MONITORING REPORT #2022-1 FOR THE GREATER NEW BEDFORD LFG UTILIZATION PROJECT, DARTMOUTH, MA

Document Prepared By: CommonWealth Resource Management Corporation
For its wholly owned subsidiary
CommonWealth New Bedford Energy, LLC

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1 PROJECT DETAILS

1.1 Summary Description of the Implementation Status of the Project

The Project is a landfill methane (a.k.a., "landfill gas" or "LFG") capture and utilization project located at a solid waste landfill (the "Landfill") in Dartmouth, Massachusetts. The Landfill is owned by the Greater New Bedford Regional Refuse Management District (the "District"). The owner of the Project is CommonWealth New Bedford Energy, LLC ("CNBE"), a wholly-owned subsidiary of CommonWealth Resource Management Corporation ("CRMC"), a Massachusetts corporation based in Boston, Massachusetts, U.S.A. CNBE also owns the exclusive rights to all of the LFG at the Landfill, and all of the environmental attributes associated with the collection, destruction and use of all of the LFG at the Landfill.

The Project voluntarily captures and destroys LFG methane from the Crapo Hill Landfill located in Dartmouth, Massachusetts (latitude and longitude are 41° 43' 28.12" N and 70° 59' 04.82" W, respectively). The Project captures LFG from the expanded active collection system and destroys it either via four Caterpillar 3516 engine-generator sets or a back-up open flare. The Project achieves emissions reductions through the destruction of LFG that would otherwise have been released to the atmosphere. The back-up flare did not operate for any significant period of time during the current verification period; therefore, emission reductions are not claimed from flaring.

The Project was implemented according to the description provided in the revalidated PD. The Project became operational in January 2002 with the expansion of an existing active LFG collection and destruction system. Emission reductions from the current verification period were claimed for LFG collected from the expanded active LFG collection system and destructed in the Caterpillar 3516 engine-generator sets. The back-up flare had limited operation during the current verification period and no emission reductions are claimed from flaring. CRMC claims GHG emission reductions eligible under VCS program of 67,565 metric tons of CO_2e for the verification period January 1 through June 30, 2022.

1.2 Sectoral Scope and Project Type

The sectoral scope is renewable energy industry. The Project is not a grouped project.

1.3 Project Proponent

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Organization name	CommonWealth Resource Management Corporation For its wholly-owned subsidiary CommonWealth New Bedford Energy, LLC
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1.4 Other Entities Involved in the Project

None.

1.5 Project Start Date

January 1, 2002

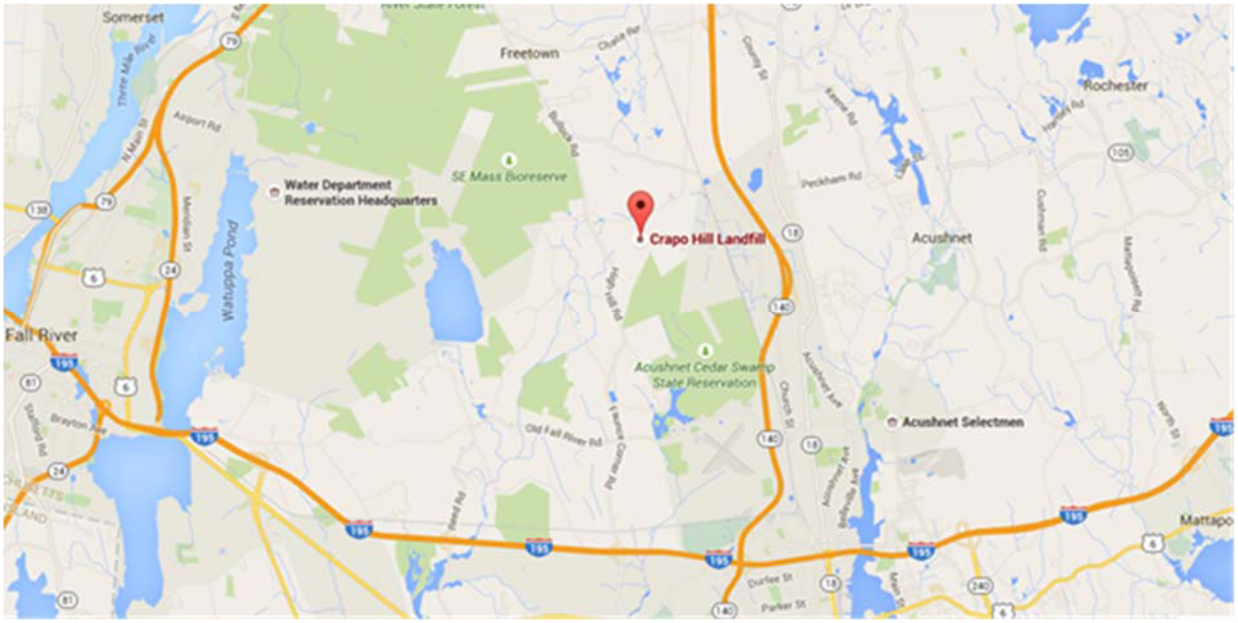
1.6 Project Crediting Period

The first Project Credit Period was a 10-year period starting March 28, 2006 and ending March 28, 2016.

The second Project Credit Period is a 10-year period starting March 29, 2016 and ending March 28, 2026.

1.7 Project Location

The Project is at the Crapo Hill Landfill located west of Samuel Barnet Boulevard in the northeast portion of the Town of Dartmouth, Massachusetts (latitude and longitude are 41° 43’ 28.12” N and 70° 59’ 04.82”).



1.8 Title and Reference of Methodology

As outlined in the Project Description document, the VCS methodology applied to the Project was the approved consolidated baseline methodology UNFCCC's ACM0001, Version 16, "Large-scale Consolidated Methodology – Flaring or use of landfill gas".

1.9 Participation under other GHG Programs

The Project is registered at the American Carbon Registry – Project ID of ACR 113. The emission reductions verified for this monitoring period will not be claimed under or registered on the ACR or any other registry. The last year that credits from this Project were registered under the ACR were for the full year of 2008 vintage.

1.10 Other Forms of Credit

- Emission Trading Programs and Other Binding Limits: The Project does not participate in emission trading programs and does not have other binding limits.
- Renewable Energy Portfolio Programs: The Project is qualified under the Massachusetts, Connecticut, Maine and New Hampshire Renewable Energy Portfolio Programs to produce Class 1 Renewable Energy Credits in Massachusetts, Connecticut, Rhode Island and Maine; and Class III Renewable Energy Credits in New Hampshire. These programs and the resulting Renewable Energy Credits do not include the GHG emission reduction attributes associated with the destruction of methane.

1.11 Sustainable Development Contributions

The Project is a renewable energy project that supports sustainable development in the United States. The Project continues to add collection equipment to new areas of the active landfill to collect newly generated landfill gas. The Project continues to add automated monitoring and collection equipment to well heads to monitor and record real time data from new wellheads and control the flow of landfill gas through the wellheads to optimize the efficiency of the collection system to collect the maximum quantity of landfill gas.

The Project supports the United States Environmental Protection Agency Landfill Methane Outreach Program (LMOP), which is a voluntary program that works cooperatively with industry stakeholders and waste officials to reduce or avoid methane emissions from landfills. LMOP encourages the recovery and beneficial use of biogas generated from organic municipal solid waste. CRMC has been a member of LMOP since 1995. The project is a listed on LMOP and CRMC reports performance of the project annually. The project helps LMOP to achieve its stated goals to reduce greenhouse gas emissions, reduction of air pollution by offsetting the use of non-renewable resources, create health and safety benefits, and benefit the community and economy.

The Project supports several of the United Nations Sustainable Development Goals. The specific support of these goals is described in the table below.

Table 1: Sustainable Development Contributions

Row number	SDG Target	SDG Indicator	Net Impact on SDG Indicator	Current Project Contributions	Contributions Over Project Lifetime
1)	7.0	Ensure access to Affordable, Reliable, Sustainable and Modern Energy	Implemented activities to increase production of reliable, low cost, base-load renewable energy to four local municipal utilities.	During first half of 2022, increased production of renewable electricity by 21% over first half of 2021.	The project has increased affordable, reliable, base-load renewable electricity in Massachusetts by 346,000 Megawatt hours since 2005.
2)	9.0	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	Implemented activities to increase the collection of landfill gas.	Installed additional landfill collectors and automated monitoring and control of landfill wells using Loci Controls technology. Collected an addition 450 metric tons of methane during monitoring period.	The project increased collection of landfill gas by expanding collection and increased the efficiency of the collection by adding automated collection and control system. Collected over 4.3 trillion Btus of landfill gas (methane) since 2005. The landfill gas was destroyed but first converted to renewable energy.
3)	13.0	Tonnes of greenhouse gas emissions avoided or removed	Implemented project activities to collect and destroy methane gas that would otherwise be emitted to the atmosphere.	By collecting and destroying landfill gas, the Project has reduced or avoided methane emissions of 64,000 metric tons of CO2 equivalents.	Reduced 1.6 million metric tons of CO2 equivalents since 2005.

2 SAFEGUARDS

2.1 No Net Harm

None. The Project is an environmental control project that is designed and operated to (1) collect and control landfill gas emissions from a landfill that may otherwise be uncollected and uncontrolled and (2) utilize an energy resource that may be otherwise wasted.

Review of the EPA Enforcement and Compliance History Online (ECHO) shows that during this reporting period, no notice of non-compliance are associated with the Project or site of the Project.

2.2 Local Stakeholder Consultation

Provide tours of the facility to interested parties including school groups, college students, environmental advocacy groups, political leaders, etc. The project has been typically used as an example by the State of Massachusetts Clean Energy Council and Department of Environmental Protection as an important environmental project that helps to achieve the environmental, renewable energy, GHG reduction and sustainability goals of Massachusetts. The Project was awarded the Silver Metal for Excellence in 2010 for landfill gas and biogas projects by the Solid Waste Association of North America (SWANA). Criteria used for this national award for excellence included Site Design & Construction, Environmental Controls, Regulatory Compliance, Planning, Operations & Financial Management, Utilization of Equipment/Systems and Technologies, Public Acceptance, Appearance and Aesthetics, and Innovation and Creativity.

2.3 AFOLU-Specific Safeguards

The Project is not an Agriculture, Forestry and Other Land Use (AFOLU) project.

3 IMPLEMENTATION STATUS

3.1 Implementation Status of the Project Activity

The project activity is in service.

The project activity operated normally during the monitoring period subject to this verification. The four engines destroyed landfill gas during the period. The back-up flare

had limited operation during the current verification period and no emission reductions are claimed from flaring.

3.2 Deviations

2.1.1 Methodology Deviations

The following methodology deviations were previously validated and approved for the Project:

- The SCADA system was programmed to calculate the methane gas flow in units of million British thermal units (MMBtu) using standardized gas flow (at 68°F and one atmosphere of pressure), methane concentration, the gross heat content (higher heating value) of methane, and the actual temperature and pressure. CNBE determined the volume of methane destroyed by converting the MMBtu values to total methane gas flow in standard cubic feet. This deviation from the monitoring methodology was previously approved by independent verifiers and had a conservative impact on the quantification of GHG emissions reductions during the verification period.
- The Project reference conditions are 20 degrees Centigrade and 1 atmosphere rather than ACM0001 reference conditions of 0 degrees Centigrade and 1 atmosphere.

Additional deviations from the latest methodology are:

1. A separate LFG meter is not present on each of the four combustion engines. A single meter is used immediately before the piping splits to each engine. This meter is continuously recording data. Operating data is tracked for each engine, so it is possible to calculate the flow destroyed by each engine and to ensure that LFG is destroyed. Flow controls are in place to ensure no LFG is sent to an engine that is not operating. This does not affect the conservativeness of the emissions reductions claimed.
2. Ex-ante emissions reductions calculations use historic Project specific data as the basis for projecting future emissions rather than the required CDM estimation tools. Using real data allows the estimations to be more accurate and reflect actual Project operating conditions. This does not affect the conservativeness of the emissions reductions claimed but increases the accuracy of the ex-ante projections ensuring the project is forecasting obtainable, appropriate emissions reductions.
3. There is no flow meter installed on the collection pipe from the District Initial System to separately monitor the contribution of the original baseline system. Given the collection system design and meter requirements, installing a meter at this location would not produce reliable, meaningful results. Instead, well-head flow measurements are collected manually. These results are used to calculate the relative contribution of the District Initial System to the overall flow of LFG destroyed by the engines. This portion of the total flow represents $F_{CH4,BL,y}$ and will be calculated on a monthly

basis and subtracted from the total flow to account for the amount of methane destroyed in the baseline scenario. This approach represents an accurate measurement of the flow because (a) the portion of the landfill that includes the District Initial System (Phase 1) is capped so no landfill gas can be passively emitted to the atmosphere, and (b) the remaining active wells from the District Initial System are located in such a way as to enable capture of all LFG generated within the sphere of influence of the District Initial System. This deviation decreases the conservativeness of the emissions reductions claimed but significantly increases the accuracy of the calculations as is allowable under VCS Standard v4.1, Section 3.17.1 and 2.

4. The Project uses the eGrid electricity emissions factor rather than the default emissions factor provided in the CDM tool as explained in the project emissions section. This deviation decreases the conservativeness of the emissions reductions claimed but significantly increases the accuracy of the calculations as is allowable under VCS Standard v4.1, Section 3.17.1 and 2.

These deviations only apply to the monitoring and measurement portions of the Project.

2.1.2 Project Description Deviations

No project description deviations applied during this monitoring period.

3.3 Grouped Projects

The Project is not a grouped project.

4 DATA AND PARAMETERS

4.1 Data and Parameters Available at Validation

Data / Parameter	OXtop_layer
Data unit	Dimensionless
Description	Fraction of methane that would be oxidized in the top layer of the SWDS in the baseline
Source of data	Consistent with how oxidation is accounted for in the methodological tool “Emissions from solid waste disposal”
Value applied:	0.1

Justification of choice of data or description of measurement methods and procedures applied	In accordance with requirements of ACM0001
Purpose of Data	Calculation of baseline emissions
Comments	No comments

Data / Parameter	GWPCH4
Data unit	T CO2e / t CH4
Description	Global warming potential of methane
Source of data	IPCC – Fourth Assessment Report
Value applied:	28
Justification of choice of data or description of measurement methods and procedures applied	Updated from 25 to 28 pursuant to (1) the re-validation report dated May 16, 2016, and (2) the VCS approval (in its VCS Standard v.4.1 issued April 22, 2021 and VCS Standard v4.2 issued January 20, 2022) of updated global warming potentials provided in the IPCC's Fifth Assessment Report (Table 8.A.1) (2013).
Purpose of Data	Calculation of baseline emissions
Comments	No comments

Data / Parameter	Regulatory requirements
Data unit	Not applicable
Description	Regulatory requirements applicable to the Project Activity
Source of data	Publicly available information on local, regional and national regulations
Value applied:	Not applicable
Justification of choice of data or description of measurement methods and procedures applied	Not applicable
Purpose of Data	To ensure continued compliance and regulatory additionality
Comments	This information is summarized in the PDD and will be monitored during the crediting period for any applicable changes.

Data / Parameter	Methane oxidation efficiency for electricity generation
Data unit	Percent
Description	Quantity of methane oxidized during combustion for electricity generation
Source of data	CDM Methodologies and Tools
Value applied:	100
Purpose of the data	Calculation of baseline and emissions reductions
Comments	None

Data Unit / Parameter:	Methane oxidation efficiency for flare
Data unit:	Percent
Description:	Quantity of methane oxidized during combustion using flare
Source of data:	40 CFR § 63.670 Requirements for flare control devices
Value applied:	98
Purpose of the data:	Baseline and emissions reductions
Any comment:	None

Data / Parameter	Fuel Use by the Emergency Generator
Data unit	Gallons/hour
Description	Average consumption of a 150kW generator operating at ¾ load to be used to calculate fuel consumed annually
Source of data	Diesel Service and Supply Company
Value applied:	8.4 gallons/hour
Justification of choice of data or description of measurement methods and procedures applied	Conservative for this piece of equipment given output needed vs total capacity
Purpose of the data	Calculation of project emissions
Comments	None

4.2 Data and Parameters Monitored

Data Unit / Parameter:	Methane content of gas (LFG and biogas)
Data unit:	Percent methane content of gas (LFG and biogas)
Description:	Methane content of gas (LFG and biogas)
Source of data:	SCADA System at Facility
Description of measurement methods and procedures to be applied:	Non-dispersive infrared
Frequency of monitoring/recording:	Continuous, hourly, daily
Value monitored:	Methane concentration, %
Monitoring equipment:	California Analytical 602P, Serial # S07002
QA/QC procedures to be applied:	Field calibrated once per week. A zero check and value check is performed by comparison with standard certified gas.
Purpose of the data	Calculate baseline and emissions reductions.
Calculation method:	Used in calculation to obtain heat value of gas (LFG and biogas) in Btu per scf of gas (LFG and biogas)
Any comment:	CO2 and O2 are also continuously monitored using the same instrument.

Data Unit / Parameter:	Volume of gas (LFG and biogas) to engines
Data unit:	Actual cubic feet per minute
Description:	Quantity of gas (LFG and biogas) used to fuel engines
Source of data:	SCADA System at Facility
Description of measurement methods and procedures to be applied:	Differential pressure measured across orifice plate
Frequency of monitoring/recording:	Continuous, hourly, daily
Value monitored:	Differential pressure
Monitoring equipment:	Oripac Model 4150, Serial #30154

QA/QC procedures to be applied:	Field calibrated once per month.
Purpose of the data	Calculate baseline and emissions reductions.
Calculation method:	Fluid flow equation (Bernoulli) calculates actual cubic feet per minute of gas (LFG and biogas).
Any comment:	None

Data Unit / Parameter:	Temperature of gas (LFG and biogas) to engines
Data unit:	Degrees Fahrenheit
Description:	Temperature of gas (LFG and biogas)
Source of data:	SCADA System at Facility
Description of measurement methods and procedures to be applied:	Thermocouple
Frequency of monitoring/recording:	Continuous
Value monitored:	Temperature
Monitoring equipment:	Thermocouple, Omega or equivalent
QA/QC procedures to be applied:	Field calibrated using thermometer.
Purpose of the data	Calculate baseline and emissions reductions.
Calculation method:	Used in fluid flow equation (Bernoulli) to calculate standard cubic feet per minute from actual cubic feet per minute of gas (LFG and biogas).
Any comment:	None

Data Unit / Parameter:	Pressure of gas (LFG and biogas) to engines
Data unit:	PSIG
Description:	Pressure of gas (LFG and biogas)
Source of data:	SCADA System at Facility
Description of measurement methods and procedures to be applied:	Pressure transducer
Frequency of monitoring/recording:	Continuous
Value monitored:	Static pressure
Monitoring equipment:	Pressure transducer, Omega or equivalent

QA/QC procedures to be applied:	Field calibrated using pressure gauge.
Purpose of the data	Calculate baseline and emissions reductions.
Calculation method:	Used in fluid flow equation (Bernoulli) to calculate standard cubic feet per minute from actual cubic feet per minute of gas (LFG and biogas).
Any comment:	None

Data Unit / Parameter:	Pressure of gas (LFG and biogas) to engines
Data unit:	PSIG
Description:	Pressure of gas (LFG and biogas)
Source of data:	SCADA System at Facility
Description of measurement methods and procedures to be applied:	Pressure transducer
Frequency of monitoring/recording:	Continuous
Value monitored:	Static pressure
Monitoring equipment:	Pressure transducer, Omega or equivalent
QA/QC procedures to be applied:	Field calibrated using pressure gauge.
Purpose of the data	Calculate baseline and emissions reductions.
Calculation method:	Used in fluid flow equation (Bernoulli) to calculate standard cubic feet per minute from actual cubic feet per minute of gas (LFG and biogas).
Any comment:	None

Data Unit / Parameter:	Methane content of biogas
Data unit:	Percent methane content of biogas
Description:	Methane content of biogas
Source of data:	CRMC Bioenergy Facility (anaerobic digester system) tied to SCADA System at Facility
Description of measurement methods and procedures to be applied:	Non-dispersive infrared
Frequency of monitoring/recording:	Continuous and a totalization of biogas volume

Data Unit / Parameter:	Methane content of biogas
Value monitored:	Methane concentration, %
Monitoring equipment:	Hitech Model: IR600 Infra-Red Gas Analyzer, Serial #1-09916
QA/QC procedures to be applied:	Field calibrated periodically. A value check is performed by comparison with standard certified gas.
Purpose of the data	Calculate emissions reductions.
Calculation method:	Used in calculation to obtain heat value of biogas in Btu per scf of biogas
Any comment:	None

Data Unit / Parameter:	Volume of biogas
Data unit:	Standard cubic feet per minute
Description:	Quantity of biogas added to LFG, both used to fuel engines
Source of data:	CRMC Bioenergy Facility (anaerobic digester system) tied to SCADA System at Facility
Description of measurement methods and procedures to be applied:	Differential pressure measured across a pitot tube
Frequency of monitoring/recording:	Continuous and at totalization of biogas volume
Value monitored:	Differential pressure
Monitoring equipment:	Dwyer Series DS-300 Flow Sensor, which is an averaging pitot tube
QA/QC procedures to be applied:	Field calibrated once per month.
Purpose of the data	Calculate emissions reductions.
Calculation method:	Fluid flow equation (Bernoulli) calculates actual cubic feet per minute of gas.
Any comment:	None

Data Unit / Parameter:	Temperature of biogas
Data unit:	Degrees Fahrenheit
Description:	Temperature of gas
Source of data:	CRMC Bioenergy Facility (anaerobic digester system) tied to SCADA System at Facility
Description of measurement methods and procedures to be applied:	Thermocouple
Frequency of monitoring/recording:	Continuous monitoring
Value monitored:	Temperature
Monitoring equipment:	Thermocouple, Omega or equivalent
QA/QC procedures to be applied:	Field calibrated using thermometer.
Purpose of the data	Calculate emissions reductions.
Calculation method:	Used in fluid flow equation (Bernoulli) to calculate standard cubic feet per minute from actual cubic feet per minute of gas.
Any comment:	None

Data Unit / Parameter:	Pressure of biogas
Data unit:	PSIG
Description:	Pressure of gas
Source of data:	SCADA System at Facility
Description of measurement methods and procedures to be applied:	Pressure transducer
Frequency of monitoring/recording:	Continuous
Value monitored:	Static pressure
Monitoring equipment:	Pressure transducer, Omega or equivalent
QA/QC procedures to be applied:	Field calibrated using pressure gauge.
Purpose of the data	Calculate baseline and emissions reductions.

Calculation method:	Used in fluid flow equation (Bernoulli) to calculate standard cubic feet per minute from actual cubic feet per minute of gas.
Any comment:	None

Data Unit / Parameter:	Volume of LFG to the flare
Data unit:	Standard cubic feet per minute
Description:	Quantity of landfill gas combusted in flare
Source of data:	Flare station
Description of measurement methods and procedures to be applied:	Differential pressure measured across orifice plate
Frequency of monitoring/recording:	Continuous, hourly, daily
Value monitored:	Standard cubic feet per minute
Monitoring equipment:	Omega PDF65 sqrt, Serial #57493
QA/QC procedures to be applied:	Field calibrated as required when operating.
Purpose of the data	Calculate baseline and emissions reductions.
Calculation method:	Fluid flow equation (Bernoulli) calculates standard cubic feet per minute of LFG.
Any comment:	None

Data / Parameter	Fraction of total LFG collected attributable to District Initial System
Data unit	Percentage
Description	Amount of LFG collected from the District Initial System that would have been destroyed in the baseline scenario
Source of data	Well-head measurements
Description of measurement methods and procedures to be applied	Measurements at each well-head using a hand-held instrument

Frequency of monitoring/recording	Once per month
Value applied:	4.1% was used in the ex-ante calculation based on data January 1, 2022 through June 30, 2022. See Exhibit 4.
Monitoring equipment	Elkin Earthworks Model 1104M64-06
QA/QC procedures to be applied	Calibrations are conducted prior to each set of measurements and documented.
Purpose of data	Calculation of the baseline emissions
Calculation method	LFG flows from District Initial System/Total LFG flow from all wells
Comments	None

Data Unit / Parameter	EF EL,Grid,y
Data unit	tonnes CO2/MWh
Description	Emission factor for electricity generation in year y
Source of data	US EPA eGRID data
Description of measurement methods and procedures to be applied	This value converted from the pounds CO2/MWh provided by the US EPA.
Frequency of monitoring/recording	The eGRID data will be reviewed each year to ensure that the most current value is used. See Exhibit 4
Value applied	0.24 tonnes CO2/MWh
Monitoring equipment	None
QA/QC procedures to be applied	None
Purpose of data	Calculation of project emissions
Calculation method	528.238 lbs CO2/MWH*0.454545455 kg/lbs*0.001 tonnes/kg = 0.24 tonnes CO2/MWh
Any comment:	None

Data Unit / Parameter	TDL Grid,y
Data unit	--
Description	Average technical transmission and distribution losses for grid in year y
Source of data	Energy Information Administration (EIA) Department of Energy (DOE) Annual Energy Review 2011: Chapter 2 Energy Consumption by Sector. P. 66
Description of measurement methods and procedures to be applied	None
Frequency of monitoring/recording	This data will be reviewed each year to ensure that the most current value is used.
Value applied	0.07
Monitoring equipment	None
QA/QC procedures to be applied	None
Purpose of data	Calculation of project emissions
Calculation method	None
Any comment	None

Data Unit / Parameter	EC Grid,y
Data unit	MWh
Description	Amount of grid electricity consumed by the project
Source of data	Bills as shown in Exhibit 5
Description of measurement methods and procedures to be applied	CNBE staff will compile the data.
Frequency of monitoring/recording	Data will be compiled annually.
Value applied	Ex Ante Calculation: 2.1 MWh/year based on January 1 through June 30, 2022 usage
Monitoring equipment	None
QA/QC procedures to be applied	None

Purpose of data	Calculation of project emissions
Calculation method	None
Any comment	None.

Data Unit / Parameter:	FCDiesel,y
Data unit:	Gallons/year
Description:	Amount of diesel consumed by the emergency generator
Source of data:	Run time log as shown in Exhibit 5
Description of measurement methods and procedures to be applied:	Plant operator will log the run time of the engine each time it is used
Frequency of monitoring/recording:	Data will be compiled annually.
Value applied:	Ex Ante Calculation: Based on January 1 –June 30, 2022 usage, the engine ran for 83.3 hours. Using a conservative assumption that the engine operated at ¾ load, it was assumed that the engine uses 8.4 gallons of diesel per hour run. (Technical specifications provided to validator. See Parameter in Section 5.1 of PD)
Monitoring equipment:	None
QA/QC procedures to be applied:	None
Purpose of data:	Calculation of project emissions
Calculation method:	The total run time will be multiplied by 8.4 gallons/hour to determine the total amount of diesel consumed in the year.
Any comment:	None.

Data Unit / Parameter:	NCVdiesel
Data unit:	MMBtu/ gallon
Description:	Energy content of the diesel

Source of data:	Draft 2011 US Greenhouse Gas Inventory Report
Description of measurement methods and procedures to be applied:	This was converted from the MMBtu/barrel data provided by the USEPA. 5.809 MMBtu/barrel
Frequency of monitoring/recording:	Annual
Value applied:	0.13831 MMBtu/gallon See ExAnteEstimate or Annual Calculation Workbooks for conversion
Monitoring equipment:	None
QA/QC procedures to be applied:	None
Calculation method:	None
Any comment:	Values provided by the EPA will be reviewed annually to ensure this value is the most up to date value available. This value is higher than the range provided by the IPCC in its 2006 Guidelines for National Greenhouse Gas Inventories and is therefore conservative.

Data Unit / Parameter:	EF CO2,Diesel,y
Data unit:	t CO2 /MMBtu
Description:	CO2 emissions factor for diesel
Source of data:	Draft 2011 US Greenhouse Gas Inventory Report
Description of measurement methods and procedures to be applied:	This was converted from the Tg C/Qbtu data provided by the US EPA. See ExAnteEstimate or Annual Calculation Workbooks for conversion
Frequency of monitoring/recording:	Annual
Value applied:	0.073957 t CO2 /MMBtu
Monitoring equipment:	N/A
QA/QC procedures to be applied:	N/A
Calculation method:	N/A

Any comment:	Values provided by the EPA will be reviewed annually to ensure this value is the most up to date value available.

4.3 Monitoring Plan

Critical for the accuracy and transparency of the calculation is that:

1. Measurements of gas flows are undertaken with reliable equipment that is regularly calibrated;
2. Sampling of Methane concentration in gas is undertaken with reliable equipment that is regularly calibrated;
3. Sampling of Methane concentration in gas takes place with a frequency that is sufficient to calculate average concentration factors that are statistically unbiased (i.e. they reflect the actual methane concentration of the gas);
4. Measurements of gas flows are undertaken at least on a monthly basis and are as frequent as necessary to apply statistically valid methane concentration factors (as described in (3), above);
5. Measurement and calibration equipment and processes and changes thereof are clearly described as part of the GHG emissions reporting process.

Unless otherwise specified through the GHG emissions reporting process, the following system is assumed to be in place.

4.3.1 Data Collection

At the Facility, the Supervisory Control and Data Acquisition (SCADA) system measures and records methane content and gas (LFG and biogas) volume to the engines and flare once per minute, and then calculates methane quantities each minute. The results are then accumulated to provide hourly and daily totals in units of million British thermal units on a higher heating value basis [MMBtu (HHV)] and thousand standard cubic feet (KSCF) of LFG. This data point provides information regarding the mixed landfill gas and biogas from the CRMC Bioenergy Facility (anaerobic digester system).

The same calculation is made using data from the biogas feed pipe. The difference between the total Btus entering the engines and the total Btus received from the biogas facility is the quantity attributed to the LFG collected and is used in the calculations described previously in the PDD. Because the calculations for this project are based on the use of Btus rather than metric tonnes of

methane as discussed in the deviation section, the value obtained by this approach is not skewed by the mixing of the gases prior to the measurement of the gas entering the engines.

Flow Measurements

The flow meters are located directly upstream of the destruction devices. One flow meter serves as the unit for flow meter measurements to the four engines, one unit for flow measurement of the biogas, and one unit for flow meter measurements to the flare. Each flow meter is equipped with a totalizer that indicates the cumulative actual cubic feet of gas that have passed through that flow meter.

The Project uses an orifice plate flow meter purchased directly from its manufacturer, Lambda Square Inc for the engine measurements. The orifice plate flow meter is an Oripac® Model 5300 that determines flow based on pressure differentials measured across a 5-inch diameter bore pressure differential plate installed in the Project's 8-inch diameter LFG pipe. The design data for the instrument specifies an accuracy of ± 0.6 percent of full scale and the capability of measuring flows from 0 to 1,600 actual cubic feet per minute. The performance of the instrument in the field is assured by the manufacturer based on bench scale testing in accordance with applicable design and methodologies prescribed by the International Standards Organization (ISO) and the American Society of Mechanical Engineers (ASME).

The Project uses an Omega PDF65 flow meter for measuring flow to the flare and a Dwyer Series DS-300 Flow Sensor, which is an averaging pitot tube, for measuring flow of the biogas.

Methane Measurements

The methane content of the gas (LFG and biogas), on a percent volume basis, is measured at a sampling port in the main header pipe near the flow meter with the use of a California Analytical Instrument Non-dispersive infrared (NDIR) analyzer. The readings are also logged by the SCADA system once per minute.

The methane content of the biogas is measured using a Hitech Model: IR600 Infra-Red Gas Analyzer.

Wellfield Measurements

The landfill gas collection system is balance in two ways including (1) high quantity LFG producing wells incorporate automated landfill gas collection technology and (2) low quantity LFG producing wells incorporate manual landfill gas collection technology.

The automated landfill gas collection was installed and is operated by Loci Controls Inc. The Loci system allows for near continuous gas collection well measurements and valve adjustments using

cellular connections to cloud based computing and data storage systems to improve gas collection system efficiency. These automated systems deploy collection well mounted hardware that provides continuous gas collection system measurement, data storage, control, and optimization. Algorithms are used to automate the valve adjustments to maximize collection efficiency, and reduce GHG emissions, based on individual collection well measurements and operating thresholds, along with aggregate gas composition thresholds for the entire collection system. The Loci automated technology transforms the high quantity LFG collection wells from periodic manual to continuous automated operation that increases landfill gas collection efficiency beyond regulatory requirements.

The manual technology requires a technician to monitor the landfill gas at each wellhead with a handheld gas analyzer and based on the data the technician adjusts a mechanical valve located on the wellhead above ground. The data is recorded by the technician and then moves on to the next wellheads to perform this same task repeatedly until all collection wells are monitored and adjusted. The technician measures LFG pressures, LFG flow rate, methane, carbon dioxide, oxygen and balance gas content of the LFG and based on these measurements adjusts the mechanical valve to control vacuum and flow from the collection well. Opening of the manual valve will increase the vacuum applied to the collection well. Closing the valve, will reduce the vacuum applied to the collection well. These results are logged in an electronic file to document system performance as well as to determine the percent contribution of LFG from the District Initial System.

Meter Calibrations

On installation, CNBE performed initial calibrations of the instruments, under actual field conditions using the USEPA Protocols described below. As a back-up to the flowmeter measurements, actual quantities of LFG destroyed in the Project engine-generators can be accurately calculated based on (a) the known engine heat rate (the number of British Thermal Units (Btus) required to produce a kilowatt hour electric power, (b) the measured heat content of the LFG fuel, and the metered electric power output of the Project.

CNBE performs calibration of the orifice plate flow meter at least quarterly and often monthly. CNBE follows the USEPA-promulgated test methods (USEPA Protocols) for determining flow rates of gas through pipes at 40 CFR 60 Appendix A, including (a) Method 1a - sample and velocity traverses for stationary sources with small stacks or ducts, and (b) Method 2c - determination of gas velocity and volumetric flow rate in small stacks or ducts (standard pitot tube). The USEPA Protocols were established by the USEPA to accurately determine the volumetric flow rates of gases through pipes at industrial facilities to determine compliance with permit limitations on process and exhaust gases.

The calibration is performed by measuring the flow at a point near the orifice flow meters. A pitot tube attached to a manometer measures the flow. The pitot tube is inserted into the pipe and several points are measured across the full diameter of the pipe. The measurements taken by the

pitot tube and manometer include velocity pressure and static pressure. Other measurements taken during calibration include gas temperature and barometric pressure.

Each week or more frequently as necessary, CNBE calibrates methane concentration measured on an automated basis by a California Instruments NDIR Analyzer installed at the Project, and any hand-held instrument that may be used in addition to the NDIR Analyzer is calibrated prior to its use. CNBE has found that weekly calibrations are sufficient to provide accurate measurements because of the reliable performance of the instrument, and the stringent dependence of engine operations on the accuracy of the methane measurements. CNBE typically experiences a weekly variance in the accuracy of methane content readings of one percent or less, which readings are measured by the California Instruments NDIR Analyzer and compared to readings from a certified standard gas containing a known methane concentration.

Another performance measure that is a further check and balance of methane content is the calculation of efficiency of the operating engine-generator sets, which is calculated daily and does not vary by more than approximately five percent during normal operations.

Biogas meters are calibrated as outlined in the relevant parameters.

4.3.2 Organizational structure, responsibilities, and competencies

CNBE owns and manages the operations of the Facility and is responsible for oversight of operations and data collection, calculating emissions reductions and ensuring proper Project documentation. CNBE personnel have extensive experience in these areas. They have successfully implemented the Project over many years and have had no employee turnover.

CNBE contracts an operating company to conduct the operations and maintenance of the Facility. The operating company employs a full-time operator to conduct operations, maintenance, inspections, calibrations, monitoring and record-keeping at the facility. The operator receives training on the necessary tasks and has a task reminder calendar to ensure duties are performed at the appropriate time.

4.3.3 Recordkeeping

The SCADA system creates a Microsoft Excel file that contains the hourly and daily totals of landfill gas flow, landfill gas heat value, landfill gas methane content, operating hours of each engine, gross power output of each engine, gross and net power output of the facility. This file is created each day at mid-night for the prior 24-hour period. The file is automatically stored on the SCADA system computer. This file can be accessed remotely or at the facility. The file is manually copied from in its entirety and pasted into the monthly quantification excel spreadsheet. No individual pieces of data are manually entered. The files are backed up at the Facility and off-site.

The SCADA systems also records all biogas data which is also transferred in its entirety and used in calculating the landfill gas values for determining Project emissions reductions.
Operator records including the Facility operation logs, maintenance logs and manually recorded data logs are maintained at the Facility. Operator records also include the log noting the run time of the emergency generator.

4.3.4 Internal Review

The Project uses several layers of review to ensure proper operations, data collection and quantification of emissions reductions.

The monthly quantification spreadsheet calculates several key performance parameters each day that are compared a few times per week to the expected performance range of each parameter. If the calculations show a significant deviation, corrective actions are taken. Corrective actions involve repairing equipment that is performing outside its normal range or correcting data that may have been reported in error. Equipment problems and corrective actions are noted in the “Service Section” of the monthly reports. CNBE includes notes to fully explain the problem and corrective action to the extent necessary. This information also identifies any deviations from this monitoring plan which can then be recorded in the verified Monitoring Report.

CNBE has established monthly operations meetings at the Facility between CNBE’s contract operator and the owners of CNBE. During each monthly meeting CNBE and the operator review the prior month operations performance including the production reports, work order list, unscheduled repairs and maintenance, and routine maintenance; the current month’s additions to the work orders that would prevent and correct deficiencies discovered and make overall improvements in performance of the Facility; review reports including monthly outage report, methane calibration logs, exhaust gas oxygen logs, lubricating oil logs, spare parts inventory report and others that may be relevant. In addition, CNBE meets with the District and Loci Control Inc. to review the status of the LFG collection system performance and work required to prevent and correct deficiencies discovered and make overall improvements in performance of the system.

CNBE annually calculates the project emissions from electricity use and emergency generator use as outlined in the PD.

5 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

5.1 Baseline Emissions

See attached Exhibits 1 through 4.

5.2 Project Emissions

See attached Exhibits 1 through 4.

5.3 Leakage

See attached Exhibits 1 through 4.

5.4 Net GHG Emission Reductions and Removals

Year	Baseline emissions or removals (tCO_2e)	Project emissions or removals (tCO_2e)	Leakage emissions (tCO_2e)	Net GHG emission reductions or removals (tCO_2e)
Year 2022 1st Half (January 1 – June 30, 2022)	67,565	0	0	67,565
Total	67,565	0	0	67,565

APPENDIX A: Exhibits 1 - 9

Exhibit 1: The emission reductions credits in CO2 equivalent tons in accordance with Project Methodology from January 1, 2022 through June 30, 2022.

Exhibit 2: Gas totalizer readings, and methane content readings for the period January 1, 2022 through June 30, 2022, and calculations using the verification protocols under the VCS to obtain emission reductions from methane oxidation during energy generation.

Exhibit 3: LFG totalizer readings, and methane content readings for the periods from January 1, 2022 through June 30, 2022, and calculations using the verification protocols under the VCS to obtain emission reductions from methane oxidation during flaring.

Exhibit 4: The key factors, equations, and calculation of VCUs in accordance with the approved consolidated baseline methodology ACM0001, Version 16.0 Large-scale Consolidated Methodology – Flaring or use of landfill gas" dated 16 October 2015 as promulgated by the United Nations Framework Convention of Climate Change (UNFCCC) under the Clean Development Mechanism (CDM).

Exhibit 5: Compilation of the field data logs recording the total gas volumes and methane content readings for the identified reporting period. Comment section includes information on Planned and Unplanned Outages. Emergency Generator Operating Hours during period. Eversource Meter Photo and Data

Exhibit 6: Calibration of the LFG and biogas flow rates, composition meters, other instrumentation for the periods.

Exhibit 7: Attestation Statement

Exhibit 8: Permits and Other Regulatory Documentation

1. Final Air Quality Operation Permit (Renewal) Issued July 23, 20202. March 26, 2019
2. NMOC Emission Rate Report, May 3, 2021. The NMOC Emission Report demonstrates that the NMOCs emissions continue to be below the NSPS applicability threshold and therefore the Crapo Hill Landfill is not subject to the requirements of NSPS.

Exhibit 9: RECs Agreements

Exhibit 1

The emission reductions credits in CO2 equivalent tons in accordance with Project Methodology from January 1, 2022 through June 30, 2022.

EXHIBIT 1
CommonWealth New Bedford Energy LLC
Greater New Bedford LFG Utilization Project
Dartmouth, Massachusetts
Calculation of Verified Emission Reduction Credits in CO2 equivalent tons
in accordance with the Project Methodology

Key parameters used in calculations

Parameter	VCS
Methane oxidation efficiency electricity generation	100.0%
Methane oxidation efficiency LFG flaring	98.0%
Methane, molecular weight	16.04
Pounds per metric ton	2,204.62
Gas constant (scf per lb-mole)	385.32
Global Warming Potential (GWP) methane	28

Summary results

	Unit	
Electricity generation		
Start date		1-Jan-22
End date		30-Jun-22
Methane delivered	scf	142,120,043
Emission Reductions	metric tons CO2e	**75,150**
Flaring		
Start date		1-Jan-22
End date		30-Jun-22
Methane delivered	scf	-
Emission Reductions	metric tons CO2e	**-**
Subtotal		
Methane delivered	scf	142,120,043
Emission Reductions	metric tons CO2e	**75,150**
Deductions		
Oxidation potential	metric tons CO2e	7,515
District Initial System	metric tons CO2e	62
Electricity use utility and diesel backup	metric tons CO2e	8
Total		
Emission Reductions eligible under VCS program	metric tons CO2e	**67,565**

Exhibit 2

Gas totalizer readings, and methane content readings for the period January 1, 2022 through June 30, 2022, and calculations using the verification protocols under the VCS to obtain emission reductions from methane oxidation during energy generation.

EXHIBIT 2
CommonWealth New Bedford Energy LLC
Emission Reductions from methane oxidation during energy generation

Physical constants:	
Methane, molecular weight (lb per lb-mole)	16.04
Pounds to metric ton	2,204.62
Gas constant, scf per lb-mole	385.32

Calculation of Verified Emission Reduction in CO2 equivalent tons per the following:
Verification Process: UNFCCC's CDM methodology ACM0001 (Version 16)
Standard of Verification: Verified Carbon Standard Version 4.2 January 20, 2022, v4.2

Begin period - date	**End period - date**	**Totalizer reading end period**	**Totalizer reading start period**	**Total in period**	**Methane delivered to engines**	**Methane delivered cumulative**	**Methane delivered in the period**	**Methane delivered in the period cumulative**	**Methane oxidation efficiency**	**MD electricity, Mass methane destroyed in the period**	**MD electricity, Mass methane destroyed cumulative**	**Global warming potential methane**	**Emission reduction**	**Emission reduction cumulative**
mm/dd/yy	*mm/dd/yy*	*MMBtu HHV*	*MMBtu HHV*	*MMBtu HHV*	*scf*	*scf*	*metric tons*	*metric tons*	*%*	*metric tons*	*metric tons*	*tons CO2 equivalent per ton methane*	*CO2 equivalent metric tons*	*CO2 equivalent metric tons*
	1-Jan-22													
1-Jan-22	1-Feb-22	24,344	-	24,344	24,055,135	24,055,135	454	454	100.0%	454	454	28	12,720	12,720
1-Feb-22	1-Mar-22	46,516	24,344	22,172	21,909,358	45,964,493	414	868	100.0%	414	868	28	11,585	24,305
1-Mar-22	1-Apr-22	71,409	46,516	24,893	24,597,981	70,562,474	465	1,333	100.0%	465	1,333	28	13,007	37,312
1-Apr-22	1-May-22	93,345	71,409	21,936	21,675,768	92,238,243	409	1,742	100.0%	409	1,742	28	11,462	48,774
1-May-22	1-Jun-22	118,435	93,345	25,090	24,792,868	117,031,110	468	2,210	100.0%	468	2,210	28	13,110	61,883
1-Jun-22	30-Jun-22	143,825	118,435	25,390	25,088,933	142,120,043	474	2,684	100.0%	474	2,684	28	13,266	75,150

Exhibit 3

LFG totalizer readings, and methane content readings for the periods from January 1, 2022 through June 30, 2022, and calculations using the verification protocols under the VCS to obtain emission reductions from methane oxidation during flaring.

EXHIBIT 3
CommonWealth New Bedford Energy LLC
Calculation of Verified Emission Reduction in CO2 equivalent tons per the Project Methodology
Emission Reductions from methane oxidation from LFG flaring

Physical constants:	
Methane, molecular weight (lb per lb-mole)	16.04
Pounds to metric ton	2,204.62
Gas constant, scf per lb-mole	385.32

Calculation of Verified Emission Reduction in CO2 equivalent tons per the following:
Verification Process: UNFCCC's CDM methodology ACM0001 (Version 16)
Standard of Verification: Verified Carbon Standard Version 4.2 January 20, 2022, v4.2

Begin period - date	End period - date	Totalizer reading end period	Totalizer reading start period	Total in period	Methane delivered to flare	Methane delivered cumulative	Methane delivered in the period	Methane delivered cumulative	Methane oxidation efficiency	MD flare, Mass methane destroyed in the period	MD flare, Mass methane destroyed cumulative	Global warming potential methane	Emission reduction	Emission reduction cumulative	PE flare, Project emissions (uncontrolled emissions to atmosphere from flare)	PE flare, Project emissions cumulative (uncontrolled emissions to atmosphere from flare)
mm/dd/yy	*mm/dd/yy*	*MMBtu HHV*	*MMBtu HHV*	*MMBtu HHV*	*scf*	*scf*	*metric tons*	*metric tons*	*%*	*metric tons*	*metric tons*	*tons CO2 equivalent per ton methane*	*CO2 equivalent metric tons*	*CO2 equivalent metric tons*	*CO2 equivalent metric tons*	*CO2 equivalent metric tons*
	1-Jan-22			-												
1-Jan-22	1-Feb-22	-	-	-	-	-	0	0	98%	-	-	28	-	-	-	-
1-Feb-22	1-Mar-22	-	-	-	-	-	0	0	98%	-	-	28	-	-	-	-
1-Mar-22	1-Apr-22	-	-	-	-	-	0	0	98%	-	-	28	-	-	-	-
1-Apr-22	1-May-22	-	-	-	-	-	0	0	98%	-	-	28	-	-	-	-
1-May-22	1-Jun-22	-	-	-	-	-	0	0	98%	-	-	28	-	-	-	-

Exhibit 4

The key factors, equations, and calculation of VCUs in accordance with the approved consolidated baseline methodology ACM0001, Version 16.0 Largescale Consolidated Methodology – Flaring or use of landfill gas" dated 16 October 2015 as promulgated by the United Nations Framework Convention of Climate Change (UNFCCC) under the Clean Development Mechanism (CDM).

EXHIBIT 4
EX Ante Estimates of Annual Emissions Reductions

	Formula variables	Value used	Units	Source if appropriate
$ER_y = BE_y - PE_y$				
	BE_y	see below	tCO2e/period	
67,565	PE_y	7.70	tCO2e/period	See Electricity Tab + Emergency Generator Tab
$BE_y = BE_{CH4,y}$				
	$BE_{CH4,y}$	see below	tCO2e/period	
67,573				
$BE_{CH4,y} = ((1-OX_{top\_layer}) \times F_{CH4,PJ,y} - F_{CH,BL,y}) \times GWP_{CH4}$				
	OX_{top_layer}	0.1		ACM001 Methodology value
67,573	GWP_{CH4}	28	tCO2e / tCH4	IPCC Value - 5th assessment report (2013)
	$F_{CH4,PJ,y}$	see below	t CH4/period	
	$F_{CH,BL,y}$	see below	t CH4/period	
$F_{CH4,PJ,y} = F_{CH4,flared,y} + F_{CH4,EL,y}$				
	$F_{CH4,flared,y}$	0	t CH4/period	See Exhibit 3 tab
2,684	$F_{CH4,EL,y}$	2,684	t CH_4/period	See Exhibit 2 tab
$F_{CH4,BL,y} = F_{CH4,BL,sys,y}$				
$F_{CH4,BL,sys,y}$ = %DistrictInitialSystem X $F_{CH4,PJ,y}$	%DistrictInitial System	4.13		See DistrictInitialSystemTab
	$F_{CH4,PJ,y}$	see above	t CH4/period	
2.2		98%	Methane oxidation efficiency for flare	

Supporting Information for Exhibit 4

Electricity Consumption Project Emissions

$PE_{EC,y} = EC_{PJ,Grid,y} * FE_{EL,Grid,y} * (1 + TDL_{Grid,y})$

0.54 tonnes CO2

Variable	Value	Units	Data Source
ECPJ,Grid, y	2.1	MWhr	See Eversource bill
FEEL,Grid,y	0.24	tonnes CO2/MWh	USEPA Conversions tableGrid data
TDLGrid,y	0.07	None	EIA Annual Energy Report 2011

Supporting Information for Exhibit 4

Fossil Fuel Project Emissions

Emergency Generator - Diesel Use

Gallons of Diesel Consumed (January 1 - June 30, 2022)

699.7 gallons FC_{Diesel} = Number of hours run * Gallons used/hour

$COEF_{Diesel,2015} = NCV_{Diesel,2015} * EF_{CO2,Diesel,2015}$

$COEF_{Diesel,2015}$ 0.010229 See inputs on USEPA Data Conversions Tab
tonnes CO2/gallon diesel

$PE_{FC,2015} = FC_{Diesel,2015} * COEF_{Diesel,2015}$

PEFC, 2010 7.16 tonnes CO2

Assumptions Used

Generator runs at 3/4 load during testing and operation
(This is conservative as the plant requires 75-90kW/hr to operate
and the generator can produce up to 150kW/hr)

The generator requires 8.4 gallons/hour running at 3/4 Load (see estimate fuel consumption)

Run time from January 1 - June 30, 2022
83.3 hours* 8.4 gallons/hour
699.7 gallons

Supporting Information for Exhibit 4

Gas extraction from District Initial System versus Phase 1 Area and District Total System

Month	Days	LFG flow rate from District Initial System contained in Phase 1 area cfm @50% methane	LFG flow rate from District Total System, cfm @50% methane	District Initial System/Total
Jan-22	31	45	1,078	4.2%
Feb-22	28	45	1,087	4.1%
Mar-22	31	45	1,102	4.1%
Apr-22	30	45	1,004	4.5%
May-22	31	45	1,111	4.1%
Jun-22	30	45	1,173	3.8%
Weighted Average based on days				4.1%
Weighted Average based on LFG flow				4.1%
Average		45	1,092	4.1%

Note: During Janary 1, 2022 through June 30, 2022, the Initial District System consists of 9 remaining active wells measuring less than 5 cfm lower detection limit of each well. Assume worst conservative case of 5 cfm from each remaining well.

Fossil Fuel Consumption

NCV Conversion

5.809	42	0.1383095
mmBtu/barrel	gallons/barrel	mmBtu/gallon

Emissions Factor

20.17	1E-15	1000000	3.666667	1E+12	0.000001	0.073957
Tg C/Qbtu	Qbtu/btu	btu/Mmbtu	g C02/g C	g/Tg	Tonnes/g	Tonnes CO2/Mmbtu

NCV Comparison to IPCC Values

0.13831	1,000,000	1.05506E-06	0.001	0.26417	1.176471	1,000,000	=	45.35
MMBtu/gallon	Btu/MMBtu	GJ/Btu	TJ/GJ	gallons/liter	liter/kg	kg/Gg		TJ/Gg

IPCC Values state 41.4-43.3 TJ/Gg
This value is higher and therefore conservative.

Data obtained from the Draft 2011 US Greenhouse Gas Report:
US EPA Inventory of US Greenhouse Gas Emissions and Sinks to provide a national factor.
Results were compared to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories

Electricity Consumption

eGRID Emissions Factor

528.238	0.454545455	0.001	0.24
lbs CO2/MWh	kg/lbs	tonnes/kg	tonnes CO2/MWh

eGRID Factor taken from NEWE region of eGRID2020 data

eGRID Summary Tables 2020

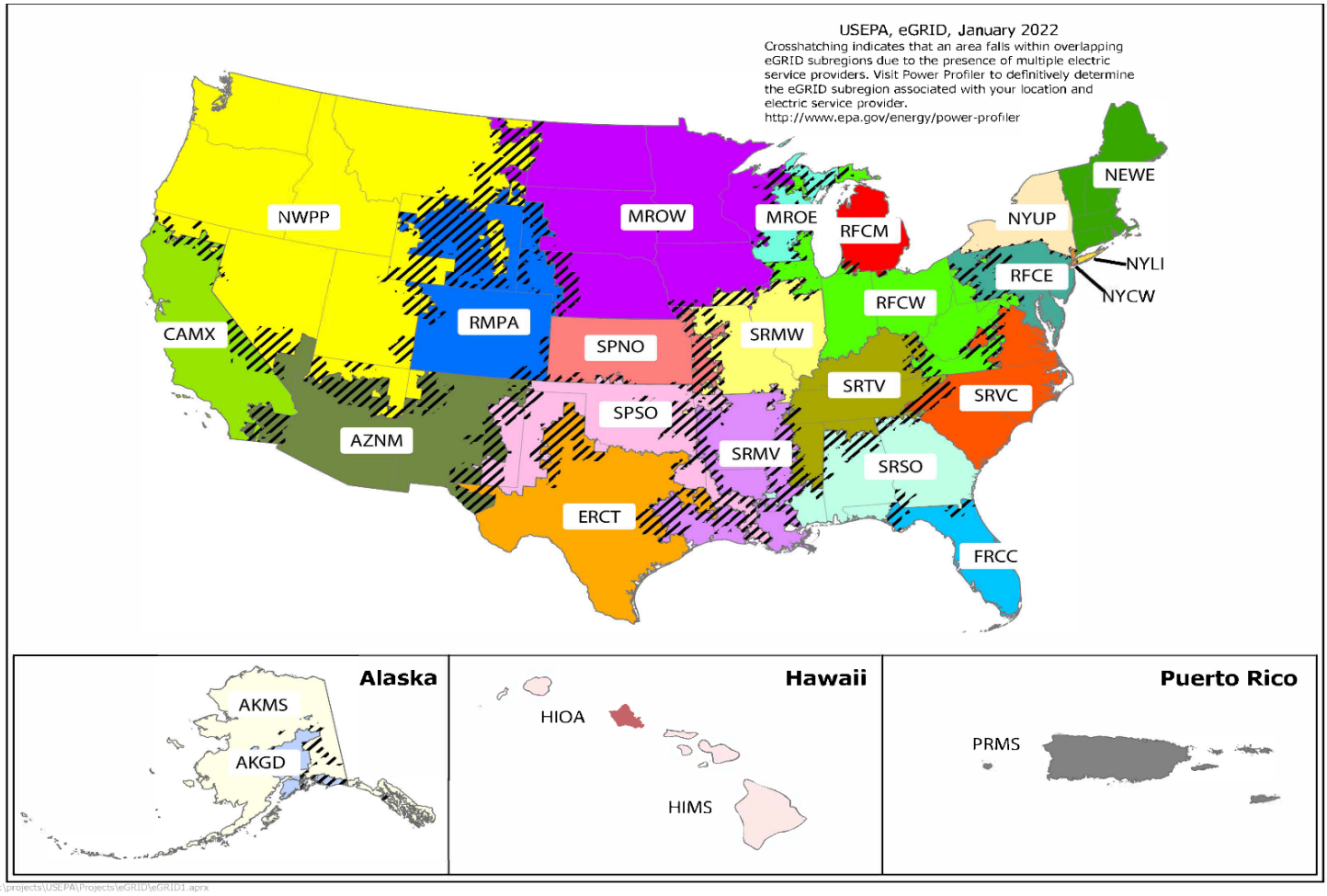
Introduction

This document provides eGRID2020 data summary tables. The tables include subregion and state-level emission rates and resource mix as well as grid gross loss values. Please note that the tables presented here only show a subset of the eGRID2020 data. The entire dataset is in the eGRID2020 Excel file available on the eGRID website.

