



*Transmitted via electronic mail delivery*  
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2 August 2021

Ms. Kimberly Merchant  
Deputy Permit Administrator  
Division of Environmental Permits  
New York State Department of Environmental Conservation  
6274 East Avon-Lima Road  
Avon, New York 14414

Reference: 0592708

Subject: Response to NYSDEC Request for Additional Technical Information & Suspension of  
Time Frame Request: Greenidge Generation LLC's Greenidge Generating Station  
DEC ID No. 8-5736-00004/00016 and 00017

Dear Ms. Merchant:

On behalf of Greenidge Generation LLC ("Greenidge"), ERM Consulting & Engineering, Inc. ("ERM") is pleased to provide the New York State Department of Environmental Conservation ("NYSDEC" or the "Department") with this response to the Department's letter, dated June 30, 2021, *Request for Additional Technical Information and Suspension of Time Frame Request*. The following serves as Greenidge Generating Station's ("Greenidge Station") response to your request for additional technical information in support of the pending renewal of its Major Air Operating ("Title V/IV") Permit.

The Department cited 6 NYCRR Part 496 as the authority under which supplemental information beyond the Title V application is requested; however, the Department's available guidance, DAR Technical Guidance Memo, titled Climate Leadership and Community Protection Act (CLCPA) and Permit Applications, dated 09/01/2020, states:

*"Purpose: DAIG-11 requires all applications for **new** state facility (ASF) and Title (ATV) permits and **significant modifications** to ASF and ATV permits to be evaluated in accordance with the Climate Leadership and Community Protection Act (CLCPA). Chapter 106 of the Laws of 2019, effective January 1, 2020.(emphasis supplied)"*

Greenidge submitted a timely and complete application in March 2021 for the **renewal** of its existing Title V/IV permit without requesting significant modifications. As such, 6 NYCRR 496 does not require an evaluation in accordance with the CLCPA.

Nevertheless, as demonstrated below, the renewal of Greenidge's Title V/IV permit is consistent with, and will not interfere with the attainment of the statewide greenhouse gas emissions targets established by the CLCPA for the following reasons:

- As a fraction of the total Statewide Emissions target of 254.87 million metric tonnes of CO<sub>2</sub>e for calendar year 2030, **Greenidge’s potential CO<sub>2</sub>e emissions (582,525.5 metric tonnes) comprise only 0.23% of the total statewide 2030 GHG emissions target.**
- **Greenidge has already reduced its onsite Greenhouse Gas (“GHG”) emissions in excess of 75.0% comparing its potential permitted emissions to its 1990 baseline actual emissions. Comparing the combined upstream and onsite potential emissions to the 1990 baseline (onsite and upstream combined) demonstrates a 70.3% reduction in GHG and CO<sub>2</sub>e emissions for the Greenidge facility.** This has been done by converting the operations from firing primarily sub-bituminous coal to primarily natural gas through the installation of pipeline natural gas as the primary fuel for electricity generation. A more realistic comparison of the 1990 actual GHG and CO<sub>2</sub>e emissions to projected actual GHG and CO<sub>2</sub>e emissions would result in an even greater reduction percentage;
- Elimination of Oil-firing during startup;
- Oil-fired thaw pits for coal handling and preparation during sub-freezing conditions have been eliminated from the facility’s operations;
- As a condition of its existing Title V/IV permit, Greenidge has conducted a one-time Energy Assessment of the facility consistent with the US EPA’s Energy Assessment requirements as codified at Title 40 of the Code of Federal Regulations, Part 63, Subpart DDDDD – The National Emissions Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters, §63.7575(a) through (h). This Energy Assessment identified opportunities for energy savings (which in turn would result in reduced GHG and CO<sub>2</sub>e emissions) and are discussed further in Section 2, Table 3 of this letter;
- Greenidge has performed a re-lamping program – replacing existing lighting systems with Light Emitting Diode (“LED”) fixtures/lamps throughout the facility.
- Greenidge’s diesel-fueled fire pump has been removed from service at the facility; and
- Greenidge is presently permitted to co-fire up to 19% (by weight) biomass – a green technology fuel.

The following section of this letter provides the supporting information requested in the Department’s June 30<sup>th</sup> letter. For ease of the Department’s review, each comment from the NYSDEC’s letter request is addressed individually.

