EXECUTIVE SUMMARY

Introduction

In this Order, the Department approves National Grid's petition to enter into a power purchase agreement with Cape Wind for the purchase of 50 percent of the output of the Cape Wind project ("contract" or "Cape Wind contract"). The Department finds that the Cape Wind contract is both cost-effective and in the public interest.

The Department denies National Grid's petition to approve a second power purchase agreement with Cape Wind for the remainder of the project's output. We find that approval of a second contract at this time would serve no clear purpose.

The Cape Wind project is a wind-energy generating facility of up to 468 MW, to be located offshore of Massachusetts in the federal waters of Nantucket Sound. Under the Cape Wind contract, National Grid agrees to purchase the energy, capacity, and renewable energy credits associated with the project for $187 per MWh for 15 years, escalating annually at 3.5 percent. There are provisions for upward price adjustments under some circumstances and for downward adjustments under others. There is also a provision allowing National Grid to extend the contract beyond 15 years at potentially reduced prices for customers.

The power from this contract is expensive in light of today's energy prices. It may also be expensive in light of forecasted energy prices—although less so than its critics suggest. There are opportunities to purchase renewable energy less expensively. However, it is abundantly clear that the Cape Wind facility offers significant benefits that are not currently available from any other renewable resource. We find that these benefits outweigh the costs of the project.

One of the many benefits that Cape Wind provides is that it will assist National Grid and Massachusetts in meeting the renewable energy requirements of the Green Communities Act, as well as the greenhouse gas emissions reduction requirements of the Global Warming Solutions Act. Meeting those greenhouse gas emission mandates will require significant investments across all sectors of the economy, and especially from the electricity sector. We conclude that those requirements are unlikely to be met without the Cape Wind contract and the associated emissions reductions from the project.

In making these findings the Department is mindful of the impacts that the Cape Wind contract will have on National Grid electric customers. Based on the range of forecasts used in this case, it appears that the contract could increase the bills of National Grid residential customers by roughly 1.3 to 1.7 percent, and the bills of large commercial and industrial customers by roughly 1.7 to 2.2 percent. We find that this increase in electricity bills is acceptable, given the significant and unique benefits of the project.

Standard of Review

Section 83 of the Green Communities Act requires all electric distribution companies in Massachusetts to solicit proposals from renewable energy developers twice in the five-year period from 2009 to 2014 and, if the companies receive reasonable proposals, to "enter into cost-effective long-term contracts to facilitate the financing of renewable energy generation." In order to be eligible for long-term contracts, renewable resources must: be cost-effective to Massachusetts electric ratepayers over the term of the contract; provide enhanced electricity reliability within the Commonwealth; contribute to moderating system peak load requirements; and create additional employment where feasible.

Furthermore, the Department always considers the public interest in the fulfillment of our duties. Thus, our consideration of long-term contracts for renewable energy under Section 83 includes a determination that the contract is in the public interest. In this case we ask, among other things, whether National Grid's customers are being asked to pay too much for this resource, whether the project's developers are likely to realize windfall profits, and whether the purchase of other renewable power would have made more sense. In regard to all of these questions, we conclude that the Cape Wind contract is in the public interest.

Cost-effectiveness

Section 83 requires that in determining the cost-effectiveness of proposed long-term contracts for renewables the Department "take into consideration both the potential costs and benefits of such contracts." While parties to this proceeding have applied the concept of cost-effectiveness in different ways, the statutory language makes it clear that in order for a Section 83 contract to be determined cost-effective its benefits must outweigh its costs.

As we have said, the price of the Cape Wind contract is $187 per MWh for 15 years, with a 3.5 percent annual escalator and opportunities for both upward and downward price adjustments depending on a variety of contingencies. Contrary to the assertions of some parties in the case, there are no additional transmission costs to customers beyond those that are already included in the contract price, and no costs of any significance to back up the addition to the regional electricity grid of an intermittent resource the size of Cape Wind.

