



The Commonwealth of Massachusetts

DEPARTMENT OF PUBLIC UTILITIES

D.P.U. 09-38

October 23, 2009

Petition of Massachusetts Electric Company, Nantucket Electric Company, Boston Gas Company and Essex Gas Company each d/b/a National Grid, pursuant to G.L. c. 164, § 1A(f); G.L. c. 164, § 94; G.L. c. 164, § 94B; 220 C.M.R. § 2.02; 220 C.M.R. § 12.04(1); and 220 C.M.R. §§ 112.10(4), 112.10(3) for approvals and findings by the Department of Public Utilities in connection with National Grid's proposed program to construct, own and operate generation facilities that produce solar energy.

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I. INTRODUCTION

On April 23, 2009, Massachusetts Electric Company and Nantucket Electric Company each d/b/a National Grid (“National Grid” or “Company”) filed with the Department of Public Utilities (“Department”) a proposed program to construct, own, and operate generation facilities that produce solar energy. The Company filed its request pursuant to G.L. c. 164, § 1A(f), as added by Section 58 of Chapter 169 of the Acts of 2008 (“Green Communities Act”). National Grid requested: (1) approval of a range of cost estimates pertaining to the installation of approximately five megawatts (“MW”) of solar capacity pursuant to G.L. c. 164, § 1A(f); and (2) approval of its proposed solar cost adjustment provision (“SCAP”) tariff for the recovery of costs in distribution rates consistent with G.L. c. 164, § 94. Boston Gas Company (“Boston Gas”) and Essex Gas Company (“Essex Gas”) joined in the petition and, together with Massachusetts Electric Company and Nantucket Electric Company,¹ requested (1) approval of proposed lease agreements between Massachusetts Electric Company and Boston Gas and between Massachusetts Electric Company and Essex Gas pursuant to G.L. c. 164, § 94B; (2) in connection with the pricing provisions of the lease agreements, a waiver of 220 C.M.R. § 12.04(1); and (3) a determination that the proposed installation of solar generation facilities on the site of the Commercial Point liquefied natural gas (“LNG”) facility does not constitute a modification to a component of the existing LNG

¹ Massachusetts Electric Company, Nantucket Electric Company, Boston Gas, and Essex Gas are affiliates within the National Grid USA holding company system.

facility pursuant to 220 C.M.R. § 112.10(4), that would result in any loss of “grandfathered” status of the LNG facility under 220 C.M.R. § 112.10(3).²

Pursuant to notice duly issued, the Department held a public hearing on May 26, 2009. The Attorney General of the Commonwealth of Massachusetts (“Attorney General”) filed a notice of intervention pursuant to G.L. c. 12, § 11E(a). The Department granted intervenor status to the Massachusetts Department of Energy Resources (“DOER”) and Environment Northeast (“ENE”). The Department granted limited participant status to Berkshire Chamber of Commerce, NSTAR Electric Company, Western Massachusetts Electric Company, The Solar Alliance, the Associated Industries of Massachusetts (“AIM”), and The Energy Consortium.

On June 11, 2009, the Department approved the Attorney General’s notice to retain an expert witness pursuant to G.L. c. 12, § 11E(b). National Grid, D.P.U. 09-38, Order on Notice of Attorney General to Retain Experts and Consultants (2009).

Evidentiary hearings were conducted on August 19 and 20, 2009. The Company sponsored the testimony of: (1) Edward H. White, Jr., acting vice president of customer strategy and sustainability in the customer markets organization of National Grid USA; (2) Fouad E. Dagher, manager of distributed resources in the customer markets organization of

² Though the Company’s petition did not request an exemption from the Department’s pre-approval regulations, 220 C.M.R. § 9.00 et seq., we find it appropriate to grant an exception, pursuant to 220 C.M.R. § 9.05, from our pre-approval regulations to the extent the Company’s proposal may be inconsistent with any provisions of such regulations. See Western Massachusetts Electric Company, D.P.U. 09-05, at 18 (August 12, 2009).

National Grid USA; (3) David E. Tufts, director of distribution and generation revenue requirements of National Grid USA; (4) Eric C. Hahn, manager of liquefied natural of Boston Gas; and (5) Robert B. Hevert, president of Concentric Energy Advisors. The Attorney General sponsored the testimony of: (1) David J. Effron, utility regulation consultant; (2) Alvaro E. Pereira, senior consultant with La Capra Associates; (3) Lee Smith, managing consultant and senior economist with La Capra Associates; and (4) Richard S. Hahn, principal consultant for La Capra Associates. The Company and the Attorney General filed initial briefs and reply briefs on September 3, 2009, and September 14, 2009, respectively. AIM filed reply comments on September 14, 2009. The evidentiary record consists of 199 exhibits and the responses to nine record requests.

II. SOLAR GENERATION UNDER THE GREEN COMMUNITIES ACT

The Green Communities Act allows electric companies and distribution companies to construct, own, and operate generation facilities that produce solar energy. G.L. c. 164, § 1A(f). A company is limited to owning up to 25 MW of solar generation facilities before January 1, 2009, and up to 50 MW after January 1, 2010. Id. A company may seek Department pre-approval of cost recovery for a solar energy generating facility. Id. In conducting its review of a company's petition for pre-approval of cost recovery, the Department is charged with determining whether the proposal is consistent with the Commonwealth's energy policy and could be used to satisfy, in part, the renewable energy portfolio standard requirements contained in G.L. c. 25A, § 11F. Id.

III. DESCRIPTION OF THE SOLAR GENERATION PROGRAM

National Grid filed a petition seeking pre-approval from the Department to construct, own, and operate facilities having approximately five MW of solar generation capacity on five properties owned by National Grid or its affiliated companies in Massachusetts (Exh. NG-EWH-1, at 4). The Company requested pre-approval of a range of cost estimates for the five projects, ranging from \$26.4 million to \$35.7 million, with \$31.1 million as the projected midpoint (Exh. NG-FED-1, at 6). For 2010, the estimated revenue requirement is \$5,583,163, which is based on capital and operating costs and an assumed in-service date for all units of January 1, 2010 (Exh. NG-DET-1, at 5). The revenue requirement does not include proceeds from the sale of energy, capacity, or renewable energy certificates (“RECs”), the revenues from which would be credited to all distribution customers (id. at 6).