## 1. CLCPA SECTION 7.2 ANALYSIS

***NYSDEC Comment/Request: To address Section 7(2) of CLCPA, identify each GHG and calculate the facility’s potential to emit GHG in tons per year and carbon dioxide equivalent (CO<sub>2</sub>e) emissions for the facility using the 20-year global warming potentials found in 6 NYCRR Section 496.5 (hereinafter, the “CLCPA analysis”).***

### 1.1 Baseline Conditions Including Upstream Emissions

In 1990, the Greenidge facility was owned and operated by NYSEG, which operated both Units #3 and #4 on sub-bituminous coal. The CLCPA uses the calendar year 1990 (“CY 1990”) CO<sub>2</sub>e emissions as the baseline against which the statewide reductions for CY 2030 and CY 2050 are compared.

To calculate actual CY 1990 CO<sub>2</sub>e emissions, the total consumption of coal combusted by Greenidge’s boilers (23,993,829 MMBtu) from the reported heat input in the three active boilers (Boilers #4, #5 & #6) was used along with the GWP20 emission factors.

Since Greenidge has no records of No. 2 diesel fuel consumption dating back to 1990, estimates of actual diesel fuel consumption by the burners in the coal thaw pits were based on 2,000 hours per year – typical operating hours for the winter season when temperature fall below freezing requiring the use of the coal car thaw pits - and calculated as follows:

$$\text{Estimated No. 2 Diesel Fuel Consumption} = \text{Heat Input Potential} \times \text{Operating Hours}$$

Where the Heat Input Potential is 15.48 MMBtu/hr, and the estimated actual Operating Hours is 2,000 hours. This results in a potential No. 2 diesel fuel oil heat input of 30,960 MMBtu.

The estimated No. 2 diesel fuel consumption by the emergency generator was calculated as follows:

$$\text{Estimated No. 2 Diesel Fuel Consumption} = \frac{\text{Generator Capacity}}{\text{Combustion Efficiency}} \times \frac{\text{Operating Hours}}{293.07}$$

Where:

- generator capacity = 280 kW;
- combustion efficiency = 30%;
- maximum operating hours = 75 hours/year<sup>1</sup>; and
- 293.07 is the conversion factor from kWh to MMBtu.

This results in an estimated heat input from the emergency generator’s No. 2 diesel fuel consumption of 239 MMBtu.

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<sup>1</sup> 6 NYCRR Parts 201(cq) and 201-3.2(c)(6) allows the emergency generator to operate up to 500 hours per year; however, typical actual operating hours are estimated to be 75 hours per year

The maximum potential diesel consumption by the fire pump was calculated as follows:

$$\text{Estimated No. 2 Diesel Fuel Consumption} = \frac{\text{Capacity}}{\text{Combustion Efficiency}} \times \frac{\text{Operating Hours}}{293.07}$$

Where:

- generator capacity = 280 kW;
- combustion efficiency = 30%;
- estimated operating hours = 75 hours/year<sup>2</sup>; and
- 293.07 is the conversion factor from kWh to MMBtu.

This results in an estimated heat input from the diesel fire pump's No. 2 diesel fuel consumption of 176 MMBtu.

The combined total heat input from No. 2 diesel fuel consumption from the thaw pits, emergency generator and the diesel fire pump is then calculated to be 31,374 MMBtu.

The actual GHG emissions from coal-firing operations as well as from upstream emissions, using the emission factors required under the CLCPA, total **3,206,800** metric tons of actual CO<sub>2</sub>e emissions based on GWP20, as shown in Table 1.

**Table 1. Greenidge 1990 Baseline and Upstream CO<sub>2</sub>e Emissions\***

Emission Type	Fuel	GHG	Quantity MMBtu	Emission Factor g/MMBtu	GHG Weight MT	Global Warming Potential <sup>3</sup> 20-Year	CO <sub>2</sub> e MT
Onsite Combustion Emissions <sup>4</sup>	Coal <sup>5</sup>	CO <sub>2</sub>	23,993,829	95,520	2,291,891	1	2,291,891
		CH <sub>4</sub>		11.0	263.9	84	22,170
		N <sub>2</sub> O		1.6	38.4	264	10,135
	Diesel	CO <sub>2</sub>	31,374	73,960	2,230	1	2,230
		CH <sub>4</sub>		3.0	0	84	8
		N <sub>2</sub> O		0.6	0	264	5
<b>Onsite Combustion Emissions Subtotal:</b>							<b>2,326,529</b>

<sup>2</sup> 6 NYCRR Parts 201(cq) and 201-3.2(c)(6) allows the diesel fire pump to operate up to 500 hours per year; however, typical actual operating hours are estimated to be 75 hours per year

<sup>3</sup> 20-Year GWP factors from 6 NYCRR 496.5

<sup>4</sup> Emission Factors for Stationary Combustion from Federal Register EPA; 40 CFR Part 98, e-CFR, June 13, 2017. Tables C-1, C-2 and AA-1.

