
Total CO ₂ Emission Rate per Unit of MSW ^d	1,933 lbs CO ₂ /ton MSW
Total CO ₂ Emission Rate per Unit of Energy Produced ^e	1,678 lbs CO ₂ Per MW-hr

DIRECT MSW INCINERATION ALTERNATIVE GHG EMISSIONS

Incinerator CO ₂ Emissions Factor ^h	1,970 lbs CO ₂ /ton MSW
Annual CO ₂ Emissions ⁱ	179,763 Tons Per year
Incinerator Heat Rate ^j	16,032 Btu/KW-hr
MSW Heat Content (HHV) ^k	5,100 Btu/lb
CO ₂ Emission Rate	3,096 lbs CO ₂ Per MW-hr

TBE GASIFICATION PROCESS VS DIRECT MSW INCINERATION ALTERNATIVE GHG EMISSIONS

Annual CO ₂ Emissions (Incineration)	179,763 Tons CO ₂ Per Year
Annual CO ₂ Emissions (Gasification)	176,369 Tons CO ₂ Per Year

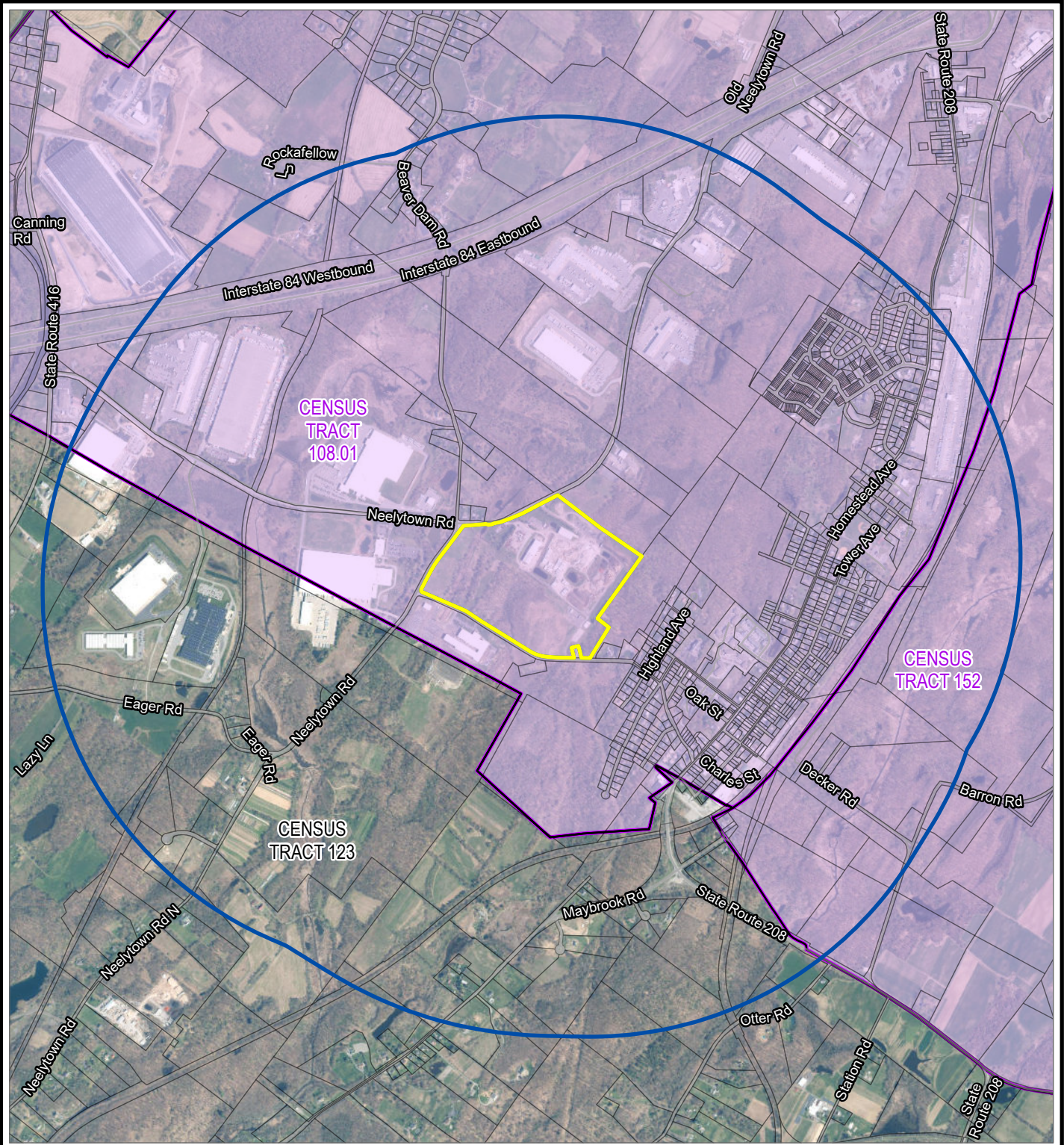
TBE GASIFICATION PROCESS VS DIRECT MSW INCINERATION ALTERNATIVE CO₂ EMISSION RATE

