

Commonwealth of Massachusetts
Executive Office of Energy and Environmental Affairs
Massachusetts Environmental Policy Act (MEPA) Office

Environmental Notification Form

For Office Use Only

EEA#: 15578

MEPA Analyst: Holly Johnson

The information requested on this form must be completed in order to submit a document electronically for review under the Massachusetts Environmental Policy Act, 301 CMR 11.00.

Project Name: MMWEC Simple Cycle Gas Turbine Project		
Street Address: 58-R Pulaski Street		
Municipality: Peabody	Watershed: North Coastal	
Universal Transverse Mercator Coordinates: Zone 19N Easting: 341688.6; Northing: 4711905.8		Latitude: 42.543330 Longitude: -70.928023
Estimated commencement date: August 2018	Estimated completion date: March 2020	
Project Type: Energy	Status of project design: 15 %complete	
Proponent: Massachusetts Municipal Wholesale Electric Company		
Street Address: 327 Moody Street, P.O. Box 426		
Municipality: Ludlow	State: MA	Zip Code: 01056
Name of Contact Person: Jackie Bruce		
Firm/Agency: Tetra Tech, Inc.		Street Address: 2 Lan Drive, Suite 210
Municipality: Westford		State: MA Zip Code: 01886
Phone: 978-212-3284	Fax: 978-692-4592	E-mail: jackie.bruce@tetrattech.com
<p>Does this project meet or exceed a mandatory EIR threshold (see 301 CMR 11.03)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>If this is an Expanded Environmental Notification Form (ENF) (see 301 CMR 11.05(7)) or a Notice of Project Change (NPC), are you requesting: Not an Expanded ENF</p> <p>a Single EIR? (see 301 CMR 11.06(8)) <input type="checkbox"/> Yes <input type="checkbox"/> No a Special Review Procedure? (see 301CMR 11.09) <input type="checkbox"/> Yes <input type="checkbox"/> No a Waiver of mandatory EIR? (see 301 CMR 11.11) <input type="checkbox"/> Yes <input type="checkbox"/> No a Phase I Waiver? (see 301 CMR 11.11) <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Note: Greenhouse Gas Emissions analysis must be included in the Expanded ENF.)</i></p> <p>Which MEPA review threshold(s) does the project meet or exceed (see 301 CMR 11.03)?</p> <ul style="list-style-type: none"> • 301 CMR 11.03(7)(b)2 – expansion of an existing electric generating facility by 25 or more MW <p>Which State Agency Permits will the project require?</p> <ul style="list-style-type: none"> • Massachusetts Department of Environmental Protection (MassDEP) Air Plan Approval/Title V Operating Permit Modification • Massachusetts State Fire Marshall Above Ground Storage Tank Approval • Massachusetts DPU – Aboveground Fuel Oil Storage Tank Approval 		

Identify any financial assistance or land transfer from an Agency of the Commonwealth, including the Agency name and the amount of funding or land area in acres:

Not Applicable.

Summary of Project Size & Environmental Impacts	Existing	Change	Total
LAND			
Total site acreage	4.0		
New acres of land altered		0	
Acres of impervious area	1.9	0.5	2.4
Square feet of new bordering vegetated wetlands alteration		0	
Square feet of new other wetland alteration		0	
Acres of new non-water dependent use of tidelands or waterways		0	
STRUCTURES			
Gross square footage	10,600	9,000	19,600
Number of housing units	0	0	0
Maximum height (feet)	60.4	90	90
TRANSPORTATION			
Vehicle trips per day	5	1	6
Parking spaces	10	0	10
WASTEWATER			
Water Use (gallons per day [GPD])	2,636	13,611	16,247
Water withdrawal (GPD)	2,636	13,611	16,247
Wastewater generation/treatment (GPD)	1,507	0	1,507
Length of water mains (miles)	0.3	0	0.3
Length of sewer mains (miles)	0.1	0	0.1
Has this project been filed with MEPA before? <input type="checkbox"/> Yes (EEA # _____) <input checked="" type="checkbox"/> No			
Has any project on this site been filed with MEPA before? <input type="checkbox"/> Yes (EEA # _____) <input checked="" type="checkbox"/> No			