<sup>5</sup> Coal consumption for 1990 from EIA reported coal consumption (962,448 short tons), and a heat content for bituminous coal of 24.93 MMBtu/short ton

Emission Type	Fuel	GHG	Quantity MMBtu	Emission Factor g/MMBtu	GHG Weight MT	Global Warming Potential <sup>3</sup>	CO <sub>2</sub> e
						20-Year	MT
Upstream Emissions <sup>6</sup>	Coal	CO <sub>2</sub>	23,993,829	3,279	78,676	1	78,676
		CH <sub>4</sub>		397	9,526	84	800,146
		N <sub>2</sub> O		0.103	2.5	264	652
	Diesel	CO <sub>2</sub>	31,374	15,164	476	1	476
		CH <sub>4</sub>		121	4	84	319
		N <sub>2</sub> O		0.258	0	264	2
<b>Upstream Emissions Subtotal:</b>							<b>880,271</b>
<b>Total</b>							<b>3,206,800</b>

\*Emissions data presented in this table are based on the data reported by NYSEG in 1990 to the US Energy Information Administration (EIA). Note that the US EPA also maintains the Clean Air Markets Database (CAMD) to which NYSEG reported emissions data subject to Title IV of the Clean Air Act (40 CFR Part 75). The CAMD data totals for the Greenidge station in 1990 were lower than those data published in the EIA database. For the CLCPA analysis, Greenidge used the EIA published data since those data appear to be more comprehensive and directly linked to energy generation at Greenidge in 1990.

Table 1 provides the summary of GHG emissions from Greenidge operations in 1990 as well as upstream GHG emissions required to provide coal as fuel to Boilers #4, #5, and #6 (associated with Units #3 & #4), and No. 2 fuel oil as fuel for the coal car thaw pits, diesel-fueled fire pump and emergency engine.

## 1.2 GHG Reduction Initiatives

Greenidge has undertaken a number of energy efficiency projects to reduce greenhouse gas emissions from the facility. Specifically, the following projects have been implemented and completed:

- Replacement of sub-bituminous coal with pipeline natural gas as the primary fuel for electricity generation;
- Site-wide Energy Assessment as a permit condition associated with its CO<sub>2</sub>e BACT requirement, following guidance in 40 CFR Part 63 Subpart DDDDD – The National Emissions Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters, § 63.7575(a) through (h). Table 3 of Section 2 below identifies the opportunities for CO<sub>2</sub>e reductions identified during that Energy Assessment; and
- Removal of the diesel-fueled fire pump from the site in 2019.

<sup>6</sup> Upstream Emission Factors from: Preliminary Interim Draft Emission Factors for Use by State Agencies and Project Proponents, NYSDEC Version 02/2021. Table 1.

Greenidge also participates in and continues to comply with the requirements of the Regional Greenhouse Gas Initiative (“RGGI”), implemented pursuant to 6 NYCRR 242, for electric generating units.

With the retirement of Unit #3 in 2009, and the conversion of Unit #4 to primarily natural gas firing in 2017, Greenidge’s onsite GHG emissions have decreased by approximately **75.0%** since 1990 when comparing the facility’s potential-to-emit (“PTE”) permitted emissions of 641,878 CO<sub>2e</sub> [short] tons/year (582,525.5 CO<sub>2e</sub> Metric tonnes/year) to the 1990 actual emissions baseline. Additionally, when comparing the emissions reductions from the combined onsite and upstream CO<sub>2e</sub> emissions, Greenidge’s current and projected potential emissions are 70.3% lower than the 1990 baseline actual emissions, as shown in Table 2 below.

The potential CO<sub>2e</sub> emissions summarized in Table 2 were calculated using the following methodology.