Table of Contents

Table	Description
1	Subregion Output Emission Rates
2	Subregion Resource Mix
3	State Output Emission Rates
4	State Resource Mix

Map of eGRID Subregions



Feedback

Customer Satisfaction Survey
Contact EPA

Created: 1/27/2022

1. Subregion Output Emission Rates (eGRID2020)

eGRID subregion acronym	eGRID subregion name	Total output emission rates lb/MWh							Non-baseload output emission rates lb/MWh							Grid Gross Loss (%)
		CO_2	CH_4	N_2O	CO_2e	Annual NO_X	Ozone Season NO_X	SO_2	CO_2	CH_4	N_2O	CO_2e	Annual NO_X	Ozone Season NO_X	SO_2	
AKGD	ASCC Alaska Grid	1,097.6	0.100	0.014	1,104.2	6.0	5.9	0.6	1,315.1	0.126	0.017	1,323.4	6.8	7.0	0.7	5.5%
AKMS	ASCC Miscellaneous	534.1	0.027	0.005	536.1	8.3	8.0	0.7	1,517.7	0.066	0.012	1,522.8	24.2	24.8	2.1	5.5%
AZNM	WECC Southwest	846.6	0.054	0.007	850.2	0.5	0.5	0.2	1,368.6	0.090	0.013	1,374.6	0.8	0.8	0.2	5.3%
CAMX	WECC California	513.5	0.032	0.004	515.5	0.5	0.5	0.0	1,006.5	0.053	0.007	1,009.9	0.9	0.9	0.1	5.3%
ERCT	ERCOT All	818.6	0.052	0.007	822.0	0.5	0.5	0.5	1,296.6	0.086	0.012	1,302.3	0.8	0.7	0.9	5.2%
FRCC	FRCC All	835.1	0.049	0.006	838.2	0.3	0.3	0.2	1,011.0	0.052	0.007	1,014.4	0.3	0.3	0.2	5.3%
HIMS	HICC Miscellaneous	1,143.2	0.110	0.017	1,151.1	7.5	7.3	3.9	1,542.1	0.134	0.022	1,551.8	11.4	11.4	5.0	5.6%
HIOA	HICC Oahu	1,653.0	0.178	0.027	1,665.5	3.8	3.8	6.8	1,753.5	0.175	0.027	1,766.0	4.5	4.5	7.9	5.6%
MROE	MRO East	1,526.4	0.139	0.020	1,535.8	1.0	1.0	0.4	1,628.9	0.143	0.021	1,638.5	1.1	1.1	0.4	5.3%
MROW	MRO West	979.5	0.104	0.015	986.6	0.7	0.8	0.9	1,810.0	0.185	0.027	1,822.5	1.3	1.3	1.6	5.3%
NEWE	NPCC New England	528.2	0.074	0.010	533.0	0.4	0.4	0.1	882.5	0.070	0.009	886.9	0.4	0.4	0.1	5.3%
NWPP	WECC Northwest	600.0	0.056	0.008	603.8	0.5	0.5	0.3	1,653.0	0.159	0.023	1,663.8	1.5	1.5	0.8	5.3%
NYCW	NPCC NYC/Westchester	634.6	0.022	0.003	636.0	0.2	0.2	0.0	970.2	0.021	0.002	971.4	0.4	0.4	0.0	5.3%
NYLI	NPCC Long Island	1,203.9	0.138	0.018	1,212.7	0.9	0.8	0.1	1,260.6	0.034	0.004	1,262.6	0.8	0.8	0.1	5.3%
NYUP	NPCC Upstate NY	233.5	0.016	0.002	234.5	0.1	0.1	0.0	877.9	0.042	0.005	880.5	0.4	0.4	0.1	5.3%
PRMS	Puerto Rico Miscellaneou	1,602.2	0.085	0.014	1,608.5	3.9	3.9	4.3	1,673.3	0.070	0.013	1,678.8	4.6	4.5	5.5	0.0%
RFCE	RFC East	652.5	0.045	0.006	655.4	0.3	0.3	0.3	1,233.4	0.085	0.012	1,239.1	0.7	0.7	0.7	5.3%
RFCM	RFC Michigan	1,153.1	0.101	0.014	1,159.8	0.6	0.7	0.8	1,725.7	0.163	0.023	1,736.5	1.1	1.1	1.6	5.3%
RFCW	RFC West	985.0	0.086	0.012	990.8	0.6	0.6	0.7	1,810.4	0.173	0.025	1,822.2	1.2	1.1	1.3	5.3%
RMPA	WECC Rockies	1,144.8	0.101	0.014	1,151.6	0.6	0.6	0.3	1,651.9	0.131	0.019	1,660.8	0.9	0.9	0.4	5.3%
SPNO	SPP North	954.0	0.100	0.014	960.8	0.5	0.5	0.2	1,969.9	0.205	0.030	1,983.9	1.0	1.0	0.4	5.3%
SPSO	SPP South	931.8	0.060	0.009	935.8	0.6	0.7	0.6	1,514.1	0.100	0.014	1,520.8	1.2	1.2	1.1	5.3%
SRMV	SERC Mississippi Valley	740.4	0.032	0.004	742.4	0.6	0.7	0.5	1,137.4	0.055	0.008	1,141.0	0.9	1.1	1.0	5.3%
SRMW	SERC Midwest	1,480.7	0.156	0.023	1,491.4	1.1	1.2	2.6	1,866.5	0.194	0.028	1,879.6	1.6	1.6	2.9	5.3%
SRSO	SERC South	860.2	0.060	0.009	864.2	0.4	0.4	0.2	1,336.9	0.094	0.013	1,343.2	0.7	0.6	0.3	5.3%
SRTV	SERC Tennessee Valley	834.2	0.075	0.011	839.2	0.4	0.4	0.5	1,511.8	0.135	0.019	1,521.0	0.7	0.6	0.9	5.3%
SRVC	SERC Virginia/Carolina	623.1	0.050	0.007	626.3	0.3	0.3	0.2	1,323.9	0.114	0.016	1,331.3	0.7	0.8	0.4	5.3%
U.S.		**818.3**	**0.065**	**0.009**	**822.6**	**0.5**	**0.5**	**0.5**	**1,399.6**	**0.109**	**0.015**	**1,406.8**	**0.9**	**0.9**	**0.8**	**5.3%**

Created: 1/27/2022

Exhibit 5

Compilation of the field data logs recording the total gas volumes and methane content readings for the identified reporting period. Comment section includes information on Planned and Unplanned Outages. Emergency Generator Operating Hours during period. Eversource Meter Photo and Data

JANUARY 2022																	
		Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
		1/1/2022	1/2/2022	1/3/2022	1/4/2022	1/5/2022	1/6/2022	1/7/2022	1/8/2022	1/9/2022	1/10/2022	1/11/2022	1/12/2022	1/13/2022	1/14/2022	1/15/2022	1/16/2022
LFG and Biogas Flow to the Engines (KSCF)		1,489	1,494	1,432	1,475	1,484	1,447	1,467	1,417	1,436	1,511	1,570	1,553	1,433	1,449	1,620	1,616
LFG and Biogas Flow to the Engines (MMBTU HHV)		796	808	759	769	795	783	794	752	796	817	798	789	762	779	798	798
LFG and Biogas Flow to the Flare (KSCF)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG and BiogasFlow to the Flare (MMBTU HHV)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG and Biogas Total Flow (KSCF)		1,489	1,494	1,432	1,475	1,484	1,447	1,467	1,417	1,436	1,511	1,570	1,553	1,433	1,449	1,620	1,616
LFG and Biogas Total Flow (MMBTU HHV)		796	808	759	769	795	783	794	752	796	817	798	789	762	779	798	798
Average Methane Content (%)		52.9	53.4	52.3	51.5	52.9	53.5	53.5	52.5	54.8	53.4	50.2	50.2	52.6	53.1	48.7	48.8
Engine 1 Hours		24	24	21	24	24	24	24	24	24	24	24	24	24	21	24	24
Engine 2 Hours		24	24	24	24	24	24	24	24	24	24	24	24	12	12	24	24
Engine 3 Hours		24	24	24	24	24	24	24	12	23	23	24	24	24	21	24	24
Engine 4 Hours		24	24	24	24	24	24	24	24	16	24	24	24	24	21	24	24
Generator 1 Power Output (kWhr)		15,520	15,248	12,360	15,084	15,440	14,932	14,756	17,224	16,712	15,500	14,772	15,001	14,748	17,768	14,552	14,432
Generator 2 Power Output (kWhr)		15,556	15,588	16,148	14,368	15,820	15,588	15,208	17,212	16,688	15,588	15,068	15,000	7,240	7,272	14,664	14,432
Generator 3 Power Output (kWhr)		15,476	15,204	14,996	14,656	15,412	14,820	14,540	6,752	15,664	15,520	14,556	14,837	13,352	16,020	14,384	14,604
Generator 4 Power Output (kWhr)		15,528	15,564	15,840	15,712	15,056	15,912	15,296	17,048	9,996	15,576	15,468	15,825	15,076	17,732	14,636	14,396
Gross Power Output (kWhr)		62,177	61,684	59,437	59,915	61,824	61,340	59,883	58,341	59,134	62,254	59,899	60,663	50,792	58,902	58,327	57,959
Net Power Output (kWhr)		60,276	59,772	57,407	57,815	59,836	59,368	57,907	56,434	57,368	60,334	57,817	58,932	49,062	57,138	56,140	55,832
Power Sold as metered by NStar, (kWhr)		60,278	59,666	57,266	57,673	59,690	59,225	57,797	56,285	57,233	60,217	57,677	58,789	48,933	57,004	55,996	55,699
Offgrid RECs (kWhr)		1,901	1,912	2,030	2,100	1,988	1,972	1,976	1,907	1,766	1,920	2,082	1,731	1,730	1,764	2,187	2,127
Calculated Performance Results																	
Daily																	
Power output (kW average when running)																	
Generator 1		647	635	589	629	643	622	615	718	696	646	616	625	615	846	606	601
Generator 2		648	650	673	599	659	650	634	717	695	650	628	625	603	606	611	601
Generator 3		645	634	625	611	642	618	606	563	681	675	607	618	556	763	599	609
Generator 4		647	649	660	655	627	663	637	710	625	649	645	659	628	844	610	600
Power output (kW average over 24-hrs)																	
Facility Gross		2,591	2,570	2,477	2,496	2,576	2,556	2,495	2,431	2,464	2,594	2,496	2,528	2,116	2,454	2,430	2,415
Facility Net		2,512	2,491	2,392	2,409	2,493	2,474	2,413	2,351	2,390	2,514	2,409	2,456	2,044	2,381	2,339	2,326
In-plant load		79	80	85	88	83	82	82	79	74	80	87	72	72	74	91	89
Daily availability factor																	
Facility		100%	100%	97%	100%	100%	100%	100%	88%	91%	99%	100%	100%	88%	78%	100%	100%
Engine 1		100%	100%	88%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	88%	100%	100%
Engine 2		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	50%	50%	100%	100%
Engine 3		100%	100%	100%	100%	100%	100%	100%	50%	96%	96%	100%	100%	100%	88%	100%	100%
Engine 4		100%	100%	100%	100%	100%	100%	100%	100%	67%	100%	100%	100%	100%	88%	100%	100%
Daily capacity factor																	
Facility		79%	78%	75%	76%	78%	77%	76%	74%	75%	79%	76%	77%	64%	74%	74%	73%
Engine 1		78%	77%	71%	76%	78%	75%	75%	87%	84%	78%	75%	76%	74%	103%	73%	73%
Engine 2		79%	79%	82%	73%	80%	79%	77%	87%	84%	79%	76%	76%	73%	73%	74%	73%
Engine 3		78%	77%	76%	74%	78%	75%	73%	68%	83%	82%	74%	75%	67%	92%	73%	74%
Engine 4		78%	79%	80%	79%	76%	80%	77%	86%	76%	79%	78%	80%	76%	102%	74%	73%
Cumulative by engine																	
Engine operating run hours in the month																	
Max Cumulative Available, hours		24	48	72	96	120	144	168	192	216	240	264	288	312	336	360	384
Engine 1		24	48	69	93	117	141	165	189	213	237	261	285	309	330	354	378
Engine 2		24	48	72	96	120	144	168	192	216	240	264	288	300	312	336	360
Engine 3		24	48	72	96	120	144	168	180	203	226	250	274	298	319	343	367
Engine 4		24	48	72	96	120	144	168	192	208	232	256	280	304	325	349	373
Engine operating run hours total from 0 hours																	
Engine 1	122,500	122,524	122,548	122,569	122,593	122,617	122,641	122,665	122,689	122,713	122,737	122,761	122,785	122,809	122,830	122,854	122,878
Engine 2	111,774	111,798	111,822	111,846	111,870	111,894	111,918	111,942	111,966	111,990	112,014	112,038	112,062	112,074	112,086	112,110	112,134
Engine 3	121,998	122,022	122,046	122,070	122,094	122,118	122,142	122,166	122,178	122,201	122,224	122,248	122,272	122,296	122,317	122,341	122,365
Engine 4	117,625	117,649	117,673	117,697	117,721	117,745	117,769	117,793	117,817	117,833	117,857	117,881	117,905	117,929	117,950	117,974	117,998
Cumulative availability, %	December 31, 2021 @ 00:00 hours																
Engine 1		100%	100%	96%	97%	98%	98%	98%	98%	99%	99%	99%	99%	99%	98%	98%	98%
Engine 2		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	96%	93%	93%	94%
Engine 3		100%	100%	100%	100%	100%	100%	100%	94%	94%	94%	95%	95%	96%	95%	95%	96%
Engine 4		100%	100%	100%	100%	100%	100%	100%	100%	96%	97%	97%	97%	97%	97%	97%	97%
Engine cumulative gross output, kWhr																	
Max cumulative capacity one engine		825	1,650	2,475	3,300	4,125	4,950	5,775	6,600	7,425	8,250	9,075	9,900	10,725	11,550	12,375	13,200
Engine 1		647	1,282	1,871	2,499	3,142	3,765	4,379	5,097	5,793	6,439	7,055	7,680	8,294	9,140	9,747	10,348
Engine 2		648	1,298	1,971	2,569	3,228	3,878	4,512	5,229	5,924	6,574	7,201	7,826	8,430	9,036	9,647	10,248
Engine 3		645	1,278	1,903	2,514	3,156	3,774	4,379	4,942	5,623	6,298	6,904	7,523	8,079	8,842	9,441	10,050
Engine 4		647	1,296	1,956	2,610	3,238	3,901	4,538	5,248	5,873	6,522	7,166	7,826	8,454	9,298	9,908	10,508
Cumulative capacity factor, %																	
Engine 1		78%	78%	76%	76%	76%	76%	76%	77%	78%	78%	78%	78%	77%	79%	79%	78%
Engine 2		79%	79%	80%	78%	78%	78%	78%	79%	80%	80%	79%	79%	79%	78%	78%	78%
Engine 3		78%	77%	77%	76%	77%	76%	76%	75%	76%	76%	76%	76%	75%	77%	76%	76%
Engine 4		78%	79%	79%	79%	78%	79%	79%	80%	79%	79%	79%	79%	79%	81%	80%	80%

	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
	1/1/2022	1/2/2022	1/3/2022	1/4/2022	1/5/2022	1/6/2022	1/7/2022	1/8/2022	1/9/2022	1/10/2022	1/11/2022	1/12/2022	1/13/2022	1/14/2022	1/15/2022	1/16/2022
Cumulative by Facility in month																
Max cumulative available engine run hours	96	192	288	384	480	576	672	768	864	960	1,056	1,152	1,248	1,344	1,440	1,536
Actual cumulative engine run hours	96	192	285	381	477	573	669	753	840	935	1,031	1,127	1,211	1,286	1,382	1,478
Cumulative Availability, %	100.0%	100.0%	99.0%	99.2%	99.4%	99.5%	99.6%	98.0%	97.2%	97.4%	97.6%	97.8%	97.0%	95.7%	96.0%	96.2%
Max cumulative gross output, kWhr	79,200	158,400	237,600	316,800	396,000	475,200	554,400	633,600	712,800	792,000	871,200	950,400	1,029,600	1,108,800	1,188,000	1,267,200
Actual cumulative gross output, kWhr	62,177	123,861	183,298	243,213	305,037	366,377	426,260	484,601	543,735	605,989	665,888	726,551	777,343	836,245	894,572	952,531
Cumulative Capacity Factor	78.5%	78.2%	77.1%	76.8%	77.0%	77.1%	76.9%	76.5%	76.3%	76.5%	76.4%	76.4%	75.5%	75.4%	75.3%	75.2%
Cumulative fuel input, MMBtu HHV	796	1,604	2,363	3,131	3,927	4,709	5,503	6,255	7,051	7,868	8,667	9,456	10,218	10,997	11,796	12,594
Cumulative gross output, kWhr	62,177	123,861	183,298	243,213	305,037	366,377	426,260	484,601	543,735	605,989	665,888	726,551	777,343	836,245	894,572	952,531
Heat Rate																
Daily heat rate, Btu/kWe gross LHV	11,529	11,789	11,488	11,549	11,580	11,488	11,928	11,606	12,122	11,812	11,999	11,714	13,509	11,907	12,322	12,400
Daily heat rate, Btu/kWe gross HHV	12,807	13,096	12,761	12,830	12,864	12,762	13,251	12,893	13,466	13,122	13,329	13,013	15,006	13,227	13,688	13,775
Cumulative heat rate, Btu/kWe gross LHV	11,529	11,658	11,603	11,590	11,588	11,571	11,621	11,620	11,674	11,688	11,716	11,716	11,833	11,838	11,870	11,902
Cumulative heat rate, Btu/kWe gross HHV	12,807	12,951	12,889	12,875	12,873	12,854	12,910	12,908	12,968	12,984	13,015	13,015	13,145	13,151	13,186	13,222
Cumulative by Facility starting Calendar Year																
Max cumulative available engine run hours	96	192	288	384	480	576	672	768	864	960	1,056	1,152	1,248	1,344	1,440	1,536
Actual cumulative engine run hours	96	192	285	381	477	573	669	753	840	935	1,031	1,127	1,211	1,286	1,382	1,478
Cumulative Availability, %	100.0%	100.0%	99.0%	99.2%	99.4%	99.5%	99.6%	98.0%	97.2%	97.4%	97.6%	97.8%	97.0%	95.7%	96.0%	96.2%
Max cumulative gross output, kWhr	79,200	158,400	237,600	316,800	396,000	475,200	554,400	633,600	712,800	792,000	871,200	950,400	1,029,600	1,108,800	1,188,000	1,267,200
Actual cumulative gross output, kWhr	62,177	123,861	183,298	243,213	305,037	366,377	426,260	484,601	543,735	605,989	665,888	726,551	777,343	836,245	894,572	952,531
Cumulative Capacity Factor	78.5%	78.2%	77.1%	76.8%	77.0%	77.1%	76.9%	76.5%	76.3%	76.5%	76.4%	76.4%	75.5%	75.4%	75.3%	75.2%
Cumulative fuel input, MMBtu HHV	796	1,604	2,363	3,131	3,927	4,709	5,503	6,255	7,051	7,868	8,667	9,456	10,218	10,997	11,796	12,594
Cumulative gross output, kWhr	62,177	123,861	183,298	243,213	305,037	366,377	426,260	484,601	543,735	605,989	665,888	726,551	777,343	836,245	894,572	952,531
Cumulative heat rate, Btu/kWe gross LHV	11,529	11,658	11,603	11,590	11,588	11,571	11,621	11,620	11,674	11,688	11,716	11,716	11,833	11,838	11,870	11,902
Cumulative heat rate, Btu/kWe gross HHV	12,807	12,951	12,889	12,875	12,873	12,854	12,910	12,908	12,968	12,984	13,015	13,015	13,145	13,151	13,186	13,222
Service																
Engine 1																
Engine 2													Front Seal Leak			
Engine 3													Condensate sump pump failed			
Engine 4													Use spare. Order spare pump.			
Oil - oil and filter change													Digester recycle pump - motor failured			
Service - plugs, air filter, valve inspection and adjustment													VFD failure			
Precipitation																
NSTAR Power Reports	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Date	1/1/2022	1/2/2022	1/3/2022	1/4/2022	1/5/2022	1/6/2022	1/7/2022	1/8/2022	1/9/2022	1/10/2022	1/11/2022	1/12/2022	1/13/2022	1/14/2022	1/15/2022	1/16/2022
Hour																
1	2,431	2,520	2,418	2,407	2,409	2,563	2,420	2,318	2,094	2,525	2,507	2,358	2,415	2,277	2,462	2,298
2	2,515	2,516	2,415	2,408	2,411	2,563	2,421	2,316	2,315	2,525	2,508	2,361	2,418	2,276	2,450	2,294
3	2,509	2,515	2,410	2,402	2,404	2,557	2,411	2,314	2,305	2,517	2,504	2,356	2,414	2,269	2,428	2,295
4	2,518	2,521	2,408	2,409	2,413	2,562	2,416	2,317	2,309	2,521	2,462	2,360	2,417	2,267	2,399	2,300
5	2,515	2,521	2,377	2,408	2,437	2,561	2,418	2,317	2,310	2,520	2,458	2,358	2,419	2,264	2,391	2,294
6	2,512	2,514	2,361	2,397	2,457	2,555	2,412	2,308	2,308	2,510	2,448	2,360	2,422	2,261	2,302	2,295
7	2,516	2,516	2,367	2,308	2,463	2,555	2,442	2,312	2,243	2,513	2,423	2,408	2,420	2,259	2,305	2,305
8	2,515	2,517	2,400	2,396	2,503	2,509	2,504	2,312	2,512	2,512	2,406	2,449	2,461	2,265	2,307	2,303
9	2,513	2,513	2,400	2,306	2,503	2,505	2,502	2,314	2,511	2,509	2,358	2,439	2,463	2,255	2,309	2,312
10	2,515	2,514	2,363	2,167	2,285	2,472	2,501	2,319	2,520	2,516	2,361	2,515	2,469	2,247	2,311	2,316
11	2,518	2,516	2,159	2,211	2,170	2,434	2,460	2,324	2,519	2,448	2,361	2,511	1,488	2,246	2,311	2,304
12	2,512	2,511	2,184	2,539	2,482	2,415	2,452	2,329	2,513	2,455	2,381	2,508	-	2,256	2,316	2,308
13	2,518	2,520	2,167	2,515	2,575	2,418	2,457	2,390	2,522	2,496	2,410	2,513	-	2,247	2,319	2,315
14	2,518	2,519	2,183	2,509	2,559	2,417	2,460	2,394	2,523	2,520	2,410	2,513	361	2,512	2,320	2,318
15	2,513	2,513	2,557	2,491	2,555	2,409	2,412	2,390	2,517	2,515	2,326	2,507	2,288	2,510	2,317	2,324
16	2,518	2,517	2,514	2,458	2,562	2,416	2,418	2,394	2,522	2,515	2,452	2,515	2,271	2,514	2,313	2,318
17	2,518	2,505	2,510	2,458	2,565	2,409	2,389	2,391	1,940	2,518	2,401	2,514	2,269	2,513	2,309	2,316
18	2,511	2,411	2,503	2,447	2,560	2,412	2,363	2,381	1,885	2,508	2,350	2,500	2,271	2,514	2,306	2,320
19	2,517	2,421	2,510	2,405	2,566	2,417	2,354	2,383	2,264	2,515	2,360	2,506	2,277	2,513	2,308	2,320
20	2,518	2,417	2,427	2,409	2,565	2,416	2,321	2,386	2,527	2,515	2,360	2,460	2,277	2,512	2,308	2,348
21	2,512	2,411	2,406	2,404	2,555	2,408	2,312	2,380	2,518	2,509	2,357	2,457	2,280	2,510	2,302	2,367
22	2,512	2,416	2,412	2,410	2,567	2,420	2,321	2,386	2,516	2,514	2,357	2,463	2,279	2,510	2,301	2,366
23	2,520	2,417	2,411	2,409	2,564	2,419	2,318	2,383	2,520	2,512	2,359	2,449	2,277	2,506	2,300	2,367
24	2,514	2,405	2,404	2,400	2,560	2,413	2,313	2,227	2,520	2,509	2,358	2,409	2,277	2,501	2,302	2,396
TOTAL	60,278	59,666	57,266	57,673	59,690	59,225	57,797	56,285	57,233	60,217	57,677	58,789	48,933	57,004	55,996	55,699
Cumulative Output Sold, kWhr	60,278	119,944	177,210	234,883	294,573	353,798	411,595	467,880	525,113	585,330	643,007	701,796	750,729	807,733	863,729	919,428
Transformer and line efficiency	100.0%	99.8%	99.8%	99.8%	99.8%	99.8%	99.8%	99.7%	99.8%	99.8%	99.8%	99.8%	99.7%	99.8%	99.7%	99.8%
Hourly average	2,512	2,486	2,386	2,403	2,487	2,468	2,408	2,345	2,385	2,509	2,403	2,450	2,039	2,375	2,333	2,321

JANUARY 2022																		
	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday			
	1/17/2022	1/18/2022	1/19/2022	1/20/2022	1/21/2022	1/22/2022	1/23/2022	1/24/2022	1/25/2022	1/26/2022	1/27/2022	1/28/2022	1/29/2022	1/30/2022	1/31/2022	TOTAL	Biogas	LFG
LFG and Biogas Flow to the Engine	1,579	1,565	1,531	1,521	1,502	1,451	1,441	1,561	1,537	1,526	1,546	1,569	1,569	1,517	1,473	46,776	641	46,135
LFG and Biogas Flow to the Engine	856	795	806	806	789	785	792	832	820	807	812	838	856	802	784	24,775	431	24,344
LFG and Biogas Flow to the Flare (	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.7%	98%
LFG and BiogasFlow to the Flare (M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
LFG and Biogas Total Flow (KSCF	1,579	1,565	1,531	1,521	1,502	1,451	1,441	1,561	1,537	1,526	1,546	1,569	1,569	1,517	1,473	46,776		
LFG and Biogas Total Flow (MMBT	856	795	806	806	789	785	792	832	820	807	812	838	856	802	784	24,775		
Average Methane Content (%)	53.6	50.2	52.0	52.4	51.9	53.5	54.3	52.7	52.7	52.3	51.9	52.8	53.9	52.2	52.6	52.34		
Engine 1 Hours	24	24	24	24	24	24	24	24	19	24	24	24	24	24	24	733		
Engine 2 Hours	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	720		
Engine 3 Hours	24	20	20	23	12	-	-	16	24	15	15	24	24	9	-	593		
Engine 4 Hours	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	733		
Generator 1 Power Output (kWhr)	15,732	14,968	15,812	14,692	16,844	19,140	19,140	16,584	11,932	16,300	17,372	15,076	15,512	17,276	19,148	489,577		
Generator 2 Power Output (kWhr)	15,792	15,084	15,948	15,396	16,208	19,128	19,124	16,752	15,592	16,456	17,376	15,452	15,600	17,508	19,128	481,984		
Generator 3 Power Output (kWhr)	15,536	12,208	10,108	13,152	7,240	-	-	10,336	15,080	8,652	6,920	14,432	15,472	5,660	-	365,589		
Generator 4 Power Output (kWhr)	15,844	15,328	16,296	15,328	16,828	19,096	19,088	16,732	15,652	16,784	17,232	15,592	15,568	17,524	19,092	496,645		
Gross Power Output (kWhr)	62,975	57,672	58,258	58,666	57,235	57,509	57,494	60,504	58,315	58,279	58,977	60,616	62,175	58,052	57,462	1,836,720		
Net Power Output (kWhr)	60,984	55,650	56,297	56,667	55,295	55,785	55,834	58,581	56,387	56,317	57,034	58,613	60,127	56,176	55,667	1,776,852		
Power Sold as metered by NStar, (	60,853	55,511	56,158	56,529	55,157	55,642	55,700	58,440	56,258	56,177	56,897	58,483	60,017	56,043	55,532	1,772,825	CRMCB inplant	
Offgrid RECs (kWhr)	1,991	2,022	1,961	1,999	1,940	1,724	1,660	1,923	1,928	1,962	1,943	2,003	2,048	1,876	1,795	59,868	13,061	
Calculated Performance Results																	22%	
Daily																	of total in-plant	
Power output (kW average whe																	power	
Generator 1	656	624	659	612	702	798	798	691	628	679	724	628	646	720	798			
Generator 2	658	629	665	642	675	797	797	698	650	686	724	644	650	730	797			
Generator 3	647	610	505	572	603	-	-	646	628	577	461	601	645	629	-			
Generator 4	660	639	679	639	701	796	795	697	652	699	718	650	649	730	796			
Power output (kW average ove																		
Facility Gross	2,624	2,403	2,427	2,444	2,385	2,396	2,396	2,521	2,430	2,428	2,457	2,526	2,591	2,419	2,394			
Facility Net	2,541	2,319	2,346	2,361	2,304	2,324	2,326	2,441	2,349	2,347	2,376	2,442	2,505	2,341	2,319			
In-plant load	83	84	82	83	81	72	69	80	80	82	81	83	85	78	75			
Daily availability factor																		
Facility	100%	96%	96%	99%	88%	75%	75%	92%	95%	91%	91%	100%	100%	84%	75%			
Engine 1	100%	100%	100%	100%	100%	100%	100%	100%	79%	100%	100%	100%	100%	100%	100%			
Engine 2	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%			
Engine 3	100%	83%	83%	96%	50%	0%	0%	67%	100%	63%	63%	100%	100%	38%	0%			
Engine 4	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%			
Daily capacity factor																		
Facility	80%	73%	74%	74%	72%	73%	73%	76%	74%	74%	74%	77%	79%	73%	73%			
Engine 1	79%	76%	80%	74%	85%	97%	97%	84%	76%	82%	88%	76%	78%	87%	97%			
Engine 2	80%	76%	81%	78%	82%	97%	97%	85%	79%	83%	88%	78%	79%	88%	97%			
Engine 3	78%	74%	61%	69%	73%	0%	0%	78%	76%	70%	56%	73%	78%	76%	0%			
Engine 4	80%	77%	82%	77%	85%	96%	96%	85%	79%	85%	87%	79%	79%	89%	96%			
Cumulative by engine																		
Engine operating run hours in th																		
Max Cumulative Available,	408	432	456	480	504	528	552	576	600	624	648	672	696	720	744			
Engine 1	402	426	450	474	498	522	546	570	589	613	637	661	685	709	733			
Engine 2	384	408	432	456	480	504	528	552	576	600	624	648	672	696	720			
Engine 3	391	411	431	454	466	466	466	482	506	521	536	560	584	593	593			
Engine 4	397	421	445	469	493	517	541	565	589	613	637	661	685	709	733			
Engine operating run hours tota																		
Engine 1	122,902	122,926	122,950	122,974	122,998	123,022	123,046	123,070	123,089	123,113	123,137	123,161	123,185	123,209	123,233			
Engine 2	112,158	112,182	112,206	112,230	112,254	112,278	112,302	112,326	112,350	112,374	112,398	112,422	112,446	112,470	112,494			
Engine 3	122,389	122,409	122,429	122,452	122,464	122,464	122,464	122,480	122,504	122,519	122,534	122,558	122,582	122,591	122,591			
Engine 4	118,022	118,046	118,070	118,094	118,118	118,142	118,166	118,190	118,214	118,238	118,262	118,286	118,310	118,334	118,358			
Cumulative availability, %																		
Engine 1	99%	99%	99%	99%	99%	99%	99%	99%	98%	98%	98%	98%	98%	98%	99%			
Engine 2	94%	94%	95%	95%	95%	95%	96%	96%	96%	96%	96%	96%	97%	97%	97%			
Engine 3	96%	95%	95%	95%	92%	88%	84%	84%	84%	83%	83%	83%	84%	82%	80%			
Engine 4	97%	97%	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%	99%			
Engine cumulative gross output																		
Max cumulative capacity or	14,025	14,850	15,675	16,500	17,325	18,150	18,975	19,800	20,625	21,450	22,275	23,100	23,925	24,750	25,575			
Engine 1	11,004	11,627	12,286	12,898	13,600	14,398	15,195	15,886	16,514	17,193	17,917	18,545	19,192	19,911	20,709			
Engine 2	10,906	11,535	12,199	12,841	13,516	14,313	15,110	15,808	16,457	17,143	17,867	18,511	19,161	19,890	20,687			
Engine 3	10,697	11,307	11,813	12,385	12,988	12,988	12,988	13,634	14,262	14,839	15,300	15,902	16,546	17,175	17,175			
Engine 4	11,168	11,807	12,486	13,125	13,826	14,621	15,417	16,114	16,766	17,465	18,183	18,833	19,482	20,212	21,007			
Cumulative capacity factor, %																		
Engine 1	78%	78%	78%	78%	78%	79%	80%	80%	80%	80%	80%	80%	80%	80%	81%			
Engine 2	78%	78%	78%	78%	78%	79%	80%	80%	80%	80%	80%	80%	80%	80%	81%			
Engine 3	76%	76%	75%	75%	75%	72%	68%	69%	69%	69%	69%	69%	69%	69%	67%			
Engine 4	80%	80%	80%	80%	80%	81%	81%	81%	81%	81%	82%	82%	81%	82%	82%			

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday			
	1/17/2022	1/18/2022	1/19/2022	1/20/2022	1/21/2022	1/22/2022	1/23/2022	1/24/2022	1/25/2022	1/26/2022	1/27/2022	1/28/2022	1/29/2022	1/30/2022	1/31/2022	TOTAL	Biogas	LFG
Cumulative by Facility in month																		
Max cumulative available engi	1,632	1,728	1,824	1,920	2,016	2,112	2,208	2,304	2,400	2,496	2,592	2,688	2,784	2,880	2,976			
Actual cumulative engine run h	1,574	1,666	1,758	1,853	1,937	2,009	2,081	2,169	2,260	2,347	2,434	2,530	2,626	2,707	2,779			
Cumulative Availability, %	96.4%	96.4%	96.4%	96.5%	96.1%	95.1%	94.2%	94.1%	94.2%	94.0%	93.9%	94.1%	94.3%	94.0%	93.4%			
Max cumulative gross output, k	1,346,400	1,425,600	1,504,800	1,584,000	1,663,200	1,742,400	1,821,600	1,900,800	1,980,000	2,059,200	2,138,400	2,217,600	2,296,800	2,376,000	2,455,200			
Actual cumulative gross output,	1,015,506	1,073,178	1,131,436	1,190,102	1,247,337	1,304,846	1,362,340	1,422,844	1,481,159	1,539,438	1,598,415	1,659,031	1,721,206	1,779,258	1,836,720			
Cumulative Capacity Factor	75.4%	75.3%	75.2%	75.1%	75.0%	74.9%	74.8%	74.9%	74.8%	74.8%	74.7%	74.8%	74.9%	74.9%	74.8%			
Cumulative fuel input, MMBtu h	13,450	14,245	15,051	15,857	16,646	17,431	18,223	19,056	19,876	20,683	21,495	22,333	23,189	23,990	24,775			
Cumulative gross output, kWhr	1,015,506	1,073,178	1,131,436	1,190,102	1,247,337	1,304,846	1,362,340	1,422,844	1,481,159	1,539,438	1,598,415	1,659,031	1,721,206	1,779,258	1,836,720			
Heat Rate																		
Daily heat rate, Btu/kWe gross	12,235	12,414	12,453	12,366	12,408	12,289	12,405	12,385	12,655	12,471	12,392	12,442	12,396	12,429	12,288			
Daily heat rate, Btu/kWe gross	13,591	13,790	13,833	13,737	13,784	13,652	13,781	13,758	14,058	13,854	13,766	13,821	13,771	13,807	13,651			
Cumulative heat rate, Btu/kWe	11,923	11,949	11,975	11,994	12,013	12,026	12,042	12,056	12,080	12,095	12,106	12,118	12,128	12,138	12,142			
Cumulative heat rate, Btu/kWe	13,245	13,274	13,303	13,324	13,345	13,359	13,377	13,393	13,419	13,435	13,448	13,461	13,473	13,483	13,489			
Cumulative by Facility starting C																		
Max cumulative available engi	1,632	1,728	1,824	1,920	2,016	2,112	2,208	2,304	2,400	2,496	2,592	2,688	2,784	2,880	2,976			
Actual cumulative engine run h	1,574	1,666	1,758	1,853	1,937	2,009	2,081	2,169	2,260	2,347	2,434	2,530	2,626	2,707	2,779			
Cumulative Availability, %	96.4%	96.4%	96.4%	96.5%	96.1%	95.1%	94.2%	94.1%	94.2%	94.0%	93.9%	94.1%	94.3%	94.0%	93.4%			
Max cumulative gross output, k	1,346,400	1,425,600	1,504,800	1,584,000	1,663,200	1,742,400	1,821,600	1,900,800	1,980,000	2,059,200	2,138,400	2,217,600	2,296,800	2,376,000	2,455,200			
Actual cumulative gross output,	1,015,506	1,073,178	1,131,436	1,190,102	1,247,337	1,304,846	1,362,340	1,422,844	1,481,159	1,539,438	1,598,415	1,659,031	1,721,206	1,779,258	1,836,720			
Cumulative Capacity Factor	75.4%	75.3%	75.2%	75.1%	75.0%	74.9%	74.8%	74.9%	74.8%	74.8%	74.7%	74.8%	74.9%	74.9%	74.8%			
Cumulative fuel input, MMBtu h	13,450	14,245	15,051	15,857	16,646	17,431	18,223	19,056	19,876	20,683	21,495	22,333	23,189	23,990	24,775			
Cumulative gross output, kWhr	1,015,506	1,073,178	1,131,436	1,190,102	1,247,337	1,304,846	1,362,340	1,422,844	1,481,159	1,539,438	1,598,415	1,659,031	1,721,206	1,779,258	1,836,720			
Cumulative heat rate, Btu/kWe	11,923	11,949	11,975	11,994	12,013	12,026	12,042	12,056	12,080	12,095	12,106	12,118	12,128	12,138	12,142			
Cumulative heat rate, Btu/kWe	13,245	13,274	13,303	13,324	13,345	13,359	13,377	13,393	13,419	13,435	13,448	13,461	13,473	13,483	13,489			
Service																		
Engine 1									E-1 trip									
Engine 2		Wellfield issue																
Engine 3		High vacuum. Took E-3 offline							Call out failure	Call out fixed								
Engine 4																		
Oil - oil and filter change																		
Service - plugs, air filter, valve insp																		
Precipitation																		
NSTAR Power Reports	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday			
Date	1/17/2022	1/18/2022	1/19/2022	1/20/2022	1/21/2022	1/22/2022	1/23/2022	1/24/2022	1/25/2022	1/26/2022	1/27/2022	1/28/2022	1/29/2022	1/30/2022	1/31/2022	TOTAL		
Hour																		
1	2,463	2,509	2,075	2,412	2,314	2,316	2,318	2,320	2,463	2,410	2,312	2,366	2,511	2,406	2,315			
2	2,500	2,470	2,075	2,414	2,311	2,315	2,317	2,320	2,464	2,399	2,311	2,374	2,511	2,404	2,313			
3	2,511	2,460	2,073	2,415	2,312	2,317	2,319	2,319	2,021	2,359	2,311	2,414	2,511	2,407	2,313			
4	2,513	2,448	2,076	2,413	2,313	2,316	2,317	2,320	1,878	2,356	2,310	2,414	2,511	2,410	2,311			
5	2,514	2,411	2,076	2,411	2,308	2,315	2,319	2,320	1,880	2,357	2,308	2,414	2,510	2,403	2,314			
6	2,514	2,409	2,076	2,416	2,308	2,316	2,318	2,319	1,879	2,361	2,310	2,414	2,513	2,349	2,309			
7	2,519	2,376	2,078	2,413	2,308	2,315	2,317	2,316	1,882	2,360	2,309	2,412	2,509	2,311	2,309			
8	2,651	2,359	2,323	2,384	2,316	2,316	2,318	2,448	2,227	2,360	2,309	2,411	2,510	2,311	2,305			
9	2,621	2,321	2,504	2,360	2,314	2,318	2,320	2,584	2,512	2,357	2,311	2,408	2,508	2,316	2,314			
10	2,635	2,311	2,505	2,365	2,196	2,318	2,324	2,475	2,509	2,313	2,314	2,412	2,508	2,304	2,315			
11	2,603	2,309	2,489	2,004	2,030	2,319	2,321	2,380	2,509	2,316	2,177	2,395	2,506	2,318	2,315			
12	2,594	2,312	2,455	1,877	2,441	2,324	2,327	2,510	2,507	2,317	2,288	2,479	2,504	2,319	2,314			
13	2,553	2,312	2,456	2,145	2,221	2,321	2,322	2,509	2,507	2,337	2,302	2,455	2,511	2,321	2,314			
14	2,552	2,311	2,459	2,512	2,313	2,327	2,327	2,511	2,508	2,407	2,509	2,460	2,508	2,321	2,317			
15	2,509	2,311	2,462	2,506	2,320	2,321	2,327	2,511	2,510	2,344	2,501	2,457	2,510	2,320	2,313			
16	2,512	2,311	2,461	2,485	2,316	2,322	2,320	2,506	2,509	2,315	2,511	2,466	2,507	2,317	2,319			
17	2,516	2,308	2,462	2,412	2,317	2,321	2,326	2,513	2,489	2,320	2,507	2,464	2,506	2,317	2,318			
18	2,514	2,307	2,453	2,412	2,314	2,319	2,321	2,482	2,462	2,316	2,467	2,461	2,509	2,315	2,318			
19	2,507	2,309	2,457	2,411	2,314	2,318	2,322	2,460	2,460	2,313	2,459	2,462	2,508	2,314	2,316			
20	2,514	2,311	2,455	2,369	2,313	2,320	2,321	2,463	2,448	2,313	2,460	2,462	2,507	2,313	2,315			
21	2,509	2,107	2,457	2,363	2,314	2,319	2,320	2,465	2,408	2,309	2,457	2,464	2,506	2,311	2,315			
22	2,512	2,075	2,408	2,360	2,314	2,314	2,319	2,463	2,409	2,312	2,432	2,464	2,504	2,312	2,314			
23	2,509	2,077	2,411	2,353	2,316	2,318	2,320	2,462	2,408	2,314	2,360	2,463	2,423	2,313	2,313			
24	2,508	2,077	2,412	2,317	2,314	2,317	2,320	2,464	2,409	2,312	2,362	2,492	2,406	2,311	2,313			
TOTAL	60,853	55,511	56,158	56,529	55,157	55,642	55,700	58,440	56,258	56,177	56,897	58,483	60,017	56,043	55,532			
Cumulative Output Sold, kV	980,281	1,035,792	1,091,950	1,148,479	1,203,636	1,259,278	1,314,978	1,373,418	1,429,676	1,485,853	1,542,750	1,601,233	1,661,250	1,717,293	1,772,825			
Transformer and line efficienc	99.8%	99.8%	99.8%	99.8%	99.8%	99.7%	99.8%	99.8%	99.8%	99.8%	99.8%	99.8%	99.8%	99.8%	99.8%	0.0%		
Hourly average	2,536	2,313	2,340	2,355	2,298	2,318	2,321	2,435	2,344	2,341	2,371	2,437	2,501	2,335	2,314	2,383		

FEBRUARY 2022																	
		Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday
		2/1/2022	2/2/2022	2/3/2022	2/4/2022	2/5/2022	2/6/2022	2/7/2022	2/8/2022	2/9/2022	2/10/2022	2/11/2022	2/12/2022	2/13/2022	2/14/2022	2/15/2022	2/16/2022
LFG and Biogas Flow to the Engines (KSCF)		1,479	1,509	1,570	1,557	1,479	1,414	1,492	1,505	1,659	1,575	1,575	1,545	1,536	1,563	1,528	1,465
LFG and Biogas Flow to the Engines (MMBTU HHV)		790	809	841	834	790	770	818	813	869	832	821	821	814	822	789	789
LFG and Biogas Flow to the Flare (KSCF)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG and BiogasFlow to the Flare (MMBTU HHV)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG and Biogas Total Flow (KSCF)		1,479	1,509	1,570	1,557	1,479	1,414	1,492	1,505	1,659	1,575	1,575	1,545	1,536	1,563	1,528	1,465
LFG and Biogas Total Flow (MMBTU HHV)		790	809	841	834	790	770	818	813	869	832	821	821	814	822	789	789
Average Methane Content (%)		52.8	53.0	52.9	52.9	52.8	53.8	54.2	53.4	51.8	52.2	51.5	52.5	52.4	52.0	51.0	53.2
Engine 1 Hours		24	24	24	24	17	-	13	24	24	24	24	24	24	24	24	17
Engine 2 Hours		24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
Engine 3 Hours		-	17	24	24	24	24	24	24	24	24	24	24	24	24	7	7
Engine 4 Hours		24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
Generator 1 Power Output (kWhr)		19,148	16,764	15,604	15,600	10,364	-	7,988	15,600	15,228	15,628	15,072	15,420	14,904	14,880	17,636	13,588
Generator 2 Power Output (kWhr)		19,128	16,744	15,592	15,596	15,600	19,140	17,208	15,944	15,592	15,580	15,592	15,592	15,588	15,332	17,636	19,128
Generator 3 Power Output (kWhr)		-	10,460	15,556	15,564	16,203	16,720	16,104	15,560	14,464	15,264	14,372	14,732	14,372	14,956	4,408	4,160
Generator 4 Power Output (kWhr)		19,092	16,712	15,556	15,552	16,500	19,088	17,284	15,908	15,564	15,556	15,564	15,560	15,568	15,308	17,612	19,096
Gross Power Output (kWhr)		57,470	60,739	62,360	62,341	58,667	54,923	58,486	63,085	60,915	62,100	60,671	61,378	60,499	60,518	57,353	56,028
Net Power Output (kWhr)		55,667	58,784	60,297	60,273	56,667	53,211	56,758	61,065	58,836	59,986	58,569	59,339	58,444	58,414	55,386	54,251
Power Sold as metered by NStar, (kWhr)		55,528	58,646	60,168	60,137	55,968	53,055	56,633	60,934	58,700	59,853	58,434	59,206	58,323	58,285	55,251	54,117
Offgrid RECs (kWhr)		1,802	1,955	2,063	2,068	2,000	1,711	1,728	2,020	2,079	2,114	2,102	2,039	2,055	2,104	1,967	1,777
Calculated Performance Results																	
Daily																	
Power output (kW average when running)																	
Generator 1		798	699	650	650	610	-	614	650	635	651	628	643	621	620	735	799
Generator 2		797	698	650	650	650	798	717	664	650	649	650	650	650	639	735	797
Generator 3		-	615	648	649	675	697	671	648	603	636	599	614	599	623	630	594
Generator 4		796	696	648	648	688	795	720	663	649	648	649	648	649	638	734	796
Power output (kW average over 24-hrs)																	
Facility Gross		2,395	2,531	2,598	2,598	2,444	2,288	2,437	2,629	2,538	2,588	2,528	2,557	2,521	2,522	2,390	2,335
Facility Net		2,319	2,449	2,512	2,511	2,361	2,217	2,365	2,544	2,452	2,499	2,440	2,472	2,435	2,434	2,308	2,260
In-plant load		75	81	86	86	83	71	72	84	87	88	88	85	86	88	82	74
Daily availability factor																	
Facility		75%	93%	100%	100%	93%	75%	89%	100%	100%	100%	100%	100%	100%	100%	82%	75%
Engine 1		100%	100%	100%	100%	71%	0%	54%	100%	100%	100%	100%	100%	100%	100%	100%	71%
Engine 2		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Engine 3		0%	71%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	29%	29%
Engine 4		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Daily capacity factor																	
Facility		73%	77%	79%	79%	74%	69%	74%	80%	77%	78%	77%	77%	76%	76%	72%	71%
Engine 1		97%	85%	79%	79%	74%	0%	74%	79%	77%	79%	76%	78%	75%	75%	89%	97%
Engine 2		97%	85%	79%	79%	79%	97%	87%	81%	79%	79%	79%	79%	79%	77%	89%	97%
Engine 3		0%	75%	79%	79%	82%	84%	81%	79%	73%	77%	73%	74%	73%	76%	76%	72%
Engine 4		96%	84%	79%	79%	83%	96%	87%	80%	79%	79%	79%	79%	79%	77%	89%	96%
Cumulative by engine																	
Engine operating run hours in the month																	
Max Cumulative Available, hours		24	48	72	96	120	144	168	192	216	240	264	288	312	336	360	384
Engine 1		24	48	72	96	113	113	126	150	174	198	222	246	270	294	318	335
Engine 2		24	48	72	96	120	144	168	192	216	240	264	288	312	336	360	384
Engine 3		0	17	41	65	89	113	137	161	185	209	233	257	281	305	312	319
Engine 4		24	48	72	96	120	144	168	192	216	240	264	288	312	336	360	384
Engine operating run hours total from 0 hours																	
Engine 1	123,184	123,208	123,232	123,256	123,280	123,297	123,297	123,310	123,334	123,358	123,382	123,406	123,430	123,454	123,478	123,502	123,519
Engine 2	112,290	112,314	112,338	112,362	112,386	112,410	112,434	112,458	112,482	112,506	112,530	112,554	112,578	112,602	112,626	112,650	112,674
Engine 3	122,709	122,709	122,726	122,750	122,774	122,798	122,822	122,846	122,870	122,894	122,918	122,942	122,966	122,990	123,014	123,021	123,028
Engine 4	118,625	118,649	118,673	118,697	118,721	118,745	118,769	118,793	118,817	118,841	118,865	118,889	118,913	118,937	118,961	118,985	119,009
Cumulative availability, %	February 1, 2022 @ 00:00 hours																
Engine 1		100%	100%	100%	100%	94%	78%	75%	78%	81%	83%	84%	85%	87%	88%	88%	87%
Engine 2		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Engine 3		0%	35%	57%	68%	74%	78%	82%	84%	86%	87%	88%	89%	90%	91%	87%	83%
Engine 4		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Engine cumulative gross output, kWhr																	
Max cumulative capacity one engine		825	1,650	2,475	3,300	4,125	4,950	5,775	6,600	7,425	8,250	9,075	9,900	10,725	11,550	12,375	13,200
Engine 1		798	1,496	2,147	2,797	3,406	3,406	4,021	4,671	5,305	5,956	6,584	7,227	7,848	8,468	9,203	10,002
Engine 2		797	1,495	2,144	2,794	3,444	4,242	4,959	5,623	6,273	6,922	7,572	8,221	8,871	9,510	10,244	11,041
Engine 3		-	615	1,263	1,912	2,587	3,284	3,955	4,603	5,206	5,842	6,441	7,054	7,653	8,276	8,906	9,500
Engine 4		796	1,492	2,140	2,788	3,476	4,271	4,991	5,654	6,302	6,951	7,599	8,247	8,896	9,534	10,268	11,063
Cumulative capacity factor, %																	
Engine 1		97%	91%	87%	85%	83%	69%	70%	71%	71%	72%	73%	73%	73%	73%	74%	76%
Engine 2		97%	91%	87%	85%	83%	86%	86%	85%	84%	84%	83%	83%	83%	82%	83%	84%
Engine 3		0%	37%	51%	58%	63%	66%	68%	70%	70%	71%	71%	71%	71%	72%	72%	72%
Engine 4		96%	90%	86%	84%	84%	86%	86%	86%	85%	84%	84%	83%	83%	83%	83%	84%

	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday
	2/1/2022	2/2/2022	2/3/2022	2/4/2022	2/5/2022	2/6/2022	2/7/2022	2/8/2022	2/9/2022	2/10/2022	2/11/2022	2/12/2022	2/13/2022	2/14/2022	2/15/2022	2/16/2022
Cumulative by Facility in month																
Max cumulative available engine run hours	96	192	288	384	480	576	672	768	864	960	1,056	1,152	1,248	1,344	1,440	1,536
Actual cumulative engine run hours	72	161	257	353	442	514	599	695	791	887	983	1,079	1,175	1,271	1,350	1,422
Cumulative Availability, %	75.0%	83.9%	89.2%	91.9%	92.1%	89.2%	89.1%	90.5%	91.6%	92.4%	93.1%	93.7%	94.2%	94.6%	93.8%	92.6%
Max cumulative gross output, kWhr	79,200	158,400	237,600	316,800	396,000	475,200	554,400	633,600	712,800	792,000	871,200	950,400	1,029,600	1,108,800	1,188,000	1,267,200
Actual cumulative gross output, kWhr	57,470	118,209	180,569	242,910	301,577	356,500	414,986	478,071	538,986	601,086	661,757	723,135	783,634	844,152	901,505	957,533
Cumulative Capacity Factor	72.6%	74.6%	76.0%	76.7%	76.2%	75.0%	74.9%	75.5%	75.6%	75.9%	76.0%	76.1%	76.1%	76.1%	75.9%	75.6%
Cumulative fuel input, MMBtu HHV	790	1,599	2,441	3,275	4,065	4,835	5,653	6,466	7,335	8,167	8,988	9,809	10,623	11,445	12,234	13,024
Cumulative gross output, kWhr	57,470	118,209	180,569	242,910	301,577	356,500	414,986	478,071	538,986	601,086	661,757	723,135	783,634	844,152	901,505	957,533
Heat Rate																
Daily heat rate, Btu/kWe gross LHV	12,381	11,990	12,142	12,044	12,128	12,616	12,589	11,607	12,842	12,056	12,184	12,044	12,112	12,230	12,386	12,678
Daily heat rate, Btu/kWe gross HHV	13,753	13,319	13,488	13,380	13,473	14,014	13,985	12,894	14,266	13,393	13,535	13,379	13,455	13,586	13,759	14,084
Cumulative heat rate, Btu/kWe gross LHV	12,381	12,180	12,167	12,135	12,134	12,208	12,262	12,175	12,251	12,231	12,226	12,211	12,203	12,205	12,217	12,244
Cumulative heat rate, Btu/kWe gross HHV	13,753	13,530	13,516	13,481	13,479	13,562	13,621	13,525	13,609	13,587	13,582	13,565	13,556	13,558	13,571	13,601
Cumulative by Facility starting Calendar Year																
Max cumulative available engine run hours	3,072	3,168	3,264	3,360	3,456	3,552	3,648	3,744	3,840	3,936	4,032	4,128	4,224	4,320	4,416	4,512
Actual cumulative engine run hours	2,851	2,940	3,036	3,132	3,221	3,293	3,378	3,474	3,570	3,666	3,762	3,858	3,954	4,050	4,129	4,201
Cumulative Availability, %	92.8%	92.8%	93.0%	93.2%	93.2%	92.7%	92.6%	92.8%	93.0%	93.1%	93.3%	93.5%	93.6%	93.8%	93.5%	93.1%
Max cumulative gross output, kWhr	2,534,400	2,613,600	2,692,800	2,772,000	2,851,200	2,930,400	3,009,600	3,088,800	3,168,000	3,247,200	3,326,400	3,405,600	3,484,800	3,564,000	3,643,200	3,722,400
Actual cumulative gross output, kWhr	1,894,190	1,954,929	2,017,289	2,079,630	2,138,297	2,193,220	2,251,706	2,314,791	2,375,706	2,437,806	2,498,477	2,559,855	2,620,354	2,680,872	2,738,225	2,794,253
Cumulative Capacity Factor	74.7%	74.8%	74.9%	75.0%	75.0%	74.8%	74.8%	74.9%	75.0%	75.1%	75.1%	75.2%	75.2%	75.2%	75.2%	75.1%
Cumulative fuel input, MMBtu HHV	25,565	26,374	27,215	28,049	28,840	29,610	30,427	31,241	32,110	32,942	33,763	34,584	35,398	36,220	37,009	37,798
Cumulative gross output, kWhr	1,894,190	1,954,929	2,017,289	2,079,630	2,138,297	2,193,220	2,251,706	2,314,791	2,375,706	2,437,806	2,498,477	2,559,855	2,620,354	2,680,872	2,738,225	2,794,253
Cumulative heat rate, Btu/kWe gross LHV	12,150	12,145	12,145	12,142	12,141	12,153	12,164	12,149	12,167	12,164	12,165	12,162	12,161	12,162	12,167	12,177
Cumulative heat rate, Btu/kWe gross HHV	13,497	13,491	13,491	13,488	13,487	13,501	13,513	13,496	13,516	13,513	13,513	13,510	13,509	13,511	13,516	13,527
Service																
Engine 1																
Engine 2																
Engine 3																
Engine 4																
Oil - oil and filter change																
Service - plugs, air filter, valve inspection and adjustment																
Precipitation																
NSTAR Power Reports	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday
Date	2/1/2022	2/2/2022	2/3/2022	2/4/2022	2/5/2022	2/6/2022	2/7/2022	2/8/2022	2/9/2022	2/10/2022	2/11/2022	2/12/2022	2/13/2022	2/14/2022	2/15/2022	2/16/2022
Hour																
1	2,313	2,317	2,508	2,505	2,506	2,210	2,211	2,513	2,506	2,457	2,456	2,458	2,410	2,458	2,308	2,311
2	2,316	2,318	2,508	2,508	2,507	2,209	2,211	2,515	2,501	2,471	2,456	2,459	2,410	2,487	2,306	2,311
3	2,314	2,316	2,510	2,506	2,504	2,209	2,210	2,510	2,461	2,506	2,454	2,459	2,411	2,505	2,305	2,310
4	2,315	2,317	2,507	2,506	2,504	2,208	2,212	2,512	2,457	2,505	2,457	2,498	2,412	2,505	2,305	2,312
5	2,314	2,319	2,509	2,509	2,479	2,207	2,211	2,517	2,459	2,505	2,406	2,504	2,409	2,505	2,311	1,592
6	2,312	2,318	2,509	2,506	2,456	2,208	2,210	2,516	2,458	2,506	2,407	2,505	2,409	2,503	2,308	2,159
7	2,310	2,317	2,507	2,511	2,459	2,209	2,210	2,514	2,426	2,509	2,406	2,505	2,410	2,504	2,308	2,210
8	2,312	2,325	2,509	2,505	2,456	2,208	2,102	2,560	2,408	2,506	2,408	2,508	2,406	2,503	2,151	2,211
9	2,309	2,499	2,506	2,504	2,458	2,214	2,207	2,603	2,406	2,504	2,408	2,507	2,409	2,501	2,304	2,210
10	2,307	2,501	2,505	2,504	2,411	2,212	2,202	2,605	2,411	2,506	2,410	2,508	2,405	2,497	2,307	2,199
11	2,310	2,501	2,508	2,506	2,371	2,215	2,190	2,604	2,408	2,506	2,405	2,484	2,412	2,431	2,309	2,198
12	2,313	2,504	2,504	2,504	2,304	2,217	2,293	2,605	2,407	2,503	2,399	2,460	2,412	2,179	2,310	2,313
13	2,311	2,503	2,506	2,504	2,317	2,212	2,511	2,605	2,407	2,502	2,404	2,461	2,414	2,477	2,307	2,317
14	2,310	2,508	2,500	2,505	2,318	2,208	2,513	2,603	2,413	2,501	2,405	2,461	2,411	2,502	2,309	2,315
15	2,311	2,502	2,503	2,504	2,317	2,211	2,513	2,566	2,457	2,501	2,419	2,461	2,459	2,499	2,310	2,315
16	2,318	2,505	2,504	2,508	2,314	2,211	2,512	2,511	2,457	2,503	2,457	2,462	2,458	2,460	2,311	2,310
17	2,317	2,510	2,506	2,507	2,268	2,211	2,514	2,511	2,460	2,509	2,462	2,462	2,459	2,433	2,311	2,319
18	2,315	2,509	2,507	2,509	1,811	2,209	2,515	2,510	2,457	2,502	2,457	2,461	2,458	2,409	2,313	2,315
19	2,318	2,511	2,508	2,505	2,160	2,212	2,516	2,509	2,455	2,504	2,460	2,456	2,458	2,377	2,309	2,315
20	2,317	2,510	2,511	2,508	2,212	2,210	2,514	2,507	2,455	2,506	2,460	2,458	2,458	2,309	2,313	2,319
21	2,317	2,508	2,510	2,502	2,210	2,210	2,515	2,506	2,455	2,471	2,460	2,437	2,459	2,309	2,309	2,314
22	2,316	2,511	2,511	2,503	2,207	2,211	2,514	2,513	2,458	2,457	2,460	2,410	2,458	2,310	2,308	2,315
23	2,316	2,507	2,506	2,503	2,208	2,210	2,514	2,509	2,459	2,457	2,459	2,411	2,458	2,311	2,308	2,316
24	2,317	2,510	2,506	2,505	2,211	2,214	2,513	2,510	2,459	2,456	2,459	2,411	2,458	2,311	2,311	2,311
TOTAL	55,528	58,646	60,168	60,137	55,968	53,055	56,633	60,934	58,700	59,853	58,434	59,206	58,323	58,285	55,251	54,117
Cumulative Output Sold, kWhr	55,528	114,174	174,342	234,479	290,447	343,502	400,135	461,069	519,769	579,622	638,056	697,262	755,585	813,870	869,121	923,238
Transformer and line efficiency	99.8%	99.8%	99.8%	99.8%	98.8%	99.7%	99.8%	99.8%	99.8%	99.8%	99.8%	99.8%	99.8%	99.8%	99.8%	99.8%
Hourly average	2,314	2,444	2,507	2,506	2,332	2,211	2,360	2,539	2,446	2,494	2,435	2,467	2,430	2,429	2,302	2,255

