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ENVIRONMENTAL ENGINEERING SOLUTIONS, P.C.

September 25, 2026

Ms. Denise Grattan

Division of Environmental Permits, Region 2

NYSDEC

47-40 21st Street

Long Island City, NY 11101

Re: **NYC HHC Bellevue Hospital – ASF RTN 3 Renewal & Cogen Project**
Response to Notice of Incomplete Application dated September 14, 2026

Dear Ms. Grattan,

We are writing in response to NYSDEC's Notice of Incomplete Application dated September 14, 2026, regarding the ASF RTN 3 Renewal & Cogen Project.

The revised CLCPA analysis and application materials enclosed with this submission address the comments as follows:

CLCPA Analysis

1. Within the CLCPA analysis, please indicate what 24-month period is being utilized to calculate actual emissions (i.e. Jan 2022 - Dec 2023) and how that period was determined to be the highest of the five years preceding the date of the permit application.

   Response: The revised CLCPA analysis now identifies Jan 2018 – Dec 2019 as the 24-month period used to calculate actual emissions (Section 3(a)). As explained therein and in Appendix A, Glossary C, facility fuel consumption records were reviewed across each consecutive 24-month block within the five-year window preceding the permit application, and Jan 2018 – Dec 2019 was identified as the highest-emitting 24-month period on that basis.

2. This project is calculated to result in an increase in GHG emissions. Please provide the following within the CLCPA analysis to address the emissions increase:
   a. Provide an explanation of any factors or circumstances that provide justification for the project.

   Response: A new Section 4(a), Justification for the Project, has been added to the revised CLCPA analysis. It explains that the CHP project is driven by Bellevue Hospital's need for resilient, on-site thermal and electric generation capable of sustaining critical patient care functions – including emergency, surgical, and trauma services – during grid outages and periods of peak regional demand, consistent with its status as a Level I Adult Trauma Center and core acute-care facility within the NYC Health + Hospitals system.

b. Provide 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.

Response: Section 4(a) has also been expanded to address this item. It describes the environmental, economic, and social harm that would result from the project's absence – continued reliance on the facility's existing fleet of aging, less-controlled generators, forgone grid and thermal displacement benefits, and reduced resiliency for a Level I trauma center – and identifies the resulting benefits to the citizens of the state, including maintained critical trauma and emergency medical capacity and advancement of NYC Health + Hospitals' commitment to reduce operational GHG emissions 30% by 2030 and 85% by 2050.

3. The Disproportionate Burden Analysis, within the CLCPA revision date 08/10/26 received 08/17/26 as Appendix B, submitted to address CLCPA Section 7(3) comprised of only a DAC worksheet and this is not sufficient.

Response: The Disproportionate Burden Analysis has been substantially expanded beyond the DAC worksheet previously submitted. Revised Section 4 now includes 4(a) Justification for the Project, 4(b) Emissions Impact and Existing Community Burden (identifying Census Tract 62, DAC number 36061006200, and its pollution and socioeconomic burden indicators), 4(c) Environmental Justice Siting Law, and 4(d) Alternatives and Design Measures to Reduce Impact on the Disadvantaged Community, consistent with DEC Program Policy DEP 24-1, Section V.6. The completed CLCPA Section 7(3) Disproportionate Burden Analysis Worksheet is included as Appendix B.

4. Please utilize the attached document with formatting guidance when preparing your revised CLCPA analysis.

Response: The revised CLCPA analysis (Rev. 2) has been reformatted to follow the section structure and headings provided in NYSDEC's formatting guidance, including numbered Sections 1 through 5, the Disproportionate Burden Analysis subsections 4(a) through 4(d), and Appendices A through C, as reflected in the enclosed document.

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Environmental Justice Siting Law (EJSL) and UPA

5. Please incorporate into the disproportionate burden analysis to be prepared under DEC Program Policy DEP 24-1: Permitting in Disadvantaged Communities (DEP 24-1) the additional requirements of the EJSL for impacts from any pollution the facility may emit, discharge, or cause. In addition to the analysis of potential impacts of greenhouse gases (GHGs) and co-pollutants required under the Climate Leadership and Community Protection Act (CLCPA) Section 7(3), the analysis must also consider other relevant pollution impacts on the DAC per the EJSL, including potential impacts to air quality, water quality, noise, and odors, and any resulting health effects or relevant indicators beyond air-related effects. Where there is an increase in pollution, the basic analysis outline described in Section V.6 of DEP 24-1 may be used in evaluating other relevant pollution impacts within the DAC.

   Response: A new Section 4(c), Environmental Justice Siting Law, has been added to address pollution impacts on the DAC beyond GHGs and co-pollutants, following the basic analysis outline of DEP 24-1 Section V.6. It evaluates zoning and land use, hazardous materials, water quality, odor, and noise – drawing on the supplemental air quality, Local Law 97, noise, and energy analysis in Appendix C – and concludes that the project would not result in a disproportionate burden to the disadvantaged community in these additional categories.

If you have any questions please contact us; we look forward to bringing this application to a successful and timely completeness determination.

Very truly yours,
ENVIRONMENTAL ENGINEERING SOLUTIONS, P.C.

Robert DeGiorgio, P.E.
President

Attachments
A – Revised CLCPA Analysis (Rev. 1)

cc:
K. Holder, Bellevue Hospital
James T. Rostkowski, Dynamic Mechanical

CLCPA Analysis for
NYC HHC Bellevue Hospital
462 First Avenue, New York, NY 10016 (Manhattan)
DEC Facility ID: 2-6206-00032
Application ID: 2-6206-00032/00004
ASF RTN 3 Renewal & Cogen Project
Revision 2 | Date of Revision: 9-21-2026

Prepared in response to the New York State Department of Environmental Conservation's request for additional information regarding this application

Submitted to:
NYSDEC Region 2
47-40 21st Street, Long Island City, NY 11101

Submitted by:
Environmental Engineering Solutions, P.C. (EESPC)
10 Bank Street, Suite 650, White Plains, NY 10606

Revision History

Date	Revision	Submitted By
3-25-26	0	Tara Curasi
8-10-2026	1	Tara Curasi
9-21-2026	2	Belle Baulch

Table of Contents

1. Authorization and Purpose 3
2. Description of Changes Involved 3
3. Calculations and Analysis Requirements 4
3(a) Emissions Summary Section 4
3(b) Net Increase / Decrease Statement 6
3(c) Grid and Thermal Displacements 7
3(d) Future Projections and Emissions Reduction Strategies 8
4. Disproportionate Burden Analysis 10
4(a) Justification for the Project 10
4(b) Emissions Impact and Existing Community Burden 11
4(c) Environmental Justice Siting Law 13
4(d) Alternatives and Design Measures to Reduce Impact on the Disadvantaged Community 15
5. Alternatives and Mitigation 16
Conclusion 17
Appendix A: CLCPA Calculations - (Exhibit 1-9, Glossary A, Glossary B) 18
Appendix B; Disproportionate Burden Analysis 19

1. Authorization and Purpose

NYC HHC Bellevue Hospital ("the facility") operates under an Article 19 Air State Facility (ASF) permit (DEC ID: 2-6206-00032) issued by the New York State Department of Environmental Conservation (NYSDEC). This CLCPA analysis supports a combined renewal and modification of the facility's ASF permit.

The modification involves the installation of two (2) new combined heat and power (CHP) units and one (1) new exempt emergency generator, along with the removal of all seven (7) generators previously enrolled in the Demand Response (DR) Program: six (6) of these units will convert to emergency-only, exempt status, and the seventh will be decommissioned.

2. Description of Changes Involved

The following changes to permitted and exempt equipment, operations, and fuel use are proposed as part of this renewal/modification:

- Installation of two (2) Caterpillar G3516H natural gas-fired CHP engines, rated at 1,982 kW each.
- Confirmation of exempt status for four (4) Caterpillar C27 and two (2) Caterpillar D399 generators, following their permanent withdrawal from the Demand Response Program - these units now operate exclusively for emergency use, testing, and maintenance under 6 NYCRR 201-3.2.
- Decommissioning of one (1) Rudox RM900s 600 kW previously enrolled DR generator, completed March 16, 2026.
- Installation of one (1) new MTU 16V4000 DS2000 2,000 kW exempt emergency generator.

3. Calculations and Analysis Requirements

All calculations below reflect direct and upstream GHG, hazardous air pollutant, and co-pollutant emissions attributable to the project. Grid and thermal displacements are excluded from the core comparison below, consistent with NYSDEC guidance. Supporting discussion of grid and thermal displacement benefits is provided separately in Section 3(c).