National Grid stated that its proposal is the first component of its three-phase solar program (Exh. NG-EWH-1, at 10). The second component involves customer-sited solar projects, where the Company would own the solar facilities but lease space on customer property, including commercial and industrial customers, municipalities, low-income housing developments and schools (id.). The Company stated that the third component would include financial offerings to customers who want to own solar generation systems (id.). The Company stated that it is in the process of determining the best way to propose integration of customer-owned solar into its energy efficiency programs, including incentives for customers who undertake aggressive energy efficiency projects to purchase solar installation (id.). The

Company stated that it expects to file these additional components of its program with the Department in the future (id. at 11).

National Grid stated that its proposal will assist the Commonwealth in achieving its goal to meet at least 20 percent of its electric load by the year 2020 through renewable alternative generation, and is consistent with Governor Patrick's goal to achieve 250 MW of solar generation by the year 2017 (id. at 6). The Company additionally cited the proposed facilities' environmental benefits and emphasized that its solar program will help address climate change by reducing key greenhouse gas emissions including sulfur dioxide, nitrogen oxide and carbon dioxide (id. at 9). Finally, the Company stated that its proposal will help move and grow the solar generation market in the Commonwealth and help to establish a viable solar industry (id. at 12).

IV. STANDARD OF REVIEW

In conducting its review of a petition for pre-approval of the recovery of costs associated with the construction of generating facilities producing solar energy, the Department must determine whether the proposal is consistent with the Commonwealth's energy policy and could be used to satisfy, in part, the renewable energy portfolio standard requirements contained in G.L. c. 25A, § 11F. G.L. c. 164, § 1A(f). In addition, the Department must determine whether the underlying solar program is in the public interest,³ and whether the associated cost recovery method results in just and reasonable rates under G.L. c. 164, § 94.⁴

³ The Supreme Judicial Court has recognized that the public interest standard controls the Department's exercise of its regulatory power. Attorney Gen. v. Dep't of Telecomms. and Energy, 438 Mass. 256, at 268 (citations omitted) (2000); Zachs v. Dep't of Pub.

V. PROPOSED SITESA. Company Proposal

National Grid proposed five sites owned by it or its affiliates for its solar installations. Four of the sites -- Dorchester, Everett, Haverhill, and Revere -- are former manufactured gas plants ("MGP") where the generation facilities would be mounted on the ground (Exh. NG-EWH-1, at 19). At the fifth site, National Grid's New England Distribution Center ("NEDC") on the Sutton/Northbridge border, the unit would be mounted on the building's roof (id.). The Company stated that it decided to use property owned by National Grid or one of its affiliated companies, instead of seeking sites that it would need to purchase or lease, in order to facilitate development of these projects in the first phase of its solar program (id. at 18). The Company stated that it engaged the services of a consulting firm to review a comprehensive list of potential sites that would be suitable for solar installations, specifically targeting former MGP sites. The Company stated that remediated MGP sites are an ideal use of otherwise underutilized property as they have limited operational value to the Company and

Utils., 406 Mass. 217, at 224 (1989). The Supreme Judicial Court has equated "public interest" with the phrase "public convenience and necessity," a term advocating a "public benefit, good, or interest." Zachs, 406 Mass. at 224. In determining whether a proposed rate conforms to this standard, the Department has wide discretion to undertake a broad and balanced consideration of a range of factors. Zachs, 406 Mass. at 223-24 (citations omitted).

⁴ Setting rates that are just and reasonable under G.L. c. 164, § 94 requires the Department to evaluate the "propriety" of the proposed rates. G.L. c. 164, § 94; see e.g., Boston Gas Company, D.T.E. 04-62, at 3 (2004); Incentive Regulation Investigation, D.P.U. 94-158, at 42 (1995). The Department has considerable discretion in assessing the propriety of proposed rates under G.L. c. 164, § 94. BECo-ComEnergy Acquisition, D.T.E. 99-19, at 8 (1999), aff'd, Attorney Gen. v. Dep't of Telecomms. and Energy, 438 Mass. 256, 269 (2002).

its affiliates, and, due to environmental restrictions, they remain part of National Grid's and its affiliates' property portfolios (id.). The Company also noted that the five sites are large enough to host a significant amount of solar energy generation facilities, offer good southern exposure, and have limited shading issues (id. at 18-19).

The Company described the added benefits associated with each of these sites. For example, the Company stated that the Dorchester site was selected because it is prominent in the greater Boston area and will help raise awareness for solar generation (id. at 19). The Company stated that the Everett site will be integrated with the Company's Congestion Relief Pilot Project, will help offset customer demand in the area temporarily, and will allow the Company to study the effects of large amounts of photo-voltaic ("PV") generation as a percentage of the load carrying capacity of a distribution feeder (id. at 20). Similarly, the Company observed that the Haverhill site will allow it to study the impact of PV output in matching and reducing residential load on a 13-kilovolt ("kV") feeder (id. at 21). The Company stated that the NEDC site will be used to study issues associated with installing and integrating a large-scale rooftop solar installation (id.). Finally, the Company noted that the Revere location will help it to evaluate the effects of solar generation on the performance of a substation, as well as the impact on contingency loading issues (id. 21-22).

The Company provided cost estimates for solar facilities at each of the five sites, dividing each site's development costs into 15 categories⁵ (Exh. NG-FED-1, at 6, 8). National Grid stated that it developed the capital costs for each of these categories and for each site

⁵ See Section VI. C.2, below, for a more detailed description of the cost estimates.

individually with the help of its consultants⁶ (id. at 6). The total capital cost for these facilities ranges from \$26.4 million to \$35.7 million, with a midpoint estimate of \$31.1 million (id.).

