

# **First Annual Report for Operation of Town of Falmouth Wind I Turbine**

**Report Date: March 31, 2011;**

**Period of Operation Covered by This Report: Start-up (March 23, 2010) through March 22, 2011**

## **Per Renewable Energy Certificates Purchase Agreement Between Massachusetts Technology Park Corporation (Massachusetts Clean Energy Center) and the Town of Falmouth, dated July 29, 2009**

The following is the first annual report for the operation of the Town of Falmouth's Wind I Turbine. Preparation and submission of this report is a requirement of the agreement between the Massachusetts Technology Park Corporation (Massachusetts Clean Energy Center, or MassCEC) and the Town.

a) Status of Major Project Permits

All required permits were secured before start up of the Wind I turbine. Copies of the relevant permits are attached (Attachment A).

The Building Commissioner's determination that a special permit was not required for the Wind I project was appealed to the Zoning Board of Appeals. The Zoning Board of Appeals voted in February 2011 to uphold the Building Commissioner's determination. A group of residents has filed a lawsuit in Barnstable Superior Court, appealing the ZBA decision (that a special permit was not required for Wind I), and requesting a cease and desist order for Wind I.

b) Status of Key Agreements (e.g. power and REC sales agreements) and Financing Arrangements Concerning the Project

The key power and REC sales agreements for Wind I are: an agreement between the Town and MassCEC for RECs, an agreement between the Town and CVEC for RECs, and agreements between the Town and NSTAR for interconnection service and power purchase.

All agreements were fully executed and remain in effect.

Wind I construction was financed as follows:

**TABLE 1**  
**Town of Falmouth - Wind I Construction Financing**

<b>Amount</b>	<b>Notes</b>
\$4,000,000.00	Bonded per TM Art 14 11/07
\$992,000.00	BAN per TM Art 16 11/08
\$4,992,000.00	Total borrowed

c) Status of Commercial Operations

Commercial operation of the Town of Falmouth's Wind I turbine began on March 23, 2010. The turbine is operated under a service agreement between Vestas-American Wind Technology, Inc. and the Town of Falmouth.

d) Anticipated or Actual Change in Ownership or Control of the Project

No change in ownership or control of the Project has occurred and no such change is anticipated.

e) Annual Financial Statements for the Wind-1 Enterprise Fund

Please see Attachment B, Chapter 200 of the Acts of 2007, An Act Authorizing the Town of Falmouth to Install, Finance and Operate Winde [sic] Energy Facilities, approved by the Governor, November 29, 2007; and Chapter 175 of the Acts of 2010, An Act Relative to the Financing of Wind Energy Facilities in the town of Falmouth, approved by the Governor, July 22, 2010. The amendment approved in 2010 authorizes the Town to establish a fund relative to Wind Energy Facilities (the fund is not required to be an enterprise fund).

Table 2 is a financial statement for the wind energy stabilization fund created by the Town pursuant to these Acts.

**TABLE 2**  
**Town of Falmouth - Wind I Renewable Energy Stabilization Fund - Financial Statement**  
**As of March 22, 2011**

Amount	Date	Notes
\$1,010,623.00	Aug-09	Advance payment from MassCEC for year 6 to 20 Wind I RECs, per July 2009 agreement
-\$57,000.00	Nov-09	FY 10 Wind I debt payment (principal + interest)
-\$369,431.04	Apr-10	FY 11 Wind I debt payment (principal + interest)
-\$60,568.96	Apr-10	FY 11 Town energy costs offset
-\$11,790.00	Sep-10	Payment to MassCEC due to "late" start of Wind I operations, per July 2009 agreement
\$511,833.00	Mar-11	current fund balance (March 22, 2011)*

\*balance does not reflect Interest earned on Investments.

Table 3 summarizes all other revenue generated to-date under the Town's REC agreement with CVEC and under the Town's power purchase agreement with NSTAR.