The maximum potential natural gas consumption was calculated using the following methodology:

$$\text{Potential Natural Gas Consumption} = \text{Max Heat Input Rating} \times \text{Max Operating Hours}$$

Where:

- the Maximum Heat Input Rating = 1,117 MMBtu/hr; and
- the Maximum Operating Hours is 8,760 hours/year.

This yields a maximum potential heat input from natural gas consumption of 9,784,920 MMBtu/year.

The maximum potential diesel consumption by the emergency generator was calculated as follows:

$$\text{Potential No. 2 Diesel Fuel Consumption} = \frac{\text{Generator Capacity}}{\text{Combustion Efficiency}} \times \frac{\text{Max Operating Hours}}{293.07}$$

Where:

- generator capacity = 280 kW;
- combustion efficiency = 30%;
- maximum operating hours = 500 hours/year<sup>7</sup>; and
- 293.07 is the conversion factor from kWh to MMBtu.

This results in a maximum potential heat input from the emergency generator’s diesel fuel consumption of 1,590 MMBtu.

<sup>7</sup> 6 NYCRR Parts 201(cq) and 201-3.2(c)(6)

**Table 2. Greenidge Current Potential-to-Emit (PTE) and Upstream CO<sub>2</sub>e Emissions<sup>8</sup>**

Emission Type	Fuel	GHGs	Quantity (MMBtu)	Emission Factor (g/MMBtu)	GHG Weight (MT)	Global Warming Potential (20-Year)	CO <sub>2</sub> e Emissions (MT)
Onsite Combustion Emissions	Natural Gas	CO <sub>2</sub>	9,784,920	53,060	519,188	1	519,188
		CH <sub>4</sub>		1.0	9.7849	84	822
		N <sub>2</sub> O		0.1	0.9785	264	258
	Diesel	CO <sub>2</sub>	1,590	73,960	118	1	118
		CH <sub>4</sub>		3.0	0	84	0
		N <sub>2</sub> O		0.6	0	264	0
<b>Onsite Combustion Emissions Subtotal:</b>							<b>520,386</b>
Upstream Emissions	Natural Gas	CO <sub>2</sub>	9,784,920	11,913	116,568	1	116,568
		CH <sub>4</sub>		384	3,757	84	315,622
		N <sub>2</sub> O		0.136	1.3307	264	351
	Diesel	CO <sub>2</sub>	1,590	15,164	24	1	24
		CH <sub>4</sub>		121	0	84	16
		N <sub>2</sub> O		0.258	0	264	0
<b>Upstream Emissions Subtotal:</b>							<b>432,582</b>
<b>Total</b>							<b>952,968</b>

Table 2 provides the summary of maximum potential GHG emissions from Greenidge operations on natural gas, as well as upstream GHG emissions associated with the natural gas used as fuel to operate Boiler #6 (associated with Unit #4) and No. 2 oil as fuel for the diesel-fueled emergency engine. The total maximum potential GHG emissions, including upstream emissions, equates to 1,050,423 CO<sub>2</sub>e short tons/year (952,968 CO<sub>2</sub>e Metric tonnes/year). The share of these potential emissions derived from the onsite combustion is calculated to be 573,628 CO<sub>2</sub>e short tons/year (520,386 CO<sub>2</sub>e Metric tonnes/year) for natural gas only firing in the main boiler and diesel fuel in the emergency engine. The permit limit of 641,878 CO<sub>2</sub>e short tons/year (582,525.5 CO<sub>2</sub>e Metric tonnes/year) is based on the onsite combustion emissions from co-firing of natural gas and up to 15% by weight of biomass fuel on an annual basis, or up to 19% on an hourly basis. This permit limit is based on using AP-42 factors for combustion of natural gas and biomass. Please note that the CLCPA analysis uses the emission factors and GWP20 factors that may differ from those factors used the Title V air permit application used to establish the 641,878 CO<sub>2</sub>e short tons/year permit limit.