FEBRUARY 2022																
	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday				
	2/17/2022	2/18/2022	2/19/2022	2/20/2022	2/21/2022	2/22/2022	2/23/2022	2/24/2022	2/25/2022	2/26/2022	2/27/2022	2/28/2022	TOTAL	Biogas	LFG	
LFG and Biogas Flow to the Engine	1,522	1,066	1,586	1,558	1,550	1,525	1,561	1,497	1,512	1,559	1,592	1,567	42,547	551	41,996	
LFG and Biogas Flow to the Engine	828	562	821	795	806	798	830	784	814	814	853	814	22,543	371	22,172	
LFG and Biogas Flow to the Flare (	-	309	-	-	-	-	-	-	-	-	-	-	309	1.6%	98%	
LFG and BiogasFlow to the Flare (M	-	163	-	-	-	-	-	-	-	-	-	-	163			
LFG and Biogas Total Flow (KSCF	1,522	1,375	1,586	1,558	1,550	1,525	1,561	1,497	1,512	1,559	1,592	1,567	42,857			
LFG and Biogas Total Flow (MMBT	828	726	821	795	806	798	830	784	814	814	853	814	22,706			
Average Methane Content (%)	53.8	52.1	51.2	50.4	51.4	51.7	52.6	51.8	53.2	51.6	52.9	51.3	52.4			
Engine 1 Hours	24	17	24	24	24	24	24	24	24	24	24	24	616			
Engine 2 Hours	24	17	24	24	24	24	23	23	23	23	23	23	659			
Engine 3 Hours	16	16	24	24	24	24	24	8	11	24	24	24	562			
Engine 4 Hours	24	17	24	24	24	24	24	24	24	24	24	24	665			
Generator 1 Power Output (kWhr)	16,740	10,376	15,472	14,428	14,424	14,340	15,312	17,588	17,528	14,808	15,604	14,468	404,512			
Generator 2 Power Output (kWhr)	16,736	10,356	15,608	14,944	15,312	15,300	14,628	17,584	17,520	15,088	15,596	14,708	448,372			
Generator 3 Power Output (kWhr)	10,496	10,336	15,124	14,384	14,384	15,156	15,232	4,736	6,924	14,384	15,004	14,384	353,439			
Generator 4 Power Output (kWhr)	16,712	10,344	15,580	15,192	15,576	14,580	15,552	17,548	17,508	15,568	15,572	15,444	450,696			
Gross Power Output (kWhr)	60,784	41,486	61,858	59,025	59,789	59,462	60,816	57,574	59,572	59,934	61,847	59,097	1,658,777			
Net Power Output (kWhr)	58,833	40,098	59,713	56,899	57,732	57,458	58,755	55,699	57,712	57,957	59,853	57,056	1,603,712			
Power Sold as metered by NStar, (	58,688	40,054	59,522	56,749	57,584	57,312	58,600	55,552	57,554	57,805	59,718	56,900	1,599,276	CRMCB inplant		
Offgrid RECs (kWhr)	1,951	1,388	2,145	2,126	2,057	2,005	2,061	1,875	1,860	1,977	1,994	2,041	55,064	18,757		
Calculated Performance Results														34%		
Daily														of total in-plant		
Power output (kW average whe														power		
Generator 1	698	610	645	601	601	598	638	733	730	617	650	603				
Generator 2	697	609	650	623	638	638	636	765	762	656	678	639				
Generator 3	656	646	630	599	599	632	635	592	629	599	625	599				
Generator 4	696	608	649	633	649	608	648	731	730	649	649	644				
Power output (kW average ove																
Facility Gross	2,533	1,729	2,577	2,459	2,491	2,478	2,534	2,399	2,482	2,497	2,577	2,462				
Facility Net	2,451	1,671	2,488	2,371	2,406	2,394	2,448	2,321	2,405	2,415	2,494	2,377				
In-plant load	81	58	89	89	86	84	86	78	78	82	83	85				
Daily availability factor																
Facility	92%	70%	100%	100%	100%	100%	99%	82%	85%	99%	99%	99%				
Engine 1	100%	71%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%				
Engine 2	100%	71%	100%	100%	100%	100%	96%	96%	96%	96%	96%	96%				
Engine 3	67%	67%	100%	100%	100%	100%	100%	33%	46%	100%	100%	100%				
Engine 4	100%	71%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%				
Daily capacity factor																
Facility	77%	52%	78%	75%	75%	75%	77%	73%	75%	76%	78%	75%				
Engine 1	85%	74%	78%	73%	73%	72%	77%	89%	89%	75%	79%	73%				
Engine 2	85%	74%	79%	75%	77%	77%	77%	93%	92%	80%	82%	78%				
Engine 3	80%	78%	76%	73%	73%	77%	77%	72%	76%	73%	76%	73%				
Engine 4	84%	74%	79%	77%	79%	74%	79%	89%	88%	79%	79%	78%				
Cumulative by engine																
Engine operating run hours in th																
Max Cumulative Available,	408	432	456	480	504	528	552	576	600	624	648	672				
Engine 1	359	376	400	424	448	472	496	520	544	568	592	616				
Engine 2	408	425	449	473	497	521	544	567	590	613	636	659				
Engine 3	335	351	375	399	423	447	471	479	490	514	538	562				
Engine 4	408	425	449	473	497	521	545	569	593	617	641	665				
Engine operating run hours tota																
Engine 1	123,543	123,560	123,584	123,608	123,632	123,656	123,680	123,704	123,728	123,752	123,776	123,800				
Engine 2	112,698	112,715	112,739	112,763	112,787	112,811	112,834	112,857	112,880	112,903	112,926	112,949				
Engine 3	123,044	123,060	123,084	123,108	123,132	123,156	123,180	123,188	123,199	123,223	123,247	123,271				
Engine 4	119,033	119,050	119,074	119,098	119,122	119,146	119,170	119,194	119,218	119,242	119,266	119,290				
Cumulative availability, %																
Engine 1	88%	87%	88%	88%	89%	89%	90%	90%	91%	91%	91%	92%				
Engine 2	100%	98%	98%	99%	99%	99%	99%	98%	98%	98%	98%	98%				
Engine 3	82%	81%	82%	83%	84%	85%	85%	83%	82%	82%	83%	84%				
Engine 4	100%	98%	98%	99%	99%	99%	99%	99%	99%	99%	99%	99%				
Engine cumulative gross output																
Max cumulative capacity or	14,025	14,850	15,675	16,500	17,325	18,150	18,975	19,800	20,625	21,450	22,275	23,100				
Engine 1	10,699	11,310	11,954	12,556	13,157	13,754	14,392	15,125	15,855	16,472	17,122	17,725				
Engine 2	11,739	12,348	12,998	13,621	14,259	14,896	15,532	16,297	17,059	17,715	18,393	19,032				
Engine 3	10,156	10,802	11,433	12,032	12,631	13,263	13,897	14,489	15,119	15,718	16,343	16,943				
Engine 4	11,760	12,368	13,017	13,650	14,299	14,907	15,555	16,286	17,015	17,664	18,313	18,956				
Cumulative capacity factor, %																
Engine 1	76%	76%	76%	76%	76%	76%	76%	76%	77%	77%	77%	77%				
Engine 2	84%	83%	83%	83%	82%	82%	82%	82%	83%	83%	83%	82%				
Engine 3	72%	73%	73%	73%	73%	73%	73%	73%	73%	73%	73%	73%				
Engine 4	84%	83%	83%	83%	83%	82%	82%	82%	82%	82%	82%	82%				

	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday			
	2/17/2022	2/18/2022	2/19/2022	2/20/2022	2/21/2022	2/22/2022	2/23/2022	2/24/2022	2/25/2022	2/26/2022	2/27/2022	2/28/2022	TOTAL	Biogas	LFG
Cumulative by Facility in month															
Max cumulative available engi	1,632	1,728	1,824	1,920	2,016	2,112	2,208	2,304	2,400	2,496	2,592	2,688			
Actual cumulative engine run h	1,510	1,577	1,673	1,769	1,865	1,961	2,056	2,135	2,217	2,312	2,407	2,502			
Cumulative Availability, %	92.5%	91.3%	91.7%	92.1%	92.5%	92.9%	93.1%	92.7%	92.4%	92.6%	92.9%	93.1%			
Max cumulative gross output, k	1,346,400	1,425,600	1,504,800	1,584,000	1,663,200	1,742,400	1,821,600	1,900,800	1,980,000	2,059,200	2,138,400	2,217,600			
Actual cumulative gross output,	1,018,317	1,059,803	1,121,661	1,180,686	1,240,475	1,299,937	1,360,753	1,418,327	1,477,899	1,537,833	1,599,680	1,658,777			
Cumulative Capacity Factor	75.6%	74.3%	74.5%	74.5%	74.6%	74.6%	74.7%	74.6%	74.6%	74.7%	74.8%	74.8%			
Cumulative fuel input, MMBtu H	13,852	14,414	15,235	16,030	16,836	17,634	18,464	19,248	20,062	20,876	21,729	22,543			
Cumulative gross output, kWhr	1,018,317	1,059,803	1,121,661	1,180,686	1,240,475	1,299,937	1,360,753	1,418,327	1,477,899	1,537,833	1,599,680	1,658,777			
Heat Rate															
Daily heat rate, Btu/kWe gross	12,267	12,202	11,949	12,122	12,131	12,078	12,287	12,263	12,303	12,229	12,411	12,396			
Daily heat rate, Btu/kWe gross	13,627	13,555	13,274	13,465	13,476	13,417	13,649	13,622	13,667	13,585	13,787	13,771			
Cumulative heat rate, Btu/kWe	12,245	12,243	12,227	12,222	12,217	12,211	12,215	12,216	12,220	12,220	12,228	12,234			
Cumulative heat rate, Btu/kWe	13,603	13,601	13,583	13,577	13,572	13,565	13,569	13,571	13,575	13,575	13,583	13,590			
Cumulative by Facility starting C															
Max cumulative available engi	4,608	4,704	4,800	4,896	4,992	5,088	5,184	5,280	5,376	5,472	5,568	5,664			
Actual cumulative engine run h	4,289	4,356	4,452	4,548	4,644	4,740	4,835	4,914	4,996	5,091	5,186	5,281			
Cumulative Availability, %	93.1%	92.6%	92.8%	92.9%	93.0%	93.2%	93.3%	93.1%	92.9%	93.0%	93.1%	93.2%			
Max cumulative gross output, k	3,801,600	3,880,800	3,960,000	4,039,200	4,118,400	4,197,600	4,276,800	4,356,000	4,435,200	4,514,400	4,593,600	4,672,800			
Actual cumulative gross output,	2,855,037	2,896,523	2,958,381	3,017,406	3,077,195	3,136,657	3,197,473	3,255,047	3,314,619	3,374,553	3,436,400	3,495,497			
Cumulative Capacity Factor	75.1%	74.6%	74.7%	74.7%	74.7%	74.7%	74.8%	74.7%	74.7%	74.8%	74.8%	74.8%			
Cumulative fuel input, MMBtu H	38,627	39,189	40,010	40,805	41,611	42,408	43,239	44,023	44,837	45,651	46,504	47,318			
Cumulative gross output, kWhr	2,855,037	2,896,523	2,958,381	3,017,406	3,077,195	3,136,657	3,197,473	3,255,047	3,314,619	3,374,553	3,436,400	3,495,497			
Cumulative heat rate, Btu/kWe	12,179	12,179	12,175	12,174	12,173	12,171	12,173	12,175	12,177	12,178	12,182	12,186			
Cumulative heat rate, Btu/kWe	13,529	13,530	13,524	13,523	13,522	13,520	13,523	13,524	13,527	13,528	13,533	13,537			
Service															
Engine 1		Eversource Outage													
Engine 2		High Winds													
Engine 3		Flare on													
Engine 4															
Oil - oil and filter change															
Service - plugs, air filter, valve insp															
Precipitation															
NSTAR Power Reports	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday			
Date	2/17/2022	2/18/2022	2/19/2022	2/20/2022	2/21/2022	2/22/2022	2/23/2022	2/24/2022	2/25/2022	2/26/2022	2/27/2022	2/28/2022	TOTAL		
Hour															
1	2,315	2,513	2,502	2,363	2,409	2,361	2,509	2,314	2,318	2,363	2,459	2,452			
2	2,316	2,513	2,499	2,352	2,410	2,361	2,509	2,312	2,316	2,363	2,461	2,412			
3	2,314	2,513	2,501	2,351	2,408	2,361	2,508	2,311	2,316	2,360	2,456	2,410			
4	2,317	2,513	2,458	2,329	2,408	2,362	2,508	2,309	2,317	2,362	2,460	2,409			
5	2,311	2,514	2,449	2,304	2,409	2,361	2,508	2,311	2,318	2,359	2,457	2,404			
6	2,315	2,164	2,449	2,303	2,410	2,364	2,509	2,313	2,315	2,359	2,459	2,398			
7	2,310	-	2,450	2,303	2,410	2,361	2,509	2,311	2,313	2,359	2,459	2,363			
8	2,350	-	2,475	2,305	2,412	2,364	2,507	2,304	2,315	2,364	2,463	2,360			
9	2,508	-	2,509	2,312	2,411	2,365	2,482	2,314	2,314	2,368	2,465	2,365			
10	2,506	-	2,509	2,310	2,411	1,913	1,888	2,318	2,321	2,368	2,495	2,365			
11	2,504	-	2,513	2,317	2,414	1,884	2,461	2,322	2,324	2,395	2,517	2,366			
12	2,505	-	2,514	2,354	2,414	2,185	2,509	2,322	2,324	2,417	2,515	2,365			
13	2,505	-	2,514	2,368	2,416	2,479	2,494	2,320	2,320	2,422	2,517	2,366			
14	2,505	295	2,515	2,387	2,414	2,507	2,509	2,319	2,462	2,417	2,511	2,364			
15	2,503	2,480	2,513	2,417	2,414	2,506	2,505	2,318	2,509	2,418	2,518	2,361			
16	2,508	2,514	2,505	2,406	2,414	2,508	2,505	2,313	2,512	2,420	2,518	2,365			
17	2,513	2,513	2,511	2,413	2,414	2,508	2,503	2,308	2,514	2,456	2,513	2,361			
18	2,509	2,507	2,505	2,405	2,409	2,505	2,481	2,314	2,513	2,464	2,514	2,365			
19	2,510	2,507	2,507	2,404	2,371	2,508	2,407	2,316	2,511	2,464	2,508	2,363			
20	2,511	2,505	2,464	2,410	2,362	2,510	2,362	2,318	2,507	2,461	2,510	2,364			
21	2,514	2,499	2,451	2,408	2,362	2,510	2,354	2,316	2,509	2,462	2,511	2,362			
22	2,514	2,501	2,405	2,409	2,358	2,510	2,361	2,315	2,499	2,463	2,510	2,328			
23	2,512	2,501	2,403	2,409	2,363	2,510	2,361	2,317	2,455	2,459	2,460	2,314			
24	2,513	2,502	2,401	2,410	2,361	2,509	2,351	2,317	2,432	2,462	2,462	2,318			
TOTAL	58,688	40,054	59,522	56,749	57,584	57,312	58,600	55,552	57,554	57,805	59,718	56,900			
Cumulative Output Sold, kV	981,926	1,021,980	1,081,502	1,138,251	1,195,835	1,253,147	1,311,747	1,367,299	1,424,853	1,482,658	1,542,376	1,599,276			
Transformer and line efficienc	99.8%	99.9%	99.7%	99.7%	99.7%	99.7%	99.7%	99.7%	99.7%	99.7%	99.8%	99.7%	0.0%		
Hourly average	2,445	1,669	2,480	2,365	2,399	2,388	2,442	2,315	2,398	2,409	2,488	2,371	2,380		

MARCH 2022														DLST			
		Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday
		3/1/2022	3/2/2022	3/3/2022	3/4/2022	3/5/2022	3/6/2022	3/7/2022	3/8/2022	3/9/2022	3/10/2022	3/11/2022	3/12/2022	3/13/2022	3/14/2022	3/15/2022	3/16/2022
LFG and Biogas Flow to the Engines (KSCF)		1,586	1,593	1,599	1,599	1,571	1,581	1,591	1,565	1,547	1,547	1,564	1,575	1,508	1,547	1,490	1,490
LFG and Biogas Flow to the Engines (MMBTU HHV)		835	846	827	827	819	845	854	824	822	822	840	818	784	822	817	817
LFG and Biogas Flow to the Flare (KSCF)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG and BiogasFlow to the Flare (MMBTU HHV)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG and Biogas Total Flow (KSCF)		1,586	1,593	1,599	1,599	1,571	1,581	1,591	1,565	1,547	1,547	1,564	1,575	1,508	1,547	1,490	1,490
LFG and Biogas Total Flow (MMBTU HHV)		835	846	827	827	819	845	854	824	822	822	840	818	784	822	817	817
Average Methane Content (%)		52.1	52.4	51.1	51.1	51.5	52.8	53.0	52.0	52.5	52.5	53.1	51.4	51.4	52.5	54.2	54.2
Engine 1 Hours		24	24	24	24	24	24	24	24	24	24	24	24	23	24	24	24
Engine 2 Hours		23	23	24	23	23	23	23	23	24	24	24	24	23	24	24	16
Engine 3 Hours		24	24	24	24	24	24	24	24	24	24	24	24	23	24	24	24
Engine 4 Hours		24	24	24	24	24	24	24	24	24	24	24	24	23	24	19	24
Generator 1 Power Output (kWhr)		14,988	15,604	15,116	14,428	14,428	15,432	15,608	14,820	14,892	15,020	15,604	15,600	14,152	15,020	15,608	16,380
Generator 2 Power Output (kWhr)		15,164	15,600	15,308	14,708	14,464	15,600	15,600	15,220	15,076	15,600	15,600	16,252	15,120	15,600	15,600	9,928
Generator 3 Power Output (kWhr)		14,636	14,680	14,616	14,384	14,384	15,204	15,220	14,620	14,384	14,844	15,248	15,496	13,784	14,844	15,444	15,908
Generator 4 Power Output (kWhr)		15,568	15,568	15,408	14,960	15,384	15,564	15,560	15,560	15,564	15,560	15,636	16,212	15,152	15,560	12,056	16,520
Gross Power Output (kWhr)		60,439	61,547	60,543	58,565	58,743	61,876	62,072	60,312	60,014	61,115	62,158	63,622	58,169	61,115	58,782	58,791
Net Power Output (kWhr)		58,397	59,443	58,484	56,561	56,722	59,855	60,028	58,181	57,892	59,013	60,153	61,581	56,228	59,013	56,796	56,852
Power Sold as metered by NStar, (kWhr)		58,241	59,285	58,329	56,403	56,565	59,712	59,869	58,021	57,731	58,862	59,998	61,439	56,100	58,662	56,654	56,709
Offgrid RECs (kWhr)		2,042	2,104	2,059	2,004	2,021	2,021	2,044	2,129	2,124	2,102	2,005	2,041	1,942	2,102	1,986	1,939
Calculated Performance Results																	
Daily																	
Power output (kW average when running)																	
Generator 1		625	650	630	601	601	643	650	618	621	626	650	650	615	626	650	683
Generator 2		659	678	638	639	629	678	678	662	628	650	650	677	657	650	650	621
Generator 3		610	612	609	599	599	634	634	609	599	619	635	646	599	619	644	663
Generator 4		649	649	642	623	641	649	648	648	649	648	652	676	659	648	635	688
Power output (kW average over 24-hrs)																	
Facility Gross		2,518	2,564	2,523	2,440	2,448	2,578	2,586	2,513	2,501	2,546	2,590	2,651	2,424	2,546	2,449	2,450
Facility Net		2,433	2,477	2,437	2,357	2,363	2,494	2,501	2,424	2,412	2,459	2,506	2,566	2,343	2,459	2,367	2,369
In-plant load		85	88	86	84	84	84	85	89	88	88	84	85	81	88	83	81
Daily availability factor																	
Facility		99%	99%	100%	99%	99%	99%	99%	99%	100%	100%	100%	100%	100%	100%	95%	92%
Engine 1		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Engine 2		96%	96%	100%	96%	96%	96%	96%	96%	100%	100%	100%	100%	100%	100%	100%	67%
Engine 3		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Engine 4		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	79%	100%
Daily capacity factor																	
Facility		76%	78%	76%	74%	74%	78%	78%	76%	76%	77%	78%	80%	73%	77%	74%	74%
Engine 1		76%	79%	76%	73%	73%	78%	79%	75%	75%	76%	79%	79%	75%	76%	79%	83%
Engine 2		80%	82%	77%	78%	76%	82%	82%	80%	76%	79%	79%	82%	80%	79%	79%	75%
Engine 3		74%	74%	74%	73%	73%	77%	77%	74%	73%	75%	77%	78%	73%	75%	78%	80%
Engine 4		79%	79%	78%	76%	78%	79%	79%	79%	79%	79%	79%	82%	80%	79%	77%	83%
Cumulative by engine																	
Engine operating run hours in the month																	
Max Cumulative Available, hours		24	48	72	96	120	144	168	192	216	240	264	288	311	335	359	383
Engine 1		24	48	72	96	120	144	168	192	216	240	264	288	311	335	359	383
Engine 2		23	46	70	93	116	139	162	185	209	233	257	281	304	328	352	368
Engine 3		24	48	72	96	120	144	168	192	216	240	264	288	311	335	359	383
Engine 4		24	48	72	96	120	144	168	192	216	240	264	288	311	335	354	378
Engine operating run hours total from 0 hours																	
Engine 1	123,800	123,824	123,848	123,872	123,896	123,920	123,944	123,968	123,992	124,016	124,040	124,064	124,088	124,111	124,135	124,159	124,183
Engine 2	112,954	112,977	113,000	113,024	113,047	113,070	113,093	113,116	113,139	113,163	113,187	113,211	113,235	113,258	113,282	113,306	113,322
Engine 3	123,266	123,290	123,314	123,338	123,362	123,386	123,410	123,434	123,458	123,482	123,506	123,530	123,554	123,577	123,601	123,625	123,649
Engine 4	118,625	118,649	118,673	118,697	118,721	118,745	118,769	118,793	118,817	118,841	118,865	118,889	118,913	118,936	118,960	118,979	119,003
Cumulative availability, %	March 1, 2022 @ 00:00 hours																
Engine 1		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Engine 2		96%	96%	97%	97%	97%	97%	96%	96%	97%	97%	97%	98%	98%	98%	98%	96%
Engine 3		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Engine 4		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	99%	99%
Engine cumulative gross output, kWhr																	
Max cumulative capacity one engine		825	1,650	2,475	3,300	4,125	4,950	5,775	6,600	7,425	8,250	9,075	9,900	10,725	11,550	12,375	13,200
Engine 1		625	1,275	1,905	2,506	3,107	3,750	4,400	5,018	5,638	6,264	6,914	7,564	8,179	8,805	9,456	10,138
Engine 2		659	1,338	1,975	2,615	3,244	3,922	4,600	5,262	5,890	6,540	7,190	7,867	8,525	9,175	9,825	10,445
Engine 3		610	1,222	1,831	2,430	3,029	3,663	4,297	4,906	5,505	6,124	6,759	7,405	8,004	8,623	9,266	9,929
Engine 4		649	1,297	1,939	2,563	3,204	3,852	4,501	5,149	5,797	6,446	7,097	7,773	8,431	9,080	9,714	10,403
Cumulative capacity factor, %																	
Engine 1		76%	77%	77%	76%	75%	76%	76%	76%	76%	76%	76%	76%	76%	76%	76%	77%
Engine 2		80%	81%	80%	79%	79%	79%	80%	80%	79%	79%	79%	79%	79%	79%	79%	79%
Engine 3		74%	74%	74%	74%	73%	74%	74%	74%	74%	74%	74%	75%	75%	75%	75%	75%
Engine 4		79%	79%	78%	78%	78%	78%	78%	78%	78%	78%	78%	79%	79%	79%	78%	79%

CommonWealth New Bedford Energy LLC
New Bedford/Dartmouth, Massachusetts

MARCH 2022

	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday
	3/1/2022	3/2/2022	3/3/2022	3/4/2022	3/5/2022	3/6/2022	3/7/2022	3/8/2022	3/9/2022	3/10/2022	3/11/2022	3/12/2022	3/13/2022	3/14/2022	3/15/2022	3/16/2022
Cumulative by Facility in month																
Max cumulative available engine run hours	96	192	288	384	480	576	672	768	864	960	1,056	1,152	1,244	1,340	1,436	1,532
Actual cumulative engine run hours	95	190	286	381	476	571	666	761	857	953	1,049	1,145	1,237	1,333	1,424	1,512
Cumulative Availability, %	99.0%	99.0%	99.3%	99.2%	99.2%	99.1%	99.1%	99.1%	99.2%	99.3%	99.3%	99.4%	99.4%	99.5%	99.2%	98.7%
Max cumulative gross output, kWhr	79,200	158,400	237,600	316,800	396,000	475,200	554,400	633,600	712,800	792,000	871,200	950,400	1,026,300	1,105,500	1,184,700	1,263,900
Actual cumulative gross output, kWhr	60,439	121,986	182,529	241,094	299,837	361,713	423,785	484,097	544,111	605,226	667,384	731,006	789,175	850,290	909,072	967,863
Cumulative Capacity Factor	76.3%	77.0%	76.8%	76.1%	75.7%	76.1%	76.4%	76.4%	76.3%	76.4%	76.6%	76.9%	76.9%	76.9%	76.7%	76.6%
Cumulative fuel input, MMBtu HHV	835	1,681	2,508	3,335	4,154	4,998	5,852	6,676	7,498	8,321	9,161	9,979	10,763	11,586	12,403	13,219
Cumulative gross output, kWhr	60,439	121,986	182,529	241,094	299,837	361,713	423,785	484,097	544,111	605,226	667,384	731,006	789,175	850,290	909,072	967,863
Heat Rate																
Daily heat rate, Btu/kWe gross LHV	12,441	12,368	12,293	12,709	12,554	12,288	12,385	12,293	12,336	12,114	12,168	11,580	12,134	12,114	12,507	12,505
Daily heat rate, Btu/kWe gross HHV	13,821	13,739	13,656	14,118	13,945	13,650	13,758	13,656	13,703	13,457	13,517	12,863	13,480	13,457	13,894	13,892
Cumulative heat rate, Btu/kWe gross LHV	12,441	12,404	12,367	12,450	12,471	12,439	12,431	12,414	12,405	12,376	12,357	12,289	12,278	12,266	12,281	12,295
Cumulative heat rate, Btu/kWe gross HHV	13,821	13,779	13,739	13,831	13,853	13,818	13,810	13,790	13,781	13,748	13,727	13,651	13,639	13,626	13,643	13,658
Cumulative by Facility starting Calendar Year																
Max cumulative available engine run hours	5,760	5,856	5,952	6,048	6,144	6,240	6,336	6,432	6,528	6,624	6,720	6,816	6,908	7,004	7,100	7,196
Actual cumulative engine run hours	5,376	5,471	5,567	5,662	5,757	5,852	5,947	6,042	6,138	6,234	6,330	6,426	6,518	6,614	6,705	6,793
Cumulative Availability, %	93.3%	93.4%	93.5%	93.6%	93.7%	93.8%	93.9%	93.9%	94.0%	94.1%	94.2%	94.3%	94.4%	94.4%	94.4%	94.4%
Max cumulative gross output, kWhr	4,752,000	4,831,200	4,910,400	4,989,600	5,068,800	5,148,000	5,227,200	5,306,400	5,385,600	5,464,800	5,544,000	5,623,200	5,699,100	5,778,300	5,857,500	5,936,700
Actual cumulative gross output, kWhr	3,555,936	3,617,483	3,678,026	3,736,591	3,795,334	3,857,210	3,919,282	3,979,594	4,039,608	4,100,723	4,162,881	4,226,503	4,284,672	4,345,787	4,404,569	4,463,360
Cumulative Capacity Factor	74.8%	74.9%	74.9%	74.9%	74.9%	74.9%	75.0%	75.0%	75.0%	75.0%	75.1%	75.2%	75.2%	75.2%	75.2%	75.2%
Cumulative fuel input, MMBtu HHV	48,153	48,999	49,825	50,652	51,471	52,316	53,170	53,994	54,816	55,638	56,479	57,297	58,081	58,904	59,720	60,537
Cumulative gross output, kWhr	3,555,936	3,617,483	3,678,026	3,736,591	3,795,334	3,857,210	3,919,282	3,979,594	4,039,608	4,100,723	4,162,881	4,226,503	4,284,672	4,345,787	4,404,569	4,463,360
Cumulative heat rate, Btu/kWe gross LHV	12,190	12,193	12,195	12,203	12,208	12,210	12,212	12,214	12,215	12,214	12,213	12,204	12,203	12,201	12,206	12,209
Cumulative heat rate, Btu/kWe gross HHV	13,542	13,545	13,547	13,556	13,562	13,563	13,566	13,568	13,570	13,568	13,567	13,557	13,556	13,554	13,559	13,563
Service																
Engine 1																
Engine 2																EMCP failure
Engine 3																
Engine 4																
Oil - oil and filter change																
Service - plugs, air filter, valve inspection and adjustment																
Precipitation																
NSTAR Power Reports	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday
Date	3/1/2022	3/2/2022	3/3/2022	3/4/2022	3/5/2022	3/6/2022	3/7/2022	3/8/2022	3/9/2022	3/10/2022	3/11/2022	3/12/2022	3/13/2022	3/14/2022	3/15/2022	3/16/2022
Hour																
1	2,360	2,511	2,457	2,311	2,356	2,410	2,508	2,508	2,358	2,459	2,509	2,510	2,533	2,406	2,454	2,508
2	2,358	2,510	2,456	2,312	2,355	2,410	2,508	2,508	2,360	2,456	2,508	2,511	2,500	2,409	2,456	2,508
3	2,359	2,507	2,482	2,311	2,362	2,413	2,508	2,501	2,358	2,442	2,507	2,514	2,500	2,407	2,166	2,507
4	2,360	2,509	2,508	2,312	2,360	2,443	2,509	2,509	2,354	2,411	2,506	2,511	2,477	2,409	1,881	2,500
5	2,363	2,512	2,508	2,312	2,361	2,461	2,509	2,496	2,361	2,409	2,507	2,511	2,445	2,411	1,883	2,508
6	2,360	2,505	2,508	2,312	2,361	2,461	2,471	2,457	2,362	2,408	2,505	2,515	2,402	2,411	1,882	2,504
7	2,363	2,459	2,507	2,309	2,360	2,458	2,462	2,459	2,363	2,411	2,508	2,512	2,403	2,454	1,883	2,507
8	2,365	2,458	2,474	2,312	2,362	2,499	2,456	2,454	2,360	2,410	2,506	2,515	2,406	2,455	1,935	2,500
9	2,368	2,459	2,457	2,321	2,318	2,510	2,458	2,405	2,359	2,404	2,513	2,512	2,407	2,455	2,510	2,308
10	2,413	2,460	2,459	2,325	2,318	2,511	2,461	2,406	2,357	2,406	2,270	2,515	2,409	2,454	2,506	2,267
11	2,412	2,453	2,465	2,322	2,319	2,511	2,462	2,407	2,374	2,407	2,513	2,539	2,413	2,455	2,504	2,515
12	2,410	2,455	2,466	2,325	2,332	2,510	2,463	2,403	2,408	2,407	2,514	2,611	2,412	2,453	2,501	2,514
13	2,428	2,457	2,465	2,343	2,367	2,511	2,505	2,403	2,408	2,407	2,514	2,611	2,412	2,452	2,500	2,512
14	2,460	2,459	2,461	2,408	2,367	2,510	2,511	2,404	2,406	2,404	2,514	2,609	2,413	2,452	2,509	2,510
15	2,458	2,456	2,417	2,420	2,367	2,511	2,504	2,404	2,425	2,445	2,514	2,603	2,414	2,450	2,511	2,509
16	2,465	2,456	2,415	2,419	2,366	2,510	2,506	2,404	2,458	2,508	2,513	2,606	2,413	2,455	2,507	2,486
17	2,457	2,459	2,414	2,412	2,364	2,510	2,509	2,377	2,458	2,512	2,511	2,606	2,423	2,460	2,507	1,873
18	2,465	2,454	2,402	2,404	2,358	2,508	2,509	2,361	2,456	2,513	2,512	2,606	2,457	2,461	2,507	1,881
19	2,469	2,456	2,357	2,406	2,364	2,510	2,508	2,355	2,455	2,506	2,505	2,605	2,458	2,462	2,509	2,064
20	2,511	2,457	2,362	2,364	2,361	2,509	2,509	2,360	2,455	2,512	2,512	2,601	2,457	2,459	2,509	2,262
21	2,510	2,458	2,347	2,363	2,361	2,509	2,508	2,361	2,460	2,509	2,508	2,601	2,455	2,458	2,509	2,241
22	2,509	2,457	2,315	2,361	2,363	2,509	2,509	2,360	2,459	2,510	2,511	2,597	2,455	2,458	2,509	2,236
23	2,506	2,459	2,313	2,363	2,364	2,509	2,508	2,358	2,458	2,505	2,509	2,572	2,436	2,461	2,508	2,244
24	2,512	2,459	2,314	2,356	2,399	2,509	2,508	2,361	2,459	2,501	2,509	2,546	-	2,455	2,508	2,245
TOTAL	58,241	59,285	58,329	56,403	56,565	59,712	59,869	58,021	57,731	58,862	59,998	61,439	56,100	58,662	56,654	56,709
Cumulative Output Sold, kWhr	58,241	117,526	175,855	232,258	288,823	348,535	408,404	466,425	524,156	583,018	643,016	704,455	760,555	819,217	875,871	932,580
Transformer and line efficiency	99.7%	99.7%	99.7%	99.7%	99.7%	99.8%	99.7%	99.7%	99.7%	99.7%	99.7%	99.8%	99.8%	99.4%	99.7%	99.7%
Hourly average	2,427	2,470	2,430	2,350	2,357	2,488	2,495	2,418	2,405	2,453	2,500	2,560	2,338	2,444	2,361	2,363

MARCH 2022																		
	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday			
	3/17/2022	3/18/2022	3/19/2022	3/20/2022	3/21/2022	3/22/2022	3/23/2022	3/24/2022	3/25/2022	3/26/2022	3/27/2022	3/28/2022	3/29/2022	3/30/2022	3/31/2022	TOTAL	Biogas	LFG
LFG and Biogas Flow to the Engine	1,450	1,170	1,540	1,532	1,461	1,439	1,454	1,415	1,415	1,413	1,416	1,447	1,473	1,531	1,575	46,679	591	46,088
LFG and Biogas Flow to the Engine	811	643	847	851	813	793	794	798	803	812	812	804	804	839	859	25,299	406	24,893
LFG and Biogas Flow to the Flare (	-	234	-	-	29	36	36	35	-	-	-	-	-	-	-	371	1.6%	98%
LFG and BiogasFlow to the Flare (M	-	129	-	-	16	20	20	20	-	-	-	-	-	-	-	205		
LFG and Biogas Total Flow (KSCF	1,450	1,404	1,540	1,532	1,490	1,475	1,490	1,450	1,415	1,413	1,416	1,447	1,473	1,531	1,575	47,050		
LFG and Biogas Total Flow (MMBT	811	771	847	851	829	813	814	818	803	812	812	804	804	839	859	25,504		
Average Methane Content (%)	55.3	54.3	54.4	54.9	54.9	54.4	54.0	55.8	56.1	56.8	56.7	54.9	53.9	54.2	53.9	53.6		
Engine 1 Hours	24	18	24	24	24	24	24	24	24	24	24	24	24	24	24	737		
Engine 2 Hours	12	18	24	24	24	24	24	24	24	24	24	24	24	24	24	710		
Engine 3 Hours	24	18	24	24	7	-	-	-	-	-	-	-	-	10	24	514		
Engine 4 Hours	24	18	24	24	24	24	24	24	24	24	24	24	24	24	24	732		
Generator 1 Power Output (kWhr)	17,376	11,952	15,604	15,604	18,172	18,604	18,808	17,856	18,500	18,876	19,036	19,116	19,140	17,376	15,600	504,320		
Generator 2 Power Output (kWhr)	7,840	11,964	15,588	15,592	18,360	19,180	18,944	19,360	19,296	19,356	19,360	19,364	19,368	17,524	15,596	497,132		
Generator 3 Power Output (kWhr)	16,100	11,436	14,368	14,368	3,644	-	-	-	-	-	-	-	-	8,228	16,408	322,248		
Generator 4 Power Output (kWhr)	17,604	12,396	16,740	16,732	18,940	19,696	19,700	19,696	19,540	19,696	19,700	19,700	19,700	17,748	15,564	518,984		
Gross Power Output (kWhr)	58,900	47,817	62,189	62,132	59,192	57,559	57,538	56,991	57,416	58,005	58,174	58,264	58,296	60,961	63,247	1,844,544		
Net Power Output (kWhr)	57,150	46,200	60,333	60,317	57,329	55,593	55,692	55,245	55,675	56,352	56,541	56,526	56,474	59,090	61,227	1,784,943		
Power Sold as metered by NStar, (	57,042	46,127	60,197	60,175	57,178	55,447	55,554	55,113	55,524	56,205	56,390	56,383	56,330	58,937	61,073	1,780,255	CRMCB inplant	
Offgrid RECs (kWhr)	1,750	1,617	1,856	1,815	1,863	1,966	1,846	1,746	1,741	1,653	1,633	1,738	1,822	1,871	2,020	59,602	14,338	
Calculated Performance Results																	24%	
Daily																	of total in-plant	
Power output (kW average whe																	power	
Generator 1	724	664	650	650	757	775	784	744	771	787	793	797	798	724	650			
Generator 2	653	665	650	650	765	799	789	807	804	807	807	807	807	730	650			
Generator 3	671	635	599	599	521	-	-	-	-	-	-	-	-	823	684			
Generator 4	734	689	698	697	789	821	821	821	814	821	821	821	821	740	649			
Power output (kW average ove																		
Facility Gross	2,454	1,992	2,591	2,589	2,466	2,398	2,397	2,375	2,392	2,417	2,424	2,428	2,429	2,540	2,635			
Facility Net	2,381	1,925	2,514	2,513	2,389	2,316	2,321	2,302	2,320	2,348	2,356	2,355	2,353	2,462	2,551			
In-plant load	73	67	77	76	78	82	77	73	73	69	68	72	76	78	84			
Daily availability factor																		
Facility	88%	75%	100%	100%	82%	75%	75%	75%	75%	75%	75%	75%	75%	85%	100%			
Engine 1	100%	75%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%			
Engine 2	50%	75%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%			
Engine 3	100%	75%	100%	100%	29%	0%	0%	0%	0%	0%	0%	0%	0%	42%	100%			
Engine 4	100%	75%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%			
Daily capacity factor																		
Facility	74%	60%	79%	78%	75%	73%	73%	72%	72%	73%	73%	74%	74%	77%	80%			
Engine 1	88%	80%	79%	79%	92%	94%	95%	90%	93%	95%	96%	97%	97%	88%	79%			
Engine 2	79%	81%	79%	79%	93%	97%	96%	98%	97%	98%	98%	98%	98%	89%	79%			
Engine 3	81%	77%	73%	73%	63%	0%	0%	0%	0%	0%	0%	0%	0%	100%	83%			
Engine 4	89%	83%	85%	85%	96%	99%	99%	99%	99%	99%	99%	99%	99%	90%	79%			
Cumulative by engine																		
Engine operating run hours in th																		
Max Cumulative Available,	407	431	455	479	503	527	551	575	599	623	647	671	695	719	743			
Engine 1	407	425	449	473	497	521	545	569	593	617	641	665	689	713	737			
Engine 2	380	398	422	446	470	494	518	542	566	590	614	638	662	686	710			
Engine 3	407	425	449	473	480	480	480	480	480	480	480	480	480	490	514			
Engine 4	402	420	444	468	492	516	540	564	588	612	636	660	684	708	732			
Engine operating run hours tota																		
Engine 1	124,207	124,225	124,249	124,273	124,297	124,321	124,345	124,369	124,393	124,417	124,441	124,465	124,489	124,513	124,537			
Engine 2	113,334	113,352	113,376	113,400	113,424	113,448	113,472	113,496	113,520	113,544	113,568	113,592	113,616	113,640	113,664			
Engine 3	123,673	123,691	123,715	123,739	123,746	123,746	123,746	123,746	123,746	123,746	123,746	123,746	123,746	123,756	123,780			
Engine 4	119,027	119,045	119,069	119,093	119,117	119,141	119,165	119,189	119,213	119,237	119,261	119,285	119,309	119,333	119,357			
Cumulative availability, %																		
Engine 1	100%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%			
Engine 2	93%	92%	93%	93%	93%	94%	94%	94%	94%	95%	95%	95%	95%	95%	96%			
Engine 3	100%	99%	99%	99%	95%	91%	87%	83%	80%	77%	74%	72%	69%	68%	69%			
Engine 4	99%	97%	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%	99%			
Engine cumulative gross output																		
Max cumulative capacity or	14,025	14,850	15,675	16,500	17,325	18,150	18,975	19,800	20,625	21,450	22,275	23,100	23,925	24,750	25,575			
Engine 1	10,862	11,526	12,176	12,826	13,584	14,359	15,142	15,886	16,657	17,444	18,237	19,033	19,831	20,555	21,205			
Engine 2	11,099	11,763	12,413	13,062	13,827	14,627	15,416	16,223	17,027	17,833	18,640	19,447	20,254	20,984	21,634			
Engine 3	10,600	11,235	11,834	12,432	12,953	12,953	12,953	12,953	12,953	12,953	12,953	12,953	12,953	13,776	14,460			
Engine 4	11,136	11,825	12,522	13,219	14,009	14,829	15,650	16,471	17,285	18,106	18,926	19,747	20,568	21,308	21,956			
Cumulative capacity factor, %																		
Engine 1	77%	78%	78%	78%	78%	79%	80%	80%	81%	81%	82%	82%	83%	83%	83%			
Engine 2	79%	79%	79%	79%	80%	81%	81%	82%	83%	83%	84%	84%	85%	85%	85%			
Engine 3	76%	76%	75%	75%	75%	71%	68%	65%	63%	60%	58%	56%	54%	56%	57%			
Engine 4	79%	80%	80%	80%	81%	82%	82%	83%	84%	84%	85%	85%	86%	86%	86%			

CommonWealth New Bedford Energy LLC
New Bedford/Dartmouth, Massachusetts

MARCH 2022

	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday			
	3/17/2022	3/18/2022	3/19/2022	3/20/2022	3/21/2022	3/22/2022	3/23/2022	3/24/2022	3/25/2022	3/26/2022	3/27/2022	3/28/2022	3/29/2022	3/30/2022	3/31/2022	TOTAL	Biogas	LFG
Cumulative by Facility in month																		
Max cumulative available engi	1,628	1,724	1,820	1,916	2,012	2,108	2,204	2,300	2,396	2,492	2,588	2,684	2,780	2,876	2,972			
Actual cumulative engine run h	1,596	1,668	1,764	1,860	1,939	2,011	2,083	2,155	2,227	2,299	2,371	2,443	2,515	2,597	2,693			
Cumulative Availability, %	98.0%	96.8%	96.9%	97.1%	96.4%	95.4%	94.5%	93.7%	92.9%	92.3%	91.6%	91.0%	90.5%	90.3%	90.6%			
Max cumulative gross output, k	1,343,100	1,422,300	1,501,500	1,580,700	1,659,900	1,739,100	1,818,300	1,897,500	1,976,700	2,055,900	2,135,100	2,214,300	2,293,500	2,372,700	2,451,900			
Actual cumulative gross output,	1,026,763	1,074,580	1,136,769	1,198,901	1,258,093	1,315,652	1,373,190	1,430,181	1,487,597	1,545,602	1,603,776	1,662,040	1,720,336	1,781,297	1,844,544			
Cumulative Capacity Factor	76.4%	75.6%	75.7%	75.8%	75.8%	75.7%	75.5%	75.4%	75.3%	75.2%	75.1%	75.1%	75.0%	75.1%	75.2%			
Cumulative fuel input, MMBtu h	14,030	14,673	15,520	16,370	17,183	17,976	18,770	19,568	20,371	21,183	21,995	22,798	23,602	24,441	25,299			
Cumulative gross output, kWhr	1,026,763	1,074,580	1,136,769	1,198,901	1,258,093	1,315,652	1,373,190	1,430,181	1,487,597	1,545,602	1,603,776	1,662,040	1,720,336	1,781,297	1,844,544			
Heat Rate																		
Daily heat rate, Btu/kWe gross	12,393	12,096	12,262	12,324	12,357	12,397	12,429	12,611	12,588	12,597	12,560	12,417	12,411	12,388	12,219			
Daily heat rate, Btu/kWe gross	13,767	13,437	13,621	13,690	13,727	13,772	13,807	14,009	13,984	13,994	13,953	13,794	13,787	13,761	13,574			
Cumulative heat rate, Btu/kWe	12,301	12,292	12,290	12,292	12,295	12,299	12,305	12,317	12,327	12,337	12,346	12,348	12,350	12,351	12,347			
Cumulative heat rate, Btu/kWe	13,664	13,654	13,652	13,654	13,658	13,663	13,669	13,682	13,694	13,705	13,714	13,717	13,719	13,721	13,716			
Cumulative by Facility starting C																		
Max cumulative available engi	7,292	7,388	7,484	7,580	7,676	7,772	7,868	7,964	8,060	8,156	8,252	8,348	8,444	8,540	8,636			
Actual cumulative engine run h	6,877	6,949	7,045	7,141	7,220	7,292	7,364	7,436	7,508	7,580	7,652	7,724	7,796	7,878	7,974			
Cumulative Availability, %	94.3%	94.1%	94.1%	94.2%	94.1%	93.8%	93.6%	93.4%	93.2%	92.9%	92.7%	92.5%	92.3%	92.2%	92.3%			
Max cumulative gross output, k	6,015,900	6,095,100	6,174,300	6,253,500	6,332,700	6,411,900	6,491,100	6,570,300	6,649,500	6,728,700	6,807,900	6,887,100	6,966,300	7,045,500	7,124,700			
Actual cumulative gross output,	4,522,260	4,570,077	4,632,266	4,694,398	4,753,590	4,811,149	4,868,687	4,925,678	4,983,094	5,041,099	5,099,273	5,157,537	5,215,833	5,276,794	5,340,041			
Cumulative Capacity Factor	75.2%	75.0%	75.0%	75.1%	75.1%	75.0%	75.0%	75.0%	74.9%	74.9%	74.9%	74.9%	74.9%	74.9%	75.0%			
Cumulative fuel input, MMBtu h	61,348	61,990	62,837	63,688	64,501	65,293	66,088	66,886	67,689	68,501	69,312	70,116	70,920	71,759	72,617			
Cumulative gross output, kWhr	4,522,260	4,570,077	4,632,266	4,694,398	4,753,590	4,811,149	4,868,687	4,925,678	4,983,094	5,041,099	5,099,273	5,157,537	5,215,833	5,276,794	5,340,041			
Cumulative heat rate, Btu/kWe	12,212	12,211	12,211	12,213	12,215	12,217	12,219	12,224	12,228	12,232	12,236	12,238	12,240	12,242	12,241			
Cumulative heat rate, Btu/kWe	13,566	13,564	13,565	13,567	13,569	13,571	13,574	13,579	13,584	13,588	13,593	13,595	13,597	13,599	13,599			
Service																		
Engine 1																		
Engine 2		Eversource Outage 6 AM - 11 AM																
Engine 3					Inframe overhaul E-3 started		<----------							E-3 Inframe Complete				
Engine 4																		
Oil - oil and filter change																		
Service - plugs, air filter, valve insp																		
Precipitation																		
NSTAR Power Reports	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday			
Date	3/17/2022	3/18/2022	3/19/2022	3/20/2022	3/21/2022	3/22/2022	3/23/2022	3/24/2022	3/25/2022	3/26/2022	3/27/2022	3/28/2022	3/29/2022	3/30/2022	3/31/2022	TOTAL		
Hour																		
1	2,242	2,510	2,509	2,508	2,508	2,348	2,236	2,354	2,351	2,341	2,351	2,355	2,352	2,352	2,507			
2	2,244	2,510	2,508	2,507	2,508	2,348	2,237	2,353	2,351	2,340	2,350	2,354	2,353	2,350	2,508			
3	2,244	2,509	2,508	2,508	2,508	2,349	2,237	2,354	2,350	2,345	2,350	2,350	2,350	2,352	2,509			
4	2,244	2,509	2,506	2,508	2,508	2,349	2,236	2,353	2,351	2,350	2,351	2,350	2,353	2,352	2,513			
5	2,244	2,509	2,508	2,508	2,505	2,348	2,237	2,354	2,351	2,354	2,352	2,352	2,351	2,349	2,510			
6	2,245	2,094	2,509	2,508	2,505	2,346	2,236	2,354	2,353	2,355	2,353	2,355	2,351	2,353	2,514			
7	2,248	-	2,508	2,508	2,330	2,345	2,235	2,351	2,354	2,355	2,354	2,353	2,352	2,351	2,514			
8	2,242	-	2,506	2,509	2,332	2,338	2,339	2,347	2,336	2,354	2,354	2,341	2,347	2,349	2,549			
9	2,239	-	2,506	2,509	2,331	2,329	2,337	2,336	2,318	2,344	2,346	2,319	2,339	2,349	2,556			
10	2,238	-	2,509	2,508	2,334	2,332	2,334	2,339	2,254	2,339	2,345	2,332	2,336	2,358	2,563			
11	2,235	-	2,510	2,507	2,334	2,330	2,337	2,345	2,237	2,340	2,342	2,341	2,337	2,354	2,565			
12	2,228	1,396	2,509	2,506	2,342	2,331	2,342	2,346	2,213	2,333	2,346	2,342	2,336	2,598	2,564			
13	2,520	2,512	2,507	2,506	2,338	2,328	2,344	2,346	2,211	2,321	2,341	2,345	2,343	2,680	2,560			
14	2,517	2,505	2,509	2,505	2,337	2,327	2,346	2,345	2,210	2,326	2,344	2,358	2,341	2,647	2,552			
15	2,514	2,506	2,509	2,505	2,338	2,082	2,345	2,210	2,231	2,332	2,344	2,360	2,331	2,533	2,561			
16	2,513	2,508	2,509	2,506	2,334	2,318	2,347	1,554	2,335	2,334	2,342	2,359	2,341	2,509	2,563			
17	2,511	2,503	2,509	2,506	2,346	2,329	2,353	2,007	2,332	2,334	2,348	2,354	2,350	2,514	2,558			
18	2,510	2,506	2,509	2,507	2,349	2,335	2,354	2,353	2,336	2,334	2,352	2,358	2,355	2,515	2,558			
19	2,511	2,507	2,508	2,507	2,350	2,335	2,354	2,351	2,341	2,335	2,354	2,357	2,355	2,514	2,557			
20	2,511	2,508	2,509	2,508	2,349	2,295	2,354	2,353	2,341	2,342	2,354	2,348	2,355	2,514	2,559			
21	2,511	2,508	2,508	2,508	2,349	2,294	2,354	2,353	2,340	2,350	2,355	2,349	2,349	2,514	2,559			
22	2,511	2,509	2,508	2,508	2,346	2,238	2,354	2,353	2,342	2,350	2,354	2,346	2,352	2,513	2,557			
23	2,510	2,509	2,508	2,507	2,349	2,237	2,354	2,352	2,343	2,347	2,354	2,353	2,350	2,512	2,558			
24	2,510	2,509	2,508	2,508	2,348	2,236	2,352	2,350	2,343	2,350	2,354	2,352	2,351	2,505	2,559			
TOTAL	57,042	46,127	60,197	60,175	57,178	55,447	55,554	55,113	55,524	56,205	56,390	56,383	56,330	58,937	61,073			
Cumulative Output Sold, kV	989,622	1,035,749	1,095,946	1,156,121	1,213,299	1,268,746	1,324,300	1,379,413	1,434,937	1,491,142	1,547,532	1,603,915	1,660,245	1,719,182	1,780,255			
Transformer and line efficienc	99.8%	99.8%	99.8%	99.8%	99.7%	99.7%	99.8%	99.8%	99.7%	99.7%	99.7%	99.7%	99.7%	99.7%	99.7%	0.0%		
Hourly average	2,377	1,922	2,508	2,507	2,382	2,310	2,315	2,296	2,314	2,342	2,350	2,349	2,347	2,456	2,545	2,393		

April 2022																	
		Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		4/1/2022	4/2/2022	4/3/2022	4/4/2022	4/5/2022	4/6/2022	4/7/2022	4/8/2022	4/9/2022	4/10/2022	4/11/2022	4/12/2022	4/13/2022	4/14/2022	4/15/2022	4/16/2022
LFG and Biogas Flow to the Engines (KSCF)		1,559	1,559	1,559	1,557	1,549	1,536	1,550	1,540	1,545	1,553	322	-	322	1,464	1,555	1,551
LFG and Biogas Flow to the Engines (MMBTU HHV)		851	834	844	836	829	839	845	845	845	849	170	-	170	814	826	827
LFG and Biogas Flow to the Flare (KSCF)		-	-	-	-	-	-	-	-	-	-	712	930	712	-	-	-
LFG and BiogasFlow to the Flare (MMBTU HHV)		-	-	-	-	-	-	-	-	-	-	377	509	377	-	-	-
LFG and Biogas Total Flow (KSCF)		1,559	1,559	1,559	1,557	1,549	1,536	1,550	1,540	1,545	1,553	1,034	930	1,034	1,464	1,555	1,551
LFG and Biogas Total Flow (MMBTU HHV)		851	834	844	836	829	839	845	845	845	849	547	509	547	814	826	827
Average Methane Content (%)		53.9	52.9	53.5	53.0	52.9	53.9	53.9	54.2	54.1	54.0	52.3	54.1	52.3	54.9	52.5	52.7
Engine 1 Hours		24	24	24	24	24	24	24	24	24	24	-	-	-	11	24	24
Engine 2 Hours		24	24	24	24	24	24	24	24	24	24	6	-	6	24	24	24
Engine 3 Hours		24	24	24	24	24	24	24	24	24	24	6	-	6	24	24	24
Engine 4 Hours		24	24	24	24	24	24	24	24	24	24	6	-	6	24	24	24
Generator 1 Power Output (kWhr)		15,596	15,604	15,604	15,560	15,076	15,604	15,604	15,600	15,604	15,600	-	-	-	6,540	15,596	15,596
Generator 2 Power Output (kWhr)		15,604	15,596	15,596	14,968	14,428	14,712	15,592	15,596	15,592	15,404	4,140	-	4,140	17,660	15,448	15,188
Generator 3 Power Output (kWhr)		16,072	14,460	15,472	15,564	15,552	15,568	15,576	15,572	15,568	15,568	4,240	-	4,240	17,952	15,572	15,572
Generator 4 Power Output (kWhr)		15,552	15,564	15,568	15,564	15,536	15,564	15,564	15,552	15,560	15,564	4,244	-	4,244	17,924	15,560	15,556
Gross Power Output (kWhr)		62,911	61,313	62,316	61,749	60,692	61,527	62,390	62,390	62,266	62,072	12,664	-	12,664	60,105	62,291	61,747
Net Power Output (kWhr)		60,925	59,282	60,268	59,736	58,667	59,552	60,375	60,351	60,233	60,052	12,216	-	12,216	58,213	60,175	59,892
Power Sold as metered by NStar, (kWhr)		60,776	59,137	60,125	59,584	58,504	59,402	60,229	60,200	60,093	59,906	12,112	-	12,157	58,055	60,021	59,749
Offgrid RECs (kWhr)		1,986	2,031	2,048	2,013	2,025	1,975	2,015	2,039	2,033	2,020	448	-	448	1,892	2,116	1,855
Calculated Performance Results																	
Daily																	
Power output (kW average when running)																	
Generator 1		650	650	650	648	628	650	650	650	650	650	-	-	-	595	650	650
Generator 2		650	650	650	624	601	613	650	650	650	642	690	-	690	736	644	633
Generator 3		670	603	645	649	648	649	649	649	649	649	707	-	707	748	649	649
Generator 4		648	649	649	649	647	649	649	648	648	649	707	-	707	747	648	648
Power output (kW average over 24-hrs)																	
Facility Gross		2,621	2,555	2,597	2,573	2,529	2,564	2,600	2,600	2,594	2,586	528	-	528	2,504	2,595	2,573
Facility Net		2,539	2,470	2,511	2,489	2,444	2,481	2,516	2,515	2,510	2,502	509	-	509	2,426	2,507	2,496
In-plant load		83	85	85	84	84	82	84	85	85	84	19	-	19	79	88	77
Daily availability factor																	
Facility		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	19%	0%	19%	86%	100%	100%
Engine 1		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	0%	46%	100%	100%
Engine 2		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	25%	0%	25%	100%	100%	100%
Engine 3		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	25%	0%	25%	100%	100%	100%
Engine 4		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	25%	0%	25%	100%	100%	100%
Daily capacity factor																	
Facility		79%	77%	79%	78%	77%	78%	79%	79%	79%	78%	16%	0%	16%	76%	79%	78%
Engine 1		79%	79%	79%	79%	76%	79%	79%	79%	79%	79%	0%	0%	0%	72%	79%	79%
Engine 2		79%	79%	79%	76%	73%	74%	79%	79%	79%	78%	84%	0%	84%	89%	78%	77%
Engine 3		81%	73%	78%	79%	79%	79%	79%	79%	79%	79%	86%	0%	86%	91%	79%	79%
Engine 4		79%	79%	79%	79%	78%	79%	79%	79%	79%	79%	86%	0%	86%	91%	79%	79%
Cumulative by engine																	
Engine operating run hours in the month																	
Max Cumulative Available, hours		24	48	72	96	120	144	168	192	216	240	264	288	312	336	360	384
Engine 1		24	48	72	96	120	144	168	192	216	240	240	240	240	251	275	299
Engine 2		24	48	72	96	120	144	168	192	216	240	246	246	252	276	300	324
Engine 3		24	48	72	96	120	144	168	192	216	240	246	246	252	276	300	324
Engine 4		24	48	72	96	120	144	168	192	216	240	246	246	252	276	300	324
Engine operating run hours total from 0 hours																	
Engine 1	124,535	124,559	124,583	124,607	124,631	124,655	124,679	124,703	124,727	124,751	124,775	124,775	124,775	124,775	124,786	124,810	124,834
Engine 2	113,670	113,694	113,718	113,742	113,766	113,790	113,814	113,838	113,862	113,886	113,910	113,916	113,916	113,922	113,946	113,970	113,994
Engine 3	123,780	123,804	123,828	123,852	123,876	123,900	123,924	123,948	123,972	123,996	124,020	124,026	124,026	124,032	124,056	124,080	124,104
Engine 4	119,357	119,381	119,405	119,429	119,453	119,477	119,501	119,525	119,549	119,573	119,597	119,603	119,603	119,609	119,633	119,657	119,681
Cumulative availability, %	April 1, 2022 @ 00:00 hours																
Engine 1		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	91%	83%	77%	75%	76%	78%
Engine 2		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	93%	85%	81%	82%	83%	84%
Engine 3		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	93%	85%	81%	82%	83%	84%
Engine 4		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	93%	85%	81%	82%	83%	84%
Engine cumulative gross output, kWhr																	
Max cumulative capacity one engine		825	1,650	2,475	3,300	4,125	4,950	5,775	6,600	7,425	8,250	9,075	9,900	10,725	11,550	12,375	13,200
Engine 1		650	1,300	1,950	2,599	3,227	3,877	4,527	5,177	5,827	6,477	6,477	6,477	6,477	7,072	7,722	8,371
Engine 2		650	1,300	1,950	2,574	3,175	3,788	4,437	5,087	5,737	6,379	7,069	7,069	7,759	8,495	9,138	9,771
Engine 3		670	1,272	1,917	2,565	3,213	3,862	4,511	5,160	5,809	6,457	7,164	7,164	7,871	8,619	9,267	9,916
Engine 4		648	1,297	1,945	2,594	3,241	3,890	4,538	5,186	5,834	6,483	7,190	7,190	7,898	8,644	9,293	9,941
Cumulative capacity factor, %																	
Engine 1		79%	79%	79%	79%	78%	78%	78%	78%	78%	79%	71%	65%	60%	61%	62%	63%
Engine 2		79%	79%	79%	78%	77%	77%	77%	77%	77%	77%	78%	71%	72%	74%	74%	74%
Engine 3		81%	77%	77%	78%	78%	78%	78%	78%	78%	78%	79%	72%	73%	75%	75%	75%
Engine 4		79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	73%	74%	75%	75%	75%