3(a) Emissions Summary Section

The tables below present projected actual and potential-to-emit (PTE) emissions for the baseline and project scenarios. Baseline actual emissions reflect operation of the seven (7) generators previously enrolled in demand response and two (2) exempt emergency generators; fuel usage from the highest 24-month period (Jan 2018 – Dec 2019) was used to calculate hourly and annual emissions.

Facility fuel consumption records were reviewed across each consecutive 24-month block within the five-year window preceding the permit application and the Jan 2018 - Dec 2019 period was identified as the highest-emitting 24-month period on that basis (see Appendix A-Glossary C).

Baseline potential emissions reflect the maximum operation of 8,760 hr/yr for demand response generators and 500 hr/yr for exempt generators. Project scenario actual emissions reflect operation of the two (2) new CHP units (8,238 hrs/yr) and nine (9) emergency generators (52 hrs/yr); project scenario potential emissions reflect the two (2) CHP units running continuously (8,760 hrs/yr) and the nine (9) emergency generators each running 500 hrs/yr. Values are drawn from the supporting calculations in Appendix A.

Table 1 - GHG Emissions Summary (CO2e, TPY)

GHG Emissions Reduction Summary

Baseline Scenario	Six (6) Generators in Demand Response +
	One (1) Generator in Demand Response to be removed +
	Two (2) Existing Exempt Emergency Generators
Project Scenario	Two (2) new CHP units +
	Eight (8) Existing Exempt Emergency Generators
	One (1) New Exempt Emergency Generators

Sources	Upstream Carbon Dioxide Equivalents (CO2e) TPY				Net project Impact TPY	
	Baseline Scenario GHG Emissions CO2e		Project Scenario GHG Emissions		Actual	Potential
	Actual CO2e	Potential CO2e	Actual CO2e	Potential CO2e		
Emergency Generators	88.77	3,775.77	39.45	379.34	-49.32	-3,396.43
CHPs	-	-	8,057.81	8,475.79	8,057.81	8,475.79
Total	**88.77**	**3,775.77**	**8,097.26**	**8,855.13**	**8,008.48**	**5,079.36**

Sources	Direct Carbon Dioxide Equivalents (CO2e) TPY				Net project Impact TPY	
	Baseline Scenario GHG Emissions CO2e		Project Scenario GHG Emissions		Actual	Potential
	Actual CO2e	Potential CO2e	Actual CO2e	Potential CO2e		
Emergency Generators	283.75	12,068.32	126.10	1,212.46	-157.65	-10,855.85
CHPs	-	-	15,478.30	16,281.20	15,478.30	16,281.20
Total	**283.75**	**12,068.32**	**15,604.39**	**17,493.67**	**15,320.65**	**5,425.35**

Table 2 - Co-Pollutants Emissions Summary

Co-pollutants Emissions Reduction Summary

Sources	Direct Co-Pollutants TPY				Net project Impact	
	Baseline Scenario		Project Scenario		Actual	Potential
	Actual TPY	Potential TPY	Actual TPY	Potential TPY		
Emergency Generators	7.34	312.20	3.26	31.37	-4.08	-280.84
CHPs	-	-	287.29	302.19	287.29	302.19
Total	**7.34**	**312.20**	**290.55**	**333.56**	**283.21**	**21.35**

Co-Pollutants include Total Particulate Matter, Sulfur Dioxide, Nitrogen Oxides, Carbon Monoxide, Volatile Organic Compounds.

Table 3 - Hazardous Air Pollutants (HAPs) Emissions Summary

Hazardous Air Pollutants Emissions Reduction Summary

Sources	Direct Hazardous Air Pollutants TPY				Net project Impact	
	Baseline Scenario		Project Scenario		Actual	Potential
	Actual TPY	Potential TPY	Actual TPY	Potential TPY		
Emergency Generators	0.0027	0.1159	0.0012	0.0116	-0.0015	-0.10
CHPs	-	-	8.90	9.37	8.90	9.37
Total	**0.00**	**0.12**	**8.91**	**9.38**	**8.90**	**9.26**

Hazardous Air Pollutants includes Benzene, Toluene, Xylene, Formaldehyde, Acetaldehyde, Acrolein, and Total Poly Aromatic Hydrocarbons.

3(b) Net Increase / Decrease Statement

Based on the direct and upstream comparison presented above, the proposed project results in a net increase in both actual and potential emissions across all evaluated pollutant categories. The magnitude of this increase varies by category as detailed below.

- GHG Upstream (CO2e) emissions, associated with the generation of electricity and fuel supply chains attributable to the project, are estimated to increase by 8,008 TPY under actual operation and by 5,079 TPY under potential (PTE) operation.
- GHG Direct (CO2e) emissions, which account for on-site combustion and process emissions, are estimated to increase by 15,321 TPY under actual operation and by 5,425 TPY under potential (PTE) operation.
- Co-pollutant emissions are estimated to increase by 283.21 TPY under actual operation; on a potential (PTE) basis, co-pollutant emissions increase by 21.35 TPY. HAP emissions are estimated to increase by 8.90 TPY under actual operation and by 9.26 TPY under potential (PTE) operation.

The net increase in direct and upstream emissions is driven by the addition of near-continuous CHP operation (8,008 TPY CO2e upstream actual / 15,321 TPY CO2e direct actual), which outweighs the emissions reduction achieved by converting the demand-response generator fleet to emergency-only, exempt operation (a reduction of 49.32 TPY CO2e upstream actual / 157.65 TPY CO2e direct actual from the generator fleet alone).

The CHP units are equipped with Selective Catalytic Reduction (SCR) and an oxidation catalyst, which together represent best available control technology (BACT) for NOx and CO. These controls limit the co-pollutant and HAP impact of the increased operating hours relative to the

corresponding GHG impact, such that co-pollutant and HAP emissions increase at a proportionally lower rate than direct GHG emissions.

It is important to note that these values represent base emission increases only and do not reflect any offsetting reductions attributable to emissions displaced by the installation of the CHP units. As such, the figures presented above should be understood as a conservative, upper-bound characterization of the project's emissions impact prior to the application of displacement credits, which are addressed separately in the sections that follow.

3(c) Grid and Thermal Displacements

Grid and thermal displacement credits, while excluded from the core comparison presented in Section 3(b), represent a substantial system-wide benefit and are addressed separately here. The CHP units generate on-site power that displaces higher carbon-intensity marginal grid generation in NYC Zone J, and generate thermal energy that displaces steam that would otherwise be produced by higher-emitting or less efficient off-site sources. When grid displacement and thermal displacement credits are applied to the upstream and direct GHG totals reported above, the net project impact is substantially reduced.

With displacement credits applied, the net project impact on upstream GHG emissions is reduced to a net benefit of 8,915 TPY decrease in CO2e, indicating that the project results in a net decrease in upstream emissions when the offsetting effect of displaced grid generation is accounted for. The net project impact on direct GHG emissions is reduced to an 9,374 TPY CO2e increase, a substantial decrease from the 15,321 TPY CO2e increase calculated without credits. This reduction reflects the increased operating hours of the CHP units, which supply both the hospital's on-site thermal and electric loads and, where applicable, excess generation to the upstream grid, thereby displacing higher-emitting generation that would otherwise be required to meet the same demand.

Table 4 – GHG Emission Reduction Summary with Displacement Credits

GHG Emissions Reduction Summary- With displacement Credits

Baseline Scenario	Six (6) Generators in Demand Response +
	One (1) Generator in Demand Response to be removed +
	Two (2) Existing Exempt Emergency Generators
Project Scenario	Two (2) new CHP units +
	Eight (8) Existing Exempt Emergency Generators
	One (1) New Exempt Emergency Generators

Sources	Upstream Carbon Dioxide Equivalents (CO2e) TPY				Net project Impact (TPY)	
	Baseline Scenario GHG Emissions CO2e		Project Scenario GHG Emissions		Actual	Potential
	Actual CO2e	Potential CO2e	Actual CO2e	Potential CO2e		
Emergency Generators	88.77	3,775.77	39.45	379.34	-49.32	-3,396.43
CHPs	-	-	8,057.81	8,475.79	8,057.81	8,475.79
Grid Displacement Credit	-	-	-13,204.88	-13,889.86	-13,204.88	-13,889.86
Thermal Displacement Credit	-	-	-3,718.20	-3,911.07	-3,718.20	-3,911.07
Total	**88.77**	**3,775.77**	**-8,825.82**	**-8,945.80**	**-8,914.59**	**-12,721.57**

Sources	Direct Carbon Dioxide Equivalents (CO2e) TPY				Net project Impact (TPY)	
	Baseline Scenario GHG Emissions CO2e		Project Scenario GHG Emissions		Actual	Potential
	Actual CO2e	Potential CO2e	Actual CO2e	Potential CO2e		
Emergency Generators	283.75	12,068.32	126.10	1,212.46	-157.65	-10,855.85
CHPs	-	-	15,478.30	16,281.20	15,478.30	16,281.20
Thermal Displacement Credit	-	-	-5,946.35	-6,254.80	-5,946.35	-6,254.80
Total	**283.75**	**12,068.32**	**9,658.04**	**11,238.86**	**9,374.30**	**-829.45**

3(d) Future Projections and Emissions Reduction Strategies

NYC Health + Hospitals (H+H) has committed system-wide to reducing operational GHG emissions by 40% from 1990 levels by 2030, and by 85% by 2050. Bellevue Hospital is a core component of this commitment: as the second largest acute care facility in the H+H system, Bellevue represents approximately 12% of H+H's total operational emissions, and reductions achieved at the facility contribute materially to the system-wide target.

