COMMONWEALTH OF MASSACHUSETTS
ENERGY FACILITIES SITING BOARD

In the Matter of the Petition of	)	
Brockton Power Company, LLC	)	EFSB 07-7/
for Approval to Construct a 350 MW	)	D.P.U. 07-58/07-59
Combined Cycle Power Plant in the	)	
City of Brockton, Massachusetts and	)	
for Zoning Exemptions from the Bylaws	)	
of the City of Brockton and for Approval to	)	
Construct an Electric Transmission Line	)	
in the City of Brockton	)	

TENTATIVE DECISION

Robert J. Shea,
Presiding Officer

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ABBREVIATIONS

1985 MECo/NEPC Decision	Massachusetts Electric Company/New England Power Company, 13 DOMSC 119 (1985)
7Q10	lowest 7-day average flow anticipated in a 10-year period
AAL	Allowable Ambient Level
ACE	Refers to an intervenor group of 26 residents of Brockton and West Bridgewater. ACE is an acronym for the group's counsel, Alternatives for Community Development
ACT	Refers to Massachusetts Green Communities Act enacted in October, 2007
AIHA	American Industrial Hygiene Association
ALOHA	Areal Locations of Hazardous Atmospheres
ANP Blackstone Decision	ANP Blackstone Energy Company, 8 DOMSB 1 (1999)
AWRF	Advanced Wastewater Treatment Facility
BACT	Best Available Control Technology
BANCT	Best Available Noise Control Technology
BELD	Braintree Electric Light Department
Braintree Decision	Braintree Electric Light Department, EFSB 07-1/ DTE/D.P.U. 07-5 (2008)
Brockton Decision	Brockton Power, LLC, 10 DOMSB 157 (2000)
Btu/kWh	British thermal units per kilowatt-hour
CAA	Clean Air Act
CAIR	Clean Air Interstate Rule
cfs	cubic feet per second
CO	carbon monoxide
CO_2	carbon dioxide
Company	NAME
dBA	A-weighted decibels

Department	Massachusetts Department of Public Utilities (also "DPU")
DOMSB	Decisions and Orders of Massachusetts Energy Facilities Siting Board
DOMSC	Decisions and Orders of Massachusetts Energy Facilities Siting Council
DPU	Massachusetts Department of Public Utilities (also "Department")
EFSB	Energy Facilities Siting Board
EMF	electric and magnetic field(s)
Enron Decision	Enron Power Enterprise Corporation, 23 DOMSC 1 (1991)
EOEA	Massachusetts Executive Office of Environmental Affairs (predecessor to EOEEA)
EOEEA	Massachusetts Executive Office of Energy and Environment (replaced EOEA in 2007)
ERPG	Emergency Response Planning Guidelines
FCA	ISO-NE's Forward Capacity Auction
GCA	Massachusetts Green Communities Act (also "ACT")
GEP	Good Engineering Practice
GHG	Massachusetts Greenhouse Gas Policy
G.L. c.	Massachusetts General Laws chapter
gpd	gallons per day
HAPS	Hazardous Air Pollutants
HRSG	heat recovery steam generator
ICNIRP	International Commission on Non-Ionizing Radiation Protection
IDC Decision	IDC Bellingham LLC, 9 DOMSB 225 (1999)
ISO-NE	Independent System Operator of New England
kV	kilovolts
kV/m	kilovolts per meter
L_{90}	sound level exceeded 90% of time

lbs/mmBtu	pounds per million British thermal units
lbs/MWH	pounds per megawatt-hour
LAER	Lowest Achievable Emission Rate
LNG	liquefied natural gas
LOS	Level of Service (traffic grade at an intersection)
MAAQS	Massachusetts Ambient Air Quality Standards
MADEP	Massachusetts Department of Environmental Protection
MBTA	Massachusetts Bay Transportation Authority
MDPH	Massachusetts Department of Public Health
MEPA	Massachusetts Environmental Protection Act
mG	milligauss
MGPD	millions of gallons per day
MMBtu	million British thermal units
MMBtu/hr	million British thermal units per hour
MVA	megavolt-amperes
MW	megawatts
MWh	megawatt-hours
NAAQS	National Ambient Air Quality Standards
NH_3	ammonia vapor
Nickel Hill Decision	Nickel Hill Energy, LLC, 11 DOMSB 83 (2000)
NO_2	nitrogen dioxide
NO_X	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NSPS	New Source Performance Standards
NSR	New Source Review
O_3	ozone

PM	particulate matter
$PM_{2.5}$	particulates 2.5 microns or smaller
PM_{10}	particulates 10 microns or smaller
ppm	parts per million
PSD	Prevention of Significant Deterioration
psi	pounds per square inch
RGGI	Regional Greenhouse Gas Initiative
ROW	right-of-way
SCR	Selective Catalytic Reduction
SILs	Significant Impact Levels
Sithe Edgar Decision	Sithe Edgar Development, LLC, 10 DOMSB 1 (2000)
Sithe Mystic Decision	Sithe Mystic Development, LLC, 9 DOMSB 101 (1999)
Siting Board	Energy Facilities Siting Board
SO_2	sulfur dioxide
SO_X	sulfur oxides
SOP	standard operating procedure
Southern Canal Decision II	Southern Energy Canal II, L.L.C., 12 DOMSB 155 (2001)
Southern Energy Kendall	Southern Energy Kendall, LLC. 11 DOMSB 255 (2000)
SPCC	Spill Prevention, Control and Countermeasure Plan
TEL	Threshold Effects Exposure Limit
tons/yr	tons per year
TPS	Technology Performance Standards
TRWA	Taunton River Watershed Alliance, Inc.
TPY	tons per year
$\mu g/m^3$	micrograms per cubic meter
ULSD	ultra-low sulfur diesel oil

USEPA	United States Environmental Protection Agency
U.S. Gen Decision	U.S. Generating Company, 6 DOMSB 1 (1997)
VOCs	volatile organic compounds

Pursuant to G.L. c. 164, § 69J¼, the Energy Facilities Siting Board (“Siting Board” or "EFSB") hereby APPROVES, subject to the conditions set forth below, the petition of Brockton Power Company LLC ("Brockton Power") for approval to construct a 350 megawatt (“MW”) combined-cycle, dual fuel (natural gas and ultra-low sulfur diesel oil (“ULSD”)) electric generating facility (the "proposed facility" or "project") in Brockton, Massachusetts. Pursuant to G.L. c. 164, § 72, the Siting Board also APPROVES the petition of Brockton Power to construct an electricity transmission line connecting the proposed facility to the regional transmission grid. Pursuant to G.L. c. 40A, § 3, the Siting Board DENIES the petition of Brockton Power for various individual zoning exemptions from the zoning ordinances of the City of Brockton ("Zoning Ordinances") and for a comprehensive exemption from said ordinances.

I. INTRODUCTION

A. Description of the Proposed Facility, Site and Interconnections

Brockton Power is an affiliate of Advanced Power Services (NA) LLC ("Advanced Power") (Exh. BP-1, at 1-1). As stated above, Brockton Power proposes to construct a 350 MW combined-cycle, dual fuel (natural gas and ULSD) electric generating facility in Brockton, Massachusetts (id.). The proposed facility would use natural gas as its primary fuel, but would seek air permitting approval to use ULSD for up to 60 days per year (id., Appendix C, § 2.3 at 2-7).

The proposed facility would be located on a vacant 13.2 acre site ("Proposed Facility Site") within the 70-acre Oak Hill Way Industrial Park in southeast Brockton (Exh. BP-1, at 1-10). The Brockton Advanced Wastewater Reclamation Facility ("AWRF") would be immediately adjacent to the Proposed Facility Site (id.). The treated water from the AWRF would be the source of water to cool the proposed facility's mechanical cooling tower (id. at 1-15).

The proposed facility would be powered by a nominal 300 MW dual-fueled combined-cycle power plant (id. at 1-1). Brockton Power anticipates using either a Siemens SGT6-PAC 5000 turbine or a similar F-class combustion turbine (id.). An additional 50 MW of energy may be produced by the supplemental firing of the Heat Recovery Steam Generator ("HRSG"), also

referred to as "duct firing," and the injection of water into the turbine, also known as "evaporative cooling" (id.).

The proposed facility would obtain the natural gas it needs from a proposed natural gas supply line that would extend approximately 1,500 feet from the project to either: 1) the Bay State Gas Company connection on Oak Hill Way; or 2) as an alternative route, the Spectra Energy pipeline system along Sargents Way (Exh. BP-1, at 1-3, 1-16; Exh. BP-4, at 2-3, 2-22). The electricity produced by the proposed facility would be transmitted to the regional transmission grid by a new 115-kV overhead circuit and interconnection substation (Exh. BP-1, at 1-1). The interconnection substation would be connected to two existing National Grid 115-kV transmission lines, occupying a transmission corridor located approximately 3,000 feet southeast of the proposed facility (id.).

B. Procedural History

In accordance with M.G.L. c. 164, § 69J¼, on July 12, 2007, Brockton Power filed a petition ("Petition") with the Energy Facilities Siting Board for approval to construct the above-described proposed facility at the Oak Hill Industrial Park located in Brockton, Massachusetts (Exh. BP-1, at 1-1). At the time the Petition was filed, this land was zoned for industrial uses, including electrical generating facilities.

On July 12, 2007, the Company also filed two petitions with the Department of Public Utilities ("DPU" or "Department"), one requesting zoning exemptions pursuant to G.L. c. 40A, §3 (the "Zoning Exemption Petition," case number D.P.U. 07-58), and one requesting permission to construct and operate a transmission line pursuant to G.L. c. 164, § 72 ("Section 72 Petition," case number D.P.U. 07-59). The Chairman of the DPU referred the Zoning Exemption Petition and the Section 72 Petition to the Siting Board for hearing and determination.

Six entities intervened in this case: National Grid, Taunton River Watershed Alliance, Inc. ("TWRA"), the Town of West Bridgewater, the City of Brockton ("City"), Custom Blends LLC ("Custom Blends"), and 26 Residents of Brockton and West Bridgewater who have also been referred to as "ACE," an acronym for their counsel, Alternatives for Communities and Environment (collectively, the "Intervenors") (Ruling Re Petitions to Intervene and Petitions to Participate dated December 4, 2007).

In addition, six persons and entities were admitted as limited participants: Alliance Against Power Plant Location ("AAPPL"), City Councilor Linda Balzotti, City Councilor Thomas Brophy, Senator Robert Creedon and State Representative Geraldine Creedon ("Senator and Representative Creedon") and State Representative Christine E. Canavan (id.; see also, Ruling Re: AAPPL's Motion to Change from Intervenor to Limited Participant Status and to Withdraw its Pre-filed Testimony dated May 13, 2008).

A total of 20 days of evidentiary hearings were held, commencing on May 19, 2008, and concluding on July 11, 2008. On or before the deadline of August 7, 2008, all Parties (except Custom Blends) as well as the limited participants Senator and Representative Creedon filed initial briefs. Brockton Power, National Grid, the Town of West Bridgewater, the City of Brockton, and ACE filed reply briefs.

The Siting Board met to consider this matter, and to hear argument from counsel for the Parties as well as elected officials, on December 11, 2008, January 8, 2009, and January 29, 2009. At the last meeting, the Siting Board formally voted on the three petitions before it and instructed the staff to draft a tentative decision reflecting said vote and the conditions imposed upon approval.

C. Jurisdiction and Scope of Review

1. General Laws, Chapter 164, Section 69J¼

Brockton Power filed its petition to construct the proposed facility in accordance with G.L. c. 164, § 69J¼. Pursuant to G.L. c. 164, § 69J¼, no applicant shall commence construction of a "generating facility" unless a petition for approval of construction of that generating facility has been approved by the Siting Board. Pursuant to G.L. c. 164, § 69G, a jurisdictional "generating facility" is defined as "any generating unit designed for or capable of operating at a gross capacity of 100 megawatts or more, including associated buildings, ancillary structures, transmission and pipeline interconnections that are not otherwise facilities, and fuel storage facilities." Because the proposed facility is capable of operating at a gross capacity of 100 MW or more, it is a "generating facility" requiring Siting Board approval under G.L. c. 164, § 69J¼.

In accordance with G.L. c. 164, § 69J¼, before approving a petition to construct a generating facility, the Siting Board must determine that the applicant has met five requirements.

First, the Siting Board must determine that the applicant's description of the site selection process used is accurate (see Section II, below). Second, the Siting Board must determine that the applicant's description of the proposed generating facility and its environmental impacts are substantially accurate and complete (see Section III, below). Third, the Siting Board must determine that the proposed generating facility will minimize environmental impacts consistent with the minimization of costs associated with mitigation, control, and reduction of the environmental impacts (see Section III, below). Fourth, the Siting Board must determine that plans for construction of the proposed generating facility are consistent with current health and environmental protection policies of the Commonwealth and with such energy policies as are adopted by the Commonwealth for the specific purpose of guiding the decisions of the Board (see Section IV, below). Fifth and finally, if the expected emissions from the proposed facility do not meet the applicable technology performance standard, the Siting Board must determine, based on a comparison with other fossil fuel generating technologies, that the proposed generating facility on balance contributes to a reliable, low-cost, diverse regional energy supply with minimal environmental impacts (see Section III.B, below). Southern Energy Kendall, 11 DOMSB 255, at 270-271 (2000).

2. General Laws, Chapter 40A, Section 3

Brockton Power also filed a petition for an exemption from the Zoning Bylaws of the Town of Brockton in accordance with G.L. c. 40A, § 3. Pursuant to G.L. c. 40A, § 3, the Department is authorized to grant exemptions "in particular respects" from the operation of a municipality's zoning ordinance or by-laws for lands or structures used, or to be used, by a public service corporation if:

> upon petition of the corporation, the [Department] shall, after notice given pursuant to section eleven and public hearing in the town or city, determine the exemptions required and find that the present or proposed use of the land or structure is reasonably necessary for the convenience or welfare of the public . . .

Accordingly, a petitioner seeking exemption from a local zoning by-law pursuant to G.L. c. 40A, § 3 must meet three criteria. First the petitioner must qualify as a public service corporation. Save the Bay v. Department of Public Utilities, 366 Mass. 667 (1975). Second, the

petitioner must establish that it requires a zoning exemption(s). Boston Gas Company, D.T.E. 00-24, at 3 (2001). Third, the petitioner must demonstrate that its present or proposed use of the land or structure is reasonably necessary for the public convenience or welfare. Massachusetts Electric Company, D.T.E. 01-77, at 4 (2002); Tennessee Gas Pipeline, D.T.E. 01-57, at 3-4 (2002).

3. General Laws, Chapter 164, Section 72

Brockton Power's final petition was filed with the Department under G.L. c. 164, § 72; it sought permission to construct approximately 3,000 feet of 115 kV overhead line and related facilities which would connect the proposed facility to the regional transmission grid. General Laws chapter 164, § 72, provides that the Department may approve a section 72 petition if it determines that said line is necessary and will serve the public convenience and is consistent with the public interest.

II. SITE SELECTION

A. Standard of Review

G.L. c. 164, § 69J¼ requires the Siting Board to determine whether an applicant's description of the site selection process the applicant used is accurate. An accurate description of an applicant's site selection process must include a complete description of the environmental, reliability, regulatory, and other considerations that led to the applicant's decision to pursue the facility as proposed at the proposed site, as well as a description of other siting and design options that were considered as part of the site selection process.

The Siting Board also is required to determine whether a proposed facility provides a reliable energy supply for the Commonwealth with a minimum impact on the environment at the lowest possible cost. G.L. c. 164, § 64H. To accomplish this, G.L. c. 164, § 69J¼ requires the Siting Board to determine whether "plans for the construction of a proposed facility minimize the environmental impacts consistent with the minimization of costs associated with the mitigation, control, and reduction of the environmental impacts of the proposed generating facility."[1] Site

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[1] In recent decisions (see, for example, Municipal Wholesale Electric Company, EFSB 07-6 (2008)), the Siting Board has held that site selection, together with project design and

selection, together with project design and mitigation, is an integral part of the process of minimizing the environmental impacts of an energy facility.

B. Description

The Company stated that it focused its site selection process on identifying sites where generating facilities had been previously proposed to the EFSB and permitted by the EFSB, but where power plants had ultimately not been built (Exh. BP-1, at 3-2). The Company explained that previously EFSB-permitted sites would inherently have sufficient acreage, access to fuel supplies in reasonable proximity, close access to the high voltage transmission grid, appropriate zoning, and ideally cooling water availability (id.). In addition, the Company stated that previously EFSB-permitted sites would have had any significant siting issues identified and adequate mitigation measures would have been developed (Exh. ACE-SS-2). The Company also noted that for previously EFSB-permitted sites there would be considerable data and analysis from which an updated proposal could be efficiently developed (Exh. EFSB-S-11).

Within the universe of previously EFSB-permitted sites in Massachusetts, the Company stated that it focused on those in eastern Massachusetts (Tr. at 1532 and 1555-1556). As the reason for its concentration on sites in eastern Massachusetts, the Company stated that the ISO-NE 2007 Regional System Plan had designated the four ISO-NE subareas that roughly comprise eastern Massachusetts[2] as being one of four regions in New England where power could be effectively added for the 2015/2016 timeframe (Tr. at 1534 and BP-JLR-1, at 38). The Company

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mitigation, is an integral part of the process of minimizing the environmental impacts of an energy facility. In these cases, the Siting Board has considered whether site selection, together with project design and mitigation, contributed to the minimization of environmental impacts of the proposed project and the costs of mitigating, controlling and reducing such impacts. See Section II.C. below for discussion of the Siting Board review of this issue.

[2] Those subareas, as referenced in Table 5-2 of the ISO-NE 2007 Regional System Plan, are: Southeastern Massachusetts/Rhode Island (SEMA/RI); Boston; Central Massachusetts (CMA); and Northeastern Massachusetts (NEMA) (Tr. at 1534 and BP-JLR-1 at 38). Note that since the ISO-NE Regional System Plan also includes the Western Massachusetts (WMA) subarea as an effective area in which to locate new generating resources for the same 2015/2016 timeframe, the whole state of Massachusetts was designated as an effective area in which to add resources (BP-JLR-1, at 38).

further explained that, although southeastern Massachusetts, where the Brockton plant would be located, has historically been a power-exporting region, the region was identified by ISO-NE in its 2007 Regional System Plan as an effective region in which to add capacity because of the region's capacity to transmit power to the greater Boston region (Tr. at 1536).

Based on its approach of considering only previously EFSB-approved sites, the Company identified four potential sites in eastern Massachusetts as possible sites for the proposed facility (Exh. BP-1, at 3-2): (a) the currently proposed Brockton site in Oak Hill Industrial Park which was the site on which Brockton Power, LLC previously proposed to build a generating station and received EFSB approval in March 2000 (Brockton Power, 10 DOMSB 157 (2000)); (b) the Everett site on which Cabot Power proposed to build a generating plant (initially considered as EFSB 91-101 which was approved in 1994 (Cabot Power, 2 DOMSB 241 (1994)), but subsequently reopened in 1997 as EFSB 91-101A which received EFSB approval in October, 1998) (Cabot Power, 7 DOMSB 233 (1998); (c) the Bellingham site on which IDC proposed to build a generating plant and received EFSB approval in December 1999 (IDC Bellingham, 9 DOMSB 225 (1999)); and (d) the Dracut site on which Nickel Hill Energy, LLC proposed to build a generating facility and received EFSB approval in November 2000 (Nickel Hill Energy, 11 DOMSB 83 (2000)).

The Company stated that next it investigated and compared the four sites as to relative general attributes for development such as access to fuel supply and 345 kV transmission lines, zoning and existing land use, and cooling water availability (Exh. EFSB-S-11). The Company also considered site availability, but notes that it did so later in the process after it investigated and compared relative general attributes (id.). The Company stated that its "understanding of the Siting Board's site selection standards [post 1997 Electric Restructuring Act] under G.L. c. 164, § J¼ is that backup or alternative sites are no longer required" (id.).

After initial consideration of general attributes, the Company dismissed the IDC Bellingham and the Cabot Everett sites from further consideration on the grounds that these sites were currently unsuitable (Exh. BP-1, at 3-6 to 3-8). In the case of the IDC Bellingham site, the Company noted that the previously EFSB-approved site had subsequently been developed as a Dunkin' Donuts distribution center and that the placement of the distribution center effectively precluded co-siting a generating facility on the property (id. at 3-8). In the case of the Cabot

Everett site, the Company explained that the site belonged to Suez/Tractabel, a direct competitor (id. at 3-6).

With the IDC Bellingham and the Cabot Everett sites eliminated, the Company presented a more detailed comparison of the proposed Brockton site in Oak Hill Industrial Park with the Nickel Hill site in Dracut on the basis of ten criteria (Exh. BP-1, at Table 3-1).[3] The Company concluded that the two sites were very comparable, but noted that the Nickel Hill site was significantly more costly (Exhs. BP-1, at Table 3-1; EFSB-S-4) and that the Nickel Hill property was actively in use as a quarry and not currently for sale (Exh. EFSB-2-2). The Company stated that the quarry activity on the Nickel Hill property had been underway when the site was originally proposed for use as a power plant site in 1999 (Tr. at 1558). The Company did note that the total acreage of the Dracut site was nearly twice that of the Brockton site, which would have better accommodated space for on-site construction and laydown, as well as construction worker parking (Exh. BP-1, at 3-11). By contrast, the Company stated that the Brockton site was not large enough for these construction and parking activities, and Brockton Power would be obliged to lease land within the industrial park or nearby to accommodate these activities (Tr. at 2590). The Company did not hold any discussions with the Dracut site owner, Brox Industries, regarding the availability or price of land for the power plant (Tr. at 1560-1561). Instead, the Company relied upon knowledge of its assessments to conclude that the Dracut site would be more expensive than the Brockton site and likely unavailable (Tr. at 1560-1562). The Company also concluded that the Brockton site was superior to the Dracut site in its proximity to a source of waste water for use in the proposed wet mechanical cooling towers, though Brockton Power acknowledged that the Dracut site was located near the Merrimack River which might have served as a source of water for that purpose (Exh. BP-1, at 3-8 – 3-11).

The Company argued that its only obligation under G. L. c.164, § 69 ¼ was to provide an accurate and detailed description of its site selection process (BP Brief at 20). The Company

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[3] Those criteria were: (1) availability of land (10-acre minimum); (2) availability of natural gas; (3) proximity to electricity interconnection; (4) proximity to supply of ULSD supply; (5) proximity to water supply/waste water interconnects; (6) noise control considerations; (7) compatibility with existing or planned land use; (8) proximity to residences; (9) presence of or proximity to wetland resources; (10) visual considerations (Exh. BP-1, at Table 3-1).

cited the 2001 decision of the Supreme Judicial Court of Massachusetts in the Town of Andover v. Energy Facilities Siting Board, 435 Mass. 377 (2001) ("Andover") as affirming that the Siting Board's duties with respect to site selection review are limited to a determination of whether the site selection process is accurate (id.).

C. Analysis and Findings

The record shows that Brockton Power's site selection process identified only the Brockton site and three other sites in eastern Massachusetts, all of which had previously been reviewed and approved by the Siting Board—some, many years earlier—for the construction of electric generating facilities. Brockton Power quickly dismissed two of these sites because they were no longer available. The Company then provided an evaluation of the remaining two sites (its proposed location in Oak Hill Industrial Park in Brockton and the Nickel Hill Site in Dracut) on the basis of ten criteria. Although the Company rated both sites as comparable in most respects, it ruled out the Nickel Hill Site on the basis of cost, and also because it was currently in use as a quarry and not available for sale.

With respect to site selection, G.L. c. 164, § 69J¼ provides that a petitioner must meet the requirement that "the description of the site selection process used is accurate." In Andover, the Supreme Judicial Court ruled that the Siting Board's duties with respect to site selection review are limited to a determination of whether the petitioner's description of its site selection process is accurate.

Although the site selection process in this case was clearly not robust,[4] there is nothing in the record to indicate that the petitioner's description of its process was inaccurate. It is also clear that, in light of the Andover decision, the petitioner reasonably understood its obligations

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[4] In the MMWEC Decision, EFSB-07-6, at 10 (2008), the Siting Board opined that "restricting the evaluation of alternative sites to those approved by the Siting Board eight or more years ago likely will not demonstrate that the applicant used a [site selection] process that contributes to minimization of environmental impacts, and the cost of mitigating, controlling or reducing such impacts." However, the Siting Board did not consider the effect of Andover on this conclusion.

with respect to site selection to be limited to providing an accurate description of its process.[5] Thus, the Siting Board is compelled in this case to approve the petitioner's approach to site selection.

We note that the Siting Board has not addressed directly the scope of its authority post-Andover. We have held in a number of post-Andover cases that site selection, together with project design and mitigation, is an integral part of the process of minimizing the environmental impacts of an energy facility. However, the Siting Board has not addressed how that scope of review and the holding in Andover should be reconciled, nor whether Andover speaks only to the Siting Board's *duties* as opposed to its *discretion*. The Siting Board intends to provide guidance on this matter for future project proponents.

The Siting Board finds that Brockton Power's site selection process was accurately described.

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[5] The Siting Board notes that the Parties raised arguments with regard to the application of the EJ Policy to the site selection process. For discussion of the general applicability of the EJ Policy, see Section IV.B.1.

III. ENVIRONMENTAL IMPACTS

A. Standard of Review

G. L. c. 164, § 69J¼ requires the Siting Board to determine whether the plans for construction of a proposed generating facility minimize the environmental impacts of the proposed facility consistent with the minimization of costs associated with the mitigation, control, and reduction of the environmental impacts of the proposed generating facility. In order to make this determination, the Siting Board asseses the impacts of the proposed facility in several areas prescribed by its statute, including air quality, water resources, wetlands, solid waste, visual impacts, noise, local and regional land use, and cumulative health, and determines whether the applicant's description of these impacts is accurate and complete. G. L. c. 164, § 69J¼.[6,7]

The Siting Board also assesses the costs and benefits of options for mitigating, controlling, or reducing these impacts, and determines whether mitigation beyond that proposed by the applicant is required to minimize the environmental impacts of the proposed facility consistent with the minimization of costs associated with the mitigation, control, and reduction of the environmental impacts of the proposed generating facility. Compliance with other agencies' standards does not establish that a proposed facility's environmental impacts have been minimized.

Finally, the Siting Board assesses any tradeoffs that need to be made among conflicting environmental impacts, particularly where an option for mitigating one type of impact has the effect of increasing another type of impact. An assessment of all impacts of a facility is necessary to determine whether an appropriate balance is achieved both among conflicting

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[6] G. L. c. 164, § 69J¼ includes "radiation impacts" in the list of generating facility impacts to be reviewed by the Siting Board. However, since radiation is a property only of nuclear power plants, radiation impacts are not considered in the Siting Board's review of gas-fired generating facilities.

[7] The Siting Board also reviews in this decision the environmental impacts of the proposed project with regard to traffic, safety, and electric and magnetic fields ("EMF").

environmental concerns and between environmental impacts and cost. A facility proposal which achieves this balance meets the Siting Board's statutory requirement to minimize environmental impacts consistent with minimizing the costs associated with the mitigation, control, and reduction of the environmental impacts of the proposed generating facility.

B. Air Quality

This section describes baseline air quality conditions, emissions and air quality impacts of the proposed facility, compliance with existing regulations and emissions offsets proposed by Brockton Power.

1. Applicable Regulations

The Company indicated that regulations governing the air quality impacts of the proposed facility include National Ambient Air Quality Standards ("NAAQS") and Massachusetts Ambient Air Quality Standards ("MAAQS"); New Source Review ("NSR") requirements; Prevention of Significant Deterioration ("PSD") requirements, and New Source Performance Standards ("NSPS") (Exh. BP-1, at 4-2 to 4-9).[8]

The Company stated that all areas of the country are classified as "attainment," "non-attainment, or "unclassifiable" with respect to NAAQS (id. at 4-2). The Company stated that, as required by the Clean Air Act ("CAA"), USEPA has promulgated NAAQS for nitrogen dioxide (NO_2), sulfur dioxide ("SO_2"), particulate matter ("PM"), carbon monoxide ("CO"), ozone ("O_3"), and lead ("Pb") (id. at 4-6). The Company further stated that the NAAQS and MAAQS specify concentration levels for the identified emittants for various averaging times and durations of exposure, and that separate standards exist for PM with a diameter of 10 microns or less ("PM_{10}") and with a diameter of 2.5 microns or less ("$PM_{2.5}$") (id. at 4-6).

The Company explained that the NAAQS include primary standards, designed to protect human health, and secondary standards, intended to protect public welfare from adverse effects due to the presence of air pollution, such as damage to vegetation (id.). The Company further explained that, for purposes of setting air quality modeling requirements, including when to

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[8] The identified regulations serve to establish and achieve compliance with ambient air quality standards.

conduct interactive modeling, USEPA and MADEP have set Significant Impact Levels ("SILs") (Exh. EFSB-A-1(S)(1) at 3-4 to 3-5). Each SIL is a small fraction (1% to 5%) of the corresponding NAAQS and MAAQS (id.).