The Company represented that this range is the design grade estimate (i.e., capital cost estimates obtained in advance of a competitive bidding process) and reflects a plus or minus 15 percent margin of error (id. at 13). Table 1, below, summarizes information about the proposed installations at each of the sites:

Table 1: Summary of Proposal by Site

Site	Capacity (MW)	Estimated Annual Output (kWh)	Cost per Watt Installed	Proposed Installed Cost
Dorchester	1.32	1,557,549	\$7.11	\$9,374,286
Everett	0.62	837,032	\$6.28	\$3,902,902
Haverhill	1.00	1,327,604	\$5.86	\$5,881,440
NEDC	1.20	1,247,425	\$5.43	\$6,513,183
Revere	0.75	886,319	\$7.17	\$5,406,492
Total	4.89	5,855,929	\$6.34	\$31,078,303

(id., at 6)

As shown in Table 1, the Company's estimated costs range from approximately \$3.9 million for the Everett site to approximately \$9.4 million for the Dorchester site. The Company explained that the differences in cost estimates among the sites were attributable to the size, installation type, and existing uses of each site. The Company explained that per-watt cost differences between sites result from the unique landscaping and permitting requirements for each site (id. at 15). In addition, the Company stated that because it worked with three

⁶ The Company stated that, in developing the capital costs associated with the five projects, it worked with three Massachusetts-based solar design firms, two environmental engineering firms, one civil engineering firm, an environmental siting and licensing law firm, and a rendering and simulation firm (Exh. NG-FED-1, at 12).

different solar design firms to estimate development costs, there were minor cost variations among the three firms (id. at 6).

B. Positions of the Parties

1. Attorney General

The Attorney General argues that the Company did not ensure that the sites it chose would result in the least-cost solar installations (Attorney General Brief at 18). The Attorney General contends that the Company first decided on the sites that it wanted to use and then developed its cost estimates (id.). The Attorney General argues that, given the site variables and differing cost drivers that result in a range of site costs, the Company should be required to either demonstrate that its selection of sites is least-cost or issue requests for proposals (“RFPs”) to compare its costs against sites identified in a competitive solicitation (id.).

The Attorney General also argues that the Company should conduct a distribution system benefits study when choosing sites, stating that such a study could assist utility companies in making better site selection choices regarding benefits and costs (id. at 19). The Attorney General recognizes that it may not be practical for the Company to conduct a comprehensive system benefits study in this proposal for five MW, however, the Attorney General argues that the Department should require the Company to examine system benefits in conjunction with its site selection process or make the system study available to potential bidders (id. at 18-19).

2. Company

The Company states that its site selection was reasonable, practical, and a reflection of common sense (Company Brief at 11). It states that it desired to move reasonably quickly to gain necessary knowledge and learn from these diverse sites before moving forward with more ambitious projects (id.). The Company explains that the decision to focus on Company-owned sites was intended to eliminate the time required to negotiate with other parties and to eliminate lease payments or fees for the use of properties owned by others (id.). The Company also states that it sought to use remediated MGP sites, which are otherwise underutilized, and, since they are close to the distribution system, do not require extensive interconnection costs (id.). The Company further emphasizes the additional benefits of its chosen sites, such as promoting solar generation to the public and the opportunity to study the interaction of utility-scale solar generation with the distribution system under a variety of different conditions (id.).

The Company maintains that there is no basis to support the Attorney General's assertion that an RFP would have resulted in sites that are more cost-effective than those proposed (Company Reply Brief at 17). Further, the Company argues that the Attorney General's witness was not able to describe an appropriate site-selection RFP process (id.). The Company also states that its cost estimates fall within the range of reasonableness for utility-scale solar generation, citing research performed by the Attorney General's witness that utility-scale solar project costs range from \$6,250 to \$7,890 per kilowatt ("kW") installed (id.). The Company observes that the mid-point of its five proposed sites is between \$5,428 and \$7,170 per kW and the estimated average is \$6,344 per kW (id.).

The Company also refutes the Attorney General's assertion that a system benefits study would produce better or more cost-effective sites than the five proposed by the Company (id. at 19). First, the Company states that transmission system benefits are unlikely given the small scale of the proposed solar facility relative to the size of the transmission system (id. at 18). The Company further states that its proposal will give it the opportunity to study the interaction between large-scale solar generation and the distribution system under a variety of conditions to determine benefits (id.). At this point, however, the Company states that benefits to the distribution system are unclear, therefore, it would not make sense to require the Company to include the additional costs to study numerous potential sites to evaluate their theoretical benefit to the distribution system (id.).

C. Analysis and Findings

As noted above, the Attorney General argues that the Company should have conducted an RFP process to identify sites that would have resulted in the selection of least-cost projects. She further argues that the Company should have conducted a distribution system benefits study that would have allowed it to make better site selection choices. The Department finds that, in general, an electric distribution company proposing to build, own, and operate solar generation projects should seek sites which minimize costs and maximize benefits. For the reasons discussed below, the Department concludes that the Company took reasonable steps in this regard.

National Grid stated that its proposal to construct, own, and operate solar facilities on sites owned by the Company or its affiliates is the first component of its three-phase solar

program, the second phase of which calls for the installation of Company-owned solar resources on customer property (Exh. NG-EWH-1, at 10). The Department finds that the Company's proposal to use sites that it owns during this first phase of its solar program is a reasonable approach to facilitate the timely development of these projects. In addition, the Department finds that the Company's proposal to target former MGP sites is appropriate, in light of the limited ways in which these sites could otherwise be used. The Department further finds that the Company's use of multiple consultants to select the sites and develop detailed site-specific cost estimates demonstrates that the Company took sufficient steps in its site selection process to minimize the costs associated with these projects (Exhs. NG-EWH-1, at 18; NG-FED-1 at 12-13). Finally, the Department finds that the Company's identification of site-specific benefits demonstrates that it took appropriate steps to maximize the benefits associated with these projects (Exh. NG-EWH-1, at 18-22).

Based on the above, the Department finds that, in the context of this proposal, the Company's site selection process was reasonable, and approves the proposed sites. The Department recommends that the Company use competitive procurement processes to the greatest practical extent in selecting sites for the second phase of its solar program, which will focus on the installation of Company-owned equipment on customer-owned properties.

VI. COST RECOVERY AND RATEMAKING TREATMENT

A. Company Proposal

1. Introduction

The Company projected annual costs (operation and maintenance, taxes, and capital equipment and replacement) for the 25-year life of the five facilities. These annual costs vary over time, and over the 25-year period sum to \$13.3 million (Exhs. NG-FED-1; NG-FED-3 at 1). For illustrative purposes, the Company estimated the combined annual revenue requirement for calendar year 2010 to be \$5.6 million, assuming an in-service date for all of the projects of January 1, 2010⁷ (Exh. NG-DET-1, at 5).