CO ₂ Emission Rate	1,678 lbs CO ₂ Per MW-hr
CO ₂ Emission Rate	3,096 lbs CO ₂ Per MW-hr

Notes:

- (a) Potential Project biomass consumption, power generation and emissions assume 365 day per year full operation.
- (b) Combustion turbine and process combustor emission rate provided by design engineers
- (c) See Appendix A
- (d) Total CO₂ Emission Rate per Unit of MSW = (109,202 tons CO₂/year + 67,167 tons CO₂/year) * 2,000 lbs/ton / 500 tons/day / 365 days/year
- (e) Total CO₂ Emission Rate per Unit of Energy Produced = (109,202 tons CO₂/year + 67,167 tons CO₂/year) * 2,000 lbs/ton / 210,240 MW-hrs
- (h) MSW incineration emission factor per US EPA AP-42, Table 2.1-4, Organic, Nitrogen Oxides, Carbon Monoxide, and Carbon Dioxide Emission Factors for MassBurn Waterwall Combustors.
- (i) Annual CO₂ Emissions = 500 tons/day * 1,970 lbs CO₂e/ton MSW * 365 days/year / 2,000 lbs/ton
- (j) Incinerator heat rate based on NY average as determined from DEC 2008 Waste to Energy Summary Report.
- (k) MSW Heat Content per Pacific Northwest National Laboratory, Municipal Solid Waste (MSW) to Liquid Fuels Synthesis, Volume 1: Availability of Feedstock and Technology prepared for US Department of Energy, PNNL-18144, December 2008. The MSW Heat Content was updated from the 2010 DEIS.
- (l) CO₂ Emission Rate was updated from the 2010 DEIS.

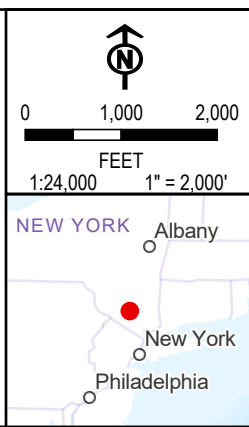
COORDINATE SYSTEM: NAD 1983 2011 STATEPLANE NEW YORK EAST FIPS 3101 FT US. MAP ROTATION: 0
 - SAVED BY: TLATHAM ON 5/25/2023 12:30:53 PM. FILE PATH: T:\1-PROJECT\TAYLORMONTGOMERY\482527_TAYLORBIO\MASSENERGY\2-APRX\482527_ENVIRONMENTALJUSTICE\APRX_LAYOUT\NAME_482527_ENVIJUST_FIG02B_DACS_PARCELS



	PROJECT AREA
	PROJECT AREA ONE-MILE RADIUS
	TAX PARCEL
	CENSUS TRACT WITHIN 1-MILE RADIUS
	DISADVANTAGED COMMUNITY (DAC) WITHIN 1-MILE RADIUS
	ROADS

* DAC CENSUS TRACTS CORRESPOND TO US CENSUS BUREAU 2019 DATA.

BASE MAP: ESRI, WORLD IMAGERY, 2021.
 DATA SOURCES: NYS GIS, NYS STREETS, 2022;
 NYS GIS, NYS TAX PARCELS, 2022;
 US CENSUS BUREAU, 2019 CENSUS TRACTS NYS;
 NYSERDA, DISADVANTAGED COMMUNITIES, 2023.



PROJECT: TAYLOR BIOMASS ENERGY LLC	
350 NEELYTOWN ROAD MONTGOMERY, NY	
TITLE: DISADVANTAGED COMMUNITIES (DAC) WITHIN ONE-MILE RADIUS	
DRAWN BY: T. LATHAM	PROJ. NO.: 482527.0000.0000
CHECKED BY: D. REILLY, G. STUDWELL	CLCPA EXHIBIT F
APPROVED BY: M. FEINBLATT	
DATE: MAY 2023	
10 HEMINGWAY DRIVE 2ND FLOOR EAST PROVIDENCE, RI 02915 PHONE: 401.330.1236	
FILE:	482527_ENVIRONMENTALJUSTICE

