

Question #	Question	Answer
1	What is the separation distance between turbines? How were those distances established? A recent report showed that 15 rotor diameters is required to minimize noise. Why would you not want to keep nuisance noise to a minimum?	The distance between turbines varies across the site for a variety of reasons, but the minimum distance between turbines as currently modeled is 2.51 rotor diameters. By having turbines closer together, the disturbance to landowners is minimized by shortening the lengths of access roads and collection cables. The sound from the turbine dissipates logarithmically with distance squared from the source, with every residence modeled at the site to be below a maximum sound level of 45 dBA, the standard nighttime value determined by the World Health Organization and NYSDEC. At 15 rotor diameters the sound would be less than 35 dBA, a value lower than the average ambient outdoor sound level.
2	You said property line setbacks are 650'. But NYSERDA states this should be 2X mth=1182 feet. Which is correct?	Lighthouse Wind (LHW) is not aware of the referenced setback recommendation by NYSERDA. The 650-foot setback is consistent with setbacks respected in all of the more than 20 utility-scale wind projects constructed in New York as well as the Cassadaga wind project that was certified by the Siting Board.
3	Why is LHW power required when there is an excess of clean power in WNY. Case in point: NIA Power Project not working at full capacity.	This question has been previously addressed. Please reference 5 section 1.5 of the PSS. http://www.lighthousewind.com/preliminary_scoping_statement_comment_responses
5	How do access roads affect the planting of crops? Will the placement of the cable 5 connector disrupt field underdrain?	The project is working cooperatively with all the landowners to make sure access road locations have as little impact on current land uses as possible. In many places we are able to use existing farm roads. If an access road or other construction activity causes any crop losses, the project will compensate for the loss of the crops. The project is also working with all landowners to understand the location of existing drainage tiles; we will locate and engineer underground cables to avoid tiles when possible, or the project will install new tile and drainage systems to ensure no disruption of current land use.
6	What is planned for the property LHW owns at county line corners?	The project will consider whether that property may be used for laydown space, temporary construction facilities and offices, or long-term operations and maintenance facilities.
7	What is the total value of this project?	The total construction period cost for this project is around \$300 million. This amount excludes any operating costs.
8	Turbine projects are now banned in Maine and Ontario. Why do you feel this project is appropriate for Yates and Somerset?	Turbines are not currently banned in Ontario or Maine. The Governor of Maine did sign an executive order in early 2018 that was originally noted as being a moratorium on wind energy permits. However, shortly after announcing the order, it was clarified as not being a "moratorium" on permitting. Permitting agencies were instructed to process permit applications according to the laws of the State of Maine. One large wind generator Maine Site Law Permit Application was submitted after February 2018 and is currently under review by Maine DEP. Other projects announced intentions to submit permit applications before the end of 2018, and another announced intentions to submit a permit application in 2019.
9	When will met tower information be available?	Quarterly met tower reports are filed with the Town of Somerset pursuant to Condition 6 of the Special Use Permit issued to Lighthouse Wind, LLC.
10	Is this project economically viable with all entities opting out of PILOT agreements?	Our financial models indicate the project will be able to operate without a PILOT agreement. However, we believe the towns will gain greater benefit from the project by engaging in discussions to explore Host Community Benefit Agreements and PILOT agreements. Within this process, the towns will be able to better define the benefits, direct the monies to the best uses, and ensure appropriate share of revenues between towns, counties, and schools.
11	Why were leaseholders not allowed to coordinate the terms of the lease?	LHW has approached landowners separately and has presented a standard agreement template to each. The final agreement with each landowner is a private agreement between parties and may represent individual desires expressed for each landowner. Landowners within the project area have been free to make their own choices. LHW does not have the ability to limit the choices and actions landowners make that are not included within the terms of an agreement approved by both parties.
12	What is the expected annual output in megawatt hours for the facility, net of internal usage and power required for the grid?	The project will generate approximately 602.85 GWH per year. The power requirement for a 4.2 MW turbine is based on the environmental conditions and turbine state. Environmental conditions such as cold may dictate the need for running heating fans or other equipment. Turbine state is if we are doing a yaw unwind because of the cable, or we are starting or stopping the turbine. Typically, this can range between 5 KW and 20 KW for a turbine.