The Company indicated that if the area of proposed project construction is classified as "attainment" or "unclassified" for a particular pollutant, then PSD review applies, and a proposed facility must demonstrate meeting requirements of Best Available Control Technology ("BACT"), as well as compliance with the NAAQS (Exh. BP-1, at 4-3). The Company further indicated that in the case of a facility proposed for a region where it would qualify as a "major source" of a nonattainment pollutant, Nonattainment NSR applies (id. at 4-3 to 4-4; Exh. EFSB-A-1, at 3-2). The Company stated that, as part of Nonattainment New Source Review ("NSR"), a proposed facility must meet Lowest Achievable Emission Rate ("LAER") requirements and secure emission offsets; furthermore, a proposed major source must meet NSPS which constitute a set of national emission standards for major stationary sources of air pollution (Exh. BP-1, at 4-3 to 4-4).

The Company stated that all Massachusetts, including Brockton, the anticipated location of the proposed facility, is classified as a moderate nonattainment area for the 8-hour ozone standard (Exh. BP-4, at 5.1-5). The Company indicated that its proposed facility must therefore meet non-attainment NSR requirements for the chemical precurors to ozone, NOx and volatile organic compounds ("VOCs") (id. at 5.1-5 to 5.1-6).[9]

The Company indicated that the MADEP requires an Air Plan Approval for all new facilities exceeding certain regulatory thresholds (Exh. BP-4, at 5.1-10).[10] In addition to requiring compliance with federal and state regulatory requirements, an MADEP Air Plan Approval requires implementation of Massachusetts BACT for each pollutant regulated as part of the Air Plan review (id.).

Brockton Power also indicated that the Siting Board has established Technology Performance Standards ("TPS") (Exh. BP-1, at 2-1 to 2-4). The Company stated that proponents of new generating facilities must either: (1) establish that the emissions from the proposed

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[9] The Company indicated that USEPA evaluates Nonattainment NSR under 40 CFR 52.21, while MADEP does so under 310 CMR 7.00 Appendix A (Exh. BP-4, at 4-4).

[10] These thresholds are set forth in 310 CMR 7.02 (Exh. BP-4, at 5.1-10).

facility meet the TPS established by the Siting Board for such facilities; or (2) provide data comparing the proposed generating facility to alternative fossil-fuel generating technologies (Exh. BP-1, at 2-1). See G.L. C. 164, § 69J¼.

The Company further stated that Massachusetts would regulate CO_2 emissions under the Regional Greenhouse Gas Initiative ("RGGI") after January 1, 2009 (Exh. BP-1, at 5-4). The Company explained that RGGI compliance is achieved by each facility using CO_2 allowances issued by the state and offsets generated by CO_2 offsets projects to account for each ton of CO_2 emitted (id.). The Company further explained that the RGGI involves a "cap, auction and trade" system in which the state transfers allowances to facilities via an auction, and facilities transfer allowances among facility owners via a secondary market (id.). The Company also explained that regulations limit the extent (3.3% to 10%, depending on allowance prices) to which CO_2 offsets might serve to account for a facility's emissions (id.). The Company stated that the RGGI guidelines set an initial cap of 26,660,204 tons for CO_2 in Massachusetts, with progressive reductions over the following ten year period (id.) The Company indicated that it expected to participate in the CO_2 allowance and offset auction (Exh. BP-4, at 5.1-18).

2. Baseline Air Quality

The Company presented background air quality concentrations of criteria pollutants based on recent air quality data collected by MADEP at two monitoring stations in Boston and one each in Brockton and Milton, at distances from the facility ranging from 3 to 8 miles to the north of the proposed facility site (Exh. BP-1, at 4-13). The Company indicated data for each criteria pollutant was collected at one of the four identified MADEP monitoring stations and was based on three years of monitoring, from 2004-2006 (id.). The Company indicated that the background air quality values were below NAAQS for all criteria pollutants except ozone for the eight-hour averaging period; for this period, ozone exceeded the NAAQS by 14%, or by approximately 8 micrograms per cubic meter ("µg/m3") (id.).

3. Emissions Impacts and Compliance

The Company indicated that it proposes to construct a nominal 300 MW gas turbine dual fuel combined cycle generation facility, consisting of a gas turbine and an HRSG (Exh. EFSB-A-1(S)(1) at 2-4). The Company stated that the project would also be equipped with duct firing,

i.e., supplemental firing of the HRSG (id.). The Company indicated that, with duct firing in use, the proposed facility would have a potential power output of 350 MW (id.). The Company stated that it calculated potential emissions based on 8,760 hours per year of full-load operation (id. at 2-4, 2-17). Of these 8,760 hours, the Company indicated that it calculated potential emissions for 2,000 hours at full load on natural gas while duct firing, 5,320 hours on natural gas at full load without duct firing, and 1,440 hours on ULSD (720 hours with duct firing and 720 hours without duct firing) (id. at 2-1, 2-3).

The Company provided the Siting Board with a copy of its Air Plan Approval Application, submitted to MADEP, based on the above hours of operation at 100% load (Exh. EFSB-A-1(S)(1) at 2-17). The Company asserted that its proposed permitted operation would result in regional air quality benefits because it would maximize operating flexibility and allow for the displacement of older, less efficient and higher emitting plants (Exh. EFSB-A-1(S)(1) at 2-17). The Company stated that while proposed permitting for the plant would include 8,760 hours of operation, it anticipated that its proposed facility would run as a "mid-merit" plant with total operations of approximately 5,000 hours per year (approximately 57% of full operation) (id.).

Brockton Power stated that the proposed facility would control emissions to applicable LAER and BACT levels (Exh. EFSB-A-1(S)(1)). The Company indicated that, to do so, the proposed facility would use water injection and Selective Catalytic Reduction ("SCR") to minimize NOx emissions; combustion controls and an oxidation catalyst to minimize CO and VOC emissions; and "clean" fossil fuels (natural gas and ULSD) to control SO_2 and $PM_{10}/PM_{2.5}$ emissions (Exhs. EFSB-A-5; EFSB-A-1(S)(1) at 2-18). The Company stated that the proposed facility would be a major source for NOx and CO, based on the potential to emit > 50 tpy and 100 tpy, respectively), and a minor source for Hazardous Air Pollutants ("HAPS"), based on potential emissions of < 25 tpy for total HAPS and <10 tpy for each individual HAP) (Exh. EFSB-A-1(S)(1), at 2-18).

The Company indicated that its "potential to emit" calculations included 1,200 hours of a 60 MMBtu auxiliary boiler operation and 400 unit-hours of black-start generator operation (RR-COB-2, at 3). The Company explained that the auxiliary boiler would keep the HRSG warm when the plant was not operating (id. at 2). The Company stated that it anticipated that any

MADEP Air Plan approval for the project would include an enforceable permit condition precluding simultaneous operation of the auxiliary boiler and the gas turbine (id.).

In addition to other documentation, the applicant has provided: the maximum potential annual emissions for the proposed project assuming full year operation on natural gas and ULSD with duct firing on each fuel for some portion of the time, as indicated above; a BACT analysis, through which the air pollution control technologies were selected; and air pollutant dispersion modeling for NO_2, SO_2, PM_{10}, and CO. Brockton Power stated that it submitted an air modeling protocol to MADEP for the proposed project and that MADEP raised no concerns with respect to air modeling in its comments on the DEIR (Exh. EFSB-G-2(S)(1), at 6; Brockton Power Initial Brief at 47).

The Company conducted air quality modeling for the project using USEPA models SCREEN3 and AERMOD (Exh. EFSB-A-1(S)(1) at 6-1). The Company stated that, for its AERMOD modeling, it used five years (2001 to 2005) of National Weather Service meteorological data from Logan Airport, Boston, MA (RR-EFSB-2). The Company asserted that significant gaps in data prevented use of data for five years from an alternative location, Taunton Municipal Airport (RR-COB-7). The Company presented refined modeling results that indicate maximum cumulative predicted levels below NAAQS for all modeled pollutants and averaging periods (Exh. EFSB-A-1(S)(1) at 6-10 to 6-13).

The Company's emission rates and dispersion modeling results[11] appear in summary form in Tables 1 and 2, below:

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[11] The Siting Board notes that facility ozone impacts are not modeled, as ozone forms in the atmosphere from NOx and VOC emitted by multiple sources, and such formation has caused large sections of the east coast to be in nonattainment for ozone. Furthermore, the Company also noted that, as required by LAER, it proposed to purchase offsets amounting to 126% of project emissions for each pollutant, NOx and VOC, which should improve regional air quality (Company Initial Brief at 38, *citing* Exhs. EFSB-A-1(S)(1), at 8-4; EFSB-A-6).

Table 1. BROCKTON POWER Project Emissions, 250-Foot-High Stack

Pollutant	Load	Concentration Using Natural Gas	Concentration Using Oil (ULSD)	Annual Max Emissions	Control Method
NO_2/NO_X	60-100%	2.0 ppm with duct firing ("w/df") 2.0 ppm without duct firing ("w/o df")	6.0 ppm w/ duct firing 6.0 ppm w/o duct firing	107 tons/yr	Selective Catalytic Reduction & Water Injection (during ULSD firing)
CO	100% 75% 60%	2.0 ppm w/ df 2.0 ppm w/o df 3.0 ppm w/o df	4.0 ppm w/ df 5.0 ppm w/o df 20.0 ppm w/o df	109 tons/yr	Combustion Controls & Oxidation Catalyst
VOC	75-100% 100% 60%	1.0 ppm w/ df 2.5 ppm w/o df 1.0 ppm w/o df	6.0 ppm w/ df 6.0 ppm w/o df 9.0 ppm w/o df	31 tons/yr	Combustion Controls & Oxidation Catalyst
Particulate ($PM_{10/2.5}$)	100% 100% 75% 60%	.007 lb/MMBtu w/df .005 lb/MMBtu w/o df .006 lb/MMBtu w/o df .007 lb/MMBtu w/o df	.023 lb/MMBtu w/df .026 lb/MMBtu w/o df .035 lb/MMBtu w/o df .050 lb/MMBtu w/o df	85 tons/yr	Fuel Selection (Natural Gas & ULSD)
SO_2	Constant	0.0006 lb/MMBtu	0.0015 lb/MMBtu	7 tons/yr	Fuel Selection (Natural Gas & ULSD)

Source: Exh. EFSB-A-1(S)(1) at 2-18; Tr. 1, at 29; RR-COB-2

Table 2. BROCKTON POWER Project Air Impacts, 250-Foot-High Stack*

	SIL EVALUATION				NAAQS EVALUATION				
	Averaging Period	**Project Maximum Concentration**	**SIL**	**% SIL**	**Project Modeled Concentration (refined)**	**Monitored Background**	**Cumulative Impact**	**NAAQS**	**% NAAQS**
		µg/m³	**µg/m³**		**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	
NO_2	Annual	0.0325	1	3.3	0.0325	9.4	9.4	100	9.4
CO	1-Hour	7.78	2000	0.4	6.12	4,176	4,182	40,000	10.5
	8-Hour	4.43	500	0.9	3.65	2,668	2,672	10,000	26.7
Particulate (PM_{10})	24-Hour	3.43	5	68.6	1.67	39	40.7	150	27.1
	Annual	0.25	1	25.0	0.25	20.1	20.4	50	41.0
Particulate ($PM_{2.5}$)	24-Hour	3.43**	NFS	NFS	1.15	30.7	31.85	35	91.0
	Annual	0.25**	NFS	NFS	0.25	9.9	10.15	15	67.7
SO_2	3-Hour	0.229	25	0.9	0.21	84	84.2	1,300	6.5
	24-Hour	0.137	5	2.7	0.06	50	50	365	13.7
	Annual	0.00225	1	0.2	0.2	.00225	8	80	10.0

Source: (Exh. EFSB-A-1(S)(1) at 6-12).
NFS = No Federal Standard

* Annual average impacts are based on 7,320 hours firing natural gas and 1,440 hours firing ULSD for all pollutants.
** Based on Brockton Power's assumption that all PM_{10} is $PM_{2.5}$ (for SIL comparison).

Brockton Power stated that, assuming construction with a 250-foot-high stack, its proposed project would meet all established NAAQS and SILs, including NAAQS promulgated for $PM_{2.5}$ effective December 2006 (Exh. BP-4, at 5.1-6 to 5.1-7). The Company indicated that, while no SILs have been adopted for $PM_{2.5}$, USEPA has proposed a number of possible SILs for 24-hour and annual averaging periods (Tr. at 129). The Company stated that 24-hour $PM_{2.5}$

impacts of the proposed project would be below two of the three alternative levels being considered for the 24-hour SIL; the proposed project's annual $PM_{2.5}$ impact would be less than all of the alternative levels being considered for the annual SIL (Tr. at 128-130). The Company argued that, in any case, the NAAQS and not the SILs are the relevant standards for the Siting Board to consider because only the NAAQS are applicable air standards for protection of public health (Company Initial Brief at 48). The Company's witness testified that there were presently no large-scale power plants in the City of Brockton, nor any existing major stationary sources of air pollutants in close proximity to the proposed site (Exh. BP-PAV-1(Rebuttal); Tr. at 1,098).

With respect to the TPS, the Siting Board assesses the predicted emissions that would be produced by the proposed facility when it operates solely on its "primary fuel" (980 CMR § 12.03(1)). Brockton Power stated that natural gas would be the primary fuel for its proposed facility, and ULSD would be the secondary fuel, used for a maximum of 60 days per year (Exhs. EFSB-A-5; EFSB-A-14). Brockton Power presented data comparing the TPS to the projected facility emissions rates, based on the proposed facility operating on natural gas, at 100% load and at 59º F (Exh. BP-1, at 2-2). Data submitted by the Company included project emissions rates for criteria and non-criteria pollutants, with and without duct firing (id. at 2-3). Based on its submitted data for the proposed facility with natural gas as the primary fuel, the Company stated that predicted emissions for all evaluated pollutants were below TPS (id. at 2-2 to 2-4).

The Company conducted a Good Engineering Practice ("GEP") analysis for stack construction for the proposed facility (Exhs. BP-1, App. C; EFSB-A-1(S)(1) at 5-9). The Company reported that, based on this analysis, GEP stack height for the facility would be 325 feet (Exh. EFSB-A-1(S)(1) at 5-9). The Company used the USEPA AERMOD PRIME downwash algorithm to examine the potential air impacts of building a shorter, 250-foot tall stack (id.). According to the Company, its modeling shows that air quality impacts would be below SILs and NAAQS (Exh. EFSB-A-1(S)(1) at 6-1 to 6-13, App. C and App. E).[12]

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[12] The proposed facility would meet NAAQS and be below SILs with a 325-foot GEP-height stack or a stack of the proposed 250-foot height. The taller stack offers the potential for reduced local air impacts, but with an accompanying increase in cost and visibility at greater distances. Installation of the proposed (250') stack would likely cost $1,100,000, $220,000 less than the anticipated $1,320,000 installation cost for a GEP (325') stack (RR-EFSB-28, Tr. at 2620-2621).

Table 3. Comparison of Impacts, 250-Foot vs. 325-Foot Stack Height: NAAQS									
Pollutant	Averaging Period	NAAQS ($\mu g/m^3$)	Monitored Background ($\mu g/m^3$)	250' Stack Total Modeled Concentration ($\mu g/m^3$)	250' Stack Cumulative Impact ($\mu g/m^3$)	325' Stack Total Modeled Concentration ($\mu g/m^3$)	325' Stack Cumulative Impact ($\mu g/m^3$)	250' Stack % of NAAQS	325' Stack % of NAAQS
NO_2	Annual	100	9.4	0.0325	9.43	0.02	9.42	9.43%	9.42%
SO_2	3-Hour	1,300	84	0.21	84.21	0.14	84.14	6.48%	6.47%
	24-Hour	365	50	0.06	50.06	0.04	50.04	13.72%	13.71%
	Annual	80	10	0.00225	10.0	0.002	10.00	12.50%	12.50%
PM_{10}	24-Hour	150	42	1.67	43.67	1.55	43.55	29.11%	29.03%
	Annual	50	20.1	0.25	20.35	0.24	20.34	40.70%	40.68%
$PM_{2.5}$	24-Hour	35	29.6	1.15	30.75	1.00	30.60	87.86%	87.43%
	Annual	15	10.12	0.25	10.37	0.24	10.36	69.13%	69.07%
CO	1-Hour	40,000	4,176	6.12	4,182	4.12	4,180	10.46%	10.45%
	8-Hour	10,000	2,668	3.65	2,672	2.00	2,670	26.72%	26.70%

Source: Exh. EFSB-G-2(S)(1) at 4.1-4.

Table 4. Comparison of Impacts, 250-Foot vs. 325-Foot Stack Height: SILs							
Pollutant	Averaging Period	NAAQS ($\mu g/m^3$)	Significant Impact Level ($\mu g/m^3$)	250' Stack AERMOD PRIME Maximum Concentration ($\mu g/m^3$)	250' Stack % of SIL	325' Stack AERMOD PRIME Maximum Concentration ($\mu g/m^3$)	325' Stack % of SIL
NO_2	Annual	100	1	0.0325	3.3%	0.02	2.0%
SO_2	3-Hour	1,300	25	0.229	0.9%	0.15	0.6%
	24-Hour	365	5	0.137	2.7%	0.07	1.4%
	Annual	80	1	0.00225	0.2%	0.002	0.2%
PM_{10}	24-Hour	150	5	3.43	68.6%	1.90	38.0%
	Annual	50	1	0.25	25.0%	0.24	24.0%
CO	1-Hour	40,000	2,000	7.78	0.4%	6.41	0.3%
	8-Hour	10,000	500	4.43	0.9%	2.86	0.6%

Source: Exh. EFSB-G-2(S)(1) at 4.1-3.

4. Offsets and Allowances

The Company stated that, pursuant to 40 CFR 72, its proposed project would be designated a Phase II Acid Rain "New Affected Unit" on January 1, 2009, or 90 days after

commencement of commercial activities, whichever comes later, but not after the date the facility declares itself commercial (Exh. EFSB-A-1, at 3-6). The Company indicated that, as such, it would be required by USEPA to hold an allowance for each ton of SO_2 emitted, and that it would secure the required allowances through the Chicago Board of Trade (id.). The Company stated that it would comply with NOx monitoring, reporting, recordkeeping, and allowance trading requirements under the Clean Air Interstate Rule ("CAIR") at 310 CMR 7.32, scheduled for implementation in January 2009 (id. at 8-15). The Company indicated that CAIR would supersede the NOx Allowance Trading Program at 310 CMR 7.28 (id.).

The Company indicated that the Siting Board has previously required that an applicant offset 1% of the CO_2 emissions from a proposed project (Exh. BP-1, at 4-17). The Company stated that, if required in accordance with past Siting Board practice, it would make an appropriate monetary contribution to cost-effective CO_2 mitigation programs (id.). The Company also indicated, however, that the Company expected to participate in RGGI after its implementation (id. at 5-4). The Company indicated that RGGI implementation was scheduled to begin in Massachusetts as of January 1, 2009 (id. at 5-4; Exh. BP-4, at 5.1-18 to 5.1-19). The Company indicated that under RGGI, the proposed facility would achieve compliance by using CO_2 allowances (issued by the state) and offsets (generated by CO_2 offset projects) to account for each ton of CO_2 emitted (Exh. BP-4, at 5.1-18 to 5.1-19). The Company explained that under the "cap, auction, and trade" RGGI system, transfer of state CO_2 allowances to a facility occurs via an auction, with allowances transferred among facilities via a secondary market (id.).[13]

5. Intervenors

The City of Brockton argued that USEPA prefers on-site meteorological data, and that, as such, the Company should have used Taunton data rather than data from Logan airport for its air modeling (City of Brockton Initial Brief at 16-17; Exh. COB-A-9(S)(1)). With respect to NAAQS, the City of Brockton stated that for most contaminants and averaging periods, using Logan data generated higher concentration (City of Brockton Initial Brief at 18). The City of Brockton noted several exceptions to this pattern: using Taunton in lieu of Logan data generated

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[13] The Company indicated that RGGI allowed the use of offsets to account for 3.3% to 10% of a facility's CO_2 emissions, depending on allowance prices (id.).

45% higher facility contributions of 24-hour $PM_{2.5}$; annual facility contributions were also higher for NO_2 (0.067 µg/m^3 vs. 0.0325 µg/m^3) and SO_2 (0.005 µg/m^3 vs. 0.00225 µg/m^3) with use of Taunton data (id.; RR-COB-7(1) at Table RR-COB-7(b)).

With respect to $PM_{2.5}$, the City of Brockton asserted that the Siting Board should establish a quantitative value to guide regulatory decisions (COB Initial Brief at 35). The City of Brockton held that this would make possible a rebuttable presumption regarding the minimization of environmental impacts from $PM_{2.5}$ consistent with minimization of costs (id.). The City of Brockton further opined that absent specific and compelling evidence of major visual impacts, stacks should always be set at the full GEP height to minimize ground level pollution impacts (id.). The City of Brockton argued for giving much greater weight to air quality impacts than to visual or other purely aesthetic impacts (id.).

The City of Brockton also supported the position of ACE's witness, who testified to the need for a health study to evaluate impacts of the project on sensitive subpopulations in Brockton (City of Brockton Initial Brief at 32, citing Exh. ACE-11; Tr. 9, at 1209 to 1212). Further, ACE argued that, to be complete, air modeling for the proposed facility required information with respect to confidence intervals about the statistical values used in decision making (ACE Initial Brief at 25).

Limited participants Senator and Representative Creedon jointly argued that emissions of $PM_{2.5}$ and other pollutants from the facility would have a direct effect on EJ populations in Brockton, and specifically on children attending five schools in EJ areas within 1.5 miles of the proposed site (Creedon Brief at 3 to 5).

6. Analysis

The Siting Board notes that evidence in this case includes documentation consistent with that submitted in other power plant cases before the Siting Board, including a copy of the Company's Air Plan Approval application incorporating the BACT/LAER analysis and air dispersion modeling for the proposed facility. The record shows that the Company would comply with requirements for holding an allowance for each ton of SO_2 emitted by the proposed facility, and with NOx monitoring, reporting, recordkeeping, and allowance trading requirements under CAIR. The record also shows that the Company would be subject to implementation of RGGI rules and regulations regarding CO_2 allowances and offsets beginning January 1, 2009.

The record shows that natural gas is the expected primary fuel of the proposed facility and that ULSD would be used at the proposed facility when oil is used as a substitute for natural gas, thereby limiting emissions of SO_2 and particulate matter; the proposed facility would meet TPS for criteria and non-criteria pollutants as set forth in 980 CMR § 12.00. The record shows that combustion control and an oxidation catalyst would control emissions of VOCs and CO, and that NOx would be controlled by temperature regulation with water injection and SCR using ammonia. Further, the record indicates that emissions from the proposed facility would not cause local or regional air quality to worsen significantly, as compared to ambient conditions and established air quality standards. The Company would provide offsets amounting to 126% of facility emissions of ozone precursors, NOx and VOC. For other pollutants, the Company's modeling analyses show ambient facility impacts would not cause an exceedance of the NAAQS. The MADEP Air Plan Approval process will further evaluate compliance with air regulations.

The Siting Board notes that concerns have been raised regarding the potential local impacts of the proposed facility with respect to air quality. Nonetheless, the record shows that with a 325-foot GEP height stack or with the proposed 250-foot stack height modeled facility, emission concentrations would be below SILs, and combined background and facility emission concentrations would be below NAAQS for the proposed facility.[14] In its review, the Siting Board both ensures that proposed facility emission concentrations would meet regulated standards and considers visual impacts of the proposed facility. In the instant case, given impacts within SILs and NAAQS, the proposed 250 foot stack height would minimize air quality impacts consistent with the minimization of visual impacts. As in past reviews, this provides a basis for the Siting Board to accept the lower of the two considered stacks for the proposed facility (see Section III.E, Visual Impacts, below). It is, however, noteworthy that the Siting Board in one past case approved a sub-GEP stack height, but later approved a project change for a taller stack that had been required as part of local permitting. IDC Bellingham, LLC – Project Change, 12 DOMSB 372, at 389-390 (2001). The Siting Board determines, therefore, that it would accept as part of any approval of the proposed facility, without further review by the

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[14] Ozone, formed regionally from precursor pollutant emitted by multiple sources, is unaffected by stack height. See Footnote 8 above.

Siting Board, a stack of any height from 250 feet to 325 feet as the Company may elect to construct and may be approved by any applicable local and MADEP/USEPA permitting.

The record shows that the proposed facility's SO_x, NOx, and CO_2 emissions would be regulated in a cost-effective manner under a USEPA program in the first instance, and by state CAIR and RGGI programs with respect to NOx and CO_2, respectively. In previous cases, the Siting Board has required mitigation of CO_2 emissions. Because the recently promulgated Massachusetts RGGI regulations would apply to the proposed Brockton facility, however, the mitigation of emissions that would occur under the RGGI regulations for generation sources would fulfill the intent of the Siting Board's offset requirements. Since the Massachusetts RGGI regulations have now been implemented, the Siting Board is not requiring, here, a back-up plan for CO_2 offsets.

The record shows that the Company has conservatively included all PM_{10} in its $PM_{2.5}$ analysis. As a further measure of conservatism, the Siting Board directs that of the hours that MADEP may allow the proposed project by permit to operate on oil, the Company will reserve two weeks – i.e., 336 hours – of that time for the month of December. To illustrate: pursuant to Brockton Power's Air Plan Approval Application, the Company has requested permission to operate for 1,440 hours per year using ULSD. If this request is granted, then from January 1 through November 30 of each year, the project may operate on ULSD for no more than 1104 hours; in December of each year, the project may operate up to 336 hours on ULSD.

The Siting Board notes that MADEP, as part of its Air Plan Approval review, will assess the Company's air modeling procedures. The Siting Board notes the MADEP review incorporates consideration of feasibility, cost, and environmental protection, and thus is generally consistent with the Siting Board's mandate to minimize both environmental impacts and the cost of mitigating or controlling such impacts.

The record shows that the Company has submitted information with respect to air impacts for full-time operation of its proposed facility, but anticipates that the proposed facility would run as a mid-merit plant, approximately 5000 hours per year.

While further refinements may be required by the MADEP, the proposed project represents a reasonable overall balance of feasibility, cost, and environmental protection with respect to its potential impacts on air quality. Accordingly, based on the proposed design, with

use of a stack between 250 and 325 feet in height, the Siting Board finds that the air quality impacts of the proposed facility would be minimized.

C. Water Resources and Wetland Impacts

In this section, the Siting Board addresses the water-related impacts of the proposed facility including: the water supply requirements and related impacts on water supply systems and surface water and ground water resources; the water-related discharges from the facility, including wastewater and stormwater discharges, and their related impacts; and wetlands impacts.

1. Water and Wastewater Issues

a. Water Supply Requirements: Volumes, Uses, Sources, Cost

The Company stated that the proposed facility would require water supply for potable needs, the combustion turbine inlet air evaporative cooling system, operation of the HRSG, and cooling tower "makeup" (Exh. BP-4, at 5.8-1 to 5.8-3). The Company indicated that cooling tower makeup would require the largest water volumes, and that its preferred source of water supply for this use was the Brockton AWRF (RR-EFSB-18; Tr. at 634). The Company stated that, with the exception of potable needs, it could also use AWRF water with additional treatment for other major water requirements, but that City of Brockton water supply was preferred (RR-EFSB-18).[15] Table 5 below, "Company's Anticipated Water Requirements and Proposed Source of Supply," indicates anticipated volumes and source for each water supply requirement.

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[15] The Company stated that plans for the proposed facility also included (1) a one-million gallon cooling water storage tank that would ensure a water supply if the AWRF were temporarily out of service, and (2) a 265,000 gallon equalization tank that would enable discharge of wastewater at off-peak periods (Exhs. EFSB-G-2(S)(1) at 1-9; BP-1, at 1-26).

Table 5. Company's Anticipated Water Requirements and Proposed Source of Supply*		
Purpose	Volume	Source
Cooling tower makeup	At peak** (using AWRF effluent): ~1.9 MGD evaporated (2.3 MGD withdrawn, 0.4 MGD returned to AWRF) on a hot summer day given full-load operation with 12-hours of duct firing On average (using AWRF effluent): ~1.6 MGD evaporated (1.9 MGD withdrawn, 0.3 MGD returned to AWRF) on average annual basis, full-load operation, 12-hrs of duct firing, ambient temperature 59 degrees F.	Preferred: AWRF effluent Alternative: City of Brockton water
Heat Recovery Steam Generator (HRSG)	~75,000 gpd for HRSG makeup water ~229,000 gpd when ULSD firing -- for turbine water injection plus HRSG makeup	Preferred: City of Brockton water Alternative: treated effluent from AWRF with additional pretreatment
Combustion turbine inlet air evaporative cooling system (assumes cooling 12 hrs/day) -- maintains combustion turbine power output during hot weather operation	~27,000 gpd	Preferred: City of Brockton water Alternative: treated effluent from AWRF with additional pretreatment

* Source: Exhs. BP-4, at 5.8-1 to 5.8-3; EFSB-G-2(S)(1) at 5-3; RR-EFSB-18.

