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UPDATE: On May 1, 2013, the Nantucket Board of Selectmen unanimously adopted the policy recommendations detailed herein. As a result, Town Administration is tasked with the management and implementation of the enclosed energy policy recommendations

Policy Guidelines for Town Roles in the Achievement of Energy Efficiency Goals and Objectives and Development of Renewable Electric Generating Facilities

Recommendations for Town Involvement in Energy-Related Activities

April 2013

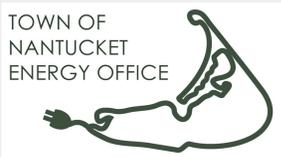
Introduction

The Town of Nantucket spends nearly \$3.0 million per year to purchase energy in the forms of electricity and liquid fuels for use by municipal facilities and equipment. In particular, in fiscal year 2012,

- Town buildings and facilities consumed over 12,000 MWh of electricity at 77 metered electric accounts at a total cost of more than \$1.8 million.
- The Town consumed approximately 162,000 gallons per year of #2 fuel oil at 17 locations; 41,000 gallons per year of propane at 28 locations; premium diesel fuel at four locations; and gasoline for vehicles at the airport, the fire department and the department of public works; together having a total cost of approximately \$1.05 million.

Town elected officials, board members, professional staff and concerned residents share an interest in reducing Town expenditures on energy purchases, but there has been no established consensus regarding the best ways for the Town to reduce these costs, nor has there been an established consensus regarding the preferred approach to Town involvement in energy-related matters in general.

To address this lack of consensus, in the fall of 2012, Commonwealth Resource Management Corporation (CRMC), of Boston, Massachusetts, in its role as senior energy consultant to the Nantucket Energy Office, and acting at the request of the



Board of Selectmen through Town Administration, prepared a draft set of energy policy guidelines for the Town, and an accompanying background document, for release to the public for discussion. The draft energy policy guidelines focused on attitudes toward Town involvement in achieving energy efficiency and developing renewable electric generating facilities on Nantucket. The Nantucket Energy Office presented the draft energy policy guidelines to the Nantucket Board of Selectmen at a public meeting on November 14, 2012. The Nantucket Energy Office then developed an on-line survey to solicit additional comments on energy policy guidelines from interested stakeholders. The survey was conducted to solicit feedback through a method that was considered a preferred alternative to the conduct of a public hearing process.

This report presents a modified set of recommendations for the role of the Town in energy-related matters that takes into account the public response to the draft energy policy guidelines. The report considers both detailed feedback from individual respondents and stake-holders, as well as 45 survey responses received electronically. Note that the survey numerical results should not be accorded statistical significance, because the results present the responses of a self-selected group of interested and motivated stakeholders rather than a randomized survey of the Nantucket population. Nonetheless, the survey results are helpful as indications of the range of attitudes held by the respondents and in identifying areas of consensus and areas of disagreement.

Attachment A presents the survey questions along with numerical data on survey responses and the comments received from the respondents on each question. Note that comments provided anonymously are so indicated. Other comments are provided without attribution to conceal the names of the commenters. Attachment B provides a copy of the original draft of the energy policy guidelines and the accompanying background document. Attachment C provides a list of the recommendations provided herein without the accompanying explanation.

The Energy Policy Recommendations

The policy recommendations listed below are presented by the Nantucket Energy Office after reviewing and incorporating input from survey respondents and from other stake-holders that provided their views. For simplicity, as suggested by one respondent, the policy recommendations are divided into three areas: energy efficiency, renewable energy and general planning and administration. In each case, a general policy recommendation is followed by recommendations of detailed measures for implementation.