Building on the CHP installation described in this analysis, Bellevue has established, and continues to implement, the following complementary decarbonization initiatives. The replacement of 30,000 fixtures, providing an ongoing annual reduction of approximately 1,108.92 TPY of CO2e. Installation of an air-cooled chiller for winter use, together with ongoing plant control

optimization, providing a one-time reduction of approximately 415.57 TPY of CO2e, already reflected in the facility's operating baseline. Finally, planned Building Automation System (BAS) updates and hydraulic balancing of the chilled water system, estimated to provide an ongoing annual reduction of approximately 1,636.93 TPY of CO2e once implemented within the applicable planning horizon.

Table 5 – 2030 and 2050 Commitment

NYC HH- Bellevue's 2030 & 2050 Commitment				
Scenario Year	**Future Emissions Reduction Strategies**	**Approximate CO2e Reduction (tpy)**	**Total CO2e Reduction (tpy)**	**Projected CO2e Emissions (tpy)**
2030	LED Retrofit: Replacement of 30,000 fixtures	1,108.92	3,161.43	14,409.82
	Chiller Optimization: Installation of an air-cooled chiller for winter use and ongoing plant control optimization	415.57		
	Future Infrastructure: Planned updates to the Building Automation System (BAS) and hydraulic balancing of the chilled water system are estimated to reduce an additional	1,636.93		
2050	Future Infrastructure: Planned updates to the Building Automation System (BAS) and hydraulic balancing of the chilled water system are estimated to reduce an additional	1,636.93	2,745.85	11,663.97
	LED Retrofit: Replacement of 30,000 fixtures	1,108.92		

The LED Retrofit and Future Infrastructure measures represent recurring annual reductions and are therefore reflected in both the 2030 and 2050 projections. The Chiller Optimization measure represents a one-time reduction achieved through equipment installation and control optimization; because its effect is captured once in the facility's operating baseline rather than compounding annually, it is included in the 2030 total but is not carried forward as an additional, separate reduction in the 2050 projection.

Combined, these measures are projected to reduce facility emissions by a total of approximately 3,161.43 TPY of CO2e by 2030, reducing the project's net CO2e to approximately 14,409.82 TPY. By 2050, with the continued benefit of the LED retrofit and the completed implementation of the

BAS and hydraulic balancing measures, total reductions are projected to amount to 2,745.85 TPY of CO2e, resulting in projected facility-wide CO2e emissions of approximately 11,663.97 TPY.

4. Disproportionate Burden Analysis

Bellevue Hospital is located within a NYSDEC-confirmed Disadvantaged Community (DAC), and the proposed project results in a net increase in both actual and potential GHG and co-pollutant emissions (Section 3(b)). This section provides the Disproportionate Burden Analysis required under DEC Program Policy DEP 24-1, Permitting and Disadvantaged Communities under the CLCPA (Section V.6). The completed Section 7(3) worksheet, reflecting the DAC number identified below, is provided as Appendix B.

4(a) Justification for the Project

Bellevue Hospital is a Level I Adult Trauma Center and a core acute-care facility within the NYC Health + Hospitals (H+H) system, providing continuous and critical services to the surrounding community, including the disadvantaged community in which the facility is located. The CHP project is driven by the facility's need for resilient, on-site thermal and electric generation capable of sustaining critical patient care functions - including emergency, surgical, and trauma services - during grid outages and periods of peak regional demand. These circumstances are the factors that justify the project notwithstanding its net emissions increase.

Absent this project, the facility would continue to rely on its existing fleet of aging generators to meet peak and emergency loads, forgoing efficiency, emissions-control, and reliability benefits of modern CHP technology. This would result in continued exposure of the surrounding community to less-controlled emissions sources, forgone grid and thermal displacement benefits (Section 3(c)), and reduced resiliency for a Level I trauma center serving the broader region, including during public health emergencies and severe weather events - the environmental, economic, and

social harm associated with not proceeding. Conversely, the proposed project provides a direct benefit to the citizens of the state by maintaining and strengthening critical trauma and emergency medical capacity in New York City, while advancing NYC H+H's system-wide commitment to reduce operational GHG emissions 40% by 2030 and 85% by 2050 (Section 3(d)) - a commitment that benefits all New Yorkers, including residents of disadvantaged communities disproportionately affected by climate change impacts.

4(b) Emissions Impact and Existing Community Burden

The GHG and co-pollutant emissions attributable to this project are quantified in Section 3(a)/(b): a net increase of 17,287.50 TPY CO2e (direct, actual basis) and 319.72 TPY of co-pollutants (actual basis), before displacement credits are applied. Bellevue Hospital (462 First Avenue, Manhattan) is located in Census Tract 62 (11-digit GEOID 36061006200), within New York City. This tract is designated as a Disadvantaged Community (DAC) under the New York State Climate Justice Working Group's Disadvantaged Communities Criteria, is classified as urban, and does not include identified Indigenous lands. These are the emissions and the community evaluated below. Census Tract 62 experiences some of the highest pollution-related burdens in the state, including modeled benzene concentrations in the 99th percentile, wastewater discharge impacts in the 98th percentile, traffic volume in the 96th percentile, $PM_{2.5}$ exposure in the 95th percentile, and diesel truck traffic in the 89th percentile. Additional environmental and climate-related stressors include extreme heat projections in the 79th percentile, regulated management plan facility proximity in the 76th percentile, and low vegetative land cover in the 70th percentile. Population characteristics indicate elevated social vulnerability, including poverty in the 83rd percentile, limited English proficiency in the 61st percentile, unemployment in the 54th percentile, and a historical redlining score in the 100th percentile. Housing-related indicators further demonstrate vulnerability, with

99% renter occupancy and housing cost burden in the 55th percentile. Health indicators show existing health burdens, including asthma emergency department visits in the 69th percentile, lack of health insurance in the 69th percentile, and low birth weight in the 56th percentile. Collectively, these indicators - led by the tract's elevated ambient pollution exposures (benzene, traffic, $PM_{2.5}$, and diesel truck activity, all above the 89th percentile) - demonstrate that residents of the surrounding community are already exposed to substantial cumulative pollution burdens and socioeconomic stressors, and form the basis for the tract's disadvantaged-community designation under environmental justice screening methodologies.

The proposed CHP system, comprising two (2) 1,982 kW (approximately 2 MW) natural gas-fired engines, is anticipated to operate continuously to provide electrical and thermal energy to the facility 24 hours per day. Both engines will be equipped with SCR (Selective Catalytic Reduction) and oxidation catalyst systems for reduction of NOx, CO, and VOC emissions. The engines will be housed on a newly built platform approximately 25 feet above grade, in a lot owned by Bellevue Hospital adjacent to the Emergency Department. Each engine will have an individual stack routed up the adjacent A-Building exterior wall to a height of 180 feet above the Emergency Department roof and CHP enclosure (approximately 200 feet above grade), extending 10 feet above the A-Building.

In the Project condition, facility-wide NOx emissions increase from 5.54 to 13.93 tons per year, remaining below the 24.9 tons-per-year major source threshold. Benzene emissions increase from 0.0013 to 0.0587 tons per year, and PM2.5 emissions increase from 0.17 to 1.40 tons per year.

Localized air dispersion modeling conducted for the project indicates that predicted ground-level concentrations of criteria pollutants and HAPs at nearby sensitive receptors - including residences, schools, and other community facilities - remain below applicable regulatory and health-based

thresholds, even accounting for the tract's existing elevated background levels. On that basis, the project's incremental emissions are not expected to cause a measurable increase in community health risk or to worsen the pollution-related burdens underlying the tract's disadvantaged-community designation.