The costs of the solar facilities will be offset by revenue derived from the sale of energy, capacity, and RECs from the solar installations into the market (id. at 8-9). Revenues from these sales would be credited to all distribution customers (id.). The total revenue produced from the five installations is projected to be \$544,676 in its first year; this amount is from energy and RECs only since the Company does not expect to receive payments from the forward capacity market until three years after the units go into service (id. at 9). The Company provided analysis of the bill impacts based on the estimated costs of the solar program, stating that for a typical residential customer using 500 kilowatt-hours (“kWh”) per month, the program would result in an increase of \$0.125 per month in the first year, based on an estimated \$5.6 million revenue requirement (id. at 13). If the revenues from the output

⁷ The Company included the calculation of the investment tax credit related to the solar generation when determining the revenue requirement for the solar units (Exh. NG-DET-1). The Company revised these calculations in response to information requests and testimony from the Attorney General (Exh. DET-1, revised).

credited to customers were included in the bill impact analysis, the increase would be reduced to \$0.113 per month in the near term (id.). Over time, the Company stated that the costs will decrease because the assets will be depreciated and revenues from the output of the facilities are expected to increase (id.). Consequently, the Company projected an average bill impact of \$0.057 per month over the life of the facilities (id.).

2. Solar Cost Adjustment Provision Tariff

National Grid proposed to recover incremental costs⁸ related to the solar investments through a fully reconciling solar cost adjustment mechanism in the form of the SCAP tariff, M.D.P.U. No. 1147 (Exhs. NG-DET-1, at 9; NG-DET-3). As each of the five solar facilities referenced in this filing goes into service, the final cost of the facility, along with its annual revenue requirement, would be filed with the Department for approval (Exh. NG-DET-1, at 9). The Company would recover its Department-approved costs through a cents per kWh adjustment factor that would apply to all distribution company customers (id. at 9-10). On an annual basis, National Grid would file a reconciliation of the revenue requirement and revenues billed for the solar facilities that are in-service, and include such reconciliation in the subsequent year's adjustment factor (id. at 10). Any over- or under-recoveries would accrue interest at the interest rate paid on customer deposits (Exh. NG-DET-3, at 1). As proposed, the tariff would go into effect within sixty days after National Grid makes a filing notifying the Department that the first solar facility has gone into service (Exh. NH-DET-1, at 9).

⁸ In response to testimony from the Attorney General, the Company revised its proposed tariff to clarify the language on the recovery of incremental costs (Exh. DET-1-Rebuttal).

The Company proposed to apply the SCAP tariff for in-service solar units until National Grid files its next distribution rate case (id. at 12). At that time, the Company would propose to include its net investment and operations and maintenance expenses associated with the in-service solar units in its distribution cost of service (id.). The Company stated that the Department would decide at that time if National Grid should maintain a separate SCAP tariff, or if the solar revenue requirement should be included with the Company's distribution assets and costs (id.).

3. Pre-Approval of Cost Recovery

In this filing, the Company requested pre-approval of a range of costs, with the upper level determined as 15 percent above the Company's estimate for each site. In response to a briefing question from the Department, the Company addressed what pre-approval means in the context of the proposed solar program. Specifically, the Company claims that if and when the Department approves the cost range proposed for the individual solar projects, the Department will have provided authorization for the Company to construct the solar generation facilities (Company Brief at 18). National Grid asserts that this means that in subsequent cost-recovery filings, the Department would not deny cost recovery on the grounds that the projects should not have gone forward (id.).

The Company states that even with pre-approval the Department retains its authority to review the prudence of how the Company actually implemented and constructed the facilities (id.). Thus, even if the final costs come within the pre-approved range, the Company states that it still has the burden to establish the prudence of these costs (id.). The Company further

states that if there are cost increases that result in actual costs being outside of the estimated cost range, the Company would bear the burden to prove that any cost increases were not within its control (Exh. NG-DET-1, at 11). The Company states, however, that this does not mean that the upper range of costs is proposed as a cost cap, beyond which it will not be able to recover costs (Company Brief at 18). Rather, the Company states that as long as the Department found that the cost increase was beyond the Company's control and the project was otherwise implemented prudently, the Company would be allowed to recover the full cost, even if it exceeded the estimated costs provided in this case (Exh. NG-DET-1, at 11).

4. Return on Equity

For the purpose of calculating the revenue requirement for the solar units, the Company provided an illustrative calculation of its weighted average cost of capital which included values from the Company's last distribution rate case, Massachusetts Electric Company, D.P.U. 95-40 (1995) (Exh. NG-DET-1, at 6-7). The Company stated that it only used these values as placeholders and would update them based on the Department's findings in National Grid's currently-pending distribution rate case proceeding, National Grid, D.P.U. 09-39 (id. at 7). The Company has asked the Department to reserve judgment on the appropriate return on equity ("ROE") that might be applied to solar generation in the future until the next distribution rate case after 2009 (id.).

B. Positions of the Parties

1. Attorney General

a. Solar Cost Adjustment Provision Tariff

The Attorney General asserts that if the solar investments are subject to the same review as any other distribution assets (i.e., the prudent, used and useful standard), then the Company's solar investments should be treated like any other distribution investment and be put into rates in the Company's next distribution rate case (Attorney General Brief at 21). The Attorney General claims that the Company cannot argue that costs are subject to the usual distribution-type prudence review and earn the same ROE as other distribution assets but recover these costs through an annual reconciling mechanism to reduce regulatory lag (id.). The Attorney General claims that the Green Communities Act does not specify the method of recovery of the solar investment costs and does not require the use of a specialized tariff (id. at 23). For these reasons, the Attorney General suggests that the costs related to the Company's solar investments be reviewed in the Company's next distribution rate case (id. at 22).