CommonWealth New Bedford Energy LLC
New Bedford/Dartmouth, Massachusetts

APRIL 2022

	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	4/1/2022	4/2/2022	4/3/2022	4/4/2022	4/5/2022	4/6/2022	4/7/2022	4/8/2022	4/9/2022	4/10/2022	4/11/2022	4/12/2022	4/13/2022	4/14/2022	4/15/2022	4/16/2022
Cumulative by Facility in month																
Max cumulative available engine run hours	96	192	288	384	480	576	672	768	864	960	1,056	1,152	1,248	1,344	1,440	1,536
Actual cumulative engine run hours	96	192	288	384	480	576	672	768	864	960	978	978	996	1,079	1,175	1,271
Cumulative Availability, %	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	92.6%	84.9%	79.8%	80.3%	81.6%	82.7%
Max cumulative gross output, kWhr	79,200	158,400	237,600	316,800	396,000	475,200	554,400	633,600	712,800	792,000	871,200	950,400	1,029,600	1,108,800	1,188,000	1,267,200
Actual cumulative gross output, kWhr	62,911	124,224	186,540	248,289	308,981	370,508	432,898	495,288	557,554	619,626	632,290	632,290	644,954	705,059	767,350	829,097
Cumulative Capacity Factor	79.4%	78.4%	78.5%	78.4%	78.0%	78.0%	78.1%	78.2%	78.2%	78.2%	72.6%	66.5%	62.6%	63.6%	64.6%	65.4%
Cumulative fuel input, MMBtu HHV	851	1,685	2,528	3,364	4,193	5,032	5,877	6,722	7,568	8,417	8,587	8,587	8,757	9,571	10,397	11,225
Cumulative gross output, kWhr	62,911	124,224	186,540	248,289	308,981	370,508	432,898	495,288	557,554	619,626	632,290	632,290	644,954	705,059	767,350	829,097
Heat Rate																
Daily heat rate, Btu/kWe gross LHV	12,171	12,245	12,188	12,183	12,293	12,272	12,198	12,198	12,222	12,311	12,100		12,100	12,188	11,940	12,063
Daily heat rate, Btu/kWe gross HHV	13,521	13,602	13,539	13,534	13,656	13,633	13,550	13,550	13,577	13,676	13,441		13,441	13,540	13,264	13,400
Cumulative heat rate, Btu/kWe gross LHV	12,171	12,208	12,201	12,197	12,215	12,225	12,221	12,218	12,219	12,228	12,225	12,225	12,223	12,220	12,197	12,187
Cumulative heat rate, Btu/kWe gross HHV	13,521	13,561	13,554	13,549	13,570	13,580	13,576	13,573	13,573	13,584	13,581	13,581	13,578	13,575	13,549	13,538
Cumulative by Facility starting Calendar Year																
Max cumulative available engine run hours	8,732	8,828	8,924	9,020	9,116	9,212	9,308	9,404	9,500	9,596	9,692	9,788	9,884	9,980	10,076	10,172
Actual cumulative engine run hours	8,070	8,166	8,262	8,358	8,454	8,550	8,646	8,742	8,838	8,934	8,952	8,952	8,970	9,053	9,149	9,245
Cumulative Availability, %	92.4%	92.5%	92.6%	92.7%	92.7%	92.8%	92.9%	93.0%	93.0%	93.1%	92.4%	91.5%	90.8%	90.7%	90.8%	90.9%
Max cumulative gross output, kWhr	7,203,900	7,283,100	7,362,300	7,441,500	7,520,700	7,599,900	7,679,100	7,758,300	7,837,500	7,916,700	7,995,900	8,075,100	8,154,300	8,233,500	8,312,700	8,391,900
Actual cumulative gross output, kWhr	5,402,952	5,464,265	5,526,581	5,588,330	5,649,022	5,710,549	5,772,939	5,835,329	5,897,595	5,959,667	5,972,331	5,972,331	5,984,995	6,045,100	6,107,391	6,169,138
Cumulative Capacity Factor	75.0%	75.0%	75.1%	75.1%	75.1%	75.1%	75.2%	75.2%	75.2%	75.3%	74.7%	74.0%	73.4%	73.4%	73.5%	73.5%
Cumulative fuel input, MMBtu HHV	73,468	74,302	75,145	75,981	76,810	77,649	78,494	79,340	80,185	81,034	81,204	81,204	81,374	82,188	83,014	83,842
Cumulative gross output, kWhr	5,402,952	5,464,265	5,526,581	5,588,330	5,649,022	5,710,549	5,772,939	5,835,329	5,897,595	5,959,667	5,972,331	5,972,331	5,984,995	6,045,100	6,107,391	6,169,138
Cumulative heat rate, Btu/kWe gross LHV	12,241	12,241	12,240	12,239	12,240	12,240	12,240	12,239	12,239	12,240	12,240	12,240	12,239	12,239	12,236	12,234
Cumulative heat rate, Btu/kWe gross HHV	13,598	13,598	13,597	13,596	13,597	13,597	13,597	13,596	13,596	13,597	13,597	13,597	13,596	13,596	13,592	13,590
Service																
Engine 1											Eversource					
Engine 2								Operations meeting			scheduled Outage ----------]					
Engine 3																
Engine 4																
Oil - oil and filter change																
Service - plugs, air filter, valve inspection and adjustment																
Precipitation																
NSTAR Power Reports	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Date	4/1/2022	4/2/2022	4/3/2022	4/4/2022	4/5/2022	4/6/2022	4/7/2022	4/8/2022	4/9/2022	4/10/2022	4/11/2022	4/12/2022	4/13/2022	4/14/2022	4/15/2022	4/16/2022
Hour																
1	2,559	2,505	2,460	2,510	2,413	2,457	2,509	2,511	2,504	2,503	2,456	-	-	2,355	2,509	2,458
2	2,559	2,477	2,460	2,510	2,407	2,461	2,506	2,506	2,504	2,502	2,456	-	-	2,355	2,508	2,457
3	2,559	2,461	2,500	2,508	2,413	2,462	2,510	2,508	2,504	2,505	2,456	-	-	2,355	2,508	2,458
4	2,559	2,460	2,507	2,508	2,410	2,462	2,510	2,511	2,503	2,502	2,456	-	-	2,355	2,507	2,458
5	2,559	2,459	2,507	2,508	2,411	2,463	2,509	2,512	2,504	2,499	2,288	-	-	2,356	2,507	2,458
6	2,560	2,459	2,507	2,509	2,411	2,463	2,510	2,511	2,504	2,500	-	-	-	2,356	2,507	2,458
7	2,561	2,460	2,508	2,510	2,413	2,464	2,510	2,511	2,505	2,505	-	-	-	2,357	2,508	2,459
8	2,559	2,462	2,508	2,506	2,413	2,461	2,508	2,509	2,505	2,504	-	-	-	2,354	2,504	2,460
9	2,560	2,461	2,509	2,497	2,408	2,463	2,514	2,509	2,504	2,504	-	-	-	2,355	2,504	2,486
10	2,564	2,462	2,511	2,510	2,416	2,071	2,514	2,516	2,503	2,504	-	-	-	2,362	2,510	2,506
11	2,517	2,462	2,511	2,515	2,383	2,517	2,513	2,515	2,505	2,504	-	-	-	2,362	2,509	2,506
12	2,515	2,462	2,510	2,474	2,458	2,517	2,513	2,515	2,504	2,505	-	-	-	2,379	2,508	2,505
13	2,516	2,462	2,510	2,467	2,462	2,517	2,512	2,511	2,503	2,504	-	-	-	2,304	2,507	2,506
14	2,516	2,463	2,510	2,468	2,466	2,517	2,509	2,510	2,503	2,503	-	-	-	2,415	2,506	2,506
15	2,516	2,463	2,510	2,467	2,465	2,515	2,502	2,508	2,503	2,503	-	-	-	2,436	2,507	2,506
16	2,513	2,462	2,511	2,466	2,465	2,515	2,503	2,511	2,503	2,504	-	-	-	2,513	2,507	2,506
17	2,512	2,463	2,511	2,463	2,461	2,510	2,507	2,500	2,503	2,504	-	-	-	2,511	2,505	2,506
18	2,513	2,463	2,512	2,462	2,462	2,511	2,510	2,505	2,503	2,505	-	-	-	2,512	2,506	2,507
19	2,513	2,463	2,513	2,463	2,462	2,511	2,510	2,503	2,504	2,505	-	-	420	2,512	2,507	2,508
20	2,512	2,463	2,512	2,463	2,462	2,511	2,510	2,503	2,505	2,504	-	-	2,314	2,512	2,506	2,508
21	2,512	2,463	2,511	2,462	2,462	2,511	2,510	2,504	2,505	2,471	-	-	2,356	2,511	2,506	2,508
22	2,511	2,462	2,511	2,461	2,460	2,510	2,509	2,504	2,504	2,455	-	-	2,356	2,510	2,459	2,507
23	2,507	2,462	2,511	2,461	2,462	2,510	2,510	2,504	2,504	2,455	-	-	2,356	2,509	2,458	2,506
24	2,504	2,458	2,505	2,416	2,459	2,503	2,511	2,503	2,504	2,456	-	-	2,355	2,509	2,458	2,506
TOTAL	60,776	59,137	60,125	59,584	58,504	59,402	60,229	60,200	60,093	59,906	12,112	-	12,157	58,055	60,021	59,749
Cumulative Output Sold, kWhr	60,776	119,913	180,038	239,622	298,126	357,528	417,757	477,957	538,050	597,956	610,068	610,068	622,225	680,280	740,301	800,050
Transformer and line efficiency	99.8%	99.8%	99.8%	99.7%	99.7%	99.7%	99.8%	99.7%	99.8%	99.8%	99.1%	#DIV/0!	99.5%	99.7%	99.7%	99.8%
Hourly average	2,532	2,464	2,505	2,483	2,438	2,475	2,510	2,508	2,504	2,496	505	-	507	2,419	2,501	2,490

CommonWealth New Bedford Energy LLC
New Bedford/Dartmouth, Massachusetts

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April 2022																	
	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday			
	4/17/2022	4/18/2022	4/19/2022	4/20/2022	4/21/2022	4/22/2022	4/23/2022	4/24/2022	4/25/2022	4/26/2022	4/27/2022	4/28/2022	4/29/2022	4/30/2022	TOTAL	Biogas	LFG
LFG and Biogas Flow to the Engine	1,551	1,539	852	1,559	1,536	1,555	1,555	1,555	1,555	1,555	1,527	1,542	1,559	1,551	41,710	608	41,103
LFG and Biogas Flow to the Engine	820	810	439	820	809	826	826	825	828	828	830	830	830	828	22,375	439	21,936
LFG and Biogas Flow to the Flare (	-	-	392	-	-	-	-	-	-	-	-	-	-	-	2,746	2.0%	98%
LFG and BiogasFlow to the Flare (M	-	-	202	-	-	-	-	-	-	-	-	-	-	-	1,465		
LFG and Biogas Total Flow (KSCF	1,551	1,539	1,243	1,559	1,536	1,555	1,555	1,555	1,555	1,555	1,527	1,542	1,559	1,551	44,457		
LFG and Biogas Total Flow (MMBT	820	810	641	820	809	826	826	825	828	828	830	830	830	828	23,840		
Average Methane Content (%)	52.2	52.0	51.0	52.0	52.0	52.5	52.5	52.4	52.6	52.6	53.7	53.2	52.6	52.8	53.0		
Engine 1 Hours	24	24	14	24	24	24	24	24	24	24	24	24	24	24	625		
Engine 2 Hours	24	24	14	24	24	24	24	24	24	24	24	24	24	24	650		
Engine 3 Hours	24	24	13	24	24	24	24	24	24	24	24	24	24	24	649		
Engine 4 Hours	24	24	14	24	24	24	24	24	24	24	24	24	24	24	650		
Generator 1 Power Output (kWhr)	15,216	15,196	8,404	15,480	15,076	15,600	15,604	15,600	15,604	15,604	15,600	15,604	15,604	15,600	402,976		
Generator 2 Power Output (kWhr)	14,724	14,324	8,396	15,280	14,768	15,592	15,588	15,588	15,588	15,588	15,592	15,584	15,588	14,700	416,564		
Generator 3 Power Output (kWhr)	15,396	15,160	8,104	15,560	15,556	15,568	15,564	15,568	15,564	15,568	15,564	15,564	15,564	15,560	422,408		
Generator 4 Power Output (kWhr)	15,564	15,564	8,392	15,568	15,564	15,560	15,564	15,568	15,556	15,564	15,560	15,564	15,568	15,568	423,840		
Gross Power Output (kWhr)	61,033	60,360	33,372	61,969	61,054	62,390	62,399	62,361	62,390	62,396	62,396	62,414	62,435	61,511	1,667,577		
Net Power Output (kWhr)	58,890	58,265	32,242	59,831	58,921	60,263	60,244	60,263	60,287	60,330	60,367	60,237	60,255	59,336	1,611,884		
Power Sold as metered by NStar, (	58,743	58,113	32,168	59,671	58,760	60,102	60,093	60,118	60,133	60,176	60,219	60,084	60,096	59,175	1,607,701	CRMCB inplant	
Offgrid RECs (kWhr)	2,143	2,095	1,130	2,138	2,133	2,127	2,155	2,098	2,103	2,066	2,029	2,177	2,180	2,175	55,693	16,418	
Calculated Performance Results																29%	
Daily																of total in-plant	
Power output (kW average whe																power	
Generator 1	634	633	600	645	628	650	650	650	650	650	650	650	650	650			
Generator 2	614	597	600	637	615	650	650	650	650	650	650	649	650	613			
Generator 3	642	632	623	648	648	649	649	649	649	649	649	649	649	648			
Generator 4	649	649	599	649	649	648	649	649	648	649	648	649	649	649			
Power output (kW average ove																	
Facility Gross	2,543	2,515	1,391	2,582	2,544	2,600	2,600	2,598	2,600	2,600	2,600	2,601	2,601	2,563			
Facility Net	2,454	2,428	1,343	2,493	2,455	2,511	2,510	2,511	2,512	2,514	2,515	2,510	2,511	2,472			
In-plant load	89	87	47	89	89	89	90	87	88	86	85	91	91	91			
Daily availability factor																	
Facility	100%	100%	57%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%			
Engine 1	100%	100%	58%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%			
Engine 2	100%	100%	58%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%			
Engine 3	100%	100%	54%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%			
Engine 4	100%	100%	58%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%			
Daily capacity factor																	
Facility	77%	76%	42%	78%	77%	79%	79%	79%	79%	79%	79%	79%	79%	78%			
Engine 1	77%	77%	73%	78%	76%	79%	79%	79%	79%	79%	79%	79%	79%	79%			
Engine 2	74%	72%	73%	77%	75%	79%	79%	79%	79%	79%	79%	79%	79%	74%			
Engine 3	78%	77%	76%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%			
Engine 4	79%	79%	73%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%			
Cumulative by engine																	
Engine operating run hours in th																	
Max Cumulative Available,	408	432	456	480	504	528	552	576	600	624	648	672	696	720			
Engine 1	323	347	361	385	409	433	457	481	505	529	553	577	601	625			
Engine 2	348	372	386	410	434	458	482	506	530	554	578	602	626	650			
Engine 3	348	372	385	409	433	457	481	505	529	553	577	601	625	649			
Engine 4	348	372	386	410	434	458	482	506	530	554	578	602	626	650			
Engine operating run hours tota																	
Engine 1	124,858	124,882	124,896	124,920	124,944	124,968	124,992	125,016	125,040	125,064	125,088	125,112	125,136	125,160			
Engine 2	114,018	114,042	114,056	114,080	114,104	114,128	114,152	114,176	114,200	114,224	114,248	114,272	114,296	114,320			
Engine 3	124,128	124,152	124,165	124,189	124,213	124,237	124,261	124,285	124,309	124,333	124,357	124,381	124,405	124,429			
Engine 4	119,705	119,729	119,743	119,767	119,791	119,815	119,839	119,863	119,887	119,911	119,935	119,959	119,983	120,007			
Cumulative availability, %																	
Engine 1	79%	80%	79%	80%	81%	82%	83%	84%	84%	85%	85%	86%	86%	87%			
Engine 2	85%	86%	85%	85%	86%	87%	87%	88%	88%	89%	89%	90%	90%	90%			
Engine 3	85%	86%	84%	85%	86%	87%	87%	88%	88%	89%	89%	89%	90%	90%			
Engine 4	85%	86%	85%	85%	86%	87%	87%	88%	88%	89%	89%	90%	90%	90%			
Engine cumulative gross output																	
Max cumulative capacity or	14,025	14,850	15,675	16,500	17,325	18,150	18,975	19,800	20,625	21,450	22,275	23,100	23,925	24,750			
Engine 1	9,005	9,639	10,239	10,884	11,512	12,162	12,812	13,462	14,112	14,762	15,412	16,063	16,713	17,363			
Engine 2	10,385	10,981	11,581	12,218	12,833	13,483	14,132	14,782	15,431	16,081	16,730	17,380	18,029	18,642			
Engine 3	10,558	11,189	11,813	12,461	13,109	13,758	14,406	15,055	15,704	16,352	17,001	17,649	18,298	18,946			
Engine 4	10,589	11,238	11,837	12,486	13,134	13,783	14,431	15,080	15,728	16,377	17,025	17,673	18,322	18,971			
Cumulative capacity factor, %																	
Engine 1	64%	65%	65%	66%	66%	67%	68%	68%	68%	69%	69%	70%	70%	70%			
Engine 2	74%	74%	74%	74%	74%	74%	74%	75%	75%	75%	75%	75%	75%	75%			
Engine 3	75%	75%	75%	76%	76%	76%	76%	76%	76%	76%	76%	76%	76%	77%			
Engine 4	76%	76%	76%	76%	76%	76%	76%	76%	76%	76%	76%	77%	77%	77%			

CommonWealth New Bedford Energy LLC
New Bedford/Dartmouth, Massachusetts

APRIL 2022

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday			
	4/17/2022	4/18/2022	4/19/2022	4/20/2022	4/21/2022	4/22/2022	4/23/2022	4/24/2022	4/25/2022	4/26/2022	4/27/2022	4/28/2022	4/29/2022	4/30/2022	TOTAL	Biogas	LFG
Cumulative by Facility in month																	
Max cumulative available engi	1,632	1,728	1,824	1,920	2,016	2,112	2,208	2,304	2,400	2,496	2,592	2,688	2,784	2,880			
Actual cumulative engine run h	1,367	1,463	1,518	1,614	1,710	1,806	1,902	1,998	2,094	2,190	2,286	2,382	2,478	2,574			
Cumulative Availability, %	83.8%	84.7%	83.2%	84.1%	84.8%	85.5%	86.1%	86.7%	87.3%	87.7%	88.2%	88.6%	89.0%	89.4%			
Max cumulative gross output, k	1,346,400	1,425,600	1,504,800	1,584,000	1,663,200	1,742,400	1,821,600	1,900,800	1,980,000	2,059,200	2,138,400	2,217,600	2,296,800	2,376,000			
Actual cumulative gross output,	890,130	950,490	983,862	1,045,831	1,106,885	1,169,275	1,231,674	1,294,035	1,356,425	1,418,821	1,481,217	1,543,631	1,606,066	1,667,577			
Cumulative Capacity Factor	66.1%	66.7%	65.4%	66.0%	66.6%	67.1%	67.6%	68.1%	68.5%	68.9%	69.3%	69.6%	69.9%	70.2%			
Cumulative fuel input, MMBtu h	12,044	12,854	13,294	14,114	14,923	15,749	16,575	17,400	18,228	19,056	19,886	20,716	21,547	22,375			
Cumulative gross output, kWhr	890,130	950,490	983,862	1,045,831	1,106,885	1,169,275	1,231,674	1,294,035	1,356,425	1,418,821	1,481,217	1,543,631	1,606,066	1,667,577			
Heat Rate																	
Daily heat rate, Btu/kWe gross	12,089	12,083	11,848	11,913	11,928	11,921	11,919	11,909	11,944	11,943	11,980	11,977	11,970	12,116			
Daily heat rate, Btu/kWe gross	13,429	13,423	13,161	13,234	13,251	13,243	13,241	13,229	13,268	13,267	13,309	13,305	13,297	13,459			
Cumulative heat rate, Btu/kWe	12,180	12,174	12,163	12,148	12,136	12,125	12,114	12,104	12,097	12,090	12,086	12,081	12,077	12,078			
Cumulative heat rate, Btu/kWe	13,531	13,524	13,512	13,495	13,482	13,469	13,457	13,446	13,438	13,431	13,425	13,421	13,416	13,417			
Cumulative by Facility starting C																	
Max cumulative available engi	10,268	10,364	10,460	10,556	10,652	10,748	10,844	10,940	11,036	11,132	11,228	11,324	11,420	11,516			
Actual cumulative engine run h	9,341	9,437	9,492	9,588	9,684	9,780	9,876	9,972	10,068	10,164	10,260	10,356	10,452	10,548			
Cumulative Availability, %	91.0%	91.1%	90.7%	90.8%	90.9%	91.0%	91.1%	91.2%	91.2%	91.3%	91.4%	91.5%	91.5%	91.6%			
Max cumulative gross output, k	8,471,100	8,550,300	8,629,500	8,708,700	8,787,900	8,867,100	8,946,300	9,025,500	9,104,700	9,183,900	9,263,100	9,342,300	9,421,500	9,500,700			
Actual cumulative gross output,	6,230,171	6,290,531	6,323,903	6,385,872	6,446,926	6,509,316	6,571,715	6,634,076	6,696,466	6,758,862	6,821,258	6,883,672	6,946,107	7,007,618			
Cumulative Capacity Factor	73.5%	73.6%	73.3%	73.3%	73.4%	73.4%	73.5%	73.5%	73.5%	73.6%	73.6%	73.7%	73.7%	73.8%			
Cumulative fuel input, MMBtu h	84,661	85,471	85,911	86,731	87,540	88,366	89,192	90,017	90,845	91,673	92,503	93,334	94,164	94,992			
Cumulative gross output, kWhr	6,230,171	6,290,531	6,323,903	6,385,872	6,446,926	6,509,316	6,571,715	6,634,076	6,696,466	6,758,862	6,821,258	6,883,672	6,946,107	7,007,618			
Cumulative heat rate, Btu/kWe	12,233	12,231	12,229	12,226	12,223	12,220	12,218	12,215	12,212	12,210	12,208	12,206	12,203	12,203			
Cumulative heat rate, Btu/kWe	13,589	13,587	13,585	13,582	13,579	13,575	13,572	13,569	13,566	13,563	13,561	13,559	13,556	13,555			
Service																	
Engine 1																	
Engine 2			Nor'easter storm														
Engine 3			Eversource Outage														
Engine 4																	
Oil - oil and filter change																	
Service - plugs, air filter, valve insp																	
Precipitation																	
NSTAR Power Reports	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday			
Date	4/17/2022	4/18/2022	4/19/2022	4/20/2022	4/21/2022	4/22/2022	4/23/2022	4/24/2022	4/25/2022	4/26/2022	4/27/2022	4/28/2022	4/29/2022	4/30/2022	TOTAL		
Hour																	
1	2,506	2,361	2,508	2,507	2,402	2,503	2,504	2,505	2,506	2,506	2,506	2,508	2,502	2,502			
2	2,505	2,361	2,508	2,506	2,404	2,503	2,500	2,506	2,506	2,506	2,507	2,508	2,502	2,502			
3	2,506	2,360	2,509	2,506	2,407	2,503	2,501	2,505	2,506	2,506	2,507	2,509	2,498	2,500			
4	2,506	2,360	2,510	2,505	2,407	2,504	2,505	2,505	2,506	2,506	2,507	2,509	2,501	2,496			
5	2,505	2,360	970	2,505	2,408	2,505	2,505	2,505	2,507	2,507	2,507	2,509	2,502	2,497			
6	2,504	2,360	-	2,504	2,409	2,505	2,506	2,504	2,506	2,507	2,508	2,509	2,503	2,497			
7	2,468	2,360	-	2,504	2,409	2,506	2,506	2,504	2,507	2,507	2,508	2,510	2,503	2,456			
8	2,458	2,359	-	2,500	2,406	2,503	2,505	2,504	2,503	2,505	2,507	2,506	2,502	2,456			
9	2,458	2,232	-	2,499	2,403	2,503	2,504	2,504	2,504	2,504	2,506	2,502	2,505	2,456			
10	2,459	2,509	-	2,497	2,402	2,507	2,504	2,504	2,508	2,511	2,511	2,502	2,510	2,456			
11	2,458	2,462	-	2,498	2,419	2,508	2,503	2,505	2,507	2,511	2,511	2,496	2,509	2,457			
12	2,459	2,452	-	2,507	2,450	2,504	2,503	2,504	2,506	2,510	2,512	2,494	2,509	2,455			
13	2,459	2,452	-	2,508	2,451	2,505	2,503	2,503	2,507	2,509	2,512	2,498	2,508	2,453			
14	2,459	2,462	-	2,509	2,460	2,506	2,503	2,504	2,506	2,508	2,513	2,498	2,506	2,453			
15	2,458	2,464	-	2,506	2,461	2,505	2,503	2,503	2,507	2,510	2,514	2,499	2,507	2,453			
16	2,458	2,463	1,086	2,502	2,461	2,502	2,503	2,504	2,506	2,509	2,514	2,501	2,507	2,453			
17	2,422	2,460	2,509	2,500	2,470	2,502	2,503	2,505	2,503	2,506	2,508	2,503	2,502	2,453			
18	2,410	2,460	2,512	2,492	2,505	2,503	2,504	2,506	2,503	2,506	2,508	2,503	2,502	2,453			
19	2,410	2,460	2,511	2,456	2,505	2,504	2,505	2,507	2,504	2,506	2,509	2,504	2,503	2,454			
20	2,410	2,460	2,511	2,455	2,505	2,503	2,504	2,506	2,503	2,507	2,509	2,504	2,503	2,454			
21	2,381	2,460	2,510	2,455	2,505	2,504	2,505	2,507	2,505	2,508	2,510	2,504	2,503	2,455			
22	2,362	2,460	2,509	2,436	2,504	2,505	2,504	2,507	2,506	2,507	2,509	2,503	2,503	2,455			
23	2,361	2,469	2,508	2,407	2,504	2,504	2,505	2,505	2,505	2,507	2,508	2,503	2,503	2,454			
24	2,361	2,507	2,507	2,407	2,503	2,505	2,505	2,506	2,506	2,507	2,508	2,502	2,503	2,455			
TOTAL	58,743	58,113	32,168	59,671	58,760	60,102	60,093	60,118	60,133	60,176	60,219	60,084	60,096	59,175			
Cumulative Output Sold, kV	858,793	916,906	949,074	1,008,745	1,067,505	1,127,607	1,187,700	1,247,818	1,307,951	1,368,127	1,428,346	1,488,430	1,548,526	1,607,701			
Transformer and line efficienc	99.8%	99.7%	99.8%	99.7%	99.7%	99.7%	99.7%	99.8%	99.7%	99.7%	99.8%	99.7%	99.7%	99.7%	0.0%		
Hourly average	2,448	2,421	1,340	2,486	2,448	2,504	2,504	2,505	2,506	2,507	2,509	2,504	2,504	2,466	2,233		

May 2022																	
		Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday
		5/1/2022	5/2/2022	5/3/2022	5/4/2022	5/5/2022	5/6/2022	5/7/2022	5/8/2022	5/9/2022	5/10/2022	5/11/2022	5/12/2022	5/13/2022	5/14/2022	5/15/2022	5/16/2022
LFG and Biogas Flow to the Engines (KSCF)		1,547	1,544	1,536	1,536	1,553	1,547	1,543	1,543	1,549	1,558	1,549	1,495	1,561	1,549	1,549	1,440
LFG and Biogas Flow to the Engines (MMBTU HHV)		821	821	818	822	822	827	827	824	818	818	816	800	824	824	824	784
LFG and Biogas Flow to the Flare (KSCF)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG and BiogasFlow to the Flare (MMBTU HHV)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG and Biogas Total Flow (KSCF)		1,547	1,544	1,536	1,536	1,553	1,547	1,543	1,543	1,549	1,558	1,549	1,495	1,561	1,549	1,549	1,440
LFG and Biogas Total Flow (MMBTU HHV)		821	821	818	822	822	827	827	824	818	818	816	800	824	824	824	784
Average Methane Content (%)		52.4	52.5	52.6	52.9	52.3	52.8	53.0	52.7	52.2	51.9	52.1	52.9	52.1	52.5	52.5	53.8
Engine 1 Hours		24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	8
Engine 2 Hours		24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
Engine 3 Hours		24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
Engine 4 Hours		24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
Generator 1 Power Output (kWhr)		15,600	15,604	15,604	15,604	15,600	15,600	15,600	15,600	15,288	15,192	15,600	14,400	15,600	15,600	15,600	4,684
Generator 2 Power Output (kWhr)		14,420	14,604	15,148	15,592	15,592	15,596	15,588	14,895	14,412	14,416	14,412	13,784	15,584	15,592	15,592	18,064
Generator 3 Power Output (kWhr)		15,564	15,568	15,564	15,568	15,564	15,572	15,568	15,568	15,564	15,564	15,568	14,436	15,560	15,564	15,564	18,476
Generator 4 Power Output (kWhr)		15,560	15,568	15,008	15,560	15,556	15,556	15,564	15,564	15,564	15,564	15,576	14,384	15,556	15,560	15,560	18,456
Gross Power Output (kWhr)		61,262	61,472	61,435	62,404	62,398	62,420	62,404	61,712	60,926	60,828	61,256	57,124	62,391	62,411	62,411	59,685
Net Power Output (kWhr)		59,044	59,312	59,288	60,241	60,126	60,203	60,203	59,494	58,735	58,660	59,071	55,114	60,365	60,394	60,394	57,822
Power Sold as metered by NStar, (kWhr)		58,893	59,153	59,133	60,087	59,971	60,044	60,054	59,165	58,579	58,513	58,941	54,983	60,218	60,255	60,321	57,684
Offgrid RECs (kWhr)		2,218	2,160	2,147	2,163	2,272	2,217	2,201	2,217	2,191	2,168	2,185	2,010	2,026	2,017	2,016	1,863
Calculated Performance Results																	
Daily																	
Power output (kW average when running)																	
Generator 1		650	650	650	650	650	650	650	650	637	633	650	600	650	650	650	586
Generator 2		601	609	631	650	650	650	650	621	601	601	601	574	649	650	650	753
Generator 3		649	649	649	649	649	649	649	649	649	649	649	602	648	649	649	770
Generator 4		648	649	625	648	648	648	649	649	649	649	649	599	648	648	648	769
Power output (kW average over 24-hrs)																	
Facility Gross		2,553	2,561	2,560	2,600	2,600	2,601	2,600	2,571	2,539	2,535	2,552	2,380	2,600	2,600	2,600	2,487
Facility Net		2,460	2,471	2,470	2,510	2,505	2,508	2,508	2,479	2,447	2,444	2,461	2,296	2,515	2,516	2,516	2,409
In-plant load		92	90	89	90	95	92	92	92	91	90	91	84	84	84	84	78
Daily availability factor																	
Facility		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	83%
Engine 1		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	33%
Engine 2		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Engine 3		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Engine 4		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Daily capacity factor																	
Facility		77%	78%	78%	79%	79%	79%	79%	78%	77%	77%	77%	72%	79%	79%	79%	75%
Engine 1		79%	79%	79%	79%	79%	79%	79%	79%	77%	77%	79%	73%	79%	79%	79%	71%
Engine 2		73%	74%	77%	79%	79%	79%	79%	75%	73%	73%	73%	70%	79%	79%	79%	91%
Engine 3		79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	73%	79%	79%	79%	93%
Engine 4		79%	79%	76%	79%	79%	79%	79%	79%	79%	79%	79%	73%	79%	79%	79%	93%
Cumulative by engine																	
Engine operating run hours in the month																	
Max Cumulative Available, hours		24	48	72	96	120	144	168	192	216	240	264	288	312	336	360	384
Engine 1		24	48	72	96	120	144	168	192	216	240	264	288	312	336	360	368
Engine 2		24	48	72	96	120	144	168	192	216	240	264	288	312	336	360	384
Engine 3		24	48	72	96	120	144	168	192	216	240	264	288	312	336	360	384
Engine 4		24	48	72	96	120	144	168	192	216	240	264	288	312	336	360	384
Engine operating run hours total from 0 hours																	
Engine 1	125,165	125,189	125,213	125,237	125,261	125,285	125,309	125,333	125,357	125,381	125,405	125,429	125,453	125,477	125,501	125,525	125,533
Engine 2	114,318	114,342	114,366	114,390	114,414	114,438	114,462	114,486	114,510	114,534	114,558	114,582	114,606	114,630	114,654	114,678	114,702
Engine 3	124,430	124,454	124,478	124,502	124,526	124,550	124,574	124,598	124,622	124,646	124,670	124,694	124,718	124,742	124,766	124,790	124,814
Engine 4	120,005	120,029	120,053	120,077	120,101	120,125	120,149	120,173	120,197	120,221	120,245	120,269	120,293	120,317	120,341	120,365	120,389
Cumulative availability, %	May 1, 2022 @ 00:00 hours																
Engine 1		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	96%
Engine 2		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Engine 3		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Engine 4		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Engine cumulative gross output, kWhr																	
Max cumulative capacity one engine		825	1,650	2,475	3,300	4,125	4,950	5,775	6,600	7,425	8,250	9,075	9,900	10,725	11,550	12,375	13,200
Engine 1		650	1,300	1,950	2,601	3,251	3,901	4,551	5,201	5,838	6,471	7,121	7,721	8,371	9,021	9,671	10,256
Engine 2		601	1,209	1,841	2,490	3,140	3,790	4,439	5,060	5,660	6,261	6,861	7,436	8,085	8,735	9,384	10,137
Engine 3		649	1,297	1,946	2,594	3,243	3,892	4,540	5,189	5,838	6,486	7,135	7,736	8,385	9,033	9,682	10,451
Engine 4		648	1,297	1,922	2,571	3,219	3,867	4,516	5,164	5,813	6,461	7,110	7,709	8,358	9,006	9,654	10,423
Cumulative capacity factor, %																	
Engine 1		79%	79%	79%	79%	79%	79%	79%	79%	79%	78%	78%	78%	78%	78%	78%	78%
Engine 2		73%	73%	74%	75%	76%	77%	77%	77%	76%	76%	76%	75%	75%	76%	76%	77%
Engine 3		79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	78%	78%	78%	78%	79%
Engine 4		79%	79%	78%	78%	78%	78%	78%	78%	78%	78%	78%	78%	78%	78%	78%	79%

CommonWealth New Bedford Energy LLC
New Bedford/Dartmouth, Massachusetts

MAY 2022

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday
	5/1/2022	5/2/2022	5/3/2022	5/4/2022	5/5/2022	5/6/2022	5/7/2022	5/8/2022	5/9/2022	5/10/2022	5/11/2022	5/12/2022	5/13/2022	5/14/2022	5/15/2022	5/16/2022
Cumulative by Facility in month																
Max cumulative available engine run hours	96	192	288	384	480	576	672	768	864	960	1,056	1,152	1,248	1,344	1,440	1,536
Actual cumulative engine run hours	96	192	288	384	480	576	672	768	864	960	1,056	1,152	1,248	1,344	1,440	1,520
Cumulative Availability, %	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	99.0%
Max cumulative gross output, kWhr	79,200	158,400	237,600	316,800	396,000	475,200	554,400	633,600	712,800	792,000	871,200	950,400	1,029,600	1,108,800	1,188,000	1,267,200
Actual cumulative gross output, kWhr	61,262	122,734	184,169	246,573	308,971	371,391	433,795	495,507	556,433	617,261	678,517	735,641	798,032	860,443	922,854	982,539
Cumulative Capacity Factor	77.4%	77.5%	77.5%	77.8%	78.0%	78.2%	78.2%	78.2%	78.1%	77.9%	77.9%	77.4%	77.5%	77.6%	77.7%	77.5%
Cumulative fuel input, MMBtu HHV	821	1,642	2,459	3,281	4,103	4,930	5,758	6,581	7,399	8,217	9,033	9,833	10,657	11,481	12,304	13,088
Cumulative gross output, kWhr	61,262	122,734	184,169	246,573	308,971	371,391	433,795	495,507	556,433	617,261	678,517	735,641	798,032	860,443	922,854	982,539
Heat Rate																
Daily heat rate, Btu/kWe gross LHV	12,061	12,020	11,979	11,856	11,857	11,931	11,934	12,013	12,086	12,106	11,996	12,607	11,883	11,879	11,879	11,829
Daily heat rate, Btu/kWe gross HHV	13,398	13,352	13,307	13,171	13,172	13,254	13,257	13,345	13,426	13,448	13,326	14,005	13,201	13,196	13,196	13,141
Cumulative heat rate, Btu/kWe gross LHV	12,061	12,040	12,020	11,978	11,954	11,950	11,948	11,956	11,970	11,984	11,985	12,033	12,021	12,011	12,002	11,992
Cumulative heat rate, Btu/kWe gross HHV	13,398	13,375	13,352	13,306	13,279	13,275	13,272	13,281	13,297	13,312	13,313	13,367	13,354	13,343	13,333	13,321
Cumulative by Facility starting Calendar Year																
Max cumulative available engine run hours	11,612	11,708	11,804	11,900	11,996	12,092	12,188	12,284	12,380	12,476	12,572	12,668	12,764	12,860	12,956	13,052
Actual cumulative engine run hours	10,644	10,740	10,836	10,932	11,028	11,124	11,220	11,316	11,412	11,508	11,604	11,700	11,796	11,892	11,988	12,068
Cumulative Availability, %	91.7%	91.7%	91.8%	91.9%	91.9%	92.0%	92.1%	92.1%	92.2%	92.2%	92.3%	92.4%	92.4%	92.5%	92.5%	92.5%
Max cumulative gross output, kWhr	9,579,900	9,659,100	9,738,300	9,817,500	9,896,700	9,975,900	10,055,100	10,134,300	10,213,500	10,292,700	10,371,900	10,451,100	10,530,300	10,609,500	10,688,700	10,767,900
Actual cumulative gross output, kWhr	7,068,880	7,130,352	7,191,787	7,254,191	7,316,589	7,379,009	7,441,413	7,503,125	7,564,051	7,624,879	7,686,135	7,743,259	7,805,650	7,868,061	7,930,472	7,990,157
Cumulative Capacity Factor	73.8%	73.8%	73.9%	73.9%	73.9%	74.0%	74.0%	74.0%	74.1%	74.1%	74.1%	74.1%	74.1%	74.2%	74.2%	74.2%
Cumulative fuel input, MMBtu HHV	95,812	96,633	97,451	98,273	99,095	99,922	100,749	101,573	102,391	103,209	104,025	104,825	105,649	106,472	107,296	108,080
Cumulative gross output, kWhr	7,068,880	7,130,352	7,191,787	7,254,191	7,316,589	7,379,009	7,441,413	7,503,125	7,564,051	7,624,879	7,686,135	7,743,259	7,805,650	7,868,061	7,930,472	7,990,157
Cumulative heat rate, Btu/kWe gross LHV	12,201	12,200	12,198	12,195	12,192	12,190	12,188	12,186	12,186	12,185	12,183	12,187	12,184	12,182	12,179	12,177
Cumulative heat rate, Btu/kWe gross HHV	13,554	13,552	13,550	13,547	13,544	13,541	13,539	13,537	13,536	13,536	13,534	13,538	13,535	13,532	13,530	13,527
Service																
Engine 1										Media replacement----------		On-line 0 H2S				Top-End Overhaul
Engine 2																
Engine 3																
Engine 4																
Oil - oil and filter change												Operations meeting				
Service - plugs, air filter, valve inspection and adjustment																
Precipitation																
NSTAR Power Reports	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday
Date	5/1/2022	5/2/2022	5/3/2022	5/4/2022	5/5/2022	5/6/2022	5/7/2022	5/8/2022	5/9/2022	5/10/2022	5/11/2022	5/12/2022	5/13/2022	5/14/2022	5/15/2022	5/16/2022
Hour																
1	2,454	2,456	2,503	2,503	2,504	2,503	2,502	2,499	2,454	2,406	2,454	2,452	2,515	2,513	2,515	2,515
2	2,455	2,457	2,503	2,503	2,503	2,503	2,503	2,499	2,454	2,407	2,454	2,456	2,517	2,513	2,515	2,516
3	2,455	2,457	2,503	2,504	2,503	2,503	2,503	2,499	2,454	2,424	2,456	2,456	2,516	2,513	2,515	2,515
4	2,455	2,457	2,503	2,503	2,503	2,503	2,503	2,499	2,454	2,455	2,455	2,456	2,516	2,513	2,514	2,515
5	2,455	2,457	2,503	2,503	2,504	2,497	2,503	2,499	2,454	2,455	2,456	2,456	2,516	2,513	2,515	2,516
6	2,454	2,457	2,503	2,504	2,504	2,495	2,503	2,499	2,455	2,454	2,457	2,456	2,516	2,513	2,515	2,517
7	2,454	2,457	2,504	2,505	2,505	2,497	2,504	2,465	2,455	2,455	2,457	2,457	2,517	2,514	2,514	2,517
8	2,454	2,454	2,503	2,503	2,501	2,496	2,504	2,453	2,452	2,449	2,451	2,451	2,512	2,513	2,514	2,415
9	2,454	2,455	2,223	2,506	2,495	2,501	2,505	2,453	2,456	2,454	2,459	2,457	2,508	2,511	2,513	2,357
10	2,453	2,460	2,347	2,510	2,494	2,505	2,504	2,452	2,458	2,456	2,460	2,459	2,505	2,509	2,513	2,355
11	2,452	2,460	2,008	2,509	2,489	2,503	2,504	2,453	2,456	2,449	2,460	2,458	2,506	2,504	2,512	2,353
12	2,452	2,460	2,478	2,510	2,488	2,505	2,503	2,453	2,455	2,454	2,460	2,455	2,499	2,504	2,512	2,336
13	2,452	2,459	2,508	2,500	2,486	2,505	2,503	2,452	2,451	2,456	2,457	1,427	2,496	2,504	2,511	2,339
14	2,452	2,459	2,508	2,498	2,483	2,504	2,502	2,453	2,455	2,456	2,457	1,435	2,491	2,503	2,510	2,340
15	2,453	2,459	2,507	2,498	2,489	2,505	2,502	2,453	2,455	2,453	2,451	106	2,489	2,508	2,510	2,341
16	2,453	2,457	2,506	2,498	2,500	2,504	2,502	2,453	2,450	2,455	2,448	2,423	2,499	2,508	2,510	2,346
17	2,453	2,456	2,502	2,504	2,501	2,501	2,501	2,453	2,451	2,454	2,456	2,511	2,509	2,509	2,512	2,357
18	2,454	2,457	2,502	2,504	2,502	2,502	2,501	2,453	2,435	2,454	2,457	2,515	2,511	2,509	2,514	2,362
19	2,454	2,457	2,503	2,504	2,503	2,502	2,502	2,454	2,406	2,409	2,457	2,516	2,512	2,512	2,515	2,362
20	2,454	2,457	2,503	2,504	2,503	2,502	2,501	2,455	2,407	2,408	2,456	2,516	2,513	2,513	2,514	2,362
21	2,455	2,495	2,503	2,504	2,503	2,502	2,501	2,455	2,406	2,408	2,457	2,517	2,514	2,514	2,514	2,362
22	2,455	2,504	2,503	2,504	2,502	2,502	2,500	2,453	2,401	2,408	2,456	2,516	2,514	2,514	2,515	2,362
23	2,455	2,503	2,503	2,503	2,503	2,502	2,499	2,454	2,400	2,408	2,456	2,516	2,514	2,514	2,515	2,362
24	2,456	2,503	2,504	2,503	2,503	2,502	2,499	2,454	2,405	2,426	2,454	2,516	2,513	2,514	2,514	2,362
TOTAL	58,893	59,153	59,133	60,087	59,971	60,044	60,054	59,165	58,579	58,513	58,941	54,983	60,218	60,255	60,321	57,684
Cumulative Output Sold, kWhr	58,893	118,046	177,179	237,266	297,237	357,281	417,335	476,500	535,079	593,592	652,533	707,516	767,734	827,989	888,310	945,994
Transformer and line efficiency	99.7%	99.7%	99.7%	99.7%	99.7%	99.7%	99.8%	99.4%	99.7%	99.7%	99.8%	99.8%	99.8%	99.8%	99.9%	99.8%
Hourly average	2,454	2,465	2,464	2,504	2,499	2,502	2,502	2,465	2,441	2,438	2,456	2,291	2,509	2,511	2,513	2,404

May 2022																		
	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday			
	5/17/2022	5/18/2022	5/19/2022	5/20/2022	5/21/2022	5/22/2022	5/23/2022	5/24/2022	5/25/2022	5/26/2022	5/27/2022	5/28/2022	5/29/2022	5/30/2022	5/31/2022	TOTAL	Biogas	LFG
LFG and Biogas Flow to the Engine	1,399	1,450	1,531	1,531	1,552	1,552	1,561	1,523	1,523	1,510	1,533	1,538	1,567	1,567	1,567	47,502	459	47,044
LFG and Biogas Flow to the Engine	764	795	831	831	822	822	822	804	808	808	833	849	840	840	849	25,404	314	25,090
LFG and Biogas Flow to the Flare (	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.2%	99%
LFG and BiogasFlow to the Flare (M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
LFG and Biogas Total Flow (KSCF	1,399	1,450	1,531	1,531	1,552	1,552	1,561	1,523	1,523	1,510	1,533	1,538	1,567	1,567	1,567	47,502		
LFG and Biogas Total Flow (MMBT	764	795	831	831	822	822	822	804	808	808	833	849	840	840	849	25,404		
Average Methane Content (%)	54.0	54.2	53.6	53.6	52.3	52.3	52.0	52.2	52.4	52.9	53.7	54.5	52.9	52.9	53.5	52.8		
Engine 1 Hours	-	11	24	24	24	24	24	24	24	24	24	24	24	24	24	691		
Engine 2 Hours	24	24	24	24	24	24	24	23	23	23	23	23	23	23	23	736		
Engine 3 Hours	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	744		
Engine 4 Hours	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	744		
Generator 1 Power Output (kWhr)	-	6,780	15,604	15,604	15,600	15,596	15,592	15,596	15,600	14,688	15,592	15,600	15,596	15,600	15,596	445,420		
Generator 2 Power Output (kWhr)	19,136	17,592	15,584	15,584	15,588	15,592	15,484	13,984	15,588	15,592	15,600	15,592	14,740	14,972	15,592	479,511		
Generator 3 Power Output (kWhr)	19,720	17,916	15,696	15,696	15,564	15,568	15,568	15,568	14,364	15,572	16,408	16,760	16,752	16,760	16,752	495,496		
Generator 4 Power Output (kWhr)	19,680	17,896	16,124	16,124	15,560	15,552	15,552	15,556	15,568	15,564	16,392	16,756	16,748	16,748	16,724	496,700		
Gross Power Output (kWhr)	58,512	60,314	63,107	63,107	62,433	62,641	62,297	60,813	61,210	61,513	64,105	64,882	63,964	64,193	64,744	1,920,374		
Net Power Output (kWhr)	56,544	58,343	61,135	61,135	60,362	60,320	60,198	58,821	59,238	59,603	62,095	62,886	61,898	62,090	62,608	1,855,742		
Power Sold as metered by NStar, (	56,440	58,209	60,999	60,487	60,265	60,219	60,063	58,702	59,137	59,504	61,978	62,755	61,802	61,988	62,459	1,851,001	CRMCB inplant	
Offgrid RECs (kWhr)	1,967	1,971	1,972	1,972	2,070	2,321	2,099	1,992	1,972	1,910	2,010	1,996	2,066	2,103	2,136	64,628	12,413	
Calculated Performance Results																	19%	
Daily																	of total in-plant	
Power output (kW average whe																	power	
Generator 1	-	616	650	650	650	650	650	650	650	612	650	650	650	650	650			
Generator 2	797	733	649	649	650	650	645	608	678	678	678	678	641	651	678			
Generator 3	822	747	654	654	649	649	649	649	599	649	684	698	698	698	698			
Generator 4	820	746	672	672	648	648	648	648	649	649	683	698	698	698	697			
Power output (kW average ove																		
Facility Gross	2,438	2,513	2,629	2,629	2,601	2,610	2,596	2,534	2,550	2,563	2,671	2,703	2,665	2,675	2,698			
Facility Net	2,356	2,431	2,547	2,547	2,515	2,513	2,508	2,451	2,468	2,483	2,587	2,620	2,579	2,587	2,609			
In-plant load	82	82	82	82	86	97	87	83	82	80	84	83	86	88	89			
Daily availability factor																		
Facility	75%	86%	100%	100%	100%	100%	100%	99%	99%	99%	99%	99%	99%	99%	99%			
Engine 1	0%	46%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%			
Engine 2	100%	100%	100%	100%	100%	100%	100%	96%	96%	96%	96%	96%	96%	96%	96%			
Engine 3	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%			
Engine 4	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%			
Daily capacity factor																		
Facility	74%	76%	80%	80%	79%	79%	79%	77%	77%	78%	81%	82%	81%	81%	82%			
Engine 1	0%	75%	79%	79%	79%	79%	79%	79%	79%	74%	79%	79%	79%	79%	79%			
Engine 2	97%	89%	79%	79%	79%	79%	78%	74%	82%	82%	82%	82%	78%	79%	82%			
Engine 3	100%	90%	79%	79%	79%	79%	79%	79%	73%	79%	83%	85%	85%	85%	85%			
Engine 4	99%	90%	81%	81%	79%	79%	79%	79%	79%	79%	83%	85%	85%	85%	84%			
Cumulative by engine																		
Engine operating run hours in th																		
Max Cumulative Available,	408	432	456	480	504	528	552	576	600	624	648	672	696	720	744			
Engine 1	368	379	403	427	451	475	499	523	547	571	595	619	643	667	691			
Engine 2	408	432	456	480	504	528	552	575	598	621	644	667	690	713	736			
Engine 3	408	432	456	480	504	528	552	576	600	624	648	672	696	720	744			
Engine 4	408	432	456	480	504	528	552	576	600	624	648	672	696	720	744			
Engine operating run hours tota																		
Engine 1	125,533	125,544	125,568	125,592	125,616	125,640	125,664	125,688	125,712	125,736	125,760	125,784	125,808	125,832	125,856			
Engine 2	114,726	114,750	114,774	114,798	114,822	114,846	114,870	114,893	114,916	114,939	114,962	114,985	115,008	115,031	115,054			
Engine 3	124,838	124,862	124,886	124,910	124,934	124,958	124,982	125,006	125,030	125,054	125,078	125,102	125,126	125,150	125,174			
Engine 4	120,413	120,437	120,461	120,485	120,509	120,533	120,557	120,581	120,605	120,629	120,653	120,677	120,701	120,725	120,749			
Cumulative availability, %																		
Engine 1	90%	88%	88%	89%	89%	90%	90%	91%	91%	92%	92%	92%	92%	93%	93%			
Engine 2	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	99%	99%	99%	99%	99%			
Engine 3	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%			
Engine 4	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%			
Engine cumulative gross output																		
Max cumulative capacity or	14,025	14,850	15,675	16,500	17,325	18,150	18,975	19,800	20,625	21,450	22,275	23,100	23,925	24,750	25,575			
Engine 1	10,256	10,872	11,523	12,173	12,823	13,473	14,122	14,772	15,422	16,034	16,684	17,334	17,984	18,634	19,283			
Engine 2	10,934	11,667	12,317	12,966	13,616	14,265	14,910	15,518	16,196	16,874	17,552	18,230	18,871	19,522	20,200			
Engine 3	11,273	12,020	12,674	13,328	13,976	14,625	15,273	15,922	16,521	17,169	17,853	18,551	19,249	19,948	20,646			
Engine 4	11,243	11,989	12,661	13,333	13,981	14,629	15,277	15,925	16,574	17,222	17,905	18,603	19,301	19,999	20,696			
Cumulative capacity factor, %																		
Engine 1	73%	73%	74%	74%	74%	74%	74%	75%	75%	75%	75%	75%	75%	75%	75%			
Engine 2	78%	79%	79%	79%	79%	79%	79%	78%	79%	79%	79%	79%	79%	79%	79%			
Engine 3	80%	81%	81%	81%	81%	81%	80%	80%	80%	80%	80%	80%	80%	81%	81%			
Engine 4	80%	81%	81%	81%	81%	81%	81%	80%	80%	80%	80%	81%	81%	81%	81%			

CommonWealth New Bedford Energy LLC
New Bedford/Dartmouth, Massachusetts

MAY 2022

	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday			
	5/17/2022	5/18/2022	5/19/2022	5/20/2022	5/21/2022	5/22/2022	5/23/2022	5/24/2022	5/25/2022	5/26/2022	5/27/2022	5/28/2022	5/29/2022	5/30/2022	5/31/2022	TOTAL	Biogas	LFG
Cumulative by Facility in month																		
Max cumulative available engi	1,632	1,728	1,824	1,920	2,016	2,112	2,208	2,304	2,400	2,496	2,592	2,688	2,784	2,880	2,976			
Actual cumulative engine run h	1,592	1,675	1,771	1,867	1,963	2,059	2,155	2,250	2,345	2,440	2,535	2,630	2,725	2,820	2,915			
Cumulative Availability, %	97.5%	96.9%	97.1%	97.2%	97.4%	97.5%	97.6%	97.7%	97.7%	97.8%	97.8%	97.8%	97.9%	97.9%	98.0%			
Max cumulative gross output, k	1,346,400	1,425,600	1,504,800	1,584,000	1,663,200	1,742,400	1,821,600	1,900,800	1,980,000	2,059,200	2,138,400	2,217,600	2,296,800	2,376,000	2,455,200			
Actual cumulative gross output,	1,041,051	1,101,365	1,164,472	1,227,579	1,290,012	1,352,653	1,414,950	1,475,763	1,536,973	1,598,486	1,662,591	1,727,473	1,791,437	1,855,630	1,920,374			
Cumulative Capacity Factor	77.3%	77.3%	77.4%	77.5%	77.6%	77.6%	77.7%	77.6%	77.6%	77.6%	77.7%	77.9%	78.0%	78.1%	78.2%			
Cumulative fuel input, MMBtu h	13,852	14,647	15,478	16,309	17,131	17,952	18,774	19,578	20,386	21,194	22,027	22,876	23,716	24,555	25,404			
Cumulative gross output, kWhr	1,041,051	1,101,365	1,164,472	1,227,579	1,290,012	1,352,653	1,414,950	1,475,763	1,536,973	1,598,486	1,662,591	1,727,473	1,791,437	1,855,630	1,920,374			
Heat Rate																		
Daily heat rate, Btu/kWe gross	11,749	11,869	11,852	11,852	11,846	11,807	11,872	11,907	11,882	11,823	11,699	11,781	11,815	11,773	11,802			
Daily heat rate, Btu/kWe gross	13,052	13,184	13,167	13,167	13,160	13,116	13,188	13,227	13,199	13,134	12,996	13,087	13,125	13,078	13,110			
Cumulative heat rate, Btu/kWe	11,978	11,972	11,965	11,960	11,954	11,947	11,944	11,943	11,940	11,936	11,926	11,921	11,917	11,912	11,908			
Cumulative heat rate, Btu/kWe	13,306	13,299	13,292	13,286	13,280	13,272	13,268	13,267	13,264	13,259	13,249	13,243	13,238	13,233	13,229			
Cumulative by Facility starting C																		
Max cumulative available engi	13,148	13,244	13,340	13,436	13,532	13,628	13,724	13,820	13,916	14,012	14,108	14,204	14,300	14,396	14,492			
Actual cumulative engine run h	12,140	12,223	12,319	12,415	12,511	12,607	12,703	12,798	12,893	12,988	13,083	13,178	13,273	13,368	13,463			
Cumulative Availability, %	92.3%	92.3%	92.3%	92.4%	92.5%	92.5%	92.6%	92.6%	92.6%	92.7%	92.7%	92.8%	92.8%	92.9%	92.9%			
Max cumulative gross output, k	10,847,100	10,926,300	11,005,500	11,084,700	11,163,900	11,243,100	11,322,300	11,401,500	11,480,700	11,559,900	11,639,100	11,718,300	11,797,500	11,876,700	11,955,900			
Actual cumulative gross output,	8,048,669	8,108,983	8,172,090	8,235,197	8,297,630	8,360,271	8,422,568	8,483,381	8,544,591	8,606,104	8,670,209	8,735,091	8,799,055	8,863,248	8,927,992			
Cumulative Capacity Factor	74.2%	74.2%	74.3%	74.3%	74.3%	74.4%	74.4%	74.4%	74.4%	74.4%	74.5%	74.5%	74.6%	74.6%	74.7%			
Cumulative fuel input, MMBtu h	108,844	109,639	110,470	111,301	112,122	112,944	113,766	114,570	115,378	116,186	117,019	117,868	118,708	119,547	120,396			
Cumulative gross output, kWhr	8,048,669	8,108,983	8,172,090	8,235,197	8,297,630	8,360,271	8,422,568	8,483,381	8,544,591	8,606,104	8,670,209	8,735,091	8,799,055	8,863,248	8,927,992			
Cumulative heat rate, Btu/kWe	12,174	12,171	12,169	12,166	12,164	12,161	12,159	12,157	12,155	12,153	12,150	12,147	12,145	12,142	12,139			
Cumulative heat rate, Btu/kWe	13,523	13,521	13,518	13,515	13,513	13,510	13,507	13,505	13,503	13,500	13,497	13,494	13,491	13,488	13,485			
Service																		
Engine 1											District installs				District installs			
Engine 2								Service			dewatering EW-83, and EW-78				dewatering EW-84			
Engine 3																		
Engine 4																		
Oil - oil and filter change																		
Service - plugs, air filter, valve insp																		
Precipitation																		
NSTAR Power Reports	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday			
Date	5/17/2022	5/18/2022	5/19/2022	5/20/2022	5/21/2022	5/22/2022	5/23/2022	5/24/2022	5/25/2022	5/26/2022	5/27/2022	5/28/2022	5/29/2022	5/30/2022	5/31/2022	TOTAL		
Hour																		
1	2,361	2,361	2,517	2,561	2,516	2,513	2,513	2,468	2,519	2,521	2,523	2,611	2,614	2,566	2,606			
2	2,361	2,361	2,516	2,561	2,517	2,514	2,516	2,470	2,519	2,521	2,524	2,613	2,614	2,566	2,607			
3	2,361	2,361	2,516	2,561	2,516	2,514	2,517	2,470	2,519	2,521	2,523	2,614	2,614	2,567	2,607			
4	2,361	2,361	2,516	2,560	2,517	2,515	2,516	2,471	2,520	2,521	2,523	2,616	2,614	2,567	2,608			
5	2,361	2,362	2,516	2,560	2,516	2,516	2,517	2,471	2,518	2,521	2,524	2,615	2,615	2,567	2,609			
6	2,362	2,362	2,515	2,561	2,517	2,516	2,514	2,471	2,518	2,522	2,524	2,614	2,614	2,566	2,608			
7	2,361	2,362	2,515	2,554	2,517	2,516	2,513	2,470	2,518	2,522	2,520	2,615	2,590	2,566	2,607			
8	2,357	2,357	2,511	2,507	2,517	2,513	2,504	2,466	2,514	2,520	2,596	2,616	2,566	2,566	2,600			
9	2,352	2,355	2,508	2,504	2,516	2,512	2,503	2,248	2,376	2,504	2,609	2,617	2,564	2,564	2,597			
10	2,343	2,353	2,509	2,501	2,515	2,508	2,503	1,879	1,871	2,154	2,609	2,616	2,562	2,561	2,591			
11	2,333	2,350	2,509	2,497	2,514	2,502	2,501	2,213	2,086	1,958	2,607	2,615	2,558	2,558	2,587			
12	2,325	2,352	2,509	2,496	2,506	2,502	2,497	2,505	2,506	2,509	2,607	2,615	2,558	2,557	2,585			
13	2,325	2,349	2,566	2,491	2,503	2,500	2,494	2,503	2,505	2,510	2,604	2,615	2,558	2,568	2,589			
14	2,326	2,411	2,605	2,491	2,503	2,501	2,493	2,504	2,505	2,510	2,601	2,614	2,559	2,603	2,596			
15	2,329	2,511	2,605	2,496	2,500	2,503	2,494	2,503	2,506	2,508	2,601	2,614	2,557	2,603	2,599			
16	2,351	2,514	2,564	2,498	2,500	2,504	2,499	2,502	2,504	2,511	2,603	2,615	2,558	2,602	2,600			
17	2,357	2,515	2,563	2,504	2,502	2,505	2,505	2,508	2,510	2,520	2,609	2,614	2,558	2,604	2,604			
18	2,358	2,515	2,565	2,509	2,504	2,507	2,506	2,508	2,517	2,521	2,611	2,614	2,559	2,605	2,606			
19	2,359	2,515	2,564	2,512	2,510	2,506	2,506	2,508	2,517	2,521	2,610	2,615	2,560	2,605	2,606			
20	2,358	2,515	2,563	2,512	2,511	2,506	2,506	2,508	2,517	2,521	2,610	2,615	2,560	2,605	2,606			
21	2,359	2,516	2,563	2,512	2,512	2,508	2,506	2,510	2,517	2,521	2,610	2,616	2,560	2,606	2,606			
22	2,360	2,517	2,562	2,512	2,512	2,512	2,507	2,513	2,517	2,521	2,610	2,616	2,561	2,605	2,610			
23	2,360	2,517	2,561	2,513	2,511	2,513	2,466	2,514	2,517	2,522	2,610	2,615	2,564	2,605	2,612			
24	2,360	2,517	2,561	2,514	2,513	2,513	2,467	2,519	2,521	2,524	2,610	2,615	2,565	2,606	2,613			
TOTAL	56,440	58,209	60,999	60,487	60,265	60,219	60,063	58,702	59,137	59,504	61,978	62,755	61,802	61,988	62,459			
Cumulative Output Sold, kV	1,002,434	1,060,643	1,121,642	1,182,129	1,242,394	1,302,613	1,362,676	1,421,378	1,480,515	1,540,019	1,601,997	1,664,752	1,726,554	1,788,542	1,851,001			
Transformer and line efficienc	99.8%	99.8%	99.8%	98.9%	99.8%	99.8%	99.8%	99.8%	99.8%	99.8%	99.8%	99.8%	99.8%	99.8%	99.8%	0.0%		
Hourly average	2,352	2,425	2,542	2,520	2,511	2,509	2,503	2,446	2,464	2,479	2,582	2,615	2,575	2,583	2,602	2,488		