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13	What transmission constraints currently exist which might impede the delivery of electricity from the project to downstate?	Preliminary analysis suggests the congestion would be limited. A full energy congestion and curtailment assessment for the project will be reviewed in detail under exhibit 8 of the Article 10 process.
14	Who owns Apex Clean Energy?	Apex Clean Energy is an independent, privately held company that was founded in 2009 in Charlottesville, Virginia.
15	Is eminent domain in effect for this project?	No.
16	What happens to a signed contract is a signed owner passes away before the project is started and there are no heirs, or the heirs do not want the turbines or the property needs to be sold?	The land use agreements are for defined activities within each defined property. While the agreements are in effect, they remain with the property. Agreements are transferred to future property owners or project owners.
19	Why are only eight turbines in the town of Yates?	LHW has carefully considered the best use of land available that is currently under lease with the project. Considerations were given to appropriate setbacks of property and environmental features, as well as proper turbine spacing to allow efficient performance. Based on thorough consideration of all of these issues, LHW can responsibly locate eight turbines within the current configuration within the Town of Yates. The final project design is subject to change and the final number may vary.
20	What is the anticipated payback on this project (in years)?	Approximately 11 years.
21	Who is the electricity output targeted for? What area?	The utility grid is supported by all generators that are active at a particular time. Loads are connected to all points of the grid. Therefore, it is a misperception to think of particular generation serving particular load. On a more general level, there is a power flow from upstate New York to downstate New York and from western New York to eastern New York.
22	Of the 100 that signed a lease, are they all residents of the towns of Yates and Somerset, or just landowners that reside somewhere else?	LHW has land agreements with landowners who live and own property in Somerset and Yates, and with landowners who own land in the project area and live in different towns.
23	Why is Apex proceeding with this project when the majority of the residents in Somerset and Yates oppose it?	The records indicate that there is broad support for renewable energy in western New York. We have met a large number of Somerset and Yates citizens who support the project. It is clear that there is also a great deal of misinformation about the project in both communities. LHW has confidence that people in both communities will overwhelmingly support the project when they are informed by correct information about the project.
24	How can you position three turbines in close proximity to Tiger Paw Airport?	The FAA has reviewed the turbine heights and locations and their findings present no negative impacts.
25	Is there any type of buffer zone distance where a neighbor would not be allowed to construct any time of buildings?	From our work and our perspective, we do have elements within our agreements that prevent somebody who we have an agreement with from building a high structure within a certain distance of our turbines. Other than that, we don't have any further prohibition of such activities. There are elements within recently adopted local zoning rules that suggest that a permit application for a structure that was made within a certain distance from a turbine may be prohibited, but that is a town zoning rule that has been adopted, and from our initial review of that, it doesn't appear that would be state-supported.
26.A	On this project, will Apex be following setback distances as laid out by the town of Somerset and the town of Yates?	The Lighthouse Wind project is being designed by appropriate standards found acceptable in New York. The project will meet or exceed such standards. Recently the Towns of Somerset and Yates created a set of laws that greatly exceed reasonable standards and also infringe on private property owner rights. We believe the towns passed these laws with a lack of understanding, as the laws include commentary that is nonfactual regarding wind energy. LHW looks forward to the opportunity to work with the both towns to craft responsible laws that will allow the project to continue forward while bringing substantial environmental and economic benefits to the area.
26.B	Somerset and Yates Town Boards have adopted local laws restricting industrial wind energy projects within three miles of Lake Ontario. How far away from Lake Ontario are the 47 proposed Apex wind turbines?	
26.C	Do set backs in these plans meet current local laws in Somerset and Yates?	
26.D	What ordinance requirements must be set aside in the Yates and Somerset ordinances.	

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27	Why apply clearances from the railroad?	Lighthouse Wind is being designed to operate in a safe and responsible manner. As such, the project applies appropriate setbacks from all property and environmental features to ensure safety for all nearby activities. Railroads are one of the many activities that are considered with safety in mind, and appropriate setbacks have been employed to ensure no future conflict.
28	Would Apex consider contributing to high speed internet service for Lyndonville/Barker students as part of the Host Community Agreement?	We very much want to engage the communities in discussion about how we can use our investment to best benefit everyone. The last thing we want to do as we start talking about a community benefits agreement is to come into the towns and say, "Here is the money, and you should do this with it." We really want to talk with you and understand your greatest needs and interests. In some of our discussions with citizens in both towns, the idea of high-speed Internet was raised. By all means, if that is truly of great interest to the community, then that is something we want to continue to explore making investments in. Some other ideas that have been raised are investments in local hospital capacities, investments in education, and lower tax rates. Again, it's too early to say "we should do [this]"; what we really want is to have a healthy dialogue with the towns and the citizens to understand what is of highest value to you so we can align the investments to those goals.
29	What is the setback distance from houses?	We were able to achieve relatively high setbacks. First, we looked at the standards of other operating projects in New York and then challenged ourselves to set turbines as far away from all homes as possible. None of the turbines are any closer than 1,800 feet from nonparticipating homes and 1,600 feet from participating homes. 1,800 feet is greater than 1/3 of a mile.
30	At 650 feet away from a house, why won't this affect a home in case of a catastrophic failure?	
31	A windmill is planned by my property line without my permission. I am 200-300 feet from it without my permission. What are my rights if I don't want it there?	All facilities will only be located on land that has an agreement with Lighthouse Wind. Unless there is an inaccuracy in the way the maps were printed, based on all the parcel data we have from the county, we have ensured that all turbines are greater than 650 feet from any nonparticipating property line.
32	It seems there are no houses visible in your pre-meeting presentation. How does the housing density in this project compare to most wind farms? Is there an accepted level?	The Lighthouse Wind Project aerial map provided shows locations of homes and buildings. The project design is not based on density of homes, but rather on adequate spacing from homes and buildings to meet sound limits and be operated in a safe and responsible manner.
33	What is the value of each of the following for this project: Federal subsidies, NY state subsidies, production tax credits, other incentives?	
34	How many federal dollars are you getting for production tax credit or investment credit? What is NY state's subsidy to your operating costs per megawatt-hour?	The total construction period cost for this project is around \$300 million. This amount excludes any operating costs. PTCs account for around 9% of total project revenues and tax benefits over the project lifetime. We do not receive any other federal or state subsidies/incentives. Annual federal subsidies in terms of PTC is around \$8 million to \$12 million per year in real U.S. dollars for the first ten years of the operating period. The government does not pay this amount in cash. It is a tax credit, and this tax credit can only be claimed if there is a project sponsor with a tax duty big enough to claim this amount.