**(1) Brockton water has a lower dissolved solids level than does treated water from the AWRF. This allows for some conservation in its use for cooling tower makeup relative to use of AWRF supply (RR-EFSB-18). Makeup requirements using City of Brockton water would be approximately 1.75 MGD at peak on a hot summer day (id.). (2) At the Company's anticipated 70% capacity factor, cooling tower makeup would require approximately 1.3 MGD with AWRF water, and approximately 1.2 MGD with City of Brockton water (id.).

With respect to the adequacy of City of Brockton water as a backup source for cooling, the Company stated that the City of Brockton (1) is authorized for Water Management Act withdrawals totaling 11.93 million gallons per day ("MGD"), and, in addition, (2) has contracted for supplemental water supply from the Inima USA Desalination Plant ("Inima" or "Aquaria"),

pending completion of the desalination plant in summer 2008 (Exhs. EFSB-G-2(S)(1) at 3-2; ACE-8; Tr. at 958, 979, 981).[16]

The Company stated that water from preferred sources for the proposed facility, including AWRF cooling water, would require approximately $750,000 in capital costs (RR-EFSB-1). The Company further stated that operating costs would run approximately $687,000 per year using AWRF effluent for cooling water and approximately $3.6 million annually using City of Brockton water (id.). The Company also indicated that its planned cooling water storage tank would add $600,000 to capital costs for the proposed facility; the wastewater equalization tank would increase capital costs by $275,000 (Exhs. EFSB-G-2(S)(1) at 1-9; BP-1, at 1-26).

b. Air Cooled Condenser Alternative

The Company stated that it considered an air-cooled condenser (as opposed to wet-mechanical cooling) as an approach to reducing water supply requirements for the proposed facility (Exhs. BP-4, at 4-8 to 4-10; EFSB-A-13). The Company indicated, however, that air-cooling would reduce plant power output, especially in hot weather, and would, in addition, increase the capital costs and physical dimensions of the proposed project (Exh. BP-4, at 4-9). The Company estimated that with an air-cooled condenser, the net plant power output penalty would be approximately 10 MW (id.; Exh. EFSB-A-13). According to the Company, because the loss would most likely occur under high ambient temperature conditions, and therefore high demand for electric power, it would coincide with the hours of peak pricing of electricity (Exh. BP-4, at 4-9). The Company asserted that lower-cost, older, less efficient plants would be run to compensate for the proposed facility's lost capacity (id.). The Company estimated that construction of the proposed facility with an air-cooled condenser would increase capital costs by $17,500,000 (id. at 10). With respect to size, the Company estimated that an air-cooled unit

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[16] The Company stated that the City of Brockton, under its contract with Inima, would have the right to 1.9 MGD in the first year of the 20-year agreement (Exh. ACE-8). Under the contract, the City must pay a fixed annual charge per 0.1 MGD of the City's firm commitment, whether or not taken (id.). The City's firm annual commitment increases annually from 1.9 MGD in the first year to 3.81 MGD in the tenth (id.). From Year 11 through the end of Year 20, the City has the right to purchase 4.07 MGD (id.). The City is entitled to request an additional 2.5 MGD beyond the firm commitment in each year of the contract term (id.).

would be 25,000 square feet larger and 56 feet higher than the proposed water cooling tower unit (id.).

c. Impacts on Salisbury Plain River Flows and Uses

The Company presented its analysis of changes to minimum flow conditions and downstream water quality in the Salisbury Plain River, and to water withdrawals downstream of the proposed project, resulting from use of the Company's preferred water supply (Exh. BP-4, at 5.8-2 to 5.8-9). On the basis of its analysis, the Company asserted that facility water supply needs could be met without adverse effects on downstream water resources or river flows (Company Initial Brief at 61). Of significance to meeting flow needs of the downstream uses, the Company noted that, at the AWRF, flow in the Salisbury Plain River is augmented above natural conditions by the treated discharge from the AWRF (Exhs. EFSB-G-2(S)(1) at 3-2; Tr. at 965).[17]

i. Changes to Flow

(A) Reduction to Mean Annual Flow

The Company stated that the long-term naturally occurring mean annual flow of the Salisbury Plain River immediately upstream of the Brockton AWRF site is approximately 20.6 MGD (Exh. EFSB-W-9). The Company further stated that the average annual wastewater discharge from the Brockton AWRF to the Salisbury Plain River is currently 19.4 MGD (id.). The Company indicated that the consumptive use of AWRF water by the proposed project would be 1.6 MGD on an average annual basis (1.9 MGD withdrawn, 1.6 MGD evaporated, 0.3 MGD returned); therefore, the proposed project would reduce the total average annual flow immediately downstream of the AWRF by an average of 1.6 MGD, from 40.0 MGD to 38.4 MGD (id.).

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[17] The Company explained that of the City's authorized withdrawals of 11.93 MGD for its water supply system, 11.11 MGD are authorized withdrawals from sources in the South Coastal River Basin; when discharged via the AWRF these withdrawals from the South Coastal River Basin represent water volumes imported into the Taunton River Basin that augment river flows above natural conditions (Exhs. EFSB-G-2(S)(1) at 3-2; ACE-3; Tr. at 965).

(B) Reduction to Base Flow

The Company indicated that the naturally occurring 7-day low flow with 10-year return frequency ("7Q10") value for the Salisbury Plain River immediately upstream of the Brockton AWRF is approximately 0.4 MGD (Exh. BP-1, at 4-40). The Company stated that, currently, if the minimum AWRF discharge were to occur coincident with the naturally occurring 7Q10, the base flow in the Salisbury Plain River at the AWRF would be 0.4 MGD plus 12.4 MGD,[18] or approximately 12.8 MGD (id. at 4-44). The Company stated that the project was expected to consume recycled water from the Brockton AWRF at the rate of 1.9 MGD on a hot summer day (2.3 MGD withdrawn, 1.9 MGD evaporated, 0.4 MGD returned to the AWRF) (Exh. EFSB-G-2(S)(1), at 5-3). According to the Company, the project would therefore reduce base flow in the Salisbury Plain River at the AWRF from 12.8 MGD to 10.9 MGD with peak consumptive cooling water use.

ii. Impacts to Uses

(A) Impacts on Downstream Wastewater Treatment

Brockton Power asserted that with its proposed cooling water use all principal downstream water resource uses will be protected and preserved (Company Initial Brief at 67). The Company stated the proposed use would not affect the ability of downstream wastewater treatment plants to comply with effluent guidelines (Exh. BP-1, 4-45 to 4-48). The Company noted that at the closest downstream wastewater discharge plant the 7Q10 is 17.7 MGD, and the proposed removal of 1.9 MGD for the project thus would represent 10.7% of that amount (Exh. COB-WR-1).

(B) Impacts on Aquatic and Recreational Uses

With respect to aquatic uses, the Company stated that to support resident fisheries, Taunton River flows of 0.32 MGD per square mile of tributary area should be maintained (Exh. BP-1, at 4-45 to 4-48). The Company stated that this flow requirement would be 5.4 MGD

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[18] This is the minimum monthly average discharge from the AWRF between 2002 and 2005 minus proposed project consumption of 1.9 MGD during peak use conditions (Exh. BP-1, at 4-44).

below the AWRF, and that with the proposed project the minimum flow of 10.9 MGD at this location would meet this requirement (id.; Exhs. EFSB-W-9; COB-WR-1). The Company also stated that during low flow conditions the project would not compromise the flow interests of the Wampanoag Canoe Passage (Exhs. BP-1, at 4-45 to 4-48; COB-WR-1; Brockton Power Initial Brief at 64). The Company indicated that use for the Wampanoag Canoe Passage would entail maintaining 2.13 to 12.9 MGD below the AWRF, based on a criterion of 0.13 to 0.77 MGD per square mile of tributary area, in order to maintain downstream river depth and velocity (Exhs. BP-1, at 4-45 to 4-48; COB-WR-1; Brockton Power Initial Brief at 64).

(C) Impacts on Town of West Bridgewater Water Supply

The Company also addressed effects of its water use on the Town of West Bridgewater water supply. With respect to the Town of West Bridgewater's public water supply, the Company argued that the proposed project's use of AWRF effluent would not negatively affect the wells in West Bridgewater that are the source of the Town's water (Exhs. TWB-W-3; TWB-W-3(S)). In support, the Company asserted the minimum flow of 10.9 MGD in the Salisbury Plain River below the AWRF would be more than sufficient to meet the Town's authorized withdrawal of 1.53 MGD from wells near the Salisbury Plain River (Exhs. BP-1, at 4-40; TWB-W-3(S)). On the basis of its analysis and comparison, the Company concluded that, even assuming Town wells were supplied solely from infiltration of river water, the proposed facility would not have an adverse impact on the public water supply of the Town of West Bridgewater (Exh. TWB-W-3(S)).

2. Wetlands

The Company submitted a summary of wetland resource area impacts, including proposed stormwater management and wetland mitigation, mitigation timing, and cost information (Exh. EFSB G-2(S)(1) at 5-9). According to updated information provided by the Company, the cost of proposed stormwater management and wetland mitigation measures would likely range from $250,000 to $325,000 (id.). Table 6 below, "Summary of Impacts to Wetland Resource Areas," catalogues the anticipated wetland impacts associated with the proposed facility as altered.

The Company indicated that it altered its original facility design with respect to the proposed transmission line to reduce wetlands impacts (Tr. at 640-642). The Company indicated, in addition, that the proposed transmission line, designed to run close to the western edge of Oak Hill Way, abutting undeveloped land, was moved in response to the Certificate of the Secretary of Energy and Environmental Affairs on the Draft Environmental Impact Report ("DEIR") and comments by the Brockton Conservation Commission (id., Exh. EFSB-G-2(S)(1)).[19] The Company stated that the revised route would reduce impacts to BVW by 27,200 square feet (Exh. EFSB-G-2(S)(1)).[20]

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[19] The Certificate of the Secretary of Energy and the Environment on the DEIR directed the Company to evaluate alternative routes that would minimize wetlands impacts; the Brockton Conservation Commission commented that tree cutting associated with the original alignment would impact approximately 29,000 square feet of Bordering Vegetative Wetlands ("BVW") (Exh. EFSB-G-2(S)(1); Tr. at 640-642).

[20] The Company adopted the revised route, but noted that it would need to acquire easements from abutters Nutramax and UPS (Tr. at 2588-2589; see Section VI, below). There is no indication in the record of the extent of these easements. The Brockton Conservation Commission has stated it approves the relocated alignment presented in the FEIR (Tr. at 872).

Table 6. Summary of Impacts to Wetland Resource Areas*

Wetland Resource Area	Wetland Resource Area Impacts	Comments
Bordering Vegetated Wetlands (BVW)	1,800 s.f. (transmission line work) 23 s.f. (water line work)	BVW #4 to be altered during construction of proposed transmission line interconnection, but transmission line support poles located outside BVW. Possible alternation to BVW #2, depending on method used to install water line. (Jacking or directional drill installation will avoid impacts.)
Riverfront Area (Edson Brook)	1,100 s.f. (transmission line work)	Likely impacts from proposed transmission line construction to portion of Edson Brook Riverfront Area overlying BVW #3 and #4. Restoration to scrub-shrub habitat. No activities in Salisbury Plain Riverfront Area.
Bordering Land Subject to Flooding (BLSF)	30 s.f. (temporary/transmission line work) 4 c.f. (permanent fill for 1 transmission line pole)	To compensate for 364 cubic feet of BLSF possibly filled by others over last decade, existing contours and floodplain elevations will be restored to 1998 conditions (per direction of Brockton Conservation Commission).
-Inland Bank -Land Under Water Bodies and Waterways (LUW) -Potential Vernal Pool at Edson Brook	0 0 0	No activities proposed on Bank of Edson Brook or Salisbury Plain River. Waterways to be protected during construction with silt fence and row of hay bales. Avoided by shifting transmission line work to west side of Edson Brook.
Isolated Vegetated Wetland (IVW)	9,000 s.f. (transmission line work)	Tree clearing for transmission line interconnection between proposed substation and National Grid right-of-way. Conversion from forested to scrub-shrub wetland.

*Source: RR-EFSB-13(1)

3. Intervenor Concerns

ACE argued that the Company did not adequately analyze the downstream impacts on the Salisbury Plain River of using treated effluent from the Brockton AWRF for proposed facility water supply (ACE Initial Brief at 34). ACE emphasized that on an average annual basis, Brockton Power's use of AWRF effluent would reduce the AWRF discharge to the Salisbury Plain River by 8 %; on an average monthly basis, the reduction might be as much as 13.4 % (Exh. BP-4, at 3-2, 5.8-1; ACE Initial Brief at 10). ACE further noted that the power plant would have a peak demand for AWRF effluent during summer months, when the discharge from

the AWRF would be low and the Salisbury Plain River would be experiencing low flows (ACE Initial Brief at 10-11; Exh. BP-4, at 3-2, 5.8-1).

ACE also noted that proposed facility operation might reduce Salisbury Plain River flow by approximately 15% and asserted that Brockton Power had not studied the Salisbury Plain River to determine the effect of such flow reduction on the river at extreme natural low flow (Exhs. BP-4, at 5.8-2; BP-1, 4-45; ACE Initial Brief at 11). ACE cited testimony from a witness for intervenor Taunton River Watershed Association ("TRWA") to support its position that reductions in flow in the Salisbury Plain River might impact stream ecology.[21] ACE stated, in addition, that the Company's use of AWRF wastewater would require that two-thirds of the Brockton City Council vote in favor of sale of AWRF discharge to Brockton Power (Tr. 8, at 1044). According to ACE, Brockton Power to date has no agreement with the City of Brockton to use AWRF effluent (id.).

In addition to opposing Brockton Power's use of its preferred water source (i.e., wastewater from the Brockton AWRF), ACE argued against Brockton Power's use of its identified alternative water source, City of Brockton water supply (ACE Initial Brief at 12). According to ACE, Brockton Power based its arguments for use of City of Brockton potable water on total allowed water withdrawals for Brockton of 11.94 MGD under two Water Management Act Permits, the first for 0.83 MGD from the Taunton River Watershed, and the second for 11.11 MGD from Silver Lake in the South Coastal Watershed (Exh. ACE-3). ACE stated that the City of Brockton was operating its potable water system under a water supply declaration of emergency and related administration consent orders that required Brockton not to exceed an average water supply withdrawal of 11.3 MGD (110% of "safe yield") (Exhs. ACE-4, ACE-5).

The Town of West Bridgewater asserted that the Company did not completely and accurately describe the potential impacts of the proposed facility on the Zone II aquifer providing the Town's drinking water (TWB Initial Brief at 5). In support of its position, the Town noted

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[21] TRWA's witness submitted information with respect to the possible impact of reductions in Salisbury Plain River flow on the tessellated darter (Exhs. TRWA-KC-2, TRWA-KC-3).

that the Company's acknowledgement (1) that its use of AWRF effluent would result in a 15 % reduction of AWRF minimum flow during low flow conditions in the Salisbury Plain River, and (2) that the Zone II supplying the Town of West Bridgewater's wells would need to expand laterally within the aquifer to make up the lost river recharge through an expanded area of precipitation recharge (Exhs. TWB-W-3(S) at 7; TWB-W-3(S)(2), EFSB-W-9, at 2; Tr. at 2775 to 2776). The Town also argued that the Company based its subsequent estimate of expansion of the bounds of the aquifer for recharge on out-moded (20-year-old) assumptions, information, and modeling (Tr. at 2775 to 2776).

The City of Brockton and Town of West Bridgewater maintained that the Company's use of treated wastewater from the Brockton AWRF would qualify as an impact to resources subject to protection under the Wetlands Protection Act, i.e., Land Under a Water Body and Waterways (City of Brockton Initial Brief at 10-12, 20-22; Town of West Bridgewater Initial Brief at 7-11; RR-EFSB-21; RR-EFSB-21(1); Tr. at 2083).[22] The intervenors opined that had the Company described its use of AWRF wastewater correctly (as an alteration of a wetland resource area), the proposed facility would require an Order of Conditions under the Wetlands Protection Act (G.L. c. 131, § 40) and MADEP's wetland regulations at 310 CMR 10.00 (City Initial Brief at 20-22; Town Initial Brief at 7-11). The City noted, furthermore, that the Company's latest calculation of likely impacts to wetlands assumed the Company's ability to obtain transmission easements from other nearby property owners (UPS and Nutramax) (Tr. at 2119-2121; City of Brockton Initial Brief at 11). ACE also asserted that construction for the proposed facility might directly or indirectly impact wetlands due to sediment deposited on public roads, construction lay-down areas, and worker parking areas (ACE Initial Brief at 36).

4. Analysis

The proposed facility would be water-cooled, using recycled minicipal wastewater, and if necessary, using backup water from City of Brockton potable supply. Power plant cases which included the use of recycled municipal wastewater as the primary facility water supply have been

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[22] The City contended that Bank Under a Water Body and Waterways would also be affected (City of Brockton Initial Brief at 20-22). Both intervenors argued that the impact was due to an anticipated reduction in flow in the Salisbury Plain River (City of Brockton Initial Brief at 10-12; Town Initial Brief at 7-11).

reviewed for facilities proposed in Milford, Charlton, and Brockton. Enron Power Enterprise Corporation 23 DOMSC 1, at 142-179 (1991), ("Enron Decision"); U.S. Gen Decision at 129-135; Brockton Power, LLC 10 DOMSB 157, at 193-205 (2000), ("Brockton Decision").[23]

The Milford plant was a baseload plant located near the headwaters of the Charles River. Its water uptake was identified as 1.35 cubic feet per second ("cfs") (0.87 MGD) at a point where the defined "low flow condition" of the Charles River was 3 cfs (1.9 MGD). Enron Decision at 142. Considering the reduction in stream flow volume an issue in the Milford case, the Siting Board reviewed modeling analysis of river flow, water quality, and aquatic impacts and imposed restrictions on plant operation during low water flow. Enron Decision at 176-179. The Charlton plant and the previously-permitted Brockton plant were to use up to 2.8 MGD and 1.65 MGD, respectively, diverted from wastewater plants or surface intakes, each resulting in up to 10% river flow reduction under low flow conditions. U.S. Gen Decision at 129; Brockton Decision at 194. The Siting Board did not impose water usage restrictions in either case.

The Siting Board has also previously reviewed power plant proposals with cooling technologies other than wet mechanical cooling, as is proposed in the present case (Exh. EFSB-A-13). Air cooling, for example, is in use at a number of operating combined-cycle plants approved by the Siting Board. ANP Bellingham, 7 DOMSB 39 (1998); Sithe Fore River, 10 DOMSB 1 (2000); ANP Blackstone, 8 DOMSB 1 (1999). In the United States, air cooling is most frequently used in dry regions such as the west and southwest, and elsewhere when water supply is of concern (Exh. EFSB-A-13). Though it is a reliable and proven technology, air cooling, may increase the capital costs and physical dimensions of a power plant and reduce its output or efficiency (id.).

The record shows that discharges from the AWRF augment flow in the Salisbury Plain River above natural conditions, and would continue to do so, though at a reduced rate, even with construction and operation of the proposed facility. The record shows, furthermore, that there is already a range between high and low flows in the Salisbury Plain River due to natural flow plus

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[23] A Billerica facility recently reviewed by the Siting Board also proposes future operation with wastewater. See Montgomery Energy Billerica Power Partners, LLC, EFSB 07-2 (2009).

discharges from the wastewater treatment plant that largely overlaps the range that would occur with operation of the proposed facility. The record also shows that the Company would use its proposed cooling water storage tank and wastewater equalization tank to minimize impacts on the Salisbury Plain River of proposed facility withdrawals and discharges.

The record further shows that significant additional water volumes from the Inima desalination plant to be supplied to the City of Brockton under contract beginning in 2008 would supplement flows to the Salisbury Plain River as well. The record shows, in addition, positive effects on flows to the Salisbury Plain River as a result of repairs made to the existing City of Brockton water supply system. The record shows that, as a consequence of such repairs to the City of Brockton water supply system, the operation of the Inima desalination plant, and the use of the planned cooling water storage and wastewater equalization tanks, operation of the proposed facility would not have adverse impacts on Salisbury Plain River flows and uses, including downstream wastewater treatment, aquatic and recreation uses, and Town of West Bridgewater water supply.

The Siting Board notes that the record shows that the Company has indicated its strong preference for use of water from the Brockton AWRF for the majority of the water requirements of its proposed facility. The Siting Board concludes, consistent with the Company's preference, that proposed use of recycled water for the proposed facility would be preferable to using City of Brockton potable water – the identified backup water supply source to operate the proposed facility. However, we also note the uncertainty, based on the latest information in the record, around the availability of Brockton AWRF water supply.

The Siting Board therefore directs the Company to work with the City of Brockton regarding use of Brockton AWRF water, and to provide a report to the Siting Board with respect to the outcome of such efforts. Furthermore, if the Company intends to use potable water for the majority of the water requirements of its proposed facility, the Siting Board directs that prior to such use the proponent provide a project change filing to the Siting Board, together with a detailed analysis focused on those issues that are germane to the use of potable water, including opportunities for water conservation. Subject to these conditions and any further ruling or conditions that the Siting Board may issue as part of its review of a project change review, the Siting Board concludes that water resources impacts of the proposed facilities, including impacts related to water use and wastewater, would be minimized.

The record shows that the Company has modified its proposed facility, in particular, the transmission line, to reduce wetland resource area impacts. Based on the record, the Siting Board concludes that with the Company's proposed changes, temporary and permanent construction impacts of the proposed facilities on wetland resource areas would be minimized.

Accordingly, the Siting Board finds that, with the implementation of the above conditions with respect to water supply, the water resources and wetlands impacts of the proposed facility would be minimized.

D. Solid Waste

1. Company Position and Description

Brockton Power estimated that during construction approximately 100 cubic yards of solid waste would be produced (Exh. EFSB-SW-2). The Company stated that its Engineering Procurement and Construction ("EPC") contractor would be responsible for the proper handling, collection, removal, transportation and disposal of any solid waste (including hazardous solid waste) that would be produced during the construction of the proposed facility (id.). The Company further pledged that it and its EPC contractor would take an active role with regard to recycling and reprocessing of waste (id.). To that end, the Company stated that it planned to segregate recyclable from non-recyclable materials and that non-recyclable materials would be disposed of in an approved solid waste facility (id.).

Brockton Power estimated that the operation of its proposed facility would result in the generation of approximately 15 tons per year ("TPY") of solid waste (Exh. EFSB-SW-1). The Company stated that it would place appropriate recycling containers on the site for paper, packaging materials, newspapers and corrugated cardboard (id.). The Company estimated that approximately one-half ton of cardboard and small office paper would be recycled each year (id.). In addition, the Company estimated that less than one ton of waste oil would be generated per year from maintenance and operation of the proposed facility (id.).

The Company stated that it would work to minimize the use and production of toxics at the proposed project (Exh. EFSB-SW-3). To this end the Company would use trailer-mounted demineralizers which would be hauled off-site for regeneration, thereby eliminating the need for on-site storage and handling of regeneration chemicals (typically strong acidic and basic chemicals (id.). The Company stated that chemical use in the wet mechanical cooling towers

would be limited to the minimum amount of sodium hypochlorite necessary for proper disinfection of the system and small quantities of water treatment chemicals (e.g., an anti-scalant) (id.). The Company stated that other chemical usage at the proposed plant would be limited to lubrication and gear oil reservoirs in the turbine and other power generation and ancillary equipment (id.).

2. Analysis and Findings

The record shows that to the extent possible Brockton Power would recycle, and otherwise contract for proper disposal of, solid wastes generated by construction, operation and maintenance of its proposed facility. However, the Company has not committed to specific targeted recycling rates or tonnage goals for either the construction or operational phases. As noted in prior decisions, Massachusetts has developed a Massachusetts Solid Waste Master Plan, that sets forth a specific state-wide goal for recycling municipal solid waste. Massachusetts Wholesale Electric Company Decision EFSB 07-06 (2008) at 44, 45; Southern Energy Canal II Decision at 214,215; Southern Energy Kendall Decision at 330, 331.24. The Master Plan was last updated in 2006. According to information that appears on the MADEP website, MADEP began to update the Master Plan in December 2008 (see http://www.mass.gov/dep/public/committee/swmpwkgp.htm).

The Siting Board directs Brockton Power to work with the City of Brockton to develop a program with the goal of attaining the target recycling rates for both construction materials and operational solid waste which are set forth in the most recent update of the Massachusetts Solid Waste Master Plan at the commencement of construction. The Siting Board further directs

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[24] The master plan referred to in the two Southern Energy decisions is the Massachusetts Solid Waste Master Plan 1997 Update, which had a statewide goal of 46% for recycling of municipal solid waste. Southern Energy Canal II Decision at 214, 215; Southern Energy Kendall Decision at 330, 331. The master plan has been revised twice since the 1997 Update: Beyond 2000 Solid Waste Master Plan and Solid Waste Master Plan – 2006 Plan Revision. The 2006 Plan Revision sets a goal of a 56% overall recycling rate for 2010 (see http://www.mass.gov/dep/recycle/priorities/swmprev.pdf). In 2006, Massachusetts achieved an overall recycling rate of 47% and a municipal solid waste recycling rate of 37% (see http://www.mass.gov/dep/public/committee/swmp1008.ppt). As of April, 2009 there is an on-going process to update the Massachusetts Solid Waste Management Plan (see http://www.mass.gov/dep/public/committee/swmpwkgp.htm).

Brockton Power to work with its contractor to attain the maximum feasible recycling of construction debris. The Siting Board directs Brockton Power, prior to the commencement of operation, to report on its recycling rate for construction debris and to provide the Siting Board with a copy of its recycling plan and anticipated recycling rate for the operational solid wastes.

Accordingly, with the implementation of the above condition, the Siting Board finds that the solid waste impacts of the proposed facility would be minimized.

E. Visual Impacts

This section describes the visual impacts of the proposed facility and mitigation proposed by Brockton Power.

1. Company

The Company submitted a series of photo-simulations of the proposed facility with a 250-foot stack in support of its assertions that a combination of other structures impacting existing vantage points and tree cover will lessen the visual impact of the proposed project (Exhs. BP-1, at 4-86 to 4-102; EFSB-V-3; EFSB-V-6; EFSB-V-7). The Company stated that it would use on-site tree planting to soften views from within the industrial park; however, the height of proposed project structures is such that on-site tree planting would not mitigate more distant views (Exh. EFSB-V-3). The Company indicated its willingness to work with the Siting Board and any affected residents with respect to supplemental visual mitigation measures that would limit views of the top of the HRSG and stack (id.). The Company asserted that the overall visual impact of the proposed project, including its proposed 115 kV overhead transmission line, would be consistent with the industrial and commercial land use activities that characterize the surrounding area (Exh. BP-1, at 4-86).

The Company also submitted information regarding trade-offs between a GEP stack height of 325 feet and the Company's proposed stack height of 250 feet (Exh. EFSB-V-5). Compared to its proposed 250-foot-high stack, the Company's modeling indicates that a 325-foot-high GEP stack would reduce modeled impacts, depending on pollutant, by margins representing .002% to 0.5% of NAAQS (id.). The Company's modeling further indicates that its proposed project with a 250-foot-high stack would be less than USEPA/MADEP SILS (id.). The

Company asserted that the additional reduction in emissions from use of a GEP stack does not justify a 30% increase in stack height (id.).

2. Intervenors

The City of Brockton asserted that the proposed facility should be designed with a stack of 325 feet rather than 250 feet, and that a 250-foot stack would not minimize impacts (COB Initial Brief at 25 to 26). The City of Brockton argues that constructing a stack of GEP height would result in a measurable reduction in ground-level air pollution levels at only a small marginal cost to the proposed project (id.). The City of Brockton further argues that there is no incremental visual impact to outweigh the air quality improvement associated with a stack of GEP height relative to a 250-foot-high stack (id. at 26).

3. Analysis

In prior generating facility decisions, the Siting Board has required proponents to mitigate visibility of the facility and the associated stack by providing selective tree plantings and other reasonable mitigation upon request, by property owners or local officials, in all residential areas up to a set distance (such as a half-mile or a mile) from the proposed stack location. Montgomery Energy Billerica Power Partners, LLC, EFSB 07-02 at 48-49 (2009) ("Billerica Decision"); IDC Decision at 298-300; Nickel Hill Decision at 179. In some previous cases, the Siting Board has required off-site mitigation, such as provision of selective measures on request or other specific mitigation plans, focused on specific nearby residential areas. Braintree Electric Light Department, EFSB 07-1/D.T.E./D.P.U. 07-5 ("Braintree Decision") at 33-34; Nickel Hill Decision at 179. Cases in which the Siting Board required mitigation focused on specific areas include (1) sites not warranting wide-area (i.e., 360-degree) mitigation given the pre-existing extent of heavily urbanized or industrial development including pre-existing power plant use in some direction, Braintree Decision at 33-34; Sithe Mystic Development LLC, 9 DOMSB 101, at 159-160 (1999); Sithe Edgar Decision at 11-12; and (2) sites warranting added or specific mitigation in particular directions based on openness or other sensitivity of areas to visibility impacts. U.S. Gen Decision at 150-152; ANP Blackstone Decision, 8 DOMSB 1, at 196-197.