Policy Recommendations for Energy Efficiency

1. Continue to implement cost-effective plans to reduce energy consumption.

There was a broad consensus among direct commenters and survey respondents to support Town efforts to reduce energy consumption at Town facilities through implementation of efficiency measures (including unanimous support for Question 3-2) as long as they are cost-effective. Generally, respondents supported evaluation of initiatives to reduce Town energy costs on their economic merits on the same basis as initiatives to reduce other types of Town costs. Some commenters urged the Town invest aggressively in efficiency measures. Other commenters advised caution regarding requirements that might accompany state and federal incentive programs. Nonetheless, almost all supported directing professional staff and technical support resources to implement cost-effective measures to reduce the Town's energy consumption and energy purchase costs. In addition, almost all agreed that the Town should provide services to advise Town residents and businesses how to control their own energy consumption and costs on a basis comparable to other economic development programs provided to local residents and businesses.

In this context, the Nantucket Energy Office recommends the following measures:

- 1.a. Monitor Town consumption of electricity and other fuels at least on an annual basis using Mass Energy Insight or comparable software. Identify consumption by each Town department and function to the extent data are available. Consider changes to metering arrangements and additional sub-metering as appropriate. Distribute information on Town energy use to Town officials and professional staff and to the public. Compare Town energy use with benchmarks for energy use in comparable municipal facilities elsewhere to the extent such comparisons are meaningful.
- 1.b. Continue with the program for auditing energy consumption of each building at which the Town pays for electricity or other fuels. As part of this program:
 - Take advantage of programs from National Grid and other sources to perform initial assessments of lighting and non-lighting energy consumption for each municipal energy building and metered consuming structure and to implement no-cost and low-cost efficiency measures. Evaluate weatherization improvements. Perform efficiency

upgrades of lighting, motor controls and other non-lighting building electric systems. Perform building commissioning studies to ensure efficient operations. Meet with National Grid's Lead Energy Efficiency Manager on an annual basis to review status of municipal energy efficiency projects.

- Identify and test the efficiency and condition of the heating, ventilation and air conditioning systems in all municipal buildings. Invest capital to upgrade to high-efficiency systems that are cost-effective to the extent capital resources are available from the Town.
- Perform higher-level assessment of the municipal facilities (e.g., wastewater treatment facilities, the composter) that consume significant energy for purposes other than lighting and space heating and cooling. Evaluate the feasibility of ground-source heat exchangers and heat pumps as a part of such evaluations. Install capital improvements that are cost-effective to the extent capital resources are available from the Town.
- Take advantage of the Mass Save Municipal Program and comparable programs to finance energy efficiency measures through electric bill payments such that the projected savings exceed the projected annual costs (that is, the overall impact will be cash flow positive) and that have paybacks of less than two years. Facilitate Town-wide contracts, purchase orders and other arrangements for purchase of energy-efficiency products and services as appropriate.
- Repeat the energy assessments at periodic intervals in order to take advantage of advancements in available efficiency products and changes in available incentive programs.
- Monitor and support efforts to change the National Grid street-lighting tariff to give credit to municipalities for reducing streetlight electricity consumption. Implement changes to street-lighting when the Town would benefit from the improvements.
- Continue to participate in the Leading by Example program of the Massachusetts Department of Energy Resources (from which the Town secured over \$18,000 of free LED lamps in FY 2013, with projected savings of an additional \$18,000 per year).

- 1.c. Encourage Town department heads and staff to reduce energy consumption through behavioral and efficiency measures in their workplaces and in the facilities under their control or jurisdiction. To support this objective:

- Educate and engage employees to adopt energy-efficient best practices. Utilize an awareness and training program (e.g., National Grid's *SEE the Light Energy Toolkit* or comparable program) to encourage staff to implement measures such as the following:
 - Turn off lights and equipment when not needed.
 - Power down computers and office equipment.
 - Monitor and maintain correct air and water set point temperatures. Consider a set-point policy to maintain optimal air and water temperatures. Support installation of devices that control temperatures and use water efficiently.
 - Check and report leaks in the restrooms, kitchens, showers, etc.
 - Keep doors and windows shut and airtight.
 - Use smart planning to operate energy-intensive equipment. For example, have maintenance platoons clean and light one floor or wing at a time; charge large battery equipment only during off-peak demand times; and have kitchen staff defer use of cooking equipment until it is needed.
 - Encourage adoption of energy reduction measures suggested by department heads and the staff themselves and provide technical and management support as appropriate. Recognize and publicize successful suggestions.
 - Develop and implement a system for distributing information on Town energy use and best practices to Town department heads and facility managers (see Attachment D). Allow use of facility and department-level energy reduction targets as an administrative tool to encourage energy-conserving behavior.
 - Maintain active participation in the Massachusetts Municipal Energy Group (MMEG): a web-based information clearing house where peers create forums, discuss strategies and share success stories. Maintain relationships with municipal energy professionals in other towns.
- 1.d. Provide information on energy efficiency and energy conservation to Town residents and businesses. To support this objective:
- Support local implementation on Nantucket of the Mass Save program to provide no-cost home energy assessments and energy efficiency measures, and to support further residential energy reduction measures. Continue to coordinate quarterly energy assessment weeks with National Grid and its service providers to ensure efficient marketing, scheduling and implementation of the program.
 - Distribute information and case studies regarding energy efficiency and conservation measures in existing buildings and approaches to

minimizing energy use in new buildings (e.g., through promotion of the LEED program and comparable initiatives for energy efficiency) that are appropriate to Nantucket and can be implemented across the island.

- 1.e. Support Nantucket-based contractors in their efforts to become eligible to perform energy efficiency services through state- and utility-sponsored programs, and in their efforts to provide such services on a commercial basis in general. Support efforts by MassSave program managers to recruit, hire and train Nantucket-based energy analysts to implement the program locally on a consistent and timely basis. Generally, encourage providers of state- and utility-sponsored energy efficiency programs to utilize Nantucket-based contractors. Support distribution on Nantucket of energy efficiency products by local retailers.

Policy Recommendations for Renewable Energy

2. Be supportive of efforts for development of solar energy and geothermal energy recovery installations, but do not have the Town take direct responsibility for development of renewable energy facilities. Take advantage of state-level renewable energy incentive programs related to renewable energy certificates and net metering credits to the benefit of the Town where feasible.

There was only isolated support for, and significant opposition to, direct Town involvement in development of renewable energy facilities. Generally, respondents were not opposed to Town participation in early-stage activities to evaluate and screen sites and proposals in order to ensure that potential adverse environmental and nuisance impacts are addressed. Generally, respondents opposed having the Town take a significant role in development, financing or ownership of such facilities unless involving small projects integrated into existing facilities (e.g., solar PV panels integrated into a roof replacement project, or waste heat recovery as part of a facility ventilation system upgrade).

In this context, the Nantucket Energy Office offers the following recommendations:

- 2.a Participate in feasibility studies related to renewable resource development that are funded or conducted by others and that involve no cost to or

continuing obligation by the Town. A key objective of the Town in such participation would be to identify and advocate at an early stage for appropriate focus on the study of island-specific concerns and potential impacts that might be unfamiliar to non-islanders, or that might otherwise be missed or dismissed unless the Town participates at an early stage.

- 2.b. Conduct a systematic inventory of Town-owned facilities and land to identify and screen opportunities for development of solar PV facilities. Screen the sites to avoid unacceptable visual impacts, potential impacts on protected species or wetlands, and constraints regarding property ownership and leasing.
- 2.d. If an opportunity to develop a solar PV facility on Town-owned land appears feasible and non-controversial, procure a private developer for the project through a competitive process that maximizes benefits to the Town.
- 2.e. Continue to register and sell Class I Renewable Energy Certificates (RECs) from the Nantucket High School wind turbine. The Town has earned \$13,192 through the first year of this program to date at minimal cost and no economic risk. The Town should continue efforts to generate revenue for the Town through the REC program as long as the opportunity is available.
- 2.f. Seek to purchase net metering credits from all available sources in a way that maximizes the financial benefits to the Town. Note that National Grid has advised that the Town cannot purchase net metering credits from projects on the mainland unless the Town initiates a proceeding before the Department of Public Utilities (DPU) to do so. Thus, the Town can only purchase net metering credits from projects located on Nantucket. Petitioning the DPU to initiate a proceeding to change the status of the net metering program is not recommended, because the Town will be better off reserving its capability to purchase net metering credits for local projects.
- 2.g. Be receptive to proposals to develop privately-owned pyrolysis or other facilities that might utilize residual materials from waste processing and composting operations as a feedstock. Ensure that such proposals address at an early stage (a) integration and consistency with other activities for solid waste management; and (b) potential adverse environmental and

nuisance impacts. In this context, if a pyrolysis or other project emerges as acceptable, the Town might pursue legislation or regulatory initiatives that would enable the pyrolysis project to qualify for net metering credits.