CLCPA EXHIBIT G
TAYLOR BIOMASS ENERGY GHG MITIGATION ASSESSMENT

Project GHG Emissions	Potential GHG Emissions
Potential Direct GHG Emissions (CLCPA Exhibit A)	179,415 tons/year
Potential Upstream GHG Emissions (CLCPA Exhibit B)	318 tons/year
Potential Vehicle Emissions (CLCPA Exhibit C)	2,334 tons/year
Reduction due to use of biogenic carbon as fuel source	-176,369 tons/year
Project GHG Reductions	
GHG Emission Reductions - Gasification Versus Landfilling (CLCPA Exhibit C)	-350,238 tons/year
GHG Emission Reductions - Gasification Versus Landfilling Trucking Reduction (CLCPA Exhibit D)	-5,087 tons/year
Net Project GHG Emissions w/o Additional GHG Mitigation	-349,627 tons/year

Additional GHG Mitigation Measures Being Proposed - GHG Reduction Calculation Methodology Identified			
Reduction Measure	Potential Annual GHG Reduction	Proposed Reduction Measure Amount	Potential GHG Mitigation
Motion Sensor Lighting ^{1,2}	16.7 tons/building	5 buildings	84 tons/year
Efficient Exterior Lighting ³	0.13 ton/lightbulb	50 lightbulbs	6 tons/year
Solar EV Charging Stations - Maybrook ⁴	34.7 tons/EV station	6 EV stations	208 tons/year
Solar Panels - Roof Mounted ⁵	0.0076 ton/square foot	20,000 square feet	151 tons/year
Green Roof on Scale House ⁶	0.0004 ton/square foot	5,000 square feet	2 tons/year
Total Proposed Quantifiable Additional GHG Mitigation			451 tons/year

Additional GHG Mitigation Measures Being Proposed - GHG Reduction Calculation Methodology Not Identified	
Reduction Measure	Potential Benefit(s)
Energy Efficient Building Envelope	Improved Energy Efficiency will result in lower GHG emissions from on-site power production
High-Efficiency HVAC System	Improved Energy Efficiency will result in lower GHG emissions from on-site power production
Maximize Interior Daylighting	Improved Energy Efficiency will result in lower GHG emissions from on-site power production
Incorporate Window Glazing	Improved Energy Efficiency will result in lower GHG emissions from on-site power production
Using Recycled Building Materials	Lower life-cycle GHG emissions from building materials
Using Local Building Materials	Lower life-cycle GHG emissions from building materials

GHG Mitigation Measures Considered but Not Being Proposed	
Reduction Measure	Rationale
Use of Lower Emission Technologies	There are currently no technically or economically feasible alternatives for reducing emissions from the Project process equipment (See Section V of the CLCPA Analysis)
Use of Alternative Process Technologies	There are currently no technically or economically feasible alternatives for reducing emissions from the Project process equipment (See Section V of the CLCPA Analysis)
Utilizing Alternative Process Fuels	There are currently no technically or economically feasible alternatives for reducing emissions from the Project process equipment (See Section V of the CLCPA Analysis)
Operational Mitigation	There are currently no technically or economically feasible alternatives for reducing emissions from the Project process equipment (See Section V of the CLCPA Analysis)
EV Company Vehicles	None of the company vehicles are near their useful life and it would be cost prohibitive to preemptively replace them with EV models (See Section V of the CLCPA Analysis)
Financial Mitigation	The operational revenue from the EV charging stations proposed for Maybrook Village can be used to fund other GHG reduction projects
On-Site EV Charging Station	The EV charging stations being proposed for Maybrook Village will provide significantly more benefit to the DAC
Solar Panels - Ground Mounted	Would be cost prohibitive and would require additional local permitting, further delaying the Project while seeking approval
Fund Electric Buses	Would be cost prohibitive and require complicated O&M agreements with local transportation authorities, further delaying the Project
Alternate Truck Travel Routes	Facility truck traffic already avoids the DAC and does not impact the DAC, as concluded in the DEIS
Planting Trees	Would be cost prohibitive and would require land acquisition agreements, further delaying the Project

References

- ¹<https://www.energy.gov/femp/articles/wireless-occupancy-sensors-lighting-controls-applications-guide-federal-facility>
- ²https://www.researchgate.net/publication/351453023_Energy_Consumption_in_a_Distributional_Warehouse_A_Practical_Case_Study_for_Different_Warehouse_Technologies
- ³<https://www.energy.gov/femp/purchasing-energy-efficient-exterior-lighting>
- ⁴[22-18-Projected Emission Factors for New York Grid Electricity.pdf](https://www.eia.gov/energy-factsheets/22-18-Projected_Emission_Factors_for_New_York_Grid_Electricity.pdf)
- ⁵<https://www.energysage.com/other-clean-options/carbon-offsets/carbon-offsets-vs-rooftop-solar/>
- ⁶https://www.epa.gov/sites/default/files/2018-09/documents/greenroofs_casestudy_kansascity.pdf