The record shows that the proposed facility, although visible at a range of distances, would be consistent with other uses that are part of its immediate surroundings. The record shows, however, that construction for the proposed facility of a stack of any height between 250 feet, as proposed by the Company, and 325 feet, the maximum GEP height, would likely have visual impacts outside the industrial park and commercial area where the proposed facility would be located. The record further shows that, on the basis of its review of potential air quality impacts of the proposed facility, the Siting Board has determined that it would accept, as part of any approval of the proposed facility, without further review by the Siting Board, a stack of any height from 250 feet to 325 feet as may be agreed upon by the Company and approved by any applicable local and MADEP/USEPA permitting (see Section III. B, above). Thus, any visual impacts of the proposed facility associated with construction of the proposed stack may differ in locus and degree, depending on the actual height of any facility stack the Company may construct, in accordance with MADEP or other local approvals. The Siting Board concludes that to minimize the potential visual impacts of the proposed facility, mitigation should incorporate flexibility to deal with visual impacts at a range of distances.

Therefore, consistent with Siting Board precedent concerning the minimization of visual impacts, the Siting Board directs the Company to provide, as requested by individual residential property owners or appropriate municipal officials, reasonable off-site mitigation of visual impacts, including shrubs, trees, window awnings, or other mutually agreeable measures that would screen views of the proposed generating facility and related facilities at affected residential properties and roadways up to one mile from the site where residents experience changed views. In implementing this requirement, the Company: (1) shall provide shrub and tree plantings, window awnings, or other reasonable mitigation on private property, only with the permission of the property owner, and along public ways, only with the permission of the appropriate municipal officials; (2) shall provide written notice of this requirement to appropriate officials and to all owners of residential property within one mile of the site, prior to the commencement of construction; (3) may limit requests for mitigation measures from local property owners and municipal officials to a specified period ending no less than six months after initial operation of the facility; (4) shall complete all agreed-upon mitigation measures within one year after completion of construction, or if based on a request filed after commencement of construction, within one year after such request; and (5) shall be responsible

for the reasonable maintenance and replacement of plantings, as necessary, to ensure that healthy plantings become established.

The Siting Board also directs the Company to determine an exterior color for the proposed stack in consultation with appropriate municipal officials, as well as to maintain the good appearance of the facility, including the stack, and on-site landscaping, for the life of the project.

Accordingly, based on the proposed design, with use of a stack between 250 and 325 feet in height, the Siting Board finds that with the implementation of the above-described visual mitigation conditions, the visual impacts of the proposed project would be minimized.

F. Noise Impacts

This section describes the noise impacts of the proposed facility and mitigation proposed by Brockton Power.

1. Company

The Company measured existing sound levels in the vicinity of the proposed facility at six representative community locations (Exh. EFSB-A-1(S)(1) at 7-3 and App. D). The Company indicated that the selected locations generally corresponded to the nearest sound-sensitive locations in various directions from the site (id.). The Company stated that both short-term and continuous sound level measurements were made during a 9-day period (id.). According to the Company, study results indicated that the ambient L_{90} sound levels[25] in January 2007 ranged from 36 to 42 A-weighted decibels ("dBA") in the community surrounding the proposed site during the quietest part of the nighttime period (id.).

The Company stated that it modeled the propagation of noise from the proposed facility using the 2005 version of the DataKustik Corporation's Cadna/A noise calculation model (Exh. EFSB-A-1(S)(1) at 7-9). The Company indicated that the model allows for octave band calculation of noise from multiple noise sources, as well as computation of diffraction around building edges, and multiple reflections off parallel buildings and solid ground areas (id.). The

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[25] L_{90} noise is the sound level exceeded for 90% of each hour, and so tends to represent the background, or baseline ambient sound level.

Company further indicated that it based its analysis on calculation of facility sound levels at nine discrete receptors, four property line receptors, one each to the north, south, east and west, and five residential receptors, including the nearest residences in several directions around the proposed facility location (id.).

The Company stated that its modeling assumed noise generated by facility equipment with incorporation of proposed noise mitigation measures (Exh. BP-1, at 4-27). The Company indicated that these mitigation measures fell into two general categories, positioning of equipment such that noise would transmit away from sensitive receptors, and buffering of equipment to reduce the level of noise transmitted (id.). The Company indicated that specific mitigation measures included: designing the site layout to face the quietest end of the cooling tower towards residential areas; housing generating equipment in metal clad buildings; adding an evaporative cooler and pulse jet cartridge system to mitigate sound from the gas turbine air inlet filter; using a stack silencer on the turbine exhaust, with additional reduction achieved by exhausting through the HRSG; and enclosing the gas compressors and the circulating cooling water pumps (as necessary) (id.).

The Company stated that it also combined ambient noise data with modeled facility noise propagation to estimate increases in sound levels from facility operation (Exh. EFSB-A-1(S)(1) at 7-12 to 7-16). The Company stated that its modeling indicated likely high noise levels along the facility site perimeter, located inside an industrial park (id.). The Company indicated that its analysis projected the greatest noise levels at the north and south edges of the facility perimeter: 57 dBA and 63 dBA, respectively (id. at 7-13). The Company stated that with quietest night-time hour L_{90} measurements used for a baseline, the projected noise levels would create an increase over ambient levels of 21 dBA at the north edge of the proposed facility site and 27 dBA at the south edge (id.).[26]

The Company represented that the MADEP Noise Policy (Noise Policy DAQC 90-001) limits a source to a 10-dBA increase in ambient L_{90} sound as measured at the property line of the proposed project and at the nearest residences (Exh. EFSB-A-1(S)(1) at 7-14). According to the Company, certain projects, including several power plants, have received a MADEP waiver for

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[26] The Company projected lower sound level increases during daytime hours (Exh. EFSB-A-1(S)(1) at 7-13).

predicted sound level increases at the property line above 10 dBA (id.). The Company further indicated that the projects that have received such a waiver have been in industrially developed areas (id.). The Company asserted that a waiver would be appropriate in the instant case given the location of the proposed facility in an industrial park where there are no sensitive land uses (id.).

Among residential receptors, the Company identified the neighborhoods to the east and west of the proposed facility site as the primary areas of noise impact concern (Exh. EFSB-A-1(S)(1) at 7-13). The Company emphasized, however, that its modeling indicated that with planned mitigation, the project would increase sound levels at residences no more than 5 dBA during the quietest nighttime hours, and less at other times (Exhs. BP-1, at 4-27; EFSB-A-1(S)(1) at 7-15 to 7-21). Addressing the issue of noise at the closest residences, the Company indicated that to the east, at 71 Appleby Street, operational noise from the proposed facility would be approximately 40 dBA; it would be approximately 43 dBA to the west, at the intersection of Hayward Avenue and Route 28 (Exh. EFSB-A-1(S)(1) at 7-13). The Company stated that the quietest hourly L_{90} noise would increase from 36 to 41 dBA at Appleby Street, and from 39 to 44 dBA at the Hayward Avenue/Route 28 intersection, i.e., increases of 5 dBA above background noise levels at both locations (id.).

The Company provided a Best Available Noise Control Technology (BANCT) analysis (Exh. EFSB-A-1(S)(1) at 7-17 to 7-20).[27] As part of this analysis, the Company discussed additional mitigation options beyond the measures described above. Most of the additional mitigation options discussed by the Company targeted specific equipment sources (id. at 7-16 to 7-17).28 The Company indicated the following options.

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[27] The Company's BANCT analysis examines the technical feasibility and cost effectiveness of incremental noise control measures (Exh. EFSB-A-1(S)(1) at 7-17 to 7-20).

[28] The same turbine installation has many sound sources, which requires a systematic reduction of sound levels from individual contributing sources. Since total sound levels are combined logarithmically, any additional noise control must focus on the highest contributing sources first before moving to lesser contributing sources. For example, further controlling a component that is already 5 dBA quieter than the loudest source will have minimal impact on proposed project sound levels. The location of residential

(1) ATCO Noise Management wall/roof and ventilation systems would be used to reduce the calculated nighttime ambient sound level increases from 5 dBA to 3 dBA at the nearest residences to the proposed facility (Exh. EFSB-A-1(S)(1) at 7-18 to 7-19). The additional mitigation would reduce sound levels from the proposed facility's rooftop exhaust fans, HRSG, and steam turbine at a net increased cost of $1,200,000 (id.). The Company asserted that the additional measures would not be cost effective (id.).

(2) ATCO Noise Management wall/roof and ventilation systems of a higher grade than the same components in the Company's proposed facility would be used, along with a cooling tower with greater noise attenuation[29] than the same component in the Company's proposed facility, a gas turbine air inlet filter, and a stack silencer to reduce to zero dBA the nighttime ambient sound level increases at the nearest residences to the proposed facility (id.). The additional mitigation would reduce sound levels from the proposed facility at a net increased cost of approximately $6,500,000[30] (id.). The Company asserted that the additional measures would not be cost effective (id.).

(3) Measures to reduce the increase in ambient sound levels at the industrial property lines to 10 dBA or less, if possible, would be used (id.). The Company asserted that limiting property line ambient sound level increases to no more than 10 dBA would not be possible even with re-orientation of project components on the proposed facility site (id.). Based on its analysis, the Company asserted that the lowest noise cooling tower available (manufactured by SPX CoolingTechnologies) would not provide sufficient noise attenuation to achieve the targeted sound level reduction (id.).

The Company stated that the location of the proposed project in a commercial area with heavy traffic, along with limits on the Company's hours of construction, would limit noise impacts at residences due to proposed project construction (Exh. EFSB-N-9; Tr. at 467 to 468; Tr. at 2742 to 2745; RR-EFSB-9; RR-EFSB-30). The Company indicated its willingness to limit

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receptors and directionality of some proposed project noise sources are also considered (Exh. EFSB-A-1(S)(1) at 7-16 to 7-17).

[29] The specified cooling tower is the lowest noise model manufactured by SPX Cooling Technologies (Exh. EFSB-A-1(S)(1) at 7-19).

[30] Costs for the described system are as follows: approximately $3,400,000 for the ATCO Noise Management systems; $1,700,000 for the cooling tower; $1,200,000 for the gas turbine air inlet filter; and $240,000 for the stack silencer (Exh. EFSB-A-1(S)(1) at 7-19).

any Saturday construction at the proposed site to the hours of 9:00 a.m. to 1:00 p.m., subject to negotiation of a labor agreement between the Company and its union workforce (RR-EFSB-30; Tr. at 2742 to 2745).[31] With respect to Monday through Friday construction, the Company indicated that construction would normally occur from 7:00 a.m. to 3:30 or 4:00 p.m., with a 30-minute lunch period, but that to keep to schedule, it might sometimes be necessary to extend weekday construction to twelve hours (RR-EFSB-9; Tr. at 457). The Company stated that as a general rule, it would only undertake wiring, pipefitting, and other indoor work when continuing construction after a normal eight-hour weekday shift (Tr. at 456). An exception to this general rule would be a large concrete pour (id. at 457 to 458). The Company stated that it must complete any large concrete pours in one day (id.). The Company also indicated that it would equip pile drivers and internal combustion engines with vibratory hammers and mufflers, respectively, to minimize the vibration and noise impacts of construction (Exh. EFSB-A-1(S)(1) at 7-21).

2. Intervenors

The City of Brockton argued that Brockton Power should implement the first option for additional noise impact mitigation (maximum 3 dBA noise increase at residences) (City of Brockton Initial Brief at 42). The City of Brockton asserted this option would noticeably reduce noise impacts at residences at a small percentage of the total cost of the proposed project, and that mitigation of residential noise impacts is particularly important given the long life of power plants and the small cost of mitigation relative to total project cost (id.). Furthermore, with respect to construction phase noise impacts, the City of Brockton stated that the Company's proposed construction hour limits, 7:00 a.m. to 3:30 p.m. on weekdays, and 9:00 a.m. to 1:00 p.m. on Saturdays, were the result of dialogue with the Siting Board staff during evidentiary hearings rather than the outcome of discussions with City of Brockton officials (id.). The City of Brockton asserted that if the Company had applied for Site Plan Approval, construction noise issues would have been reviewed and addressed by City of Brockton officials during the site plan

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[31] The Company indicated that the labor agreement would also dictate holidays when no work would occur at the proposed project site, most likely New Year's Day, President's Day, Patriot's Day, Memorial Day, the Fourth of July, Labor Day, Columbus Day, Veteran's Day, Thanksgiving, and Christmas (RR-EFSB-9).

review process (id. at 42-43). The City of Brockton argued that, absent an opportunity for appropriate City of Brockton officials to participate in establishing construction work schedules, the City of Brockton was not able to agree that construction noise impacts had been adequately minimized (id.).

ACE argued that the Company erroneously assumed it would receive a noise limit waiver from MADEP at the property line of the proposed project (ACE Initial Brief at 51 to 52). ACE argued that, while the adjacent property to the river line of the plant is an industrial or commercial use, the Salisbury Plain River itself represented a de facto distinct property that is not fully controlled by Brockton Power or the opposite-bank land owner (id.). In addition, ACE argued that the Company cannot assume there is no "noise-sensitive use" at the river and land proximate to the river because the present uses might change over time (id.). ACE asserted that the Company's Petition should therefore include noise mitigation to lower the noise level at the proposed plant property line adjacent to the Salisbury Plain River such that a waiver from MADEP would no longer be required (id.).

3. Analysis

In prior decisions, the Siting Board has reviewed the noise impacts of proposed facilities for general consistency with applicable governmental regulations, including the MADEP 10-dBA standard. Southern Energy Canal II, 12 DOMSB 155, at 229 (2001). In the present case, facility operations would increase L_{90} sound levels at the property line by up to 28 dBA, which significantly exceeds the 10-dBA MADEP standard. It appears that MADEP gives waivers for exceedances on neighboring industrial properties on a case-by-case basis. We do not know whether MADEP would agree, given the extent of excesses, to waive the standard for all affected neighboring parcels; however, we note that MADEP often grants such waivers. We also note that MADEP is precluded from issuing a final permit, which would make clear its decision, before the Siting Board issues a decision in the case. G. L. c. 164, § 69J¼.

As part of reviewing whether projects meet the Siting Board's "minimum environmental impact" standard, the Siting Board has also considered the significance of expected off-site noise increases which, although lower than 10 dBA, may adversely affect existing residences or other sensitive receptors. In cases where measured background noise levels at the most affected residential receptors were neither unusually noisy nor unusually quiet, the Siting Board has

accepted or required facility noise mitigation sufficient to hold residential L_{90} increases to 5 to 8 dBA. Billerica Decision at 50, 55-56; Braintree Decision at 40- 43 (2008); IDC Bellingham, 9 DOMSB at 311 (1999); Berkshire Power Development, Inc. 4 DOMSB 221, at 404. The Siting Board has accepted higher noise increases at residential receptors with unusually quiet background, but only after considering whether cost-effective alternatives existed for additional mitigation. See ANP Blackstone Decision at 172. In Everett, the Siting Board approved a baseload project in a noisy location with modeled residential L_{90} noise increases of 2 dBA. Sithe Mystic Decision at 165.

In prior decisions, the Siting Board has also reviewed the cost of additional mitigation when a facility would cause an appreciable increase in ambient sound levels. In Charlton, the Siting Board required a reduction in the project's modeled nighttime noise increase from 10 dBA to 7.5 dBA, at an estimated cost of $1 million. U.S. Gen Decision, at 163-170, 311-314. In Taunton, the Siting Board required a 2 dBA nighttime reduction, from 9-10 dBA to 7-8 dBA, based on estimates that a package of measures costing $501,000 would reduce the increase by 3 dBA, to 6-7 dBA (additionally, sound wall mitigation of unspecified cost was required to similarly reduce daytime noise increase due to rail activities). Silver City Energy Limited Partnership, 3 DOMSB 1, at 366-369, 412-414. In Bellingham, the Siting Board required a reduction of the nighttime increase of a proposed facility from 8 dBA to 5 dBA at one receptor at a cost of $1.4 million. IDC Decision at 155-159, 314-316. More recently, the Siting Board did not require mitigation costing $1,075,000 that would have provided up to 2 dBA of night-time noise reduction calculated for a peaking facility likely to operate during the day. Braintree Decision at 41 (2008). Similarly, the Siting Board did not require mitigation costing $250,000 that would have provided less than 1 dBA of noise reduction. Billerica Decision at 56.

The record shows that the Company has provided a comprehensive measurement study of ambient sound levels in the vicinity of the proposed facility and predicted increases in sound levels resulting from proposed facility operation. The record shows that with the noise reduction features incorporated in the proposed facility design, noise impacts at residences closest to the proposed facility would be no more than 5 dBA during the quietest nighttime hours, and less at other times.

The record shows that the Company could achieve an additional 2 dBA reduction of nighttime ambient sound level increases at residences nearest to the proposed facility with an

additional net increased cost of $1,200,000. However, the Siting Board notes that the proposed facility as planned would already provide a level of noise mitigation consistent with Siting Board precedent, as discussed above.

The record shows that, with respect to construction noise, the Company would institute measures to minimize the vibration and noise impacts of construction to the extent possible, as well as limit, to the extent possible, construction from 7:00 a.m. to 3:30 or 4:00 p.m. at the latest, Monday through Friday. The record further shows the Company's willingness to limit any weekend construction at the proposed site to Saturday from 9:00 a.m. to 1:00 p.m., subject to negotiation of a labor agreement between the Company and its union workforce. The Siting Board directs the Company to limit any weekend construction at the proposed site to the hours of 9:00 a.m. to 1:00 p.m.

Intervenor ACE asserts that the Company should further mitigate operation noise impacts of the proposed plant at its property line adjacent to the Salisbury Plain River. The City of Brockton asserts that it cannot agree that construction noise impacts have been adequately minimized barring the review of noise issues by the City of Brockton as part of its Site Plan Approval review.

The Siting Board notes that it considers proposed and additional mitigation based on its mandate to minimize environmental impacts consistent with minimizing the costs associated with the mitigation, control, and reduction of the environmental impacts of the proposed generating facility. The Siting Board notes that this balancing is incumbent upon the Siting Board apart from any analysis and findings the Siting Board may make in conjunction with an applicant's request for specific zoning exemptions. Furthermore, as noted above, the Company's proposed noise mitigation is consistent with the minimization of noise impacts in previous proceedings before the Siting Board.

The Siting Board also observes that the present uses of the property adjacent to the river line of the plant are industrial or commercial. The Siting Board notes that the record indicates no categorical changes to uses of river and land proximate to the river at the identified location in the foreseeable future. The Siting Board concludes, based on its noise impacts review, that no additional noise mitigation is warranted at the identified location. Consequently, the Siting Board concludes that the noise impacts of the proposed facility would be minimized, consistent with minimizing costs.

The Siting Board therefore finds that, with the implementation of the condition limiting construction hours, the noise impacts of the proposed facility would be minimized, consistent with minimizing costs.

G. Safety

This section describes the safety impacts of the proposed facility with regard to the overall safety and the handling and storage of aqueous ammonia and the mitigation proposed by Brockton Power.

1. Company

The Company indicated that, prior to commencement of construction, it would install a temporary construction security fence to segregate the construction area for the proposed facility from the public at large (Exh. EFSB-HS-7). The Company further stated that it would install a permanent security fence equipped with card access and electronic gates to bar entry to unauthorized individuals after construction of the proposed facility (id.). The Company stated that it would follow all Occupational Safety and Health Administration and environmental regulations during proposed facility construction, and that it would require its Engineering, Procurement, and Construction ("EPC") contractor to have an on-site safety engineer for the active phases of the construction process (Exh. BP-1, at 4-70 to 4-71) .

The Company stated that the proposed project would include a 15,000-gallon welded steel tank, 10 feet in diameter and 25 feet in height, for on-site storage of 19% aqueous ammonia (Exh. BP-4, at 5.5-2 to 5.5-3). The Company indicated that a concrete or steel dike surrounding the tank would have 110% of its capacity and would contain leaks of any size, up to and including a major spill (id.). The Company also indicated that it would enclose the tank and dike in a building in keeping with recent Siting Board precedent (see Braintree Decision at 51), would leak-test the tank before initial plant operations, and would inspect all equipment periodically (Exh. BP-4, at 5.5-2 to 5.5-3; Brockton Power Initial Brief at 106 to 107). The Company stated that a level gauge in the tank would connect to a monitor in the control room of the proposed facility; any unusual change in the level of tank contents would activate an alarm and emergency response procedures, including notification of local emergency response agencies (Exh. BP-4, at

5.5-2 to 5.5-3). The Company indicated that responders would include Brockton Power plant staff and contracted emergency response personnel (id.).

The Company indicated that it used the USEPA's ALOHA model to estimate the maximum one-hour averaged concentrations for an accidental ammonia release from the proposed facility at the nearest public receptors (Exh. EFSB-HS-3). Based on its modeling, the Company stated that predicted concentrations at the nearest property line would be 1.3 ppm, below the American Industrial Hygiene Association's Level 1 Emergency Response Planning Guideline ("ERPG") of 25 ppm (id.). The Company stated that, at the nearest residence to the proposed facility (1,140 feet to the west), its modeling predicted ammonia concentration of 0.5 ppm in the event of a catastrophic spill (id.). [32]

The Company indicated that its SCR system would include a Standard Operating Procedure ("SOP") for handling, transfer, and storage of aqueous ammonia on site (Exh. EFSB-HS-1). The Company stated that a second SOP would be developed for aqueous ammonia deliveries (id.).[33] The Company indicated that development of the SOPs would occur during the detailed engineering and procurement stage of the proposed project (id.). The Company also provided a copy of its Draft Spill Prevention, Control and Countermeasure Plan ("SPCC Plan")

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[32] ERPG-1 (25 ppm) is the maximum airborne concentration of ammonia below which nearly all individuals could be exposed for up to 1 hour without experiencing other than mild, transient adverse health effects or without perceiving a clearly defined, objectionable odor. At this level, there may be some odor, but there should be no significant irritation (Exh. EFSB-HS-4).

ERPG-2 (150 ppm) is the maximum airborne concentration of ammonia below which nearly all individuals could be exposed for up to 1 hour without experiencing or developing irreversible or other serious health effects or symptoms, which could impair an individual's ability to take protective action. There is likely to be strong odor and some eye irritation at this level, but serious health effects are unlikely (id.).

ERPG-3 (750 ppm) is the maximum airborne concentration of ammonia below which all individuals could be exposed for up to 1 hour without experiencing or developing life-threatening health effects. This level may cause severe eye and nasal irritation, but lethality is not expected (id.).

[33] The Company states that aqueous ammonia delivery procedures will be similar to those for ULSD, as identified in the draft SPCC plan (Exh. EFSB-HS-1).

for handling of oil delivery, transfer, storage, and removal (Exhs. EFSB-HS-1; BP-4, App. I). In addition, the Company provided a copy of its Draft Emergency Action Plan, which indicates procedures to follow in the event of a fire (Exhs. EFSB-HS-1; BP-4, App. J).

The Company stated that it was committed to coordinating well in advance of commercial operations with emergency responders from Brockton and other mutual aid communities, in particular with respect to conducting reviews of planned emergency response procedures (Tr. at 1928 to 1930; Brockton Power Initial Brief at 75). The Company stated that it had made good faith efforts to meet with the fire chief of the City of Brockton to discuss the various safety aspects of the proposed project (Tr. at 2021 to 2023). The Company further stated, however, that the fire chief had indicated a general preference to hold such meetings after the proposed project had moved further through the approval process (id.).

2. Intervenors

The City of Brockton argued that a complete safety analysis of the proposed project would require the Company and local public safety officials to meet and jointly review project safety issues (Tr. at 2017). The City of Brockton stated that no such meeting and joint review had occurred (id.). The City of Brockton asserted that (1) the safety analysis for the proposed project was therefore incomplete and (2) the description of safety issues in the Company's Petition could not be considered accurate and complete (City of Brockton Initial Brief at 22 to 23).

The Town of West Bridgewater expressed concern about the transportation of aqueous ammonia and ULSD oil within its town limits (TWB Initial Brief at 12 to 14; Tr. at 1824, 2714 to 2731). The Town argued that the Siting Board should condition any approval of the proposed project on transportation of aqueous ammonia and ULSD oil via a route entirely outside the Town of West Bridgewater (Town of West Bridgewater Initial Brief at 12 to 14; Tr. at 2719, 2725). The Town further argued that, should trucks transporting aqueous ammonia or ULSD oil violate said condition, Brockton Power should provide compensation to the Town of West Bridgewater (Town of West Bridgewater Initial Brief at 13 to 14).

3. Analysis

The record shows that the Company proposes to store aqueous ammonia on-site in an enclosed 15,000 gallon tank, surrounded by a concrete or steel dike impoundment with 110% of the tank capacity. The record shows that in the event of a worst-case ammonia release, ammonia concentrations would be approximately 1.3 ppm at the nearest property line and 0.5 ppm at the nearest residence, well below the level at which nearly all individuals would experience health impacts.

In recent cases the Siting Board examined the applicant's ammonia dispersion modeling and found that enclosure of the applicant's proposed aqueous ammonia storage tank (1) was warranted and (2) would mitigate potential impacts of on-site aqueous ammonia storage for the proposed facility. Billerica Decision at 62-63; Braintree Decision at 46, 50, 51.

The record shows that Brockton Power would have programs in place to ensure safety for employees and the surrounding community during facility construction and operation. The Company has also shown that it would store, handle and dispose of oil and other non-fuel chemicals properly and in accordance with applicable regulatory standards, and that it would have secondary systems in place to contain oil and chemical spills or releases.

The Company has provided drafts of its SPCC Plan and its Emergency Action Plan. The record also shows that its SCR system would include a SOP for handling transfer and storage of aqueous ammonia on site; a second SOP would be developed for aqueous ammonia deliveries. To facilitate accurate and effective emergency response planning procedures, the Siting Board directs the Company to prepare final versions of the Company's SPCC Plan and Emergency Action Plan as well as the two anticipated SOPs for management of aqueous ammonia, and to submit copies of same to the Siting Board within six weeks of their completion. In addition, within six weeks of the receipt of any such approval, the Siting Board directs the Company to file a report with the Siting Board confirming approval by the Brockton Fire and Police Departments of safety and security plans developed for the proposed facility.

The record also shows the concerns of the Town of West Bridgewater with respect to routing of deliveries of aqueous ammonia and ULSD for the proposed facility. The Siting Board directs the Company to work with the Town of West Bridgewater and the City of Brockton with respect to routing and related safety issues associated with the delivery of aqueous ammonia and ULSD to the proposed facility. Specifically, the Siting Board directs the Company to instruct its

ULSD and aqueous ammonia vendors located outside the Town of West Bridgewater to use one of two major roads (Routes 27 and 123) from Route 24 through the City of Brockton to Route 28 South; and that these Brockton Routes must be stipulated in its contracts with vendors. (see Section III.H, below.)

Accordingly, the Siting Board finds that, with the implementation of the above conditions requiring: that Brockton Power prepare, and submit copies to the Siting Board within the time period specified, an SPCC Plan, an Emergency Action Plan, a Standard Operating Procedure for handling, transfer, and storage of aquous ammonia on site, a Standard Operating Procedure for aqueous ammonia deliveries; that the Company file a report with the Siting Board, within the time period specified, confirming approval by the Brockton Fire and Police Departments of safety and security plans developed for the proposed facility; and, that the Company work with the Town of West Bridgewater and the City of Brockton with respect to routing and related safety issues associated with the delivery of ULSD and aqueous ammonia to the proposed facility, the safety impacts of the proposed project would be minimized.

H. Traffic Impacts

This section describes the traffic impacts associated with the construction and operation of the proposed facility, as well as mitigation measures proposed by Brockton Power.

