

Questions Raised through the Monhegan Energy Task Force Survey #2 and during the Community Meeting on April 5, 2016

The MAV answers are provided by Jake Ward. Answers (*in italics*) are based on best information available as of May 5, 2016. Questions with “TBD” as an answer will be answered as that information becomes available.

I. Questions about the Project:

For Maine Aqua Ventus -

1. Has there been any research done on the effects of such large wind turbines so close to a community?

Yes, including turbines even closer than those that would be more than 2 miles from Monhegan. In a large national study, [A Spatial Hedonic Analysis of the Effects of Wind Energy Facilities on Surrounding Property Values in the United States \(link is external\)](#), (U.S. Department of Energy, Aug. 2013). the research team collected data from more than 50,000 home sales among 27 counties in nine states. These homes were within 10 miles of 67 different wind facilities, and 1,198 sales were within 1 mile of a turbine—many more than previous studies have collected. “Regardless of model specification, we find no statistical evidence that home values near turbines were affected in the post-construction or post-announcement/pre-construction periods.” See <https://emp.lbl.gov/sites/all/files/lbnl-6362e.pdf>

In a study focused on Massachusetts, Relationship between Wind Turbines and Residential Property Values in Massachusetts, (U of CT/ US Dept. of Energy, 2014). The study “found no net effects due to the arrival of turbines in the sample’s communities. Weak evidence suggests that the announcement of the wind facilities had a modest adverse impact on home prices, but those effects were no longer apparent after turbine construction and eventual operation commenced. The analysis also showed no unique impact on the rate of home sales near wind turbines.” See <https://emp.lbl.gov/sites/all/files/lbnl-6371e.pdf>

WINDEXchange is the U.S. Department of Energy Wind Program's platform for disseminating credible information about wind energy. The purpose of WINDEXchange is to help communities weigh the benefits and costs of wind energy, understand the deployment process, and make wind development decisions supported by the best available information. <http://apps2.eere.energy.gov/wind/windexchange/>

U.S. Department of Energy Regional Resource Centers Report: State of the Wind Industry in the Regions. Ruth Baranowski, Frank Oteri, Ian Baring-Gould, and Suzanne Tegen National Renewable Energy Laboratory. <http://www.nrel.gov/docs/fy16osti/62942.pdf>

Wind-Wildlife Impacts Literature Database (WILD): WILD is a searchable bibliographic database of documents that focuses on the effects of wind energy development on wildlife. Visit at: <https://wild.nrel.gov/>

NREL Publications Database: For a comprehensive list of other NREL wind publications, explore NREL's Publication Database. When searching the database, search on the following key words: wind, wind energy, wind turbines, or on a specific area or component name, i.e. offshore, gearbox, dynamometer, blade testing. Visit at:
<http://www.nrel.gov/research/publications.html>

Annex IV 2016 State of the Science Report: Environmental Effects of Marine Renewable Energy Development Around the World has a ocean waves/tidal focus but many of the studies would apply to ocean wind especially the cable and noise issues.
<http://tethys.pnnl.gov/publications/state-of-the-science-2016>

About Tethys

In order to address the growing global demand for energy, industry is looking to extract energy from renewable sources such as wind, waves, and tides. Yet potential environmental effects must be evaluated and measured to ensure that animals, habitats, and ecosystem functions are not adversely affected, nor that existing ocean and land uses be displaced. The goal of Tethys is to progress industry in an environmentally-responsible manner.

Tethys was developed in 2009 by the [Pacific Northwest National Laboratory](#) (PNNL) to support the [U.S. Department of Energy](#) (DOE) [Wind](#) and [Water](#) Power Technologies Office. The primary functions of Tethys are twofold:

- *To facilitate the exchange of information and data on the environmental effects of wind and marine renewable energy technologies; and*
- *To serve as a commons for wind and marine renewable energy practitioners and therefore enhance the connectedness of the renewable energy community as a whole.*

The growing body of content in Tethys is actively collected and curated by researchers at PNNL from a variety of sources. Members of the community are also encouraged to [contribute to Tethys](#) by identifying documents not yet in the collection.