On the other side of the ledger, the benefits associated with the Cape Wind contract include the value associated with the energy, capacity, and renewable energy credits that National Grid will purchase through the contract. In those years when the contract cost exceeds that value, National Grid customers will pay "above-market costs" for the Cape Wind contract. Based on the evidence presented, we believe the most likely range of above-market costs over the 15 years of the contract, including consideration of the price suppression effect, is from $420 million to $695 million.

We have included the effect of price suppression in the calculation of above-market costs because price suppression will offset at least some of the contract's potential above-market costs to National Grid's customers, thereby reducing bill impacts, and will reduce prices for all of the other electricity customers in the state and region. Price suppression occurs when an electricity resource bids into the wholesale energy market at low or zero cost (on account of low or zero fuel costs), thereby establishing a lower energy price in the wholesale market. All of the parties in this proceeding who have addressed price suppression agree that the Cape Wind facility will reduce wholesale energy prices, although there are differing views as to the magnitude and duration of the effect.

In order for the Cape Wind contract to be considered cost-effective, the unquantified benefits of the contract must outweigh the net above-market costs that are expected from the contract. We conclude that the benefits of the Cape Wind project well exceed such potential costs. The key unquantified benefits are described briefly below.

Assisting National Grid and the Commonwealth to comply with state renewables and greenhouse gas emissions reduction requirements. The state's renewable portfolio standard requires 15 percent of the state's electricity supply to come from renewables by 2020, with an additional one percent requirement each year thereafter. Most other states in the region have comparable requirements, which limit the amount of regional renewable resources that will be available to serve Massachusetts. The state's Global Warming Solutions Act requires a reduction in greenhouse gases of: (1) ten to 25 percent by 2020; (2) 80 percent by 2050; and (3) interim target levels in 2030 and 2040 that will lead to achieving the 2050 target. In addition to these requirements, the Green Communities Act establishes a goal of meeting 20 percent of the state's electric demand through renewable and alternative energy generation by 2020.

The analyses of the supply of and demand for renewable resources presented in this case make it clear that the Commonwealth and the region will require the development of offshore wind in order to meet their renewables and greenhouse gas emissions requirements. The demand for renewable resources over the next 15 to 20 years will far outstrip the current supply. While there is the potential, at least in theory, for new development of other types of renewable resources in the region to fill this gap, many of the other options face significant hurdles in the near- to mid-term and, thus, are unlikely to come close to meeting the demand for renewables in the absence of offshore wind. In particular, Massachusetts has recently promulgated draft regulations that will severely limit the eligibility of biomass for renewable portfolio standard credits; solar power installations in the state currently stand at fewer than 30 MW and, although projected to increase, are currently more expensive than other renewables options; and land-based wind, although a promising resource, in many instances faces significant siting and transmission constraints in order to serve Massachusetts load.

We are fully persuaded that if Massachusetts is to meet its statutory renewables and greenhouse gas emissions reduction requirements, offshore wind will have to be part of the

mix. Notwithstanding the enormous wind resource off the New England and Mid-Atlantic coast, Cape Wind is the only offshore wind facility in the country that has even approached the end of its permitting process, which in the case of Cape Wind has taken ten years. We note by comparison that there are 43 offshore wind projects with an aggregate capacity of more than 2,000 MW in twelve countries already in operation, mostly in Europe, and 16 others with 3,500 MW of capacity, also in Europe, financed and/or under construction. This is the moment for the state and the region to begin to capture the potential of offshore wind by approving the long-term contract that will help the country's largest proposed offshore wind facility become a reality.

Providing National Grid the option to extend the contract beyond 15 years. The Cape Wind contract offers National Grid the option to extend the contract for ten years beyond the initial 15-year term, at a price that covers the remaining costs of operating the facility plus a reasonable rate of return for Cape Wind. This option would be exercised by National Grid only if market prices are higher than the cost-based prices for Cape Wind, and could provide significant benefits to National Grid customers at a time when fossil fuel prices could be higher and greenhouse gas emissions reductions requirements more stringent than during the first 15 years of the contract.