GENERAL PROJECT INFORMATION – all proponents must fill out this section

PROJECT DESCRIPTION:

Describe the existing conditions and land uses on the project site:

The Massachusetts Municipal Wholesale Electric Company (MMWEC) Simple Cycle Gas Turbine Project (the Project) will be situated on approximately 0.6 acre (Project Site) located within the existing developed Peabody Municipal Light Plant (PMLP) Waters River Station property (the Property) located off Pulaski Street, proximate to the Waters River. The entire 4.0-acre Property is addressed in this ENF, as Project-related interconnections and relocation of existing structures and infrastructure may occur across this area in association with the Project.

The Property is zoned "IL – Light Industry" under the Peabody Zoning Ordinance¹, and electric generation is an allowed use in that zone. The Property already includes a 0.4-acre 115-kilovolt (kV) substation. The Property is bounded by an abandoned railroad spur to the south; a New England Power (d.b.a. National Grid) transmission right-of-way (ROW) to the north; Wayside Leasing's trailer storage yard to the east; and an abandoned Boston & Main Railroad ROW to the west. The existing Waters River Station occupies the southern portion of the Property.

The majority of the Property is currently developed to support the existing Waters River Station, which includes two simple-cycle electric generation units totaling 68 megawatts (MW) and a 115-kV substation. The existing 115-kV substation was installed in 1969. In 1971, a 20-MW Pratt Whitney FT4A-9 oil-fired combustion turbine (Unit 1) was installed, exhausting through a 31-foot tall, rectangular stack. In 1989, Unit 1 was converted to a dual-fuel unit, which allows the operator to select either oil or natural gas to burn at any given time. At that time, Unit 1 was connected directly into the nearby interstate natural gas transmission pipeline, making it the first unit in the nation to accomplish a direct connection between an electrical generator and an interstate natural gas transmission pipe. A GE-LM5000 dual-fuel combustion turbine (Unit 2), was installed in 1991, with a power output of 48 MW. Unit 2 exhausts into a 60.4-foot tall, rectangular stack and is equipped with water injection for nitrogen oxides (NO_x) emissions control and an oxidation catalyst system for carbon monoxide (CO) control. Both units can be operated remotely, and personnel need not be present on the Property while the units operate.

There are three existing aboveground fuel oil tanks on the site, each with a nominal capacity of 115,000 gallons.

Describe the proposed project and its programmatic and physical elements:

MMWEC seeks to permit and construct a state-of-the-art, fast-starting, dual fuel-fired simple-cycle electric generating facility (the Project) to be located adjacent to the existing PMLP Waters River Station Units 1 and 2. The Project will utilize a single Pratt & Whitney FT4000 combustion turbine, or comparable unit, with an approximate net nominal capacity of 60 MW. (The FT4000 is the largest unit being considered.) The Project will utilize natural gas as the primary fuel, with limited use of ultra-low sulfur distillate (ULSD) as the backup fuel. The Project will be equipped with selective catalytic reduction and an oxidation catalyst system to control emissions of NO_x and CO. The Project will operate during peak times of energy demand to provide flexibility and reliability to meet the region's demonstrated power needs. The Project will include an approximately 90-foot stack.

The proposed Project will be located on approximately 0.6 acre on the northeastern corner of the Property. Natural gas will be provided to the Project using a natural gas connection available on the Property. The

¹ Peabody Zoning Ordinance, Officially adopted on April 28, 2011, as amended through March 28, 2013

Project will include an electric-powered natural gas compressor to increase the natural gas pressure to the required turbine natural gas inlet pressure. The Project will interconnect with the regional high voltage transmission system by connecting into the existing PMLP-owned switchyard, located on the northwestern corner of the Property. Temporary use of land within the Property will occur during construction for parking and laydown. The proposed completion date for the Project is March 30, 2020.

One of the existing 115,000-gallon fuel oil storage tanks on the Property will be decommissioned and removed, and will be replaced with a new 200,000-gallon ULSD storage tank. A new 10,000-gallon tank will also be installed to hold 19% aqueous ammonia required by the SCR system.