As a comparison to the total Statewide Emissions target of 254.87 Million Metric tonnes of CO<sub>2</sub>e for calendar year 2030, Greenidge's maximum potential CO<sub>2</sub>e emissions comprise only **0.23%** of the total statewide 2030 GHG emissions target and, as noted, constitute a **70.3%** reduction in combined onsite and upstream CO<sub>2</sub>e emissions, based on the facility's potential-to-emit ("PTE")

<sup>8</sup> Table 1 footnote references (1 - 4) are applicable to Table 2

permitted emissions compared to the actual 1990 baseline and 75% reduction from 1990 actual baseline onsite emissions

## 2. FUTURE PROJECTED GHG & CO<sub>2e</sub> EMISSIONS

**NYSDEC Comment/Request:** *The CLCPA analysis must include calculations showing the facility's projected GHG and CO<sub>2e</sub> emissions in the years 2030, 2040, and 2050.*

Based on its operational needs and trends, the Facility's projected GHG and CO<sub>2e</sub> emissions in the years 2030, 2040, and 2050 are expected to be consistent with its Potential GHG and CO<sub>2e</sub> emissions as presented in Table 2 above.

However, Greenidge intends to use the next five years allowed by renewal of its Title V permit ending in 2026 (four years before the next CLCPA interim deadline) to assess its ability to further reduce improve efficiency and reduce GHG emissions associated with its operation. Specifically, Greenidge has identified several additional GHG reduction projects that it will evaluate over the next 5-year Title V/IV permit renewal period.

Table 3 summarizes those projects that will be evaluated during the impending renewed permit period.

**Table 3. Greenidge GHG Reduction Project Opportunities**

GHG Reduction Project Opportunity	Description
Installation of a variable frequency drive on the 2,000 horsepower booster exhaust fan	Study to analyze the feasibility of installing a variable frequency drive on the existing booster exhaust fan to improve efficiency, reduce energy consumption and modulate fan speed as needed. This could result in a CO <sub>2e</sub> emissions reduction of approximately 1-2%.
Redesign of the Exhaust Gas Duct work system	Study to analyze potential energy reduction benefits that could be achieved from removal and redesigning/rebalancing Unit #4 exhaust gas ductwork including ductwork for the former Unit #3 that was abandoned in place. If deemed feasible this could result in the elimination of the 2,000 horsepower booster exhaust fan. This could result in a CO <sub>2e</sub> emissions reduction of approximately 2-3%.
Up to 15 MW of Solar Farm capacity installation	Study to analyze the feasibility of installing a community solar farm. The study would include analysis of required approvals/permitting for the solar farm. This could result in a CO <sub>2e</sub> emissions reduction of approximately 10-15%.
Up to 2 MW Solar Farm capacity installation on the former coal pile area	Pilot study to analyze the feasibility of installing a solar farm on the former onsite coal pile area. Pilot study would include analysis of required closure requirements of the coal pile area and approvals/permitting for the solar farm. This could result in a CO <sub>2e</sub> emissions reduction of approximately 2-3%.



GHG Reduction Project Opportunity	Description
Replacement of the catalyst in the Selective Catalytic Reduction (SCR) system	Evaluate the feasibility of converting to a catalyst media with a smaller overall surface area thereby reducing static flow rate losses through the SCR bed and reducing the energy demand to operate the Induced Draft ("ID") fan. This could result in a CO <sub>2</sub> e emissions reduction of approximately 2-3%.
Co-firing hydrogen with natural gas	Study to analyze the benefits of co-firing green hydrogen with natural gas. This would include evaluation of boiler efficiency, impacts on NO <sub>x</sub> emissions and associated permit limitations, and the commercial availability of green hydrogen. This could result in a CO <sub>2</sub> e emissions reduction of approximately 10-15%.

Those projects listed in Table 3 above that are preliminarily determined to be technically and economically viable could then be considered for implementation during the subsequent 5-year Title V/IV permit period (2026 through 2031), at which time it may be possible to screen projects in accordance with anticipated future regulatory requirements issued pursuant to the CLCPA.

Potential emissions in 2030 from Greenidge will not be greater than the CO<sub>2</sub>e emissions provided in Table 2 and can reasonably be expected to decrease based on the implementation of some or all of the additional GHG reduction measures discussed in Table 3 above and other future measures that Greenidge identifies and implements to reduce the CO<sub>2</sub>e emissions from the facility.