Enhancing electricity reliability in the state. The Cape Wind project will interconnect with a substation in southeastern Massachusetts, very close to the largest electricity loads in New England. It is fueled by wind—a fuel that does not depend on delivery into the region and is especially plentiful during the winter, when natural gas is at a premium for heating purposes. The location is advantageous from a reliability perspective as compared to more remote renewable resources, especially those in relatively transmission-constrained areas north of Massachusetts.

Moderating system peak load. Offshore wind facilities in the Northeast are expected to have a higher capacity factor, with greater coincidence to both summer and winter peak loads, than onshore wind or solar facilities. Moreover, Horseshoe Shoal, the area of Nantucket Sound where the project will be located, has one of the strongest and most consistent wind regimes in New England. Actual hourly wind data shows that the project's capacity factor would have averaged an impressive 76 percent during the region's top ten historic peak hours.

The creation of additional employment. It is undisputed that the construction and operation of the Cape Wind facility will lead to increased jobs in the region. There will also be additional jobs created as a result of the reduction of electricity bills throughout the region arising from the price suppression effect. On the other hand, the increase in above-market costs from the contract is expected to have the effect of reducing jobs. Evidence in this case shows that all of these effects combined are likely to create an average of 162 jobs per year for the 15 years of the contract. We note, as well, that a number of studies in the record of this proceeding, including one conducted by the United States Department of Energy and another by the Department of Economics and Political Economy Research Institute at the University of

Massachusetts, conclude that the project will have a positive impact on long-term employment and on resulting economic activity.

Public Interest

Although the Department always considers the public interest in its decision-making, there is no public interest litmus test. The determination is case specific, taking into consideration the particular issues raised in a given case. In this proceeding, we address the following questions to determine whether the Cape Wind contract is in the public interest:

- Is the contract reasonable and appropriate relative to alternative long-term contracts for renewable power?
- Is the contract price reasonable for the specific type of resource (i.e., offshore wind) being purchased?
- Are the amount and type of renewable power purchased appropriate?
- Are the bill impacts on National Grid's customers acceptable?

Is the contract reasonable and appropriate relative to alternative long-term contracts for renewable power? A contract for renewable power does not need to be the lowest cost contract available in order to be cost-effective. Nonetheless, if an electric distribution company chooses a contract whose cost significantly exceeds the cost of alternative renewable resources, it must demonstrate that doing so is in the public interest. The evidence in this proceeding makes it clear that the Cape Wind project offers unique benefits relative to the other renewable resources available. In particular, the project's combination of size, location, capacity factor, advanced stage of permitting, and advanced stage of development is unmatched by any other renewable resource in the region for the foreseeable future. This combination of benefits will significantly enhance the ability of National Grid to achieve renewables and greenhouse gas emissions reduction requirements.

Is the contract price reasonable for the specific type of resource (i.e., offshore wind) being purchased? We have confidence for a number of reasons that the price of the Cape Wind contract is reasonable. First, the Attorney General used cost data from offshore wind projects in the United States and Europe to derive a range of estimates for the Cape Wind project's likely installed cost, financing cost, and future operating and maintenance expenses. Comparing the Cape Wind project pricing to the derived estimates, she concluded that the contract price is consistent with her own estimate of project costs.

Next, because offshore wind will be needed in order to meet state renewables and greenhouse gas requirements, the cost of this project should be compared not only to the cost of other types of renewable resources that submitted proposals for long-term contracts, but also

to other offshore wind projects. These are likely to offer benefits similar to those of the Cape Wind project, such as substantial size, high capacity factor, and proximity to large population centers. In the United States, the opportunities for comparison are limited. The one other contract for a project of roughly comparable size and with publicly available price data is the Bluewater project off the Delaware coast, which was selected through a competitive process. The levelized price of the Cape Wind contract is slightly lower than that of the Bluewater contract. There are many more offshore wind projects in Europe, many of which are more expensive than Cape Wind, but some of which are less expensive.