**TABLE 3**  
**Town of Falmouth - Other Wind I Energy Revenue**  
**Received from start-up (March 23, 2010) to March 22, 2011**

Amount	Notes
\$79,695.00	CVEC payments for RECS produced March 23 - Sept 30 2010, per May 2010 agreement
\$311,423.53	NSTAR payments for energy produced from March 23 2010-February 27, 2011
\$391,118.53	total received to-date (March 22, 2011)*

\*This total does not include revenue to come from CVEC for October 2010 - March 2011, because the trading periods for these RECs have not yet opened, and does not include March 2011 payment to come from NSTAR, because that billing period has not yet closed. Once these payments are received, total revenue for the first 12 months of production will be more than \$100,000 greater than the total received to-date.

f) Updated Projection of Anticipated Annual Production Numbers and Anticipated Aggregate Production Amount

Falmouth’s Wind I turbine produced a greater than projected number of certificates in the first year of its operation. As shown in Table 4 (next page) in the 12 month period from start-up in March 23, 2010 through March 22, 2011, Wind I generated 3942 megawatt hours of energy. This resulted in the production of 318 certificates more than the 3624 projected annual production.

**TABLE 4**  
**Town of Falmouth Wind I Turbine Actual Energy Production**  
 First Year of Operation (March 23, 2010-March 22, 2011)

<b>Start Time</b>	<b>End Time</b>	<b>Energy Production (KWh)</b>
3/23/2010 0:00	4/1/2010 0:00	24,917
4/1/2010 0:00	5/1/2010 0:00	315,142
5/1/2010 0:00	6/1/2010 0:00	324,853
6/1/2010 0:00	7/1/2010 0:00	203,020
7/1/2010 0:00	8/1/2010 0:00	235,660
8/1/2010 0:00	9/1/2010 0:00	269,218
9/1/2010 0:00	10/1/2010 0:00	397,930
10/1/2010 0:00	11/1/2010 0:00	455,278
11/1/2010 0:00	12/1/2010 0:00	243,995
12/1/2010 0:00	1/1/2011 0:00	463,575
1/1/2011 0:00	2/1/2011 0:00	383,827
2/1/2011 0:00	3/1/2011 0:00	497,862
3/1/2011 0:00	3/22/2011 0:00	<u>126,382</u>
Total (KWh)		3,941,660

Total Actual First Year Production (MWh):	3,942
Projected Annual Production (MWh):	3,624
Actual First Year Production in Excess of Projection (MWh):	318

However, the Town does not feel it is appropriate to change production projections based on the first year’s data because: (1) Production will vary year to year based on wind speed and turbine availability, and (2) The Board of Selectmen voted on February 28<sup>th</sup> 2011 (and affirmed their vote on March 7<sup>th</sup>) to curtail the operation of Wind I in higher winds, in an effort to address noise concerns of some residents. In addition, some residents have filed a lawsuit in Barnstable Superior Court as discussed in part (a) of this report, above. The long-term resolution of these issues is uncertain at this time; it is possible that curtailments will be imposed on Wind I in the long-term which could affect Wind I production during the term of the Town’s agreement with MassCEC. However, no agreement has yet been reached about the magnitude, hours or duration of any long-term curtailment, so it is not possible yet to predict its impact on future production.

Therefore Table 5, next page, shows the revised projection to be the same as the original projection at this time.

**TABLE 5**

*Massachusetts Green Power Partnership*  
**Revised Projection of Annual and Aggregate Production**

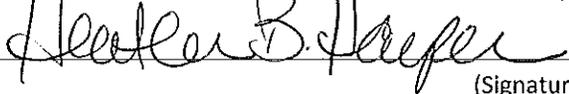
**Seller:** Town of Falmouth, Massachusetts