Knowledge Base

The core of Tethys is a Knowledge Base that draws together metadata, supporting reports, relevant papers, videos, and other material to provide a current state of knowledge of environmental effects. The information provided in the Tethys knowledge base covers four categories:

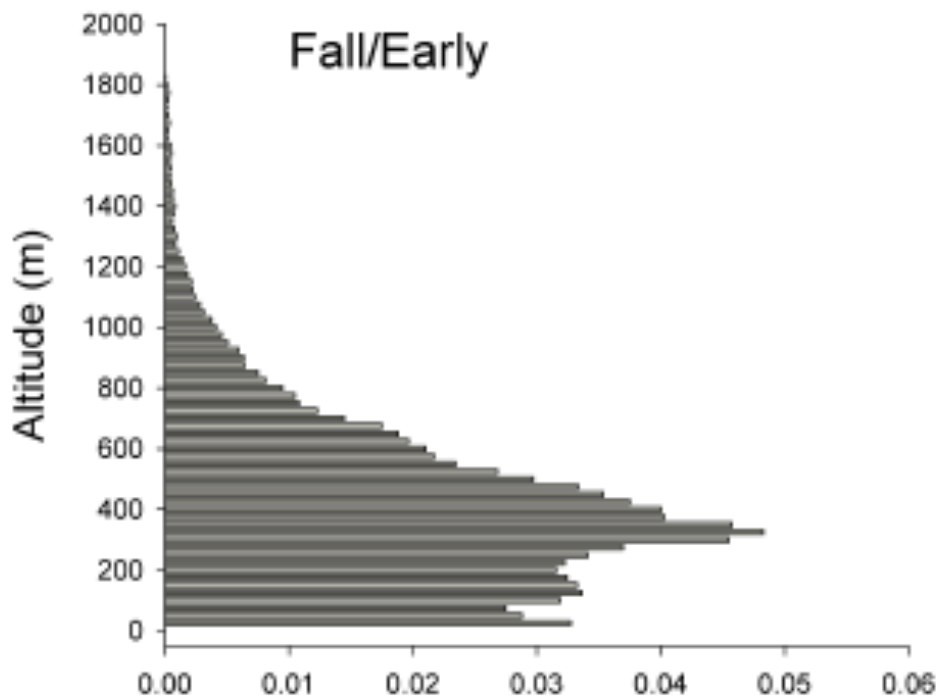
1. [Marine energy \(or MHK\)](#),
2. [Wind energy \(offshore and land-based\)](#),

3. [An international collaboration focused on the environmental effects of marine energy \(Annex IV\)](#), and
4. [An international collaboration focused on the environmental effects of wind energy \(WREN\)](#).

All media are arranged into one large table. The columns can be sorted alphabetically by clicking on each column header, while the results can be filtered by clicking terms on the right or typing search terms into the Text Search. Clicking on a title will open the associated page in a new tab. [Click here to access the Tethys Knowledge Base](#).

1b. Are there updates to the bird studies? The old studies were for the old height correct? People want to see studies that correlate to the larger scale project.

The previous studies done by NJ Audubon were not designed for a specific hub height. The radar covered from 0-2000 meters or 0-6000 feet. 90% of birds fly above hub height. Same with visual surveys. There is nothing specific about monitoring at a specific hub height.



2. **How will cleanup be handled in the event the project fails and who will pay for it? Will there be, for example, money put aside in an escrow account to pay the costs of a failure and the attendant cleanup costs? Regulatory agencies will require a decommissioning plan, with sufficient funding by the developer to implement it.**

LD 1465, the State statute governing the use of the test site is posted on the METF website. It has specific requirements for project removal, Subsection G. page 6., includes the following:

G. A project removal plan that the applicant will, at its expense, initiate within 60 days of termination of a general permit granted pursuant to this section and that provides for:

(1) Removal of the project in its entirety from all project lands and waters, except for any part of the project regarding which the applicant provides the department substantial evidence of plans for continued beneficial use, including but not limited to an executed lease of state-owned submerged lands, as applicable, or for partial removal or other modification adequate to avoid foreseeable adverse effects on natural resources and existing uses;

(2) Minimizing seabed disturbances and suspended sediments during removal of any underwater facilities;

(3) Monitoring the effects of the removal activities on species listed as threatened or endangered species in Title 12, section 6975 or Title 12, section 12803, subsection 3 and marine resources both during and subsequent to completion of removal activities;

(4) An implementation schedule that provides for all removal and restoration activities to be completed within one year of the expiration date of the general permit pursuant to subsection 9;

(5) An estimate of the total project removal cost, without regard to salvage value of the equipment, and the net project removal cost, prepared by a licensed professional engineer; and

(6) Written evidence and certification that the applicant has posted and will maintain funds for project removal in an amount equal to the net project removal cost, except that at no point may such funds be less than 25% of the total project removal cost. The applicant shall post and maintain project removal funds with a bonding company or federal-chartered or state-chartered lending institution that is authorized to do business in the State and chosen by the applicant and considered acceptable by the department posting the financial security. Project removal funds may be in the form of a performance bond, surety bond, letter of credit, corporate guarantee or other form of financial assurance that the department considers adequate to ensure funds posted pursuant to this paragraph will remain inviolate and available for project removal if the applicant ceases to exist, declares bankruptcy or becomes insolvent or otherwise unable to finance the project removal plan required under this paragraph.