With regard to the wording of the SCAP tariff, the Attorney General states that the tariff is unclear regarding what would constitute incremental costs (id. at 14-15). Consequently, the Attorney General expresses concern that this lack of clarity could result in double recovery of solar-related costs -- once through distribution rates and again as a charge to the solar program (id. at 16). The Attorney General recommends that the Department establish clear, unambiguous language in the SCAP tariff concerning the definition of

incremental costs (id.). The Attorney General suggests that the Department adopt the language found in Western Massachusetts Electric Company's solar tariff (id.).

b. Pre-Approval of Cost Recovery

The Attorney General argues that a lack of any upper boundary on the cost of the solar program is a significant deficiency in the Company's request for pre-approval of cost recovery (id.). The Attorney General encourages the Department to establish a similar type of cost cap that was approved in the settlement of Western Massachusetts Electric Company's solar generation proposal (id. at 16-17, citing Western Massachusetts Electric Company, D.P.U. 09-05 (August 12, 2009)). While the Attorney General recognizes that a settlement does not establish precedent, she states that establishing a similar cap would be in the public interest and be equitable for National Grid's customers (id. at 17)

c. Return on Equity

The Attorney General argues that the Company's risk associated with the recovery of costs related to the solar units is reduced because the costs would be pre-approved by the Department and collected through the SCAP (id. at 10). The application of the investment tax credit ("ITC") also reduces project risk, according to the Attorney General (id. at 11). The Attorney General states that this reduced risk warrants a reduced ROE for the solar investments (Attorney General Brief at 11; Attorney General Reply Brief at 4). The Attorney General recommends a 100 basis point reduction to the ROE for the solar investments (Attorney General Brief at 13). The Attorney General avers that this suggested ROE adjustment is just and reasonable in that it provides benefits to ratepayers while allowing the

Company to earn a return that is financially attractive and commensurate with the level of risk (id.).

2. Company

a. Solar Cost Adjustment Provision Tariff

National Grid argues that its cost recovery proposal is reasonable given the discretionary nature of the solar investments (Company Brief at 14). The Company avers that it proposed an interim reconciling mechanism in order to eliminate regulatory lag until such time as the costs related to in-service solar units can be rolled into distribution base rates (id.).

The Company claims that the Attorney General's argument that the solar investment be reviewed in the Company's next distribution rate case is a new argument that is not supported by record evidence (Company Reply Brief at 27). The Company asserts that this suggestion from the Attorney General is contradictory to the Attorney General's suggestion that the Department should treat the solar investments differently than the Company's distribution assets for ratemaking purposes (id. at 27, citing Exh. AG-RSH-1, at 11-12). The Company argues that the Attorney General has failed to reconcile the contradiction between her support for the interim, fully reconciling tariff in the Western Massachusetts Electric Company solar proceeding, D.P.U. 09-05, and her opposition to a similar cost recovery proposal proposed by National Grid in the instant proceeding (id. at 27-28). The Company states that it is willing to undertake these discretionary investments on the assumption that there will be no material regulatory lag in cost recovery (id. at 28). National Grid suggests that if the Department implements the Attorney General's recommendation it would have the effect of stopping the

solar investment proposal in its tracks (id.). The Company states that the Department should reject the Attorney General's recommendation regarding the SCAP tariff because it is unfounded, unreasonable and bad public policy (id.).

Finally, the Company states that it has modified the definition of incremental costs in order to eliminate any concern that the Company would recover costs that are not truly incremental to the solar investments (Company Brief at 15, citing Exh. NG-DET-2, at 7-8; Company Reply Brief at 19-20). The Company states that the Department (and the Attorney General) will have the opportunity to confirm that all costs sought for recovery by the Company are incremental when the Company files for cost recovery after each solar unit goes into service (Company Reply Brief at 20).

b. Pre-Approval of Cost Recovery

The Company argues that the cap established for Western Massachusetts Electric Company regarding pre-approval of cost recovery was reasonable, but that such a cap is not warranted for National Grid because of significant differences between the companies' proposals (Company Brief at 20). For example, National Grid argues that the cap was appropriate for Western Massachusetts Electric Company because Western Massachusetts Electric Company's filing did not contain information regarding specific sites with specific cost information (id. at 20-21). National Grid argues that because the Department did not have the opportunity to review detailed cost information associated with specific sites, it was a reasonable compromise to impose a cost cap before allowing Western Massachusetts Electric Company to go forward with its proposal (id. at 21). National Grid argues that its filing, in

contrast, contains site-specific information including costs and, therefore, a cost cap is not necessary for pre-approval (id.).

National Grid further states that there is no basis to establish a cap that gives the Department authority to deny prudently incurred costs, merely because the final costs exceed the high end of the range (id.). The Company argues that to establish such a cap would be arbitrary and unlawful, absent a settlement such as occurred in D.P.U. 09-05 (id.). Rather, the Company states that costs can only be denied if imprudence is established (id. at 22). Further, National Grid argues that the prudence of a company's actions is independent of the accuracy of budget estimates but is dependent on the reasonableness of the assumptions at the time the estimates were made (id.). Hence, the Company claims that "the Department does not have the authority today to deny recovery of prudently incurred costs for distribution projects simply because the project costs ended up higher than expected prior to construction" (id.). Instead, the Company contends that costs can only be denied if the Company acted imprudently (id.). The Company states that this does not mean that customers are not protected, even in the absence of a cost cap (id.). Specifically, the Company states that it would be reasonable for the Department to condition its approval on the Company not making any commitments to go forward with any specific projects, without returning to the Department, if it appears that any of the projects will exceed the pre-approved range of costs (id.).

c. Return on Equity

The Company claims that the Attorney General's recommendation of a 100 basis point reduction to the ROE for the solar investments is not supported by substantial evidence in the record (Company Reply Brief at 5). The Company states that there was no quantitative evidence put forth by the Attorney General, such as any analysis of market data to justify the recommended reduction to the ROE, to support her suggested reduction to the ROE (id. at 5, 7). The Company claims that the Attorney General's suggested reduction to the ROE is just a continuation of the results of the settlement negotiations in the Western Massachusetts Electric Company solar investment proceeding, D.P.U. 09-05 (id.).

The Company also argues that it would be inappropriate and arbitrary to impute a cost of capital for the solar projects since the Company will be financing the solar projects just as it finances all other distribution investments (id. at 13-14). The Company states that its proposed revenue recovery mechanism does not eliminate investment risk, therefore, it is reasonable to set the authorized return at the level set in National Grid's current rate case proceeding (Exh. NG-RBH-1, at 25). The Company claims that its proposal strikes the right balance by treating the financing of solar projects like other distribution investments while giving the Company the right signal to make the necessary discretionary investments to move forward with the solar projects (Company Brief at 14). The Company states that, for the above-mentioned reasons, the Department should reject the Attorney General's recommended reduction to the ROE (Company Reply Brief at 6).