**Project Name and Contract Type:** Town of Falmouth Wind I – REC Purchase Agreement

Contract Year	Calendar Year	ORIGINAL CONTRACT		REVISED PROJECTION*	
		Total Amount of all Certificates Project is Expected to Generate	MTPC Certificates (Anticipated Annual Production Number)	Total Amount of all Certificates Project is Expected to Generate	MTPC Certificates (Anticipated Annual Production Number)
1	2015	3624	3262	3624	3262
2	2016	3624	3262	3624	3262
3	2017	3624	3262	3624	3262
4	2018	3624	3262	3624	3262
5	2019	3624	3262	3624	3262
6	2020	3624	3262	3624	3262
7	2021	3624	3262	3624	3262
8	2022	3624	3262	3624	3262
9	2023	3624	3262	3624	3262
10	2024	3624	3262	3624	3262
11	2025	3624	3262	3624	3262
12	2026	3624	3262	3624	3262
13	2027	3624	3262	3624	3262
14	2028	3624	3262	3624	3262
15	2029	3624	3262	3624	3262
		<b>Anticipated Aggregate Production Amount:</b>	48,924	<b>Anticipated Aggregate Production Amount:</b>	48,924

\* Please see part (f) of this annual report. It is possible that curtailments will be imposed on Wind I in the long-term which could affect Wind I production during the term of this agreement. However, no agreement has yet been reached about the magnitude, hours or duration of any long-term curtailment, so it is not possible yet to predict its impact on future production. Therefore, the Revised Projection of Annual and Aggregate Production is the same as the original one at this time.

**Seller's Certification:** As of this date the revised projection herein is based on and reflects reasonable assumptions for which Seller has a reasonable basis, reflects conditions that Seller reasonably expects exist, and reflects the course of action that the Seller reasonably expects to take with respect to the Project.

  
 (Signature)

**Print Name:** Heather Harper

**Title:** Acting Town Manager

**Date:** March 31, 2011

ATTACHMENT A (4 PAGES)

FALMOUTH PLANNING  
OFFICE

## Memo

**To:** Eladio Gore, Building Commissioner

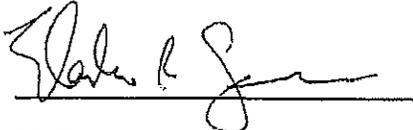
**From:** Brian Currie, Town Planner 

**Date:** 5/13/2008

**Re:** Wind Turbine at Treatment Plant

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Pursuant to our conversation, it is your opinion that a municipal wind turbine is a use allowed as a matter of right in a Public Use zoning district pursuant to § 240-30 – Permitted Community Service Uses – of the Zoning Bylaw. If you agree please indicate so by signing in the space provided for you below. Thank you

 5/13/08

Eladio Gore, Building Commissioner

cc: George Calise, Town Engineer 

Sari Budrow, Zoning Administrator

Robert L. Whitenour, Jr., Town Manager



Federal Aviation Administration  
Air Traffic Airspace Branch, ASW-520  
2601 Meacham Blvd.  
Fort Worth, TX 76137-0520

Aeronautical Study No.  
2006-ANE-490-OE  
Prior Study No.  
2005-ANE-1189-OE

Issued Date: 10/05/2007

David McCarron  
Massachusetts Technology Collobarative  
75 North Drive  
Westborough, MA 01581

**\*\* Extension \*\***

A Determination was issued by the Federal Aviation Administration (FAA) concerning:

Structure:	Wind Turbine Falmouth Wind Turbine - Option 2
Location:	Falmouth, MA
Latitude:	41-36-23.96 N NAD 83
Longitude:	70-37-14.42 W
Heights:	434 feet above ground level (AGL) 586 feet above mean sea level (AMSL)

In response to your request for an extension of the effective period of the determination, the FAA has reviewed the aeronautical study in light of current aeronautical operations in the area of the structure and finds that no significant aeronautical changes have occurred which would alter the determination issued for this structure.

Accordingly, pursuant to the authority delegated me, the effective period of the determination issued under the above cited aeronautical study number is hereby extended and will expire on 04/05/2009 unless otherwise extended, revised, or terminated by this office.

This extension issued in accordance with 49 U.S.C., Section 44718 and, if applicable, Title 14 of the Code of Federal Regulations, part 77, concerns the effect of the structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

A copy of this extension will be forwarded to the Federal Communications Commission if the structure is subject to their licensing authority.

If we can be of further assistance, please contact our office at (718) 553-2560. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2006-ANE-490-OE.