3. What commitment will MAV make for energy on Monhegan after 20 years?

That would depend on whether the project would still be operating after 20 years; if it is, and islanders are in agreement with MAV and it is approved by the MPUC, then project energy could be supplied to Monhegan.

4. What is the long-term vision for MAV (beyond the 2 test turbines)?

Assuming the demonstration project is successful, then the goal would be to seek financing and approvals for a full-scale wind farm project, in federal waters of the Gulf of Maine that would be more than 10 miles from an inhabited island.

5. How close could a future full-scale commercial wind farm be to Monhegan?

No closer than 10 miles. Previously the University has committed not to license its patent pending technology to any commercial farm that would locate within 10 miles of Monhegan.

6. Why is MAV set on the Monhegan waters - rather than the test site that STATOIL was prepared to use?

The Monhegan test site was selected by the State of Maine pursuant to a legislative mandate, and after numerous hearings along the coast, and detailed evaluations by environmental and other officials of siting throughout Maine waters, from York to Lubec. The Maine test site law LD 1465 (posted on the METF web site) has very specific controls and environmental monitoring requirements such that the State has oversight. The STATOIL's site is in Federal waters and is not governed by the State process, thus subject to very different permitting, monitoring and oversight processes.

7. Can impact on tourism be forecast? And if so using what modeling?

Yes, see the information on the METF website (http://www.monheganenergy.info/tourism_faq/). (Jake is asking for more detail)

From Block Island FAQ

Q: Will the proposed wind farm have a negative effect on island real estate values?

A: A recent three year study conducted by the Lawrence Berkeley National Laboratory for the Department of Energy concluded the real estate prices were not impacted by proximity to wind farms. Most of the areas studied were considered significant for their pristine view sheds. These results are also confirmed by a prior study conducted by the Renewable Energy Policy Project and substantial anecdotal information from European off-shore wind farm projects. To date, there have been no studies of comparable integrity that contradict these findings.

Q: Will the proposed wind farm have a negative effect on Block Island Tourism?

A: Recent studies indicate that there will be no overall negative impacts on tourism on Block Island Business owners will benefit from a substantial reduction in power costs. Also, the wind farm is a natural fit to our eco-tourism ethic. Our proud tradition of conservation of open space and our historic fabric will now extend to the conservation of our planet-the very context of our island. European off-shore wind farms have proven to be a tourist draw and a boon to seaside communities.

II. Questions about the Cable Option:

For Maine Aqua Ventus -

- 1. Would MAV need to dismantle the cable? What happens to the cable after the project is finished [20 years]?**

Whenever the project is over, as part of decommissioning the turbines would be removed.

The cable could remain if Monhegan or some other party sought and received regulatory approvals to use it.

- 2. Could part of the agreement include a provision that CMP keep Monhegan as customers [after 20 years]?**

That aspect has not yet been explored. It would be determined by the MPUC/CMP. We cannot speak for CMP on that issue.

- 3. Could the wind tower platform be a bridge [for electricity] after the tower platform is done being used?**

If you mean could the floating platform be used, without a wind turbine? The project removal requirements would not permit the platform to remain.

- 4. What is the plan to link the fiber optics throughout the community?**

MAV has committed to including a fiber optic cable link as part of the of the power cable connection. Monhegan could then connect that to a system to provide communications/internet access to residences on the island. The Island system would be the responsibility of Monhegan and a communications/internet vendor. Examples could range from a full network or Island wide wireless. This has not been explored in any detail yet.