These policy recommendations for renewable energy do not address wind turbine projects, which are the subject of numerous discussions in other forums.

Policy Recommendations for Town Planning and Administration

3. Require energy efficiency to be considered as a factor in all planning decision, facility design and construction decisions, and vehicle purchases that have a significant impact on energy consumption.
4. Do not adopt numeric goals to reduce Town-wide energy consumption or greenhouse gas emissions.
5. Do not pursue designation as a Green Community.

Generally, stake-holders and survey respondents view Town involvement in energy-related activities on the same basis as other Town activities. Capital projects and ongoing initiatives to reduce Town energy costs should be evaluated on their economic merits on the same basis as initiatives to reduce other Town costs. There was little support for adopting goals that could be achieved only through Town commitment of resources to programs and expenditures that might not otherwise be cost-effective. Similarly, there was little support for making Town commitments to policies and programs being promoted state-wide simply to achieve designation as a Green Community. The Town has previously considered and rejected several of the required components of qualification for designation as a Green Community, including as-of-right zoning and expedited permitting for renewables and adoption of the enhanced version of the building code known as the Stretch Code.

Nonetheless, stake-holders and respondents did provide significant support for measures that make sense and provide value for Nantucket when evaluated on a case-by-case basis. Examples of such programs include ENERGY STAR for Buildings Program and the LEED (Leadership in Energy and Environmental Design) Program, which are voluntary, consensus-based, market-driven programs that provides third-party verification of green building practices.

Stake-holders also offered a range of views on the challenges of installing energy efficiency measures and solar facilities in light of the regulatory role of the Historic District Commission (the HDC) in the protection of historic architecture and landscapes. Many of the challenges are addressed in an HDC publication entitled “Sustainable Preservation”, which is a 2009 addendum to *Building with Nantucket in Mind* (the HDC’s manual of design guidelines for historic preservation). Sustainable Preservation provides detailed guidelines for, among other things, installation of energy efficient windows and doors, solar installations and use of alternative materials.

Some stake-holders argued that the HDC has overemphasized historical preservation without being open to new products or alternative materials that might be considered aesthetically appropriate in specific situations. Specifically cited as problematic were the HDC requirements to install single-glazed true-divided light windows in all buildings in the core; opposition to installing solar panels in the core, even when visibility from public ways would be extremely limited; and prohibitions on use of alternative materials in the core, even when such materials resemble traditional materials and are not visually distracting. Other stakeholders argued that HDC needs to enforce strict limits in order to preserve Nantucket’s unique historical resource, and that solutions have been found to almost every compliance issue, though such compliance is often at odds with the original concept of the owner or designer or builder, and can add significant cost to construction or renovation projects. All agreed that Nantucket would benefit from improved distribution of information on specific products and approaches that the HDC has approved as appropriate to specific circumstances.

In this context, the Nantucket Energy Office offers the following recommendations to consider energy efficiency as a factor in Town planning and administration actions:

- 3.a. Ensure that the scopes of significant Town planning initiatives consider the implications for energy consumption, and incorporate and consider energy efficiency measures, in the evaluation of each alternative. In each case, evaluate alternatives to ensure that the most energy- and cost-efficient approaches are used to provide facilities and infrastructure for necessary municipal functions. Examples of such planning initiatives undertaken by the Town include:
 - The comprehensive wastewater management plan, which is in process.
 - The process for updating the Nantucket Airport master plan.