1. Company Description and Position

Traffic approaching the proposed site on Industrial Boulevard in Oak Hill Industrial Park is expected to come either from Main Street (Rt. 28) or Sargents Way (Exh. BP-1 at 4-67). In 1998, when a generating facility was proposed for this same site in Oak Hill Industrial Park, the intersection of Main Street and Sargents Way was governed by a flashing light (yellow for traffic on Main Street and red for traffic on Sargents Way) (id. at 4-66). As a result of the traffic study carried out in connection with the 1998 power plant proposal, the intersection of Main Street and Sargents Way was upgraded to become a fully signalized intersection (id.). Counts of existing traffic at the Main Street/Sargents Way intersection conducted in May of 2007 during peak morning and evening construction hours[34] (6:00-7:00 a.m. and 3:00-4:00 p.m.) confirmed the

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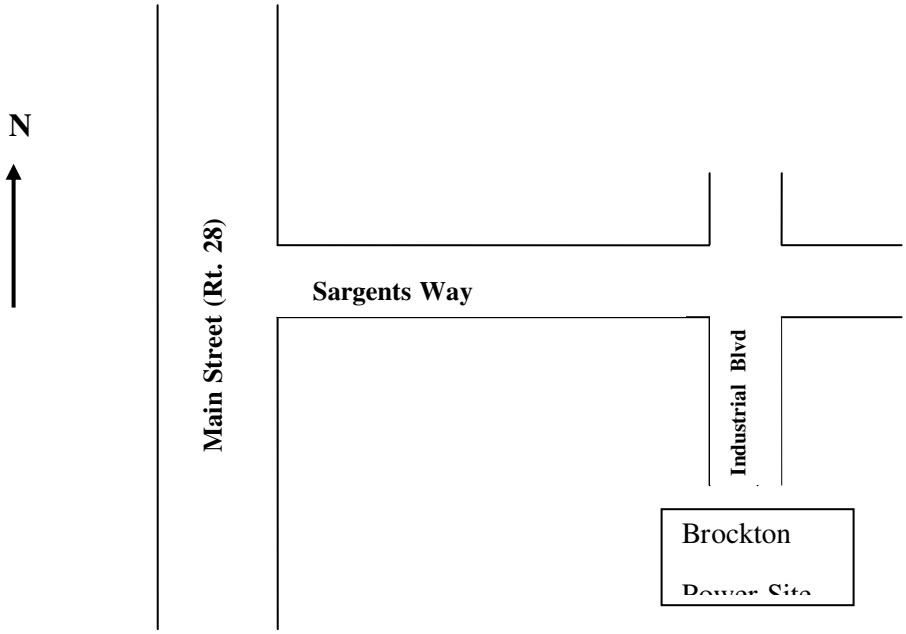
[34] The peak hours refer to the projected peak hours for construction-generated traffic.

findings of the 1999 traffic study that the majority of the traffic would enter and exit Sargents Way from the south on Main Street, presumably headed to/from Routes 24 and I-495 (Exh. BP-4, at 5.6-2). May 2007 counts indicated that 851 vehicles during the peak morning construction hour and 1,716 vehicles during the peak afternoon construction hour passed through the Main Street/Sargents Way intersection, with the majority of the traffic north or south bound through traffic on Main Street (id.).



Brockton Power analyzed the impact of construction-related traffic on the intersection of Main Street and Sargents Way, using the updated May 2007 traffic counts for the intersection and assuming the current optimization of signal timing and a 90-second signal cycle (Exh. BP-1, at 4-68). Brockton Power estimated that traffic associated with the plant's 24-month construction period would increase peak hour vehicle counts by a maximum of 305 vehicles during morning peak hour and 232 vehicles during afternoon peak hour (id.). Brockton Power estimated the impact of the construction traffic on the Main Street/ Sargent's Way intersection in terms of grades of Level of Service ("LOS") between A and F (where a grade of A indicates lower volumes and relatively free-flowing traffic conditions and an F indicates large volumes of traffic with significant congestion and delays) (id.). As shown in the table below, the Company projected that during the construction of Brockton Power, the intersection would continue to operate at a generally "A" LOS in the morning except for traffic coming west on Sargents Way and turning left onto Main Street (id.). The Company indicated that overall peak afternoon hour

traffic at the intersection is currently graded at a somewhat lower "B" LOS. The Company stated that it would expect that during construction the peak afternoon LOS rating would drop to "C" (id.). The Company asserted that the congestion and delays would be associated with west-bound traffic seeking to turn left off Sargents Way onto Main Street (id.). [35] The Company stated that it would "endeavor to work with the City of Brockton to optimize the timing of the lights during the peak afternoon construction traffic hours" (Exh. AAPPL-T-1).

Table 7. Comparison of Level of Service at Intersection of Main Street (Rt. 28) and Sargents Way

	Level of Service/Average Delay (Seconds)	
	AM	**PM**
Existing Conditions[1]		
Westbound Left	C/34.1	D/37.0
Westbound Right	A/5.4	A/3.3
Southbound Left	A/3.7	A/7.8
Overall Intersection	A/8.9	B/14.1
Construction Period		
Westbound Left	C/33.4	E/55.4
Westbound Right	A/4.8	A/2.8
Southbound Left	A/4.8	A/9.9
Overall Intersection	A/7.5	C/21.8

[1]Based on 2007 counts under signal control

The Company stated that post-construction, during normal operations, there would be three to seven workers at the plant (id. at 4-69). In the Company's view, the traffic generated by these few workers would not have a significantly adverse impact on the operation of the Main Street/Sargents Way Intersection (id.). The Company stated that in addition to employees required to operate the plant, there would be occasional deliveries of ULSD[36] and two or three

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35 The Company did not provide information on the number or schedule of deliveries of large equipment or plant components. Therefore, all assumptions about increased traffic appear to refer to construction worker trips to and from the site.

36 The Company stated that the initial filling of the ULSD storage tank would be done gradually over a period of time (i.e., 12 truck deliveries per day over 10 days) and that any refilling could occur gradually over time (Exh. BP-1, at 4-69). In the unlikely event

deliveries per month of aqueous ammonia (id.).[37] The Company stated that the impact of deliveries would be minimized by being scheduled during period of lowest traffic flows (Exh. BP-4, at 5.6-4).

The Company stated that with the planned mitigation measures, the impact of construction traffic would be minimized (Company Initial Brief at 99). The decline in overall LOS of the Main Street/Sargents Way intersection in the afternoon peak period would be due to the increased delay for westbound traffic on Sargents Way turning left (id.). Once the westbound traffic received a green light, all vehicles in the queue would likely clear the intersection (id.). The Company cited other factors which would tend to mitigate the traffic impact during construction, including: a Company plan to schedule deliveries of construction equipment and materials outside peak morning and evening hours; a Company requirement that all construction traffic access the site through Main Street; the expectation that peak construction activity would last less than 24 months because construction activity typically tapers off somewhat towards the project end, with associated reductions in construction personnel; the Company's plan to pursue negotiations with its union work force regarding a limited Saturday work schedule (9:00 a.m. to 1:00 p.m.); and the Company's possible use of satellite parking areas during construction (id.; Exh. B-4, at 5.6-2).

In addition to mitigation measures directed at minimizing the impact of construction worker related traffic, the Company has agreed to measures designed to restrict truck traffic associated with delivery of fuel oil and aqueous ammonia when the plant is in operation (Exh. BP-4, at 5.6-4). These delivery vehicles would, per the terms of the Company's contracts with its suppliers, be required to access the Brockton Power site from Route 24 through Brockton using one of two routes: from the north exiting onto Route 27 through the City of Brockton and then onto Route 28 south; or, from the south, exiting Route 24 onto Route 123 to Route 28 south (id. at 5.6-4 – 5.6-5). The use of these two prescribed routes would minimize traffic through residential neighborhoods and, except for vendors located in the Town of West Bridgewater, keep the delivery traffic out of West Bridgewater (id.) The Company committed to the use of

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that the facility were to operate continuously on ULSD during a winter cold spell, the maximum number of truck deliveries would reach two per hour (id.).

[37] See Section III.I regarding safety impacts of deliveries of ULSD and aqueous ammonia.

fines and/or contract termination as penalty for suppliers whose trucks did not utilize the prescribed access routes (Tr. at 2719 and 2725).

2. Intervenors' Positions and Concerns

a. City of Brockton

The City of Brockton expressed concern about the projected traffic delays at the intersection of Main Street and Sargents Way during construction (City of Brockton Initial Brief at 43). As a condition to any Siting Board approval of the facility, the City of Brockton would like the Company to be required to hire a consultant to perform a traffic optimization study for the Main Street/ Sargents Way intersection related to the construction phase (id.). The City of Brockton requested that such a study be focused on optimizing the timing of the traffic lights during construction to minimize delays at the intersection.[38] During the evidentiary hearing the Company indicated that such an optimization study could be carried out for a cost of $5,000 (assuming all hardware including signal controllers were in place) to $10,000-20,000 (if detection equipment were added to left-turning lanes) (RR-COB-11).

b. Town of West Bridgewater

The Town of West Bridgewater raised concerns about construction and delivery truck traffic use of West Bridgewater roads to access the proposed site if the primary routes through Brockton were blocked for repair work, accidents or some other reason (Town of West Bridgewater Initial Brief at 11-12). The Town argued that the Company had not identified secondary routes to be followed in the event that either of the two main routes from Rt. 24 to the proposed site are unavailable (id.; Tr. at 1821-1824). The Town of West Bridgewater argued that because the Company had not determined secondary routes to the plant site and examined the impact of these secondary routes, it had not fully described the environmental impact of its proposed plant (Town of West Bridgewater Initial Brief at 11-12). The Town of West Bridgewater also raised a similar concern with regard to the route of trucks which would deliver

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[38] The Company noted that the cycles and intervals of the traffic light at the intersection of Main Street and Sargents Way are currently optimized to minimize delays associated with normal traffic. The optimization study which the City of Brockton requested is related to projected traffic volumes associated with construction.

distillate oil and aqueous ammonia to the plant (id. at 12-14). The Town of West Bridgewater asked that the Town receive some form of compensation from the Company when fines are levied by the Company on its suppliers for violating the required delivery route and that the Company's contractual commitment with its suppliers be subject to annual renewal (id. at 14).

3. Analysis and Findings

The record shows that the construction of the proposed facility would result in a maximum temporary increase in the traffic to the site by construction workers of approximately 305 trips per hour, in the morning between 6:00 and 7:00 a.m., with peak afternoon increase of 232 vehicles between 3:00 and 4:00 PM. The added traffic is expected to primarily affect the flow of traffic at the intersection of Main Street (Route 28) and Sargents Way. Brockton Power's analysis of construction traffic through the Main Street/Sargents Way intersection indicates that with the optimization of signal timing and the use of a 90-second signal cycle, the overall level of service at that intersection will remain at the "A" LOS level in the morning, but will deteriorate from a "B" LOS to a "C" LOS in the afternoon during the period of greatest construction activity. The Company has committed to work with the City of Brockton to optimize the timing of intervals and cycles of the traffic light at the intersection of Main Street and Sargents Way so as to minimize any congestion associated with construction traffic. The Siting Board notes that the Company's commitment to work with the City of Brockton to minimize the impact of construction traffic could include, among other measures, the commissioning of a study to determine how to further optimize the operation of the traffic light at the intersection of Main Street and Sargents Way during the construction period. Given that the Company will coordinate with the City of Brockton, it would be premature here to order the Company to proceed with a specific measure, i.e. commissioning a traffic study as a condition of this decision.

With respect to traffic impacts during facility operation, the record shows that operation of the facility would have minimal impacts on local traffic. Specifically, traffic would be limited to the daily commutes of three to seven workers, occasional deliveries of ULSD and two or three

deliveries per month of aqueous ammonia.[39] Any impact of deliveries during plant operation would be minimized by scheduling them during periods of lowest traffic flows.

The Town of West Bridgewater has requested, and the Company has agreed, that the Company will instruct its ULSD and aqueous ammonia vendors located outside West Bridgewater to use one of two major roads (Route 27 or Route 123) from Route 24 through the City of Brockton to Route 28 South. The Company has stated that these Brockton routes would be stipulated in its contracts with vendors; furthermore, vendors that do not follow one of the prescribed routes will be subject to fines and possible contract termination. The Siting Board notes that the stipulation to its vendors by the Company in response to the Town of West Bridgewater's request will contribute to minimizing the traffic impacts of the proposed facility.

Accordingly, the Siting Board finds that the traffic impacts of the proposed facility would be minimized.

I. EMF

This section describes the electro and magnetic field ("EMF") impacts of the proposed transmission line and the mitigation measures proposed by Brockton Power.

1. Company Description

Brockton Power described that the electricity generated by the proposed facility would be transmitted to the regional power grid via a new 3,000-foot 115 kV overhead line running from the southeast corner of the project site to a new substation adjacent to a New England Power Company d/b/a National Grid ("NEP") right of way ("ROW"), and would interconnect with an existing double-circuit NEP 115 kV line (Exh. BP-1, at 4-110). The Company stated that approximately the first 1800 feet of the new transmission line would be constructed within Oak Hill Industrial Park and the remainder of the new line and the new substation would be built on vacant land owned by South Brockton LLC to the southeast of the project site (id.). The Company described that the proposed route of the new transmission line would extend from the site east across an adjacent vacant lot, and then southward along the east side of Oak Hill Road and across the parcel owned by South Brockton LLC (id. at 1-19, Figure 1.6-3; Exh. EFSB-G-2

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[39] See Section III. G regarding the safety aspects of delivering ULSL and ammonia.

(S) (1) at 4.3-3-4.3-4). The Company indicated that the alignment had been revised to run along the eastern edge of Oak Hill Way, away from the BVW located along the western edge of the roadway (Exh. BP-1, at 4-77-4-78).[40] Within this alignment, however, the transmission line would run very close to the enterprises[41] located along the eastern side of Oak Hill Way (Exh. BP-1, at 4-77-4-78). Specifically, the Company stated that the nearest United Parcel Service structure would be approximately 70 feet from the center line of the proposed transmission line (Tr. at 1739).

Brockton Power presented analyses of both the electric and magnetic field strengths (together "EMF") that would be expected to occur directly under the transmission line at the point of maximum sag in the line and at intervals of 100 feet laterally to either side of that point of maximum sag in the line (Exh. BP-4, Appendix G, at 11-12; Tr. Vol. 15 at 2045-2051; RR-ESFB-31). The Company estimated that magnetic fields (measured at 3 feet off the ground) would reach a maximum of 307 milligauss ("mG") directly under the transmission line at the point of greatest sag, but would fall off rapidly with lateral distance from the transmission corridor to a range of 25 to 32 mG at intervals of plus and minus 100 feet from the point of maximum sag (Exh. BP-4, Appendix G at 12). The Company then estimated that the resultant maximum magnetic field at the nearest UPS structure would be 50 to 60 mG (Tr. at 1739). Brockton Power also noted that structures (such as the UPS building) and cars do not generally have a shielding effect with regard to magnetic fields (Tr. at 2055).

The Company estimated that electric field strength (also directly under the transmission line at the point of maximum sag) would be 1.55 kilovolts per meter ("kV/m") (Exh. BP-4,

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40 In its Petition (Exh. BP-1) and in its DEIR (Exh. BP-4), Brockton Power proposed to locate the transmission line along the western edge of Oak Hill Way. However, in response to concerns about wetland disturbance raised by the Brockton Conservation Commission, and as required by the Certificate issued by the Massachusetts Secretary of Energy and Environmental Affairs, Brockton Power identified the currently proposed route. This revised route would first cross the undeveloped lots abutting the eastern edge of the proposed plant site and then head south along the eastern edge of Oak Hill Way onto the South Brockton LLC property. This realignment reduces by 94% the area of Bordering Vegetated Wetland ("BVW") that would require tree removal.

41 Specifically United Parcel Service ("UPS") (warehouse and distribution) and Nutramax Cough and Cold Division (Nutramax") (manufacturing).

Appendix G at 3). The Company explained that electric field strength is dependent upon line voltage (id.). The Company also noted that electrical fields, unlike magnetic fields, "essentially attenuate to zero" inside a building (such as the UPS building) or car because of the shielding effect of those structures (Tr. at 2054).

The Company also contrasted its projection of EMF levels for its proposed transmission line with recent EMF measurements along the existing NEP 115 kV lines into which the proposed transmission line would connect (id.). The Company stated that magnetic fields measured within the NEP ROW peaked at about 10 mG in the center of the ROW and decreased with distance from the centerline to 1 to 2 mG at the ROW edge (id.). According to the Company, peak electric fields within the NEP ROW were approximately 4 kV/m at the center of the ROW and also decreased with distance from the center line to a range of 0.7 to 1.0 kV/m at the ROW edge (id.).

At the request of Siting Board staff, Brockton Power analyzed design changes that might lower the projected levels of magnetic field strength at adjacent enterprises along Oak Hill Way (RR-EFSB-20). Brockton Power's analysis showed that with the use of a delta configuration for the line's conductors (rather than the vertical array originally proposed), greater magnetic field cancellation would be possible and, as a result, magnetic fields under the line at the eastern edge of the Oak Hill Way ROW (that is, 30 feet from the centerline of the ROW) would be a maximum of 84 mG at the point of greatest sag in the line (id.). The Company also indicated that the use of the delta configuration would also significantly reduce maximum electric field strength near the center of the ROW (id.). The Company stated that the use of the delta array would not increase facility capital costs (id.). According to Brockton Power, use of an underground design for the transmission line, while it would reduce electric field strength at ground level and above to zero, would not result in lower magnetic fields compared to an overhead delta design (id.). The Company stated that the use of an underground design would increase costs substantially (id.). The Company agreed to revise the conductor design (from vertical to delta) to produce a greater cancellation effect on magnetic fields (Company Initial Brief at 117).

Regarding the potential detrimental health impacts of EMF, the Company indicated the impact of exposure to EMF on human health is a debated topic among health experts (RR-ACE-13). The Company maintained that there is no scientific data to support the establishment of

health-based maximum exposure levels to either electric or magnetic fields (Company Initial Brief at 111).

Brockton Power's expert, Dr. Peter Valberg, claimed that no definitive causal link between exposure to higher EMF levels and negative impacts on human health has been proven (Tr. at 2068-2072). Dr. Valberg explained that there have been some epidemiological studies in which proximity to transmission lines has been statistically associated with higher rates of cancer (especially childhood leukemia) (id.). However, Dr. Valberg asserted that the statistical associations reported have been weak and inconsistent across studies and that it is possible that other factors in the lives of the population (e.g., socio-economic or age of housing stock) could explain the correlations (id. at 2069-2070). Dr. Valberg pointed out that studies on adult workers on transmission lines do not show a correlation between exposure to EMF and risk for cancer (id. at 2071).

The Company also noted that only seven states have set guidelines or definitive limits for new transmission lines on electric fields and only two states have established limits/guidelines on magnetic fields (Exh. BP-1, at 4-114). The Company provided a summary of existing state electric field strength limits which indicated within-ROW limits typically range from 7 to 10 kV/m and edge-of-ROW limits generally range from 1.6 to 3 kV/m (id.). The Company reported that two states have set limits on magnetic field strength measured at the edge of the ROW: Florida has set standards that vary as a function of the voltage of the line from 150 mG for a 230 kV line to 200 mG for a 500 kV line; New York has established a 200 mG maximum.

By contrast, the Company stated that Massachusetts had set no definitive limits with regard to either electric or magnetic field levels (id.). In the absence of such prescriptive standards, petitioners have regarded the maximum field levels previously approved in the 1985 case of Massachusetts Electric Company as guidelines. Massachusetts Electric Company/New England Power Company, 13 DOMSC 119, at 228-242 (1985)("1985 MECo/NEPCo Decision"). In that case, the Siting Board approved a new 345 kV transmission line with a maximum edge of ROW electric field of 1.8 kV/m and a maximum edge of the ROW magnetic field of 85 mG (id.).

2. Position of Other Intervenors

NEP supports the use of the delta configuration because it believes that the delta configuration achieves the best balance of minimizing costs and environmental impacts (NEP

Brief at 9-11). None of the other intervenors advanced a position on projected EMF levels or the proximity of the lines to the parking areas and buildings belonging to Nutramax and UPS.

3. Analysis and Findings

In a previous review of proposed 345 kV transmission line facilities, the Siting Board accepted edge of ROW levels of 1.8 kV/meter for electric field and 85 mG for magnetic field. (id.). In subsequent reviews of proposed electric facilities, the Siting Board has compared estimated EMF impacts to the edge-of-ROW impacts accepted in the 1985 MECo/NEPCo Decision, and as applicable considered whether based on such comparison estimated EMF impacts are unusually high. CELCo Kendall Decision, 12 DOMSB 305, at 347-349; Sithe Mystic Decision, 9 DOMSB 101, at 181-183; Hingham Municipal Lighting Plant, 14 DOMSC 7, at 28 (1986).

The Siting Board did not conclude, in the 1985 MECo/NEPCo Decision or any later review referencing that decision, that an edge-of-ROW magnetic field of 85 mG is a level above which harmful effects would necessarily result. Sithe Mystic Decision, 9 DOMSB 101, at 181. Rather, the Siting Board has held that the edge-of-ROW magnetic field level of 85 mG serves as a benchmark of a previously accepted impact along a 345 kV transmission ROW in Massachusetts, not as a limit of acceptable impact. (Id.) Among past cases, for example, the Siting Board has approved petitions for: a generating facility that, with proposed interconnection plans, was expected to result in a magnetic field level at a residence along an interconnecting transmission line of up to 110 mG. Sithe Mystic Decision, 9 DOMSB 101, at 181; and an underground transmission line that was expected to result in an in-street magnetic field level of up to 124 mG. CELCo Kendall Decision, 12 DOMSB 305, at 348.

At the same time, the Siting Board in previous decisions has cited transmission line applicants' recognition that some members of the public are concerned about magnetic fields, and on this basis has found reasonable those applicants' proposed use of design features that would reduce magnetic fields at low additional cost or no additional cost. See, e.g., CELCo Kendall Decision, at 349; New England Power Company, 4 DOMSB 109, at 148 (1995). In a previous transmission line review, the Siting Board directed the applicant to consult with local officials, and make a compliance filing, regarding use of cost-effective measures to reduce EMF

exposure of students at a school along the route and, if reasonably feasible, reduce magnetic field to 10 mG at the school. CELCo Kendall Decision, 12 DOMSB 305, at 349.

In generating facility cases, the Siting Board has reviewed EMF in the context of possible impacts along interconnecting power lines. Braintree Decision at 61; Sithe Mystic Decision, 9 DOMSB 101, at 181-182; Silver City Decision, 3 DOMSB at 353-354. The Siting Board has held that, as part of pursuing interconnection plans that require upgrades to the regional transmission system, generating facility applicants should work with transmission providers to seek inclusion of practical and cost-effective designs to minimize magnetic fields along affected ROWs. Braintree Decision at 61 ; Sithe Mystic Decision, 9 DOMSB 101, at 181-182; Silver City Decision at 353-354.

In the present case of the proposed transmission line between the proposed Brockton facility and a new substation, the record indicates that there are no residences close to the transmission line ROW. However, the UPS and Nutramax enterprises would be close to the ROW. The Company has agreed to employ a delta configuration of conductors which is projected to reduce the strength of the magnetic fields directly under the transmission line at the point of maximum sag from 236 mG to 141. The use of the delta configuration would also reduce electric field strength at the maximum sag point 1.55 kV/m to 0.58 kV/m.

Regarding interconnecting transmission lines, the Siting Board notes that the proposed project may increase power flow on the two existing NEP transmission lines into which the proposed transmission line from the project would connect. We note, however, that the existing NEP lines are supported on double-circuit poles, offering the opportunity to minimize magnetic fields by optimizing line phasing. We understand that final interconnection plans have not been drawn up and will be based on the conclusions of ISO-NE's final interconnection study. Because the proposed project may contribute to higher power flows on area transmission lines, the Siting Board seeks to remain informed about Brockton Power's interconnection plans and any associated transmission upgrades as they may relate to EMF impacts.

Accordingly, the Siting Board directs Brockton Power to keep the Siting Board informed as to the progress and the outcome of Brockton Power's interconnection plans and on designs for any transmission upgrades. Specifically, at such time as Brockton Power reaches final agreement with NEP and ISO-NE regarding interconnection, the Siting Board directs Brockton

Power to keep it informed as to any measures incorporated into final transmission upgrade designs to minimize electric and magnetic field impacts.

The Siting Board finds that, with the implementation of the delta configuration of conductors on the proposed transmission line from the proposed generating facility to the proposed substation and the above condition, the environmental impacts of the proposed facility would be minimized with respect to EMF impacts of that line.

J. Land Use

This section describes the land use impacts of the proposed facility, including the associated transmission line and substation.

1. Description

Brockton Power has proposed to build its facility on a vacant, previously disturbed 13.2-acre site within the 70-acre Oak Hill Industrial Park in the southeastern part of the City of Brockton (Exh. BP-1, at 1-10). The Company stated that the site, though currently undeveloped, does not provide any potential for scenic or recreational qualities, because it is located in the middle of an industrial district. Specifically, the Company indicated that the proposed project site is zoned Industrial I-3, "Zones, heavy industrial uses," and that the principal permitted uses include "electric power generating plants" (id.).

The Company stated that the zoning within Oak Hill Industrial Park includes both I-3 and Commercial C-2 areas (Exh. BP-1, at 4-80). Brockton Power explained that in addition to its proposed project site, land to the south and southwest (including the site of the Brockton waste water reclamation facility, the site of the proposed substation and areas adjacent to the eastern boundary of proposed site and along the eastern side of Oak Hill Way) is zoned I-3 (id.). However, the Company reported that the section of Oak Hill Industrial Park immediately to the north of the proposed project site is zoned C-2 and currently is occupied by businesses compatible with that zoning (id. at 4-76-4-78).[42] The Company further described that land

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[42] These businesses include Zoots (dry cleaning delivery hub); F. W. Webb (plumbing, heating, cooling and industrial supply operation); Custom Blends, Inc. (a.k.a. Cindy's Kitchen, manufacturer of salad dressings, dips, etc.); and a vacant lot.

outside Oak Hill Industrial Park to the west of the proposed project site, along both sides of Route 28, is zoned Commercial C-2 (id. at 4-80).

The Company stated that one of two proposed routes for a pipeline to connect the proposed facility to the Spectra Gas Pipeline (which runs across the northern edge of Oak Hill Industrial Park) would cross the C-2 zoned land lying north of the proposed facility (Exhs. BP-4, at 2-3; BP-1, at 4-80). According to the Company, the City of Brockton's C-2 zoning ordinance neither specifically allows nor prohibits public utility structures within C-2 districts (Exh. BP-2, at 16-17). The Company stated that it planned to seek relief from this ambiguity in its Zoning Exemption Petition (id.).

Brockton Power stated that the nearest residence would be located to the west on Hayward Avenue approximately 1,100 feet from the proposed location of the turbine exhaust stack (id. at 76). The Company stated that Hayward Avenue residences would be well buffered from the proposed site by a combination of the commercial activity along Main Street (Rt. 28), and the wooded banks of the Salisbury Plains River (id. at 77). The Company stated that the nearest residences to the east would be located along Appleby Street, approximately 1,500 feet from the proposed site of the turbine exhaust stack (id. at 4-77). The Company indicated that the nearest residences to the north would be the Crowne Place Condominiums located approximately 1,600 feet northeast of the turbine exhaust stack at the intersection of Sargents Way and Plain Street (id.).

The Company stated that the Massachusetts Bay Transportation Authority commuter rail line and the industrial buildings along Oak Hill Way, which lie between the proposed site and Appleby Street and Plain Street residences, would provide some buffer to the east and northeast (id.). The Company indicated that the Brockton AWRF is located directly south of the proposed site, and that the land south of the AWRF falls within the boundaries of the Town of West Bridgewater (id. at 4-74). The Company indicated that the closest residences to the south are those in West Bridgewater within the Westbridge Landing mobile home community (Exh. BP-4, at 2-4).

Brockton Power described that it had reviewed the State and National Register files and the Inventory of Historic and Archaeological Assets at the Massachusetts Historical Commission and found no evidence of historical or archaeological resources within the project area (Exh. BP-4 at 3-30). Based on this research, the Company stated that the nearest historic or

archaeological resources are located over one-half mile from the Project site and, thus, are unlikely to be impacted, directly or indirectly, by the Project (id.). Furthermore, Brockton Power stated that it does not anticipate any direct impacts to historical or archaeological resources due to the previously disturbed nature of the proposed power plant and substation sites (id.).

The Company stated that the Project will not affect any rare species habitat (Exh. BP-1, at 4-81).

2. Analysis and Findings

The Siting Board includes in its review of land use impacts a consideration of whether a proposed facility would be consistent with: (1) existing land uses; and (2) state and local requirements, policies or plans relating to land use and terrestrial resources. The Siting Board notes that the proposed facility would be built on previously disturbed, industrially-zoned land on which electric generating facilities are a permitted use. The record indicates that the areas immediately surrounding the proposed plant site are zoned and currently utilized for commercial or industrial applications.

The record also indicates that the footprint of the proposed generating plant and its associated outbuildings would cover the majority of the 13.2 acre site. The site has a limited wooded buffer area along the Salisbury Plain River on its western site boundary. The limited extent of the buffer has ramifications with respect to specific environmental issues considered herein, for example noise and visual impacts, each of which has been evaluated in previous sections.[43] The Siting Board has found above (see Sections C and H), that with the mitigation measures proposed by the Company and/or imposed as conditions to this decision, noise and visual impacts would be minimized.

The Siting Board finds that the land use impacts of the proposed facility would be minimized.

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[43] In particular, the facility proposal has posed issues relating to (1) the level of noise at the property line; and, (2) the visibility of the 250-325-foot stack and other high structures.

K. Cumulative Health Impacts

This section describes the cumulative health impacts of the proposed facility. The Siting Board considers the term "cumulative health" to encompass the range of effects that a proposed facility could have on human health through emission of pollutants over various pathways, as well as possible effects on human health unrelated to emissions of pollutants (e.g., EMF or noise effects). The Siting Board considers these effects in the context of existing background conditions, existing baseline health conditions, and, when appropriate, likely changes in the contributions of other major emissions sources. Braintree Decision at 65; Massachusetts Municipal Wholesale Electric Company, EFSB 07-6, at 59 (2008); Sithe Mystic Decision, 9 DOMSB 101, at 189.