- 5. Are there other options for high speed Internet (beside laying fiber optics)?**

As Monhegan is currently served by a microwave tower, there should be other options to explore wireless transmission. Technology is advancing every day. The Island Institute recently commissioned Tilson Technologies to conduct a broadband study for most of the Maine islands, including Monhegan. The Report can be downloaded from the following <http://www.islandinstitute.org/resource/broadband-study-maine-shore-islands>

- 6. What is "dark fiber"?**

The term dark fiber was originally used when referring to the potential network capacity of telecommunication infrastructure, but now also refers to the increasingly common practice of leasing fiber optic cables from a network service provider, or, generally, to the fiber installations not owned or controlled by traditional carriers. This means that while the fiber optic cable is there, Monhegan would have to contract with an Internet Service Provider (ISP) such as Fairpoint, GWI, OTT as examples, to use the cable to connect to the internet.

7. What is the potential life of the cable or the fiber optics and when would it have to be replaced?

Typically the design life of a cable is meant to coincide with the Turbine life which is typically 20+ years, depending on the manufacturer's warranty and actual wear.

8. Can estimates for the costs listed in any of the categories ('a' to 'e' in the survey) be given?

- a. *Payment of cost of system upgrades to allow delivery of power to MPPD*
- b. *Cost of installing fiber optic cable*
- c. *Dark fiber lease to MPPD of fiber optic cable*
- d. *Right of Way for the cable to MPPD on Monhegan*
- e. *Monhegan Alternative Benefit in the case that that MAV is not able to provide electricity as specified in agreement*

TBD...

9. What is meant by Monhegan Alternative Benefit?

Maine Aqua Ventus offered the cable and power option to Monhegan as part of the MAV proposal to the Maine Public Utilities Commission. From the term sheet (posted on the METF website at <http://www.monheganenergy.info/wp-content/uploads/2014/01/MAV-Proposed-Term-Sheet-12-4-13.pdf>) "...or through consultation with the District (MPPD) provide benefits in an alternative form that are acceptable to MAV and approved by the Commission (Monhegan Alternative Benefit). An "Alternative Benefit" would be something other than the cable.

10. What happens if the cable fails?

That is unlikely to happen but if it did, it is MAV's responsibility to have it repaired. Annual inspection and electronic fault monitoring provide indications of damage/wear. Circuit breakers and GFIs shut off power if a short or fault is detected.

11. I understand that wind power is intermittent. What would the cost of storage on Monhegan be? Is there a battery option we could implement?

We are not currently evaluating any battery storage options so we do not have an answer to this question.

12. Where would the cable land on Monhegan? A map of the projected right of way and of any other infrastructure necessary would help inform the impact on the island.

If Monhegan choose the cable option, MAV would work directly with MPPD and Monhegan to choose a path that creates the least impact and would need to follow Monhegan codes.

13. Could the cable be laid on Monhegan via eminent domain (i.e. as a 'taking'), forgoing easements?

No.

14. What exactly would the community's share of the costs be, both from individual users and from the power company?

MPPD would have no costs to install cable to the best location to interface with the existing power station and grid. MPPD would need to continue to manage the MPPD grid as they do today. The cable will provide energy supply.

15. What are the future costs to have a cable serviced, maintained, repaired, etc.?

We do not have specific costs at this time. That is determined by the cable vendor which has not been finalized. We will try to get some estimates but believe it is integrated into the overall operations and maintenance (O&M) for the project.

16. Are there any reliable estimates of the actual financial impacts of the cable on the lobstering industry?

We are not aware of any information like that. Offshore cables are pretty prevalent in Maine with over 100 cables from the main land to islands. We are not aware of any studies that have measure before and after impacts in Maine.

III. Questions about the Payment Option:

For Maine Aqua Ventus -

1. How did MAV come up with a potential number of \$200,000.00 for 20 years?

MAV has not made any formal proposals for the payment option. The "conversations" about the value of the cable were estimated based on the value of avoided costs of generating electricity from diesel.

2. How much money would MAV save by NOT running a cable to the Island?

TBD

3. What is the "real cost" versus the benefit to ship electricity all the way in shore, plus the costs to maintain such a facility?

MAV does not understand this question?

4. How much will the project make?

TBD

5. What will be our obligations be to MAV for these payments?

TBD

6. If cash option were chosen, when would payments start (i.e. when project starts? When turbines are operational?)?

This would be negotiated as part of the final community benefit agreement.

7. How much are you giving to surrounding communities that will be affected by this project?

At this time, Monhegan is the only community with a proposed community benefit agreement.

8. Would like to see a detailed financial analysis done by an impartial party, including track record of past projects done by the company and its officers.

This request has been shared with the team. TBD.