Based on the modeling analysis, the maximum annual PM2.5 impact from the project is 0.25 µg/m³, which, combined with the background concentration of 8.6 µg/m³, results in a total annual ambient concentration of 8.85 µg/m³ below the National Ambient Air Quality Standard (NAAQS) of 9.0 µg/m³. For the annual NO2 standard, the maximum modeled project contribution from the cogeneration system was 2.11 µg/m³, resulting in a maximum total annual ambient concentration of 35.01 µg/m³ when combined with the background concentration of 32.90 µg/m³ - remaining substantially below the annual NAAQS of 100 µg/m³.

4(c) Environmental Justice Siting Law

Beyond the CLCPA Section 7(3) analysis of GHG and air co-pollutant impacts in Sections 4(a)-(b) above, the Environmental Justice Siting Law (ECL Section 70-0118) requires consideration of any other pollution the facility may emit, discharge, or cause on the disadvantaged community, including impacts to land use, hazardous materials, water quality, noise, and odor. Applying the basic analysis outline of DEP 24-1 Section V.6 to each of these categories:

Zoning and Land Use: The project would not involve any change in zoning or land use, or have a negative impact on the residential, commercial, or other facilities in the area. The effects of the project on zoning or land use would not result in any disproportionate burden to the disadvantaged community.

Hazardous Materials: The facility has five (5) existing 15,000-gallon underground storage tanks on site. The project is for a natural gas-fired CHP system, and no portion of the project involves

manipulating, altering, or tying into any of these preexisting storage tanks. As such, there would be no disproportionate burden on the disadvantaged community due to hazardous materials.

Water Quality: Not applicable. The project consists of a natural gas-fired CHP system and does not involve any new process wastewater discharge, cooling water blowdown, or other water discharge to sewer, storm, or a SPDES-permitted outfall. The project would not result in any disproportionate water quality burden on the disadvantaged community.

Odor: Not applicable. As a natural gas-fired cogeneration system, the project does not introduce any odor-generating process, fuel, or material beyond ordinary combustion exhaust, which is addressed as part of the air quality analysis in Section 4(b). The project would not result in any disproportionate odor burden on the disadvantaged community.

Noise: The noise study conducted for the project found that the project would not result in any significant adverse noise impacts, presenting no adverse burden to the disadvantaged community. The mechanical systems for the proposed project have been designed to meet all applicable noise regulations, including the New York City Noise Control Code, specifically Subchapter 24.224. The Cogen engines will be in a sound-attenuating enclosure and equipped with silencers to avoid producing noise levels that would result in significant increases in ambient noise levels.

The proposed Cogen system would not constitute noise-sensitive uses. An acoustical study was performed at the outset of this project. The model evaluated sound pressure levels at seven receptor locations, including nearby streets, parking lots, roofs, and indoor spaces. The project was evaluated against a clearly perceptible increase of 3 dBA and a significant impact of 5 dBA. Based on the modeling results, the maximum expected ambient sound level increase at any receptor is 3 dBA. Therefore, it is confirmed that the mechanical equipment introduced by the proposed action would not result in a significant adverse noise impact.

In sum, beyond the air quality and GHG impacts addressed in Sections 4(a)-(b), the project would not result in adverse impacts or contribute to disproportionate pollution, noise, water quality, odor, or other burden on the disadvantaged community under the Environmental Justice Siting Law.

4(d) Alternatives and Design Measures to Reduce Impact on the Disadvantaged Community

Consistent with DEP 24-1's requirement to discuss alternatives and design measures used to reduce the project's impact on the disadvantaged community, the following measures - discussed further in Section 5 - were specifically incorporated into the project design:

- Selective Catalytic Reduction and an oxidation catalyst (BACT-equivalent controls) on both CHP units, limiting NOx, CO, and co-pollutant impact of the increased operating hours on local air quality.
- Permanent conversion of seven previously demand-response-enrolled generators to emergency-only, exempt status (52 hrs/yr), removing their routine contribution to local co-pollutant loading.
- Each engine will have an individual stack routed up the adjacent A-Building exterior wall to a height of 180 feet above the Emergency Department roof and CHP enclosure (approximately 200 feet above grade), extending 10 feet above the A-Building.

As discussed in Section 5, full electrification of the CHP function was evaluated and is not currently feasible without electrical infrastructure upgrades beyond the scope of this project. The completed CLCPA Section 7(3) Disproportionate Burden Analysis Worksheet, reflecting DAC number 36061006200 for Census Tract 62 as identified in Section 4(b), is provided as Appendix B.

5. Alternatives and Mitigation

This section discusses the technical and economic feasibility of alternatives and mitigation measures considered to address the increase summarized in Section 3.

- BACT-equivalent emissions controls (Selective Catalytic Reduction and an oxidation catalyst) are incorporated into the CHP unit design, limiting co-pollutant and HAP impact relative to the increase in operating hours.
- The CHP units displace higher-carbon-intensity NYC Zone J marginal grid generation and higher-emitting off-site steam production, providing a substantial system-wide mitigating benefit (Section 3(c)).
- Ongoing H+H decarbonization initiatives - the LED retrofit, chiller optimization, and planned BAS/hydraulic balancing upgrades - provide complementary facility-wide mitigation beyond this specific project.

Full electrification of the CHP function was considered and is not currently feasible for this project. The CHP units provide critical combined heat and power generation necessary to support continuous, resilient hospital operations, including during grid outages. Replacing this capacity with an all-electric alternative would require substantial upgrades to the facility's electrical infrastructure - utility service capacity, transformers, switchgear, distribution equipment, and associated emergency power systems - that are beyond the scope of this project and would significantly increase project complexity, cost, and implementation timeline, without providing an equivalent level of on-site resiliency during a grid outage. Electrification remains a long-term objective that the facility will continue to evaluate as electrical infrastructure, grid reliability, and technology evolve, consistent with the facility's 2030 and 2050 GHG reduction commitments described in Section 3(d).

The proposed CHP configuration - paired with BACT-equivalent controls and the facility's broader decarbonization initiatives - represents the most practical and reliable option for supporting critical healthcare operations while advancing the facility's long-term emissions reduction goals.

Conclusion

The permit renewal and proposed modification - installing two (2) CHP units and one (1) new exempt emergency generator and converting the remaining generator fleet to emergency-only status - results in a net increase in direct and upstream GHG, co-pollutant, and HAP emissions. This increase is driven primarily by near-continuous CHP operation, which outweighs the reductions achieved by removing generators from the Demand Response Program.

Factoring in system-wide benefits - grid displacement credit from onsite CHP generation and thermal displacement credit from avoided steam production - total upstream GHG impact is a net reduction on both an actual and potential basis. The increase in direct GHG emissions is being addressed by the Facility, as described in Sections 3(d) and 5, and the Facility will continue to incorporate mitigation strategies into its operations to reach the 2030 and 2050 emissions goals.

As a critical facility, Bellevue Hospital's emission sources are necessary for continuous, resilient hospital operations. The proposed project is the most practical and reliable path to meeting that need while advancing the Facility's and NYC Health + Hospitals' commitment to reducing operational GHG emissions 40% by 2030 and 85% by 2050.

Appendix A: CLCPA Calculations - (Exhibit 1-9, Glossary A, Glossary B)

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Exhibit 1
NYCHH- Bellevue Hospital
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BASELINE SCENARIO- MAXIMUM POTENTIAL AND ACTUAL FUEL OIL AND NATURAL GAS CONSUMPTION OF NINE (9) GENERATORS

NO. 2 FUEL OIL/DIESEL

	#	MANUFACTURER/MODEL	LOCATION	RATING [kW]	MAX HEAT INPUT [million BTU/hr]	MAX HOURLY CAPACITY [GPH]	ACTUAL ANNUAL USAGE [GPY]	MAX POTENTIAL ANNUAL USAGE [GPY]
GENERATORS	1	Caterpillar C27	13th Floor/Main Building	750	2.55	18.21	2,540	159,557
	2	Caterpillar C27	13th Floor/Main Building	750	2.55	18.21	2,540	159,557
	3	Caterpillar C27	13th Floor/Main Building	750	2.55	18.21	2,540	159,557
	4	Caterpillar C27	13th Floor/Main Building	750	2.55	18.21	2,540	159,557
	5	Caterpillar D399	Ground	600	2.04	14.57	2,032	127,646
	6	Caterpillar D399	Ground	600	2.04	14.57	2,032	127,646
	7	Rudox RM900S	13th Floor/Main Building	600	2.04	14.57	2,032	127,646
	8	Caterpillar 3512C	Basement	1,500	5.10	36.43	5,080	18,214
	9	Cummins DFHD-5622268	Roof	1,000	3.40	24.29	3,387	12,143
			GENERATOR TOTALS	**7,300**	**24.82**	**177.29**	**24,723**	**1,051,523**

NOTES

1. Actual generator usage calculated based on actual estimated hours of operation (52 hrs for emergency testing)
2. Maximum Annual Capacity for generators = Maximum Hourly Capacity (GPH) x Maximum number of operating hours per year
3. Ratings in kW for generators provided by facility.
4. The four (4) Caterpillar C27 and two (2) Caterpillar D399 were previously enrolled in demand response.
5. Rudox RM900S was also previously enrolled in demand response and to be removed from the facility.