The Project will obtain an Air Plan Approval from MassDEP, which will include a detailed review of air and noise emissions and impacts to ensure compliance with all regulatory requirements. The Project's air and noise emissions will meet MassDEP requirements for Best Available Control Technology (BACT). The Project will be limited to 1,250 hours of operation per year, with a maximum of 250 hours per year on ULSD.

All existing infrastructure interconnections on the Property are sufficient to support the demands of the proposed Project, including interconnections for natural gas, electricity, and water/wastewater.

Construction of different elements of the project (e.g., site preparation, foundations, electrical/mechanical) will be sequenced over the construction period which will limit the number of construction workers at the site at any one time.

NOTE: The project description should summarize both the project's direct and indirect impacts (including construction period impacts) in terms of their magnitude, geographic extent, duration and frequency, and reversibility, as applicable. It should also discuss the infrastructure requirements of the project and the capacity of the municipal and/or regional infrastructure to sustain these requirements into the future.

Describe the on-site project alternatives (and alternative off-site locations, if applicable), considered by the proponent, including at least one feasible alternative that is allowed under current zoning, and the reasons(s) that they were not selected as the preferred alternative:

The purpose of the Project is to respond to an acknowledged need for additional electrical generating capacity in the Independent System Operator – New England (ISO-NE) system, especially during periods of peak demand. MMWEC considered a range of off-site alternative locations, as well as several alternative technologies and fuels for the proposed Project. In selecting the location of the proposed Project, MMWEC determined that the addition of capacity to an existing power station, located in the ISO-NE region, would be preferable to development on a new greenfield site. Adding capacity to an existing facility has significant technical, financial, and environmental benefits compared to developing a new power station on a greenfield site not currently in use for electric generation. Additionally, MMWEC recognized the importance of siting the Project in a location with access to adequate natural gas, electric transmission, and water. Adding capacity in a location proximate to existing infrastructure minimizes technical, financial, and environmental impacts to within the boundaries of the proposed site.

In addition to environmental and market concerns, MMWEC recognized the importance of siting the Project at a location where there is sufficient space for the proposed Project and ancillary structures, and the development of the Project is compatible with zoning and community needs and concerns.

Technologies Considered

MMWEC considered alternate technologies, including combined-cycle and simple-cycle combustion turbine technology. Based on its analyses, MMWEC determined that the most acute capacity need in

ISO-NE is for meeting peak electrical demand periods. Combined-cycle units, although ideal for base-load applications, are not the most cost-effective technology to meet intermittent peak-load capacity needs and are not appropriate for a peaking unit, due to longer start-up and shutdown times. Therefore, MMWEC selected simple-cycle turbine technology for the proposed Project.

MMWEC also considered alternate turbine fuels. Due to its environmental benefits and generation reliability, a dual-fueled combustion turbine was selected over a reciprocating engine peaking unit.

Off-Site Alternatives

MMWEC reviewed the locations of existing natural gas and electrical transmission infrastructure throughout eastern Massachusetts and Rhode Island. MMWEC identified six properties, all located proximate to adequate existing infrastructure. In addition to existing infrastructure, other criteria evaluated included: proximity of the load-center (i.e., the City of Boston); available space; zoning; surrounding land use; and proximity to sensitive receptors. A description of each site considered is provided below:

- Tiverton, Rhode Island: a 2-acre greenfield site located off Eagleville Road, west of the Fall River Expressway (State Route 24). The site is located adjacent to the intersection of the Algonquin natural gas line, the Spectra 8-inch natural gas line, and National Grid's 115-kV transmission line. Eagleville Road has several industrial and commercial properties, with a few scattered residences surrounded by dense vegetation. Although the site is zoned for industrial use, it is currently undisturbed and located in close proximity to known wetlands; therefore, it was deemed less preferable.
- Fall River, Massachusetts: a 0.5-acre site located within an approximately 10.8-acre property owned by Massachusetts Electric Company along the Taunton River. The site is located off Hathaway Street, on property zoned Waterfront and Transit Oriented Development District (WTOD). Although the site is adjacent to two existing substations; there are also several residential properties located in close proximity; therefore, this site was deemed less preferable.
- Rochester, Massachusetts: a 1.5-acre greenfield site located adjacent to an existing substation and approximately 0.5 mile southeast of the Spectra Middleboro take station. Although the site is zoned for industrial use, it is currently undisturbed, vegetated land located adjacent to known wetlands; therefore, it was deemed less preferable.
- Plymouth, Massachusetts – Bourne Road: a 0.4-acre green field site located adjacent to an existing NSTAR electrical switchyard, which ties into the Eversource 115-kV transmission line. Accessed off of Bourne Road, the site is also adjacent to the Spectra 20-inch natural gas line. Zoned for rural residential use, and located proximate to a proposed housing development, this site was deemed less preferable.
- Plymouth, Massachusetts – Black Cat Road: a 3.5-acre disturbed site within a 47.7-acre property currently owned by EJ Pontiff Inc. Located off Black Cat Road, the site is adjacent to the Spectra 8-inch natural gas line and the Eversource 115-kV transmission line. Zoned for rural residential use and located in proximity to several residential properties, this site was deemed less preferable.
- Peabody, Massachusetts: a 4.0-acre site located along Waters River already developed in support of two dual-fueled, simple-cycle units. A substation is also located on the site, adjacent to approximately 0.6 acre of disturbed, open space. A 115-kV transmission line forms the northern boundary of the site, with industrial uses located to the east and south. The site is zoned for Light Industrial use.

All sites considered shared the characteristics of close proximity to electric transmission infrastructure and

an interstate gas transmission line. As both sites in Plymouth are zoned rural residential, the Project would require a conditional use permit or a zoning amendment; therefore, both sites were deemed less preferable. Both the Tiverton and Rochester sites are densely vegetated sites located in proximity of known wetlands and waterways; therefore, due to the clearing that would be required, and the possible wetland impact, they were deemed less favorable. Although situated on a disturbed parcel, adjacent to electrical infrastructure, the Fall River site is also located adjacent to several residential properties; therefore, it was deemed less preferable.

The Peabody site is located in an industrially developed area, on land already developed in support of similar activities (electricity generation). The existing zoning (Light Industry) allows for electric generation use. The site has already been cleared and disturbed. Due to the compatibility of land use and zoning, the Peabody site was deemed most favorable for the proposed Project.

On-Site Alternatives

The Project is proposed on the only sufficient open space available at the Peabody site. Therefore, an alternate location on the Peabody site for the Project was not feasible. The proposed location maximizes distance to residences and other sensitive off-site land uses and, based on the topography of the site, would result in the least visual change from off-site vantage points. Various iterations of equipment orientation were considered, with selection of the proposed layout chosen as the most efficient and least intrusive option.

NOTE: *The purpose of the alternatives analysis is to consider what effect changing the parameters and/or siting of a project, or components thereof, will have on the environment, keeping in mind that the objective of the MEPA review process is to avoid or minimize damage to the environment to the greatest extent feasible. Examples of alternative projects include alternative site locations, alternative site uses, and alternative site configurations.*

Summarize the mitigation measures proposed to offset the impacts of the preferred alternative:

Impacts associated with the Project will be avoided and/or minimized due to the proposed location at the existing Waters River Station. Utilizing an existing industrial site avoids undisturbed natural resources and causes minimal to no change in land use.

The Project will be constructed with state-of-the-art emissions controls and will meet MassDEP requirements for BACT. The Project will also incorporate sound control measures to meet the MassDEP Noise Policy requirements. Other design measures will be incorporated to minimize the potential impact of the Project on surrounding areas, including locating the new unit immediately proximate to the existing units and minimizing stack height to the greatest extent possible to minimize visual impacts. Site drainage will be designed with all required mitigation measures to minimize impacts to the Waters River.

If the project is proposed to be constructed in phases, please describe each phase:

The Project will not be constructed in phases.

AREAS OF CRITICAL ENVIRONMENTAL CONCERN:

Is the project within or adjacent to an Area of Critical Environmental Concern?

Yes (Specify _____) No

If yes, does the ACEC have an approved Resource Management Plan? Yes ___ No ___;

If yes, describe how the project complies with this plan. _____

Will there be stormwater runoff or discharge to the designated ACEC? Yes ___ No ___;