The analysis of the health impacts of a proposed generating facility is necessarily closely related to the analysis included in sections above of specific environmental impacts which could have an effect on human health and any necessary mitigation measures. This section: (1) sets forth information on the human health effects that may be associated with air emissions, including criteria pollutants and air toxics, emissions to ground and surface waters, the handling and disposal of hazardous wastes, EMF, and noise; (2) describes any existing health-based regulatory programs governing these impacts; and (3) considers the impacts of the proposed facility in light of such programs.

1. Air

a. Baseline Health Conditions

The Company provided a summary of study findings regarding pediatric and adult asthma prevalence and total cancer incidence for Massachusetts communities, including Brockton and West Bridgewater (Exh. EFSB-H-2). The Company indicated that the summary of study findings it provided was available from the Massachusetts Department of Public Health ("MDPH"). With respect to adult asthma prevalence, the Company submitted findings from the MDPH publication "A Profile of Health Among Massachusetts Adults, 2005." With reference to this publication, the Company indicated that MDPH grouped Brockton and West Bridgewater with other cities in southeastern Massachusetts (id.). The Company stated that the adult asthma prevalence for southeastern Massachusetts was 13.8%, lower than the statewide average adult asthma prevalence of 14.2% (id.). The Company reported on adult cancer incidence in Brockton

and West Bridgewater based on estimates from the MDPH report "Cancer Incidence in Massachusetts, 2000-2004" (id.). The Company stated that, for the study period, Brockton rates for most cancers were about average, but were statistically above the state average for cervical, esophageal, and lung cancer and below the state average for breast and prostate cancer (id.). The Company stated that West Bridgewater cancer incidence rates were comparable to statewide averages (id.).

The Company stated that the two most recent MDPH reports on pediatric asthma covered the years 2004-2005 and 2005-2006 (Exh. EFSB-H-2). For 2004-2005, the Company stated that average pediatric asthma prevalence statewide was 10%, with a range of 2.6 to 22.1%; for the same year, prevalence of pediatric asthma was 11.7% in Brockton, and 8.7% in West Bridgewater, considered "statistically higher" and "statistically similar," respectively (id.). The Company indicated that in 2005-2006, average prevalence of pediatric asthma in Massachusetts communities was 10.6%, with a range of 8.1% to 12% (id.). The Company stated that in the same year, prevalence of pediatric asthma in Brockton was 13.85%, again statistically above the mean, in contrast to the statistically lower prevalence of 8.56% in West Bridgewater (id.). The Company indicated that MDPH ascribed differences in pediatric asthma prevalence across communities to a number of factors, including, but not limited to, different levels of mold and moisture in school buildings and differences in record keeping (id.). The Company further stated that MDPH observed an association between pediatric respiratory symptoms and genetic and lifestyle factors, and with the nature of children's outdoor and home environment exposures (id.).

In addition to information with respect to asthma prevalence in Brockton and West Bridgewater, the Company provided information with regard to the possible effect of industrial emission sources, such as power plants and incinerators, on asthma rates (Exhs. BP-1, at 4-103 to 4-106; BP-4, at 5.14-2 to 5.14-5; EFSB-H-2). The information provided by the Company included results of a Year 2008 MDPH study of air pollution in the Merrimack Valley ("Merrimack Valley study") which, the Company stated, concluded that the prevalence of asthma in children was not associated with air pollution levels from stationary sources (Exh. EFSB-H-2,[44, 45]). The Company argued, furthermore, that its use of an efficient turbine, clean

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[44] The Company indicated that the Merrimack Valley study did, however, link the incidence of asthma with proximity to high volumes of traffic (Exh. EFSB-H-2).

fossil fuels, combustion controls and a "very effective" air pollution control system would produce emission rates fully compliant with LAER and BACT requirements (Company Initial Brief at 38).

b. Criteria Pollutants

As discussed in Section III.B, above, the Company indicated that USEPA and MADEP regulate emissions of SO_2, PM (PM_{10} and $PM_{2.5}$), CO, O_3, and lead (Pb) under NAAQS (Exh. BP-1, at 4-6). The Company stated that NAAQS for $PM_{2.5}$, set at 35 $\mu g/m^3$ for the 24 hour average, and 15 $\mu g/m^3$ for the annual average, were promulgated by USEPA in September 2006 under the Clean Air Act (id.).

The Company indicated that USEPA is required to establish both primary and secondary NAAQS for the identified pollutants; primary standards are designed to be protective of human health, including the health of children and other sensitive subgroups, with an adequate margin of safety (Exhs. BP-1, at 4-6; EFSB-A-1, at 3-4). The Company stated that primary standards must be set at the level that is "in the judgment of the Administrator, based on such criteria and allowing an adequate margin of safety, …requisite to protect the public health" (Exh. EFSB-H-1, citing 42 U.S.C.A. §7409). The Company indicated that the "margin of safety" requirement is intended to address uncertainties in the available scientific and technical information, to protect sensitive subpopulations, and to provide a reasonable degree of protection against harms that may be identified in the future (Exh. EFSB-H-1).

The Company further indicated that the Clean Air Act specifically identifies asthmatics as a sensitive subpopulation to be protected by primary standards (id.).[46] The Company indicated, in addition, that the proposed facility would be below SILs, and that SILs had been adopted by USEPA and MADEP for NAAQS criteria pollutants (excluding PM2.5) with respect to new sources of air pollution with the potential for incremental impacts to ambient air quality

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45 The Company stated that the Merrimack Valley study indicated that rural communities without power plants in the study may have had higher pediatric asthma rates than cities with power plants (Exhs. EFSB-H-2; BP-PAV-1 (Rebuttal)(S) at 10-11).

46 Secondary standards, which are not human health-based, are developed to protect public welfare and the environment, including effects to crops and vegetation, wildlife, man-made materials, and visibility (Exh. EFSB-A-1, at 3-4).

(Exh. BP-4, at 5.14-1). The Company stated that, because all Massachusetts is a moderate non-attainment area for ozone, potential new sources of ozone-precursor pollutants such as the proposed facility must obtain emissions offsets and achieve a more stringent level of pollution control (as required under LAER) (Exh. BP-1, at 4-4). The Company stated that the proposed facility would meet BACT and LAER standards as well as all health-based USEPA requirements (Exhs. BP-1, at 4-1 to 4-17; BP-PAV-1(Rebuttal) at 9; EFSB-A-1 at 5.14-1). The Company asserted that the proposed facility would thus have no adverse impacts on air quality in Brockton or the surrounding area (Exh. BP-PAV-1(Rebuttal) at 9).

c. Air Toxics

Two types of ambient air guidelines, allowable ambient limits ("AALs") and threshold effects limits ("TELs"), have been developed by MADEP for potentially hazardous air pollutants, also commonly known as "air toxics" or "non-criteria pollutants" (Exh. BP-4, at 5.1-22 to 5.1-25, App. B at 5-9). Air toxics include organic compounds, metals, ammonia, and sulfuric acid (id. at 5.1-22 to 5.1-25).

The Company indicated that it modeled ambient air impacts of potential hazardous air pollutants from the facility (id. at 5.1-22 to 5.1-25, App. B at 5-9). The Company further indicated that it based such modeling on USEPA emission factors for turbines firing oil and natural gas, and on AERMOD dispersion modeling (id.). The Company stated that it compared modeled values to MADEP ambient air guidelines,[47] and that modeled 24-hour and annual average concentrations would be within MADEP guidelines for AALs and TELS (id.).

d. Intervenors

With respect to cumulative health, the City of Brockton asserted that the Company's own evidence indicated that the background concentration of ozone over an eight-hour period was already in excess of the applicable NAAQS standards by 21% (City of Brockton Initial Brief at 7, citing COB-A-10, Table COB-A-10-1). The City of Brockton further asserted that the Project would be a significant source of NOx and other volatile organic compounds ("VOC"), which

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47 MADEP regulates air toxics through the establishment of AALs and TELS based on potential carcinogenic and non-carcinogenic effects from exposure to ambient air. Braintree Decision at 68-69.

would be precursors to ozone (City of Brockton Initial Brief at 7, citing BP-4, at 5.1-5 to 5.1-6). According to the City of Brockton, the Project would, in addition, result in an increase in particulate matter in the Brockton air (City of Brockton Initial Brief at 8, citing Exh. RR-COB-2(c) Table RR-COB-2(c)). The City of Brockton further argued that this was significant for two reasons: (1) even at levels below NAAQS the pollutant PM2.5 would be a health hazard (City of Brockton Initial Brief at 9-10, citing Exh. ACE-11, at 67-68); and (2) both ozone and PM2.5 have been associated with the aggravation of asthma (City of Brockton Initial Brief at 8-9, citing Exh. COB-LT-1(7), at 5-6, and Exh. COB-LT-1(8), at 54128).

ACE asserted that the Company's methodology for calculating particulate matter emissions was flawed (ACE Initial Brief at 3-4). ACE argued that while the Company included primary particulate matter in its model, it excluded secondary particulate matter (id. at 4, citing Tr. at 2377-2378).[48] According to ACE, the modeled emission, PM2.5, would comprise both primary and secondary PM (ACE Initial Brief at 4, citing COB-LT-1(8)). ACE implied that, by ignoring the secondary PM that the proposed project would emit, the Company underestimated the PM2.5 that would result from operation of the proposed facility (id.). This is important, ACE asserted, because even though the Company's own model did not take secondary PM2.5 formation into account, the model predicted that PM2.5 emissions would be at 91% of NAAQS for the 24-hour period; had the secondary PM been included, the modeled PM2.5 emissions might have exceeded NAAQS (ACE Initial Brief at 4, citing EFSB-A-1(S)(1), 6-12).

ACE asserted, moreover, that the Company used flawed date for dispersion modeling because the data came from Logan Airport, 20 miles to the northeast of the proposed site (ACE Initial Brief at 5, citing EFSB-A-1(S)(1), 5-3). According to ACE, the Company did not provide information from which one might conclude that the Logan Airport data "approximates the meteorological data at the Brockton site" (ACE Initial Brief at 5). Finally, ACE asserted that the Company's argument that the Project's emissions would not exceed federal air quality limits was irrelevant because said limits do not fully protect public health (id. at 5-8).

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[48] Primary and secondary particulates are those emitted directly to the atmosphere and those formed by reactions in the atmosphere, respectively.

e. Analysis

Based on the Company's air toxics impact assessment, the proposed project would comply with each of the MADEP's applicable ambient air guidelines for AALs and TELs (id.). The Siting Board therefore finds that the cumulative health impacts of air toxics from the proposed facility would be minimized.

With respect to criteria pollutants, the Siting Board notes that the approach of USEPA and MADEP to protecting air quality is consistent with the Siting Board's mandate to minimize both the environmental health impacts and costs of proposed generating facilities. The Siting Board notes that it consequently gives great weight to expected compliance with USEPA and MADEP air quality regulatory requirements as an indicator of whether the potential impacts to air quality of a proposed facility would be minimized. In the instant case, the Company has shown that its proposed facility would comply with regulatory programs of USEPA and MADEP that would minimize its cumulative health impacts with respect to air quality.

In Sithe Edgar Development LLC, 10 DOMSB 1 ("Sithe Edgar Development") (2000), the Board addressed the issue of compliance with NAAQS as follows:

> [T]he USEPA has set in place ambient air quality standards, called NAAQS . . . These standards are set based on extensive review of medical literature regarding the health effects of each pollutant, and are designed to be protective of human health, ***including the health of sensitive subgroups*** such as the elderly, children, and asthmatics, ***with an adequate margin for safety.*** The Siting Board ***gives great weight to these standards*** as indicators of whether incremental emissions of criteria pollutants will have a discernable impact on public health.
>
> Sithe Edgar Development LLC, at 121 (emphasis supplied).

This view of NAAQS was recently reiterated in the Braintree Decision, at 66: "The USEPA sets the NAAQS to be protective of sensitive populations, such as adult and pediatric suffers of respiratory illnesses, including asthma." Consequently, it appears that the Company is on safe ground in using NAAQS to measure the health impacts of the Project.

The Siting Board therefore finds that the cumulative health impacts of criteria pollutant emissions from the proposed facility would be minimized.

2. Discharges to Ground and Surface Waters

The Company indicated that with anticipated completion of an upgrade of its facilities, the Brockton AWRF would be in compliance with its NPDES permit (Exh. TRWA-W-14). The Company stated that the purpose of the NPDES permit, in accordance with the Clean Water Act, is to protect water quality in the Salisbury Plain River (id.). The Company indicated that withdrawals and return flow would not affect the ability of the AWRF to comply with its NPDES permit in the future (id.; Exh. EFSB-W-18).

Based on its analysis, the Company indicated that variability of AWRF discharge flows already encompassed periods of 15% flow reduction, similar to the potential impact of the proposed facility on AWRF discharge flows (Exh. TRWA-W-14). The Company indicated, in addition, that because of the planned raw water storage tank, it would be possible for the proposed facility to withdraw water at peak hours of AWRF flow and to discharge its wastewater to the AWRF at periods of low flow, thus minimizing impacts to the Salisbury Plain River (Exh. TRWA-W-14). The Company stated that the Brockton AWRF used pre- through secondary treatment, with seasonal tertiary treatment, to disinfect wastewater flows, and ultra-violet light for final disinfection (Exhs. BP-1, at 1-3; EFSB-W-19, Att.). The Company stated that any water discharged from a wastewater treatment plant such as the AWRF must be comparable in terms of water quality to existing surface waters (Exh. BP-1, at 107).

The Company also indicated that its proposed facility stormwater management system would comply with MADEP's Stormwater Management Policy and revised (effective January 2, 2008) Wetlands Protection Act regulations (Exhs. BP-1, at 4-58 to 4-60; EFSB-W-15). The Company further indicated that it would use a combination of MADEP-listed Best Management Practices to achieve an 80% removal rate of total suspended solids (id.). In addition, the Company stated that rooftop and driveway runoff from the main power plant building would be collected and appropriately treated before recharging the groundwater via an infiltration trench (Exhs. EFSB-W-15; EFSB-W-25).

As discussed in Section III.C, above, the Siting Board has found that the wastewater impacts of the proposed facility on the Salisbury Plain River would be minimized. Accordingly,

the Siting Board finds that the health impacts of wastewater and stormwater discharges would be minimized.

3. Handling and Disposal of Hazardous Materials

In Section III.G, above, the Siting Board reviewed plans submitted by the Company with respect to (1) storage and handling of hazardous materials at the proposed facility, including 19% aqueous ammonia, ULSD, and limited amounts of industrial chemicals for facility maintenance and operation, and (2) minimizing and responding to accidental releases of oil or other hazardous materials. The Company also submitted information, details of which are provided in Section III.G, above, regarding potential human health effects of exposure to ammonia vapor.

The Siting Board has determined in Sections III.D and III.G, above, that Brockton Power would have appropriate programs in place to ensure the safety of employees and the surrounding community during facility construction and operation. The Siting Board also determined that the Company would use appropriate measures to prevent or contain chemical spills or releases. In addition, the Siting Board has directed the Company to update its Emergency Response and SPCC Plans prior to any construction at the proposed site. The Company has committed to enclosing its proposed ammonia storage tank to minimize dispersion risk, and to work with affected towns with respect to delivery routing and other safety issues. Based on these safety and mitigation measures, the Siting Board finds that the health risks of the proposed facility related to the handling and disposal of hazardous materials, including ammonia, would be minimized.

4. Noise

As discussed in Section III.F, above, Brockton Power has assessed the noise impacts of the proposed facility during construction and operation in relation to the applicable state and local criteria for acceptable ambient noise. The record demonstrates that with implementation of the Company's proposed noise mitigation measures, noise impacts at residential receptors closest to the proposed facility would be at most 5 dBA above ambient noise during the quietest nighttime hours and less at other times (Exhs. BP-1, at 4-27; EFSB-A-1(S)(1) at 7-15 to 7-21).

The Company provided a copy of the USEPA document "Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin

of Safety," USEPA 550/9-74/004 (Exh. EFSB-N-7(1)). The submitted document indicates that (1) maintaining outdoor noise levels at an energy equivalent of 55 dB and indoor levels at 45 dB will, with high probability, avert noise-induced annoyance and interference with activity; and (2) individuals generally do not risk hearing loss if exposed to an equivalent sound level (24 hours per day) below 70 dBA (Exh. EFSB-N-7(1) at 3). Based on its environmental sound evaluation, the Company anticipated that, at nearby residences, with anticipated noise mitigation, operational noise from the proposed facility would not likely exceed 44 dBA, and that noise from construction would not likely exceed 70 dBA (Exh. BP-4, at 7-1 to 7-22).

In Section III.F, above, the Siting Board found that, with implementation of Brockton Power's proposed mitigation measures and a condition imposed by the Siting Board, noise impacts of construction and operation of the proposed facility would be minimized, consistent with minimizing cost. Accordingly, the Siting Board finds that the health effects, if any, of noise from the proposed facility would be minimized.

5. EMF

The Company stated that the revised alignment of the proposed transmission line (see Section III.I, above) would place the line along the eastern edge of Oak Hill Road, approximately 70 feet from the UPS building which would be the nearest abutting industrial structure (Tr. at 1739; RR-EFSB-20). The Company indicated that use of a delta configuration for the line's conductors would produce a greater cancellation effect on magnetic fields than would use of a vertical array (Tr. at 1739; RR-EFSB-20). The Company indicated that with a delta configuration, magnetic fields would be reduced to between 83 and 107 mG under the proposed line and to a maximum of 50 to 60 mG at the nearest industrial structure, the identified UPS building (Tr. at 1739; RR-EFSB-20). The Company stated that it projected the highest electric field strength would be about 1.55 kV/m directly under the conductors at the point of maximum sag (Exh. BP-4, App. G at 3). The EMF levels indicated by the Company are consistent with edge-of-ROW levels of 1.8 kV/m and 85 mG previously accepted by the Siting Board.

The Company described a variety of EMF research initiatives undertaken internationally and within the United States, including initiatives examining the potential health impacts of power-line electric and magnetic fields (Exh. BP-1, at 4-110 to 4-114). The Company's witness, Dr. Valberg, indicated that there have been some epidemiological studies associating proximity

to transmission lines with higher rates of cancer, particularly childhood leukemia, but asserted that the reported associations have been weak and inconsistent across studies (Tr. at 2006 to 2072). Dr. Valberg hypothesized that housing, age, or other socio-economic factors might explain the studies' findings (id.).

Based on Dr. Valberg's testimony, the Company asserted that available data have not demonstrated a statistically significant association between power-line EMF and human health effects, including effects to workers at higher levels of exposure (e.g., transmission line workers) (NRC, 1997) (Exh. BP-1, at 4-113; Tr. at 2066 to 2072). With respect to guidelines for EMF exposures, the Company indicated that a number of agencies had proposed guidelines, and singled out the work of the International Commission on Non-ionizing Radiation Protection ("ICNIRP") (Exh. BP-1, at 4-113 to 4-114). The Company stated that the ICNIRP, formally recognized by the World Health Organization, concluded that there was no evidence of adverse health effects of EMF below continuous exposure levels of 833 mG (id. at 4-113). The Company asserted that 833 mG exceeds magnetic field level exposure encountered by the public in a transmission line environment (id.).

In Cambridge Electric Light Company, 12 DOMSB 305, at 348 (2001), the Siting Board found that "although some epidemiological studies suggest a correlation between exposure to magnetic fields and childhood leukemia, there is no evidence of a cause-and-effect association between magnetic field exposure and human health." Consistent with this Siting Board finding, and in light of Brockton Power's projections regarding electric and magnetic fields at the edge of the transmission line rights-of-way, the Siting Board finds that the health effects, if any, of EMF associated with the proposed facility would be minimized.

6. Conclusions

In the sections above, the Siting Board has reviewed the potential for the Company's proposed facility to impact human health as a result of emissions of criteria pollutants and air toxics, discharges to ground and surface waters, handling and disposal of hazardous materials, EMF, and noise. The Siting Board has found that: (1) the health impacts, if any, of air toxics and criteria pollutant emissions from the proposed facility would be minimized; (2) the health impacts of wastewater and stormwater discharges would be minimized; (3) the health risks of the proposed facility related to the handling and disposing of hazardous materials, including

ammonia would be minimized; (4) the health effects, if any, of EMF associated with the proposed facility would be minimized; and (5) the health effects, if any, of noise from the proposed facility would be minimized.

Accordingly, based on its review of the record, the Siting Board finds that the cumulative health impacts of the proposed facility would be minimized.

L. Conclusions on Environmental Impacts

Based on the information in Sections III.B through K, above, the Siting Board finds that Brockton Power's description of the proposed project and its environmental impacts is substantially accurate and complete.

In Section III.B, the Siting Board has found that, based on the proposed design, with use of a stack between 250 and 325 feet in height, the air quality impacts of the proposed facility would be minimized.

In Section III.C, the Siting Board has found that, with the implementation of the conditions with respect to water supply, water resources and wetlands impacts of the proposed facility (including any rulings or conditions that may come from a Siting Board review of any project change filing) would be minimized.

In Section III.D, the Siting Board has found that, with implementation of the recycling condition, the solid waste impacts of the proposed facility would be minimized.

In Section III.E, the Siting Board has found that, based on the proposed design, with use of a stack between 250 and 325 feet in height, and with the implementation of the two visual mitigation conditions, the visual impacts of the proposed project would be minimized.

In Section III.F, the Siting Board has found that, with the implementation of the condition limiting construction hours, the noise impacts of the proposed facility would be minimized.

In Section III.G, the Siting Board has found that, with the implementation of the condition regarding routing and related safety issues associated with the delivery of ULSD and aqueous ammonia to the proposed facility, the condition regarding Brockton Fire and Police Department approval of safety and security plans for the proposed facility, and the conditions requiring preparation of an SPCC Plan, an Emergency Action Plan, a Standard Operating Procedure for on-site transfer and storage of aqueous ammonia, and a Standard Operating

Procedure for aqueous ammonia deliveries, the safety impacts of the proposed facility would be minimized.

In Section III.H, the Siting Board has found that the traffic impacts of the proposed facility would be minimized.

In Section III.I, the Siting Board has found that, based on a delta configuration of the proposed transmission line conductors, and with the implementation of the EMF informational condition, the EMF impacts of the proposed facility would be minimized.

In Section III.J, the Siting Board has found that the land use impacts of the proposed facility would be minimized.

In Section III.K, the Siting Board has found that the cumulative health impacts of the proposed facility would be minimized.

Accordingly, the Siting Board finds that, with the implementation of the above-listed conditions, Brockton Power's plans for the construction of the proposed generating facility would minimize the environmental impacts of the proposed facility consistent with the minimization of costs associated with the mitigation, control, and reduction of the environmental impacts of the proposed generating facility. In addition, the Siting Board finds that an appropriate balance would be achieved among conflicting environmental concerns as well as between environmental impacts and costs.

IV. CONSISTENCY WITH THE POLICIES OF THE COMMONWEALTH

A. Standard of Review

G.L. c. 164, § 69J¼ requires the Siting Board to determine whether the plans for construction of a proposed generating facility are consistent with current health and environmental protection policies of the Commonwealth and with such energy policies of the Commonwealth as are adopted by the Commonwealth for the specific purpose of guiding the decisions of the Siting Board. The health and environmental protection policies applicable to the review of a generating facility vary considerably depending on the unique features of the site and technology proposed; however, they may include existing regulatory programs of the Commonwealth relating to issues such as air quality, water-related discharges, noise, water supply, wetlands or riverfront protection, rare and endangered species, and historical or

agricultural land preservation. Therefore, in this section, the Siting Board summarizes the health and environmental protection policies of the Commonwealth that are applicable to the proposed facility and discusses the extent to which the proposed facility complies with these policies.

B. Policies and Issues

In this case, parties have raised arguments with regard to whether the construction and operation of the proposed facility would be consistent with the Environmental Justice policy and other policies of the Commonwealth. These issues are discussed below.

1. Environmental Justice ("EJ") Policy

a. Background

In 2002, the EJ policy was promulgated by the Executive Office of Environmental Affairs ("EOEA") (Exh. EFSB-1, EJ Policy Statement), the predecessor to the Executive Office of Energy and Environmental Affairs ("EOEEA"). EOEA issued the EJ policy pursuant to its statutory mandate to "develop policies, plans, and programs for carrying out [its] assigned duties" (G.L. c. 21A, §2, see also, Exh. EFSB-1, EJ Policy Statement, page 2 of 12, "Legal Authority" section). Pursuant to said policy, an EJ area is a neighborhood in which the median household income is below 65% of the statewide median income for Massachusetts, or one in which 25% of the residents are either minority, foreign born, or lacking in English proficiency; a neighborhood need only satisfy one of these four criteria to constitute an EJ area (Exh. EFSB-1, EJ Policy Statement at 5). While the Commonwealth contains 351 municipalities, only 20 of them have a neighborhood, or collection of neighborhoods, that satisfy all four EJ criteria. Brockton is one of those 20 (Exh. EFSB-2).

The EJ Policy contains a set of procedures to be followed by project proponents to enhance public participation when projects are proposed to be located in or near an EJ area (Exh. EFSB-1, at 8). In the present case, the record shows that although the proposed site would not be inside an EJ area, it would be within one half-mile or less of EJ areas to the west, north and northeast (Exhs. BP-4 at Figure 6.5-1; COB-SS-1 (Attachment)).

When the EJ Policy was issued, the Siting Board was under the jurisdiction of the Office of Consumer Affairs, not the EOEA. The policy explicitly stated that it was not applicable to the EFSB: "This policy is not intended to regulate agencies outside the EOEA secretariat . . . This

policy is not intended to interfere with, supersede, or create any new obligations on the Energy Facility Siting Board, an entity which is not by law or otherwise a part of the EOEA secretariat" ("Environmental Justice Policy of the Executive Office of Environmental Affairs" dated October 9, 2002, at 12, section entitled "Disclaimers"). The Siting Board later came under the jurisdiction of the EOEA's successor, EOEEA, on April 11, 2007 (Statutes of 2007, Chapter 19, section 17A Addendum Issued by Office of the Secretary of the Commonwealth dated March 7, 2007). All of the Parties who addressed the EJ Policy issue, assumed that said policy was one of the "current health and environmental protection policies of the Commonwealth" referred to in section 69J¼ (see citations above). No one argued to the contrary.

b. Summary of the Parties' Positions

The Company asserted that: the "EJ Policy establishes procedural requirements that an applicant must satisfy . . . [such as] additional outreach, education, and information distribution with EJ communities . . . . the EJ Policy does not establish any substantive requirements that provide any community, whether EJ or not, with preferential treatment either for or against the siting of development or infrastructure projects" (Company Reply Brief at 90, emphasis in original, language in brackets supplied). The Company argued that it, "has complied fully with the EJ policy through the MEPA process as a result of its extensive outreach efforts and public notification process" (Company Initial Brief, at 137).

The City of Brockton acknowledged that the EJ Policy required various procedural steps to be taken and admitted that the Company has satisfied these requirements (City of Brockton Initial Brief at 46, n.7). Nevertheless, the City of Brockton asserted that the Board must be attentive to the "broader findings and principles of" said policy (id.). Approving the proposed facility, the City of Brockton argued, would increase the pollution problems of an EJ community and this would, in turn, exacerbate "an existing equal protection problem as defined by EJ Policy" (id.).

ACE articulated five specific arguments for denying the Company's Petition on EJ Policy grounds (ACE Initial Brief at 61). They are: 1) the Petition "does not include a comprehensive health impact assessment"; 2) the Petition "does not describe the environmental justice impacts of the facility"; 3) the Petition "does not describe the environmental justice considerations of the site selection process"; 4) the Petition "does not use local meteorological data for air quality

modeling"; 5) the Petition "does not compare its air modeling estimates to the most protective proposed SIL for PM2.5 or undertake the analysis required for exceeding the 24-hour SIL for PM2.5" (id.). In addition to these specific objections, ACE also asserted a more general, policy objection: i.e., that siting the proposed facility in Brockton would result in an "undue concentration of environmentally hazardous sites in the City of Brockton" (id. at 62).

Senator Robert Creedon and Representative Geraldine Creedon asserted that allowing the Siting Board Petition would violate the rights of Brockton residents to clean air and water (Brief of Senator Representative Geraldine Creedon at 7-8). Senator and Representative Creedon argued that the City of Brockton is already "overburdened with environmentally hazardous sites and facilities." Therefore, Senator and Representative Creedon contended, siting the proposed facility at the proposed location would "disproportionately overburden the Environmental Justice Population that abuts the site" (id. at 7).