C. Analysis and Findings

1. Solar Cost Adjustment Provision Tariff

The Company proposed its SCAP tariff as a temporary vehicle to recover costs associated with its solar proposal until such time that it files a base rate case subsequent to D.P.U. 09-39 (Exh. NG-DET-1, at 12). The Attorney General argues that the Company should not be allowed to recover the costs associated with the solar investments through a reconciling tariff (Attorney General Brief at 21). She states that the Company's investments in the solar units should be reviewed in the Company's next distribution rate proceeding (id. at 22).

In reviewing the Company's proposed SCAP tariff, we must determine if the Company's proposal is a reasonable means through which to recover the costs associated with the solar investments. While the Green Communities Act does not specifically reference cost recovery through a tariff, the Act does mention pre-approval of costs. G.L. c. 164, § 1A(f). In principle, the Department could grant the Company pre-approval of recovery of costs associated with its proposal, but defer actual recovery until its next rate case. However, we conclude that such an approach would be inconsistent with the intent of the Green Communities Act to permit electric companies to develop and implement plans to construct, own, and operate solar generating facilities. The Department finds that the Company's proposal to recover its solar costs through the SCAP tariff until the time of its subsequent rate case is consistent with the Green Communities Act and is a reasonable means of cost recovery.

Regarding the specific language of the SCAP tariff, the Attorney General recommends that the Department establish clear, unambiguous language concerning the definition of incremental costs (Attorney General Brief at 16). The Department has reviewed the revised tariff language included in the Company's rebuttal testimony (Exh. DET-2 (rebuttal)). The revised tariff includes language related to incremental costs that states, in part:

[i]ncremental operation and maintenance costs shall include only those costs that are directly charged to the solar generation facilities and are necessary for the operation and maintenance of the solar generation facilities and shall exclude those direct or allocated costs recovered by any other rate, charge or tariff

(id.). The Department finds that the language included in the Company's proposed tariff regarding incremental costs is sufficiently clear regarding what will constitute incremental costs.

For the reasons stated above, the Department finds that the Company's proposed SCAP tariff is reasonable, and approves the tariff.

2. Pre-Approval of Cost Recovery

In Section V, above, the Department approves the five sites proposed by the Company for its solar installations. Pursuant to the Green Communities Act, the Company seeks Department pre-approval of recovery of costs for these projects. The Company states that, under its interpretation of pre-approval, if the Department approves the estimated cost range for the individual projects, the Department will have provided authority for the Company to construct the facilities and will not deny cost recovery in the future on the grounds that the Company should not have gone forward with the investment. The Company states that the

Department retains the full authority to review the prudence of how the Company implemented and constructed the facilities, and the resulting costs.

The Company has provided a detailed estimate of the costs it projects to incur at each of its proposed sites, with costs ranging from approximately \$3.9 million for the Everett site to approximately \$9.4 million for the Dorchester site (Exh. NG-FED-1, at 6). The Company stated that it worked with numerous consulting firms (see footnote 6, above) to derive site-specific cost estimates for 15 cost categories (Exh. NG-FED-1, at 6, 12).⁹ For each category, the Company explained the basis for the cost components (e.g., labor, equipment, installation) (Exh. NG-FED-1, at 7-11). Further, each of the cost categories was subdivided into major tasks, and workpapers were presented that identified assumptions, preliminary designs and preliminary estimates for the cost estimates (Exhs. NG-FED-1, at 12; NG-FED-2, at 2-6 and Workpapers).

The Department finds that National Grid provided sufficient information to allow for a full understanding of the method used in developing its cost estimates, and based its cost estimates on reliable information. Accordingly, the Department finds that the Company's cost estimates are reasonable, and we pre-approve recovery of these costs.

As stated above, the Company will make filings with the Department as each of its approved facilities goes into service. These filings will detail the final cost of the facility, as

⁹ The cost categories are: design and permitting, site mobilization, site grading/clearing, ground structure installation, PV module purchase, PV module installation, inverter purchase, inverter installation, wiring of modules and equipment, data acquisition system, O&M manual/as-built preparation, fencing/security upgrades, engineering oversight of installation, interconnection, and commissioning (Exh. NG-FED-1, at 6).

well as the associated annual revenue requirements. Based on our pre-approval of recovery of costs associated with these projects, we will not, as part of our review of these filings, revisit whether the Company should have proceeded with these investments. The Department will, however, review the prudence of the Company's actions in constructing the facilities. To the extent that actual costs for a facility exceed the Company's estimates, the Company will need to demonstrate that the cost increases were outside of its control and are consistent with prevailing market conditions. Further, we expect the Company to apprise the Department before making commitments to proceed with a facility if the Company determines that costs are likely to exceed the range presented in the filing.

Regarding the imposition of a cost cap, the Department finds that National Grid's detailed site-specific cost analysis provides significant information regarding expected costs. This information, combined with the Department's ability to review the prudence of the Company's actual costs in a subsequent cost recovery proceeding, provides appropriate safeguards for the Department to approve the Company's proposal without imposing a cost cap.

3. Return on Equity

As discussed above, the Company proposed to use the ROE that will be established for its distribution plant in D.P.U. 09-39. Conversely, the Attorney General argues that, because pre-approval and the application of the ITC renders solar investments less risky, a 100 basis point reduction to the solar investment ROE is appropriate.

The Department recognizes that the pre-approval treatment afforded solar investments by the Green Communities Act may serve to reduce the risk associated with the investments as compared to more traditional distribution-related investments made by electric companies. Similarly, allowing companies to recover their solar-related costs outside of a rate case proceeding, and the application of the ITC, may also serve to reduce the risk associated with the investments. However, these factors alone do not call for a reduction in ROE. Rather, they must be weighed against other factors that may argue against such a reduction. First, the Company stated that it will finance the solar investments just as it finances all other distribution investments. Second, the Company ultimately seeks to include its solar assets in its overall rate base, which is subject to the Company-wide ROE. Finally, the Green Communities Act contains provisions furthering the goals of the Commonwealth's energy policy and, to that end, allows electric companies to construct, own, operate, and seek pre-approval of cost recovery for solar generation facilities.