June 2022																	
		Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday
		6/1/2022	6/2/2022	6/3/2022	6/4/2022	6/5/2022	6/6/2022	6/7/2022	6/8/2022	6/9/2022	6/10/2022	6/11/2022	6/12/2022	6/13/2022	6/14/2022	6/15/2022	6/16/2022
LFG and Biogas Flow to the Engines (KSCF)		1,534	1,561	1,541	1,581	1,597	1,586	1,570	1,589	1,618	1,635	1,645	1,601	1,441	1,610	1,625	1,588
LFG and Biogas Flow to the Engines (MMBTU HHV)		845	860	837	852	852	847	840	857	880	875	882	868	790	877	874	859
LFG and Biogas Flow to the Flare (KSCF)		-	-	-	-	-	-	-	-	-	-	-	-	92	-	-	-
LFG and BiogasFlow to the Flare (MMBTU HHV)		-	-	-	-	-	-	-	-	-	-	-	-	50	-	-	-
LFG and Biogas Total Flow (KSCF)		1,534	1,561	1,541	1,581	1,597	1,586	1,570	1,589	1,618	1,635	1,645	1,601	1,533	1,610	1,625	1,588
LFG and Biogas Total Flow (MMBTU HHV)		845	860	837	852	852	847	840	857	880	875	882	868	840	877	874	859
Average Methane Content (%)		54.4	54.5	53.7	53.3	52.7	52.8	52.9	53.3	53.8	52.9	53.0	53.6	54.2	53.8	53.1	53.5
Engine 1 Hours		24	24	24	24	24	24	24	24	24	24	24	24	24	22	24	24
Engine 2 Hours		23	23	23	23	23	23	23	23	23	23	23	23	23	22	24	24
Engine 3 Hours		24	24	24	24	24	24	24	24	24	24	24	24	24	22	24	24
Engine 4 Hours		24	24	24	24	24	24	24	24	24	24	24	24	24	21	24	24
Generator 1 Power Output (kWhr)		15,604	16,108	15,172	15,600	15,600	15,600	15,384	15,600	16,192	15,944	15,600	15,164	13,808	15,592	15,576	15,600
Generator 2 Power Output (kWhr)		15,588	16,048	15,936	16,776	16,780	15,972	15,592	16,420	16,784	16,784	16,780	15,520	14,268	15,596	15,576	15,596
Generator 3 Power Output (kWhr)		16,752	16,752	15,892	16,732	16,744	16,752	16,752	16,756	16,752	16,756	16,756	15,944	14,824	16,752	16,732	16,748
Generator 4 Power Output (kWhr)		15,716	16,740	15,904	16,732	16,740	16,736	16,736	16,724	16,728	16,732	16,732	16,368	14,800	16,724	16,712	16,580
Gross Power Output (kWhr)		63,760	65,754	63,045	65,949	65,949	65,160	64,587	65,638	66,567	66,332	65,974	63,069	57,900	64,658	64,600	64,572
Net Power Output (kWhr)		61,749	63,721	61,063	63,959	63,924	63,059	62,473	63,514	64,453	64,179	63,871	60,995	55,906	62,644	62,547	62,541
Power Sold as metered by NStar, (kWhr)		61,638	63,591	60,943	63,834	63,810	62,922	62,338	63,383	64,323	64,034	63,743	60,899	55,790	62,483	62,466	62,403
Offgrid RECs (kWhr)		2,011	2,033	1,982	1,990	2,025	2,101	2,114	2,124	2,114	2,153	2,103	2,074	1,994	2,014	2,053	2,031
Calculated Performance Results																	
Daily																	
Power output (kW average when running)																	
Generator 1		650	671	632	650	650	650	641	650	675	664	650	632	575	709	649	650
Generator 2		678	698	693	729	730	694	678	714	730	730	730	675	620	709	649	650
Generator 3		698	698	662	697	698	698	698	698	698	698	698	664	618	761	697	698
Generator 4		655	698	663	697	698	697	697	697	697	697	697	682	617	796	696	691
Power output (kW average over 24-hrs)																	
Facility Gross		2,657	2,740	2,627	2,748	2,748	2,715	2,691	2,735	2,774	2,764	2,749	2,628	2,413	2,694	2,692	2,691
Facility Net		2,573	2,655	2,544	2,665	2,664	2,627	2,603	2,646	2,686	2,674	2,661	2,541	2,329	2,610	2,606	2,606
In-plant load		84	85	83	83	84	88	88	89	88	90	88	86	83	84	86	85
Daily availability factor																	
Facility		99%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%	91%	100%	100%
Engine 1		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	92%	100%	100%
Engine 2		96%	96%	96%	96%	96%	96%	96%	96%	96%	96%	96%	96%	96%	92%	100%	100%
Engine 3		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	92%	100%	100%
Engine 4		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	88%	100%	100%
Daily capacity factor																	
Facility		81%	83%	80%	83%	83%	82%	82%	83%	84%	84%	83%	80%	73%	82%	82%	82%
Engine 1		79%	81%	77%	79%	79%	79%	78%	79%	82%	81%	79%	77%	70%	86%	79%	79%
Engine 2		82%	85%	84%	88%	88%	84%	82%	87%	88%	88%	88%	82%	75%	86%	79%	79%
Engine 3		85%	85%	80%	85%	85%	85%	85%	85%	85%	85%	85%	81%	75%	92%	85%	85%
Engine 4		79%	85%	80%	85%	85%	85%	85%	84%	84%	85%	85%	83%	75%	97%	84%	84%
Cumulative by engine																	
Engine operating run hours in the month																	
Max Cumulative Available, hours		24	48	72	96	120	144	168	192	216	240	264	288	312	336	360	384
Engine 1		24	48	72	96	120	144	168	192	216	240	264	288	312	334	358	382
Engine 2		23	46	69	92	115	138	161	184	207	230	253	276	299	321	345	369
Engine 3		24	48	72	96	120	144	168	192	216	240	264	288	312	334	358	382
Engine 4		24	48	72	96	120	144	168	192	216	240	264	288	312	333	357	381
Engine operating run hours total from 0 hours																	
Engine 1	125,855	125,879	125,903	125,927	125,951	125,975	125,999	126,023	126,047	126,071	126,095	126,119	126,143	126,167	126,189	126,213	126,237
Engine 2	115,061	115,084	115,107	115,130	115,153	115,176	115,199	115,222	115,245	115,268	115,291	115,314	115,337	115,360	115,382	115,406	115,430
Engine 3	125,173	125,197	125,221	125,245	125,269	125,293	125,317	125,341	125,365	125,389	125,413	125,437	125,461	125,485	125,507	125,531	125,555
Engine 4	120,749	120,773	120,797	120,821	120,845	120,869	120,893	120,917	120,941	120,965	120,989	121,013	121,037	121,061	121,082	121,106	121,130
Cumulative availability, %	June 1, 2022 @ 00:00 hours																
Engine 1		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	99%	99%	99%
Engine 2		96%	96%	96%	96%	96%	96%	96%	96%	96%	96%	96%	96%	96%	96%	96%	96%
Engine 3		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	99%	99%	99%
Engine 4		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	99%	99%	99%
Engine cumulative gross output, kWhr																	
Max cumulative capacity one engine		825	1,650	2,475	3,300	4,125	4,950	5,775	6,600	7,425	8,250	9,075	9,900	10,725	11,550	12,375	13,200
Engine 1		650	1,321	1,954	2,604	3,254	3,904	4,545	5,195	5,869	6,534	7,184	7,815	8,391	9,099	9,748	10,398
Engine 2		678	1,375	2,068	2,798	3,527	4,222	4,900	5,614	6,343	7,073	7,803	8,477	9,098	9,807	10,456	11,105
Engine 3		698	1,396	2,058	2,755	3,453	4,151	4,849	5,547	6,245	6,943	7,642	8,306	8,924	9,685	10,382	11,080
Engine 4		655	1,352	2,015	2,712	3,410	4,107	4,804	5,501	6,198	6,895	7,593	8,275	8,891	9,688	10,384	11,075
Cumulative capacity factor, %																	
Engine 1		79%	80%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	78%	79%	79%	79%
Engine 2		82%	83%	84%	85%	86%	85%	85%	85%	85%	86%	86%	86%	85%	85%	84%	84%
Engine 3		85%	85%	83%	83%	84%	84%	84%	84%	84%	84%	84%	84%	83%	84%	84%	84%
Engine 4		79%	82%	81%	82%	83%	83%	83%	83%	83%	84%	84%	84%	83%	84%	84%	84%

CommonWealth New Bedford Energy LLC
New Bedford/Dartmouth, Massachusetts

JUNE 2022

	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday
	6/1/2022	6/2/2022	6/3/2022	6/4/2022	6/5/2022	6/6/2022	6/7/2022	6/8/2022	6/9/2022	6/10/2022	6/11/2022	6/12/2022	6/13/2022	6/14/2022	6/15/2022	6/16/2022
Cumulative by Facility in month																
Max cumulative available engine run hours	96	192	288	384	480	576	672	768	864	960	1,056	1,152	1,248	1,344	1,440	1,536
Actual cumulative engine run hours	95	190	285	380	475	570	665	760	855	950	1,045	1,140	1,235	1,322	1,418	1,514
Cumulative Availability, %	99.0%	99.0%	99.0%	99.0%	99.0%	99.0%	99.0%	99.0%	99.0%	99.0%	99.0%	99.0%	99.0%	98.4%	98.5%	98.6%
Max cumulative gross output, kWhr	79,200	158,400	237,600	316,800	396,000	475,200	554,400	633,600	712,800	792,000	871,200	950,400	1,029,600	1,108,800	1,188,000	1,267,200
Actual cumulative gross output, kWhr	63,760	129,514	192,559	258,508	324,457	389,617	454,204	519,842	586,409	652,741	718,715	781,784	839,684	904,342	968,942	1,033,514
Cumulative Capacity Factor	80.5%	81.8%	81.0%	81.6%	81.9%	82.0%	81.9%	82.0%	82.3%	82.4%	82.5%	82.3%	81.6%	81.6%	81.6%	81.6%
Cumulative fuel input, MMBtu HHV	845	1,705	2,542	3,394	4,246	5,093	5,933	6,791	7,671	8,546	9,428	10,296	11,086	11,963	12,837	13,696
Cumulative gross output, kWhr	63,760	129,514	192,559	258,508	324,457	389,617	454,204	519,842	586,409	652,741	718,715	781,784	839,684	904,342	968,942	1,033,514
Heat Rate																
Daily heat rate, Btu/kWe gross LHV	11,929	11,779	11,951	11,627	11,627	11,703	11,713	11,756	11,903	11,880	12,029	12,389	12,281	12,214	12,176	11,978
Daily heat rate, Btu/kWe gross HHV	13,251	13,085	13,276	12,916	12,916	13,000	13,012	13,060	13,223	13,197	13,363	13,763	13,642	13,568	13,526	13,306
Cumulative heat rate, Btu/kWe gross LHV	11,929	11,853	11,885	11,819	11,780	11,767	11,760	11,759	11,775	11,786	11,808	11,855	11,885	11,908	11,926	11,929
Cumulative heat rate, Btu/kWe gross HHV	13,251	13,167	13,203	13,130	13,086	13,072	13,063	13,063	13,081	13,093	13,118	13,170	13,202	13,228	13,248	13,252
Cumulative by Facility starting Calendar Year																
Max cumulative available engine run hours	14,588	14,684	14,780	14,876	14,972	15,068	15,164	15,260	15,356	15,452	15,548	15,644	15,740	15,836	15,932	16,028
Actual cumulative engine run hours	13,558	13,653	13,748	13,843	13,938	14,033	14,128	14,223	14,318	14,413	14,508	14,603	14,698	14,785	14,881	14,977
Cumulative Availability, %	92.9%	93.0%	93.0%	93.1%	93.1%	93.1%	93.2%	93.2%	93.2%	93.3%	93.3%	93.3%	93.4%	93.4%	93.4%	93.4%
Max cumulative gross output, kWhr	12,035,100	12,114,300	12,193,500	12,272,700	12,351,900	12,431,100	12,510,300	12,589,500	12,668,700	12,747,900	12,827,100	12,906,300	12,985,500	13,064,700	13,143,900	13,223,100
Actual cumulative gross output, kWhr	8,991,752	9,057,506	9,120,551	9,186,500	9,252,449	9,317,609	9,382,196	9,447,834	9,514,401	9,580,733	9,646,707	9,709,776	9,767,676	9,832,334	9,896,934	9,961,506
Cumulative Capacity Factor	74.7%	74.8%	74.8%	74.9%	74.9%	75.0%	75.0%	75.0%	75.1%	75.2%	75.2%	75.2%	75.2%	75.3%	75.3%	75.3%
Cumulative fuel input, MMBtu HHV	121,241	122,101	122,938	123,790	124,642	125,489	126,329	127,186	128,067	128,942	129,824	130,692	131,482	132,359	133,233	134,092
Cumulative gross output, kWhr	8,991,752	9,057,506	9,120,551	9,186,500	9,252,449	9,317,609	9,382,196	9,447,834	9,514,401	9,580,733	9,646,707	9,709,776	9,767,676	9,832,334	9,896,934	9,961,506
Cumulative heat rate, Btu/kWe gross LHV	12,138	12,135	12,134	12,130	12,127	12,124	12,121	12,118	12,117	12,115	12,115	12,116	12,117	12,118	12,118	12,118
Cumulative heat rate, Btu/kWe gross HHV	13,484	13,481	13,479	13,475	13,471	13,468	13,465	13,462	13,460	13,458	13,458	13,460	13,461	13,462	13,462	13,461
Service																
Engine 1	District dewatering		District dewatering										Replace Air Cooler			
Engine 2	EW-85		Planning EW-81										Flare on			
Engine 3	Received new gas cooler.															
Engine 4																
Oil - oil and filter change																
Service - plugs, air filter, valve inspection and adjustment																
Precipitation																
NSTAR Power Reports	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday
Date	6/1/2022	6/2/2022	6/3/2022	6/4/2022	6/5/2022	6/6/2022	6/7/2022	6/8/2022	6/9/2022	6/10/2022	6/11/2022	6/12/2022	6/13/2022	6/14/2022	6/15/2022	6/16/2022
Hour																
1	2,613	2,617	2,709	2,666	2,664	2,662	2,612	2,612	2,663	2,707	2,659	2,651	2,653	2,612	2,612	2,612
2	2,612	2,617	2,709	2,665	2,665	2,663	2,612	2,612	2,662	2,710	2,660	2,612	2,654	2,612	2,612	2,612
3	2,614	2,617	2,710	2,664	2,665	2,663	2,613	2,615	2,662	2,709	2,661	2,612	2,653	2,613	2,612	2,612
4	2,614	2,617	2,709	2,666	2,665	2,662	2,613	2,615	2,662	2,710	2,661	2,612	2,653	2,614	2,612	2,612
5	2,614	2,617	2,709	2,665	2,666	2,663	2,614	2,615	2,663	2,710	2,661	2,612	2,653	2,614	2,612	2,613
6	2,614	2,617	2,709	2,665	2,664	2,663	2,610	2,615	2,661	2,710	2,661	2,613	2,526	2,614	2,613	2,612
7	2,614	2,617	2,709	2,664	2,664	2,660	2,610	2,612	2,659	2,706	2,662	2,612	2,461	2,614	2,612	2,611
8	2,611	2,612	2,667	2,660	2,664	2,638	2,392	2,635	2,655	2,656	2,661	2,612	2,622	2,609	2,606	2,604
9	2,600	2,609	2,653	2,660	2,663	2,599	2,602	2,651	2,652	2,648	2,656	2,609	2,647	2,601	2,600	2,600
10	2,199	2,606	2,652	2,660	2,657	2,595	2,598	2,651	2,651	2,645	2,651	1,631	1,116	2,593	2,599	2,593
11	1,996	2,605	1,399	2,658	2,652	2,589	2,595	2,650	2,652	2,643	2,650	2,521	-	2,587	2,593	2,591
12	2,600	2,605	1,253	2,656	2,651	2,593	2,594	2,649	2,653	2,644	2,651	2,655	25	2,585	2,587	2,442
13	2,607	2,601	2,512	2,650	2,651	2,597	2,597	2,646	2,703	2,643	2,651	2,651	2,446	2,586	2,589	2,599
14	2,602	2,612	2,237	2,650	2,651	2,595	2,600	2,646	2,701	2,644	2,649	2,653	2,602	2,585	2,581	2,599
15	2,604	2,659	2,651	2,649	2,649	2,599	2,600	2,647	2,695	2,644	2,650	2,654	2,599	2,583	2,582	2,600
16	2,607	2,703	2,656	2,650	2,648	2,603	2,600	2,649	2,693	2,644	2,650	2,652	2,601	2,585	2,588	2,603
17	2,614	2,706	2,660	2,652	2,649	2,606	2,605	2,655	2,698	2,653	2,651	1,350	2,607	2,603	2,602	2,611
18	2,614	2,707	2,662	2,662	2,657	2,608	2,609	2,655	2,704	2,657	2,657	2,658	2,610	2,610	2,602	2,611
19	2,614	2,707	2,662	2,662	2,660	2,609	2,610	2,654	2,704	2,658	2,657	2,657	2,610	2,609	2,607	2,611
20	2,614	2,706	2,662	2,662	2,661	2,609	2,610	2,656	2,705	2,659	2,656	2,655	2,610	2,610	2,608	2,611
21	2,614	2,707	2,662	2,662	2,660	2,610	2,610	2,661	2,705	2,658	2,656	2,656	2,610	2,610	2,607	2,611
22	2,614	2,709	2,663	2,661	2,660	2,612	2,610	2,660	2,706	2,659	2,657	2,655	2,610	2,612	2,609	2,611
23	2,616	2,709	2,664	2,662	2,662	2,612	2,611	2,660	2,706	2,659	2,658	2,653	2,611	2,611	2,610	2,611
24	2,617	2,709	2,664	2,663	2,662	2,612	2,611	2,662	2,708	2,658	2,657	2,653	2,611	2,611	2,611	2,611
TOTAL	61,638	63,591	60,943	63,834	63,810	62,922	62,338	63,383	64,323	64,034	63,743	60,899	55,790	62,483	62,466	62,403
Cumulative Output Sold, kWhr	61,638	125,229	186,172	250,006	313,816	376,738	439,076	502,459	566,782	630,816	694,559	755,458	811,248	873,731	936,197	998,600
Transformer and line efficiency	99.8%	99.8%	99.8%	99.8%	99.8%	99.8%	99.8%	99.8%	99.8%	99.8%	99.8%	99.8%	99.8%	99.7%	99.9%	99.8%
Hourly average	2,568	2,650	2,539	2,660	2,659	2,622	2,597	2,641	2,680	2,668	2,656	2,537	2,325	2,603	2,603	2,600

CommonWealth New Bedford Energy LLC
New Bedford/Dartmouth, Massachusetts

JUNE 2022

June 2022																	
	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday			
	6/17/2022	6/18/2022	6/19/2022	6/20/2022	6/21/2022	6/22/2022	6/23/2022	6/24/2022	6/25/2022	6/26/2022	6/27/2022	6/28/2022	6/29/2022	6/30/2022	TOTAL	Biogas	LFG
LFG and Biogas Flow to the Engine	1,563	1,604	1,635	1,606	1,619	1,559	1,563	1,583	1,608	1,613	1,582	1,590	1,583	1,609	47,639	514	47,125
LFG and Biogas Flow to the Engine	859	879	884	859	863	844	851	851	857	857	859	861	859	869	25,747	358	25,390
LFG and Biogas Flow to the Flare (	-	-	-	-	-	-	-	-	-	-	-	-	-	-	92	1.4%	99%
LFG and BiogasFlow to the Flare (M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50		
LFG and Biogas Total Flow (KSCF	1,563	1,604	1,635	1,606	1,619	1,559	1,563	1,583	1,608	1,613	1,582	1,590	1,583	1,609	47,731		
LFG and Biogas Total Flow (MMBT	859	879	884	859	863	844	851	851	857	857	859	861	859	869	25,798		
Average Methane Content (%)	54.3	54.1	53.4	52.8	52.7	53.5	53.8	53.1	52.7	52.5	53.7	53.5	53.6	53.4	53.4		
Engine 1 Hours	24	24	24	24	24	24	24	24	24	24	24	24	24	24	718		
Engine 2 Hours	24	24	24	24	24	24	24	24	24	24	24	24	24	24	705		
Engine 3 Hours	24	24	24	24	24	24	24	24	24	24	24	24	24	24	718		
Engine 4 Hours	24	24	24	24	24	24	24	24	24	24	24	24	24	24	717		
Generator 1 Power Output (kWhr)	15,600	15,596	15,604	15,592	15,596	15,592	15,596	15,600	15,596	15,600	15,600	15,600	15,600	16,048	466,964		
Generator 2 Power Output (kWhr)	16,416	16,784	16,776	15,952	15,592	15,588	15,320	15,596	15,604	15,604	15,604	15,604	15,600	16,236	478,292		
Generator 3 Power Output (kWhr)	16,752	16,760	16,748	16,748	16,748	16,740	16,748	16,752	16,760	16,764	16,756	16,760	16,756	16,764	498,952		
Generator 4 Power Output (kWhr)	16,732	16,744	16,756	16,736	16,724	16,716	16,728	16,732	16,728	16,732	16,732	16,724	16,720	16,724	497,632		
Gross Power Output (kWhr)	65,607	66,003	66,016	65,127	64,756	64,760	64,495	64,771	64,791	64,791	64,775	64,800	64,827	65,823	1,944,856		
Net Power Output (kWhr)	63,541	64,008	64,016	62,994	62,666	62,700	62,419	62,730	62,715	62,683	62,664	62,719	62,713	63,707	1,882,873		
Power Sold as metered by NStar, (	63,402	63,905	63,920	62,854	62,517	62,579	62,278	62,588	62,591	62,565	62,519	62,568	62,567	63,545	1,878,998	CRMCB inplant	
Offgrid RECs (kWhr)	2,066	1,995	2,000	2,133	2,090	2,060	2,076	2,041	2,076	2,108	2,111	2,081	2,114	2,116	61,983	7,810	
Calculated Performance Results																13%	
Daily																of total in-plant	
Power output (kW average whe																power	
Generator 1	650	650	650	650	650	650	650	650	650	650	650	650	650	669			
Generator 2	684	699	699	665	650	650	638	650	650	650	650	650	650	677			
Generator 3	698	698	698	698	698	698	698	698	698	699	698	698	698	699			
Generator 4	697	698	698	697	697	697	697	697	697	697	697	697	697	697			
Power output (kW average ove																	
Facility Gross	2,734	2,750	2,751	2,714	2,698	2,698	2,687	2,699	2,700	2,700	2,699	2,700	2,701	2,743			
Facility Net	2,648	2,667	2,667	2,625	2,611	2,613	2,601	2,614	2,613	2,612	2,611	2,613	2,613	2,654			
In-plant load	86	83	83	89	87	86	87	85	87	88	88	87	88	88			
Daily availability factor																	
Facility	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%			
Engine 1	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%			
Engine 2	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%			
Engine 3	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%			
Engine 4	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%			
Daily capacity factor																	
Facility	83%	83%	83%	82%	82%	82%	81%	82%	82%	82%	82%	82%	82%	83%			
Engine 1	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	81%			
Engine 2	83%	85%	85%	81%	79%	79%	77%	79%	79%	79%	79%	79%	79%	82%			
Engine 3	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%			
Engine 4	85%	85%	85%	85%	84%	84%	84%	85%	84%	85%	85%	84%	84%	84%			
Cumulative by engine																	
Engine operating run hours in th																	
Max Cumulative Available,	408	432	456	480	504	528	552	576	600	624	648	672	696	720			
Engine 1	406	430	454	478	502	526	550	574	598	622	646	670	694	718			
Engine 2	393	417	441	465	489	513	537	561	585	609	633	657	681	705			
Engine 3	406	430	454	478	502	526	550	574	598	622	646	670	694	718			
Engine 4	405	429	453	477	501	525	549	573	597	621	645	669	693	717			
Engine operating run hours tota																	
Engine 1	126,261	126,285	126,309	126,333	126,357	126,381	126,405	126,429	126,453	126,477	126,501	126,525	126,549	126,573			
Engine 2	115,454	115,478	115,502	115,526	115,550	115,574	115,598	115,622	115,646	115,670	115,694	115,718	115,742	115,766			
Engine 3	125,579	125,603	125,627	125,651	125,675	125,699	125,723	125,747	125,771	125,795	125,819	125,843	125,867	125,891			
Engine 4	121,154	121,178	121,202	121,226	121,250	121,274	121,298	121,322	121,346	121,370	121,394	121,418	121,442	121,466			
Cumulative availability, %																	
Engine 1	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%			
Engine 2	96%	97%	97%	97%	97%	97%	97%	97%	98%	98%	98%	98%	98%	98%			
Engine 3	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%			
Engine 4	99%	99%	99%	99%	99%	99%	99%	99%	100%	100%	100%	100%	100%	100%			
Engine cumulative gross output																	
Max cumulative capacity or	14,025	14,850	15,675	16,500	17,325	18,150	18,975	19,800	20,625	21,450	22,275	23,100	23,925	24,750			
Engine 1	11,048	11,698	12,348	12,998	13,648	14,298	14,947	15,597	16,247	16,897	17,547	18,197	18,847	19,516			
Engine 2	11,789	12,489	13,188	13,852	14,502	15,152	15,790	16,440	17,090	17,740	18,390	19,040	19,690	20,367			
Engine 3	11,778	12,476	13,174	13,872	14,570	15,267	15,965	16,663	17,361	18,060	18,758	19,456	20,155	20,853			
Engine 4	11,772	12,470	13,168	13,865	14,562	15,258	15,955	16,653	17,350	18,047	18,744	19,441	20,137	20,834			
Cumulative capacity factor, %																	
Engine 1	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%			
Engine 2	84%	84%	84%	84%	84%	83%	83%	83%	83%	83%	83%	82%	82%	82%			
Engine 3	84%	84%	84%	84%	84%	84%	84%	84%	84%	84%	84%	84%	84%	84%			
Engine 4	84%	84%	84%	84%	84%	84%	84%	84%	84%	84%	84%	84%	84%	84%			

CommonWealth New Bedford Energy LLC
New Bedford/Dartmouth, Massachusetts

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	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday			
	6/17/2022	6/18/2022	6/19/2022	6/20/2022	6/21/2022	6/22/2022	6/23/2022	6/24/2022	6/25/2022	6/26/2022	6/27/2022	6/28/2022	6/29/2022	6/30/2022	TOTAL	Biogas	LFG
Cumulative by Facility in month																	
Max cumulative available engi	1,632	1,728	1,824	1,920	2,016	2,112	2,208	2,304	2,400	2,496	2,592	2,688	2,784	2,880			
Actual cumulative engine run h	1,610	1,706	1,802	1,898	1,994	2,090	2,186	2,282	2,378	2,474	2,570	2,666	2,762	2,858			
Cumulative Availability, %	98.7%	98.7%	98.8%	98.9%	98.9%	99.0%	99.0%	99.0%	99.1%	99.1%	99.2%	99.2%	99.2%	99.2%			
Max cumulative gross output, k	1,346,400	1,425,600	1,504,800	1,584,000	1,663,200	1,742,400	1,821,600	1,900,800	1,980,000	2,059,200	2,138,400	2,217,600	2,296,800	2,376,000			
Actual cumulative gross output,	1,099,121	1,165,124	1,231,140	1,296,267	1,361,023	1,425,783	1,490,278	1,555,049	1,619,840	1,684,631	1,749,406	1,814,206	1,879,033	1,944,856			
Cumulative Capacity Factor	81.6%	81.7%	81.8%	81.8%	81.8%	81.8%	81.8%	81.8%	81.8%	81.8%	81.8%	81.8%	81.8%	81.9%			
Cumulative fuel input, MMBtu H	14,555	15,434	16,318	17,177	18,040	18,884	19,734	20,585	21,442	22,299	23,159	24,019	24,878	25,747			
Cumulative gross output, kWhr	1,099,121	1,165,124	1,231,140	1,296,267	1,361,023	1,425,783	1,490,278	1,555,049	1,619,840	1,684,631	1,749,406	1,814,206	1,879,033	1,944,856			
Heat Rate																	
Daily heat rate, Btu/kWe gross	11,789	11,988	12,057	11,868	12,002	11,725	11,872	11,822	11,908	11,908	11,942	11,955	11,925	11,887			
Daily heat rate, Btu/kWe gross	13,096	13,318	13,394	13,183	13,333	13,025	13,189	13,132	13,229	13,229	13,266	13,281	13,248	13,205			
Cumulative heat rate, Btu/kWe	11,921	11,925	11,932	11,929	11,932	11,923	11,921	11,916	11,916	11,916	11,917	11,918	11,918	11,917			
Cumulative heat rate, Btu/kWe	13,243	13,247	13,255	13,251	13,255	13,245	13,242	13,238	13,237	13,237	13,238	13,240	13,240	13,239			
Cumulative by Facility starting C																	
Max cumulative available engi	16,124	16,220	16,316	16,412	16,508	16,604	16,700	16,796	16,892	16,988	17,084	17,180	17,276	17,372			
Actual cumulative engine run h	15,073	15,169	15,265	15,361	15,457	15,553	15,649	15,745	15,841	15,937	16,033	16,129	16,225	16,321			
Cumulative Availability, %	93.5%	93.5%	93.6%	93.6%	93.6%	93.7%	93.7%	93.7%	93.8%	93.8%	93.8%	93.9%	93.9%	94.0%			
Max cumulative gross output, k	13,302,300	13,381,500	13,460,700	13,539,900	13,619,100	13,698,300	13,777,500	13,856,700	13,935,900	14,015,100	14,094,300	14,173,500	14,252,700	14,331,900			
Actual cumulative gross output,	10,027,113	10,093,116	10,159,132	10,224,259	10,289,015	10,353,775	10,418,270	10,483,041	10,547,832	10,612,623	10,677,398	10,742,198	10,807,025	10,872,848			
Cumulative Capacity Factor	75.4%	75.4%	75.5%	75.5%	75.5%	75.6%	75.6%	75.7%	75.7%	75.7%	75.8%	75.8%	75.8%	75.9%			
Cumulative fuel input, MMBtu H	134,951	135,830	136,714	137,573	138,436	139,280	140,130	140,981	141,838	142,695	143,554	144,415	145,274	146,143			
Cumulative gross output, kWhr	10,027,113	10,093,116	10,159,132	10,224,259	10,289,015	10,353,775	10,418,270	10,483,041	10,547,832	10,612,623	10,677,398	10,742,198	10,807,025	10,872,848			
Cumulative heat rate, Btu/kWe	12,115	12,115	12,114	12,113	12,112	12,110	12,108	12,106	12,105	12,104	12,103	12,102	12,101	12,100			
Cumulative heat rate, Btu/kWe	13,459	13,458	13,457	13,456	13,455	13,452	13,450	13,448	13,447	13,446	13,445	13,444	13,443	13,441			
Service																	
Engine 1																	
Engine 2																	
Engine 3																	
Engine 4																	
Oil - oil and filter change																	
Service - plugs, air filter, valve insp																	
Precipitation																	
NSTAR Power Reports	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday			
Date	6/17/2022	6/18/2022	6/19/2022	6/20/2022	6/21/2022	6/22/2022	6/23/2022	6/24/2022	6/25/2022	6/26/2022	6/27/2022	6/28/2022	6/29/2022	6/30/2022	TOTAL		
Hour																	
1	2,611	2,662	2,666	2,662	2,613	2,614	2,616	2,616	2,613	2,612	2,610	2,611	2,613	2,612			
2	2,612	2,664	2,666	2,663	2,614	2,615	2,615	2,617	2,613	2,613	2,610	2,612	2,612	2,612			
3	2,612	2,665	2,666	2,663	2,615	2,616	2,616	2,617	2,614	2,614	2,612	2,615	2,613	2,612			
4	2,612	2,666	2,666	2,663	2,615	2,617	2,617	2,617	2,614	2,614	2,611	2,614	2,614	2,613			
5	2,613	2,666	2,666	2,663	2,616	2,616	2,616	2,617	2,615	2,614	2,611	2,614	2,614	2,613			
6	2,613	2,666	2,665	2,663	2,616	2,616	2,617	2,617	2,615	2,613	2,608	2,615	2,613	2,614			
7	2,613	2,666	2,665	2,664	2,615	2,612	2,613	2,616	2,615	2,612	2,606	2,613	2,611	2,608			
8	2,631	2,665	2,666	2,622	2,607	2,605	2,336	2,611	2,612	2,611	2,600	2,610	2,606	2,383			
9	2,654	2,659	2,666	2,600	2,600	2,602	2,598	2,603	2,608	2,606	2,596	2,601	2,603	2,530			
10	2,652	2,658	2,658	2,587	2,595	2,601	2,591	2,597	2,604	2,601	2,593	2,598	2,600	2,639			
11	2,652	2,661	2,660	2,582	2,590	2,596	2,588	2,593	2,604	2,600	2,593	2,599	2,597	2,640			
12	2,651	2,656	2,661	2,585	2,588	2,593	2,593	2,594	2,603	2,600	2,594	2,598	2,596	2,681			
13	2,648	2,655	2,664	2,584	2,588	2,594	2,591	2,598	2,598	2,600	2,595	2,598	2,599	2,688			
14	2,640	2,661	2,663	2,587	2,587	2,593	2,587	2,597	2,600	2,599	2,593	2,599	2,598	2,687			
15	2,641	2,662	2,663	2,594	2,589	2,596	2,591	2,596	2,599	2,598	2,601	2,598	2,598	2,694			
16	2,653	2,661	2,663	2,598	2,593	2,597	2,598	2,601	2,600	2,599	2,600	2,599	2,600	2,695			
17	2,661	2,663	2,662	2,602	2,603	2,606	2,604	2,606	2,600	2,602	2,607	2,604	2,606	2,697			
18	2,662	2,663	2,662	2,609	2,607	2,612	2,611	2,609	2,605	2,605	2,612	2,606	2,608	2,698			
19	2,662	2,664	2,663	2,610	2,607	2,612	2,611	2,610	2,608	2,606	2,613	2,610	2,607	2,703			
20	2,661	2,663	2,662	2,610	2,608	2,613	2,612	2,611	2,608	2,608	2,612	2,608	2,612	2,704			
21	2,661	2,663	2,662	2,609	2,611	2,613	2,613	2,611	2,609	2,609	2,611	2,609	2,611	2,705			
22	2,662	2,664	2,660	2,610	2,613	2,613	2,614	2,610	2,611	2,609	2,610	2,612	2,612	2,705			
23	2,662	2,666	2,662	2,612	2,613	2,613	2,614	2,612	2,612	2,610	2,610	2,612	2,612	2,706			
24	2,663	2,666	2,663	2,612	2,614	2,614	2,616	2,612	2,611	2,610	2,611	2,613	2,612	2,706			
TOTAL	63,402	63,905	63,920	62,854	62,517	62,579	62,278	62,588	62,591	62,565	62,519	62,568	62,567	63,545			
Cumulative Output Sold, kV	1,062,002	1,125,907	1,189,827	1,252,681	1,315,198	1,377,777	1,440,055	1,502,643	1,565,234	1,627,799	1,690,318	1,752,886	1,815,453	1,878,998			
Transformer and line efficienc	99.8%	99.8%	99.9%	99.8%	99.8%	99.8%	99.8%	99.8%	99.8%	99.8%	99.8%	99.8%	99.8%	99.7%	0.0%		
Hourly average	2,642	2,663	2,663	2,619	2,605	2,607	2,595	2,608	2,608	2,607	2,605	2,607	2,607	2,648	2,610		

energy Biogas Flow Rate from SCADA													
		Minutes	Totalizer Reading,	scfm	Tot KSCF		% Methane		Heat valued per time period,	Tot Heat value in month,	Average methane content,	Biogas flow rate,	Biogas flow rate 50% methane,
Date	Time	in Period	KSCF		in month	Month	End	Start	MMBtu	MMBtu	%	ave scfm	ave scfm
1-Jan-22	0:00	1,440	2,290.00	11	**718.17**		66.4%	66.4%	10.3	483.7	66.6	16	21.4
2-Jan-22	0:00	1,440	2,316.66	19			66.4%	66.4%	17.9				
3-Jan-22	0:00	1,440	2,346.27	21			66.5%	66.4%	19.9				
4-Jan-22	0:00	1,440	2,373.07	19			66.5%	66.5%	18.0				
5-Jan-22	0:00	1,440	2,395.27	15			66.5%	66.5%	14.9				
6-Jan-22	0:00	1,440	2,415.46	14			66.5%	66.5%	13.6				
7-Jan-22	0:00	1,440	2,439.25	17			66.5%	66.5%	16.0				
8-Jan-22	0:00	1,440	2,458.32	13			66.5%	66.5%	12.8				
9-Jan-22	0:00	1,440	2,481.10	16			66.5%	66.5%	15.3				
10-Jan-22	0:00	1,440	2,501.82	14			66.5%	66.5%	13.9				
11-Jan-22	0:00	1,440	2,520.29	13			66.5%	66.5%	12.4				
12-Jan-22	0:00	1,440	2,541.19	15			66.5%	66.5%	14.1				
13-Jan-22	0:00	1,440	2,562.08	15			66.5%	66.5%	14.1				
14-Jan-22	0:00	1,440	2,579.79	12			66.5%	66.5%	11.9				
15-Jan-22	0:00	1,440	2,601.93	15			66.5%	66.5%	14.9				
16-Jan-22	0:00	1,440	2,623.76	15			66.5%	66.5%	14.7				
17-Jan-22	0:00	1,440	2,652.62	20			66.5%	66.5%	19.4				
18-Jan-22	0:00	1,440	2,671.91	13			66.5%	66.5%	13.0				
19-Jan-22	0:00	1,440	2,693.66	15			66.5%	66.5%	14.6				
20-Jan-22	0:00	1,440	2,714.08	14			66.5%	66.5%	13.7				
21-Jan-22	0:00	1,440	2,729.52	11			66.5%	66.5%	10.4				
22-Jan-22	0:00	1,440	2,746.80	12			66.5%	66.5%	11.6				
23-Jan-22	0:00	1,440	2,756.97	7			66.5%	66.5%	6.8				
24-Jan-22	0:00	1,440	2,773.17	11			66.5%	66.5%	10.9				
25-Jan-22	0:00	1,440	2,791.52	13			66.5%	66.5%	12.3				
26-Jan-22	0:00	1,440	2,813.28	15			66.5%	66.5%	14.6				
27-Jan-22	0:00	1,440	2,839.96	19			66.5%	66.5%	18.0				
28-Jan-22	0:00	1,440	2,854.65	10			66.5%	66.5%	9.9				
29-Jan-22	0:00	1,440	2,885.51	21			66.5%	66.5%	20.8				
30-Jan-22	0:00	1,440	2,901.21	11			66.5%	66.5%	10.6				
31-Jan-22	0:00	1,440	2,909.11	5			66.5%	66.5%	5.3				
1-Feb-22	0:00	1,440	2,930.62	15	**640.62**		66.5%	66.5%	14.5	431.1	66.5	14	19.1
2-Feb-22	0:00	1,440	2,942.23	8			66.5%	66.5%	7.8				
3-Feb-22	0:00	1,440	2,959.70	12			66.5%	66.5%	11.8				
4-Feb-22	0:00	1,440	2,979.28	14			66.5%	66.5%	13.2				
5-Feb-22	0:00	1,440	2,994.28	10			66.5%	66.5%	10.1				
6-Feb-22	0:00	1,440	3,009.28	10			66.5%	66.5%	10.1				
7-Feb-22	0:00	1,440	3,017.32	6			66.5%	66.5%	5.4				
8-Feb-22	0:00	1,440	3,030.52	9			66.5%	66.5%	8.9				
9-Feb-22	0:00	1,440	3,049.33	13			66.5%	66.5%	12.7				
10-Feb-22	0:00	1,440	3,066.21	12			66.5%	66.5%	11.4				
11-Feb-22	0:00	1,440	3,084.99	13			66.5%	66.5%	12.6				
12-Feb-22	0:00	1,440	3,094.04	6			66.5%	66.5%	6.1				
13-Feb-22	0:00	1,440	3,105.99	8			66.5%	66.5%	8.0				
14-Feb-22	0:00	1,440	3,130.40	17			66.5%	66.5%	16.4				
15-Feb-22	0:00	1,440	3,155.29	17			66.5%	66.5%	16.8				

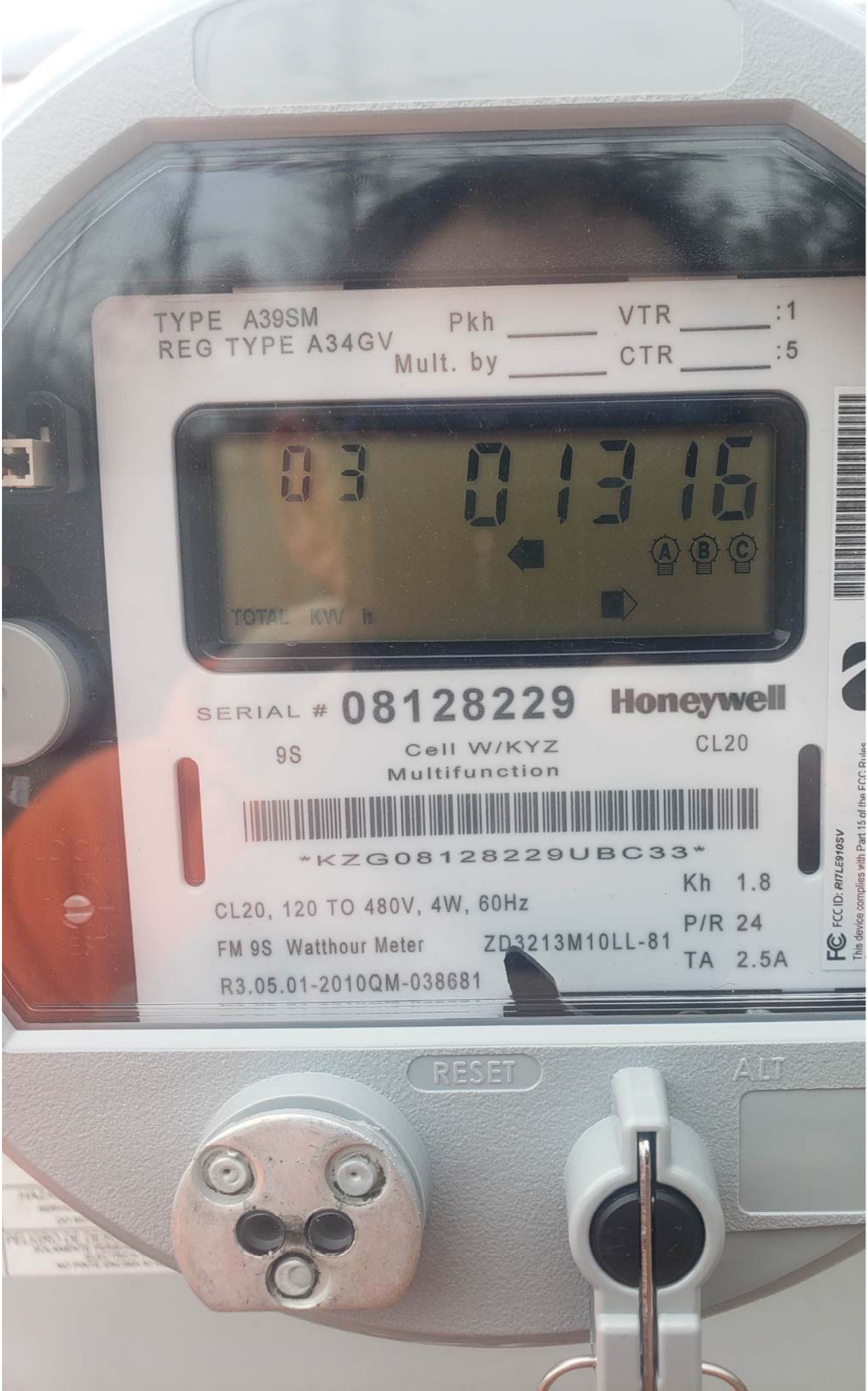
energy Biogas Flow Rate from SCADA													
		Minutes	Totalizer Reading,	scfm	Tot KSCF		% Methane		Heat valued per time period,	Tot Heat value in month,	Average methane content,	Biogas flow rate,	Biogas flow rate 50% methane,
Date	Time	in Period	KSCF		in month	Month	End	Start	MMBtu	MMBtu	%	ave scfm	ave scfm
16-Feb-22	0:00	1,440	3,176.92	15			66.5%	66.5%	14.6				
17-Feb-22	0:00	1,440	3,193.17	11			66.5%	66.5%	10.9				
18-Feb-22	0:00	1,440	3,215.65	16			66.5%	66.5%	15.1				
19-Feb-22	0:00	1,440	3,232.82	12			66.5%	66.5%	11.6				
20-Feb-22	0:00	1,440	3,258.26	18			66.5%	66.5%	17.1				
21-Feb-22	0:00	1,440	3,274.99	12			66.5%	66.5%	11.3				
22-Feb-22	0:00	1,440	3,294.74	14			66.5%	66.5%	13.3				
23-Feb-22	0:00	1,440	3,319.28	17			66.5%	66.5%	16.5				
24-Feb-22	0:00	1,440	3,339.06	14			66.5%	66.5%	13.3				
25-Feb-22	0:00	1,440	3,370.09	22			66.5%	66.5%	20.9				
26-Feb-22	0:00	1,440	3,385.31	11			66.5%	66.5%	10.2				
27-Feb-22	0:00	1,440	3,401.40	11			66.5%	66.5%	10.8				
28-Feb-22	0:00	1,440	3,416.20	10			66.5%	66.5%	10.0				
1-Mar-22	0:00	1,440	3,436.15	14	**550.64**		66.5%	66.5%	13.4	370.6	66.5	14	18.2
2-Mar-22	0:00	1,440	3,446.97	8			66.5%	66.5%	7.3				
3-Mar-22	0:00	1,440	3,470.50	16			66.5%	66.5%	15.8				
4-Mar-22	0:00	1,440	3,496.42	18			66.7%	66.5%	17.5				
5-Mar-22	0:00	1,440	3,513.43	12			66.7%	66.7%	11.5				
6-Mar-22	0:00	1,440	3,525.58	8			66.7%	66.7%	8.2				
7-Mar-22	0:00	1,440	3,540.71	11			66.7%	66.7%	10.2				
8-Mar-22	0:00	1,440	3,560.83	14			66.7%	66.7%	13.6				
9-Mar-22	0:00	1,440	3,582.75	15			66.7%	66.7%	14.8				
10-Mar-22	0:00	1,440	3,602.91	14			67.8%	66.7%	13.7				
11-Mar-22	0:00	1,440	3,623.45	14			68.8%	67.8%	14.2				
12-Mar-22	0:00	1,440	3,642.40	13			68.7%	68.8%	13.2				
13-Mar-22	0:00	1,440	3,663.07	14			68.5%	68.7%	14.3				
14-Mar-22	0:00	1,440	3,685.04	15			68.2%	68.5%	15.2				
15-Mar-22	0:00	1,440	3,707.00	15			68.1%	68.2%	15.1				
16-Mar-22	0:00	1,440	3,730.16	16			68.1%	68.1%	16.0				
17-Mar-22	0:00	1,440	3,745.25	10			68.4%	68.1%	10.4				
18-Mar-22	0:00	1,440	3,761.39	11			68.2%	68.4%	11.2				
19-Mar-22	0:00	1,440	3,777.32	11			68.8%	68.2%	11.0				
20-Mar-22	0:00	1,440	3,788.42	8			68.8%	68.8%	7.7				
21-Mar-22	0:00	1,440	3,813.51	17			68.3%	68.8%	17.4				
22-Mar-22	0:00	1,440	3,836.28	16			68.2%	68.3%	15.7				
23-Mar-22	0:00	1,440	3,857.95	15			68.5%	68.2%	15.0				
24-Mar-22	0:00	1,440	3,874.01	11			68.3%	68.5%	11.1				
25-Mar-22	0:00	1,440	3,895.37	15			68.4%	68.3%	14.8				
26-Mar-22	0:00	1,440	3,906.05	7			68.4%	68.4%	7.4				
27-Mar-22	0:00	1,440	3,925.05	13			68.4%	68.4%	13.2				
28-Mar-22	0:00	1,440	3,953.00	19			68.3%	68.4%	19.3				
29-Mar-22	0:00	1,440	3,971.50	13			68.6%	68.3%	12.8				
30-Mar-22	0:00	1,440	4,000.86	20			68.8%	68.6%	20.4				
31-Mar-22	0:00	1,440	4,013.61	9			68.7%	68.8%	8.9				
1-Apr-22	0:00	1,440	4,026.99	9	**590.84**		68.5%	68.7%	9.3	406.2	67.9	13	18.0
2-Apr-22	0:00	1,440	4,039.29	9			68.5%	68.5%	8.5				

energy Biogas Flow Rate from SCADA													
		Minutes	Totalizer Reading,	scfm	Tot KSCF		% Methane		Heat valued per time period,	Tot Heat value in month,	Average methane content,	Biogas flow rate,	Biogas flow rate 50% methane,
Date	Time	in Period	KSCF		in month	Month	End	Start	MMBtu	MMBtu	%	ave scfm	ave scfm
3-Apr-22	0:00	1,440	4,051.84	9			68.5%	68.5%	8.7				
4-Apr-22	0:00	1,440	4,065.95	10			68.5%	68.5%	9.8				
5-Apr-22	0:00	1,440	4,085.27	13			68.2%	68.5%	13.4				
6-Apr-22	0:00	1,440	4,118.62	23			68.3%	68.2%	23.0				
7-Apr-22	0:00	1,440	4,153.68	24			68.5%	68.3%	24.3				
8-Apr-22	0:00	1,440	4,187.14	23			68.2%	68.5%	23.1				
9-Apr-22	0:00	1,440	4,214.67	19			68.2%	68.2%	19.0				
10-Apr-22	0:00	1,440	4,244.61	21			68.2%	68.2%	20.7				
11-Apr-22	0:00	1,440	4,275.61	22			68.2%	68.2%	21.4				
12-Apr-22	0:00	1,440	4,307.92	22			68.4%	68.2%	22.3				
			4,519.88		Reset								
13-Apr-22	0:00	1,440	4,549.88	21			68.3%	68.4%	20.8				
14-Apr-22	0:00	1,440	4,583.06	23			68.2%	68.3%	22.9				
15-Apr-22	0:00	1,440	4,615.90	23			68.4%	68.2%	22.7				
16-Apr-22	0:00	1,440	4,645.63	21			68.4%	68.4%	20.6				
17-Apr-22	0:00	1,440	4,662.60	12			67.3%	68.4%	11.7				
18-Apr-22	0:00	1,440	4,675.64	9			67.3%	67.3%	8.9				
19-Apr-22	0:00	1,440	4,688.00	9			67.3%	67.3%	8.4				
20-Apr-22	0:00	1,440	4,698.06	7			67.3%	67.3%	6.9				
21-Apr-22	0:00	1,440	4,725.41	19			67.3%	67.3%	18.6				
22-Apr-22	0:00	1,440	4,739.99	10			67.3%	67.3%	9.9				
23-Apr-22	0:00	1,440	4,748.20	6			67.3%	67.3%	5.6				
24-Apr-22	0:00	1,440	4,759.88	8			67.3%	67.3%	8.0				
25-Apr-22	0:00	1,440	4,775.08	11			67.3%	67.3%	10.4				
26-Apr-22	0:00	1,440	4,781.80	5			67.3%	67.3%	4.6				
27-Apr-22	0:00	1,440	4,792.60	8			67.3%	67.3%	7.4				
28-Apr-22	0:00	1,440	4,820.82	20			67.3%	67.3%	19.2				
29-Apr-22	0:00	1,440	4,851.96	22			67.3%	67.3%	21.2				
30-Apr-22	0:00	1,440	4,865.27	9			67.3%	67.3%	9.1				
1-May-22	0:00	1,440	4,876.79	8	**607.84**		67.3%	67.3%	7.8	438.7	71.3	14	20.1
2-May-22	0:00	1,440	4,889.53	9			67.2%	67.3%	8.7				
3-May-22	0:00	1,440	4,891.90	2			67.1%	67.2%	1.6				
4-May-22	0:00	1,440	4,896.32	3			67.4%	67.1%	3.0				
5-May-22	0:00	1,440	4,896.32	-			67.3%	67.4%	-				
6-May-22	0:00	1,440	4,904.76	6			67.1%	67.3%	5.7				
7-May-22	0:00	1,440	4,904.76	-			67.1%	67.1%	-				
8-May-22	0:00	1,440	4,904.76	-			67.1%	67.1%	-				
9-May-22	0:00	1,440	4,913.34	6			67.1%	67.1%	5.8				
10-May-22	0:00	1,440	4,925.24	8			67.3%	67.1%	8.1				
11-May-22	0:00	1,440	4,932.94	5			67.3%	67.3%	5.2				
12-May-22	0:00	1,440	4,948.03	10			67.3%	67.3%	10.3				
13-May-22	0:00	1,440	4,965.58	12			67.8%	67.3%	12.0				
14-May-22	0:00	1,440	4,977.25	8			67.8%	67.8%	8.0				
15-May-22	0:00	1,440	4,995.78	13			67.8%	67.8%	12.7				
16-May-22	0:00	1,440	5,014.31	13			67.4%	67.8%	12.7				
17-May-22	0:00	1,440	5,035.46	15			67.3%	67.4%	14.4				

energy Biogas Flow Rate from SCADA													
		Minutes	Totalizer Reading,	scfm	Tot KSCF		% Methane		Heat valued per time period,	Tot Heat value in month,	Average methane content,	Biogas flow rate,	Biogas flow rate 50% methane,
Date	Time	in Period	KSCF		in month	Month	End	Start	MMBtu	MMBtu	%	ave scfm	ave scfm
18-May-22	0:00	1,440	5,053.35	12			67.3%	67.3%	12.2				
19-May-22	0:00	1,440	5,080.44	19			67.1%	67.3%	18.4				
20-May-22	0:00	1,440	5,080.44	-			67.4%	67.1%	-				
21-May-22	0:00	1,440	5,123.44	30			67.3%	67.4%	29.3				
22-May-22	0:00	1,440	5,135.21	8			67.3%	67.3%	8.0				
23-May-22	0:00	1,440	5,155.93	14			67.2%	67.3%	14.1				
24-May-22	0:00	1,440	5,179.36	16			67.4%	67.2%	16.0				
25-May-22	0:00	1,440	5,202.19	16			69.2%	67.4%	15.8				
26-May-22	0:00	1,440	5,223.77	15			68.8%	69.2%	15.1				
27-May-22	0:00	1,440	5,244.50	14			68.8%	68.8%	14.4				
28-May-22	0:00	1,440	5,263.25	13			68.8%	68.8%	13.1				
29-May-22	0:00	1,440	5,279.26	11			67.3%	68.8%	11.0				
30-May-22	0:00	1,440	5,295.76	11			66.8%	67.3%	11.2				
31-May-22	0:00	1,440	5,311.73	11			67.3%	66.8%	10.8				
1-Jun-22	0:00	1,440	5,335.37	16	**458.58**		67.3%	67.3%	16.1	313.8	67.6	10	13.9
2-Jun-22	0:00	1,440	5,353.11	12			66.2%	67.3%	12.0				
3-Jun-22	0:00	1,440	5,377.79	17			66.7%	66.2%	16.6				
4-Jun-22	0:00	1,440	5,398.71	15			67.5%	66.7%	14.2				
5-Jun-22	0:00	1,440	5,422.69	17			68.0%	67.5%	16.4				
6-Jun-22	0:00	1,440	5,441.01	13			68.0%	68.0%	12.6				
7-Jun-22	0:00	1,440	5,452.63	8			69.0%	68.0%	8.1				
8-Jun-22	0:00	1,440	5,468.78	11			69.1%	69.0%	11.3				
9-Jun-22	0:00	1,440	5,486.13	12			69.1%	69.1%	12.1				
10-Jun-22	0:00	1,440	5,501.38	11			69.2%	69.1%	10.7				
11-Jun-22	0:00	1,440	5,516.07	10			69.3%	69.2%	10.3				
12-Jun-22	0:00	1,440	5,529.74	9			69.3%	69.3%	9.6				
13-Jun-22	0:00	1,440	5,544.19	10			69.3%	69.3%	10.1				
14-Jun-22	0:00	1,440	5,561.75	12			69.1%	69.3%	12.3				
15-Jun-22	0:00	1,440	5,573.25	8			69.1%	69.1%	8.0				
16-Jun-22	0:00	1,440	5,592.85	14			69.3%	69.1%	13.7				
17-Jun-22	0:00	1,440	5,610.90	13			69.2%	69.3%	12.6				
18-Jun-22	0:00	1,440	5,625.47	10			69.4%	69.2%	10.2				
19-Jun-22	0:00	1,440	5,648.67	16			69.1%	69.4%	16.3				
20-Jun-22	0:00	1,440	5,667.11	13			69.1%	69.1%	12.9				
21-Jun-22	0:00	1,440	5,684.72	12			69.1%	69.1%	12.3				
22-Jun-22	0:00	1,440	5,699.48	10			69.1%	69.1%	10.3				
23-Jun-22	0:00	1,440	5,710.77	8			69.3%	69.1%	7.9				
24-Jun-22	0:00	1,440	5,723.70	9			69.1%	69.3%	9.1				
25-Jun-22	0:00	1,440	5,737.00	9			69.1%	69.1%	9.3				
26-Jun-22	0:00	1,440	5,747.83	8			69.1%	69.1%	7.6				
27-Jun-22	0:00	1,440	5,765.99	13			69.3%	69.1%	12.7				
28-Jun-22	0:00	1,440	5,777.77	8			69.1%	69.3%	8.2				
29-Jun-22	0:00	1,440	5,801.39	16			69.1%	69.1%	16.5				
30-Jun-22	0:00	1,440	5,826.06	17			69.1%	69.1%	17.3				
1-Jul-22	0:00	1,440	5,849.31	16	**513.94**		69.1%	69.1%	16.3	357.5	68.7	12	16.4

EMERGENCY GENERATOR LOG SHEET

	PRIOR TO RUNNING		AFTER SHUTTING DOWN			
DATE	TIME	RUN HRS	DATE	TIME	RUN HRS	REASON
29-Dec-21	1020	456.6	29-Dec-21	1038	457	Testrun
26-Jan-22	920	457	26-Jan-22	942	457.3	Testrun
18-Feb-22	6:36	457.3	18-Feb-22	13:08	463.8	Wind Storm
18-Mar-22	5:40	463.8	18-Mar-22	10:54	469.1	Eversource Work
8-Apr-22	13:20	469.1	8-Apr-22	13:45	469.5	Testrun
11-Apr-22	4:38	469.5	13-Apr-22	17:55	530.8	Eversource Work
19-Apr-22	5:08	530.8	19-Apr-22	14:38	540.3	Wind Storm
1-Jul-22	9:00	540.3	1-Jul-22	9:00	540.3	End of 1st half 2022 period


TYPE A39SM
REG TYPE A34GV
Pkh _____
Mult. by _____
VTR _____:1
CTR _____:5
03 01316
A B C
TOTAL KW h
SERIAL # 08128229
Honeywell
9S
Cell W/KYZ
Multifunction
CL20
KZG08128229UBC33
Kh 1.8
CL20, 120 TO 480V, 4W, 60Hz
P/R 24
FM 9S Watthour Meter
ZD3213M10LL-81
TA 2.5A
R3.05.01-2010QM-038681
FCC ID: RI7LE910SV
This device complies with Part 15 of the FCC Rules
RESET
ALT

EVERSOURCE

Account & Billing | Outages & Storms | Services | Save Money & Energy | Safety

Usage History

Select an Account :

27461920012(CNBE)

300 SAMUEL-BARNET BLV CGN, NEW BEDFRD MA 02745

Meter Number: 8128229

View Data From : 13 months

Usage Data | Usage Graph

Read Date	Usage (kWh)	Number of Days	Usage Per Day	Cost Per Day
06/16/2022	0	30	0	$0.19
05/17/2022	2100	32	65.63	$6.94
04/15/2022	0	29	0	$0.20
03/17/2022	0	29	0	$0.20
02/16/2022	0	29	0	$0.20
01/18/2022	0	32	0	$0.18
12/17/2021	0	30	0	$0.19

Exhibit 6

Calibration of the LFG and biogas flow rates, composition meters, other instrumentation for the periods.