Signature Control No: 461489-100747953  
William Merritt  
Specialist

(EXT)



DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS AIR FORCE SPACE COMMAND

MEMORANDUM FOR FALMOUTH ENERGY COMMITTEE

JAN 11 2008

FROM: HQ AFSPC/A3F  
150 Vandenberg St Ste 1105  
Peterson AFB CO 80914-4250

SUBJECT: Request for Radar Data

1. We have reviewed the parameters for your proposed Wind Farm near Cape Cod AFS, MA and have no issue with its location. We have reviewed your request with MDA and they also approve. If your building parameters change please submit them to AFSPC for further review.

2. My POC for this issue is Mr. Jimmy Miller, DSN 692-3789, e-mail: james.miller2.ctr@peterson.af.mil.

STEVEN W. WINTERS, Col, USAF  
Chief, Global Space Capabilities and  
Effects Division

cc:  
14 AF/A3



**The Commonwealth of Massachusetts**  
William Francis Galvin, Secretary of the Commonwealth  
Massachusetts Historical Commission

November 16, 2007

Andrew H. Brydges  
Project Manager  
KEMA Inc.  
67 S. Bedford Street, Suite 201E  
Burlington, MA 01803

RE: Wind Turbine Installation at Waste Water Treatment Facility, 154 Blacksmith Shop Road, Falmouth, MA  
MHC# RC.42724

Dear Mr. Brydges:

The Massachusetts Historical Commission has reviewed the photosimulations you submitted, received October 17, 2007, regarding the proposed project referenced above. The project site is in proximity of numerous historic properties. These include the extensive West Falmouth Village Historic District (MHC# FAL.AX), which is listed in the National Register of Historic Places (36 CFR 60); the West Falmouth Historic District (FAL.AK), a local historic district that is included in MHC's Inventory of Historic and Archaeological Assets of the Commonwealth and may be eligible for listing in the National Register of Historic Places; and the West Falmouth Highway Area (FAL.D) and the Swift Lots Area (FAL.G), both of which are included in MHC's Inventory of Historic and Archaeological Assets of the Commonwealth and may be eligible for listing in the National Register of Historic Places. The project site is also in proximity of the property at 40 Frazar Lane, historically known as the Everett Welles Frazar House (FAL.553). It is the opinion of MHC staff that the Everett Welles Frazar House meets the criteria for listing in the National Register of Historic Places.

The project involves installation of an approximately 389-foot tall wind turbine on the Waste Water Treatment Facility property at 154 Blacksmith Shop Road in Falmouth, Massachusetts. According to the information submitted, the turbine height to the top of the hub will be 80 meters (262.5 feet) and the blade radius will be 38.5 meters (126.3 feet).

After a review of MHC files and the information submitted, I have determined that the project will have "no adverse effect" (950 CMR 71.07) on the historic properties mentioned above.

These comments are offered to assist in compliance with M.G.L. Chapter 9, Section 26-27C (950 CMR 71.02). Please do not hesitate to contact Walter Maros of my staff if you have any questions.

Sincerely,

A handwritten signature in cursive script that reads "Bronn Simon".

Bronn Simon  
Executive Director  
State Historic Preservation Officer  
Massachusetts Historical Commission

xc: Massachusetts Technology Collaborative  
Federal Aviation Administration  
Falmouth Historical Commission

**ATTACHMENT B (2 PAGES)****Acts****2007**

**CHAPTER 200** AN ACT AUTHORIZING THE TOWN OF FALMOUTH TO INSTALL, FINANCE AND OPERATE WIND ENERGY FACILITIES. (see House, No. 3769) Approved by the Governor, November 29, 2007

*Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same as follows:*

**SECTION 1.** Notwithstanding any general or special law to the contrary, the town of Falmouth may design and install wind energy facilities at its wastewater treatment facility at Blacksmith Shop road in the town, prepare and improve the site, acquire all equipment necessary for the wind energy facilities, make improvements and extraordinary repairs to the facilities and pay all costs incidental and related thereto.