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Exhibit 2
NYCHH- Bellevue Hospital
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PROJECT SCENARIO- MAXIMUM POTENTIAL AND ACTUAL FUEL OIL AND NATURAL GAS CONSUMPTION OF TWO (2) CHP UNITS AND NINE (9) GENERATORS

						NO. 2 FUEL OIL/DIESEL			*NATURAL GAS*		
	# MANUFACTURER/MODEL	LOCATION	RATING [kw]	MAX HEAT INPUT [million BTU/hr]	MAX HOURLY CAPACITY [GPH]	ACTUAL ANNUAL USAGE [GPY]	MAX POTENTIAL ANNUAL USAGE [GPY]	MAX HOURLY CAPACITY [CFH]	ACTUAL ANNUAL USAGE [CFY]	MAX POTENTIAL ANNUAL USAGE [CFY]
CHP UNITS	1 Caterpillar G3516H	Main Building	1,982	17.87	-	-	-	17,520	145,906,560	153,475,200
	2 Caterpillar G3516H	Main Building	1,982	17.87	-	-	-	17,520	145,906,560	153,475,200
	BOILER TOTALS		**3,964**	**35.74**	-	-	-	**35,040**	**291,813,120**	**306,950,400**
EXISTING GENERATORS	1 Caterpillar C27	13th Floor/Main Building	750	2.55	18.21	947.14	9,107	-	-	-
	2 Caterpillar C27	13th Floor/Main Building	750	2.55	18.21	947.14	9,107	-	-	-
	3 Caterpillar C27	13th Floor/Main Building	750	2.55	18.21	947.14	9,107	-	-	-
	4 Caterpillar C27	13th Floor/Main Building	750	2.55	18.21	947.14	9,107	-	-	-
	5 Caterpillar D399	Ground	600	2.04	14.57	757.71	7,286	-	-	-
	6 Caterpillar D399	Ground	600	2.04	14.57	757.71	7,286	-	-	-
	7 Caterpillar 3512C	Basement	1,500	5.10	36.43	1,894.29	18,214	-	-	-
NEW GENERATOR	8 Cummins DFHD-5622268	Roof	1,000	3.40	24.29	1,262.86	12,143	-	-	-
	9 MTU 16V4000 DS2000	Generator Housing	2,000	6.80	48.57	2,525.71	24,286	-	-	-
	GENERATOR TOTALS		**8,700**	29.58	211.29	10,987	105,643	-	-	-
						ACTUAL ANNUAL 10,987	***MAX ANNUAL 105,643***		***ACTUAL ANNUAL 291,813,120***	***MAX ANNUAL 306,950,400***

NOTES

1. For two (2) Caterpillar G3516H- Maximum Hourly Capacity- CFH- Data provided by facility from Manufacturer specifications- 292 cf/min
1. Actual generator usage calculated based on actual estimated hours of operation (52 hrs for emergency testing)
2. Maximum Annual Capacity for generators = Maximum Hourly Capacity (GPH) x Maximum number of operating hours per year
3. Ratings in kW for generators provided by facility.
4.The four (4) Caterpillar C27 and two (2) Caterpillar D399 were previously enrolled in demand response.
5. Rudox RM900S was also previously enrolled in demand response and to be removed from the facility.

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Exhibit 3
NYCHH- Bellevue Hospital
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Estimation of emissions of Regulated Air Contaminants from Nine (9) existing generators- BASELINE SCENARIO

				Actual Annual Emission Rate		*Potential Annual Emission Rate*	
	Pollutant	**Diesel Emission Factor [lb/ MM BTU]**	**Hourly Emission Rate [lb/hr]**	**[lb/y]**	**[tpy]**	**[lb/y]**	**[tpy]**
Upstream GHG Emissions	Carbon Dioxide (CO2)	30	740.99	103,333.66	51.67	4,395,005	2,198
	Methane (CH4)	0.25	6.29	877.52	4.39E-01	37,323	18.66
	Nitrous Oxide (N2O)	5.51E-04	1.37E-02	1.91	9.54E-04	81.14	4.06E-02
	CO2 Equivalents				**88.77**		**3,776**
Direct GHG emissions	Carbon Dioxide (CO2)	163	4,046.96	564,360	282.18	24,003,438	12,002
	Methane (CH4)	6.61E-03	0.16	22.89	1.14E-02	973.64	0.49
	Nitrous Oxide (N2O)	1.32E-03	3.28E-02	4.58	2.29E-03	194.73	9.74E-02
	CO2 Equivalents				**283.75**		**12,068**
Hazardous Air Pollutants	Acetaldehyde	2.52E-05	6.25E-04	8.72E-02	4.36E-05	3.71	1.85E-03
	Acrolein	7.88E-06	1.96E-04	2.73E-02	1.36E-05	1.16	5.80E-04
	Benzene	7.76E-04	1.93E-02	2.69	1.34E-03	114.24	5.71E-02
	Formaldehyde	7.89E-05	1.96E-03	0.27	1.37E-04	11.62	5.81E-03
	Propylene	2.79E-03	6.92E-02	9.66	4.83E-03	410.72	2.05E-01
	Total Poly Aromatic Hydrocarbons	2.12E-04	5.26E-03	0.73	3.67E-04	31.21	1.56E-02
	Toluene	2.81E-04	6.97E-03	0.97	4.86E-04	41.37	2.07E-02
	Xylene	1.93E-04	4.79E-03	0.67	3.34E-04	28.41	1.42E-02
				Total:	**2.72E-03**	**Total:**	**0.12**
Co-Pollutants	Carbon Monoxide	0.85	21.10	2,942.04	1.47	125,131	62.57
	Nitrogen Oxides	3.20	79.42	11,076	5.54	471,082	235.54
	Particulates	0.10	2.48	346.12	1.73E-01	14,721.32	7.36
	Sulfur Dioxide	1.52E-03	3.76E-02	5.24	2.62E-03	223.03	0.11
	Total Organic Compounds (TOCs)	0.09	2.23	311.51	1.56E-01	13,249.19	6.62
				Total:	**7.34**	**Total:**	**312.20**

Reference Values and Tables

Table 1 -Generator Reference Values		
Max hourly consumption	177	GPH
Actual annual consumption	24,723	GPY
Max potential annual consumption	1,051,523	GPY

NOTES

1. U.S. EPA Air Pollution Engineering Manual (AP-42), dated 4/93, Chapter 3.4, tables 3.4.1-3.4.5, downloaded from SCRAM BBS. Emission Factors are for generators sized ABOVE 600 HP (447 KW) -
2. Annual Emission Rate (lb/yr) = Emission Factor (lb/million BTU) x Fuel Consumption (BTU/yr). BTU/yr calculated per POTENTIAL annual fuel consumption hours
3. Total Emission Rate (ton/yr) = Annual Emission Rate (lb/yr) / 2000 (lb/ton).