Greenidge recognizes the energy sector is required to achieve a net zero GHG emissions goal by 2040. **While Greenidge has already more than achieved the 2030 target for reductions compared to the 1990 baseline with reductions implemented to date, the company will of course strive to comply with the zero emissions goal established for the entire statewide energy sector by 2040.**

### 3. GHG AND CO<sub>2</sub>e EMISSIONS, 2015 – 2020

**NYSDEC Comment/Request: *The CLCPA analysis must also include actual GHG emissions from the facility, in tons per year and CO<sub>2</sub>e, for each year since 2015.***

Table 4 provides a summary of the GHG and CO<sub>2</sub>e emissions from Greenidge, beginning in calendar year 2015 through calendar year 2020. Note that from March 18, 2011 through the issuance of its Title V/IV (PSD-level) Permit in September 2016, Greenidge was being maintained in a protective layup condition; therefore, the primary electricity generating unit (#4) was not operating throughout 2015 and 2016. "First fire" of Unit #4 occurred in February 2017, once repairs and start up/commissioning upgrades were completed, consistent with the terms of its Title V/IV air permit.

**Table 4. Greenidge Actual GHG/CO<sub>2</sub>e Emissions, 2015 through 2021\***

Calendar Year	CO <sub>2</sub> e Emissions (in metric tonnes)
2015	0
2016	0
2017	172,309
2018	195,731
2019	64,607
2020	374,814
2021*	195,493

\*CO<sub>2</sub>e emissions for Calendar Year 2021 are only available from January through June 2021.

#### 4. PROJECTED ACTUAL GHG EMISSIONS, 2021 THROUGH 2026

**NYSDEC Comment/Request:** *The CLCPA analysis must also include the anticipated actual GHG emissions from the facility, based on anticipated operation of the facility, for each year of the proposed renewal term of the permit.*

Table 5 presents the summary of projected actual GHG emissions for the facility for the expected term from 2022 through 2026 that would constitute the renewed 5-year permit term.

**Table 5. Greenidge Projected Actual CO<sub>2</sub>e Emissions, 2021 through 2025**

Calendar Year	Onsite Combustion CO <sub>2</sub> e Emissions	Upstream CO <sub>2</sub> e Emissions	Total Projected Actual CO <sub>2</sub> e Emissions
	(Metric Tonnes, MT)		
2022	520,386	432,582	952,958
2023	520,386	432,582	952,958
2024	520,386	432,582	952,958
2025	520,386	432,582	952,958
2026	520,386	432,582	952,958

#### 5. CO-POLLUTANT EMISSIONS

**NYSDEC Comment/Request:** *In addition to the GHG requirements outlined above, calculations and discussions of mitigation measures for any co-pollutants must also be provided.*

Greenidge Station currently has installed air pollution control equipment and operating procedures for the following suite of technologies:

- NOxOUT CASCADE® hybrid selective non-catalytic reduction (SNCR) / in-duct SCR system for NOx control;
- Advanced air-fuel staging and low NOx burners;
- a Dust Collection System (baghouse) for particulate matter control;

- Selective Catalytic Reduction (SCR);
- Urea Injection through Multi-Nozzle Lances (MNLs);
- Pre-combustion Under-fire Air for CO control;
- Closed-coupled Over-fire (CCOFA); and
- Post-combustion advanced, Separated Over-fire Air (SOFA).

With the reactivation of the Greenidge plant in 2016 along with the conversion from coal-firing to primarily natural gas-firing, and upgrades to the Station's air pollution control equipment to achieve the Non-Attainment New Source Review/Prevention of Significant Deterioration (NA-NSR/PSD) requirements of its US EPA approved and NYSDEC issued Title V/IV Air Operating Permit, select equipment installed for the MPC Project were upgraded to achieve both Lowest Achievable Emission Rate (LAER) limits for NO<sub>x</sub> and Best Available Control Technology (BACT) limits for sulfur dioxide (SO<sub>2</sub>), particulate matter less than 10 microns (PM<sub>10</sub>), particulate matter less than 2.5 microns (PM<sub>2.5</sub>) - both filterable and condensable fractions, and GHGs.

The CLCPA defines co-pollutants as hazardous air pollutants ("HAPs") emitted by GHG sources. As a natural gas combustion source, Greenidge emits HAPs through the combustion process. As a NA-NSR/PSD regulated facility, Greenidge is subject to LAER for NO<sub>x</sub> emissions and BACT for GHGs, PM<sub>10</sub> and PM<sub>2.5</sub>, and SO<sub>2</sub> emissions. Although these air pollutants are defined as "criteria" air pollutants and not HAPs, they are emitted as the result of the natural gas combustion process that also emits HAP emissions and serve as surrogates or indicators of the level of control for HAP emissions. The control of these criteria pollutants through efficient fuel pre- and post-combustion management and the suite of air pollution control equipment and engineering controls installed and operational at Greenidge is indicative of the level of HAPs control achieved at Greenidge and that further HAPs emissions reductions are not feasible. The HAP emissions calculations provided in the 2016 Title V/IV application and approved by the US EPA and the Department still apply today.