- Evaluations of changes in solid waste management activities at the site and facilities on Madaket Road.
 - Future master plans for Town educational facilities.
 - Studies and initiatives to identify municipal space needs and future facility utilization plans.
- 3.b. Require the designs of all new and renovated municipal facilities to incorporate energy efficiency and conservation measures consistent with an appropriate LEED standard or equivalent designation.
- 3.c. Evaluate implementation of a system that would identify and consider consumption and costs for electricity and fuels as a line item in the budget of every Town department. Such a system would provide direct financial incentives to Town department heads to act on measures to reduce energy costs.
- 3.d. Develop and enforce policies to encourage efficient use of existing Town vehicles and purchases of new fuel-efficient vehicles for the Town. In particular:
- Maintain an inventory of Town vehicles with information on vehicle types, approved functions, necessary drive systems and other features; mile-per-gallon ratings; and qualification as a heavy-duty vehicle, police cruiser, transport van, or other specialty vehicle.
 - Monitor miles driven and fuel consumed for each vehicle in each department. Discourage discretionary unnecessary personal use of Town vehicles.
 - Evaluate implementation of a system such that vehicle fuel use is identified and considered as a line item in each Town department that uses vehicles.
 - Purchase energy-efficient regular and specialty vehicles whenever feasible and appropriate for the function as models become commercially available. Require a demonstration that requests for specific vehicle types and features (e.g., pick-up truck or utility vehicle rather than a sedan) are required by the proposed function.
 - Promote, monitor, maintain and support use of the existing electric vehicle charging stations.

- 3.e. Regarding the challenges of installing energy efficiency measures, solar facilities and alternative materials in light of HDC policies for protection of historic architecture and landscapes:
- Develop and distribute information and educational materials on specific energy efficiency measures and green practices that are aesthetically and historically appropriate for Nantucket. Publicize case studies of exemplary installations, including those that rely on alternative compliance methods to meet new building code standards.
 - Create an updated version of Sustainable Preservation in the form of a living document to address newly-approved products and practices, new local precedents, and local approaches to comply with building code changes. This might involve creation of a web-based platform to encourage sharing of information on products and approaches to compliance.
 - Expand consideration of solar panel installations when visibility from public ways would be extremely limited. Expand consideration of the appropriateness of alternative materials that resemble traditional materials and are not visually distracting (e.g., flush-mounted shingles with solar PV elements, materials that closely resemble wood, etc.).
 - Share information on specific experiences and products for implementing energy efficiency measures for historic structures that are exempt from the state building code.
- 3.f. Continue to procure electricity for municipal sources from third-party competitive suppliers through a competitive process. Generally, purchase all energy products and energy-related services through competitive bidding processes, notwithstanding the specific exemption for energy products and energy-related services set forth in the state procurement law (Chapter 30B). Limit exceptions to special products or services that would be exempt from Chapter 30B on other grounds due to their proprietary and unique nature and that are projected to pay for themselves through reductions in operating costs over a short payback period.
- 3.g. Do not expend Town resources on development of long-term energy plans or carbon emission reduction plans (e.g., plans per the ICLEI protocols, which the Town chose not to pursue as not sufficiently appropriate to Nantucket) outside of regulatory or other compelling mandates to do so. Rather, focus on development and promotion of best practices for energy

efficiency on Nantucket derived from actual experience with implementation of various measures under local conditions.

- 3.h. Explore a relationship or affiliation with the Cape Light Compact to share knowledge and experience with implementation of these policies.
- 3.i. Explore procurement of a private energy-service company (ESCO) to implement energy efficiency measures through a shared-savings approach that the Town could not otherwise pursue due to limitations on resources or other internal constraints.
- 3.j. Re-consider appropriate roles for volunteers to support the implementation of these policies. Of particular value might be volunteer efforts that involve specific efforts for public engagement, public education and similar tasks for which the Town might benefit from additional resources, but without long-term commitments or assuming excessive responsibility.
- 3.k. Do not adopt the Stretch Code. Rather, focus on education required for local builders and contractors to comply with forthcoming changes in the Massachusetts base building energy code scheduled to be promulgated in 2014.