Finally, the contract's downward price adjustment mechanisms, in particular the provision for reducing the price if the project's internal rate of return is higher than 10.75 percent, assure that the developer will not reap windfall profits. We note that the costs of the facility that will be used to calculate the rate of return are subject to review by an independent verification agent.

Are the amount and type of renewable power purchased appropriate? National Grid has chosen to enter into one contract for a single wind project to meet its Section 83 requirement to solicit long-term contracts for renewable power. The total amount of generation from the Cape Wind contract is expected to equal roughly 3.5 percent of its total distribution demand, slightly higher than the three percent requirement identified in Section 83. This decision raises the question of whether Cape Wind has purchased too much renewable generation, and too much renewable generation from one project.

National Grid justifies its decision chiefly on the grounds that the amount is necessary in order to facilitate the financing of the project. The Company also states that it has chosen this amount of renewable generation from Cape Wind because of the balance it wishes to achieve in its portfolio of energy contracts. We find National Grid's decision to purchase this amount of renewable generation through a single contract to be reasonable, given the unique circumstances associated with the Cape Wind project.

Are the bill impacts on National Grid customers acceptable? Based on the range of forecasts used in this case, the Cape Wind contract could increase the bills for National Grid customers by approximately 1.7 percent (for residential customers) to 2.2 percent (for large commercial and industrial customers). With price suppression factored in, the range would be from approximately 1.3 percent (for residential customers) to 1.7 percent (for large commercial and industrial customers). We find that the range of potential bill impacts is acceptable, given the significant and unique benefits offered by the Cape Wind project. We note as well that these bill impacts are small relative to the volatility that electric customers regularly experience due to the fluctuations in wholesale electricity prices, and that the contract will mitigate that volatility.

Compliance with Long-Term Contracting Regulations; Facilitation of Financing; Cost Recovery

During the pendency of this proceeding and subsequent to the initiation of National Grid's contract negotiations with Cape Wind, the Department changed its regulations and suspended the applicability of the provision in Section 83 that proposals for renewable resources under Section 83 be located within the Commonwealth or in adjacent federal waters. In that regulatory proceeding, the Department directed National Grid to demonstrate in *this* proceeding compliance with the new long-term contract regulations.

In response to that directive, National Grid maintains that it entered into a long-term contract with Cape Wind because of the project's unique attributes and because of National Grid's view of the enormous potential of offshore wind, not because of the facility's location off the coast of Massachusetts. It identified and considered alternative resources, which did not change its decision. We are persuaded by National Grid's assertions in that regard.

We are also persuaded that approval of the contract is required in order to facilitate the financing of the Cape Wind project. A project of this scale and risk requires a power purchase agreement in order to obtain financing.

Finally, pursuant to Section 83, we have exercised our discretion to allocate any above-market costs of the Cape Wind contract to all of the Company's distribution customers because all customers, not just those receiving basic service, will benefit from the contract.

Second Cape Wind Contract

In this Order, the Department denies National Grid's request to approve the second power purchase agreement with Cape Wind for the remainder of the project's output. The second contract is intended for assignment by National Grid to another party, and pre-approval by the Department would purportedly facilitate that assignment.

The nexus between pre-approval of the second Cape Wind contract and advancement of the purposes of Section 83 is too tenuous. First, Cape Wind has the right to terminate the second contract at any time before it is assigned to another party, and either party may terminate it if it is not assigned within a certain time period. Second, that contract may be assigned to a party that is not even subject to the Department's jurisdiction. Third, Cape Wind and a future purchaser may modify its terms after assignment. If Cape Wind enters into another contract with a party subject to the Department's jurisdiction, the Department will review such contract at that time.