While the Attorney General presented her qualitative argument in this proceeding that a 100 basis point reduction in the Company's ROE is warranted, she did not present expert testimony or quantitative evidence in support of her proposal. It appears that the Attorney General's sole basis for selecting a 100 basis point reduction is that this was the reduction used in the settlement she reached with Western Massachusetts Electric Company in D.P.U. 09-05. In the absence of record evidence supporting a reduction in ROE, or its magnitude, the Department finds it reasonable to allow the Company to include in its revenue requirement calculation for the solar proposal the ROE that will be set by the Department in D.P.U. 09-39.

VII. AFFILIATE LEASES

A. Company Proposal

Three of the proposed sites are owned by Boston Gas and one is owned by Essex Gas (Exh. NG-EHW at 18). Both gas companies are affiliates of Massachusetts Electric Company, having National Grid USA as the common parent company. In its filing, National Grid proposed a nominal (\$10 per year) lease payment for each of these “company-owned” sites (id. at 24-25). The Company requested a waiver of the Department’s affiliate transaction rule set forth in 220 C.M.R. § 12.04(1) and stated that the pricing provisions contained in the proposed leases are reasonable and necessary to accomplish the goals of the Green Communities Act (Company Petition at 1-2). Further, the Company requested approval of the lease agreements, pursuant to G.L. c. 164, § 94B, which pertains to contracts with affiliated companies (id.).

B. Positions of the Parties

1. Attorney General

The Attorney General notes that although the Company proposed nominal lease payments for the use of sites owned by the gas companies, the Department’s regulations provide that the payment be the “higher of net book value or market value of the asset” (Attorney General Brief at 20, citing 220 C.M.R. § 12.04). Additionally, the Attorney General posits that to the extent the gas companies are receiving, without payment, site improvements (e.g., tree clearing, grading, installation of fencing, and improved connection to the grid), the gas companies should be required to credit the solar program for the value of these improvements (Attorney General Brief at 20).

2. The Company

The Company explains that the proposed nominal lease payment for the gas company sites is to avoid artificially increasing the costs of the solar installations (Company Brief at 26). National Grid notes that, but for its proposal in this case, these properties -- each a former MGP site -- are not likely to ever be used for other purposes that would produce significant value to gas customers in the form of market value lease payments (id.).

The Company takes issue with the Attorney General's proposal that the value of any site improvements, received by the gas companies, should be credited to the solar program (Company Reply Brief at 28). National Grid states that this argument is unsubstantiated by record evidence and was raised for the first time on brief (id.).

C. Analysis and Findings

The Company requested a waiver from the Department's affiliate transaction regulations, 220 C.M.R. § 12.04(1), and approval of the contract under G.L. c. 164, § 94B. Our affiliate transaction regulation provides:

A Distribution Company may ... lease to an Affiliate ... an asset, the cost of which has been reflected in the Distribution Company's rates for regulated service, provided the price charged the Affiliate is the higher of net book value or market value of the asset.

220 C.M.R. § 12.04(1). The Company provided information showing that the cost of each property is or has been reflected in the respective gas companies' rates for regulated service (Exhs. DPU-2-1; DPU-2-2; DPU-2-3; DPU-2-4). The record further shows that the market value rent would be greater than the net book value (id.). As noted above, the Company's requested exemption from market value lease payment will allow it to: (1) make productive

use of these locations whose value to gas customers, due to their status as former MGP sites, is not significant; and (2) avoid artificially increasing the costs of the solar installations (Company Brief at 26).

The record reflects that the four sites that are the subject of the affiliate leases are former MGP sites, having limited commercial utility. We have before us a proposal to construct solar generation facilities with a capacity of approximately five MW. As discussed below, the Company's proposal was made pursuant to the Green Communities Act and will help further the Commonwealth's energy policy, including the goals to meet 20 percent of electricity load from renewable or alternative generation by 2020, and of having 250 MW of solar generation capacity installed in the Commonwealth by 2017. Given the condition of the proposed sites, the referenced solar generation goals, and the fact that solar PV is not yet a commercial technology, we find that the proposed nominal lease payments are reasonable and appropriate. While our affiliate standards of conduct do not explicitly assign the Department the authority to grant companies an exemption from § 12.04(1), we interpret that such authority is implicitly present in the regulations. See Bay State Gas Company, D.T.E. 99-23, at 11 (1999), citing, Hurst v. State Ballot Law Commission, 428 Mass. 116 (1998); Boston Police Superior Officers Federation, 414 Mass. 458 (1993). Accordingly, we grant the requested waiver from 220 C.M.R. § 12.04 pertaining to the pricing provisions of the proposed lease agreements.

Additionally, the Company has requested approval of the lease agreements, pursuant to G.L. c. 164, § 94B, which, in pertinent part, provides:

No gas or electric company shall, without the approval of the [D]epartment, ... enter into a contract with a company related to it as an affiliated company ... covering a period in excess of one year, by virtue of which any compensation is to be paid by said gas or electric company in whole or in part for services to be rendered by such affiliated company

As discussed above, in the context of our affiliate transaction regulations we have found that in the circumstances of the Company's solar generation proposal the requested nominal (\$10) annual lease payment is reasonable and appropriate. Accordingly, we approve the proposed lease agreements under G.L. c. 164, § 94B.

VIII. COMMERCIAL POINT LNG FACILITY

A. Company Proposal

The proposed Dorchester location is the site of the Commercial Point LNG facility.

The Company stated that the proposed solar facility would predominantly be located on portions of the site that are not being used for the active LNG facility (Exh. NG-ECH at 6).

To accommodate the solar facility, the Company would remove and construct a new LNG impounding area, and associated fencing, for the LNG tank's pumping equipment (id. at 7).