In response to the arguments propounded by the City of Brockton, ACE, and Senator and Representative Creedon regarding air quality and its EJ implications, Brockton Power asserted that the NAAQS are established by the USEPA and are the only criteria that should be used to determine whether the proposed facility would result in a "minimum environmental impact" (Company Reply Brief at 87). The Company argued that: "The Siting Board should not attempt to establish new air quality standards under the guise of the EJ Policy, but should continue to apply on an even-handed basis the currently applicable standards that are used by the federal and state agencies with primary authority over air emissions regulations" (id. at 89).

c. Analysis

When issued in 2002, the EJ policy explicitly stated that it was not intended to apply to agencies outside the EOEA, the predecessor to EOEEA. Therefore, we agree that the EJ policy became applicable to the Siting Board for the first time in 2007, when the Board came under the jurisdiction of EOEEA. During the relatively short period of time during which the EJ policy has been applicable to the Board, the Board has not had occasion to consider the scope of or otherwise interpret the policy. For these reasons, we have no useful precedent to guide us in this matter.

In its current form, the EJ policy seems to the Board to be largely procedural, requiring enhanced outreach and public participation. No participant in this case appears to argue that

there was any defect in that regard. Rather, participants argue that substantive requirements are implicit in the EJ policy. In light of the prescriptive nature of the Siting Board's obligations as imposed by statute, it is difficult to know how to apply requirements that are implicit at best. This problem is confounded by two other considerations: (1) the proposed facility is close to but not actually in an EJ area, and (2) in his MEPA Certificate (of March 28, 2008), the Secretary of EOEEA concluded that the facility was not subject to the requirement of enhanced analysis under the EJ policy (because it did not exceed a mandatory EIR threshold for air). For these reasons, we conclude that EJ considerations do not change other aspects of the analysis we have undertaken or our conclusions in this case. Therefore, the Siting Board finds that construction of the proposed facility would be consistent with EJ Policy.

2. Other Consistency Arguments, Asserted by ACE

a. Positions of the Parties

ACE asserts that plans for the construction of the proposed facility are inconsistent with the Brockton and West Bridgewater residents' right to clean air under Article XCVII of the Massachusetts Constitution (ACE Initial Brief at 62 - 63). In response, the Company asserts that the Constitutional right to clean air is ensured through statutory provisions and regulations such as the air emissions policies adopted by the MADEP, and it argues that any project that complies with MADEP regulations, "cannot be said to be in violation of this constitutional protection" (Company Reply Brief at 98).

Furthermore, ACE cites to the Commonwealth's 2004 Water Policy, maintaining that it encourages protection of fish habitat and recharge of treated wastewater into the ground to replenish aquifers (ACE Initial Brief at 64-67). The proposed facility's use of wastewater, ACE argues, would reduce the discharge into the Salisbury Plain River, thereby both endangering the fish habitat and precluding the use of this water to recharge the aquifer (id. at 65-67). The Company, however, notes that the Commonwealth's 2004 Water Policy was not introduced into evidence during the proceedings (Company Reply Brief at 99-100 and at 31). Consequently, the Company had no opportunity to question the ACE witness about the Water Policy and no opportunity to present its own witnesses on this subject (id. at 99-100 and at 31). As a result, Brockton Power alleges, it has been prejudiced and, therefore, it requests that the Board

disregard both ACE's arguments and the Commonwealth 2004 Water Policy itself (id. at 99 n. 42 and at 31).

In addition, ACE argues that the proposed use of ULSD fuel in the proposed facility would violate the Greenhouse Gas ("GHG") Policy promulgated by the EOEEA (ACE Initial Brief at 69).[49] Brockton Power responds by arguing that its receipt of a MEPA certificate demonstrates its compliance with the EOEEA's Greenhouse Gas Policy (id.).

Finally, ACE argues that construction of the project would not be consistent with the goals of the Green Communities Act ("GCA"), including the goals of demand reduction, conservation, energy efficiency, and increasing renewable energy sources (ACE Initial Brief at 71).

b. Analysis of the Parties' Arguments

With respect to Article XCVII of the Massachusetts Constitution, the right to clean air, the Siting Board has extensively examined air issues above and found that the proposed facility meets air quality standards (Section III.B). ACE has provided neither supporting argument nor citation to relevant precedent to support its argument that construction and operation of the proposed facility would violate this constitutional right. Consequently, we have not been presented with a compelling reason or reasons to reach the conclusion that ACE advocates.

With respect to the Commonwealth's 2004 Water Policy, we note that in Section III.C above, the Siting Board looked at both water discharges and resources. In that section the Siting Board determined that with the conditions imposed the water resources and wetland impacts, including impacts to water use and wastewater would be minimized. Further, there is nothing in the record to indicate that the proposed facility would be inconsistent with the Commonwealth's 2004 Water Policy.

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[49] EOEEA issued the Greenhouse Gas Emissions Policy and Protocol pursuant to its authority under the Massachusetts Environmental Protection Act ("MEPA"), G.L. c. 30 § 60 (MEPA Greenhouse Gas Emissions Policy and Protocol, at 1, available at www.mass.gov/envir/mepa). The Policy took effect on October 15, 2007 (id.). The GHG Policy was issued in order to fulfill the statutory obligation to take all feasible measures to avoid, minimize, or mitigate damage to the environment. The Policy requires certain Projects undergoing review by the MEPA Office to quantify their GHG emissions and to identify measures to avoid, minimize, or mitigate such emissions (id.). The GHG Policy itself was neither admitted into evidence nor submitted by any Party.

Regarding the Greenhouse Gas ("GHG") Policy, we note that this project appears not to be subject to said policy. The Greenhouse Gas Policy applies only to "new projects that file an Environmental Notification Form for MEPA review after the effective date of the Policy" (GHG Policy at 1). The policy's effective date was October 15, 2007 (id.). The ENF in this case was filed on April 30, 2007 (Exh. BP-4, at 1-1).

Finally, we address ACE's argument that construction of the proposed facility would not be consistent with the Green Communities Act ("GCA" or "Act"). The Act does not change the fundamental prescriptive requirements of the statutory charge to the Siting Board under M.G.L. ch. 164. Indeed, ACE itself states that: "The Act itself does not change any rights or obligations of the Company or intervenors" (ACE Initial Brief, at 70). Finally, even ACE itself expresses some doubt whether the Act, which became effective one year after the filing of this case, applies to this proceeding (id. at 70).[50]

C. Conclusions with Respect to Consistency with Environmental and Health Policies of the Commonwealth

In Sections II and III above, the Siting Board has reviewed the process by which Brockton Power sited and designed the proposed facility, and the overall environmental and health impacts of the proposed facility as sited and designed. As part of this review, the Siting Board has identified a number of Commonwealth policies applicable to the design, construction, and operation of the proposed facility. These are briefly summarized below.

As discussed in Section III.B above, the MADEP, in conjunction with the USEPA, extensively regulates emissions of criteria and non-criteria pollutants from new sources such as the proposed facility. Brockton Power has demonstrated that operation of its proposed facility would comply with all applicable MADEP and USEPA standards.

As discussed in Sections III.C and III.D above, the MADEP, in conjunction with the USEPA, extensively regulates various wastewater discharges as well as construction in wetlands and waterway areas. Brockton Power has demonstrated that it would comply with MADEP and USEPA standards for water discharges and for work in wetlands and waterway areas.

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[50] The Petition was filed on July 12, 2007, and the hearings in this case began on May 19, 2008, and concluded on July 11, 2008. The Act became effective on July 2, 2008 (Chapter 169 of the Acts of 2008).

As discussed in Section III.G above, Brockton Power has maintained that it will limit increases in off-site noise caused by operation of the proposed facility to less than 10 dBA at the nearest residences and property lines, and has represented that it will seek a waiver from MADEP for noise increases on adjacent non-residential properties, consistent with MADEP policy 90-001, which limits such increases to 10 dBA.

As discussed in Section III.J above, the record indicates that the proposed project will not to adversely impact endangered species or historical or archaeological resources. Brockton Power has thereby demonstrated that it would comply with the policies of the Massachusetts Natural Heritage and Endangered Species Program and the Massachusetts Historical Commission.

As discussed in Section IV.B above, the Siting Board has found that the proposed project is consistent with the EJ Policy of the Commonwealth and other policies that have been asserted by the Parties.

Accordingly, for the reasons set forth above, the Siting Board finds that plans for construction of the proposed facility are consistent with current health and environmental protection policies of the Commonwealth and with such energy policies of the Commonwealth as have been adopted for the specific purpose of guiding the decisions of the Siting Board.

V. ZONING EXEMPTION[51]

A. Standard of Review

General Laws c. 40A, § 3, provides, in relevant part, the following:

> Land or structures used, or to be used by a public service corporation may be exempted in particular respects from the operation of a zoning ordinance or bylaw if, upon petition of the corporation, the department . . . shall, after notice given pursuant to section eleven and public hearing in the town or city, determine the

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[51] As mentioned in section I.B. above, the Zoning Exemption Petition and the Section 72 Petition were both originally filed with the Department but have been referred to the Siting Board for hearing and determination and also have been consolidated with the petition filed with the Siting Board pursuant to G.L. c. 164, § 69J¼. G.L. c. 25, § 4; G.L. c. 164, § 69H.

> exemptions required and find that the present or proposed use of the land or structure is reasonably necessary for the convenience or welfare of the public . . . .

Accordingly, a petitioner seeking exemption from a local zoning bylaw under G.L. c. 40A, § 3 must meet three criteria. First, the petitioner must qualify as a public service corporation. New England Power Company/Massachusetts Electric Company, D.T.E. 04-66/04-81, at 4-5 (2005) ("NEP/MECo (2005)"), citing Save the Bay, Inc. v. Department of Public Utilities, 366 Mass. 667 (1975) ("Save the Bay"). Second, the petitioner must establish that it requires exemption from the zoning ordinance or bylaw. NEP/MECo (2005) at 4-5 citing Boston Gas Company, D.T.E. 00-24, at 3 (2001) ("Boston Gas"). Finally, the petitioner must demonstrate that its present or proposed use of the land or structure is reasonably necessary for the public convenience or welfare. New England Power Company/Massachusetts Electric Company, D.T.E. 04-66/04-81, at 4-5 (2005), citing Massachusetts Electric Company, D.T.E. 01-77, at 4 (2002) ("MECo ("2002"); Tennessee Gas Pipeline Company, D.T.E. 01-57, at 3-4 (2002) ("Tennessee Gas (2002)").

1. Public Service Corporation

In determining whether a petitioner qualifies as a "public service corporation" ("PSC") for the purposes of G.L. c. 40A, § 3, the Massachusetts Supreme Judicial Court ("SJC") stated:

> among the pertinent considerations are whether the corporation is organized pursuant to an appropriate franchise from the State to provide for a necessity or convenience to the general public which could not be furnished through the ordinary channels of private business; whether the corporation is subject to the requisite degree of governmental control and regulation; and the nature of the public benefit to be derived from the service provided.
>
> Save the Bay at 680. See also, Boston Gas at 3-4; Berkshire Power Development, Inc., D.P.U. 96-104, at 26-36 (1997) ("Berkshire Power").

The Department interprets this list not as a test, but rather as guidance to ensure that the intent of G.L. c. 40A, § 3 will be realized, i.e., that a present or proposed use of land or structure that is determined by the Department to be "reasonably necessary for the convenience or welfare of the public" not be foreclosed due to local opposition. See Berkshire Power, D.P.U. 96-104, at 26-36; Save the Bay at 685-686. The Department has interpreted the "pertinent considerations" as a "flexible set of criteria which allow the Department to respond to changes in the

environment in which the industries it regulates operate and still provide for the public welfare." Berkshire Power at 30; see also Dispatch Communications of New England d/b/a Nextel Communications, Inc., D.P.U./D.T.E. 95-59-B/95-80/95-112/96-113, at 6 (1998) ("Nextel"). The Department has determined that it is not necessary for a petitioner to demonstrate the existence of "an appropriate franchise" in order to establish PSC status. See Berkshire Power at 31.

2. Exemption Required

In determining whether exemption from a particular provision of a zoning bylaw is required for purposes of G.L. c. 40A, § 3, the Department looks to whether the exemption is necessary to allow construction or operation of the petitioner's project as proposed. NEP/MECO (2005) at 5-6, citing MECo (2002) at 4-5; Tennessee Gas (2002) at 5; Western Massachusetts Electric Company, D.P.U./D.T.E. 99-35, at 4, 6-8 (1999); Tennessee Gas Company, D.P.U. 92-261, at 20-21 (1993). It is the petitioner's burden to identify the individual zoning provisions applicable to the project and then to establish on the record that exemption from each of those provisions is required:

> The Company is both in a better position to identify its needs, and has the responsibility to fully plead its own case . . . The Department fully expects that, henceforth, all public service corporations seeking exemptions under c. 40A, § 3 will identify fully and in a timely manner all exemptions that are necessary for the corporation to proceed with its proposed activities, so that the Department is provided ample opportunity to investigate the need for the required exemptions.
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> New York Cellular Geographic Service Area, Inc., D.P.U. 94-44, at 18 (1995).

3. Public Convenience or Welfare

In determining whether the present or proposed use is reasonably necessary for the public convenience or welfare, the Department must balance the interests of the general public against the local interest. NEP/MECo (2005) at 6-7, citing Save the Bay at 680; Town of Truro v. Department of Public Utilities, 365 Mass. 407, at 411 (1974). Specifically, the Department is empowered and required to undertake "a broad and balanced consideration of all aspects of the general public interest and welfare and not merely [make an] examination of the local and individual interests which might be affected." New York Central Railroad v. Department of

Public Utilities, 347 Mass. 586, 592 (1964) ("New York Central Railroad"). When reviewing a petition for a zoning exemption under G.L. c. 40A, § 3, the Department is empowered and required to consider the public effects of the requested exemption in the State as a whole and upon the territory served by the applicant. Save the Bay at 685; New York Central Railroad at 592.

With respect to the particular site chosen by a petitioner, G.L. c. 40A, § 3 does not require the petitioner to demonstrate that its preferred site is the best possible alternative, nor does the statute require the Department to consider and reject every possible alternative site presented. Rather, the availability of alternative sites, the efforts necessary to secure them, and the relative advantages and disadvantages of those sites are matters of fact bearing solely upon the main issue of whether the preferred site is reasonably necessary for the convenience or welfare of the public. Martarano v. Department of Public Utilities, 401 Mass. 257, 265 (1987); New York Central Railroad, 347 Mass. at 591.

Therefore, when making a determination as to whether a petitioner's present or proposed use is reasonably necessary for the public convenience or welfare, the Department examines: (1) the present or proposed use and any alternatives or alternative sites identified; (2) the need for, or public benefits of, the present or proposed use; and (3) the environmental impacts or any other impacts of the present or proposed use. The Department then balances the interests of the general public against the local interest, and determines whether the present or proposed use of the land or structures is reasonably necessary for the convenience or welfare of the public. Boston Gas at 2-6; MECo (2002) at 5-6; Tennessee Gas (2002) at 5-6; Tennessee Gas Company, D.T.E. 98-33, at 4-5 (1998).

B. Summary of Parties' Arguments and Analysis

1. Parties' Arguments Regarding Public Service Corporation Status

a. Summary of Arguments

The City of Brockton argued that Brockton Power does not qualify as a public service corporation ("PSC") because it has not received an "appropriate franchise" from the Commonwealth, and that the grant of such a franchise is the sine qua non of PSC status (City of Brockton Initial Brief at 48–50, citing Save the Bay). The City admitted that since the Save the Bay decision, the Department has determined that it is not necessary for a petitioner to establish

the existence of an appropriate franchise in order to establish PSC status (City of Brockton Initial Brief at 48 citing Princeton Municipal Light Department, D.T.E./D.P.U. 06-11, at 5 (2007) ("Princeton") and Berkshire Power Development, Inc., D.P.U. 96-104, at 31 (1997) ("Berkshire Power"). Nevertheless, the City of Brockton argued that Princeton and Berkshire Power were wrongly decided and urged the Siting Board to reinstate the grant of an "appropriate franchise" as a required element of all public service corporations (City of Brockton Initial Brief 48).

Brockton Power responded that the deregulation of the energy industry has effectuated a change in energy generation that has rendered the "appropriate franchise" argument inapplicable (Company Reply Brief at 103). Prior to deregulation, according to the Company, the generation and sale of energy in the Commonwealth was exclusively accomplished by vertically integrated utilities that operated as monopolies (id.). As a result of deregulation, however, "the generation of electricity is now a competitive service that is no longer subject to a monopoly or utility franchise as granted by the state" (id.). Consequently, the Company asserted, no corporations now enjoy the type of franchise referred to in Save the Bay (id. at 104).

b. Analysis of Parties' Arguments Regarding Public Service Corporation Status

In 1997, the Department issued Berkshire Power. In that decision, for the first time, the Department addressed whether an independent power producer qualified as a PSC under G.L. c. 40A, § 3. Specifically, the Department stated that,

> the issues before the Department in the present proceeding are how the Department should (1) interpret the intent of the Legislature in enacting G.L. c. 40A, § 3 in an environment that is significantly different from that in which the section was first enacted, and (2) apply the section in this changed environment.
>
> Berkshire Power, D.P.U. 96-104 at 28.

Since G.L. c. 40A, § 3 does not define a PSC, the Department looked to Save the Bay for guidance. In Save the Bay, the Court provided a "list of 'pertinent considerations' to be used when making a determination as to whether an entity is a PSC." (id., citing Save the Bay, 366 Mass. at 680.

As mentioned above, the City asserts that the receipt of an appropriate franchise from the state is essential in order for an entity to successfully claim PSC status (Section VI.B.1 above; City of Brockton Initial Brief at 48–50, citing Save the Bay). The Company, on the other hand,

asserts that the "appropriate franchise" argument has been superseded, and rendered irrelevant, by developments in the generation and distribution of energy since Save the Bay was decided (Section VI.B.1, above; Company Reply Brief at 102 - 105).

In Save the Bay, the Supreme Judicial Court states that, "whether the corporation is organized pursuant to an appropriate franchise from the State" is one of the "pertinent considerations" in determining whether a corporation qualifies as a PSC. Save the Bay at 680 (emphasis supplied). The City, however, asserts that the receipt of an "appropriate franchise" is absolutely essential to the qualification of an entity as a PSC (City of Brockton Initial Brief at 48, emphasis supplied). Specifically, in criticizing the Princeton decision, the City states that it, "submits that [the] DPU was incorrect in determining that an entity does not require an 'appropriate franchise' to qualify as a public service corporation" (id., emphasis added).

The Siting Board is of the opinion that the City of Brockton's argument goes farther than the Save the Bay decision would support. We agree with the reasoning of the Berkshire Power decision. Therefore, it is not necessary that Brockton Power have an appropriate franchise from the state in order to qualify as a public service corporation.

Finally, the City cites to Attorney General v. Haverhill Gaslight Co., 215 Mass. 394 (1913) and Town of Truro v. Department of Public Utilities, 365 Mass. 407 (1947) in support of its petition. These cases are inapposite. These cases were decided when the provision of electric service was the monopoly of local utility companies. Therefore, they address factual situations far removed from the present case.

In conclusion, it is not necessary that Brockton Power have an appropriate franchise from the state in order to qualify as a public service corporation. Consequently, we conclude that Brockton Power qualifies as a PSC for purposes of G.L. c. 40A, § 3.

2. Parties' Arguments Regarding Public Convenience and Welfare

a. Company Description and Position

The Company asserted that its proposed plant would enhance the reliability of the regional electric system by providing 350 MW of dual natural gas/oil generating capacity (Exhs. BP-1, at 1-33; BP-4, at 2-26 to 2-29; AAPPL-1-5; RR-EFSB-16; Tr. at 187-89). The Company cited a number of factors that it asserts together are a threat to future system reliability:

- demand for peak resources increasing at nearly 2% per year (Exh. BP-4 at 2-26);

- limited capacity additions in recent years (including only 11 MW in 2006) (id.);
- the prospect of substantial unit retirements (Exh. BP-J-1 (Rebuttal) at 8),
- uncertainty regarding the level of regional electrical imports and exports (Exh. BP-JLR-1 (Rebuttal) at 10-11);
- the unmet need for "steel-in-the-ground" to back up the regional system's growing reliance on demand response resources (Exh. BP-JR-1 (Rebuttal) at 11-12); and
- the requirement to maintain a sufficient level of reserves (Tr. 2,233-4, 2,282-3, 2285)

With reference specifically to the Southeastern Massachusetts ("SEMA") region, within which the City of Brockton is located, the Company stated that there is uncertainty surrounding the continued operation of the Mirant Canal plant. The Company asserted that this uncertainty is indicative of a need for additional capacity in that region (Tr. at 2189-90).

With respect to forecasted regional needs,[52] the Company initially cited the ISO-NE 2006 Regional System Plan, indicating that ISO-NE would need new capacity by 2011-2012 (Exh. BP-4, at 2-26). However, the Company later testified that, based on the new capacity and Demand Response ("DR") added in the February 2008 Forward Capacity Auction and the projected 1.2% growth in peak summer demand forecast in of the 2008 ISO-NE Capacity, Energy, Load and Transmission Report ("CELT Report"), ISO-NE might not require additional capacity until the 2013-2014 period assuming continued availability of imports at current levels, and the planned retirement of only the Norwalk, CT generating station (Exh. BP-JR-1 (Rebuttal)

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[52] As regards the issue of "Need," the Company relied exclusively on ISO-NE forecasts of need for additional generating capacity (Exh. BP-1, at 1-4, 1-5 citing, ISO-NE October, 2006 New England Regional System Plan). The ISO-NE 2008 Regional System Plan indicates that there is no need for additional generating capacity until after 2014 (Exh. EFSB-4(S) at 3). The 2008 forecast reflects slower growth in demand, evidence of new energy conservation and efficiency programs to be enacted by the New England states and the response to the first FCM auction held in February 2008. The ISO-NE 2008 Regional System Plan, dated October 16, 2008, was received by the Board after the close of evidentiary hearings and was added to the Exhibit List as EFSB-4(S). A copy of this ISO-NE 2008 Regional System Plan was served electronically on all parties and limited participants.

at 10). The Company's witnesses critiqued the new forecasts as vulnerable to underestimation of need, based on such factors as reliance on large amounts of DR, assumed continued operation of older plants, historic inaccuracy of ISO-NE forecasts, presumed continuation of imports at current levels, and untested effectiveness of FCM auctions (Exh. BP-JR-1(Rebuttal)(1), at 7-8, 10, 11-12)). With respect to the growing reliance of ISO-NE on DR, the Company argued that its proposed plant would "facilitate efforts to increase Massachusetts and ISO-NE's reliance on demand-side resources and renewables" by providing backup capacity should DR resources fail to respond or by filling in intermittent gaps in the output of renewable resources (id. at 7).

The Company noted that in past generating facility reviews which addressed need, the Siting Board held that "because of the critical importance of a reliable supply of electricity, the several-year lead time that is associated with adding new generating facilities and the sudden changes that may occur in market conditions. . . the need for new generating facilities exists when need is shown within a window of 4-6 years from the proposed online date of the subject facility" (Company Initial Brief at 160, citing ANP Bellingham,7 DOMSB 39, 64 (1998); Cabot Power, 7 DOMSB 233, 252-253; U.S. Generating Company, 6 DOMSB 1, at 23 (1997)).

With regard to potential additions to generating capacity in ISO-NE in general, the Company admitted that its proposed 350 MW facility in Brockton is among 8,517 MW (summer MW rating) of combined-cycle capacity being proposed to be built system-wide in ISO-NE per the May 2008 list of Interconnection Requests ("the ISO-NE queue") (Tr. at 1625; Exh. EFSB-7). Within the SEMA subarea alone, the Company stated that there are three combined-cycle plants totaling 1,165 MW of new capacity (including the proposed Brockton facility) which have been proposed and appear on the May 2008 ISO-NE queue (Tr. at 1627-1628). The Company stated that historically many plants which have been listed on the ISO-NE queue have subsequently been withdrawn (id. at 1637-1638). Specifically, the Company called attention to ISO-NE's estimate in its 2007 Regional System Plan that indicated that within SEMA a total of 11,250 MW of new capacity of all types had been proposed over the decade 1997 to 2007, of which 8,680 MW had been withdrawn, 1,135 MW had become operational and 1,440 MW remained on the ISO-NE queue (Exh. EFSB-4).

The Company asserted that the siting of the proposed plant would maximize its system reliability benefits (Tr. at 2159-2160, 2185-2191). The Company described that the proposed plant would be located in the SEMA subarea of ISO-NE, which is a subarea where there have

been significant reliability concerns due to transmission constraints and the potential retirement of the Mirant Canal Electric plant (id. at 2159-2160).[53] The Company also asserted that ISO-NE has determined that the SEMA/RI subarea is an effective region in which to add capacity in order to improve system wide reliability (Tr. at 2185-2919; Exhs. BP-JLR-1(Rebuttal) at 38; EFSB-4).

The Company also asserted that the operation of the proposed facility would result in significant environmental benefits for the ISO-NE region (Exhs. AAPPL-1-5; BP-JLR-1 (Rebuttal) at 5). The Company argued that the relatively high efficiency rating of the proposed Brockton plant (6,842 Btu/ kWh versus 7,200 Btu/kWh for the average existing gas-fired combined-cycle facility[54]) would result in its being designated by ISO-NE to operate at least

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53 The Mirant Canal plant is located in Sandwich, MA, which is technically part of the ISO-NE subarea known as Lower SEMA and which includes all of Cape Cod plus the communities along the southeastern coast of Massachusetts from Marshfield, Duxbury and Plymouth southward, but does not include Brockton. NSTAR, D.P.U. 07-60/0761, at 10 (2008). The Mirant Canal plant is an 1120 MW oil-fired plant and when oil prices are higher than natural gas prices, the plant would not ordinarily be called upon to operate (id.). However, because Lower SEMA has historically lacked sufficient transmission capacity to import power should it simultaneously experience more than one event which compromised its ability to provide and transmit sufficient power (a condition known as "N-2"), ISO-NE has frequently required the Mirant Canal plant to operate in backup mode (id. at 10-11). With oil prices high, this reliability-driven practice resulted in very large uneconomic wholesale market costs beginning in January, 2006 which were borne by Lower SEMA residents (id.). NSTAR devised and implemented upgrades to its transmission system and substations in Lower SEMA in 2007 and 2008 intended to increase Lower SEMA's import capacity to provide sufficient power during peak periods (cont'd) under N-2 conditions from 35% to 73% (id. at11-12). As a result of the NSTAR upgrades and the dramatic decline in the price of oil, ISO-NE has dispatched the Mirant Canal plant less frequently and only when the use of the plant is economic compared with other sources (id.).

54 In its initial Petition (Exh. BP-1, at 1-13), its DEIR (Exh. BP-4, at 2-9) and its FEIR (Exh. EFSB-G-2 (S) (1) at 2-1) Brockton Power described the proposed plant as being a "highly efficient unit" with "a nominal heat rate of 7,226 British thermal units per kilowatt hour ("Btu/kWh"). However, Brockton Power testified that a heat rate of approximately 7,300 Btu/kWh would describe the average efficiency of gas-fired combined-cycle power plants added to the ISO-NE system since 1999/2000 (Tr. at 42). In later testimony and in its Air Plan application (Exh.EFSB-A-1 (S) (1)) the Company said that the heat rate of the plant would be 6, 876 Btu/kWh (Tr. at 2636). The Company explained that the earlier characterizations of the plant's efficiency had been based on in-house calculations, and that the later rating of 6,876 Btu/kWh was provided by the turbine manufacturer (Siemens) and included more accurate estimates of fuel

70% of the annual hours (Company Initial Brief at 176). As a result of the Brockton plant being dispatched at such a high rate, the Company stated that operation of the proposed plant would back out (i.e., reduce the hours of operation of) other existing, less efficient and more polluting generating facilities within the ISO-NE system (Exhs. AAPPL-1-5; Company Initial Brief at 174-176).

The Company conducted modeling of the ISO-NE dispatch program with and without the proposed Brockton plant (Exh. AAPPL-1-5). The Company stated that the operation of the proposed Brockton Power plant would result in reductions in projected tons of emissions by power plants within the ISO-NE region equivalent to 0.8% for nitrogen oxides, 0.4% for sulfur dioxide and 0.3% carbon dioxide (see Table 8 below) (id.). Specifically, the Company projected that the operation of the proposed Brockton plant would reduce annual operating hours primarily at older, less efficient gas-fired combined-cycle power plants by about 1-2% (id.). The Company stated that the projected emissions in the Base Case reported in Table 8 were based on the October 2006 ISO-NE Regional System Plan, and did not include the impact of resources added in any of the Forward Capacity Auctions or the Connecticut RFP and did not incorporate recent ISO-NE changed assumptions about the rate of future growth in demand for electricity (id.).

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requirements of other equipment within the power plant (id. at 2636-2638). In other parts of the record, Brockton Power stated that the proposed plant was designed to be water-cooled, which, the Company stated is approximately 3% more efficient than an air-cooled plant (Exh. EFSB-A-13).

Table 8

BASE CASE

Brockton Power's Projection of Total System Wide ISO-NE Emissions in 2011
With and Without Proposed Facility – Base Case

Pollutant	**Base Case 2011 Without Brockton Power Emissions (Tons)**	**Base Case 2011 With Brockton Power Emissions (Tons)**	**Percentage Reduction in 2011 Emissions Due to Operation of Brockton Power**
Nitrogen Oxides (NO_x)	57,987	57,507	0.8%
Sulphur Dioxide (SO_2)	202,893	202,084	0.4%
Carbon Dioxide (CO_2)	52,964,454	52,827,212	0.3%
% of Time Brockton Power Dispatched			71%

Source: Exh. AAPPL-1-5.