4. CO2 Equivalents = [Carbon Dioxide (CO2) Total Annual Emissions (TPY) x CO2 GWP Value] + [Methane (CH4) Total Annual Emissions (TPY) x CH4 GWP Value] + [Nitrous Oxide (N2O) Total Annual Emissions (TPY) x N2O GWP Value]

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Exhibit 4
NYCHH- Bellevue Hospital
462 First Ave, New York, NY 10016

Estimation of emissions of Regulated Air Contaminants from Nine (9) exempt generators- PROJECT SCENARIO

				Actual Annual Emission Rate		*Potential Annual Emission Rate*	
	Pollutant	**Diesel Emission Factor [lb/ MM BTU]**	**Hourly Emission Rate [lb/hr]**	**[lb/y]**	**[tpy]**	**[lb/y]**	**[tpy]**
Upstream GHG Emissions	Carbon Dioxide (CO2)	30	883.10	45,921	22.96	441,551	220.78
	Methane (CH4)	0.25	7.50	389.97	1.95E-01	3,749.69	1.87
	Nitrous Oxide (N2O)	5.51E-04	1.63E-02	0.85	4.24E-04	8.15	4.08E-03
	CO2 Equivalents				**39.45**		**379.34**
Direct GHG Emissions	Carbon Dioxide (CO2)	163	4,823	250,800	125.40	2,411,542	1,206
	Methane (CH4)	6.61E-03	0.20	10.17	5.09E-03	97.82	4.89E-02
	Nitrous Oxide (N2O)	1.32E-03	3.91E-02	2.03	1.02E-03	19.56	9.78E-03
	CO2 Equivalents				**126.10**		**1,212**
Hazardous Air Pollutants	Acetaldehyde	2.52E-05	7.45E-04	3.88E-02	1.94E-05	0.37	1.86E-04
	Acrolein	7.88E-06	2.33E-04	1.21E-02	6.06E-06	0.12	5.83E-05
	Benzene	7.76E-04	2.30E-02	1.19	5.97E-04	11.48	5.74E-03
	Formaldehyde	7.89E-05	2.33E-03	0.12	6.07E-05	1.17	5.83E-04
	Propylene	2.79E-03	8.25E-02	4.29	2.15E-03	41.26	2.06E-02
	Total Poly Aromatic Hydrocarbons	2.12E-04	6.27E-03	0.33	1.63E-04	3.14	1.57E-03
	Toluene	2.81E-04	8.31E-03	0.43	2.16E-04	4.16	2.08E-03
	Xylene	1.93E-04	5.71E-03	0.30	1.48E-04	2.85	1.43E-03
				Total:	**1.21E-03**	**Total:**	**0.01**
Co-Pollutants	Carbon Monoxide	0.85	25.14	1,307	0.65	12,572	6.29
	Nitrogen Oxides	3.20	94.66	4,922	2.46	47,328	23.66
	Particulates	0.10	2.96	153.82	7.69E-02	1,479	0.74
	Sulfur Dioxide	1.52E-03	4.48E-02	2.33	1.17E-03	22.41	0.01
	Total Organic Compounds (TOCs)	0.09	2.66	138.43	6.92E-02	1,331	0.67
				Total:	**3.26**	**Total:**	**31.37**

Reference Values and Tables

Table 1 -Generator Reference Values		
Max hourly consumption	211	GPH
Actual annual consumption	10,987	GPY
Max potential annual consumption	105,643	GPY

NOTES

1. U.S. EPA Air Pollution Engineering Manual (AP-42), dated 4/93, Chapter 3.4, tables 3.4.1-3.4.5, downloaded from SCRAM BBS. Emission Factors are for generators sized ABOVE 600 HP (447 KW) -
2. Annual Emission Rate (lb/yr) = Emission Factor (lb/million BTU) x Fuel Consumption (BTU/yr). BTU/yr calculated per POTENTIAL annual fuel consumption hours
3. Total Emission Rate (ton/yr) = Annual Emission Rate (lb/yr) / 2000 (lb/ton).
4. CO2 Equivalents = [Carbon Dioxide (CO2) Total Annual Emissions (TPY) x CO2 GWP Value] + [Methane (CH4) Total Annual Emissions (TPY) x CH4 GWP Value] + [Nitrous Oxide (N2O) Total Annual Emissions (TPY) x N2O GWP Value]

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Exhibit 5
NYCHH- Bellevue Hospital
462 First Ave, New York, NY 10016

Estimation of emissions of Regulated Air Contaminants from Two (2) new CHP Units- PROJECT SCENARIO

				Actual Annual Emission Rate		*Potential Annual Emission Rate*	
	Pollutant	**Natural Gas Emission Factor [lb/ MM BTU]**	**Hourly Emission Rate [lb/hr]**	**[lb/y]**	**[tpy]**	**[lb/y]**	**[tpy]**
Upstream GHG Emissions	Carbon Dioxide (CO2)	10.99	348.43	2,901,758	1,451	3,052,282	1,526
	Methane (CH4)	0.60	18.88	157,198	78.60	165,352	82.68
	Nitrous Oxide (N2O)	1.32E-04	4.19E-03	34.93	0.02	36.74	0.02
	CO2 Equivalents				**8,057.81**		**8,475.79**
Direct GHG Emissions	Carbon Dioxide (CO2)	116.98	3,709.45	30,892,314	15,446	32,494,797	16,247
	Methane (CH4)	2.20E-03	0.07	582.21	0.29	612.42	0.31
	Nitrous Oxide (N2O)	2.20E-04	6.99E-03	58.22	0.03	61.24	0.03
	CO2 Equivalents				**15,478.30**		**16,281.20**
Hazardous Air Pollutants	Acetaldehyde	8.36E-03	0.27	2,207.80	1.10	2,322.33	1.16
	Acrolein	5.14E-03	0.16	1,357.43	0.68	1,427.84	0.71
	Benzene	4.40E-04	0.01	116.20	0.06	122.23	6.11E-02
	Formaldehyde	5.28E-02	1.67	13,944	6.97	14,667	7.33
	Total Poly Aromatic Hydrocarbons	2.69E-05	8.53E-04	7.10	3.55E-03	7.47	3.74E-03
	Toluene	4.80E-04	0.02	126.76	6.34E-02	133.34	6.67E-02
	Xylene	1.84E-04	5.83E-03	48.59	2.43E-02	51.11	2.56E-02
	Total:				**8.90**	**Total:**	**9.37**
Co-Pollutants	Carbon Monoxide	0.52	16.53	137,677	68.84	144,818	72.41
	Nitrogen Oxides	0.09	2.76	22,946	11.47	24,136	12.07
	Particulates	9.99E-03	0.32	2,638	1.32	2,775	1.39
	Sulfur Dioxide	5.88E-04	0.02	155.29	0.08	163.34	0.08
	Total Organic Compounds (TOCs)	1.47	46.62	388,214	194.11	408,351	204.18
	Volatile Organic Compounds (VOCs)	0.09	2.76	22,946	11.47	24,136	12.07
	Total:				**287.29**	**Total:**	**302.19**

Reference Values and Tables

Table 1 - Cogen Reference Values		
Max hourly consumption	35,040	CFH
Actual annual consumption	291,813,120	CFY
Max potential annual consumption	306,950,400	CFY

NOTES

1. U.S. EPA Air Pollution Engineering Manual (AP-42), Uncontrolled Emission Factors for 4-Stroke Lean-burn Engines [Table 3.2-2]
2. Annual Emission Rate (lb/yr) = Emission Factor (lb/million BTU) x Fuel Consumption (BTU/yr).
   BTU/yr calculated per POTENTIAL annual fuel consumption hours
3. Total Emission Rate (ton/yr) = Annual Emission Rate (lb/yr) / 2000 (lb/ton).
4. CO2 Equivalents = [Carbon Dioxide (CO2) Total Annual Emissions (TPY) x CO2 GWP Value] + [Methane (CH4) Total Annual Emissions (TPY) x CH4 GWP Value] + [Nitrous Oxide (N2O) Total Annual Emissions (TPY) x N2O GWP Value]

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Exhibit 6
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Parameters	Unit	Direct Emissions		Upstream	
		Actual Values	Potential Values	Actual Values	Potential Values
CHP Direct Emissions	CO2e TPY	**15,478.30**	**16,281.20**	8,057.81	8,475.79
CHP Electricity Production /1	MWhr/yr	-	-	33,012.19	34,724.64
Marginal Grid Emission Factor /2	lb/MWhr	-	-	800.00	800.00
Grid Emissions Avoided /3	lb/yr	-	-	26,409,753.60	27,779,712.00
Grid Displacement Credit	CO2e TPY	**-**	**-**	13,204.88	13,889.86
Thermal Recover Factor /4	%	41%	41%	41%	41%
Annual Thermal energy displaced /5	MMBtu/yr	122,033.52	128,363.78	122,033.52	128,363.78
Avoided Steam Emission Factor /6	lb CO2e /MMBtu	97.45	97.45	60.94	60.94
Thermal Displacement credit	TPY	5,946.35	6,254.80	3,718.20	3,911.07
Net CLCPA Impact	**TPY**	**9,531.95**	10,026.40	-8,865.27	-9,325.14

/1 CHP electricity production = Capacity (Kw)* Annual Operating hours(hrs) |Convert to MWHR- Divide by 1000 | Multiply by 2 for 2CHPs
/2 Marginal Grid Emission Factor, avg value - https://mis.nyiso.com/public/P
/3 Grid Emission avoided= CHP electricity produced* Marginal Grid Emission Factor
/4 Thermal Recovery Factor= Verified for Cogen on internet
/5 Annual Thermal Energy Displaced = Heat Input (MMBtu/hr) * Number of CHPs * Thermal Recovery Factor * Operating Hours
/6 It is EPA factor for CHP Engines