Landfill Gas Flow Calculation

Crapo Hill Landfill, New Bedford/Dartmouth, Massachusetts

Note: Calculation of volumetric flow of LFG through a pipe using a pitot tube and n

		Engine 1, kW	600	800	640	650	600	700
		Engine 2, kW	600	800	600	650	575	700
		Engine 3, kW	600	-	650	650	600	700
		Engine 4, kW	600	800	600	650	600	650
		Gross, kW	2,400	2,400	2,490	2,600	2,375	2,750
MEASURING INSTRUMENT:		Pitot Tube:	167	168	168	168	168	168
		Manometer:	Dwyer Mark II	Dwyer Mark II	Dwyer Mark II	Dwyer Mark II	Dwyer Mark II	Dwyer Mark II
DATE OF MEASUREMENT:			11-Jan-22	15-Feb-22	8-Mar-22	8-Apr-22	12-May-22	8-Jun-22
TIME OF MEASUREMENT:			**11:00**	**11:00**	**14:00**	**14:00**	**12:00**	**14:00**
PARAMETERS		UNITS	VALUES	VALUES	VALUES	VALUES	VALUES	VALUES
Pipe dimensions								
Inside Diameter		inches	**10.420**	**10.420**	**10.420**	**10.420**	**10.420**	**10.420**
Area of cross section		square feet	0.5922	0.5922	0.5922	0.5922	0.5922	0.5922
Flow Calculation								
Kp	pitot tube constant	ft/sec[(lb/lb-mole)(in. Hg)/(R)(in H20)]^1/2	85.49	85.49	85.49	85.49	85.49	85.49
Cp	Pitot tube coefficient	dimensionless	1.00	1.00	1.00	1.00	1.00	1.00
dP	Average velocity pressure of stack gas	in H20	**0.209**	**0.204**	**0.276**	**0.251**	**0.240**	**0.264**
Blower Inlet								
Ts	Stack temperature	Degrees Fahrenheit	**56**	**54**	**60**	**64**	**68**	**74**
		Degrees Rankine	516	514	520	524	528	534
Pg	Stack static pressure	inch H20	-52	-50	-62	-58	-58	-58
		inch Hg	(3.82)	(3.68)	(4.56)	(4.27)	(4.27)	(4.27)
Ps	Absolute stack gas pressure	inch Hg	26.51	26.49	25.27	25.02	26.02	25.44
Blower Outlet								
Ts	Stack temperature	Degrees Fahrenheit	**115**	**110**	**116**	**118**	**118**	**115**
		Degrees Rankine	575	570	576	578	578	575
Pg	Stack static pressure	inch H20	60.9	62.6	72.0	63.7	63.7	63.9
		inch Hg	4.48	4.60	5.29	4.68	4.68	4.70
		psig	2.20	2.26	2.60	2.30	2.30	2.31
Pbar	Barometric pressure	inch Hg	**30.33**	**30.17**	**29.83**	**29.29**	**30.29**	**29.71**
Ps	Absolute stack gas pressure	inch Hg	34.81	34.77	35.12	33.97	34.97	34.41
Ms	Molecular weight of stack gas, wet	lb/lb-mole	27.80	27.15	27.40	27.31	27.29	27.36
Vs	Average stack gas velocity	feet per second	32.7	32.7	38.9	37.5	36.1	38.5
Qact	Volumetric Flow	actual cubic feet per minute	1,162	1,161	1,382	1,333	1,283	1,368
Qstd	**Volumetric Flow at actual methane content**	**standard cubic feet per minute ***	**1,053**	**1,056**	**1,185**	**1,123**	**1,116**	**1,150**
Qstd corr	Volumetric Flow at 50% methane	standard cubic feet per minute **	1,053	1,092	1,209	1,199	1,183	1,210
Ht HHV	Heat input	MMBtu per hour HHV	31.97	33.15	36.70	36.39	35.92	36.74
Ht LHV	Heat input	MMBtu per hour LHV	28.78	29.85	33.04	32.76	32.33	33.08
	Methane Content	%, vol/vol wet	50.00%	51.70%	51.00%	53.36%	53.00%	52.60%
Diff. between pitot tube and orifice reading:			-0.6%	-1.1%	2.9%	2.4%	1.1%	-0.4%
FACILITY ORIFICE FLOW METER:								
dP	Delta pressure across orifice plate	inches H20	**8.00**	**8.10**	**9.50**	**9.10**	**8.70**	**9.80**
Qact	Volumetric Flow	acfm	992	992	1,069	1,057	1,034	1,094
Qstd	**Volumetric Flow at actual methane content**	**standard cubic feet per minute ***	**1,059**	**1,068**	**1,150**	**1,097**	**1,104**	**1,155**
Qstd	Volumetric Flow at 50% methane	standard cubic feet per minute **	1,059	1,104	1,173	1,170	1,170	1,216
Ht HHV	Heat input	MMBtu per hour HHV	32.16	33.52	35.62	35.53	35.52	36.90
Ht LHV	Heat input	MMBtu per hour LHV	28.95	30.17	32.07	31.99	31.98	33.22

* Standard conditions are corrected to 68 degrees F and 29.92 in Hg at actual methane content.

** Standard conditions corrected to 50 % methane content.

Input values are in blue or bold.

Calculated output values are in black or not bold.

Calculation Formulas:

- Vs = Kp*Cp*(sqrt dP) * sqrt (Ts/(Ps*Ms))
- Qact = Vs * A * 60
- Qstd = Qact * Tstd/ Ts * Ps/Pstd
- Flow, ACFM = 96.3221*SQRT(dP)*SQRT((460+Temperature)/(2.703*(Pressure +14.7)))

Conversions and constants

- 13.5958 in H2O/in Hg
- 1 PSI = 2.036 in HG
- 1 PSI = 27.68 in WG
- Tstd = 528 degrees R
- Pstd = 29.92 in Hg

- Methane heat content = 1,012 BTU per scf HHV
- Methane heat content = 911 BTU per scf LHV

Landfill Gas Flow Measurements						
Crapo Hill Landfill, New Bedford/Dart						
Measurements by	TY, EN	TY, EN	TY, EN	TY, EN	TY, EN	TY, EN
Date	11-Jan-22	15-Feb-22	8-Mar-22	8-Apr-22	12-May-22	8-Jun-22
Time	11:00	11:00	14:00	14:00	12:00	14:00
Flow valve						
Pipe inside diameter, inches	10.42	10.42	10.42	10.42	10.42	10.42
Ambient Temperature, F	14	20	20	65	64	75
Barometric Pressure, In Hg	30.33	30.17	29.83	29.29	30.29	29.71
Blower Inlet Temperature, F	56	54	60	64	68	74
Outlet Temperature, F	115	110	116	118	118	115
Blower Inlet Pressure (SP), In H20	-52	-50	-62	-58	-58	-58
Blower Outlet Pressure, PSIG	2.20	2.26	2.60	2.30	2.30	2.31
Blower Outlet Pressure, In H20	60.90	62.56	71.97	63.66	63.66	63.94
Measurement						
Manometer						
Pitot Tube						
Velocity Pressure (dP)						
Point						
1	0.19	0.19	0.26	0.26	0.24	0.20
2	0.21	0.21	0.28	0.27	0.25	0.28
3	0.21	0.21	0.28	0.27	0.25	0.28
4	0.22	0.21	0.29	0.27	0.25	0.28
5	0.22	0.21	0.29	0.26	0.25	0.28
6	0.22	0.22	0.28	0.27	0.26	0.28
7	0.22	0.22	0.28	0.25	0.26	0.28
8	0.21	0.21	0.28	0.21	0.20	0.28
9	0.18	0.16	0.24	0.20	0.20	0.22
Average	0.209	0.204	0.276	0.251	0.240	0.264
Gas Composition						
Compound, %v/v						
Methane (CH4)	50.0%	51.7%	51.0%	53.4%	53.0%	52.6%
Carbon dioxide (CO2)	37.0%	36.0%	35.1%	36.7%	36.5%	37.0%
Oxygen (O2)	1.00%	0.12%	1.80%	0.94%	0.90%	0.70%
Balance gas	12.00%	11.20%	12.10%	9.00%	9.60%	9.70%
Total	100.0%	99.0%	100.0%	100.0%	100.0%	100.0%
Moisture (H20) (included in balance gas	1.6%	1.4%	1.7%	2.0%	2.3%	2.8%
Molecular weight, lb/lb-mole wet	27.80	27.15	27.40	27.31	27.29	27.36
H2S, PPMV						
Pre-calibration LFG flow, scfm	1,059	1,068	1,150	1,075	1,100	1,100
Post-calibration LFG flow, scfm	1,050	1,056	1,185	1,123	1,116	1,150

Measurement confirmation/calibration for pressure and temperature

Measurements by		TY, RB	TY, EN	TY, EN	TY, EN	TY, EN	TY, EN	TY, EN
Date		22-Apr-21	11-Jan-22	15-Feb-22	8-Mar-22	8-Apr-22	12-May-22	8-Jun-22
Time		13:20	11:00	11:00	14:00	14:00	12:00	14:00
Pressure and Temperature Measurements								
Facility Flow Measurement Point								
Facility Pressure monitor, inches WG		1.90	2.20	2.26	2.60	2.30	2.30	2.30
Measurement Type	Gauge							
Independent Pressure monitor, inches WG		1.90	2.20	2.26	2.60	2.30	2.30	2.31
Measurement Type	Manometer							
Difference in Pressure, %		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%
Adjusted Pressure, in WG		1.90	2.20	2.26	2.60	2.30	2.30	2.30
Facility Temperature monitor, F		114	115	110	116	118	118	115
Facility Temperature monitor, R		574	575	570	576	578	578	575
Measurement Type	Gauge							
Independent Temperature monitor, F		114	115	110	118	119	118	115
Facility Temperature monitor, R		574	575	570	578	579	578	575
Measurement Type	Thermometer							
Difference in Temperature, %		0.0%	0.0%	0.0%	0.3%	0.2%	0.0%	0.0%
Adjusted Temperature, F		114	115	110	118	119	118	115
Calibration Flow Measurement Point								
Facility Pressure monitor, inches WG		-62	-52	-50	-62	-58	-58	-58
Measurement Type	Transducer							
Independent Pressure monitor, inches WG		-62	-52	-50	-62	-58	-58	-58
Measurement Type	Manometer							
Difference in Pressure, %		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Adjusted Pressure, in WG		-62	-52	-50	-62	-58	-58	-58
Facility Temperature monitor, F		57	56	54	60	64	68	74
Facility Temperature monitor, R		517	516	514	520	524	528	534
Measurement Type	Gauge							
Independent Temperature monitor, F		57	63	64	58	62	68	74
Facility Temperature monitor, R		517	523	524	518	522	528	534
Measurement Type	thermometer							
Difference in Temperature, %		0.0%	1.3%	1.9%	-0.4%	-0.4%	0.0%	0.0%
Adjusted Temperature, F		57	62.5	63.5	64.5	65.5	65.5	65.5

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'California Analytical' Analyzer Calibration Results
California Analytical Instrument, Model 602P NDIR, Serial #S07002

Month:	Jan-22	**Methane (% v/v) measurements**						
Week	Date	LFG Temp @ blower inlet	Cal Gas dry	Cal Gas wet	Pre-calibration	Zero gas	Span gas	Post-calibration
1/2/22	1/7/22	62 F	55%	54.62%	52.66%	-0.01%	54.29%	53.44%
1/9/22	1/14/22	59 F	55%	54.65%	51.78%	0.06%	54.90%	51.67%
1/16/22	1/21/22	58 F	55%	54.56%	52.21%	-0.01%	55.02%	52.16%
1/23/22	1/28/22	58 F	55%	54.56%	52.06%	-0.01%	53.62%	52.16%

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'California Analytical' Analyzer Calibration Results
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Month:	Feb-22	**Methane (% v/v) measurements**						
Week	Date	LFG Temp @ blower inlet	Cal Gas dry	Cal Gas wet	Pre-calibration	Zero gas	Span gas	Post-calibration
1/30/22	2/4/22	60 F	55%	54.64%	52.21%	-0.05%	54.22%	52.34%
2/6/22	2/11/22	57 F	55%	54.67%	51.83%	0.05%	59.00%	51.68%
2/13/22	2/18/22	58 F	55%	54.66%	50.95%	-0.01%	50.55%	51.07%
2/20/22	2/25/22	58 F	55%	54.66%	53.92%	0.03%	54.62%	53.81%

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'California Analytical' Analyzer Calibration Results
California Analytical Instrument, Model 602P NDIR, Serial #S07002

Month:	Mar-22	**Methane (% v/v) measurements**						
Week	Date	LFG Temp @ blower inlet	Cal Gas dry	Cal Gas wet	Pre-calibration	Zero gas	Span gas	Post-calibration
2/28/22	3/4/22	61 F	55.0%	54.63%	51.68%	-0.04%	53.48%	51.83%
3/7/22	3/11/22	59 F	55.0%	54.65%	52.94%	0.03%	55.47%	52.70%
3/14/22	3/18/22	62 F	55.0%	54.62%	54.00%	-0.05%	53.80%	53.88%
3/21/22	3/25/22	57 F	55.0%	54.67%	54.07%	0.06%	55.44%	53.29%
3/28/22	4/1/22							

CommonWealth New Bedford Energy, LLC
Greater New Bedford LFG Utilization Project
300 Samuel Barnett Blvd.
New Bedford, Massachusetts
(508) 985-0923

'California Analytical' Analyzer Calibration Results
California Analytical Instrument, Model 602P NDIR, Serial #S07002

Month:	Apr-22	**Methane (% v/v) measurements**						
Week	Date	LFG Temp @ blower inlet	Cal Gas dry	Cal Gas wet	Pre-calibration	Zero gas	Span gas	Post-calibration
3/28/22	4/1/22	62 F	55.0%	54.62%	52.50%	-0.01%	54.28%	52.71%
4/4/22	4/8/22	63 F	55.0%	54.60%	54.35%	-0.05%	53.74%	54.30%
4/11/22	4/15/22	64 F	54.0%	53.60%	52.30%	0.02%	55.84%	51.58%
4/18/22	4/22/22	64 F	54.0%	53.60%	51.12%	0.02%	55.20%	51.15%
4/25/22	4/29/22	64 F	54.0%	53.60%	52.25%	0.02%	52.38%	52.02%

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Month:	May-22	**Methane (% v/v) measurements**						
Week	Date	LFG Temp @ blower inlet	Cal Gas dry	Cal Gas wet	Pre-calibration	Zero gas	Span gas	Post-calibration
5/1/22	5/6/22	67 F	54.0%	53.56%	51.53%	-0.05%	56.82%	51.73%
5/8/22	5/13/22	75 F	54.0%	53.43%	51.59%	-0.01%	54.28%	51.42%
5/15/22	5/20/22	77 F	54.0%	53.39%	51.49%	-0.01%	52.61%	51.46%
5/22/22	5/27/22	73 F	54.0%	53.47%	53.04%	0.02%	51.67%	53.69%

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New Bedford, Massachusetts
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'California Analytical' Analyzer Calibration Results
California Analytical Instrument, Model 602P NDIR, Serial #S07002

Month:	Jun-22	**Methane (% v/v) measurements**						
Week	Date	LFG Temp @ blower inlet	Cal Gas dry	Cal Gas wet	Pre-calibration	Zero gas	Span gas	Post-calibration
5/30/22	6/3/22	73 F	54.00%	53.47%	53.51%	-0.02%	55.02%	52.99%
6/6/22	6/10/22	74 F	54.00%	53.45%	52.53%	0.01%	53.20%	52.71%
6/13/22	6/17/22	74 F	54.00%	53.45%	53.89%	-0.01%	53.89%	53.92%
6/20/22	6/24/22	74 F	54.00%	53.45%	53.04%	0.00%	53.22%	52.62%
6//27/22	7/1/22	76 F	54.00%	53.41%	52.77%	-0.01%	54.08%	53.01%

Biogas Flow Measurements									
$Q = \sqrt{dP/[Ss * (T + 460)/(K^2 * D^4 * P * 16590)]}$									
							P	P	
		SCADA Reading				SCADA Reading	static	static	T
		Pre-calibration	Measured	Measured	Difference between	Post-calibration	pressure	pressure	temperature
Month	Date	flow rate, scfm	dP, inch WG	flow rate, scfm	Measured and SCADA, %	flow rate, scfm	inch WG	psia	F
Jan-22	11-Jan-22	14.0	0.04	13.8	1.6%	14	6	14.92	85
Feb-22	15-Feb-22	17.0	0.06	16.9	0.8%	17	6	14.92	85
Mar-22	8-Mar-22	14.0	0.04	13.8	1.6%	14	6	14.92	85
Apr-22	8-Apr-22	22.0	0.1	21.8	1.0%	22	6	14.92	85
May-22	12-May-22	10.0	0.02	9.7	2.6%	10	6	14.92	85
Jun-22	8-Jun-22	13.0	0.035	12.9	0.9%	13	6	14.92	85

CRMC Bioenergy LLC							
Biogas Calibrations							
METHANE CONFIRMATIONS/CALIBRATIONS							
		SCADA Reading		Measured		SCADA Reading	
		Pre-calibration	Calibration	Calibration	Difference between	Post-calibration	
Month	Date	Methane, %	Methane, %	Methane, %	Measured and SCADA, %	Methane, %	
Jan-22	11-Jan-22	65.5%	50.0%	50.2%	-0.4%	65.5%	
Feb-22	15-Feb-22	65.5%	50.0%	50.0%	0.0%	65.5%	
Mar-22	8-Mar-22	66.7%	50.0%	49.8%	0.4%	66.7%	
Apr-22	8-Apr-22	68.0%	50.0%	50.3%	-0.6%	68.0%	
May-22	12-May-22	67.3%	50.0%	49.9%	0.2%	67.3%	
Jun-22	8-Jun-22	69.0%	50.0%	50.0%	0.0%	69.0%	
PRESSURE AND TEMPERATURE CONFIRMATION/CALIBRATION							
		P	P			T	
		static	calibration		T	calibration	
		pressure	static pressure		temperature	temperature	
Month	Date	inch WG	inch WG	Adjustment	F	F	Adjustment
Jan-22	11-Jan-22	6	6	None	85	85	None
Feb-22	15-Feb-22	6	6	None	85	85	None
Mar-22	8-Mar-22	6	6	None	85	85	None
Apr-22	8-Apr-22	6	6	None	85	85	None
May-22	12-May-22	6	6	None	85	85	None
Jun-22	8-Jun-22	6	6	None	85	85	None

Exhibit 7

Attestation Statement

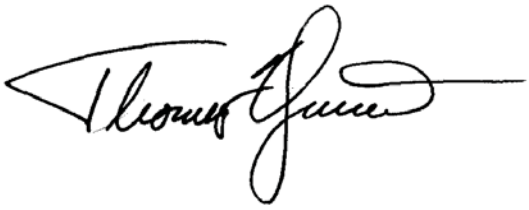
Attestation Statement

As an officer of CommonWealth New Bedford Energy LLC (CNBE) I hereby certify that the verified carbon units (VCUs) verified under the verified carbon standard (VCS) for the period January 1, 2022 through June 30, 2022 from the Project Activity will be registered on the VERRA Registry only.

Thomas Yeransian
Name

Principal of CommonWealth Resource Management Corporation, Member of CommonWealth New Bedford Energy LLC

Title



Signature

Date: July 18, 2022

Exhibit 8

Permits and Other Regulatory Documentation

1. Final Air Quality Operation Permit (Renewal) Issued July 23, 20202. March 26, 2019
2. NMOC Emission Rate Report, May 3, 2021. The NMOC Emission Report demonstrates that the NMOCs emissions continue to be below the NSPS applicability threshold and therefore the Crapo Hill Landfill is not subject to the requirements of NSPS.

Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

Southeast Regional Office • 20 Riverside Drive, Lakeville MA 02347 • 508-946-2700

Charles D. Baker
Governor

Karyn E. Polito
Lieutenant Governor

Kathleen A. Theoharides
Secretary

Martin Suuberg
Commissioner

July 23, 2020

Mr. Patrick Bird, Manager
Air Permits, Toxics and Indoor Air Unit
EPA-New England, Region 1
5 Post Office Square, Suite 100
Mail Code OEP05-2
Boston, MA 02109-3912

RE: **FINAL AIR QUALITY OPERATING PERMIT (RENEWAL)**
Application for: BWP AQ 14/12 Operating Permit Renewal
310 CMR 7.00: Appendix C
Application No.: 17-AQ14/12-000003-APP
Authorization No.: AQ-14-0000105
Source No. 1200624

AT: CommonWealth New Bedford Energy, LLC
300 Samuel Barnet Boulevard
Dartmouth, MA

Dear Mr. Bird:

In accordance with 310 CMR 7.00: Appendix C(6) of the Air Pollution Control Regulations ("the Regulations"), the Massachusetts Department of Environmental Protection ("MassDEP" or "Department"), is forwarding to the United States Environmental Protection Agency ("EPA") the attached Final Air Quality Operating Permit for CommonWealth New Bedford Energy, LLC, 300 Samuel Barnet Boulevard, Dartmouth, Massachusetts.

Public notice of the Draft Air Quality Operating Permit was published by the MassDEP in the Environmental Monitor on December 23, 2019 and in the New Bedford Standard-Times also on December 23, 2019, in accordance with the requirements of 310 CMR 7.00: Appendix C. As such, the public comment period ended on January 22, 2020. During that period, no comments were received, and no public hearing was requested pursuant to 310 CMR 7.00: Appendix C(6)(f).

This information is available in alternate format. Contact Michelle Waters-Ekanem, Director of Diversity/Civil Rights at 617-292-5751.
TTY# MassRelay Service 1-800-439-2370
MassDEP Website: www.mass.gov/dep

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On January 31, 2020, MassDEP forwarded to EPA Region 1, via electronic mail, the Proposed Operating Permit for this facility. EPA did not object to or comment on the Proposed Operating Permit, nor did EPA receive a petition to object to the Proposed Operating Permit within the regulatory deadlines. Therefore, MassDEP is issuing the Final Air Quality Operating Permit.

The attached Final Air Quality Operating Permit contains all of the Federal and State Air Pollution Control Requirements the facility is subject to, and the terms and conditions for compliance with such applicable requirements.

Should you have any questions concerning this Final Operating Permit, please contact Dan Kamieniecki, at (508) 946-2717.

Sincerely,

Gerard M. R. Martin

FOR: Thomas Cushing, Chief
Permit Section
Bureau of Air and Waste

C/DK

Enclosure

Enclosure – Final Air Quality Operating Permit Renewal Authorization No. AQ14-0000105 (copy)

cc: CommonWealth New Bedford Energy, LLC – Thomas Yeransian, Principal
7 Winslow Way, Mansfield, MA. 02048
(w/encl. – Original Final Air Quality Operating Permit Renewal Auth. No. AQ14-0000105)

ecc: Undine Kipka, U.S. EPA Region 1
Marc Wolman, MassDEP/Boston
Yi Tian, MassDEP/Boston
Seth Pickering, MassDEP/BAW-SERO
Thomas Cushing, MassDEP/BAW-SERO
Mark Poudrier, MassDEP/BAW-SERO
Daniel Kamieniecki, MassDEP/BAW-SERO
Lisa Ramos, MassDEP/BAW-SERO
Thomas Yeransian, CommonWealth New Bedford Energy, LLC

Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection
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Kathleen E. Theoharides
Secretary

Martin Suuberg
Commissioner

FINAL AIR QUALITY OPERATING PERMIT

Issued by the Massachusetts Department of Environmental Protection ("Department" or "MassDEP") pursuant to its authority under M.G.L. c. 111, §142B and §142D, 310 CMR 7.00 et seq., and in accordance with the provisions of 310 CMR 7.00: Appendix C.

ISSUED TO ["the Permittee"]:
CommonWealth New Bedford Energy, LLC
7 Winslow Way
Mansfield, MA 02048

INFORMATION RELIED UPON:
Application No. 17-AQ14/12-000003-APP
Application No. 4B04015
Approval No. SE-13-020
ePlace Authorization No.: AQ-14-0000105

FACILITY LOCATION:
CommonWealth New Bedford Energy, LLC
300 Samuel Barnet Boulevard
Dartmouth, MA

FACILITY IDENTIFYING NUMBERS:
AQ ID: 1200624
FMF FAC No.: 402936
FMF RO No.: 402937

NATURE OF BUSINESS:
Electric Power Generation

Standard Industrial Classification (SIC): 4911
North American Industrial Classification System (NAICS): 221117

RESPONSIBLE OFFICIAL:
Name: Mr. Thomas Yeransian
Title: Principal of CommonWealth Resource Management Corporation, Managing Member of CommonWealth New Bedford Energy

FACILITY CONTACT PERSON:
Name: Mr. Thomas Yeransian
Title: Principal
Phone: (508) 339-3074
Fax: 508-339-1326
Email: tyeransian@crmcx.com

This Operating Permit shall expire on July 23, 2025.

For the Department of Environmental Protection

Gerard M.R. Martin
FOR: Permit Chief, Bureau of Air and Waste

July 23, 2020
Date

This information is available in alternate format. Contact Michelle Waters-Ekanem, Director of Diversity/Civil Rights at 617-292-5751.
TTY# MassRelay Service 1-800-439-2370
MassDEP Website: www.mass.gov/dep

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SPECIAL CONDITIONS FOR OPERATING PERMIT

1. PERMITTED ACTIVITIES

In accordance with the provisions of 310 CMR 7.00:Appendix C and applicable rules and regulations, the Permittee is authorized to operate air emission units as shown in Table 1 and exempt, and insignificant activities as described in 310 CMR 7.00:Appendix C(5)(h) and (i). The units described in Table 1 are subject to the terms and conditions shown in Sections 4, 5, and 6 and to other terms and conditions as specified in this Permit. Emissions from the exempt activities shall be included in the total facility emissions for the emission-based portion of the fee calculation described in 310 CMR 4.00 and this Permit.

A. DESCRIPTION OF FACILITY AND OPERATIONS

CommonWealth New Bedford Energy, LLC, (CNBE) operates the Greater New Bedford LFG Utilization Project, a landfill gas (LFG) to energy, electric power generation facility ("Facility") located at the Crapo Hill Landfill in Dartmouth, Massachusetts, with a United States Postal Service mailing address of 300 Samuel Barnet Boulevard, New Bedford MA 02745. The facility is a Major Source, as defined in 310 CMR 7.00: Appendix C, of Carbon Monoxide (CO), and therefore subject to the 310 CMR 7.00: Appendix C: Operating Permit and Compliance Program, and the requirement to obtain an Operating Permit. The approved operation consists of up to five (5) identical LFG-fired reciprocating engine/generator sets. The reciprocating engines are Caterpillar Model 3516 engines. Each engine/generator set has a nominal output rating of approximately 825 kW of electricity, and a maximum output rating of 900 kW of electricity. The engines are housed in a generation building. Each engine has a separate exhaust stack, which discharges through the generation building roof at an exhaust height of 30 feet above ground.

The primary fuel supplied to the Facility is LFG generated from the Crapo Hill Landfill, which is owned and operated by the Greater New Bedford Regional Refuse Management District (District). A small quantity of digester gas supplements the LFG fuel supplied to the Facility. CRMC Bioenergy LLC owns and operates an anaerobic digestion facility that is located adjacent to the Facility and supplies the digester gas to CNBE. The anaerobic digestion facility operates in accordance with MassDEP Air Quality Plan Approval SE-13-020, Transmittal X254662, dated September 26, 2013. Both the Facility and anaerobic digestion facility are located on property leased from the District.

As part of the Operating Permit (OP) renewal process, MassDEP evaluated the relationship between the District and CNBE, to determine if the parties were under common control for purposes of implementing the Title V Operating Permit program. Based on a review of the case-specific facts, factors, and circumstances, and informal guidance documents and determination letters from the United States Environmental Protection Agency, MassDEP determined that the District and CNBE do not meet the criteria for common control, and therefore, the two entities should continue to be considered separate sources.

MassDEP also evaluated the relationship between CRMC Bioenergy LLC and CNBE and has determined that CRMC Bioenergy LLC and CNBE meet the criteria for common control for purposes of implementing the Title V Operating Permit program. This anaerobic digester system is identified as Emission Unit No. 8 (EU-8) in this Operating Permit.

Other equipment associated with Emission Unit Nos. 1 through 5 (EU-1 through EU-5) includes a LFG production system which conditions the LFG with a knockout drum, 2 (redundant) blowers, a cooler, and a coalescing filter. The condensate from the conditioned LFG drains into the Landfill's leachate collection system for disposal. The engines are serviced by a closed-loop lubricating oil system that consists of a 2,000-gallon virgin oil tank and a 2,000-gallon waste oil tank. Each engine is cooled by a glycol/water mix that is run through a radiator outside of the building.

The key parameters that govern the facility operation are monitored and recorded through a supervisory control and data acquisition (SCADA) system. This electronic operator interface system allows for remote access to facility operations and is the main monitoring/recordkeeping tool. In addition, the operation of the engine-generators is controlled by General Electric Fanuc programmable logic controllers (PLCs) located in the switchgear for each engine. Controls include air-to-fuel ratio control, load control, electric generation controls and protective relays. The operation and control of the motors are by variable frequency drives (VFDs). The VFDs operate motors that drive the LFG blowers, the cooler, the engine room ventilation fans, and the radiators.

The facility also maintains a cold cleaning degreaser-parts washer identified as Emission Unit No. 6 (EU-6). The parts washer is subject to and operated in accordance with 310 CMR 7.03(8) and 310 CMR 7.18(8)(a).

The OP renewal application includes the addition of Emission Unit No. 7 (EU-7). EU7 is an emergency reciprocating internal combustion engine (RICE) which operates an emergency engine generator, fires No.2 fuel oil, and is rated at 150 kilowatts of power generation output. The unit was installed on November 13, 2014, and is subject to the requirements of 310 CMR 7.26(42) *Emergency Engines and Turbines*, 40 CFR 60 Subpart IIII, *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines* and 40 CFR 63 Subpart ZZZZ, *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines.*

CNBE is considered an Area Source for Hazardous Air Pollutants (HAPs). The facility has proposed to restrict facility-wide HAP emissions to less than twenty-five (25) tons per year (aggregate total HAPs) and less than ten (10 tons per year (any Single HAP). The four (4) existing engines (EU-1, EU-2, EU-3, and EU-4) were installed prior to June 12, 2006. EU-1, EU-2, EU-3, EU-4 are subject to requirements for existing, non-emergency, non-black start, LFG-fired, stationary, spark ignited, reciprocating internal combustion engines (RICE) at 40 CFR Part 63, Subpart ZZZZ. The facility is approved for the installation of one (1) additional engine (EU-5). At the time of installation of EU-5, the Permittee shall notify MassDEP, evaluate the installation according to applicable State and Federal regulations (such as, but not limited to 40 CFR Part 63 Subpart ZZZZ, and 40 CFR Part 60 Subpart JJJJ), and propose to modify the Operating Permit as necessary. The facility does not currently have any emission units subject to requirements at 40 CFR Part 64, Compliance Assurance Monitoring (CAM).

A list of any exempt activities shall be maintained as indicated in Section 3, Table 2. Operating Permit Section 4, Tables 3, 4, 5, and 6 list the facility emission limits along with monitoring, testing, record-keeping and reporting requirements. Operating Permit Section 4, Table 7 lists regulations that are not applicable to the facility at this time.

The Permittee is subject to the requirements of Greenhouse Gas Emissions Reporting as defined by MassDEP in 310 CMR 7.71(3)(a).

2. EMISSION UNIT IDENTIFICATION

The following emission units (Table 1) are subject to and regulated by this Operating Permit:

Table 1

EU	Description of EU	EU Design Capacity	Pollution Control Device (PCD)
EU-1 through EU-5(note 1)	Caterpillar Model No. 3516, Internal Combustion Engine	10.07 MMBtu/hr (maximum energy input) 900 kilowatts (maximum generator output)	None
EU-6	Parts Washer (Cold Cleaning Degreaser)	Meets design specifications at 310 CMR 7.18(8)(a)3.	None
EU-7	Emergency Generator Kohler Model 150REOZJF Date of Installation: 2014	Maximum heat rate input 1.725MMBtu/hr Fuel: No. 2 Fuel Oil	None
EU-8	Anaerobic Digestion System	100,000 gallon digester capacity	None

Table 1 Key:
MMBtu/hr = Million British thermal units per hour
CMR = Code of Massachusetts Regulations
EU = Emission Unit
No. = number

Table 1 Note:
(1) Facility currently consists of four (4) identical Caterpillar Engines which are identified in this Operating Permit as EU-1, EU-2, EU-3 and EU-4. EU-5 has not yet been installed.

3. IDENTIFICATION OF EXEMPT ACTIVITIES

The following are considered exempt activities in accordance with the criteria contained in 310 CMR 7.00: Appendix C(5)(h):

Table 2

Description of Current Exempt Activities	Reason
The list of current exempt activities is contained in the Operating Permit application and shall be updated by the Permittee to reflect changes at the facility over the Permit term. An up-to-date copy of exempt activities list shall be kept on-site at the facility and a copy shall be submitted to the MassDEP's Regional Office. Emissions from these activities shall be reported on the annual emissions statement pursuant to 310 CMR 7.12.	310 CMR 7.00: Appendix C(5)(h)

Table 2 Key:
MassDEP = Massachusetts Department of Environmental Protection
CMR = Code of Massachusetts Regulations

4. APPLICABLE REQUIREMENTS

A. OPERATIONAL AND/OR PRODUCTION EMISSION LIMITS AND RESTRICTIONS

The Permittee is subject to the limits/restrictions as contained in Table 3 below:

Table 3

EU	Fuel/Raw Material	Pollutant	Operational and/or Production Limits	Emissions Limits/Standards	Applicable Regulation and/or Approval No.
1,2,3,4,5 (per engine) (Note 2)	Landfill Gas/ Digester Gas	NO_x	N/A	0.166 lb/MMBtu	4B04015 SE-13-020
				0.60 g/bhp-hr	
				0.62 TPM	
				7.32 TPY (Note 1)	
		CO	N/A	0.83 lb/MMBtu	
				3.11 TPM	
				36.61 TPY (Note 1)	
		NMOC	N/A	0.083 lb/MMBtu	
				0.31 TPM	
				3.66 TPY (Note 1)	
		VOC	N/A	0.083 lb/MMBtu	
				0.31 TPM	
				3.66 TPY (Note 1)	
		$PM/PM_{10}/PM_{2.5}$	N/A	0.06 lb/MMBtu	
				0.21 TPM	
				2.40 TPY (Note 1)	
		SO_2	LFG $H_2S \leq 200$ ppm_v	0.064 lb/MMBtu	
				0.24 TPM	
				2.81 TPY (Note 1)	
1,2,3,4	Landfill Gas/ Digester Gas	HAP (Note 6)	Change oil and filter every 1440 hours of operation or annually(Note 3), whichever comes first; Inspect spark plugs every 1440 hours of operation or annually, whichever comes first; and Inspect all hoses and belts every 1440 hours of operation or annually, whichever comes first, and replace as necessary.		40 CFR Part 63, Subpart ZZZZ §§ 63.6603(a), 63.6625(j) and Table 2d
			At all times operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions.		40 CFR Part 63, Subpart ZZZZ § 63.6605(a) and (b)

Table 3

EU	Fuel/Raw Material	Pollutant	Operational and/or Production Limits	Emissions Limits/Standards	Applicable Regulation and/or Approval No.
1,2,3,4	Landfill Gas/ Digested Gas	HAP (Note 6)	i. Operate and maintain the stationary RICE according to the manufacturer's emission-related operation and maintenance instructions; or ii. Develop and follow your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions.		40 CFR Part 63, Subpart ZZZZ § 63.6625(e) and Table 6
			Minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes.		40 CFR Part 63, Subpart ZZZZ § 63.6625(h) and Table 2d
1,2,3,4,5 (Combined) (Note 4)	Landfill Gas/ Digester Gas	NO_x	See heat input limit below	3.10 TPM 36.6 TPY (Note 1)	4B04015 SE-13-020
		CO	See heat input limit below	15.5 TPM 183.0 TPY (Note 1)	
		VOC	See heat input limit below	1.55 TPM 18.3 TPY (Note 1)	
		NMOC	See heat input limit below	1.55 TPM 18.3 TPY (Note 1)	
			Operate each EU at all times when the collected LFG is routed to the EU	Each EU shall reduce NMOC emissions by 98% by weight, or reduce the stack NMOC concentration to < 20 ppm_{vd}, as hexane, at 3% O_2	
		$PM/PM_{10}/PM_{2.5}$	See heat input limit below	1.05 TPM 12.2 TPY (Note 1)	
		SO_2	See heat input limit below	1.20 TPM 14.0 TPY (Note 1)	
		All	Maximum heat input of LFG/DG shall not exceed 37,460 MMBtu per month	N/A	
			Maximum heat input of LFG/DG shall not exceed 440,925 MMBtu in any consecutive 12 month period	N/A	
1,2,3,4,5	Landfill Gas/ Digester Gas	Visible Emissions	Stack emissions shall not exceed 0% opacity (no visible emissions), with the exception of up to five (5) minutes during startup. During startup visible emissions shall comply with the provisions of 310 CMR 7.06.		4B04015 SE-13-020
6	Non-halogenated solvent	VOC	Solvent consumption < 100 gallons per month per unit	Operating procedures identified at 310 CMR 7.18(8)(e); **and** design features and specifications identified at 310 CMR 7.18(8)(a)	310 CMR 7.03(8) 310 CMR 7.18(8)(a) 310 CMR 7.18(8)(e)

Table 3

EU	Fuel/Raw Material	Pollutant	Operational and/or Production Limits	Emissions Limits/Standards	Applicable Regulation and/or Approval No.
7	No 2. Fuel Oil	All	≤ 100 hours per calendar year for maintenance and testing as recommended by the manufacturer; and As part of the above, ≤ 50 hours per calendar year for non-emergency situations; and During an emergency		310 CMR 7.26(42)(d)1.a.
			Affected source must meet the requirements of this part by meeting the requirements of 40 CFR Part 60, Subpart IIII, for compression ignition engines		40 CFR Part 63, Subpart ZZZZ § 63.6590(c) 310 CMR 7.26(42)(d)1.b.
		NMHC + NO_x	As noted below	4.0 g/kW-hr	40 CFR Part 60, Subpart IIII § 60.4211(a) and (c) § 60.4205(b) § 60.4202(a)(2) 40 CFR Part 89 Subpart B § 89.112
		CO	As noted below	3.5 g/kW-hr	
		PM	As noted below	0.20 g/kW-hr	
		Sulfur in fuel	N/A	≤0.0015 percent	310 CMR 7.26(42)(c) 310 CMR 7.05(1)(a)1.: Table 1
		All	N/A	Shall comply with applicable Emission limits set by US EPA for non-road engines (40 CFR 89).	310 CMR 7.26(42)(b)
			Operate and maintain engine and control device according to manufacturer's emission-related written instructions. ***See Table 4, Proviso No. 19***		40 CFR Part 60, Subpart IIII § 60.4211(a)(1) and (2)
			Limited to operation as noted at § 60.4211(f) for emergency stationary ICE. ***See Table 4, Provisos Nos. 16, 17, & 18***		40 CFR Part 60 Subpart IIII 310 CMR 7.26(42)(d)1.
		Smoke	N/A	< No. 1 of Chart[1], except ≥ No. 1 to < No. 2 of Chart for ≤ 6 minutes during any one hour, no time to equal or exceed No. 2 of the Chart.	310 CMR 7.26(42)(d)5. 310 CMR 7.06(1)(a)

Table 3

EU	Fuel/Raw Material	Pollutant	Operational and/or Production Limits	Emissions Limits/Standards	Applicable Regulation and/or Approval No.
7	No 2. Fuel Oil	Opacity	N/A	≤ 20 % except >20% to ≤ 40 % for ≤ 2 minutes during any 1 hour	310 CMR 7.26(42)(d)5. 310 CMR 7.06(1)(b)
		Sound		Constructed, located, operated and maintained to comply with 310 CMR 7.10	310 CMR 7.26(42)(d)2. 310 CMR 7.10 **(State Only Requirement)**
		All	Limited to stack height and Emission dispersion requirements. ***See Table 4*** ***Proviso No. 21***	N/A	310 CMR 7.26(42)(d)3.a.
8	Digester Gas	N/A	3,000 gallons of feedstock per day based on a 90 day rolling average	N/A	SE-13-020
Facility-wide	All	Greenhouse Gas (Note 5)	N/A	N/A	310 CMR 7.71 **(State Only Requirement)**
	All	Any Single HAP	N/A	< 10 TPY	17-AQ14/12-000003-APP
		Total HAP		< 25 TPY	

Table 3 Key:

Btu = British thermal units
CFR = Code of Federal Regulations
CMR = Code of Massachusetts Regulations
CO = Carbon Monoxide
DG = Digester Gas
EU = Emission Unit
g/bhp-hr =grams per brake horsepower for one hour (engine output)
g/kW-hr = grams per kilowatt for one hour (engine output)
HAP = Hazardous Air Pollutant as listed in the 1990 Clean Air Act Amendments, Section 112(b)
H_2S = Hydrogen Sulfide
HAP = Hazardous Air Pollutant(s)
ICE = Internal Combustion Engine
lb/MMBtu = pound per Million British thermal units
LFG = Landfill Gas
MMBtu = Million Btu
N/A = Not Applicable
No. = Number
Nos. = Numbers
NMHC = Non-Methane HydroCarbons
NMOC = Non-Methane Organic Compounds

NO_x = Nitrogen Oxides
O_2 = Oxygen
PM = Total Particulate Matter
$PM_{2.5}$ = Particulate Matter less than or equal to 2.5 microns in diameter
PM_{10} = Particulate Matter less than or equal to 10 microns in diameter
ppm_v = Parts per million, by volume
ppm_{vd} = parts per million, by volume, dry basis
RICE = Reciprocating Internal Combustion Engine
SO_2 = Sulfur Dioxide
TPM = Tons Per Month
TPY = Tons Per consecutive12-month period [1]
VOC = Volatile Organic Compound
% = Percent
≥ = Greater than or equal to
< = Less than
≤ = Less than or equal to
+ = added to
§ = Section
§§ = Sections

Table 3 Foot Notes:

1. To calculate the amount of a consecutive 12 month rolling period take the current calendar month amount and add it to the previous 11 calendar months total amount.
2. Emission limits listed are for individual emission units.
3. Sources have the option to utilize an oil analysis program as described in § 63.6625(j) in order to extend the specified oil change requirement in Table 2d of this subpart.
4. Emission limits and Heat Input limits represent a combined total for up to five emission units.
5. Greenhouse Gas means any chemical or physical substance that is emitted into the air and that MassDEP may reasonably anticipate will cause or contribute to climate change including, but not limited to: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), sulfur hexaflouride (SF_6), hydrofluorocarbons (HFCs), and perfluorocarbons (PFCs).
6. Hazardous Air Pollutants are as listed in the 1990 Clean Air Act (CAA) Amendments, Section 112(b).
7. Chart means the Ringelmann Scale for grading the density of smoke, as published by the United States Bureau of Mines and as referred to in the Bureau of Mines Information Circular No. 8333, or any smoke inspection guide approved by the MassDEP.

B. COMPLIANCE DEMONSTRATION

The Permittee is subject to the monitoring/testing, record keeping, and reporting requirements as contained in Tables 4, 5, and 6 below and 310 CMR 7.00 Appendix C (9) and (10) and applicable requirements contained in Table 3:

Table 4

EU	Monitoring And Testing Requirements
EU-1 EU-2 EU-3 EU-4	1. In accordance with Plan Approval No. 4B04015, one operable oxygen analyzer shall be maintained on-site and record shall be maintained of the stack outlet oxygen (O_2) levels at least once per week on each engine.
	2. As applicable, and in lieu of oil change required in Table 3, analyze engine oil for Total Acid Number, viscosity, and percent water content as specified at 40 CFR §63.6625(j).
	3. In accordance with Plan Approval No. 4B04015, each engine/generator set shall be continuously monitored for run time and kW produced.
	4. In accordance with Plan Approval No. 4B04015, a LFG flow recorder shall be maintained so that an on-site record of the total volume of LFG (scf) fired by the five (5) engine/generator sets will be available by date and time period.
	5. In accordance with Plan Approval No. 4B04015, the heat input of LFG (Btu) fired in each EU shall be determined by gas chromatograph and/or field measurements for each month and for each consecutive 12-month period.
	6. In accordance with 310 CMR 7.00: Appendix C(9)(b)2., monitor the H_2S concentration (ppm_v) of the LFG to be combusted on a monthly basis. The sampling shall be conducted using a protocol and test method(s) that are approved by MassDEP.
	7. In accordance with 310 CMR 7.00: Appendix C(9)(b)2., perform monthly visible emissions observations of each engine exhaust, in accordance with 40 CFR Part 60, Appendix A, Method 22, for a time period no less than fifteen (15) minutes while the engines are in operation.
	8. In accordance with Plan Approval No. 4B04015, the ability of the facility to maintain emission rates at or below approved levels shall be demonstrated to the MassDEP in the future if deemed necessary. Compliance testing, if requested by MassDEP, shall be conducted in accordance with MassDEP's "Guideline for Source Emission Testing" and test methods and procedures contained in 40 CFR Part 60, Appendix A.
EU-5	9. In accordance with Plan Approval No. 4B04015, the facility shall be constructed to accommodate the emission testing requirements contained in 40 CFR Part 60, Appendix A.
	10. In accordance with Plan Approval No. 4B04015, emission testing shall be performed to determine compliance with approved CO, NMOC and NO_x emission limits. Emission testing shall be completed within ninety (90) days from the date the engine commences LFG burning after startup of the facility.
	11. Upon installation the Permittee shall conduct, as applicable, monitoring and performance testing required at 40 CFR Part 60 and 40 CFR Part 63.
	12. In accordance with Plan Approval No. 4B04015, a NO_x/CO optimization/minimization diagnostic emission test program shall be conducted prior to emission testing.

Table 4	
EU	**Monitoring And Testing Requirements**
EU-6	13. In accordance with 310 CMR 7.18(8)(h), Persons subject to 310 CMR 7.18(8) shall, upon request of the MassDEP, perform or have performed test to demonstrate compliance. Testing shall be conducted in accordance with a method approved by the MassDEP and USEPA.
EU-7	14. In accordance with 40 CFR 60.4206, the Permittee must operate and maintain stationary CI ICE that achieve the emission standards as required in 40 CFR 60.4205(b) and 60.4202(a)(2) over the entire life of the engine.
	15. In accordance with 310 CMR 7.26(42)(d)1.c., and 40 CFR 60.4209(a), the Permittee must install a non-turn-back hour counter. The non-turn-back hour counter shall be operated and maintained in good working order.
	16. In accordance with 40 CFR 60.4211(f)(1), the Permittee may operate the emergency stationary ICE for emergency situations with no time limit.
	17. In accordance with 40 CFR 60.4211(f)(2)(i), the Permittee may operate the emergency stationary ICE for any combination of the purposes specified below for a maximum of 100 hours per calendar year. (i) Emergency Stationary ICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency ICE beyond 100 hours per calendar year.
	18. In accordance with 40 CFR 60.4211(f)(3), the Permittee may operate the Emergency stationary ICE for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing provided in paragraph (f)(2)(i) of this section. Except as provided in paragraph (f)(3)(i) of this section, the 50 hours per year for nonemergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity. (i) The 50 hours per year for nonemergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met: *A. The Engine is dispatched by the local balancing authority or local transmission and distribution system operator;* *B. The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region.* *C. The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or Guidelines.* *D. The power is provided only to the facility itself or to support the local transmission and distribution system.* *E. The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner or operator.*

Table 4

EU	Monitoring And Testing Requirements
EU-7	19. In accordance with 310 CMR 7.26(42)(e)2., MassDEP may require emission or other monitoring to assure compliance with the requirements of 310 CMR 7.26(42).
	20. In accordance with 310 CMR 7.26(42)(e)3., any testing when required shall comply with the following: a) Tests to certify compliance with emission limitations must be performed in accordance with EPA reference Methods, California Air Resources Board Methods approved by EPA, or equivalent methods as approved by MassDEP and EPA. b) Particulate matter from liquid fuel reciprocating engines shall be determined using Method 8178 D2 of the International Organization for Standardization. c) MassDEP may require emission or other testing to assure compliance with the emission limitations or fuel requirements.
	21. In accordance with 310 CMR 7.26(42)(d)3.a., the engine shall utilize an exhaust stack that discharges so as to not cause a condition of air pollution (310 CMR 7.01(1)). Exhaust stacks shall be configured to discharge the combustion gases vertically and shall not be equipped with any part or device that restricts the vertical exhaust flow of the emitted combustion gases. Any emission impacts of exhaust stacks upon sensitive receptors including, but not limited to, people, windows and doors that open, and building fresh air intakes shall be minimized by employing good air pollution control engineering practices. Such practices include without limitation: i) Avoiding locations that may be subject to downwash of the exhaust; and ii) Installing stack(s) of sufficient height in locations that will prevent and minimize flue gas impacts upon sensitive receptors.
EU-8	22. In accordance with Plan Approval SE-13-020, the Permittee shall continuously monitor the pressure in the Blending and Mixing tank to ensure it is maintained at a negative pressure at all times.
	23. In accordance with Plan Approval SE-13-020, the Permittee shall continuously monitor the biogas production rate of the anaerobic digestion system.
	24. In accordance with Plan Approval SE-13-020, if and when MassDEP requires it, the Permittee shall conduct emission testing in accordance with USEPA Reference Test Methods and regulation 310 CMR 7.13.
Facility-wide	25. In accordance with Plan Approval No. 4B04015 and 310 CMR 7.12, monitor operations such that information may be compiled for the annual preparation of a Source Registration/Emission Statement.
	26. In accordance with AQ14/12-000003-APP, the Permittee shall monitor so that comprehensive and accurate records are maintained onsite to demonstrate compliance with the facility-wide HAP emission limits contained in Table 3. Monitor so that records are compiled for actual emissions of all HAPs emitted for each calendar month and for each consecutive twelve-month period and compiled no later than the 15th day following each month.
	27. In accordance with 310 CMR 7.13(1) Any person owning, leasing, operating or controlling a facility for which the MassDEP has determined that stack testing is necessary to ascertain compliance with the MassDEP's regulations or design approval provisos shall cause such stack testing: a) to be conducted by a person knowledgeable in stack testing, b) to be conducted in accordance with procedures contained in a test protocol which has been approved by the MassDEP, c) to be conducted in the presence of a representative of the MassDEP when such is deemed necessary, and d) to be summarized and submitted to the MassDEP with analysis and report within such time as agreed to in the approved test protocol.

Table 4	
EU	**Monitoring And Testing Requirements**
Facility-wide	28. In accordance with 310 CMR 7.13(2) Any person having control of a facility relative to which the MassDEP determines that stack testing (to ascertain the mass emission rates of air contaminants emitted under various operating conditions) is necessary for the purposes of regulatory enforcement or determination of regulatory compliance shall cooperate with the MassDEP to provide: a) entrance to a location suitable for stack sampling, b) sampling ports at locations where representative samples may be obtained, c) tagging and ladders to support personnel and equipment for performing the tests, d) a suitable power source at the sampling location for the operation of sampling equipment, and e) such other reasonable facilities as may be requested by the MassDEP.
	29. In accordance with 310 CMR 7.00: Appendix C (9)(b), the Permittee shall; a) comply with all emissions monitoring and analysis procedures or test methods required under the applicable requirements, including those promulgated pursuant to 42 U.S.C. 7401, §§ 504(a) and 504(b) or 114(a)(3); b) if the applicable requirement does not require periodic testing or instrumental or non-instrumental monitoring (which may consist of record keeping designed to serve as monitoring), then the Permittee shall perform periodic monitoring sufficient to yield reliable data from the relevant time period that is representative of the source's compliance with the permit. Such monitoring requirements shall assure the use of terms, test methods, units, averaging periods, and other statistical conventions consistent with the applicable requirement. Record keeping provisions may be sufficient to meet the requirements; and c) comply with requirements concerning the use, maintenance and installation of monitoring equipment or methods as the MassDEP deems appropriate.
	30. In accordance with 310 CMR 7.71(1) and Appendix C(9), the Permittee shall establish and maintain data systems or record keeping practices (e.g. fuel use records, SF_6 usage documentation, Continuous Emissions Monitoring System) for greenhouse gas emissions to ensure compliance with the reporting provisions of M.G.L. c. 21N, the Climate Protection and Green Economy Act, St. 2008, c. 298, § 6. **(State Only Requirement)**

Table 4 Key:
Btu= British thermal units
c. = chapter
CFR = Code of Federal Regulations
CMR = Code of Massachusetts Regulations
CO = Carbon Monoxide
e.g. = for example
EU = Emission Unit
HAP = Hazardous Air Pollutant, as listed in the 1990 Clean Air Act (CAA) Amendments, Section 112(b)
H_2S = Hydrogen Sulfide
ICE = Internal Combustion Engine
kW = kiloWatt
LFG = Landfill Gas
M.G.L. = Massachusetts General Law
NERC = North American Electric Reliability Corporation
NMOC = Non-Methane Organic Compound
NO_x = Nitrogen Oxides
No. = Number
O_2 = Oxygen
ppm_v = parts per million, by volume
scf = standard cubic foot
SF_6 = Sulfur Hexafluoride
SI = Spark Ignition
U.S.C. = United States Code
USEPA = United States Environmental Protection Agency
§ = Section
§§ = Sections

Table 5

EU	Record Keeping Requirements
EU-1 EU-2 EU-3 EU-4 EU-5	1. In accordance with Plan Approval No. 4B04015, a record of stack oxygen levels, as determined at least weekly during operation, shall be maintained for each engine.
	2. In accordance with Plan Approval No. 4B04015, a copy of the NO_x/CO optimization/minimization program report for each engine shall be maintained on-site.
	3. In accordance with Plan Approval No. 4B04015, a record of the volume of LFG (scf) fired in each engine/generator set for each month and for each consecutive 12 month period shall be maintained on-site. This record shall take into account the total volume of LFG fired by the combined engine/generator sets, and the individual engine/generator set run time and amount of electricity produced.
	4. In accordance with Plan Approval No. 4B04015, the heat input of LFG (Btu) fired in the engine/generator sets for each month and consecutive 12 month period shall be maintained on-site.
	5. In accordance with Plan Approval No. 4B04015, a record of NO_x, CO, NMOC, VOC, PM, and SO_2 monthly and consecutive 12 month period emission rate records for each engine/generator set shall be maintained on-site.
	6. In accordance with Plan Approval No. 4B04015, a copy of the Standard Operating and Maintenance Procedures for all subject equipment shall be maintained on-site.
	7. In accordance with Plan Approval No. 4B04015, an operation log, or other record keeping system, shall be maintained on-site at a level of detail sufficient to document that the Operation and Emission Limits in Table 3 are not exceeded.
	8. In accordance with 310 CMR 7.00: Appendix C(10)(b), maintain records of the monthly H_2S monitoring results to include H_2S concentration (ppm_v) in LFG and the corresponding SO_2 emission calculations.
	9. In accordance with 310 CMR 7.00: Appendix C(10)(b), maintain records of the monthly visible emissions observations to include date and time period of the observations, the result of observations with respect to visible emissions, and a description of the facility operations at the time of the observation.
	10. In accordance with Plan Approval No. 4B04015, all operating and monitoring records, including emission test reports, shall be maintained for the life of the facility; the five most recent years of data/records shall be maintained on-site.
	11. In accordance with 40 CFR 63.6655(a)(2), maintain records of the occurrence and duration of each malfunction of operation or the air pollution control and monitoring equipment.
	12. In accordance with 40 CFR 63.6655(a)(5), maintain records of actions taken during periods of malfunction to minimize emissions in accordance with § 63.6605(b), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.
	13. In accordance with 40 CFR 63.6655(d), maintain records of manufacturer's emission-related operation and maintenance instructions; or the facility maintenance plan, if developed as allowed at 40 CFR 63, Subpart ZZZZ, Table 6.

Table 5	
EU	**Record Keeping Requirements**
EU-1 EU-2 EU-3 EU-4 EU-5	14. In accordance with 40 CFR 63.6655(d) and (e), maintain records of the maintenance (and monitoring as specified at §63.6625(j), if applicable) conducted on the stationary RICE in order to demonstrate that the RICE was operated and maintained according the requirements of 40 CFR 63, Subpart ZZZZ, Table 2d and Table 6.
EU-6	15. In accordance with 310 CMR 7.03(6) and 7.18(8)(g), prepare and maintain records sufficient to demonstrate continuous compliance as stated in 310 CMR 7.18(8)(f) and with the monthly solvent usage restriction in 310 CMR 7.03(8). Records shall include, but are not limited to: identity, quantity, formulation and density of solvent(s) used and waste solvent(s) generated.
EU-7	16. In accordance with 310 CMR 7.26(42)(f), the Permittee shall maintain records described in 310 CMR 7.26(42)(f)1. through 4. Such records shall be maintained on site or for remote locations, at the closest facility where records can be maintained and shall be made available to MassDEP or its designee upon request. The owner or operator shall certify that records are accurate and true in accordance with 310 CMR 7.01(2)(a) through (c). 1) Information on equipment type, make and model, and rated power output; 2) A log of operations, including date, time and duration of operation and reason for each start per 310 CMR 7.26(42)(d)1., fuel type and supplier; 3) Purchase orders, invoices, and other documents to substantiate information in the log; 4) Copies of certificates and documents from the manufacturer related to certificates.
EU-8	17. In accordance with Plan Approval SE-13-020, the Permittee shall continuously record the pressure in the Blending and Mixing tank to document it is maintained at negative pressure at all times. 18. In accordance with Plan Approval SE-13-020, the Permittee shall maintain adequate records on-site to demonstrate compliance with all operational, production, and emission limits contained in Table 2 above. These records shall be compiled no later than the 15th day following each month. 19. In accordance with Plan Approval SE-13-020, the Permittee shall maintain records of monitoring and testing as required by Table 4. 20. In accordance with Plan Approval SE-13-020, the Permittee shall maintain a copy of the most up-to-date SOMP for the EU(s) approved herein on-site. 21. In accordance with Plan Approval SE-13-020, the Permittee shall maintain a record of routine maintenance activities performed on the approved EU(s) and monitoring equipment. The records shall include, at a minimum, the type or a description of the maintenance performed and the date and time the work was completed. 22. In accordance with Plan Approval SE-13-020, the Permittee shall maintain a record of all malfunctions affecting air contaminant emission rates on the approved EU(s) and monitoring equipment. At a minimum, the records shall include: date and time the malfunction occurred; description of the malfunction; corrective actions taken; the date and time corrective actions were initiated and completed; and the date and time emission rates and monitoring equipment returned to compliant operation.
Facility-wide	23. In accordance with 310 CMR 7.71 (6) (b) and (c), the Permittee shall keep on site at the facility documents of the methodology and data used to quantify emissions for a period of 5 years from the date the document is created. The Permittee shall make these documents available to MassDEP upon request. **(State Only Requirement)**.

Table 5	
EU	**Record Keeping Requirements**
Facility-wide	24. In accordance with AQ14/12-000003-APP, the Permittee shall maintain comprehensive and accurate records onsite to demonstrate compliance with the facility-wide HAP emission limits contained in Table 3. A record of all HAPs emitted for each calendar month and for each consecutive twelve-month period shall be maintained on-site. These records shall be compiled no later than the 15th day following each month.
	25. In accordance with Plan Approval No. 4B04015, a record keeping system shall be established and maintained on-site. All records shall be maintained up-to-date such that the year-to-date information is readily available for MassDEP examination. Record keeping shall, at a minimum, include: a) a record of routine maintenance activities performed on emission unit control and monitoring equipment including, at a minimum, the type or a description of the maintenance performed and the date and time the work was completed; and b) a record of all malfunctions on emission unit control and monitoring equipment shall include, at a minimum: the date and time the malfunctions occurred; a description of the malfunctions and the corrective actions taken; the date and time corrective actions were initiated; and the date and time corrective actions were completed and the emission unit returned to compliance. All records shall be kept on-site for five (5) years and shall be made available to MassDEP personnel upon request.
	26. In accordance with 310 CMR 7.12, maintain records to facilitate compilation of data for the required Source Registration submittal.
	27. In accordance with 310 CMR 7.12(3)(c), copies of Source Registration and other information supplied to MassDEP, to comply with 310 CMR 7.12, shall be retained by the facility owner/operator for five years from the date of submittal.
	28. In accordance with Plan Approval SE-13-020, the Permittee shall make records required by this Plan Approval available to MassDEP and USEPA personnel upon request.