## 6. PHYSICAL CHANGES/CHANGES IN METHOD OF OPERATION

**NYSDEC Comment/Request: *Please also identify when the facility began operation of bitcoin mining at the facility and any physical changes or changes in method of operation made at the plant to enable bitcoin mining. In addition, please identify how much electricity the facility provided to the electricity grid, and how much electricity was generated behind the meter, for each year since bitcoin mining commenced at the facility.***

No physical changes or changes in the method of operation at the emission source have taken place at the facility since the start of the Blockchain Technology (*aka*, bitcoin mining) activities; including no changes to any of the air pollution sources or operational control devices associated with the emissions sources.

After piloting a Blockchain Technology data center in the existing facility during 2019, in 2020, the Town of Torrey authorized the installation of the initial Blockchain Technology data center through its Site Plan approval process, which included a SEQRA review and analysis.

Table 6 presents a summary of the electricity generated by Greenidge, including power that was dispatched to the New York Independent System Operator (NY ISO) electricity grid and the facility's Station Service electricity load (i.e., "behind the meter" demand) beginning in 2017 through June 2021. Blockchain Technology Service, a component of Station Service, is listed separately in Table 6 below.

**Table 6. Greenidge Electricity Generation & Distribution**

Calendar Year	Net Generation to NY ISO Grid	Station Service**	Blockchain Technology Service
	Megawatts (MW)		
2017	170,297	10,223	0
2018	203,918	12,496	0
2019	61,232	4,303	7,812
2020	215,588	32,170	132,215
2021*	76,486	16,094	112,474

\* Electricity generation for calendar year 2021 is only currently available for January 1, 2021 through June 30, 2021.

\*\* Station Service values do not include Blockchain Technology Service

**Note that Greenidge's use of 'behind the meter' power *has not* resulted in an increase -- *nor will it result in an increase* -- in the Facility's future potential-to-emit GHGs and CO<sub>2e</sub> emissions from the current PTE, and renewal of the Title V/IV air permit will not impact this conclusion.**

Finally, we note that Section 7(3) of the CLCPA requires State agencies to prioritize reductions of GHG emissions and co-pollutants (defined by the CLCPA as hazardous air pollutants produced by greenhouse gas emission sources) in Disadvantaged Communities. Although the term Disadvantaged Communities is not defined within the CLCPA or Part 496, for the purposes of this CLCPA analysis, Greenidge equates the term "Disadvantaged Communities" with the Department's term "Environmental Justice ("EJ") areas." There are no potential EJ areas in Yates County where Greenidge is located and, based on the New York State Energy Research and Development Authority's interim guidance, Greenidge is also not located in or near a "Disadvantaged Community."

## CONCLUSION

From the information presented above, renewal of Greenidge Generation's Title V/IV Permit is fully consistent with the CLCPA and Article 75 GHG emission reduction targets. **As noted in this assessment, current onsite and upstream potential emissions of CO<sub>2e</sub> emissions from Greenidge are 70.3% lower than actual emissions in 1990, and 75% lower when comparing current and projected potential onsite emissions to the 1990 baseline actual emissions**

As Greenidge continues to identify, evaluate and implement additional GHG reduction measures between now and 2030, its projected actual GHG and CO<sub>2e</sub> emissions will continue to support New York's climate leadership initiatives.

As such, Greenidge's GHG reduction strategy is currently consistent with all requirements established in 6 NYCRR Part 496 and the CLCPA.

Accordingly, Greenidge renews its request that the Department determine that its Title V/IV application is complete within the meaning of 6 NYCRR 621 and promptly issue a completeness determination and draft Title V/IV Air Operating Permit.

Sincerely,

A handwritten signature in blue ink, appearing to read "David T. Murtha".

David T. Murtha, QEP, CVI, TWIC  
*Consultant Director*

cc: D. Irwin, Greenidge Generation LLC  
T. Panaski, Greenidge Generation LLC  
S. Russo, Esq., Greenberg Traurig, LLP