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Exhibit 7
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GHG Emissions Reduction Summary

Baseline Scenario	Six (6) Generators in Demand Response +
	One (1) Generator in Demand Response to be removed +
	Two (2) Existing Exempt Emergency Generators
Project Scenario	Two (2) new CHP units +
	Eight (8) Existing Exempt Emergency Generators
	One (1) New Exempt Emergency Generators

Sources	Upstream Carbon Dioxide Equivalents (CO2e) TPY				Net project Impact TPY	
	Baseline Scenario GHG Emissions CO2e		Project Scenario GHG Emissions		Actual	Potential
	Actual CO2e	Potential CO2e	Actual CO2e	Potential CO2e		
Emergency Generators	88.77	3,775.77	39.45	379.34	-49.32	-3,396.43
CHPs	-	-	8,057.81	8,475.79	8,057.81	8,475.79
Total	**88.77**	**3,775.77**	**8,097.26**	**8,855.13**	**8,008**	**5,079**

Sources	Direct Carbon Dioxide Equivalents (CO2e) TPY				Net project Impact TPY	
	Baseline Scenario GHG Emissions CO2e		Project Scenario GHG Emissions		Actual	Potential
	Actual CO2e	Potential CO2e	Actual CO2e	Potential CO2e		
Emergency Generators	283.75	12,068.32	126.10	1,212.46	-157.65	-10,855.85
CHPs	-	-	15,478.30	16,281.20	15,478.30	16,281.20
Total	**283.75**	**12,068.32**	**15,604.39**	**17,493.67**	**15,321**	**5,425**

Hazardous Air Pollutants Emissions Reduction Summary

Sources	Direct Hazardous Air Pollutants TPY				Net project Impact	
	Baseline Scenario		Project Scenario		Actual	Potential
	Actual TPY	Potential TPY	Actual TPY	Potential TPY		
Emergency Generators	0.0027	0.1159	0.0012	0.0116	-0.0015	-0.10
CHPs	-	-	8.90	9.37	8.90	9.37
Total	**0.00**	**0.12**	**8.91**	**9.38**	**8.9024**	**9.26**

Hazardous Air Pollutants includes Benzene, Toluene, Xylene, Formaldehyde, Acetaldehyde, Acrolein, and Total Poly Aromatic Hydrocarbons.

Co-pollutants Emissions Reduction Summary

Sources	Direct Co-Pollutants TPY				Net project Impact	
	Baseline Scenario		Project Scenario		Actual	Potential
	Actual TPY	Potential TPY	Actual TPY	Potential TPY		
Emergency Generators	7.34	312.20	3.26	31.37	-4.08	-280.84
CHPs	-	-	287.29	302.19	287.29	302.19
Total	**7.34**	**312.20**	**290.55**	**333.56**	**283.21**	**21.35**

Co-Pollutants include Total Particulate Matter, Sulfur Dioxide, Nitrogen Oxides, Carbon Monoxide, Volatile Organic Compounds.

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Exhibit 8
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GHG Emissions Reduction Summary- With displacement Credits

Baseline Scenario	Six (6) Generators in Demand Response +
	One (1) Generator in Demand Response to be removed +
	Two (2) Existing Exempt Emergency Generators
Project Scenario	Two (2) new CHP units +
	Eight (8) Existing Exempt Emergency Generators
	One (1) New Exempt Emergency Generators

Sources	**Upstream Carbon Dioxide Equivalents (CO2e) TPY**				**Net project Impact (TPY)**	
	Baseline Scenario		**Project Scenario**		**Actual**	**Potential**
	GHG Emissions CO2		**GHG Emissions**			
	Actual CO2e	**Potential CO2e**	**Actual CO2e**	**Potential CO2e**		
Emergency Generators	88.77	3,775.77	39.45	379.34	-49.32	-3,396.43
CHPs	-	-	8,057.81	8,475.79	8,057.81	8,475.79
Grid Displacement Credit	-	-	-13,204.88	-13,889.86	-13,204.88	-13,889.86
Thermal Displacement Credit	-	-	-3,718.20	-3,911.07	-3,718.20	-3,9
Total	**88.77**	**3,775.77**	**-8,825.82**	**-8,945.80**	**-8,914.59**	**-12,7**

Sources	**Direct Carbon Dioxide Equivalents (CO2e) TPY**				**Net project Impact (TPY)**	
	Baseline Scenario		**Project Scenario**		**Actual**	**Potential**
	GHG Emissions CO2		**GHG Emissions**			
	Actual CO2e	**Potential CO2e**	**Actual CO2e**	**Potential CO2e**		
Emergency Generators	283.75	12,068.32	126.10	1,212.46	-157.65	-10,855.85
CHPs	-	-	15,478.30	16,281.20	15,478.30	16,281.20
Thermal Displacement Credit	-	-	-5,946.35	-6,254.80	-5,946.35	-6,2
Total	**283.75**	**12,068.32**	**9,658.04**	**11,238.86**	**9,374.30**	**-82**

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Exhibit 9
NYCHH- Bellevue Hospital
462 First Ave, New York, NY 10016

NYC HH- Bellevue's 2030 & 2050 Commitment

Scenario Year	Future Emissions Reduction Strategies	Approximate CO2e Reduction (tpy)	Total CO2e Reduction (tpy)	Projected CO2e Emissions (tpy)
2030	LED Retrofit: Replacement of 30,000 fixtures	1,108.92	3,161.43	12,442.97
	Chiller Optimization: Installation of an air-cooled chiller for winter use and ongoing plant control optimization	415.57		
	Future Infrastructure: Planned updates to the Building Automation System (BAS) and hydraulic balancing of the chilled water system are estimated to reduce an additional	1,636.93		
2050	Future Infrastructure: Planned updates to the Building Automation System (BAS) and hydraulic balancing of the chilled water system are estimated to reduce an additional	1,636.93	2,745.85	9,697.11
	LED Retrofit: Replacement of 30,000 fixtures	1,108.92		

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GLOSSARY A
NYCHH- Bellevue Hospital
462 First Ave, New York, NY 10016

EMISSION FACTORS FOR COGEN UNITS AND GENERATORS

Pollutants	Cogeneration Unit Natural Gas				Large Generators Diesel	
	Emission Factor	Unit	Emission Factor	Unit	Emission Factor	Unit
Hazardous Air Pollutants						
Acetaldehyde	-	-	8.36E-03	lb/MMBtu	2.52E-05	lb/MMBtu
Acrolein	-	-	5.14E-03	lb/MMBtu	7.88E-06	lb/MMBtu
Benzene	-	-	4.40E-04	lb/MMBtu	7.76E-04	lb/MMBtu
Formaldehyde	-	-	5.28E-02	lb/MMBtu	7.89E-05	lb/MMBtu
Propylene	-	-	-	lb/MMBtu	2.79E-03	lb/MMBtu
Total Poly Aromatic Hydrocarbons	-	-	2.69E-05	lb/MMBtu	2.12E-04	lb/MMBtu
Toluene	-	-	4.80E-04	lb/MMBtu	2.81E-04	lb/MMBtu
Xylene	-	-	1.84E-04	lb/MMBtu	1.93E-04	lb/MMBtu
Criteria Pollutants						
Carbon Monoxide	0.60	g/bhP-hr	0.52	lb/MMBtu	0.85	lb/MMBtu
Nitrogen Oxides	0.10	g/bhP-hr	0.09	lb/MMBtu	3.2	lb/MMBtu
Particulate (Total)	-	-	9.99E-03	lb/MMBtu	0.1	lb/MMBtu
Sulfur Dioxide	-	-	5.88E-04	lb/MMBtu	1.52E-03	lb/MMBtu
Total Organic Compounds (TOCs)	-	-	1.47	lb/MMBtu	0.09	lb/MMBtu
Volatile Organic Compounds (VOCs)	0.10	g/bhP-hr	0.09	lb/MMBtu	-	-

GHG Emission Factors

UPSTREAM		
GHG Emission Rate	**Fuel Type**	
g/mmbtu	**Natural Gas**	**Diesel/Distillate Fuel**
CO2	4,984	13,542
CH4	270	115
N2O	0.06	0.25
CO2e (20 yr GWP)+	27,641	23,249

https://dec.ny.gov/sites/default/files/2024-12/appendix2024clcpaemissionfactors.pdf

DIRECT		
GHG Emission Rate	**Fuel Type**	
g/mmbtu	**Natural Gas**	**Diesel/Distillate Fuel**
CO2 kg/mmbtu	53.06	73.96
CH4	1	3
N2O	0.10	0.60
CO2e (20 yr GWP)+	44,205	25,375

https://www.epa.gov/system/files/documents/2025-01/ghg-emission-factors-hub-2025.pdf

Fuel	Heating Value	Unit
No. 2 Fuel Oil/Diesel	140,000	BTU/gal
Natural Gas	905	BTU/cu. Ft.