Table 5 Key:

Btu = British thermal units
CFR= Code of Federal Regulations
CMR = Code of Massachusetts Regulations
CO = Carbon Monoxide
EU = Emission Unit
HAP = Hazardous air pollutant, as listed in the 1990 Clean Air Act (CAA) Amendments, Section 112(b)
H_2S = Hydrogen Sulfide
LFG = Landfill Gas
MassDEP = Massachusetts Department of Environmental Protection
NMOC = Non-Methane organic compounds
NO_x = Nitrogen Oxides
No.= Number
PM = Particulate Matter
ppm_v = parts per million, by volume
RICE = Reciprocating Internal Combustion Engine
scf = standard cubic foot
SO_2 = Sulfur Dioxide
VOC = Volatile Organic Compounds
§= Section

Table 6

EU	Reporting Requirements
EU-1 EU-2 EU-3 EU-4 EU-5	1. In accordance with Plan Approval No. 4B04015, revisions to the Final Standard Operating and Maintenance Procedures shall be submitted to the MassDEP within seven (7) days from their initial use.
	2. In accordance with Plan Approval No. 4B04015, the MassDEP's Permit Chief for the Bureau of Air and Waste at this office must be notified by telephone or electronic mail within 24 hours, and with written notification within ten (10) days, after occurrence of any upsets or malfunctions to the facility equipment, air pollution control equipment, or monitoring equipment which result in an excess emission to the air and/or a condition of air pollution.
EU-5	3. In accordance with Plan Approval No. 4B04015, notification to the MassDEP, in writing, shall be made within 10 days from the date that EU-5 commences LFG or digester gas burning.
Facility-wide	4. In accordance with Plan Approval 4B04015 and 310 CMR 7.12, the Permittee shall submit a Source Registration/Emission Statement Form to MassDEP on an annual basis.
	5. In accordance with Plan Approval No. 4B04015, a stack test protocol shall be submitted to the MassDEP at least 30 days prior to the commencing of compliance testing. The final emission report shall be submitted to the MassDEP within 30 days from completion of on-site testing.
	6. In accordance with 310 CMR 7.13(1) and 7.13(2), if determined by MassDEP that stack testing is necessary to ascertain compliance with the Department's regulations or design approval provisos, the Permittee shall cause such stack testing to be summarized and submitted to MassDEP as prescribed in the agreed to pretest protocol.
	7. In accordance with 310 CMR 7.00: Appendix C(10)(c)., the Permittee shall report a summary of all monitoring data and related supporting information to MassDEP at least every six months (January 30 and July 30 of each calendar year).
	8. In accordance with General Condition 10 of this Permit, the Permittee shall submit the Annual Compliance report to MassDEP and USEPA by January 30 of each year.
	9. In accordance with 310 CMR 7.00: Appendix C (10)(f), the Permittee shall promptly report to the MassDEP all instances of deviations from permit requirements. This report shall include the deviation itself, including those attributable to upset conditions as defined in the permit, the probable cause of the deviation, and any corrective actions or preventative measures taken.
	10. Submit Annual Compliance report to MassDEP and USEPA by January 30 of each year and as required by General Condition 10 of this Permit.
	11. In accordance with 310 CMR 7.00: Appendix C (10)(h), all required reports must be certified by a responsible official consistent with 310 CMR 7.00: Appendix C (5)(c).
	12. Unless otherwise noted [Note 1], all notifications and reporting required by this Operating Permit shall be sent to: Department of Environmental Protection Bureau of Air and Waste Southeast Regional Office 20 Riverside Drive Lakeville, MA 02347 ATTN: Chief, Air Permitting Telephone: (508) 946-2770 Electronic mail address: sero.air@mass.gov
	13. In accordance with 310 CMR 7.71(5), the Permittee shall electronically submit and certify by April 15th of each year a greenhouse gas emissions report to MassDEP. **(State Only Requirement)**.

Table 6 Key:
EU = Emission Unit
CMR = CMR = Code of Massachusetts Regulations
MassDEP = Massachusetts Department of Environmental Protection
USEPA = United States Environmental Protection Agency
No. = Number
LFG = Landfill Gas

Table 6 Note:
(1) The annual Source Registration/Emission Statement shall be submitted to the MassDEP office specified in the instructions.

C. GENERAL APPLICABLE REQUIREMENTS

The Permittee shall comply with all generally applicable requirements contained in 310 CMR 7.00 et seq. and 310 CMR 8.00 et. seq., when subject.

D. REQUIREMENTS NOT CURRENTLY APPLICABLE

The Permittee is currently not subject to the following requirements:

Table 7

Regulation	Reason
310 CMR 7.16: Reduction of Single Occupant Commuter Vehicle Use	Facility is below employee threshold.
40 CFR Part 64: Compliance Assurance Monitoring	Facility has no subject emission units

Table 7 Key:
CFR = Code of Federal Regulations
CMR = Code of Massachusetts Regulations

5. SPECIAL TERMS AND CONDITIONS

The Permittee is subject to and shall comply with the following special terms and conditions that are not contained in Table 3, 4, 5, and 6:

Table 8

EU	Special Terms and Conditions
EU-5	1. In accordance with AQ14/12-000003-APP, at the time of installation of EU-5, the Permittee shall notify MassDEP, evaluate the installation according to applicable State and Federal regulations (such as, but not limited to 40 CFR Part 63 Subpart ZZZZ, and 40 CFR Part 60 Subpart JJJJ), and propose to modify the Operating Permit as necessary.
EU-7	2. In accordance with 310 CMR 7.26(42)(b)3., the Permittee shall obtain from the supplier a statement that a certificate of conformity has been obtained from the USEPA. Pursuant to 40 CFR 89.105 as in effect October 23, 1998, any engine certified under the USEPA non-road standards is automatically certified to operate as an emergency engine pursuant to 310 CMR 7.26(42).
EU-8	3. In accordance with Plan Approval SE-13-020, in the event that the engines at the facility are not operational, all digested gas from the anaerobic digester system shall be routed to the flare.
Facility-wide	4. Emission Units EU-1 through EU-5 construction shall be consistent with the Equipment and Design Schedule in Plan Approval Nos. 4B04015 and SE-13-020 as follows: **Engine/Electric Generator Sets** Manufacturer: Caterpillar (or equiv.) Model No.: 3516 (or equiv.) Max. Heat Input: 10.07 MMBtu/hr/engine @ 900 kW Fuel: Landfill Gas / Digester Gas Maximum Output: 900 kW/generator Nominal Output: 825 kW/generator Max. Stack Exit Temperature: 960 °F Stack Material: Steel Stack Height: 30 feet above ground Stack Exit Diameter: 12 inches Silencer Manufacturer: EM Products (or equiv.) Silencer Model No.: JCS12-X2608 (or equiv.) **Approximate Facility Location** UTM Coordinates: 334925 East, 4620880 North (Zone 19) Latitude/Longitude: North 41° 43' 28", West 70° 59'
	5. Emission units EU-1 through EU-4 are subject to the requirements of 40 CFR 63.1-15, Subpart A, "General Provisions" [as indicated in Table"8" to Subpart ZZZZ of 40 CFR 63] except §§ 63.7(b) and (c), 63.8(e), (f)(4) and (f)(6), 63.9(b) through (e), 63.9(g) and 63.9(h) as specified at § 63.6645(a)(5). Compliance with all applicable provisions therein is required.
	6. In accordance with Plan Approval No. 4B04015, there shall be no direct release or bypass of landfill gas from the facility to the ambient air.
	7. In accordance with Plan Approval No. 4B04015, sound impacts shall not exceed 10 dB(A) above background and shall not cause a puretone condition as defined in the MassDEP's DAQC Policy No. 90-001. **(State Only Requirement)**

Table 8	
EU	**Special Terms and Conditions**
Facility-wide	8. In accordance with Plan Approval No. 4B04015, MassDEP personnel shall be provided immediate access to the plant site, buildings, and all pertinent records for the purpose of making inspections and surveys, collecting samples, obtaining data, and reviewing records.
	9. In accordance with Plan Approval No. 4B04015, if any nuisance condition(s) should be generated by the operation of this facility, immediate appropriate steps shall be taken to abate the nuisance condition(s).

Table 8 Key:

CFR = Code of Federal Regulations
dB(A) = decibels weighted for the "A" scale
hr = hour
MMBtu = Million British Thermal Units
° = degrees
' = minutes
" = seconds
°F = degrees Fahrenheit
@ = at
equiv. = equivalent
DAQC = Division of Air Quality Control
EU = Emission Unit
kW = kilowatt
No. = Number
UTM = Universal Transverse Mercator
§ = Section
§§ = Sections
USEPA = United States Environmental Protection Agency
CMR = Code of Massachusetts Regulations
max. = maximum

6. ALTERNATIVE OPERATING SCENARIOS

The Permittee did not request alternative operating scenarios in its Operating Permit application.

7. EMISSIONS TRADING

A. INTRA-FACILITY EMISSION TRADING

The Permittee did not request intra-facility emissions trading in its Operating Permit application.

B. INTER-FACILITY EMISSION TRADING

The Permittee did not request inter-facility emissions trading in its Operating Permit application.

8. COMPLIANCE SCHEDULE

The Permittee has indicated that the Facility is in compliance and shall remain in compliance with the applicable requirements contained in Sections 4 and 5.

In addition, the Permittee shall comply with any applicable requirements that become effective during the Permit term.

GENERAL CONDITIONS FOR OPERATING PERMIT

9. FEES

The Permittee has paid the permit application processing fee and shall pay the annual compliance fee in accordance with the fee schedule pursuant to 310 CMR 4.00.

10. COMPLIANCE CERTIFICATION

All documents submitted to the MassDEP shall contain certification by the responsible official of truth, accuracy, and completeness. Such certification shall be in compliance with 310 CMR 7.01(2) and contain the following language:

"I certify that I have personally examined the foregoing and am familiar with the information contained in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including possible fines and imprisonment."

The "Operating Permit Reporting Kit" contains instructions and the Annual Compliance Report and Certification and the Semi-Annual Monitoring Summary Report and Certification. The "Operating Permit Reporting Kit" is available to the Permittee via the MassDEP's web site, http://www.mass.gov/dep/air/approvals/aqforms.htm#op.

A. Annual Compliance Report and Certification

The Responsible Official shall certify, annually for the calendar year, that the facility is in compliance with the requirements of this Operating Permit. The report shall be postmarked or delivered by January 30 to the MassDEP and to the Air Compliance Clerk, U.S. Environmental Protection Agency - New England Region. The report shall be submitted in compliance with the submission requirements below.

The compliance certification and report shall describe:

1) the terms and conditions of the Permit that are the basis of the certification;
2) the current compliance status and whether compliance was continuous or intermittent during the reporting period;
3) the methods used for determining compliance, including a description of the monitoring, record keeping, and reporting requirements and test methods; and
4) any additional information required by the MassDEP to determine the compliance status of the source.

B. Semi-Annual Monitoring Summary Report and Certification

The Responsible Official shall certify, semi-annually on the calendar year, that the Facility is in compliance with the requirements of this Permit. The report shall be postmarked or delivered by January 30 and July 30 to MassDEP. The report shall be submitted in compliance with the submission requirements below.

The compliance certification and report shall describe:

1) the terms and conditions of the Permit that are the basis of the certification;
2) the current compliance status during the reporting period;
3) the methods used for determining compliance, including a description of the monitoring, record keeping, and reporting requirements and test methods;
4) whether there were any deviations during the reporting period;
5) if there are any outstanding deviations at the time of reporting, and the Corrective Action Plan to remedy said deviation;
6) whether deviations in the reporting period were previously reported;
7) if there are any outstanding deviations at the time of reporting, the proposed date of return to compliance;
8) if the deviations in the reporting period have returned to compliance and date of such return to compliance; and
9) any additional information required by the MassDEP to determine the compliance status of the source.

11. NONCOMPLIANCE

Any noncompliance with a permit condition constitutes a violation of 310 CMR 7.00: Appendix C and the Clean Air Act, and is grounds for enforcement action, for Permit termination or revocation, or for denial of an Operating Permit renewal application by the MassDEP and/or EPA. Noncompliance may also be grounds for assessment of administrative or civil penalties under M.G.L. c.21A, §16 and 310 CMR 5.00; and civil penalties under M.G.L. c.111, §142A and 142B. This Permit does not relieve the Permittee from the obligation to comply with any other provisions of 310 CMR 7.00 or the Act, or to obtain any other necessary authorizations from other governmental agencies, or to comply with all other applicable Federal, State, or Local rules and regulations, not addressed in this Permit.

12. PERMIT SHIELD

A. This Facility has a permit shield provided that it operates in compliance with the terms and conditions of this Permit. Compliance with the terms and conditions of this Permit shall be deemed compliance with all applicable requirements specifically identified in Sections 4, 5, 6, and 7, for the emission units as described in the Permittee's application and as identified in this Permit.

Where there is a conflict between the terms and conditions of this Permit and any earlier approval or Permit, the terms and conditions of this Permit control.

B. The MassDEP has determined that the Permittee is not currently subject to the requirements listed in Section 4, Table 7.

C. Nothing in this Permit shall alter or affect the following:

1) the liability of the source for any violation of applicable requirements prior to or at the time of Permit issuance.

2) the applicable requirements of the Acid Rain Program, consistent with 42 U.S.C. §7401, §408(a); or

3) the ability of EPA to obtain information under 42 U.S.C. §7401, §114 or §303 of the Act.

13. ENFORCEMENT

The following regulations found at 310 CMR 7.02(8)(h) Table 6 for wood fuel, 7.04(9), 7.05(8), 7.09 (odor), 7.10 (noise), 7.18(1)(b), 7.70, 7.71, 7.72, 7.74, 7.75 and any condition(s) designated as "state only" are not federally enforceable because they are not required under the Act or under any of its applicable requirements. These regulations and conditions are not enforceable by the EPA. Citizens may seek equitable or declaratory relief to enforce these regulations and conditions pursuant to Massachusetts General Law Chapter 214, Section 7A

All other terms and conditions contained in this Permit, including any provisions designed to limit a facility's potential to emit, are enforceable by the MassDEP, EPA and citizens as defined under the Act.

A Permittee shall not claim as a defense in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Permit.

14. PERMIT TERM

This Permit shall expire on the date specified on the cover page of this Permit, which shall not be later than the date 5 years after issuance of this Permit.

Permit expiration terminates the Permittee's right to operate the facility's emission units, control equipment or associated equipment covered by this Permit, unless a timely and complete renewal application is submitted at least 6 months before the expiration date.

15. PERMIT RENEWAL

Upon the MassDEP's receipt of a complete and timely application for renewal, this Facility may continue to operate subject to final action by the MassDEP on the renewal application.

In the event the MassDEP has not taken final action on the Operating Permit renewal application prior to this Permit's expiration date, this Permit shall remain in effect until the MassDEP takes final action on the renewal application, provided that a timely and complete renewal application has been submitted in accordance with 310 CMR 7.00: Appendix C(13).

16. REOPENING FOR CAUSE

This Permit may be modified, revoked, reopened, and reissued, or terminated for cause by the MassDEP and/or EPA. The responsible official of the Facility may request that the MassDEP terminate the facility's Operating Permit for cause. The MassDEP will reopen and amend this Permit in accordance with the conditions and procedures under 310 CMR 7.00: Appendix C(14).

The filing of a request by the Permittee for an Operating Permit revision, revocation and reissuance, or termination, or a notification of a planned change or anticipated noncompliance does not stay any Operating Permit condition.

17. DUTY TO PROVIDE INFORMATION

Upon the MassDEP's written request, the Permittee shall furnish, within a reasonable time, any information necessary for determining whether cause exists for modifying, revoking and reissuing, or terminating the Permit, or to determine compliance with the Permit. Upon request, the Permittee shall furnish to the MassDEP copies of records that the Permittee is required to retain by this Permit.

18. DUTY TO SUPPLEMENT

The Permittee, upon becoming aware that any relevant facts were omitted or incorrect information was submitted in the permit application, shall promptly submit such supplementary facts or corrected information. The Permittee shall also provide additional information as necessary to address any requirements that become applicable to the Facility after the date a complete renewal application was submitted but prior to release of a draft permit.

The Permittee shall promptly, on discovery, report to the MassDEP a material error or omission in any records, reports, plans, or other documents previously provided to the MassDEP.

19. TRANSFER OF OWNERSHIP OR OPERATION

This Permit is not transferable by the Permittee unless done in accordance with 310 CMR 7.00: Appendix C(8)(a). A change in ownership or operation control is considered an administrative permit amendment if no other change in the Permit is necessary and provided that a written agreement containing a specific date for transfer of Permit responsibility, coverage and liability between current and new Permittee, has been submitted to the MassDEP.

20. PROPERTY RIGHTS

This Permit does not convey any property rights of any sort, or any exclusive privilege.

21. INSPECTION AND ENTRY

Upon presentation of credentials and other documents as may be required by law, the Permittee shall allow authorized representatives of the MassDEP, and EPA to perform the following:

A. Enter upon the Permittee's premises where an operating permit source activity is located or emissions-related activity is conducted, or where records must be kept under the conditions of this Permit;

B. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Permit;

C. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Permit; and

D. Sample or monitor at reasonable times any substances or parameters for the purpose of assuring compliance with the Operating Permit or applicable requirements as per 310 CMR 7.00 Appendix C(3)(g)(12).

22. PERMIT AVAILABILITY

The Permittee shall have available at the Facility, at all times, a copy of the materials listed under 310 CMR 7.00: Appendix C(10)(e) and shall provide a copy of the Operating Permit, including any amendments or attachments thereto, upon request by the MassDEP or EPA.

23. SEVERABILITY CLAUSE

The provisions of this Permit are severable, and if any provision of this Permit, or the application of any provision of this Permit to any circumstances, is held invalid, the application of such provision to other circumstances, and the remainder of this Permit, shall not be affected thereby.

24. EMERGENCY CONDITIONS

The Permittee shall be shielded from enforcement action brought for noncompliance with technology based[1] emission limitations specified in this Permit as a result of an emergency[2]. In order to use emergency as an affirmative defense to an action brought for noncompliance, the Permittee shall demonstrate the affirmative defense through properly signed, contemporaneous operating logs, or other relevant evidence that:

A. an emergency occurred and that the Permittee can identify the cause(s) of the emergency;

B. the permitted Facility was at the time being properly operated;

C. during the period of the emergency, the Permittee took all reasonable steps as expeditiously as possible, to minimize levels of emissions that exceeded the emissions standards, or other requirements in this Permit; and

D. the Permittee submitted notice of the emergency to the MassDEP within two (2) business days of the time when emission limitations were exceeded due to the emergency. This notice must contain a description of the emergency, any steps taken to mitigate emission, and corrective actions taken.

If an emergency episode requires immediate notification to the Bureau of Waste Site Cleanup/Emergency Response, immediate notification to the appropriate parties should be made as required by law.

25. PERMIT DEVIATION

Deviations are instances where any permit condition is violated and not reported as an emergency pursuant to section 24 of this Permit. Reporting a permit deviation is not an affirmative defense for action brought for noncompliance. Any reporting requirements listed in Table 6 of this Operating Permit shall supersede the following deviation reporting requirements, if applicable.

The Permittee shall report to the MassDEP's Regional Bureau of Air and Waste the following deviations from permit requirements, by telephone, by fax or by electronic mail (e-mail), within three (3) days of discovery of such deviation:

A. Unpermitted pollutant releases, excess emissions or opacity exceedances measured directly by CEMS/COMS, by EPA reference methods or by other credible evidence, which are ten percent (10%) or more above the emission limit.

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[1] Technology based emission limits are those established on the basis of emission reductions achievable with various control measures or process changes (e.g., a new source performance standard) rather than those established to attain health based air quality standards.

[2] An "emergency" means any situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, which situation would require immediate corrective action to restore normal operation, and that causes the source to exceed a technology based limitation under the Permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operations, operator error or decision to keep operating despite knowledge of any of these things.

B. Exceedances of parameter limits established by this Operating Permit or other approvals, where the parameter limit is identified by the Permit or approval as surrogate for an emission limit.

C. Exceedances of Permit operational limitations directly correlated to excess emissions.

D. Failure to capture valid emissions or opacity monitoring data or to maintain monitoring equipment as required by statutes, regulations, this Operating Permit, or other approvals.

E. Failure to perform QA/QC measures as required by this Operating Permit or other approvals for instruments that directly monitor compliance.

For all other deviations, three (3) day notification is waived and is satisfied by the documentation required in the subsequent Semi-Annual Monitoring Summary and Certification. Instructions and forms for reporting deviations are found in the MassDEP Bureau of Air and Waste Air Operating Permit Reporting Kit, which is available to the Permittee via the MassDEP's web site, http://www.mass.gov/dep/air/approvals/aqforms.htm#op.
This report shall include the deviation, including those attributable to upset conditions as defined in the Permit, the probable cause of such deviations, and the corrective actions or preventative measures taken.

Deviations that were reported by telephone, fax or electronic mail (e-mail) within 3 days of discovery, said deviations shall also be submitted in writing via the Operating Permit Deviation Report to the regional Bureau of Air and Waste within ten (10) days of discovery. For deviations, which do not require 3-day verbal notification, follow-up reporting requirements are satisfied by the documentation required in the aforementioned Semi-Annual Monitoring Summary and Certification.

26. OPERATIONAL FLEXIBILITY

The Permittee is allowed to make changes at the Facility consistent with 42 U.S.C. §7401, §502(b)(10) not specifically prohibited by the Permit and in compliance with all applicable requirements provided the Permittee gives the EPA and the MassDEP written notice fifteen (15) days prior to said change; notification is not required for exempt activities listed at 310 CMR 7.00: Appendix C(5)(h) and (i). The notice shall comply with the requirements stated at 310 CMR 7.00: Appendix C(7)(a) and will be appended to the Facility's Permit. The permit shield allowed for at 310 CMR 7.00: Appendix C(12) shall not apply to these changes.

27. MODIFICATIONS

A. Administrative Amendments - The Permittee may make changes at the Facility which are considered administrative amendments pursuant to 310 CMR 7.00: Appendix C(8)(a)1., provided they comply with the requirements established at 310 CMR 7.00: Appendix C(8)(b).

B. Minor Modifications - The Permittee may make changes at the Facility which are considered minor modifications pursuant to 310 CMR 7.00: Appendix C(8)(a)2., provided they comply with the requirements established at 310 CMR 7.00: Appendix C(8)(d).

C. Significant Modifications - The Permittee may make changes at the Facility which are considered significant modifications pursuant to 310 CMR 7.00: Appendix C(8)(a)3., provided they comply with the requirements established at 310 CMR 7.00: Appendix C(8)(c).

D. No permit revision shall be required, under any approved economic incentives program, marketable permits program, emission trading program and other similar programs or processes, for changes that are provided in this Operating Permit. A revision to the Permit is not required for increases in emissions that are authorized by allowances acquired pursuant to the Acid Rain Program under Title IV of the Act, provided that such increases do not require an Operating Permit revision under any other applicable requirement.

28. OZONE DEPLETING SUBSTANCES

This section contains air pollution control requirements that are applicable to this Facility, and the United States Environmental Protection Agency enforces these requirements.

A. The Permittee shall comply with the standards for labeling of products using ozone-depleting substances pursuant to 40 CFR Part 82, Subpart E:

1) All containers containing a class I or class II substance that is stored or transported, all products containing a class I substance, and all products directly manufactured with a class I substance must bear the required warning statement if it is being introduced into interstate commerce pursuant to 40 CFR 82.106.

2) The placement of the required warning statement must comply with the requirements of 40 CFR 82.108.

3) The form of the label bearing the required warning statement must comply with the requirements of 40 CFR 82.110.

4) No person may modify, remove or interfere with the required warning statement except as described in 40 CFR 82.112.

B. The Permittee shall comply with the standards for recycling and emissions reduction pursuant to 40 CFR Part 82, Subpart F, except as provided for motor vehicle air conditioners (MVAC) in Subpart B:

1) Persons opening appliances for maintenance, service, repair or disposal must comply with the required practices of 40 CFR 82.156.

2) Equipment used during the maintenance, service, repair or disposal of appliances must comply with the standards for recycling and recovery equipment of 40 CFR 82.158.

3) Persons performing maintenance, service, repair or disposal of appliances must be certified by an approved technician certification program pursuant to 40 CFR 82.161.

4) Persons disposing of small appliances, MVACs and MVAC-like appliances (as defined in 40 CFR 82.152) must comply with recordkeeping requirements of 40 CFR 82.166.

5) Persons owning commercial or industrial process refrigeration equipment must comply with the

leak repair equipment requirements of 40 CFR 82.156.

6) Owners/operators of appliances normally containing 50 or more pounds of refrigerant must keep records of refrigerant purchased and added to such appliances pursuant to 40 CFR 82.166.

C. If the Permittee manufactures, transforms, imports or exports a class I or class II substance, the Permittee is subject to all the requirements as specified in 40 CFR Part82, Subpart A, "Production and Consumption Controls".

D. If the Permittee performs a service on motor (fleet) vehicles when this service involves ozone-depleting substance refrigerant (or regulated substitute substance) in the motor vehicle air conditioner (MVAC), the Permittee is subject to all the applicable requirements as specified in 40 CFR Part 82, Subpart B, "Servicing of Motor Vehicle Air Conditioners". The term "motor vehicle" as used in Subpart B does not include a vehicle in which final assembly of the vehicle has not been completed. The term "MVAC" as used in Subpart B does not include the air-tight sealed refrigeration system used as refrigerated cargo or system used on passenger buses using HCFC-22 refrigerant.

E. The Permittee shall be allowed to switch from any ozone-depleting substance to any alternative that is listed in the Significant New Alternatives Program (SNAP) promulgated pursuant to 40 CFR Part 82, Subpart G, "Significant New Alternatives Policy Program".

29. PREVENTION OF ACCIDENTAL RELEASES

This section contains air pollution control requirements that are applicable to this Facility and the United States Environmental Protection Agency enforces these requirements.

This Facility is subject to the requirements of the General Duty Clause, under 112(r)(1) of the CAA Amendments of 1990. This clause specifies that owners or operators of stationary sources producing, processing, handling or storing a chemical in any quantity listed in 40 CFR Part 68 or any other extremely hazardous substance have a general duty to identify hazards associated with these substances and to design, operate and maintain a safe facility, in order to prevent releases and to minimize the consequences of accidental releases which may occur.

APPEAL CONDITIONS FOR OPERATING PERMIT

This Permit is an action of the MassDEP. If you are aggrieved by this action, you may request an adjudicatory hearing within 21 days of issuance of this Permit. In addition, any person who participates in any public participation process required by the Federal Clean Air Act, 42 U.S.C. §7401, §502(b)(6) or under 310 CMR 7.00: Appendix C(6), with respect to the MassDEP's final action on operating permits governing air emissions, and who has standing to sue with respect to the matter pursuant to federal constitutional law, may initiate an adjudicatory hearing pursuant to Chapter 30A, and may obtain judicial review, pursuant to Chapter 30A, of a final decision therein.

If an adjudicatory hearing is requested, the Facility must continue to comply with all existing federal and state applicable requirements to which the Facility is currently subject, until a final decision is issued in the case or the appeal is withdrawn. During this period, the application shield shall remain in effect, and the Facility shall not be in violation of the Act for operating without a Permit.

Under 310 CMR 1.01(6)(b), the request must state clearly and concisely the facts which are the grounds for the request, and the relief sought. Additionally, the request must state why the Permit is not consistent with applicable laws and regulations.

The hearing request along with a valid check payable to The Commonwealth of Massachusetts in the amount of one hundred dollars ($100.00) must be mailed to:

The Commonwealth of Massachusetts
Department of Environmental Protection
P.O. Box 4062
Boston, MA 02211

The request will be dismissed if the filing fee is not paid unless the appellant is exempt or granted a waiver as described below.

The filing fee is not required if the appellant is a city or town (or municipal agency) county, or district of the Commonwealth of Massachusetts, or a municipal housing authority.

The MassDEP may waive the adjudicatory hearing filing fee for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file, together with the hearing request as provided above, an affidavit setting forth the facts believed to support the claim of undue financial hardship.

NMOC Emission Rate Report May 3, 2021.

1 Tech Drive, Suite 310
Andover, MA 01810

T: 978-794-0336

May 3, 2021

Mr. Patrick Bird
Director, Air Branch
USEPA Region 1
5 Post Office Square, Suite 100
Boston, MA 02109-3912

Re: NMOC Emission Rate Report for 2020 and 2021
Crapo Hill Landfill, Dartmouth, Massachusetts
MassDEP Regulated Object Account #172448

Dear Mr. Bird:

On behalf of the Greater New Bedford Regional Refuse Management District (the District), Brown and Caldwell (BC) submits this letter report in accordance with the New Source Performance Standards (NSPS) for municipal solid waste (MSW) landfills contained in 40 CFR Part 60, Subpart XXX. Specifically, this letter report provides the uncontrolled emission rate of non-methane organic compounds (NMOCs) from the Crapo Hill Landfill for calendar years 2020 and 2021.

The NMOCs emission rate was determined in accordance with the methodology contained in 40 CFR Part 60, Subpart XXX. These NSPS regulations require calculation of the annual uncontrolled NMOCs emission rate for landfills that have a maximum landfill design capacity for waste disposal of greater than or equal to 2.5 million megagrams (Mg). The Crapo Hill Landfill triggered this threshold as shown in the design report submitted to USEPA and MassDEP by BC on behalf of the District dated March 26, 2019, provided as Attachment 1. The NSPS provides a three-tiered procedure for calculating uncontrolled NMOC emission rates. If the landfill is calculated to generate less than 35 Mg per year of uncontrolled NMOCs under any of the tiered procedures, then the landfill is not subject to the control, monitoring and most reporting requirements under the NSPS. Both Tier 1 and Tier 2 procedures were followed as described below.

In accordance with the Tier 1 methodology, the uncontrolled NMOC emission rate is calculated using a first order decay equation with default parameters, combined with site-specific waste acceptance rates, to estimate uncontrolled or pre-control NMOC emissions from the landfill. BC used the model developed by the USEPA called “Landfill Gas Emissions Model” (LandGEM), which incorporates the decay equation and default parameters with site-specific waste acceptances values input by the user. The default value for NMOCs concentration contained in landfill gas corrected to 50% methane content is 4,000 ppmv as hexane. The result of the Tier 1 procedure was a calculated quantity of uncontrolled NMOCs of 320 Mg for 2020 and 326 Mg for 2021, which are greater than the 35 Mg threshold. Based upon the Tier 1 result, BC elected to proceed to the Tier 2 calculation that allows for measured site-specific NMOC concentrations to be input to the LandGEM model to estimate the landfill’s emissions.

In accordance with the Tier 2 methodology under 40 CFR Part 60, Subpart XXX, the following was performed.

- **Sampling**: In accordance with EPA Methods 3C and 25C, three samples of landfill gas were collected on September 18, 2019 from the landfill gas (LFG) collection system. The collection site is located prior to control, upstream of the flare station and LFG power generating facility. Three six-liter Summa canisters each at an initial vacuum of 25 inches of mercury were connected to a sampling port in the main LFG header. LFG samples were extracted at a flow rate of approximately 350 milliliters per minute over a 5-minute period. The Summa canisters were sent to Atmospheric Analysis & Consulting, Inc. (AAC) in Ventura, California for laboratory analysis.

- **Analyses:** AAC conducted EPA method 3C analysis to determine the concentration of fixed gases including hydrogen, oxygen, nitrogen, carbon monoxide, carbon dioxide, and methane, and EPA Method 25C analysis to determine NMOCs (as carbon) concentration contained in the LFG prior to control.

- **Calculations:**
  - The site specific NMOC concentration results from EPA Method 25C were converted from carbon to hexane basis in accordance with 40 CFR Part 60.764 – "Test methods and procedures".
  - The site-specific NMOC concentration results were used in the LandGEM Model, together with the USEPA recommended input values to calculate uncontrolled NMOC quantities contained in LFG in 2020 and 2021. The USEPA recommended input values included waste input rates from 1995 through 2020, methane generation rate (k) of 0.05 $year^{-1}$, potential methane generation capacity (L_o) of 170 cubic meters of methane per Mg waste, and the site specific NMOC concentrations in landfill gas of 83 ppmv as hexane, and a methane content of LFG of 50%.

The results of the measurement, analyses and calculations are as follows:

- The uncontrolled NMOC emissions for 2020 are 6.64 Mg and for 2021 are 6.76 Mg as shown in the LandGEM report provided as Attachment 2.

- The average of three samples show uncontrolled NMOCs concentration is 83 ppmv, as hexane, corrected to 50-percent methane content in LFG, as also presented in the calculation in Attachment 2. The fixed gases were used to correct the concentrations of NMOCs to 50-percent methane content in LFG. The uncorrected NMOC and fixed gases for each of the three samples are shown in the analytical laboratory report provided by AAC, which was previously provided in our October 2019 Tier 2 Report.

As noted previously, because the uncontrolled NMOC emissions are below the 35 Mg per year threshold as calculated by the Tier 2 methodology, the Crapo Hill Landfill is not subject to the controls, monitoring and most of the reporting requirements under the NSPS for MSW landfills contained in 40 CFR Part 60, Subpart XXX. However, the District is subject to the requirement under the NSPS to recalculate and

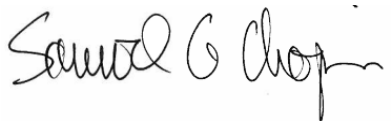
report the uncontrolled NMOC mass emission rate annually as provided in §60.767(b)(1) and retest the site-specific uncontrolled NMOC concentration every 5 years as required thereafter.

The site-specific uncontrolled NMOC concentration is scheduled to be re-determined through sampling of the LFG in 2024.

Please contact me directly at 508-728-3005 with any questions.

Very truly yours,

Brown and Caldwell



Samuel G. Chapin, P.E.
Senior Principal

cc: Scott Alfonse, Executive Director, Greater New Bedford Regional Refuse Management District
Thomas Yeransian, Commonwealth Resource Management Corporation
Mark Dakers, MassDEP Solid Waste
Thomas Cushing, MassDEP Air Quality

Attachments

Attachment 1

March 26, 2019 NSPS Design Report

101 Industrial Park Road, Suite 205
Taunton, MA 02780
T: 508.923.0879

March 26, 2019

Director, Office of Ecosystem Protection
U. S. Environmental Protection Agency, Region 1
5 Post Office Square, Suite 100
Boston, MA 02109-3912

Re: Amended Design Capacity Report, Crapo Hill Landfill, Dartmouth, MA
40 CFR Part 60, Subparts WWW and XXX

Dear Sir or Madam:

The Greater New Bedford Regional Refuse Management District has recently received an operating permit (Authorization to Operate) from the Massachusetts Department of Environmental Protection that increases the design capacity of the Crapo Hill Sanitary Landfill. Identifying information is as follows:

Name and address of Landfill:

Crapo Hill Sanitary Landfill
300 Samuel Barnet Boulevard
New Bedford, MA 02745
508-998-5674
(Note: Landfill is located in Dartmouth, MA but the mail address is New Bedford, MA)

Name and address of Landfill owner and operator:

Greater New Bedford Regional Refuse Management District
300 Samuel Barnet Boulevard
New Bedford, MA 02745
508-763-5924
Scott Alfonse, Executive Director

Permits issued by the Massachusetts Department of Environmental Protection for the construction and operation of the Crapo Hill Landfill include the following:

- Solid Waste Facility Permit and Authorization to Construct Phase 1, January 26, 1993, approving 69.8 acres of sanitary landfill and specifically authorizing construction of 18.6 acre Phase 1.
- Authorization to Operate Phase 1, December 28, 1994.
- Landfill Major Modification, Phase 1 Grades, February 3, 2000, authorizing a reconfiguration of the Phase 1 final elevations.
- Authorization to Construct New Phase of Permitted Landfill, July 12, 2000, authorizing construction of 10 acre Phase 2, Cells #1 and #2.
- Authorization to Operate Phase 2 Cells #1 and #2, April 22, 2002.
- Authorization to Construct New Phase of Permitted Landfill, December 15, 2006, authorizing construction of 9.5 acre Phase 2, Cells #3 and #4.
- Authorization to Operate Phase 2 Cells #3 and #4, September 8, 2008.

- Renewal of Authorization to Operate Phase 2, Cells #3 and #4, June 18, 2013
- Authorization to Construct New Phase of Permitted Landfill, October 23, 2014, authorizing construction of 12.13 acre Phase 2, Cells #5 and #6.
- Authorization to Operate Phase 2 Cell #5, March 8, 2016
- Authorization to Operate Phase 2 Cell #6, February 12, 2019

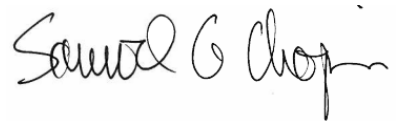
The total permitted waste disposal capacity of the landfill is 2,809,271 cubic meters. A calculation of this permitted capacity is attached. Also attached is a site locus map.

The Crapo Hill Landfill is currently provided with an active landfill gas collection and control system comprising 64 vertical extraction wells, approximately 30,000 feet of horizontal gas collectors, a 2,000 scfm open flare, and a landfill gas-fueled electric power generating plant. In addition, passive vent flares are used on the Landfill to provide localized landfill gas control. The landfill gas collection and control system is fully permitted by the Massachusetts Department of Environmental Protection.

Please contact Scott Alfonse, Executive Director, Greater New Bedford Regional Refuse Management District, or me at 508-819-1431 if you have any questions.

Very truly yours,

Brown and Caldwell



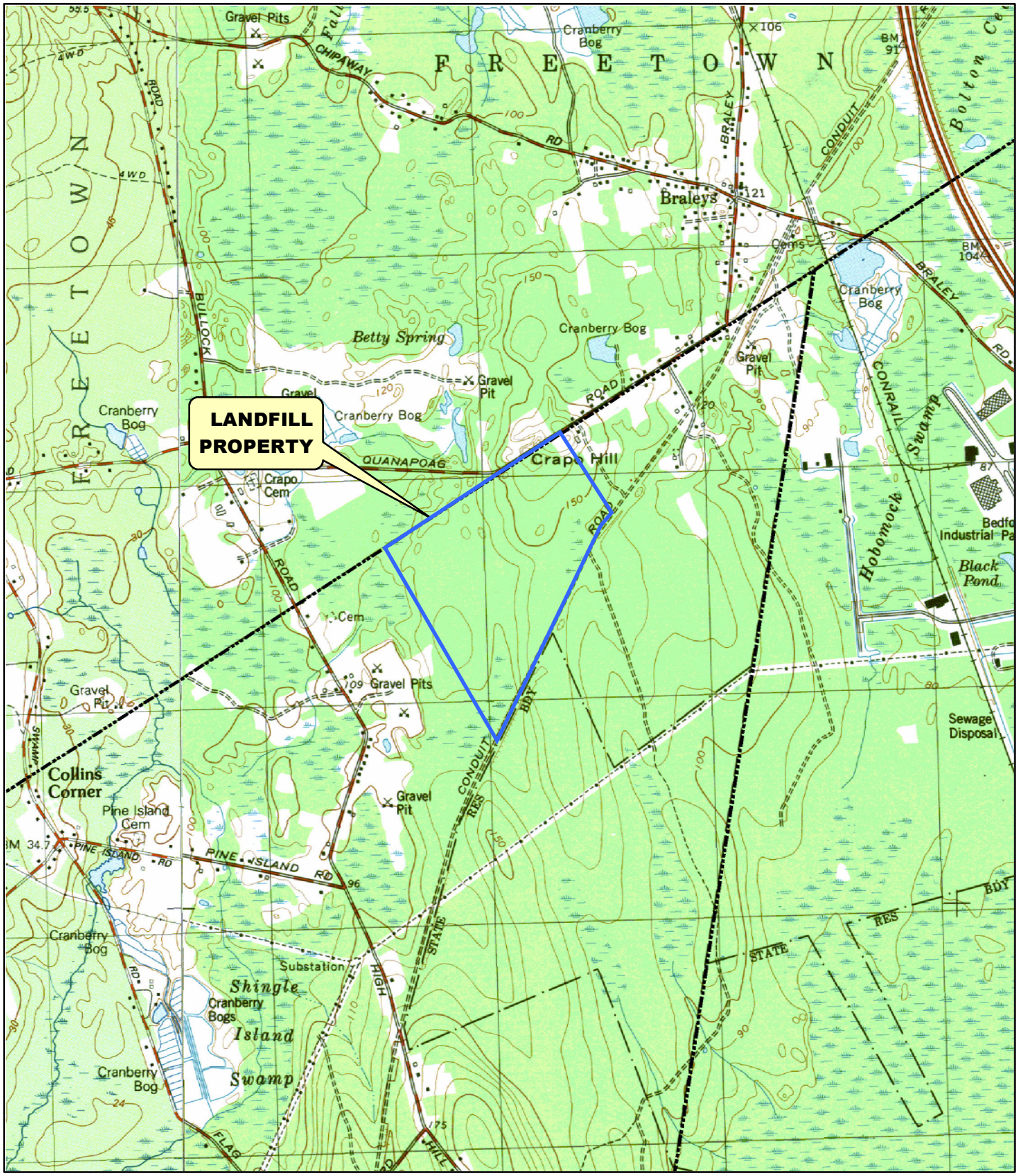
Samuel G. Chapin, P.E.
Managing Engineer

SGC

cc: Greater New Bedford Regional Refuse Management District

Attachments:
Site Locus Map
Design Capacity Calculation

Crapo Hill Landfill					
Dartmouth, MA					
Design Capacity					
Landfill Area	Volumes in cubic yards	Notes/Data Source			
Phase 1					
Gross Volume	1,286,000	Camp, Dresser & McKee Permit Documents			
Final Cover	63,243	2 foot thick over 19.6 acre slope area			
Net Usable Volume	1,222,757				
Daily and Intermediate Cover	330,144	Average 27% by volume over life of landfill			
Net Waste Volume	892,613				
Phase 1 Permit Modification					
Gross Volume	275,000	CGK Environmental calculation			
Final Cover		no increase in final cover			
Net Usable Volume	275,000				
Daily and Intermediate Cover	74,250	Average 27% by volume over life of landfill			
Net Waste Volume	200,750				
Phase 2 Cells #1 and #2					
Gross Volume	977,638	Brown and Caldwell digital modeling			
Final Cover	33,880	2 foot thick over 10.5 acre slope area			
Net Usable Volume	943,758				
Daily and Intermediate Cover	254,815	Average 27% by volume over life of landfill			
Net Waste Volume	688,943				
Phase 2 Cells #3 and #4					
Gross Volume	971,500	Brown and Caldwell digital modeling			
Final Cover	32,423	2 foot thick over 10.0 acre slope area			
Net Usable Volume	939,077				
Daily and Intermediate Cover	253,551	Average 27% by volume over life of landfill			
Net Waste Volume	685,526				
Phase 2 Cell #5					
Gross Volume	455,587	Brown and Caldwell digital modeling			
Final Cover	27,689	2 foot thick over 8.58 acre slope area			
Net Usable Volume	427,898				
Daily and Intermediate Cover	106,975	Average 25% by volume over life of landfill			
Net Waste Volume	320,924				
Phase 2 Cell #6					
Gross Volume	1,198,713	Brown and Caldwell digital modeling			
Final Cover	18,160	2 foot thick over 5.63 acre slope area			
Net Usable Volume	1,180,553				
Daily and Intermediate Cover	295,138	Average 25% by volume over life of landfill			
Net Waste Volume	885,415				
Total Waste Volume					
(Design Capacity)	3,674,170				
Waste Volume in cubic meters					
(Design Capacity)	2,809,271	1 cu. yd. = 0.7646 cu. meter			
Gross Volume, cubic yards	5,164,438				
Gross Volume, cubic meters	3,948,729				



BROWN AND CALDWELL
101 Industrial Park Road, Suite 205
Taunton, Massachusetts, 02780
Tel. (508) 923-0879 Fax. (508) 923-0894

Note: USGS Quad Maps obtained from MassGIS scanned 5-CDset, dated July 1996. All other data from MassGIS Data Viewer software, updated May 2009.

FIGURE 1
SITE LOCATION MAP

Crapo Hill Sanitary Landfill
Dartmouth, Massachusetts

Prepared for:
Greater New Bedford Regional
Refuse Management District

N
W E
S

0 500 1,000 2,000
Feet

Date: 05/2014

Project: 144674

Scale: 1" =2000'

File: Site locus

Attachment 2

USEPA LandGEM Report and Calculations



Summary Report

Landfill Name or Identifier: Crapo Hill Landfill

Date: Monday, May 03, 2021

Description/Comments:

About LandGEM:

First-Order Decomposition Rate Equation:

$$Q_{CH_4} = \sum_{i=1}^{n} \sum_{j=0.1}^{1} kL_o \left(\frac{M_i}{10} \right) e^{-kt_{ij}}$$

Where,

Q_{CH4} = annual methane generation in the year of the calculation ($m^3/year$)

i = 1-year time increment

n = (year of the calculation) - (initial year of waste acceptance)

j = 0.1-year time increment

k = methane generation rate ($year^{-1}$)

L_o = potential methane generation capacity (m^3/Mg)

M_i = mass of waste accepted in the i^{th} year (Mg)

t_{ij} = age of the j^{th} section of waste mass M_i accepted in the i^{th} year (*decimal years*, e.g., 3.2 years)

LandGEM is based on a first-order decomposition rate equation for quantifying emissions from the decomposition of landfilled waste in municipal solid waste (MSW) landfills. The software provides a relatively simple approach to estimating landfill gas emissions. Model defaults are based on empirical data from U.S. landfills. Field test data can also be used in place of model defaults when available. Further guidance on EPA test methods, Clean Air Act (CAA) regulations, and other guidance regarding landfill gas emissions and control technology requirements can be found at http://www.epa.gov/ttnatw01/landfill/landflpg.html.

LandGEM is considered a screening tool — the better the input data, the better the estimates. Often, there are limitations with the available data regarding waste quantity and composition, variation in design and operating practices over time, and changes occurring over time that impact the emissions potential. Changes to landfill operation, such as operating under wet conditions through leachate recirculation or other liquid additions, will result in generating more gas at a faster rate. Defaults for estimating emissions for this type of operation are being developed to include in LandGEM along with defaults for convential landfills (no leachate or liquid additions) for developing emission inventories and determining CAA applicability. Refer to the Web site identified above for future updates.

Input Review

LANDFILL CHARACTERISTICS

Landfill Open Year	**1995**	
Landfill Closure Year (with 80-year limit)	**2020**	
Actual Closure Year (without limit)	***2020***	
Have Model Calculate Closure Year?	**No**	
Waste Design Capacity	**2,275,992**	*megagrams*

MODEL PARAMETERS

Methane Generation Rate, k	**0.050**	*year^{-1}*
Potential Methane Generation Capacity, L_o	**170**	*m^3/Mg*
NMOC Concentration	**83**	*ppmv as hexane*
Methane Content	**50**	*% by volume*

GASES / POLLUTANTS SELECTED

Gas / Pollutant #1: **NMOC**
Gas / Pollutant #2:
Gas / Pollutant #3:
Gas / Pollutant #4:

WASTE ACCEPTANCE RATES

Year	Waste Accepted		Waste-In-Place	
	(Mg/year)	*(short tons/year)*	*(Mg)*	*(short tons)*
1995	86,851	95,536	0	0
1996	99,742	109,716	86,851	95,536
1997	100,430	110,472	186,593	205,252
1998	104,169	114,585	287,022	315,724
1999	98,743	108,617	391,191	430,310
2000	105,423	115,966	489,934	538,927
2001	102,923	113,216	595,357	654,893
2002	104,326	114,758	698,280	768,108
2003	101,223	111,345	802,606	882,867
2004	103,152	113,467	903,829	994,212
2005	103,715	114,087	1,006,981	1,107,679
2006	96,234	105,858	1,110,696	1,221,766
2007	92,011	101,212	1,206,931	1,327,624
2008	85,929	94,522	1,298,942	1,428,836
2009	85,157	93,672	1,384,870	1,523,357
2010	89,291	98,220	1,470,027	1,617,030
2011	71,357	78,493	1,559,318	1,715,249
2012	90,124	99,136	1,630,674	1,793,742
2013	88,383	97,221	1,720,798	1,892,878
2014	84,675	93,143	1,809,181	1,990,099
2015	96,915	106,607	1,893,856	2,083,242
2016	92,629	101,892	1,990,772	2,189,849
2017	96,735	106,409	2,083,401	2,291,741
2018	95,786	105,365	2,180,136	2,398,150
2019	90,538	99,592	2,275,922	2,503,514
2020	89,306	98,237	2,366,460	2,603,106
2021	0	0	2,455,766	2,701,343
2022	0	0	2,455,766	2,701,343
2023	0	0	2,455,766	2,701,343
2024	0	0	2,455,766	2,701,343
2025	0	0	2,455,766	2,701,343
2026	0	0	2,455,766	2,701,343
2027	0	0	2,455,766	2,701,343
2028	0	0	2,455,766	2,701,343
2029	0	0	2,455,766	2,701,343
2030	0	0	2,455,766	2,701,343
2031	0	0	2,455,766	2,701,343
2032	0	0	2,455,766	2,701,343
2033	0	0	2,455,766	2,701,343
2034	0	0	2,455,766	2,701,343

Results

Year	NMOC					
	(Mg/year)	*(m^3/year)*	*(av ft^3/min)*	*(Mg/year)*	*(m^3/year)*	*(av ft^3/min)*
1995	0	0	0	0	0	0
1996	4.295E-01	1.198E+02	8.051E-03	0.000E+00	0.000E+00	0.000E+00
1997	9.019E-01	2.516E+02	1.691E-02	0.000E+00	0.000E+00	0.000E+00
1998	1.355E+00	3.779E+02	2.539E-02	0.000E+00	0.000E+00	0.000E+00
1999	1.804E+00	5.032E+02	3.381E-02	0.000E+00	0.000E+00	0.000E+00
2000	2.204E+00	6.149E+02	4.131E-02	0.000E+00	0.000E+00	0.000E+00
2001	2.618E+00	7.304E+02	4.907E-02	0.000E+00	0.000E+00	0.000E+00
2002	2.999E+00	8.368E+02	5.622E-02	0.000E+00	0.000E+00	0.000E+00
2003	3.369E+00	9.399E+02	6.315E-02	0.000E+00	0.000E+00	0.000E+00
2004	3.705E+00	1.034E+03	6.946E-02	0.000E+00	0.000E+00	0.000E+00
2005	4.035E+00	1.126E+03	7.563E-02	0.000E+00	0.000E+00	0.000E+00
2006	4.351E+00	1.214E+03	8.156E-02	0.000E+00	0.000E+00	0.000E+00
2007	4.615E+00	1.287E+03	8.650E-02	0.000E+00	0.000E+00	0.000E+00
2008	4.845E+00	1.352E+03	9.081E-02	0.000E+00	0.000E+00	0.000E+00
2009	5.033E+00	1.404E+03	9.435E-02	0.000E+00	0.000E+00	0.000E+00
2010	5.209E+00	1.453E+03	9.764E-02	0.000E+00	0.000E+00	0.000E+00
2011	5.397E+00	1.506E+03	1.012E-01	0.000E+00	0.000E+00	0.000E+00
2012	5.486E+00	1.531E+03	1.028E-01	0.000E+00	0.000E+00	0.000E+00
2013	5.664E+00	1.580E+03	1.062E-01	0.000E+00	0.000E+00	0.000E+00
2014	5.825E+00	1.625E+03	1.092E-01	0.000E+00	0.000E+00	0.000E+00
2015	5.960E+00	1.663E+03	1.117E-01	0.000E+00	0.000E+00	0.000E+00
2016	6.149E+00	1.715E+03	1.153E-01	0.000E+00	0.000E+00	0.000E+00
2017	6.307E+00	1.759E+03	1.182E-01	0.000E+00	0.000E+00	0.000E+00
2018	6.478E+00	1.807E+03	1.214E-01	0.000E+00	0.000E+00	0.000E+00
2019	6.635E+00	1.851E+03	1.244E-01	0.000E+00	0.000E+00	0.000E+00
2020	6.760E+00	1.886E+03	1.267E-01	0.000E+00	0.000E+00	0.000E+00
2021	6.872E+00	1.917E+03	1.288E-01	0.000E+00	0.000E+00	0.000E+00
2022	6.537E+00	1.824E+03	1.225E-01	0.000E+00	0.000E+00	0.000E+00
2023	6.218E+00	1.735E+03	1.165E-01	0.000E+00	0.000E+00	0.000E+00
2024	5.914E+00	1.650E+03	1.109E-01	0.000E+00	0.000E+00	0.000E+00
2025	5.626E+00	1.570E+03	1.055E-01	0.000E+00	0.000E+00	0.000E+00
2026	5.352E+00	1.493E+03	1.003E-01	0.000E+00	0.000E+00	0.000E+00
2027	5.091E+00	1.420E+03	9.542E-02	0.000E+00	0.000E+00	0.000E+00
2028	4.842E+00	1.351E+03	9.077E-02	0.000E+00	0.000E+00	0.000E+00
2029	4.606E+00	1.285E+03	8.634E-02	0.000E+00	0.000E+00	0.000E+00
2030	4.382E+00	1.222E+03	8.213E-02	0.000E+00	0.000E+00	0.000E+00
2031	4.168E+00	1.163E+03	7.813E-02	0.000E+00	0.000E+00	0.000E+00
2032	3.965E+00	1.106E+03	7.432E-02	0.000E+00	0.000E+00	0.000E+00
2033	3.771E+00	1.052E+03	7.069E-02	0.000E+00	0.000E+00	0.000E+00
2034	3.587E+00	1.001E+03	6.724E-02	0.000E+00	0.000E+00	0.000E+00
2035	3.412E+00	9.520E+02	6.396E-02	0.000E+00	0.000E+00	0.000E+00
2036	3.246E+00	9.056E+02	6.084E-02	0.000E+00	0.000E+00	0.000E+00
2037	3.088E+00	8.614E+02	5.788E-02	0.000E+00	0.000E+00	0.000E+00
2038	2.937E+00	8.194E+02	5.505E-02	0.000E+00	0.000E+00	0.000E+00
2039	2.794E+00	7.794E+02	5.237E-02	0.000E+00	0.000E+00	0.000E+00
2040	2.658E+00	7.414E+02	4.982E-02	0.000E+00	0.000E+00	0.000E+00
2041	2.528E+00	7.052E+02	4.739E-02	0.000E+00	0.000E+00	0.000E+00
2042	2.405E+00	6.709E+02	4.507E-02	0.000E+00	0.000E+00	0.000E+00
2043	2.287E+00	6.381E+02	4.288E-02	0.000E+00	0.000E+00	0.000E+00
2044	2.176E+00	6.070E+02	4.079E-02	0.000E+00	0.000E+00	0.000E+00

NMOC Results
2020 6.76 Mg/Yr
2021 6.87 Mg/Yr

Methane and Non-methane Organic Compounds Analysis Results
Crapo Hill Landfill
3-Oct-19

	NMOCs concentration in landfill gas		
Sample #	as carbon ppmv	as hexane ppmv	as hexane ppmv corrected to 50 % methane
1	544	76	77
2	566	79	80
3	660	92	93
Average			83

	Fixed gases concentration in landfill gas					
Component in landfill gas Sample #	Methane, %	Carbon dioxide, %	Carbon monoxide %	Nitrogen %	Oxygen %	Hydrogen %
1	49.5	35.2	<0.2	14.0	1.3	<2.4
2	49.6	35.3	<0.3	13.8	1.3	<2.2
3	49.7	35.3	<0.4	13.7	1.2	<2.3
Landtec GEM readings	49.6	36.4		13.8	0.3	

Exhibit 9

RECs Agreements

CONFIDENTIAL

AGREEMENT FOR THE PURCHASE AND SALE OF RENEWABLE ENERGY CERTIFICATES

CONFIRMATION LETTER

From: Dan Heim
EXELON GENERATION COMPANY, LLC
1310 Point Street 8th Floor
Baltimore, MD 21231

To: COMMONWEALTH NEW BEDFORD ENERGY LLC
199 Corey Street
Boston, MA 02132

The purpose of this letter (this "Confirmation Letter") is to confirm the terms and conditions of the oral transaction between EXELON GENERATION COMPANY, LLC ("Buyer") and COMMONWEALTH NEW BEDFORD ENERGY LLC ("Seller") as of the Effective Date (the "Transaction"). Seller and Buyer are each referred to as a "Party" and, collectively, as the "Parties." This Confirmation Letter, including the attached General Terms and Conditions, shall constitute the entire agreement ("Agreement") between the Parties related to the subject matter hereof and supersedes and replaces any prior oral or written confirmation, including broker confirmations, regarding this Transaction.

The terms of the transaction to which this Confirmation Letter relates are as follows:

Trade Date:	06/23/2020
Effective Date:	07/14/2020
Seller:	COMMONWEALTH NEW BEDFORD ENERGY LLC
Buyer:	EXELON GENERATION COMPANY, LLC
Product:	Massachusetts "RPS Class I Renewable Generation Attributes" represented by NEPOOL GIS Certificates ("RECs")
Applicable Standard:	Massachusetts Alternative Renewable Energy Portfolio Standard, M.G.L. ch. 25A § 11F, et seq., and regulations promulgated with respect thereto, 225 CMR 14.00, in each case as applicable to the Calendar Year(s) transferred hereunder
Applicable Tracking System:	NEPOOL GIS
Facility:	Greater New Bedford LFG Utilization Facility at the Crapo Hill Landfill, a 3.3 MW landfill gas-to-energy generating facility in Dartmouth, Massachusetts.

CONFIDENTIAL

Deal ID	Calendar Year	Contract Price	Contract Quantity	Delivery Date	Delivery Obligation
4042691	CY2020	[redacted]	Up to [redacted] RECs	6/1/2021	Unit Contingent
4042691	CY2021	[redacted]	Up to [redacted] RECs	6/1/2022	Firm
4042691	CY2022	[redacted]	Up to [redacted] RECs	6/1/2023	Firm

Capitalized terms used but not defined herein shall have the meaning given to them in the General Terms and Conditions.

1. ***Product***.
Seller represents that the Product sold hereunder meets the "RPS Class I Minimum Standard," as set forth in the Applicable Standard, as applicable to the Calendar Year(s) transferred hereunder; provided, however, that the Product does not include: (i) state and federal production tax credits, investment tax credits, and any other tax credits or tax benefits, (ii) cash payments or outright grants of money (except any cash payments or grants related to any environmental greenhouse gas or emissions cap and trade program), (iii) other financial incentives which, if achieved, will result in cash payments by the party providing such incentives and which are specific to project development or project operation and (iv) any item that would otherwise be an environmental benefit or attribute under this definition, but (a) cannot be transferred by Seller in accordance with applicable law or (b) cannot be transferred by Seller without incurring material expenses.

2. ***Product Delivery***.
For each deal set forth above, Seller shall initiate a transfer order for the applicable Contract Quantity of Product to Buyer's NEPOOL GIS account on or before the applicable Delivery Date set forth in the table above. Upon receiving written, facsimile or electronic confirmation from NEPOOL GIS that a transfer order has been initiated by Seller, Buyer shall confirm such transfer order in NEPOOL GIS within five (5) Business Days.

3. ***Payment.***
Within five (5) Business Days of Buyer's receipt of written, facsimile or electronic confirmation from NEPOOL GIS that the transfer order has been completed, Buyer shall pay Seller the Contract Price for the Product delivered. Buyer shall make such payment by wire transfer of immediately available United States dollars to an account designated by Seller or as otherwise reasonably requested by Seller. If payment is not made within the time specified, without limiting Seller's rights and remedies, the past due amount shall carry interest at the Interest Rate.

4. ***Payment Netting***.
If Buyer and Seller are each required to pay amounts in respect of purchases/sales hereunder or under any other forward commodity contract between the Parties on the same day, then, upon notice from one Party to the other, such amounts with respect to each Party shall be aggregated and the Parties shall discharge their obligations to pay through netting, in which case the Party, if any, owing the greater aggregate amount shall pay to the other Party the difference between the amounts owed.

5. ***Term***.
This Agreement shall commence on the Effective Date and shall terminate on the date on which both Parties have completed the performance of their obligations hereunder, unless earlier terminated pursuant to the terms hereof.

IN WITNESS WHEREOF, the Parties have caused this Agreement to be duly executed as of the Effective Date.