**SECTION 2.** The town of Falmouth may issue, from time to time, bonds or notes in order to finance all or a portion of the costs of the wind energy facilities project authorized in section 1. Notwithstanding chapter 44 of the General Laws, the maturities of such bonds shall be arranged: (i) for each issue, so that the annual combined payments of principal and interest payable in each year, commencing with the first year in which a principal payment is required, shall be as nearly equal as practicable, in the opinion of the town treasurer; or (ii) in accordance with a schedule providing for a more rapid amortization of principal. The first payment of principal of each issue of bonds or of any temporary notes issued in anticipation of the bonds shall be not later than 5 years from the estimated date of the commencement of regular operation of the wind energy facilities financed thereby, as determined by the town treasurer. The last payment of principal of the bonds shall be not later than 25 years from the date of the bonds. Indebtedness incurred under this act shall not be included in determining the limit of indebtedness of the town under section 10 of chapter 44 of the General Laws but, except as otherwise provided herein, shall be subject to said chapter 44.

**SECTION 3.** Notwithstanding any general or special law to the contrary, the town of Falmouth may operate wind energy facilities installed pursuant to section 1, sell the electricity generated from such facilities and sell any other marketable products resulting from the generation of wind energy at such facilities or from the generation of any type of renewable energy at any renewable energy facility which the town is authorized to operate. Such marketable products shall include, but not be limited to, electronic certificates created to represent the generation attributes, as is defined in 225 CMR 14.02, of each megawatt hour of energy generated by the wind energy facility or any other renewable energy-producing facility. The board of selectmen of the town of Falmouth may enter into contracts on behalf of the town for the sale of electricity and energy facilities with such parties and upon such terms and conditions as the board of selectmen determines to be in the best interests of the town of Falmouth.

**SECTION 4.** The town of Falmouth shall procure the services required for the design, installation, improvement, repair and operation of the wind energy facilities authorized in this act and any equipment necessary in connection therewith, in accordance with the procurement requirements of chapter 30B of the General Laws. The town of Falmouth may procure such services and equipment together as 1 procurement or as separate procurements thereunder.

**SECTION 5.** The town of Falmouth may establish an enterprise fund pursuant to section 53F1/2 of chapter 44 of the General Laws for the receipt of all revenues from the operation of the wind energy facilities authorized in this act and from any other renewable energy-producing facilities which the town is authorized to operate and all moneys received for the benefit of the wind energy facilities and any other renewable energy facilities, other than the proceeds of bonds or notes issued therefor. Such receipts shall be used to pay the costs of operation and maintenance of the wind energy facilities and any such other renewable energy facilities, to pay the costs of future improvements and repairs thereto and to pay the principal and interest on any bonds or notes issued therefor.

**SECTION 6.** This act shall take effect upon its passage.

*Approved November 29, 2007.*

**Acts****2010**

**CHAPTER 175** AN ACT RELATIVE TO THE FINANCING OF WIND ENERGY FACILITIES IN THE TOWN OF FALMOUTH. (see Senate, No. 2291) Approved by the Governor, July 22, 2010

*Be It enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same as follows:*

**SECTION 1.** Chapter 200 of the acts of 2007 is hereby amended by striking out section 5 and inserting in place thereof the following section:-

Section 5. Notwithstanding section 53 of chapter 44 of the General Laws or any other general or special law to the contrary, the town of Falmouth may establish a fund, which shall be kept separate and apart from all other monies of the town, into which shall be deposited all revenues from the operation of the wind energy facilities authorized in this act and from any other renewable energy producing facilities which the town is authorized by law to operate and all monies received for the benefit of the wind energy facilities and any other renewable energy facilities, other than the proceeds of bonds or notes issued therefore. The receipts may be appropriated to pay the cost of operation and maintenance of wind energy facilities and any other renewable energy facilities, to pay costs of future improvements and repairs thereto, to offset the other energy or energy related expenses of the town, to pay the principal and interest on any bonds or notes issued therefore and for any other lawful municipal purpose.

**SECTION 2.** This act shall take effect upon its passage.

*Approved July 22, 2010*