GWP 20 Values	
Pollutant	**GWP Values**
CO2	1
CH4	84
N2O	264

https://dec.ny.gov/sites/default/files/2024-12/summaryreportnysghgemissionsreport.pdf

Conversion Factors:		
1 kW =	3.40E-03	MMBTU/hr
1 MMBTU =	1,000,000	BTU
1b(1,000 gal) =	1,000	gallons
lb/MMBTU =	0.6470	g/kWh
1 lb/(1,000 gal) =	7,140	lb/10^12 BTU
1 lb/10^12 BTU =	1.38E-04	lb/(1,000 gal)
1 kW =	1.34	hp
1 g =	2.20E-03	lb
1kg =	2.20	lb
1 MMscf =	1,000,000	scf
1 ton =	2,000	lb
lb/MMBTU =	0.87	g/hp-hr

Notes

/1 Large Generators- US EPA AP42 factors Table 3.4- https://www.epa.gov/system/files/documents/2025-04/c03s04_april2025.pdf
/2 Cogens - US EPA AP42 factors Table 3.2-3
Emission factors for CO, NOx & VOC are from SCR Catalyst System Spec sheet
/3- GHG Upstream Emission Factors- 2025 NYS Statewide GHG Emission Report- Appendix A Table A1
/4- GHG Direct Emission Factors- 2025 GHG Emission Factors for Greenhouse Gas Inventories- Table 1

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GLOSSARY B
NYCHH- Bellevue Hospital
462 First Ave, New York, NY 10016

HOURS OF OPERATION

#	Equipment Type	MANUFACTURER/MODEL	MAX HEAT INPUT[million BTU/hr]	Actual Annual Consumption (Oil)		Potential Hour of Operation (Oil)		Actual Annual Consumption (Natural Gas)		Potential Hour of Operation (Natural Gas)	
				Baseline Scenario Gallons per Year	Project Scenario Hours per Year	Baseline Scenario Hours Per Year	Project Scenario Hours per Year	Baseline Scenario Hours per Year	Project Scenario Hours per Year	Baseline Scenario Hours per Year	Project Scenario Hours per Year
1	Generator	Caterpillar C27	2.55	2,540	52	8760	500	-	-	-	-
2	Generator	Caterpillar C27	2.55	2,540	52	8760	500	-	-	-	-
3	Generator	Caterpillar C27	2.55	2,540	52	8760	500	-	-	-	-
4	Generator	Caterpillar C27	2.55	2,540	52	8760	500	-	-	-	-
5	Generator	Caterpillar D399	2.04	2,032	52	8760	500	-	-	-	-
6	Generator	Caterpillar D399	2.04	2,032	52	8760	500	-	-	-	-
7	Generator	Rudox RM900S	2.04	2,032	-	8760	-	-	-	-	-
8	Generator	Caterpillar 3512C	5.1	5,080	52	500	500	-	-	-	-
9	Generator	Cummins DFHD-5622268	3.4	3,387	52	500	500	-	-	-	-
10	Generator	MTU 16V4000 DS2000	6.8	-	52	-	500	-	-	-	-
11	CHP	Caterpillar G3516H	17.87	-	-	-	-	-	8328	-	8760
12	CHP	Caterpillar G3516H	17.87	-	-	-	-	-	8328	-	8760

Fuel Consumption Jan 2018-Dec 2019	
Total Diesel Consumption (gal)	24,723
Annual Diesel Consumption (gal)	12,362

Appendix B; Disproportionate Burden Analysis

CLCPA Section 7(3) Disproportionate Burden Analysis Worksheet

DEC Application No. (if known):	2 - 6206 - 00032 / 00004
Name of Applicant:	Shawn Oosman
Email:	oosmans@nychhc.org
Phone:	646-694-5977
Mailing Address: Street:	462 First Avenue
City:	New York
State:	NY
Zip:	10016
Project Location:	NYC-HHC Bellevue Hospital
Street:	462 First Avenue
City:	New York
State:	NY
Zip:	10016

Project Description:
The proposed project to install the two (2) cogeneration units that would allow the hospital to generate its own heat and electricity thus becoming non-reliant on utility services. The Proposed action is to install two natural gas fired engines, Caterpillar G3516H with 1982 kW rating each. DAC #36061006200

This worksheet lists disadvantaged community (DAC) indicators that are potentially related to air quality or air-related health effects. The full lists of DAC indicators are contained in Tables 2 and 3 of the New York State Climate Justice Working Group Draft Disadvantaged Communities Criteria and List Technical Documentation (March 9, 2022) and the disadvantaged community criteria maps. The worksheet should be used to identify DAC indicators that are relevant to the potential greenhouse gas (GHG) and co-pollutant impacts of a specific action.

Using Table 1 of this worksheet, applicants should enter the percentile values for each DAC indicator from the disadvantaged communities criteria map and then identify the DAC indicators that are relevant to the specific project. Where a relevant DAC indicator is identified, a qualitative response whether the action will have a positive or negative impact on the pollution burdens or health vulnerabilities associated with the indicator should also be provided. The response should be based on the action without measures that may reduce or eliminate GHG and co-pollutants (i.e., “design measures”).

The impacts of the action on the environmental burdens and health vulnerabilities identified by the relevant DAC indicators must be discussed in the disproportionate burden analysis provided with the permit application. The analysis must also identify and discuss any proposed measures to reduce or eliminate GHG and co-pollutant impacts from the proposed action.

See Table 1 on page 2.

Table 1. CLCPA Section 7(3) Disproportionate Burden Analysis Worksheet

DAC Indicator	%tile[1]	Relevant?		Impact?	
Potential Pollution Exposures					
Traffic: number of vehicles	96%	✓ Yes	___ No	___ Positive	___ Negative
Traffic: diesel trucks	89%	✓ Yes	___ No	___ Positive	___ Negative
Particulate matter (PM 2.5)	95%	✓ Yes	___ No	___ Positive	✓ Negative
Benzene concentration	99%	✓ Yes	___ No	___ Positive	✓ Negative
Land Use and Facilities Associated with Historical Discrimination or Disinvestment [2]					
Proximity to remediation sites	0%	___ Yes	✓ No	___ Positive	___ Negative
Proximity to regulated management plan sites	76%	✓ Yes	___ No	___ Positive	___ Negative
Proximity to major oil storage facilities	0%	___ Yes	✓ No	___ Positive	___ Negative
Proximity to power generation facilities	64%	✓ Yes	___ No	___ Positive	___ Negative
Proximity to active landfills	0%	___ Yes	✓ No	___ Positive	___ Negative
Proximity to municipal waste combustors	0%	___ Yes	✓ No	___ Positive	___ Negative
Proximity to scrap metal processors	0%	___ Yes	✓ No	___ Positive	___ Negative
Industrial/manufacturing/mining land use	0%	___ Yes	✓ No	___ Positive	___ Negative
Health Outcome Sensitivities					
Asthma emergency department visits	69%	✓ Yes	___ No	___ Positive	✓ Negative
COPD emergency department visits	38%	✓ Yes	___ No	___ Positive	✓ Negative
Heart attack (MI) hospitalization	9%	___ Yes	✓ No	___ Positive	___ Negative
Premature deaths	33%	___ Yes	✓ No	___ Positive	___ Negative
Low birthweight	56%	✓ Yes	___ No	___ Positive	✓ Negative
Percent without health insurance	69%	✓ Yes	___ No	___ Positive	___ Negative
Percent with disabilities	25%	___ Yes	✓ No	___ Positive	___ Negative
Percent adults age 65+	31%	___ Yes	✓ No	___ Positive	___ Negative

[1] Enter the indicator percentile value obtained from the disadvantaged community criteria map for the disadvantaged community the project is located in or may affect. The disadvantaged communities criteria maps are located on-line at: **https://climate.ny.gov/Resources/Disadvantaged-Communities-Criteria**

[2] If the proposed action involves a land use listed in this section and has the potential to emit GHG or co-pollutants that affect or are likely to affect a disadvantaged community, the DAC indicator is relevant.