National Grid represented that the new impounding area would be the only component of the active LNG facility that would be replaced, relocated, or significantly altered; the construction of this new component would be undertaken in such a way as to meet or exceed all current federal and state regulations (id.). Accordingly, the Company has requested the Department to make a determination that the proposed site work needed to locate the solar generation facility on this site does not constitute a modification to a component of an existing LNG plant

pursuant to 220 C.M.R. § 112.10(4), that would result in any loss of “grandfathered” status of the LNG plant established under 220 C.M.R. § 112.10(3) (Petition at 2).

B. Positions of the Parties

1. Attorney General

The Attorney General does not oppose the Company’s request.

2. Company

The Company states that it has demonstrated that its proposal to site a solar generation facility at the Dorchester Commercial Point LNG plant will not interfere with any of the active LNG facilities at the site (Company Brief at 27). Further, the Company notes that preservation of the facilities’ overall “grandfathered” status will enable these facilities to continue to provide service to customers without potentially costly upgrades (id. at 28).

C. Analysis and Findings

The record demonstrates the Columbia Point LNG facility predates the adoption of the Department’s regulations pertaining to the design, operation, maintenance, and safety of LNG plants and facilities, 220 C.M.R. §§ 112.00, et seq. As such, and with the exception of significant modifications, this facility is deemed grandfathered from complying with future amendments to design and construction requirements of the regulations. 220 C.M.R. § 112.10. Based on the record, we determine that, with the exception of the relocation of the impounding area, which the Company stated will be constructed in accordance with all federal and state regulations, the proposed site work associated with the location of the solar generation facility on this site does not constitute a modification to a component of an existing

LNG plant pursuant to 220 C.M.R. § 112.10(4), that would result in any loss of “grandfathered” status of the LNG plant established under 220 C.M.R. § 112.10(3).¹⁰

IX. CONSISTENCY WITH THE COMMONWEALTH’S ENERGY POLICY, RENEWABLE ENERGY PORTFOLIO STANDARDS, AND PUBLIC INTEREST

As stated in Section IV, above, the Department, in conducting its review of a petition for pre-approval of the recovery of costs associated with the construction of generating facilities producing solar energy, must determine whether the proposal: (1) is consistent with the Commonwealth’s energy policy; (2) could be used to satisfy, in part, the renewable energy portfolio standard requirements contained in G.L. c. 25A, § 11F; and (3) is in the public interest, and whether the associated cost-recovery method results in just and reasonable rates under G.L. c. 164, § 94.

The Green Communities Act includes a broad range of provisions intended to enhance the development of renewable and alternative energy and to increase energy efficiency in the Commonwealth. See generally Chapter 169 of the Acts of 2008. The Green Communities Act sets the specific goal that the Commonwealth meet at least 20 percent of its electric load by the year 2020 through new renewable and alternative generation. Chapter 169 of the Acts of 2008, § 116(a)(2). Separately, Governor Patrick set a goal of 250 MW of solar generation installed in the Commonwealth by 2017 (Governor’s Office April 2007 press release). The Department finds that the Company’s proposal to develop approximately five MWs of solar

¹⁰ The Department’s finding regarding the grandfathered status of the LNG facility is expressly conditioned on the Company constructing the new impounding area in accordance with all federal and state regulations.

generation at sites owned by the Company or its affiliates, pursuant to G.L. c. 164, § 1(A)(f), is consistent with the Commonwealth's energy policy.

The Commonwealth's RPS requires that all retail electric suppliers provide a minimum percentage of kWh sales to end-use customers in the Commonwealth from new renewable energy generating sources. G.L. c. 25A, § 11F(a). Solar PV is a renewable energy generating source. G.L. c. 25A, 11F(b). These minimum percentage requirements, which increase annually, are defined as Class I renewable energy generating source requirements. G.L. c. 25A, § 11F(a). Class I renewable energy generating sources include solar PV generation that began commercial operation after December 31, 1997. G.L. c. 25A, § 11F(c). Accordingly, the solar facilities proposed in the National Grid's proposal could be used to satisfy the renewable energy portfolio standard requirements as they would qualify as Class I renewable energy generating sources.

In determining whether the Company's proposal is in the public interest and whether the associated cost-recovery method will result in just and reasonable rates under G.L. c. 164, § 94, it is important to recognize that climate change is one of the most important challenges facing society today. Consistent with this, there are several initiatives currently taking place at the state, regional, and federal levels that are aimed at reducing greenhouse gas emissions, particularly carbon, from electric generation facilities. At the state level, the Massachusetts Global Warming Solutions Act requires the Commonwealth to reduce greenhouse gas emissions, relative to 1990 levels, by 10 to 25 percent by 2020. Chapter 298 of the Acts of 2008. This target increases to 80 percent by 2050. At the regional level, the Regional

Greenhouse Gas Initiative is a carbon cap and trade regime that establishes caps on carbon emissions from larger electric generation facilities in participating states. Federal legislation addressing climate change is currently under consideration in both houses of Congress, and is a major priority of the Obama Administration. The Department cannot ignore the high likelihood that the combination of initiatives within the Commonwealth, across the Northeast region, and at the national level will result in increased costs associated with reduced greenhouse gas emissions being internalized in electricity prices, resulting in increased costs to electric consumers over time. As such, it is appropriate for the Department to take into account the benefits of the Company's solar proposal which include (1) producing electricity without emissions, thus avoiding future costs to electric consumers associated with the control of greenhouse gas emissions, (2) stimulating market forces in creating additional solar generation in the Commonwealth, and (3) producing valuable information on the costs and benefits of installing solar generation facilities in Massachusetts. Based on these benefits, the Department concludes that (1) the Company's proposal is in the public interest, and (2) the associated cost-recovery method will result in just and reasonable rates under G.L. c. 164, § 94.

X. ORDER

Accordingly, after due notice, hearing, and consideration, it is

ORDERED: That the Petition of Massachusetts Electric Company, Nantucket Electric Company, Boston Gas Company and Essex Gas Company each d/b/a National Grid is APPROVED; and it is

Appeal as to matters of law from any final decision, order or ruling of the Commission 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 Commission be modified or set aside in whole or in part. Such petition for appeal shall be filed with the Secretary of the Commission within 20 days after the date of service of the decision, order or ruling of the Commission, or within such further time as the Commission may allow upon request filed prior to the expiration of 20 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. Sec. 5, Chapter 25, G.L. Ter. Ed., as most recently amended by Chapter 485 of the Acts of 1971.