In response to questions from the Siting Board staff, Brockton Power repeated its modeling of emissions to take into account the impact on its Base Case projections of reductions in pollutants associated with the following factors: (1) the resources added in the initial Forward Capacity Auction ("FCA") in February 2008 (new generating capacity, demand response, energy efficiency); (2) the resources procured in the Connecticut 2008 Request for Proposals; (3) the adoption by ISO-NE of more conservative assumptions about future growth in peak electricity demand; (4) the assumption of continued imports from outside the ISO-NE region of 2,000 MW; and (5) the assumption of only announced plant retirements (RR-EFSB-16). The Company stated that once items (1) through (5) above were taken into consideration, the operation of the proposed facility would result in the following reductions in pollutants:

Table 9

REVISED CASE

Brockton Power's Estimate of the Reduction in Pollutant Emissions Due to Operation of Brockton Power Assuming the Availability of Resources Procured in the February 2008 FCA and CT RFP, 2000 MW of Imports, Lower Demand Growth and Announced Capacity Retirements

Pollutant	**% Reduction in Emissions with Operation of Brockton Power**
Nitrogen Oxides (NO_x)	0.4%
Sulphur Dioxide (SO_2)	0.1%
Carbon Dioxide (CO_2)	0.1%
% of Time Brockton Power Dispatched	70%

b. Other Positions

i. The City of Brockton

The City of Brockton disputes the Company's argument that the operation of the proposed plant would result in a net reduction in regional emissions (City of Brockton Initial Brief at 37). The City of Brockton contends that the Company's modeling of ISO-NE's future dispatch of the region's power plants assuming the Brockton Power plant is constructed is unreliable and that the modeling failed to consider the impact of programs such as RGGI (id. at 38). Finally, the City argues that any evidence of reduced emissions at other existing dirtier facilities should not be allowed to offset local impacts on the City of Brockton (id. at 39).

ii. ACE

ACE argued that the Company's claims that its proposed plant will displace operations at existing, dirtier power plants in the region are misleading, inconsistent and lacking evidence of improvements in ambient air quality (ACE Reply Brief at 13). ACE stated that the Company's claims were misleading in that modeling results showed that displacement would occur almost

exclusively at other gas-fired co-generation plants rather than at the region's dirtier oil and coal-fired plants. ACE also stated that the Company's modeling results are inconsistent with the Company's representation that its proposed plant would displace "older, inefficient steam-cycle facilities firing fuel oil." Finally, ACE stated that the Company failed to quantify through modeling the claimed improvements in ambient air quality that would be associated with the displaced plant operations (id. at 13-15).

c. Analysis and Findings

Brockton Power has asserted that the capacity of its proposed 350 MW plant will be needed to maintain the reliability of the New England power grid operated by ISO-NE in the timeframe of 2008-2014. The arguments presented by the Company supporting its assertion of future need for the capacity included general growth in peak demand, expected future retirements of older existing capacity, uncertainty surrounding the future level of New England imports and exports of power, and the desire to maintain historic (or higher) reserve levels to assure reliability as the region increases its reliance on demand response and renewable energy.

In reaching its conclusion, however, the Company relied on selected ISO-NE estimates of future peak electricity demand. In the view of the Siting Board, the Company-cited estimates may overstate the levels of future capacity required, due to their failure to factor in current estimates of:

- the capacity committed during the initial FCA in February 2008;
- the capacity procured by Connecticut with its RFP process in early 2008;
- the continuation of historic net imports of electric power from Canada and seasonal trade with New York; and,
- the potential of subsequent FCAs to lock in additional capacity.

Since the Company's filing of the Petition and the close of evidentiary hearings, the Legislature of the Commonwealth passed the Green Communities Act[55] which is expected to reduce the rate of growth in demand for electricity (through promotion of greater energy efficiency and increased participation in demand response programs) and to stimulate the

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55 "An Act Relative to Green Communities" (a.k.a "Green Communities Act" was signed into law on July 2, 2008 (*www.mass.gov/legis/laws/seslaw08/sl080169.htm)*

development of renewable power which could further reduce the need for new power plant capacity such as proposed by Brockton Power. In addition, Governor Patrick articulated a policy goal in 2007 of offsetting all future electric demand growth with increased energy efficiency by 2010.[56] If the recently enacted regulations and policy objectives succeed in their goals, they will reduce future electrical demand and extend the timeframe in which additional generating capacity is needed beyond 2014. The Siting Board notes that the FCA process provides a regularly scheduled, disciplined method of addressing future capacity needs. Additionally, the Siting Board does not consider that it would be warranted to discount future levels of power imports, given (1) the current expansion projects for Canadian hydropower and (2) the growing demand for imported certifiable renewable power under the Regional Greenhouse Gas Initiative.

At the same time the Siting Board notes that as of May 2008 (when evidentiary hearings commenced on the Brockton Power Petition) there were proposals to build approximately 8,500 MW of new gas-fired or gas/oil-fired combined-cycle capacity listed on the active ISO-NE queue. Within SEMA alone proposals for new gas/oil-fired combined-cycle capacity totaled 1,150 MW. While the Siting Board acknowledges that historically many of the proposals listed on prior ISO-NE queues have not been built, it notes that the extent of interest in building new gas-fired co-generation plants within ISO-NE evidenced by the number of proposed plants and their cumulative capacity, together with the financial incentives of the FCA process, strongly supports the view that Brockton's proposal is only one of many possible facilities which could supply future needs for new generating capacity, if these needs develop. On balance, the Siting Board is persuaded that any need for added generating capacity within the ISO-NE grid is neither currently obvious nor urgent.

The Company also asserted that there is a specific need for additional generating capacity within SEMA based on ISO-NE projections of where new capacity could be effectively sited to improve overall system reliability and uncertainties associated with future operation of the

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[56] Governor Patrick's Address to the Clean Energy Council, October 30, 2007.

http://www.mass.gov/?pageID= gov3terminal&L= 3&L0= Home&L1= Media+ Center &L2= Speeches&sid= Agov3&b= terminalcontent&f= text_2007-10-30_clean_energy&csid= Agov3

Mirant Canal plant. In reaching its determination that ISO-NE had designated SEMA as a subarea in which up to 1,000 MW of new capacity could be effectively sited to increase system reliability, the Company relied on Table 5-2 of the 2007 ISO-NE Regional System Plan ("RSP"). The Siting Board agrees that SEMA combined with Rhode Island ("SEMA/RI") is shown as a subarea in which up to 1,000 MW of capacity can effectively be sited. However, the Siting Board notes that SEMA/RI is not unique within New England. Table 5-2 of the 2007 RSP indicates that up to 500 MW of new capacity could be effectively sited anywhere in New England except Northern Maine, and up to 1,000 MW of new capacity could be sited anywhere in Massachusetts, Rhode Island, or Connecticut.

As to the Company's claim that its proposed facility could provide a backup should the Mirant Canal facility be decommissioned, the Siting Board notes that: (1) the Mirant Canal plant is located in Lower SEMA which historically has had limited import capacity from SEMA; (2) the recently-completed NSTAR upgrades to its lines and substations in the Lower SEMA have substantially increased the ability of the Lower SEMA subarea to operate reliably without the Mirant Canal plant; and (3) the proposed Brockton facility is located electrically outside the Lower SEMA region, and thus would not be effective in addressing the identified reliability issues associated with the Lower SEMA region. For all of these reasons, the Siting Board rejects the idea that Brockton Power's proposed location in SEMA fulfills a specific need for new capacity in SEMA.

Brockton Power has asserted that operation of its proposed facility would result in significant environmental benefits to the New England region as a result of reducing the use of older, more polluting generating plants. The Siting Board finds that the asserted reductions in tons of emissions are very small on a New England-wide basis (in all scenarios less than 1% for nitrogen oxides, sulfur dioxide and carbon dioxide) and that these reductions would not come from reducing operations of highly polluting plants, but instead come from reduced hours of operation at gas-fired cogeneration plants constructed in the period since 1997. The Company credited the modern design of its proposed plant and its intention to employ water rather than air in cooling with making the plant more efficient than existing gas-fired co-generation plants. However, the Siting Board notes that the advances in technology and water cooling may not be characteristics unique to Brockton Power's proposed facility. These same or similar efficiency

improvements may be incorporated in the design of plants proposed by other developers of co-generation plants which are listed on the ISO-NE queue.

The Siting Board also notes that while there may be minimal reductions in emissions achieved on a New England-wide basis, there will be additional emissions in Brockton and surrounding municipalities. Further, the Siting Board notes that the ISO-NE Queue listing of proposed generating facilities current at the time of the evidentiary hearings (May, 2008)[57] indicated that there were 24 other combined-cycle gas or gas/oil-fired plants proposed throughout the ISO-NE system, in addition to wind generating facilities with significantly lower emission rates than the proposed facility. The approximately 8,150 MW of total capacity represented in these other similarly-configured generating facilities, as well as additional proposed low- or zero-emission generation capacity indicates that it is highly likely that even absent construction or operation of the Brockton facility, incremental need for new generation capacity will be met by facilities that will result in the same, or greater, displacement emission reductions than those estimated for proposed facility. In consideration of these factors, the Siting Board finds that the proposed plant would not result in significant system-wide environmental benefits.

In Section III, above, the Siting Board reviewed the environmental impacts, including air, traffic, noise, land use, water resources and wetlands, visual, hazardous materials, and EMF impacts of the proposed facility. The review showed that many of the impacts considered would be either a temporary condition, limited to the construction period, or periodic conditions, such as ULSD and ammonia deliveries. The review also showed that the proposed facility may result in some local adverse environmental impacts extending to off-site areas, including possible air and noise emissions, stream flow reductions, project views, and EMF. The Siting Board found in Section III, above, that with the conditions set forth therein, the environmental impacts associated with the proposed facility would be minimized. In Section IV, above, the Siting Board further found that the proposed facility would be consistent with the environmental, health, and resource development policies of the Commonwealth.

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[57] See Exh. EFSB-7 and Exh. EFSB-8 for plant by plant listing of the proposed combined-cycle gas and gas/ULSD facilities on the May 2008 ISO-NE queue.

In summary and as noted above, in determining whether a proposed use is reasonably necessary for the public convenience or welfare, the Siting Board must balance the interests of the general public against the local interest. Further, in this weighing of benefits and disadvantages, it is the burden of the project proponent to show that the benefits prevail. In this case, the Siting Board has found that the record provides limited—if any—evidence that the project is needed to meet power system demand, or that the facility would lead to significant—or, again, any—environmental benefits by virtue of displacing the emissions from other facilities. Thus, the Siting Board has determined that the benefits of this facility would be minimal at best. The Siting Board also concluded above that while we have found that the environmental impacts would be minimized, the facility would have some adverse impacts on the local environment.

Therefore, on balance, the Siting Board finds that the project proponent has not sustained its burden of proof, and that the benefits to the general public of the proposed use would not outweigh the adverse local impacts. Accordingly, the Siting Board finds that the proposed use of the land to construct the proposed generating facility is not reasonably necessary for the public convenience and welfare.

3. Specific Exemptions Sought

In section V.B.2.c above, the Siting Board found that the proposed use of the land and structures was not reasonably necessary for the public convenience and welfare. Consequently, the Siting Board does not address the issue of whether the proposed exemptions are required.

VI. G.L. C. 164, § 72[58]

A. Standard of Review

Massachusetts General Laws, chapter 164, § 72, requires, in relevant part, that an electric company seeking approval to construct a transmission line must file with the Department a petition for:

> authority to construct and use … a line for the transmission of electricity for distribution in some definite area or for supplying electricity to itself or to another electric company or to a municipal lighting plant for distribution and sale … and shall represent that such line will or does serve the public convenience and is consistent with the public interest .... The [D]epartment, after notice and a public hearing in one or more of the towns affected, may determine that said line is necessary for the purpose alleged, and will serve the public convenience and is consistent with the public interest.[59]

The Department, in making a determination under G.L. c. 164, § 72, is to consider all aspects of the public interest. Boston Edison Company v. Town of Sudbury, 356 Mass. 406, 419 (1969). Section 72, for example, permits the Department to prescribe reasonable conditions for the protection of the public safety. Id. at 419-420. All factors affecting any phase of the public interest and public convenience must be weighed fairly by the Department in a determination under G.L. c. 164, § 72. Town of Sudbury v. Department of Public Utilities, 343 Mass. 428, 430 (1962).

As the Department has noted in previous cases, the public interest analysis required by G.L. c. 164, § 72, is analogous to the Department's analysis for the "reasonably necessary for the convenience or the welfare of the public" standard under G.L. c. 40A, § 3. See New England Power Company, D.P. U. 89-163, at 6 (1993); New England Power Company, D.P.U. 91-

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[58] As mentioned in section I.B. above, the Zoning Exemption Petition and the Section 72 Petition were both originally filed with the DPU but have been referred to the Siting Board for hearing and determination and have been consolidated with the petition filed under G.L. c. 164, § 69J¼. G.L. c. 25, § 4; G.L. c. 164, § 69H.

[59] Pursuant to G.L. c. 164, §72, the electric company must file with its petition a general description of the transmission line, a map or plan showing its general location, an estimate showing in reasonable detail the cost of the line, and such additional maps and information as the Department requires. Brockton Power filed these documents as exhibits to its section 72 petition (Exh. BP-3).

117/118, at 4 (1991); Massachusetts Electric Company, D.P.U. 89-135/136/137, at 8 (1990). Accordingly, in evaluating petitions filed under G.L. c. 164, § 72, the Department relies on the standard of review for determining whether the proposed project is reasonably necessary for the convenience or welfare of the public under G.L. c. 40A, § 3, as set forth above.

B. Parties' Positions

Brockton Power stated the transmission facilities are necessary in order to connect the proposed electric generating facility to the regional electricity grid (Exh. BP-3, at 7; Tr. at 2579, 2584). Without the transmission facilities, the proposed project would not be possible because there would be no means by which the electricity generated could be delivered to consumers throughout the region (Exh. BP-3, at 7; Tr. at 2579, 2584).

The Company stated that it considered an alternative transmission route, which would follow the preferred route along Oak Hill Way, then head east along the UPS facility boundary, then south along the MBTA rail line ROW until the intersection with NEP's transmission corridor (Exh. BP-3, at 11 to 12). The Company stated that this route is 3,371 feet in length, and would require three more transmission structures than the preferred route (id.; Tr. at 2575). The Company indicated that approval from the MBTA would be required for construction along this route (Exh. BP-3, at 11 to 12; Tr. at 2575). The Company also stated that while this route is technically feasible, it would necessitate negotiating with the MBTA and meeting their specific design requirements, construction windows and potentially added costs and ROW clearing (Exh. BP-3, at 11 to 12; Tr. at 2575 to 2576). The Company further indicated that, assuming that the MBTA ROW could be obtained, the cost estimate associated with the alternative route is approximately $300,000 more expensive than the estimate for the preferred route.

In addition, the Company indicated that, unlike the preferred route, siting the transmission line along the MBTA ROW would result in visual impacts to nearby residences located along Appleby Street (Exh. BP-3, at 12; Tr. at 2575). The Company indicated that greater wetland impacts are also anticipated along the alternative transmission route as compared to the preferred route as revised, including placement of new utility poles directly within certain wetland resource areas (Exh. BP-3, at 12; Tr. at 2575 to 2576).

In response to concerns about wetland impacts and EMF impacts with use of its preferred route, the Company proposed both a different alignment and a different conductive configuration

of the transmission lines during the course of the proceedings (Company Initial Brief at 72-73). As a result, both the EMF impacts and the cutting or trimming of trees along the right of way for the lines would be significantly reduced (id. at 73, 116-117; see also, Initial Brief of National Grid at 7-12).

The City noted, however, that the Company has not yet obtained all easements necessary to construct its proposed line with the revised route (City of Brockton Initial Brief at 53). Consequently, the City argued, the route of said lines was left unresolved at the close of the record (City of Brockton Initial Brief at 53). Therefore, Brockton asserted, the "Transmission Line Petition should be denied until such time as the Company secures the required easements or describes adequate but unsuccessful efforts to obtain them" (id.).

In response, the Company, citing Town of Andover v. Energy Facilities Siting Board, 435 Mass. 377, 395 (2001), argued that an applicant need not have a property right in the site or, by implication, in the route of a transmission line, in order to obtain approval under Section 72 (Company Reply Brief at 115). The same argument is advanced by National Grid, which cites to Town of Sudbury v. Department of Public Utilities, 343 Mass. 428, 433 (1962) (Reply Brief of National Grid at 2-3).

C. Analysis

To establish the need for a transmission interconnect line, a petitioner must demonstrate that: (1) the existing transmission system is inadequate to interconnect the new or expanded generator; and (2) the new or expanded generator is likely to be available to contribute to the regional energy supply. Cape Wind Associates and NSTAR Electric, EFSB 02-2, at 16-17 (2005); Cambridge Electric Light Co., 12 DOMSB 305, 318 (2001). This standard is met by Brockton Power's proposal. The record shows here that transmission facilities are an essential component of the proposed project in that, in the absence of the transmission facilities, the proposed generating facility could not interconnect to the transmission grid.

In addition, the record shows that an alternative transmission route along the MBTA ROW was evaluated, but would result in greater visual impacts and wetland impacts and be more costly than the preferred route. The Siting Board finds that Brockton Power has reasonably determined that the preferred route is preferable to its identified alternative route along the MBTA ROW.

In Section III above, the Siting Board reviewed the environmental impacts of the overall project including specific impacts of the transmission facilities relating to water resources and wetlands and EMF impacts. The record shows the Company will use modified alignment and conductor configurations that minimize wetland and EMF impacts. The Siting Board finds for the purposes of Section 72 review that the proposed transmission facilities may result in some modest EMF impacts but would result in generally minimal environmental impacts.

As the Company points out, the City does not contest Brockton Power's assertion that the transmission line will be needed, nor does the City deny that the line will provide public benefits (Company Reply Brief at 114). Consequently, Brockton Power has established at least a prima facie case that construction and use of the transmission line, "is necessary for the purpose alleged," and that said line "will serve the public convenience and is consistent with the public interest." G.L. c. 164, § 72.

This leaves the City's argument that it is premature to approve the Section 72 petition because the Company has not obtained all the necessary easements. We agree with Brockton Power that the SJC opinion in Town of Andover v. Energy Facilities Siting Board, 435 Mass. 377, 395 (2001) is dispositive of this matter. In that case, the Court held:

> There is no merit to the argument that Nickel Hill [the Petitioner] lacks standing to petition for a permit to construct the proposed generating facility at the selected site because it had not secured an ownership, leasehold, or other interest in the site. The statute does not require such an interest.
>
> 435 Mass. at 395.

Chapter 164, Section 72, (the statute in question in the present case) contains no requirement that a petitioner hold a property interest in the route of the transmission line in order to obtain approval, just as Chapter 164, section 69J¼ (the statute in question in the Andover case) contains no requirement that a petitioner hold a property interest in the site of a proposed facility. The two statutes are identical in this respect. Consequently, the holding of the Andover case applies to the present case, and the Company's lack of certain property interests in the proposed route is irrelevant to the issue of whether the Siting Board may approve the Section 72 petition.

As stated above, in evaluating petitions filed pursuant to G.L. c. 164, § 72, the Department relies on the standard of review established for G.L. c. 40A, § 3, for determining

whether the proposed project is reasonably necessary for the convenience or welfare of the public. We note that we are not in this section focusing on the need for the generating facility but, rather, on the need for the transmission line should the facility be built. If the project is built, the transmission facilities will be needed to allow the project output to be delivered to the grid. The Siting Board finds pursuant to G.L. c. 164, § 72, that if the proposed facility is constructed, then the proposed transmission lines will be necessary for the purpose alleged, will serve the public convenience, and be consistent with the public interest.

D. Conclusion

The Siting Board concludes that the Section 72 petition should be APPROVED.

VII. SECTION 61 FINDINGS

The Massachusetts Environmental Policy Act ("MEPA") provides that "[a]ny determination made by an agency of the Commonwealth shall include a finding describing the environmental impact, if any, of the project and a finding that all feasible measures have been taken to avoid or minimize said impact." G.L. c. 30, § 61. Pursuant to 301 CMR § 11.01 (4), these findings are necessary when an Environmental Impact Report ("EIR") is submitted by a petitioner to the Secretary of the Executive Office of Energy and Environmental Affairs, and should be based on such EIR. Where an EIR is not required, G.L. c. 30, § 61 findings are not necessary. 301 CMR § 11.01 (4). The record indicates that Brockton Power filed both a draft EIR as well as a final EIR in relation to the project. Therefore, a finding under G.L. c. 30, § 61 is necessary relative to Brockton Power's Zoning Exemption Petition.

In Section III, above, the Siting Board conducted a comprehensive analysis of the environmental impacts of the proposed generating facility and found that the temporary and permanent impacts of the proposed generating facility at the preferred site would be minimized and that the proposed project would achieve an appropriate balance among conflicting environmental concerns as well as among environmental impacts, reliability, and cost. Accordingly, the Siting Board finds that all feasible measures have been taken to avoid or minimize the environmental impacts of the proposed facility.

VIII. DECISION

The Siting Board's enabling statute directs the Siting Board to implement the energy policies contained in G.L. c. 164, §§ 69H-69Q, to provide a reliable energy supply for the Commonwealth with a minimum impact on the environment at the lowest possible cost. G.L. c. 164, § 69H. Section 69J¼ requires that, in its consideration of a proposed generating facility, the Siting Board review inter alia the site selection process, the environmental impacts of the proposed project, and the consistency of the plans for construction and operation of the proposed project with the environmental policies of the Commonwealth.

In Section II above, the Siting Board has found that Brockton Power's description of the site selection process it used is accurate.

In Section III, above, the Siting Board examined Brockton Power's analysis of the impact of the project relative to air quality, water resources and wetlands, solid waste, visual, noise, safety, traffic, and EMF impacts, and concluded that Brockton Power's plans for the construction of the proposed generating facility would minimize the environmental impacts of the proposed project consistent with the minimization of costs associated with the mitigation, control and reduction of the environmental impacts of the proposed project, subject to certain conditions.

In Section IV, above, the Siting Board has found that the plans for the construction of the proposed project are consistent with current health and environmental protection policies of the Commonwealth and with such energy policies of the Commonwealth as have been adopted by the Commonwealth for the specific purpose of guiding the decisions of the Siting Board.

Accordingly, the Siting Board finds that, upon compliance with the conditions listed below, the construction and operation of the proposed project will provide a reliable energy supply for the Commonwealth with a minimum impact on the environment at the lowest possible cost.

Accordingly, the Siting Board APPROVES the petition of Brockton Power to construct a 350 MW generating facility, subject to the following conditions:

1. The Siting Board directs that of the hours that MADEP may allow the proposed project by permit to operate on oil, the Company will reserve two weeks – i.e., 336 hours – of that time for the month of December.

1. The Siting Board directs the Company to work with the City of Brockton with respect to water supply issues associated with use of Brockton AWRF water, and to provide a report to the Siting Board with respect to the outcome of such efforts. Furthermore, if the Company intends to use potable water for the majority of the water requirements of its proposed facility, the Siting Board directs the Company to provide a project change filing to the Siting Board, together with an analysis as detailed as that done for AWRF water, but directed to those issues that are germane to the use of potable water, including opportunities for water conservation.

2. The Siting Board directs Brockton Power, prior to the commencement of operation, to report on its recycling rate for construction debris and to provide the Siting Board with a copy of its recycling plan and anticipated recycling rate for the operational solid wastes.

3. The Siting Board directs the Company to provide, as requested by individual residential property owners or appropriate municipal officials, reasonable off-site mitigation of visual impacts, including shrubs, trees, window awnings, or other mutually agreeable measures that would screen views of the proposed generating facility and related facilities at affected residential properties and roadways up to one mile from the site where residents experience changed views. In implementing this requirement, the Company: (1) shall provide shrub and tree plantings, window awnings, or other reasonable mitigation on private property, only with the permission of the property owner, and along public ways, only with the permission of the appropriate municipal officials; (2) shall provide written notice of this requirement to appropriate officials and to all owners of residential property within one mile of the site, prior to the commencement of construction; (3) may limit requests for mitigation measures from local property owners and municipal officials to a specified period ending no less than six months after initial operation of the facility; (4) shall complete all agreed-upon mitigation measures within one year after completion of construction, or if based on a request filed after commencement of construction, within one year after such request; and (5) shall be responsible for the reasonable maintenance and replacement of plantings, as necessary, to ensure that healthy plantings become established.

4. The Siting Board directs the Company to determine an exterior color for the proposed stack in consultation with appropriate municipal officials, as well as to maintain the good appearance of the facility, including the stack, and on-site landscaping, for the life of the project.

5. The Siting Board directs the Company to limit any weekend construction at the proposed site to the hours of 9:00 a.m, to 1:00 p.m.

6. The Siting Board directs the Company to prepare final versions of the Company's Spill Prevention, Control and Countermeasure Plan and Emergency Action Plan as well as the two anticipated Standard Operating Procedures for management of aqueous ammonia, and to submit copies to the Siting Board within six weeks of completion. In addition, within six weeks of receipt of any such approval, the Siting Board directs the Company to file a report with the Siting Board confirming approval by the Brockton Fire and Police Departments of safety and security plans developed for the proposed facility.

7. The Siting Board directs the Company to work with the Town of West Bridgewater and the City of Brockton with respect to routing and related safety issues associated with the delivery of aqueous ammonia and ULSD to the proposed facility. Specifically, the Siting Board directs the Company to instruct its ULSD and aqueous ammonia vendors located outside the Town of West Bridgewater to use one of two major roads (Routes 27 and 123) from Route 24 through the City of Brockton to Route 28 South; and that these Brockton Routes must be stipulated in its contracts with vendors.

8. The Siting Board directs Brockton Power to keep the Siting Board informed as to the progress and the outcome of Brockton Power's interconnection plans and on designs for any transmission upgrades. Specifically, at such time as Brockton Power reaches final agreement with NEP and ISO-NE regarding interconnection, the Board directs Brockton Power to keep it informed as to any measures incorporated into final transmission upgrade designs to minimize magnetic field impacts.

Regarding the petition to construct a 115 kV overhead line and related facilities filed pursuant to G.L. c. 164, § 72, the Siting Board found in Section VI above that the line is necessary for the purpose alleged, i.e., to connect the project to the regional transmission grid; that the proposed line will serve the public convenience; and that construction and maintenance of the proposed line is consistent with the public interest. Consequently, the Siting Board APPROVES Brockton Power's Section 72 Petition provided that the Company is able to secure

such easements and/or rights of way as are necessary to allow it to fully construct the project as it has proposed. Once all necessary rights or easements have been obtained, the Siting Board directs the Company to report this acquisition to the Siting Board.

Regarding the Zoning Exemption Petition filed by the Company pursuant to G.L. c. 40A, § 3, the Siting Board found in Section V above that Brockton Power has failed to establish that the proposed use of the land and structures is reasonably necessary for the convenience and welfare of the public. Accordingly, the Siting Board DENIES the petition of Brockton Power for several specific exemptions, as well as a general exemption, from the City of Brockton's Zoning Bylaws.

Pursuant to G.L. c. 30, § 61, and 301 CMR § 11.01 (4), the Siting Board finds that all feasible measures have been taken to avoid or minimize the environmental impacts of the proposed facility.

Because issues addressed in this Decision relative to this facility are subject to change over time, construction of the proposed generating facility must be commenced within three years of the date of the decision.

In addition, the Siting Board notes that the findings in this decision are based upon the record in this case. A project proponent has an absolute obligation to construct and operate its facility in conformance with all aspects of its proposal as presented to the Siting Board. Therefore, the Siting Board requires Brockton Power to notify the Siting Board of any changes other than minor variations to the proposal so that the Siting Board may decide whether to inquire further into a particular issue. Brockton Power is obligated to provide the Siting Board with sufficient information on changes to the proposed project to enable the Siting Board to make these determinations.

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Robert J. Shea
Presiding Officer

Dated this DATE

Vote & Signature Page

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Ann Berwick, Acting Chair

Energy Facilities Siting Board

Dated this xxxxx 2009

Appeal as to matters of law from any final decision, order or ruling of the Siting Board may be taken to the Supreme Judicial Court by an aggrieved party in interest by the filing of a written petition praying that the order of the Siting Board be modified or set aside in whole or in part. Such petition for appeal shall be filed with the Siting Board within twenty days after the date of service of the decision, order or ruling of the Siting Board, or within such further time as the Siting Board may allow upon request filed prior to the expiration of the twenty days after the date of service of said decision, order or ruling. Within ten days after such petition has been filed, the appealing party shall enter the appeal in the Supreme Judicial Court sitting in Suffolk County by filing a copy thereof with the clerk of said court. (Massachusetts General Laws, Chapter 25, Sec. 5; Chapter 164, Sec. 69P).