Very truly yours,

EXELON GENERATION COMPANY, LLC

By:_____
Name: Phil Priolo
Title: Vice President, Commercial Risk

Legal Approval by Allyson Pait

Accepted and Agreed:

COMMONWEALTH NEW BEDFORD ENERGY LLC

By:_____
Name: ThomasYeransian
Title: Managing Member

CONFIDENTIAL

AGREEMENT FOR THE PURCHASE AND SALE OF RENEWABLE ENERGY CERTIFICATES

GENERAL TERMS AND CONDITIONS

1. DEFINITIONS

1.1 Definitions. In addition to any other terms defined in the Confirmation Letter or these General Terms and Conditions, the following terms shall have the meaning ascribed to them as set forth below:

"Adequate Assurances" shall have the meaning given in Section 8.7.

"Business Day" means a day on which Federal Reserve member banks in New York City are open for business; and a Business Day shall open at 8:00 a.m. and close at 5:00 p.m. Eastern Prevailing Time.

"Calendar Year" means the period beginning January 1 of the period year and continuing until December 31 of the subject year (e.g. Calendar Year 2017 means January 1, 2017 through December 31, 2017).

"Confidential Information" means all oral and written information exchanged between the Parties with respect to the subject matter of this Agreement. The following information does not constitute Confidential Information for purposes of this Agreement: (a) information that is or becomes generally available to the public other than as a result of a disclosure by either Party in violation of this Agreement; (b) information that was already known by either Party on a non-confidential basis prior to this Agreement; and (c) information that becomes available to either Party on a non-confidential basis from a source other than the other Party if such source was not subject to any prohibition against disclosing the information to such Party.

"Costs" means, with respect to a Non-Defaulting Party, the present value of brokerage fees, commission, attorney's fees, and other similar third party transactions costs and expenses reasonably incurred by such Party either in terminating or replacing any arrangement pursuant to which it has hedged its obligations; and any charges, penalties, fines or fees imposed or assessed against the Non-Defaulting Party under the Applicable Standard on account of Delivery not occurring on the Delivery Date, as determined by the Non-Defaulting Party in a commercially reasonable manner.

"Default" shall have the meaning specified in Article 7.

"Defaulting Party" shall have the meaning specified in Article 8.2.

"Delivery Date" shall have the meaning set forth in the Confirmation Letter.

"Early Termination Date" shall have the meaning given in Article 8.2.

"**Effective Date**" shall have the meaning set forth in the Confirmation Letter.

"Firm" means that if either Party fails to perform its obligation to sell and deliver or purchase and receive the Contract Quantity of Product, such a failure would be deemed to be an Event of Default under Section 7(a) below. Force Majeure affecting Seller's supply shall not excuse performance of a Firm RECs Transaction.

"Force Majeure" means an event or circumstance which materially adversely affects the ability of a Party to perform its obligations under this Agreement, which event or circumstance was not reasonably anticipated as of the Trade Date and which is not within the reasonable control of, or the result of the negligence of, the Party claiming Force Majeure, and which the claiming Party is unable to overcome or avoid or cause to be avoided, by the exercise of reasonable care. Force Majeure may not be based on (i) the loss or failure of Buyer's markets; (ii) Buyer's inability economically to use or resell the Product; (iii) Seller's ability to sell the Product to another at a price greater than the Contract Price; (iv) Buyer's ability to produce Product; or (v) Buyer's ability to purchase product similar to the Product at a price less than the Contract Price. Force Majeure may include a change in applicable law and may, to the extent such a change falls under Section 6, require a negotiated amendment to this Agreement. In the case of a Party's obligation to make payments hereunder, Force Majeure will be only an event or act of a governmental authority that on any day disables the banking system through which a Party makes such payments.

"Gains" means, with respect to any Party, an amount equal to the present value of the economic benefit to it, if any (exclusive of Costs), resulting from the termination of a Terminated Transaction, determined in a commercially reasonable manner.

"Interest Rate" means a per annum rate of interest equal to two (2%) percent over the prime lending rate as published from time to time in the Wall Street Journal under "Money Rates" on such due date (or if not published on such day on the most recent preceding day on which published), but in no event to exceed the maximum lawful rate.

"Losses" means, with respect to any Party, an amount equal to the present value of the economic loss to it, if any (exclusive of Costs), resulting from termination of a Terminated Transaction, determined in a commercially reasonable manner.

"NEPOOL GIS" means Seller's transfer within NEPOOL GIS of the RECs into Buyer's NEPOOL GIS Account, and Buyer's confirmation of such transfer, in accordance with NEPOOL GIS Operating Rules. "Delivery" will be deemed to occur on the date that the transfer has been registered in the NEPOOL GIS and Buyer has received confirmation, by electronic means or otherwise, that the RECs have been transferred into Buyer's NEPOOL GIS Account.

"Non-Defaulting Party" shall have the meaning given in Article 8.2.

"Settlement Amount" means, with respect to a transaction and the Non-Defaulting Party, the Losses or Gains, and Costs, including those which such Party incurs as a result of the liquidation of a Terminated Transaction pursuant to Article 8.2.

"Termination Payment" shall have the meaning given in Article 8.3.

"Terminated Transaction" shall have the meaning given in Article 8.2.

"Unit Contingent" means Seller's obligation to deliver the Contract Quantity of Product may be excused on account of the failure of the Facility(ies) to generate such Contract Quantity of RECs during the applicable 2020 Year, due to a Force Majeure event affecting the Facility(ies), or limited available landfill gas quantities supplied to the Facility or such other disruptions in supply from the Facility(ies).

2. REPRESENTATIONS AND WARRANTIES

2.1 Representations and Warranties of Both Parties. As of the Effective Date, each Party hereby represents and warrants to the other Party that:

(a) it is duly organized, validly existing and in good standing under the laws of the jurisdiction of its formation;

(b) it has all regulatory authorizations necessary for it to legally perform its obligations under this Agreement;

(c) the execution, delivery and performance of this Agreement is within its powers, have been duly authorized by all necessary action and do not violate any of the terms and conditions in its governing documents, any contracts to which it is a party or any law, rule, regulation, order or the like applicable to it;

(d) this Agreement and each other document executed and delivered in accordance with this Agreement constitutes its legally valid and binding obligation enforceable against it in accordance with its terms; subject to any equitable defenses, bankruptcy principles, or the like;

(e) no Event of Default (as defined in Article 7 below) with respect to it has occurred and is continuing and no such event or circumstance would occur as a result of its entering into or performing its obligations under this Agreement;

(f) it is acting for its own account, has made its own independent decision to enter into this Agreement and as to whether this Agreement is appropriate or proper for it based upon its own judgment, is not relying upon the advice or recommendations of the other Party in so doing, and is capable of assessing the merits of and understanding, and understands and accepts, the terms, conditions and risks of this Agreement;

(g) it is a "forward contract merchant" within the meaning of the United States Bankruptcy Code;

(h) it has entered into this Agreement in connection with the conduct of its business and it has the capacity or ability to make or take delivery of all Products referred to in the Agreement to which it is a Party; and

(i) with respect to this Agreement, it is a producer, processor, commercial user or merchant handling the Product, and it is entering into such Agreement for purposes related to its business as such.

2.2 Representations and Warranties of Seller. As of the Delivery Date, Seller hereby represents and warrants to Buyer that:

(a) it has the right to sell the Product;

(b) the Product has never been sold for any other purpose or use;

(c) the Product is free and clear of all liens or other encumbrances; and

(d) the Product was generated during the eligible Calendar Year.

2.3 Limitation on Warranties. EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, SELLER EXPRESSLY DISCLAIMS ANY OTHER REPRESENTATIONS OR WARRANTIES, WHETHER WRITTEN OR ORAL, AND WHETHER EXPRESS OR IMPLIED, INCLUDING,

WITHOUT LIMITATION, ANY REPRESENTATION OR WARRANTY WITH RESPECT TO CONFORMITY TO MODELS OR SAMPLES, MERCHANTABILITY, OR FITNESS FOR ANY PARTICULAR PURPOSE. WITHOUT LIMITING THE GENERALITY OF THE FOREGOING, SELLER MAKES NO REPRESENTATION OR WARRANTY HEREUNDER REGARDING ANY ACTION OR FAILURE TO ACT, OR APPROVAL OR FAILURE TO APPROVE, OF ANY AGENCY OR GOVERNMENTAL ENTITY.

3. TAXES AND FEES

Each Party shall be responsible for any taxes or other fees associated with its respective purchase and sale hereunder. As used herein "taxes" means, but is not limited to, any or all ad valorem, property, occupation, severance, first use, conservation, gross receipts, privilege, sales, use, consumption, excise, lease, transaction, and other taxes, governmental charges, licenses, fees, permits and assessments, or increases therein, other than taxes based on net income or net worth. A tax is not a penalty or a fine.

4. ASSIGNMENT

Neither Buyer nor Seller shall assign this Agreement nor delegate any of its duties hereunder without the prior written consent of the other Party, which consent shall not be unreasonably withheld; provided, however, that either Party, without the consent of the other Party, may assign this Agreement to any of its affiliates provided such assigning Party shall not be released from its liabilities and obligations under this Agreement; and provided further that Seller may assign this Agreement without the consent of Buyer as collateral security to any lender (and in connection therewith, Buyer shall execute and deliver to such lender a consent agreement in a form reasonably acceptable to Buyer).

5. FORCE MAJEURE

If either Party is rendered unable, wholly or in part, by Force Majeure to carry out its obligations with respect to this Agreement, that upon such Party's giving notice and full particulars of such Force Majeure as soon as reasonably possible after the occurrence of the cause relied upon, such notice to be confirmed in writing to the other Party, the obligations of the claiming Party will, to the extent they are affected by such Force Majeure, be suspended during the continuance of said inability, but for no longer period, and the claiming Party will not be liable to the other Party for, or on account of, any loss, damage, injury or expense resulting from, or arising out of such event of Force Majeure. The Party receiving such notice of Force Majeure will have until the end of the Business Day following such receipt to notify the claiming Party that it objects to or disputes the existence of an event of Force Majeure.

6. CHANGE IN LAW

If any statutes, rules, regulations, permits or authorizations are enacted, amended, granted or revoked which have the effect of changing the transfer and sale procedure set forth in this Agreement so that the implementation of this Agreement becomes impossible or impracticable, or otherwise revokes or eliminates the Applicable Standard, the Parties hereto agree to negotiate in good faith to amend this Agreement to conform with such new statutes, regulations, or rules in order to maintain the original intent of the Parties under this Agreement.

7. EVENTS OF DEFAULT

For purposes of this Agreement, a Party shall be in default (each of the following, an "Event of Default"):

(a) if that Party materially breaches any or all of its obligations as described in this Agreement and such breach is not cured within five (5) Business Days of written notice of such breach from the other Party;

(b) if any representation or warranty made by a Party in Article 2 of this Agreement proves to have been misleading or false in any material respect when made and such Party does not cure the underlying facts so as to make such representation and warranty correct and not misleading within five (5) Business Days of written notice from the other Party; or

(c) if a Party:

(i) makes an assignment or any general arrangement for the benefit of its creditors,

(ii) files a petition or otherwise commences, authorizes or acquiesces in the commencement of a proceeding or cause under any bankruptcy or similar law for the protection of creditors, or has such a petition filed against it, or

(iii) otherwise becomes bankrupt or insolvent (however evidenced).

8. REMEDIES UPON DEFAULT/ADEQUATE ASSURANCES

8.1 Liquidated Damages. Buyer and Seller agree this Article in its entirety represents the liquidated damages of each, and no part hereof represents a penalty.

8.2 Remedies. If either Party is in Default (the "Defaulting Party"), as set forth in Article 7, the other Party (the "Non-Defaulting Party") may select any or all of the following remedies: (i) to designate a day, no earlier than the day such notice is effective and no later than twenty (20) days after such notice is effective, as an early termination date ("Early Termination Date") to accelerate all amounts owing between the Parties and to liquidate and terminate all, but not less than all transactions (each referred to as a "Terminated Transaction") between the Parties, (ii) withhold any payments due in respect of this Agreement and any other agreements between the Parties to the extent of its damages pursuant to this Article 8, (iii) suspend performance, and (iv) exercise such remedies as provided in this Agreement, including an action for damages (except as limited by Article 8.5). The Non-Defaulting Party will calculate, in a commercially reasonable manner, a Settlement Amount for each such Terminated Transactions as of the Early Termination Date (or, to the extent that in the reasonable opinion of the Non-Defaulting Party certain of such Terminated Transactions are commercially impracticable to liquidate and terminate or may not be liquidated or may not be liquidated and terminated under applicable law on the Early Termination Date, as soon thereafter as is reasonably practicable).

8.3 Net Out of Settlement Amounts. The Non-Defaulting Party shall aggregate all Settlement Amounts into a single amount by: netting out (a) all Settlement Amounts that are due to the Defaulting Party, plus, at the option of the Non-Defaulting Party, any cash or other form of security then available to the Non-Defaulting Party pursuant to Article 8.7, plus any or all other amounts due to the Defaulting Party under this Agreement against (b) all Settlement Amounts that are due to the Non-Defaulting Party, plus any or all other amounts due to the Non-Defaulting Party under this Agreement, so that all such amounts shall be netted out to a single liquidated amount (the "Termination Payment") payable by one Party to the other.

The Termination Payment shall be due to or due from the Non-Defaulting Party as appropriate. The Termination Payment, if any, is due within two (2) Business Days following written notice sent by the Non-Defaulting Party to the Defaulting Party, which notice will be sent out as soon as reasonably possible following the calculation of the Termination Payment, but in no event later than ten (10) Business Days following the Early Termination Date.

8.4 Calculation Disputes. If the Defaulting Party disputes the Non-Defaulting Party's calculation of the Settlement Amount or Termination Payment, in whole or in part, the Defaulting Party will, within two (2) Business Days of receipt of the Non-Defaulting Party's calculation, provide the Non-Defaulting Party a detailed written explanation of the basis for such dispute.

8.5 Limitation on Damages. Subject to any provisions in this Agreement to the contrary, the Defaulting Party's liability will be limited to direct, actual damages only, and such direct, actual damages will be the sole and exclusive remedy hereunder. In no event will any other liability be incurred by either Party for any obligations that arise under this Agreement, including, but not limited to, consequential, incidental, punitive, exemplary, or indirect damages in tort, contract, or otherwise.

8.6 Exclusive Remedy. THE REMEDIES SET FORTH IN THIS ARTICLE 8 ARE THE SOLE AND EXCLUSIVE REMEDIES IN THE EVENT OF A DEFAULT OF A PARTY'S OBLIGATIONS TO SELL OR PURCHASE PRODUCT, AND A PARTY'S LIABILITY SHALL BE LIMITED AS SET FORTH IN THIS ARTICLE. ALL OTHER REMEDIES OR DAMAGES FOR FAILURE TO SELL OR PURCHASE PRODUCT AT LAW ARE HEREBY WAIVED.

8.7. Adequate Assurances. Should either Party have reasonable grounds to believe that the creditworthiness of the other Party has become unsatisfactory, then the dissatisfied Party (the "Requesting Party") may require assurance of the other Party's ability to perform any obligation hereunder. Such assurance ("Adequate Assurance") may include (i) posting of a letter of credit in favor of the Requesting Party by an issuing bank reasonably acceptable to the Requesting Party, (ii) posting of cash collateral with the Requesting Party, or (iii) other security reasonably acceptable to the Requesting Party.

9. CONFIDENTIALITY

9.1 Confidentiality. Except as provided in this Article, neither Party shall publish, disclose, or otherwise divulge Confidential Information to any person at any time during or after the term of this Agreement, without the other Party's prior express written consent. Each Party shall permit knowledge of and access to Confidential Information only to those of its affiliates and to persons investing in, providing funding to or acquiring it or its affiliates, and to its and the foregoing persons' respective attorneys, accountants, representatives, agents and employees who have a need to know such Confidential Information related to this Agreement.

9.2 Required Disclosure. If required by any law, statute, ordinance, decision, order or regulation passed, adopted, issued or promulgated by a court, governmental agency or authority having jurisdiction over a Party, that Party may release Confidential Information, or a portion thereof, to the court, governmental agency or authority, as required by the applicable law, statute, ordinance, decision, order or regulation, and a Party may disclose Confidential Information to accountants in connection with audits, provided that such Party has notified the other Party of the required disclosure, such that the other Party may attempt (if such Party so chooses) to cause that court, governmental agency, authority or accountant to treat such information in a confidential manner and to prevent such information from being disclosed or otherwise becoming part of the public domain.

9.3 Tax Treatment Exception. Notwithstanding any provision of this Agreement to the contrary, the legal obligations of confidentiality hereunder do not extend to the U.S. federal or state tax structure or the U.S. federal or state tax treatment of any transaction hereunder. If any U.S. federal or state tax analyses or materials are provided to a Party, such Party is free to disclose any such analyses or materials without limitation.

9.4 Survival. The Parties obligations under this Article 9 shall survive for a period of one (1) year following the expiration or termination of this Agreement.

10. ENTIRE AGREEMENT

This Agreement, together with any attachments or exhibits specifically referenced herein, constitutes the entire agreement between the Seller and the Buyer with respect to the subject matter hereof, supersedes all prior oral or written representations and contracts, and may be modified only by a written amendment signed by Buyer and Seller.

11. GOVERNING LAW; WAIVER OF TRIAL BY JURY

This Agreement shall be construed, enforced, and performed in accordance with the laws of the State of New York, without recourse to principles governing conflicts of law. **AS A MATERIAL INDUCEMENT TO EACH PARTY TO ENTER INTO THIS AGREEMENT, THE PARTIES EACH HEREBY IRREVOCABLY WAIVE ALL RIGHT TO TRIAL BY JURY IN ANY ACTION, PROCEEDING OR COUNTERCLAIM ARISING OUT OF OR RELATING HERETO, ANY PRODUCT OR THE TRANSACTIONS CONTEMPLATED HEREBY. EACH PARTY FURTHER WAIVES ANY RIGHT TO CONSOLIDATE ANY ACTION IN WHICH A JURY TRIAL HAS BEEN WAIVED WITH ANY OTHER ACTION IN WHICH A JURY TRIAL CANNOT BE OR HAS NOT BEEN WAIVED.**

12. RECORDING

Each Party consents to the recording of its trading, marketing and scheduling representatives' telephone conversations without any further notice. Any tape recordings may be submitted in evidence to any court or in any legal proceeding for the purpose of establishing any matter relating to the Transaction. In addition, the Parties agree not to contest the authority of either Party's employees to enter into the Transaction evidenced by this Agreement. Notwithstanding the foregoing, any agreement with respect to the Transaction shall be in a writing signed by both Parties.

13. WAIVER

No delay or omission by a Party in the exercise of any right under this Agreement shall be taken, construed or considered as a waiver or relinquishment thereof, and any such right may be exercised from time to time and as often as may be deemed expedient. If any of the terms and conditions hereof are breached and thereafter waived by a Party, such waiver shall be limited to the particular breach so waived and is not deemed to waive any other breach hereunder.

14. NOTICES

All notices, payments and other formal communications which either Party may give to the other under or in connection with this Agreement shall be in writing and shall be sent by any of the following methods: hand delivery; reputable overnight courier; certified mail, return receipt requested; or, with respect to

communications other than payments, by facsimile transmission, if the original communication is delivered by reputable overnight courier. The communications shall be sent to the following addresses, and shall be effective when received:

If to SELLER:

COMMONWEALTH NEW BEDFORD ENERGY LLC
7 Winslow Way
Mansfield, MA 02048
Attn: Thomas Yeransian
Telephone: 508-339-3074
Email: tyeransian@crmcx.com

If to BUYER:

EXELON GENERATION COMPANY, LLC
1310 Point Street 8th Floor
Baltimore, MD 21231
Email (for Invoices): RECOPSGROUP@constellation.com

Legal Notices:
EXELON GENERATION COMPANY, LLC
1310 Point Street 8th Floor
Baltimore, MD 21231
Attn: Counsel
Telephone: 410-470-7156
Facsimile: 410-470-2600

CONFIDENTIAL

AGREEMENT FOR
PURCHASE AND SALE OF RENEWABLE ENERGY CERTIFICATES

THIS AGREEMENT FOR THE PURCHASE AND SALE OF RENEWABLE ENERGY CREDITS (this "**Agreement**") is made as of the Effective Date, by and between DTE Energy Trading, Inc., whose address is 414 South Main Street, Suite 200, Ann Arbor, MI 48104 **("DTE")** and CommonWealth New Bedford Energy LLC, whose address is ("**Counterparty**"). DTE and Counterparty are each a "**Party**" and, collectively, are the "**Parties**."

WHEREAS, the Parties wish to provide terms and conditions pursuant to which they are entering into this Agreement for the purchase and sale of Renewable Energy Certificates pursuant to both the Commercial Terms ("**Part A**") and the General Terms ("**Part B**"), as set forth below;

NOW, THEREFORE, in consideration of their mutual covenants herein, the Parties, intending to be legally bound, agree as follows:

Part A – Commercial Terms

Commercial Terms--Generally:

Transaction Reference:	8251051
Effective Date:	06/04/2020
Seller:	CommonWealth New Bedford Energy LLC
Buyer:	DTE Energy Trading, Inc.
Applicable Standard:	CT Class I as defined in Conn. Gen. Stat. § 16-245a et seq.; MA Class I as defined in Massachusetts General Law Chapter 25A § 11F; 225 CMR 14.00, as amended
Certified Renewable Energy Facility:	Not specified
Vintage:	CT 1 2021; MA 1 2021
Start of Generation Period:	1/1/2021
End of Generation Period:	12/31/2021
Contract Quantity (MWh)/ Delivery Obligation:	XXXXXXX
Contract Price ($/MWh):	XXXXXXXX
Total Contract Price:	XXXXXXXX
Delivery Date:	On or before 5/15/2022
Payment Before Delivery [Yes][No]:	No
Applicable Tracking System:	NEPOOL-GIS
Applicable Tracking System Account Name:	DTE Energy Trading, Inc.
Buyer Delivery Contact [Name, Email]:	Paul Joyce, paul.joyce@dteenergy.com
Seller Delivery Contact [Name, Email]:	Thomas Yeransian, tyeransian@crmcx.com
Special Provisions, if any:	

Part B – General Terms

1. DEFINITIONS

1.1 Definitions. In addition to any other terms defined in the Agreement, the following terms shall have the meaning ascribed to them as set forth below:

"**Accept**" or "**Acceptance**" means Buyer's electronic acceptance in the Applicable Tracking System of the Delivery of the RECs in its Account, in accordance with the operating rules and procedures of the Applicable Tracking System.

"**Acceptance Deadline**" means the amount of time Buyer has to Accept the RECs pursuant to Section 2.2 of this Agreement.

"**Account**" means a Party's electronic account with the Applicable Tracking System.

"**Adequate Assurance**" means cash, prepayment, a Guaranty, or Letter of Credit in the form, amount and for the term reasonably acceptable to the Party in whose favor Adequate Assurance is being provided.

"**Administrator**" means the entity with jurisdiction over the Applicable Tracking System.

"**Alternative Compliance Payment**" or "**ACP**" means any monetary payment made to a governmental authority as an alternative to submitting RECs for compliance with a RPS, or equivalent concept limiting the price of RECs under a RPS, as set forth in the Applicable Standard.

"**Applicable Standard**" means the provincial, state or federal RPS identified in the applicable program, other mandatory or voluntary standard(s), or set of rules set forth in Part A.

"**Applicable Tracking System**" means the environmental registry and information system set forth in Part A that tracks the environmental and fuel attributes of generation, and any successor tracking system that both Parties agree in their reasonable commercial judgment facilitates the sale and purchase of the REC.

"**Attestation Form**", if set forth on the line "Special Provisions" in Part A, means documentation provided from Seller to Buyer transferring title to the REC, specifying the Certified Renewable Energy Facility, Delivered Quantity, Generation Period, and other information with respect to the REC sold herein as well as declarations made by Seller with respect to such REC to be completed in accordance with, and on the form required under, the Applicable Standard.

"**Business Day**" means any day except a Saturday or Sunday or a Federal Reserve Bank holiday. A Business Day opens at 8:00 a.m. and close at 5:00 p.m. Eastern Prevailing Time.

"**Buyer**" means the Party set forth in Part A that is obligated to purchase, receive and Accept the RECs, under the conditions specified in this Agreement.

"**Certified Renewable Energy Facility**" means one or more electric generation units, other facilities or installations set forth in Part A, or upon Delivery if not set forth in this Agreement that has

been determined by the Certifier to meet the requirements of the Applicable Standard and is designated as qualified for the Applicable Standard on the Applicable Tracking System.

"**Certifier**" means the entity with jurisdiction over the qualification of a resource as a Certified Renewable Energy Facility pursuant to the Applicable Standard.

"**Commercial Operation Date**" or "**COD**", if set forth on the line "Special Provisions" in Part A, means the date post-testing for a specified Certified Renewable Energy Facility when it is licensed, operational from a commercial perspective, and can consistently generate RECs that it can transfer to another party.

"**Confidential Information**" has the meaning defined in Section 10.1.

"**Contract Price**" means the amount payable by Buyer to Seller for each REC set forth in Part A.

"**Contract Quantity**" means the quantity of RECs set forth in Part A to be Delivered by Seller to Buyer.

"**Defaulting Party**" shall have the meaning set forth in Section 8.

"**Deliver**", "**Delivered**" or "**Delivery(ies)**" means the initiation of the electronic transfer of RECs from Seller's Account to Buyer's Account in accordance with the Applicable Standard and the operating rules and procedures of the Applicable Tracking System.

"**Delivered Quantity**" means the quantity of RECs Delivered.

"**Delivery Date(s)**" means the date(s) by which Delivery of the Contract Quantity shall occur as set forth in Part A; provided that Delivery is not required to occur prior to one (1) Business Day after full execution of this Agreement. In the event this Agreement requires Buyer to pay Seller before Delivery, then Delivery shall occur by the later of: (i) the Delivery Date set forth in Part A; or (ii) one (1) Business Day after Seller receives the Payment Amount from Buyer.

"**Eastern Prevailing Time**" or "**EPT**" means the prevailing time (i.e., Standard Time or Daylight Savings Time) on any given day in the Eastern Time Zone.

"**Effective Date**" means the date set forth in Part A.

"**Energy**" means three-phase, 60 Hz electrical energy expressed in MWhs produced during the Generation Period giving rise to the creation of the REC.

"**Event of Default**" shall have the meaning set forth in Section 8.

"**Firm**" means Seller shall Deliver the Contract Quantity of RECs by the Delivery Date, unless excused by Force Majeure or Buyer's failure to perform.

"**Force Majeure**" means an event or circumstance which materially adversely affects the ability of a Party (the "**Claiming Party**") to perform its obligations under this Agreement, which event or circumstance was not reasonably anticipated as of the Effective Date and which is not within the reasonable control of, or the result of negligence by, the Claiming Party, and which Claiming Party is

unable to overcome or avoid or cause to be avoided, by the exercise of reasonable care including but not limited to acts of God; fire; flood; earthquake; war; explosions; lightning; hurricanes; tornadoes; riots; or terrorism that affects one or both Parties. "**Force Majeure**" may not be based on (i) the loss or failure of Buyer's markets; (ii) Buyer's inability economically to use or resell the RECs; (iii) Seller's ability to sell the REC to a third party on terms superior to Seller's terms herein; (iv) Seller's ability to produce the RECs, if Seller's obligation is Firm; or (iv) Buyer's ability to purchase similar RECs from a third party on terms superior to Buyer's terms herein. With respect to a Party's obligation to make payments hereunder, Force Majeure will be only an event or act of a governmental authority that on any day disables the banking system through which a Party makes such payments.

"**Full Output**" is an "any and all" deal, which means that Seller is obligated to Deliver to Buyer, on or before the Delivery Date, and Buyer is obligated to purchase, any and all RECs generated within the relevant Vintage. In a Full Output agreement, the Seller's obligation to Deliver RECs is excused to the extent that Seller in good faith fails to produce additional RECs, so long as all RECs that are produced are Delivered to the Buyer.

"**Generation Period**" means the calendar year, quarter, or other specified period of time set forth in Part A in which the Energy associated with the RECs is or will be generated.

"**Guarantor**" means, with respect to a Party, the guarantor, if any, specified for such Party on the line "Special Provisions" in Part A. A guarantor shall be identified as either Seller's Guarantor or Buyer's Guarantor, as applicable.

"**Guaranty**" means a guaranty of payment from a Guarantor, in a form, amount and for a term all reasonably acceptable to the Party to whom the Guaranty is being issued.

"**Interest Rate**" means a per annum rate of interest equal to two (2%) percent over the prime lending rate as published from time to time in The Wall Street Journal under "Money Rates" on such day (or if not published on such day, on the most recent preceding day on which published), but in no event to exceed the maximum lawful rate.

"**Letter of Credit**" means an irrevocable, transferable, standby letter of credit, governed by the International Standby Practices rules, International Chamber of Commerce Pub. 590 and issued by a Qualified Institution utilizing such form as may be required by such Qualified Institution and as may be reasonably acceptable to the Party in whose favor the letter of credit is issued.

"**Market Exposure**" means, as reasonably calculated and substantiated upon request, the product of: (i) the difference between the Contract Price and the Market Price for the Undelivered Quantity, and (ii) the Undelivered Quantity.

"**Market Price**" means the average of market quotes for the Undelivered Quantity from reputable brokerage firms or third-party intermediaries actively engaged in the purchase and sale of RECs under the Applicable Standard or, if no such quotes from such firms or intermediaries are available, any other reasonable method selected to value the Undelivered Quantity; provided, however, that the Market Price for purposes of this Agreement shall not in any event exceed the highest Alternative Compliance Payment for the Undelivered Quantity under the Applicable Standard; and further provided that a broker quote can only be used if RECs meeting the Applicable Standard are available for purchase or sale, as applicable, on the day of the quote.

"**MWh**" means megawatt-hour.

"**Non-Defaulting Party**" shall have the meaning given in Section 9.1.

"**Not Specified**" if set forth on the line "Certified Renewable Energy Facility" in Part A, means that for the associated term or characteristic not explicitly defined in this Agreement, Seller may Deliver the Contract Quantity of any such term or characteristic that meets all other specific requirements pursuant to the Applicable Standard and this Agreement.

"**Payment Amount**" means an amount equal to the product of: (i) the Contract Price, and (ii) the Delivered Quantity. If this Agreement requires Buyer to pay Seller before the Delivery of RECs, then Delivered Quantity means the expected Delivery Quantity.

"**Payment Due Date**" has the meaning set forth in Section 4.1.

"**Qualified Institution**" means a commercial bank or trust company organized under the laws of the United States or a political subdivision thereof or foreign bank with a US branch office, with (i) a rating for its deposit obligations of at least (a) "A-" by Standard & Poor's Financial Services LLC ("**S&P**") and "A3" by Moody's Investors Service, Inc. ("**Moody's**"), if such entity is rated by both S&P and Moody's, or (b) "A-" by S&P or "A3" by Moody's, if such entity is rated by either S&P and Moody's, but not both.

"**Renewable Energy Certificate(s)**" or "**REC(s)**" means a certificate, credit, allowance, green tag, or other transferable indicium, howsoever entitled, that is associated with, but separate from, the generation of one (1) MWh of Energy from a Certified Renewable Energy Facility. To the extent applicable, the term "**RECs**" includes Solar Renewable Energy Certificate(s) ("**SRECs**").

"**Renewable Portfolio Standard**" or "**RPS**" means a local, state, provincial or federal law, rule or regulation that requires a stated amount or minimum proportion or quantity of Energy sold or used by specified entities to be generated from a Certified Renewable Energy Facility.

"**Seller**" means the Party set forth in Part A that is obligated to sell, assign and Deliver the RECs, under the circumstances specified in this Agreement.

"Settlement Amount" means, as determined in a commercially reasonable manner by the Non-Defaulting Party as of the Early Termination Date:

(a) if Seller is the Defaulting Party, an amount equal to the sum of: (i) the positive difference, if any, obtained by subtracting the Contract Price from the Market Price multiplied by the Undelivered Quantity, plus (ii) if and as applicable, any broker costs charged by brokers actively engaged in the purchase and sale of RECs under the Applicable Standard incurred by Buyer for entering into any replacement transaction to purchase the Undelivered Quantity minus (iii) the Contract Price multiplied by the Delivered Quantity for which Seller has not been paid by Buyer, if any; and

(b) if Buyer is the Defaulting Party, an amount equal to the sum of: (i) the positive difference, if any, obtained by subtracting the Market Price from the Contract Price multiplied by the Undelivered Quantity, plus (iii) if and as applicable, any broker costs charged by brokers actively engaged in the purchase and sale of RECs under the Applicable Standard incurred by Seller for

entering into any replacement transaction to sell the Undelivered Quantity plus (iii) the Contract Price multiplied by the Delivered Quantity for which Seller has not been paid, if any.

"**Standing Order**" means, if set forth on the line "Special Provisions" in Part A, that Seller is required to put in place instructions to the Administrator for sufficient irrevocable transfers to Buyer's Account of the Contract Quantity within five (5) Business Days following execution of this Agreement by both Parties. Should the Delivered Quantity exceed the quantity required for the respective year under the irrevocable transfers, Buyer will return any excess generation to Seller within five (5) Business Days of Delivery.

"**Term**" has the meaning set forth in Section 2.1.

"**Undelivered Quantity**" means the difference between the Contract Quantity and the Delivered Quantity.

"**Unit Contingent**" shall mean that Seller's obligation to Deliver the Contract Quantity of RECs shall be excused to the extent the Parties have specified a particular Certified Renewable Energy Facility as the generator of the RECs, and (i) the Certified Renewable Energy Facility specified in Part A is unavailable as a result of a Forced Outage (*as defined in the NERC Generating Unit Availability Data System (GATS) Forced Outage reporting guidelines*), (ii) the RECs have not been generated within the relevant Vintage or other time frame agreed to by the Parties due to a Force Majeure event affecting such Certified Renewable Energy Facility, or (iii) such other disruptions in supply from such Certified Renewable Energy Facility as may be further specified and conditioned on the line "Special Provisions" in Part A occurred. In any such event, Seller shall not be liable to Buyer for any damages, including any amounts determined under Section 9 herein.

"**Vintage(s)**" means the time period(s), e.g., calendar year, energy year, reporting year, etc., set forth in Part A for which RECs produced during the Generation Period are eligible for the purpose of complying with the Applicable Standard as that time period is defined by the Applicable Standard.

2. TERM; SALE & PURCHASE OBLIGATIONS; OTHER PARTY OBLIGATIONS

2.1 Term. This Agreement shall commence on the Effective Date and shall terminate on the date on which both Parties have completed the performance of their obligations hereunder, unless terminated earlier or discharged pursuant to the terms hereof. Provisions of this Agreement which are stated or reasonably implied to survive such termination or discharge shall so survive until satisfied or waived.

2.2 Sale and Purchase Obligations. With respect to Delivery, Seller will sell, assign and Deliver the Contract Quantity to Buyer's Account, using the Applicable Tracking System Account Name, on or before the Delivery Date. Upon receiving written (e.g., facsimile, electronic, etc.) confirmation from the Applicable Tracking System that a transfer order has been initiated by Seller, Buyer must purchase, receive, and Accept the RECs within two (2) Business Days of Delivery by Seller.

2.3 Buyer's Account Name, Rejection Rights; & Related Issues.

(a) Buyer's Account Name. In the event that Buyer's Account name in the Applicable Tracking System is different than Buyer's legal name, Buyer shall set forth its Account name on the line "Applicable Tracking System Account Name" in Part A.

(b) Buyer's Rejection Rights. If the RECs Delivered to Buyer do not meet the terms of this Agreement as of the date Delivery was made by the Seller, Buyer may reject Delivery of such RECs within two (2) Business Days of Delivery by Seller. If Buyer justifiably and timely rejects Delivery, then Seller must, within two (2) Business Days of such rejection, take the necessary steps to fulfill its performance obligations under this Agreement. If Seller timely replaces the RECs as stated above, then Seller shall have satisfied its obligations regarding timely Delivery.

(c) Certified Renewable Energy Facility Delivery Obligation. If a Certified Renewable Energy Facility is set forth in Part A, then Seller shall Deliver RECs from that Certified Renewable Energy Facility without excuse other than Force Majeure, unless Buyer agrees in a prior writing that Seller may Deliver from an alternative Certified Renewable Energy Facility.

(d) Firm Delivery Obligation. Unless otherwise set forth on the line "Contract Quantity (MWh)/Delivery Obligation:" in Part A, the Delivery obligation for each REC is a Firm obligation.

(e) Delivery Costs. Each Party shall bear its own expenses associated with Delivery and Acceptance.

(f) De-Certification of Certified Renewable Energy Facility. If the Certifier determines the Delivered Quantity does not meet the Applicable Standard upon Delivery because the Certified Renewable Energy Facility was de-certified prior to the date Delivery was made by the Seller, then Seller must, within two (2) Business Days of notification of de-certification, take the necessary steps to fulfill its performance obligations and Deliver such Delivered Quantity as set forth in this Agreement. If Seller timely replaces such Delivered Quantity as stated above, then Seller shall have satisfied its obligations regarding timely Delivery.

2.4. Transfer of Title. All rights, title and interest to and in the Delivered Quantity shall transfer from Seller's Account to Buyer's Account when recorded in the Applicable Tracking System consistent with the operating procedures thereof. Upon either Party's receipt of notice from the Administrator that transfer of the Delivered Quantity pursuant to this Agreement will not be recognized or Delivery was not made as required, that Party will promptly notify the other Party by providing a copy of such notice. Both Parties shall cooperate in taking necessary and commercially reasonable actions to cause such transfer to be recognized by the Administrator and have the Delivered Quantity be transferred and Accepted to the Buyer's Account.

2.5 Representations and Warranties of Both Parties. As of the Effective Date and upon each subsequent Delivery, each Party hereby represents and warrants to the other Party that:

(a) it is duly organized, validly existing and in good standing under the laws of the jurisdiction of its formation;

(b) it has all regulatory authorizations necessary for it to legally perform its obligations under this Agreement;

(c) the execution, delivery and performance of this Agreement is within its powers, have been duly authorized by all necessary action and do not violate any of the terms and conditions in its

governing documents, any contracts to which it is a party or any law, rule, regulation, order or the like applicable to it;

(d) this Agreement and each other document executed and delivered in accordance with this Agreement constitutes its legally valid and binding obligation enforceable against it in accordance with its terms; subject to any equitable defenses, bankruptcy principles, or the like;

(e) no Event of Default with respect to it has occurred and is continuing and no such event or circumstance would occur as a result of its entering into or performing its obligations under this Agreement;

(f) it is acting for its own account, has made its own independent decision to enter into this Agreement and as to whether this Agreement is appropriate or proper for it based upon its own judgment, is not relying upon the advice or recommendations of the other Party in so doing, and is capable of assessing the merits of and understanding, and understands and accepts, the terms, conditions and risks of this Agreement;

(g) it is a "forward contract merchant" within the meaning of the United States Bankruptcy Code; and

(h) it has entered into this Agreement in connection with the conduct of its business and it has the capacity or ability to make Delivery or Accept Delivery, as applicable, of all RECs set forth in Part A.

2.6 Representations and Warranties of Seller. As of the relevant Delivery Date, Seller hereby represents and warrants to Buyer that:

(a) it has the right to sell the RECs;

(b) the RECs have not been sold for any other purpose or use;

(c) the RECs are free and clear of all liens or other encumbrances; and

(d) the RECs were generated to meet the applicable Vintage(s).

3. TAXES AND FEES

Each Party shall be responsible for the taxes levied upon it by any governmental authority; provided, however, that Buyer will be responsible for any sales tax imposed under this Agreement. As used herein "taxes" means, but is not limited to, any or all ad valorem, property, occupation, severance, first use, conservation, gross receipts, privilege, sales, use, consumption, excise, lease, transaction, and other taxes, governmental charges, licenses, fees, permits and assessments, or increases therein, other than taxes based on net income or net worth. A tax is not a penalty or a fine.

4. BILLING AND PAYMENT INSTRUCTIONS

4.1. Invoicing and Payment. Seller may send a written invoice to Buyer within the earlier of: (a) Buyer's Acceptance of the RECs in the Applicable Tracking System, or (b) two (2) Business Days after Seller Delivers RECs to Buyer. Within ten (10) Business Days of receipt of Seller's invoice (the

"**Payment Due Date**"), Buyer shall pay Seller the Contract Price for the Delivered Quantity**.** If DTE is the Buyer, then Seller must properly complete and return Buyer's *IRS Form W-9, and Electronic Funds Transfer Form*, unless previously provided, before Buyer is obligated to make payment. If payment is not made by the Payment Due Date, without limiting Seller's rights and remedies, the past due amount shall carry interest at the Interest Rate.

4.2. Payment Netting. If Buyer and Seller are each required to pay amounts in respect of purchases and/sales hereunder and under any other REC agreement between the Parties on the same day, then, upon written notice (e.g., facsimile, electronic, etc.) from one Party to the other, such amounts with respect to each Party shall be aggregated, and the Parties shall discharge their obligations to pay through netting, in which case the Party, if any, owing the greater aggregate amount shall pay to the other Party the difference between the amounts owed.

4.3 Payment Instructions. Payment shall be made by electronic funds transfer, or by other mutually agreed upon method, in immediately available funds, to the bank account name and account number as set forth below, or as otherwise notified in writing to the Party making payment by the Party to whom payment is to be made.

If to DTE:

Invoices to DTE will be sent to:

DTE Energy Trading, Inc.
414 South Main Street, Suite 200
Ann Arbor, MI 48104
Attn: Settlements
Phone: (734) 887-2023
Fax: (734) 887-2140
Email: dte_env_sttlmts@dteenergy.com

Payments to DTE will be sent to:

DTE Energy Trading, Inc.
414 South Main Street, Suite 200
Ann Arbor, MI 48104
Attn: Accounting
Phone: (734) 887-2023
Fax: (734) 887-2140

ACH financial transfer instructions will be specified in DTE invoice.

If to Counterparty:

Payments to CommonWealth New Bedford Energy LLC will be sent to:

CommonWealth New Bedford Energy LLC

Attn: George Aronson
Phone: 781-784-8835
Email: garonson@crmcx.com

ACH financial transfer instructions:

Beneficiary Bank Name:
BayCoast Bank
23 Elm Street
New Bedford, MA 02740
Phone: 508-742-4703
Routing/ABA Number: 211-372-239

Beneficiary:
CommonWealth New Bedford Energy LLC
Account # 84036-3692

5. ASSIGNMENT

Neither Party shall assign this Agreement or its rights hereunder without the prior written consent of the other Party, which consent shall not be unreasonably withheld. Notwithstanding the foregoing, either Party may, without the consent of the other Party (and without relieving itself from liability hereunder), (i) transfer, sell, pledge, encumber or assign this Agreement or the accounts, revenues or proceeds hereof in connection with any financing or other financial arrangements, (ii) transfer or assign this Agreement to an affiliate of such Party which affiliate's creditworthiness is equal to or higher than that of such Party, or (iii) transfer or assign this Agreement to any person or entity succeeding to all or substantially all of the assets whose creditworthiness is equal to or higher than that of such Party; provided, however, that in each such case, any such assignee shall agree in writing to be bound by the terms and conditions hereof and so long as the transferring Party delivers such tax and enforceability assurance as the non-transferring Party may reasonably request.

6. FORCE MAJEURE

If either Party is rendered unable, wholly or in part, by Force Majeure to carry out its obligations with respect to this Agreement, then the obligations of the Claiming Party will, to the extent they are affected by such Force Majeure, be suspended during the continuance of said inability, but for no longer period, and the Claiming Party will not be liable to the other Party for, or on account of, any loss, damage, injury or expense resulting from, or arising out of such event of Force Majeure. Such Party must give notice and full particulars of such Force Majeure as soon as reasonably possible after the occurrence of the cause relied upon, and such notice must be confirmed in writing to the other Party. The Party receiving such notice of Force Majeure will have until the end of the second Business Day following such receipt to notify the Claiming Party that it objects to or disputes the existence of an event of Force Majeure.

7. REMEDIES FOR FAILURE TO DELIVER/RECEIVE & ACCEPT

7.1 Seller's Failure. If Seller fails to sell, assign and Deliver, all or part of the Contract Quantity of RECs to the Buyer by the Delivery Date, and such failure is not excused under the terms of this Agreement *(e.g., Unit Contingent)* or by Buyer's failure to perform, then Seller shall pay Buyer within five (5) Business Days after invoice receipt, the sum of (i) the positive difference, if any, obtained by subtracting the Contract Price from the Market Price multiplied by the Undelivered Quantity, plus (ii) if and as applicable, any broker costs charged by brokers actively engaged in the purchase and sale of RECs under the Applicable Standard incurred by Buyer for entering into any replacement transaction to purchase the Undelivered Quantity. The invoice for such amount shall include a written statement explaining in reasonable detail the calculation of such amount.

7.2 Buyer's Failure. If Buyer fails to receive and Accept, all or part of the Delivered Quantity of RECs by the Acceptance Deadline, and such failure is not excused by Seller's failure to perform, then Buyer shall pay Seller within five (5) Business Days after invoice receipt, the sum of the product of: (A) the Contract Price and (B) the Delivered Quantity.

8. EVENTS OF DEFAULT

An "**Event of Default**" means, with respect to a Party (the "**Defaulting Party**"), the occurrence of any of the following: (i) failure by such Party to make, when due, any payment required under this Agreement, if such failure is not remedied within two (2) Business Days after written notice of such failure is given by the other Party; (ii) any representation or warranty made by such Party that is incorrect or misleading in any material respect when made or when deemed made or repeated; (iii) the failure by such Party to perform any material covenant or obligation set forth in this Agreement (except for such Party's obligation to Deliver or Accept the RECs, the exclusive remedy for which is provided in Sections 7.1 and 7.2, respectively) if such failure is not remedied within three (3) Business Days after written notice is given by the other Party; (iv) such Party becomes Bankrupt; (v) fails to provide Adequate Assurance under Section 11 within two (2) Business Days following receipt of written notice or (vi) with respect to such Party's Guarantor, if any,(a) if any representation or warranty made by a Guarantor in connection with this Agreement is incorrect or misleading in any material respect when made or when deemed made or repeated, (b) the failure of the Guarantor to make any payment required or to perform any other material covenant or obligation in any guaranty made in connection with the Agreement and such failure is not remedied within three (3) Business Days after written notice, (c) a Guarantor becomes bankrupt, (d) the failure of a Guarantor's Guaranty to be in full force and effect for purposes of this Agreement (other than in accordance with its terms) prior to the satisfaction of all obligations of such Party under this Agreement without the written consent of the other Party, or (e) a Guarantor shall repudiate, disaffirm, disclaim or reject, in whole or in part, or challenge the validity of any Guaranty.

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9. REMEDIES UPON DEFAULT

9.1 Remedies. If an Event of Default with respect to a Defaulting Party has occurred and is continuing, the other Party (the "**Non-Defaulting Party**") shall have the right: (i) to designate a date, upon at least two Business Days' written notice to the Defaulting Party, as an early termination date (**"Early Termination Date"**) to accelerate the amounts owing under this Agreement and liquidate and terminate this Agreement, (ii) withhold any payments due in respect of this Agreement, and (iii) suspend performance. The Non-Defaulting Party shall calculate, in a commercially reasonable manner, a Settlement Amount for the termination of this Agreement as of the Early Termination Date.

9.2 Notice of Payment of Settlement Amount. As soon as practicable after a liquidation, notice shall be given by the Non-Defaulting Party to the Defaulting Party of the Settlement Amount and whether the Settlement Amount is due to or due from the Non-Defaulting Party. The notice shall include a written statement explaining in reasonable detail the calculation of such amount. The Settlement Amount shall be paid by the Party that owes it within two (2) Business Days after the notice is received.

9.3 Calculation Disputes. If the Defaulting Party disputes the Non-Defaulting Party's calculation of the Settlement Amount, the Defaulting Party shall, within two (2) Business Days of receipt of the Non-Defaulting Party's calculation, pay the undisputed amount and provide the Non-Defaulting Party a detailed written explanation of the basis for such dispute; provided however that if the Settlement Amount is due from the Defaulting Party, the Defaulting Party shall first transfer Adequate Assurance to the Non-Defaulting party in an amount equal to the disputed amount that has not been paid.

9.4 Setoff. Each Party reserves all rights, setoff, recoupments, counterclaims or other remedies and defenses (to the extent not expressly waived or denied in this Agreement) that such Party has or to which such Party may be entitled arising from or out of this Agreement.

9.5 Limitation of Remedies, Liability and Damages. EXCEPT AS SET FORTH HEREIN, THERE IS NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, AND ANY AND ALL IMPLIED WARRANTIES ARE DISCLAIMED. THE PARTIES CONFIRM THAT THE EXPRESS REMEDIES AND MEASURES OF DAMAGES PROVIDED IN THIS AGREEMENT SATISFY THE ESSENTIAL PURPOSES HEREOF. FOR BREACH OF ANY PROVISION FOR WHICH AN EXPRESS REMEDY OR MEASURE OF DAMAGES IS PROVIDED, SUCH EXPRESS REMEDY OR MEASURE OF DAMAGES SHALL BE THE SOLE AND EXCLUSIVE REMEDY, THE OBLIGOR'S LIABILITY SHALL BE LIMITED AS SET FORTH IN SUCH PROVISION AND ALL OTHER REMEDIES OR DAMAGES AT LAW OR IN EQUITY ARE WAIVED. IF NO REMEDY OR MEASURE OF DAMAGES IS EXPRESSLY PROVIDED HEREIN OR IN A TRANSACTION, THE OBLIGOR'S LIABILITY SHALL BE LIMITED TO DIRECT ACTUAL DAMAGES ONLY. SUCH DIRECT ACTUAL DAMAGES SHALL BE THE SOLE AND EXCLUSIVE REMEDY AND ALL OTHER REMEDIES OR DAMAGES AT LAW OR IN EQUITY ARE WAIVED. UNLESS EXPRESSLY HEREIN PROVIDED, NEITHER PARTY SHALL BE LIABLE FOR CONSEQUENTIAL, INCIDENTAL, PUNITIVE, EXEMPLARY OR INDIRECT DAMAGES, LOST PROFITS OR OTHER BUSINESS INTERRUPTION DAMAGES, BY STATUTE, IN TORT OR CONTRACT, UNDER ANY INDEMNITY PROVISION OR OTHERWISE. IT IS THE INTENT OF THE PARTIES THAT THE LIMITATIONS HEREIN IMPOSED ON REMEDIES AND THE MEASURE OF DAMAGES BE WITHOUT REGARD TO THE CAUSE OR CAUSES RELATED THERETO, INCLUDING THE NEGLIGENCE OF ANY PARTY, WHETHER SUCH NEGLIGENCE BE SOLE, JOINT OR CONCURRENT, OR ACTIVE OR PASSIVE. TO THE EXTENT ANY DAMAGES REQUIRED TO BE PAID HEREUNDER ARE LIQUIDATED, THE

PARTIES ACKNOWLEDGE THAT THE DAMAGES ARE DIFFICULT OR IMPOSSIBLE TO DETERMINE, OR OTHERWISE OBTAINING AN ADEQUATE REMEDY IS INCONVENIENT AND THE DAMAGES CALCULATED HEREUNDER CONSTITUTE A REASONABLE APPROXIMATION OF THE HARM OR LOSS.

10. CONFIDENTIALITY

10.1 Confidentiality Generally. "**Confidential Information**" means all oral and written information exchanged between the Parties with respect to the subject matter of this Agreement. The following information does not constitute Confidential Information for purposes of this Agreement: (a) information that is or becomes generally available to the public other than as a result of a disclosure by either Party in violation of this Agreement, (b) information that was already known by either Party on a non-confidential basis prior to this Agreement, (c) information that becomes available to either Party on a non-confidential basis from a source other than the other Party if such source was not subject to any prohibition against disclosing the information to such Party, and (d) information that is developed by receiving Party or its affiliates independently and without access to the Confidential Information of disclosing Party. Except as provided in this Section 10.1 and 10.2, neither Party shall publish, disclose, or otherwise divulge Confidential Information to any person at any time during or after the term of this Agreement, without the other Party's prior express written consent. Each Party shall permit knowledge of and access to Confidential Information only to those of its affiliates and to persons investing in, providing funding to or acquiring it or its affiliates, and to its and the foregoing persons' respective attorneys, accountants, representatives, agents and employees who have a need-to-know such Confidential Information related to this Agreement.

10.2 Authorization to Disclose. The Parties are expressly authorized to disclose the existence of this Agreement and certain REC details to affect Delivery of such RECs or otherwise comply with any relevant Applicable Standard while using commercially reasonable efforts to preserve the confidentiality of any other information unnecessary for such requirements, notwithstanding any agreement between the Parties regarding the protection of Confidential Information. If required by any law, statute, ordinance, decision, order or regulation passed, adopted, issued or promulgated by a court, governmental agency or authority having jurisdiction over a Party, that Party may release Confidential Information, or a portion thereof, to the court, governmental agency or authority, as required by the applicable law, statute, ordinance, decision, order or regulation. Before such disclosure such Party shall promptly notify the other Party of the required disclosure, if legally permissible, such that the other Party may attempt (if such other Party so chooses and at such other's Party's expense) to cause that court, governmental agency or authority to treat such information in a confidential manner and to prevent such information from being disclosed or otherwise becoming part of the public domain. Notwithstanding the foregoing, if a Party is required to make a disclosure pursuant to this Section 10.2, then it will, if possible, request that such disclosure be accorded confidential treatment.

10.3 Injunctive Relief; Survival. Each of the Parties acknowledges and agrees that the other Party would be irreparably harmed if any Confidential Information of the Disclosing Party were to be disclosed to third persons, or if any use were to be made of such Confidential Information other than that permitted under this Agreement, and further agrees that the disclosing Party shall have the right to seek injunctive relief upon any violation or threatened violation of the terms of this Section 10, in addition to all other rights and remedies available at law or in equity, without having to post a bond or other security. The Parties' obligations under this Section 10 shall survive for a period of one (1) year following the expiration or termination of this Agreement.

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11. CREDIT

If either Party ("**X**") has reasonable grounds for insecurity regarding the creditworthiness of the other Party ("**Y**") (including, without limitation, the occurrence of a material change in the creditworthiness of Y), then X shall provide Y with written demand requesting Adequate Assurance to cover adverse Market Exposure X has to Y. Upon receipt of such notice, Y shall provide Adequate Assurance to X within two (2) Business Days of receipt of such notice. In the event that Y fails to provide Adequate Assurance with two (2) Business Days following receipt of notice, then an Event of Default shall be deemed to have occurred with respect to Y.

12. REGULATORY CHANGE

After the Effective Date and during the Term of this Agreement, if any statute, rule, regulation, permit or authorization is enacted, amended, granted or revoked (including a final order of a court having jurisdiction) which has the effect of: (i) materially changing the ability of Seller to Deliver RECs to Buyer so that implementation of this Agreement becomes illegal or unenforceable, or (ii) repealing the Applicable Standard in its entirety so that the implementation of this Agreement becomes impossible or impracticable, is considered a regulatory change (each a "**Regulatory Change**"). If a Regulatory Change occurs, then this Agreement automatically terminates with no further payment or performance obligation except for such obligations that accrued prior to such termination. Notwithstanding the foregoing, if the Applicable Standard in Part A references more than one RPS and at least one (1) of the RPS has not been negatively impacted as described in (i) or (ii) of this Section, then a Regulatory Change has not occurred.

13. BANKRUPTCY CODE PROVISIONS

The Parties intend that: (i) this Agreement is a "forward contract" within the meaning of the Bankruptcy Code, (ii) all payments made or to be made by one Party to the other Party, pursuant to this Agreement constitute "settlement payments" within the meaning of the Bankruptcy Code, (iii) all transfers of credit support by one Party to the other Party under this Agreement constitute "margin payments" within the meaning of the Bankruptcy Code, and (iv) each Party's rights under Section 9.1 of this Agreement constitutes a "contractual right to liquidate" this Agreement within the meaning of the United Stated Bankruptcy Code.

14. CONSENT TO RECORDING

Each Party consents to the creation of a tape or electronic recording ("**Recording**") of telephone conversations between each Party's trading, marketing or scheduling employees or contractors. Such Recordings shall be retained in confidence, secured from improper access, and may be submitted in evidence in any proceeding or action relating to this Agreement. Each Party waives any further notice of such monitoring or recording and agrees to notify its employees and contractors of such monitoring or recording and to obtain any necessary consent of such employees and contractors.

15. ENTIRE AGREEMENT; SEVERABILITY

This Agreement, together with any attachments or exhibits specifically referenced herein, constitutes the entire agreement between the Seller and the Buyer with respect to the subject matter hereof, supersedes all prior oral or written representations and contracts, and may be modified only by a written instrument signed by Buyer and Seller.

Any part of this Agreement that is or becomes invalid, illegal, or unenforceable may be severed from the remainder hereof, and to the extent possible, the Parties will use reasonable efforts to replace any such part with provisions that preserve their original intent.

16. COUNTERPARTS

This Agreement may be executed by PDF or facsimile and in one or more counterparts, all of which taken together will constitute one and the same original instrument.

17. GOVERNING LAW; WAIVER OF TRIAL BY JURY & ATTORNEYS' FEES

17.1 Governing Law and Jury Trial Waiver. This Agreement shall be construed, enforced, and performed in accordance with the laws of the State of New York, without recourse to its principles governing conflicts of law that would apply the law of another jurisdiction. **AS A MATERIAL INDUCEMENT TO EACH PARTY TO ENTER INTO THIS AGREEMENT, THE PARTIES EACH HEREBY IRREVOCABLY WAIVE ALL RIGHT TO TRIAL BY JURY IN ANY ACTION, PROCEEDING OR COUNTERCLAIM ARISING OUT OF OR RELATING HERETO, ANY RECS OR THE AGREEMENT CONTEMPLATED HEREBY. EACH PARTY FURTHER WAIVES ANY RIGHT TO CONSOLIDATE ANY ACTION IN WHICH A JURY TRIAL HAS BEEN WAIVED WITH ANY OTHER ACTION IN WHICH A JURY TRIAL CANNOT BE OR HAS NOT BEEN WAIVED.**

17.2 Attorneys' Fees. In the event of any suit or other proceeding between the Parties arising out of this Agreement, the prevailing Party shall be entitled to recover reasonable attorneys' fees, costs (including at the trial and appellate levels) and expenses of investigation.

18. WAIVER; AMENDMENT

None of the terms or conditions of this Agreement may be amended or waived except in writing and signed by both Parties. The Parties agree that no waiver, amendment, or modification of this Agreement will be established by conduct, custom, or course of dealing. The failure of a Party to require performance of any provision of this Agreement will not limit such Party's right to seek such performance at a later time. Similarly, a Party's waiver of its rights with respect to any Event of Default or any other matter arising in connection with this Agreement will not be considered a waiver with respect to any subsequent Event of Default or matter.

19. NOTICES

All notices, payments and other formal communications which either Party may give to the other under or in connection with this Agreement shall be in writing and shall be sent by any of the following methods: hand delivery, reputable overnight courier, facsimile transmission, electronic mail or the electronic equivalent. The communications shall be sent to the following addresses, and shall be effective when received:

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If to Counterparty:

CommonWealth New Bedford Energy LLC

Attn: Thomas Yeransian
Telephone: 508-339-3074
Facsimile: 508-339-1326
Email: tyeransian@crmcx.com

If to DTE:

DTE Energy Trading, Inc.
414 South Main Street, Suite 200
Ann Arbor, MI 48104
Attn: Contract Administration/Legal
Telephone: 734-887-2161
Facsimile: 734-887-2235
Email: DTE_CONTRACT_ADMIN@dteenergy.com

With a copy also to:

Jay McCall/Erica Reicher
Telephone: 734-887-4183 (*Jay*);
734-887-4184 (*Erica*)
Email: DTE_ENV_Desk@dteenergy.com

Each Party represents that the person signing this Agreement on its behalf is authorized to enter into this Agreement. Each Party also understands and agrees to the terms and conditions herein and agrees to be bound thereby. Each Party acknowledges its obligations of good faith and fair dealing under this Agreement (including commercially reasonable mitigation of damages, if any, so far as possible), notwithstanding any contrary provision herein or in applicable law.

DTE Energy Trading, Inc.

By: _____

Name: Gregory V. Staton

Title: Vice President

Date: 06/05/2020

SS CMG

CommonWealth New Bedford Energy LLC

By: _____

Name: Thomas Yeransian

Title: Principal CRMC, Managing Member of CommonWealth New Bedford Energy LLC

Date: June 04, 2020