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99	Do wind projects bring in other industries? Can you cite examples?	<p>Wind projects can enhance the local economy in many ways. During construction, the activities support business including mechanical equipment support and repair, earth work, local supplies, restaurants, lodging, and much more needed to keep a crew of 200 to 300 people working effectively. After construction, the wind project staff on hand will continue to use these services. In addition, third-party contractors are needed to support the project. These can include ground maintenance, mechanical support, environmental monitoring, and more. In some cases, a business may locate near the project to provide these support services, and all these additional people coming and going also support the local parts, materials, food, and lodging industries.</p> <p>Finally, Lighthouse Wind is prepared to work with the communities to direct investment into the communities to create the largest impact. This investment may take the form of economic development funds that attract business. The investment may be directed to small business loan funds that provides low-cost capital for local business growth. Another opportunity may be tax reduction that would then entice local business to move to or grow within the area because they can be more competitive. The process of exploring these options and establishing a vision for the communities can be exciting and Lighthouse Wind looks forward to the opportunity to engage with the communities on this topic.</p>
117	Planning use of investments- public doesn't decide how money is used?	<p>We sincerely hope the public will be involved in the decisions and planning for how the investments the project will bring is utilized. This starts with a discussion about a Host Community Agreement. It is very important that citizens take part in that process.</p>
132	Can land under and around towers be used (farmed, etc.)?	<p>Generally speaking, yes. We have operating projects in which farming continues right up to a small buffer around the foundation. When we build a wind turbine, we utilize approximately one acre of land. Once we have completed construction, we decompact the soils and the turbine itself occupies a little less than a quarter of an acre. The pedestal of a turbine comes up out of the ground and is about 18 feet in diameter. There is a gravel beauty ring where the access road comes to the turbine and there is a gravel ring around the bottom that is about 10 feet wide. That is the only ground space that is occupied, and you can farm right up to that. When you look at how wind projects operate, in particular where there is agriculture, it is a really wonderful and compatible activity because it allows diverse revenue for the landowners and farmers.</p>
193.A	Can someone clear up the information about the project and if it will have any impact on the air base in Niagara Falls?	
193.B	Personnel at Niagara Falls Air Reserve base state Apex turbines are not an interference with operations. Is this true?	<p>Colonel Janik established back in 2016 that the Lighthouse Wind project would not negatively impact the Niagara Falls Air Force Base. He said the wind turbines "are a non-issue" because training missions occur far above any wind operations.</p> <p>The FAA also issued a statement that this project will present no negative impact on line of sight or navigational aids at the airport.</p> <p>History:</p> <p>On October 23, 2016 Col. Joseph J. Janik indicated with the new planes used at the base, the wind turbines are a non-issue because "with the new tanker we'll be at higher altitudes," he said. (Although Carl Calabrese Calabrese, Martucci - SOS lobbyist now living in Wheatfield - says the project could be considered "encroachment" on the base's operations).</p> <p>On November 13, 2016, the Buffalo News re-stated Commander Col. Joseph Janik said Apex's wind turbine project would have no impact on operations at the air base because training missions would occur "far above any wind turbine."</p>

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36	How many collection stations are associated with the subject 47 turbines?	One.
37	How does the electrical energy from the collecting stations get to the electrical power grids (above or below ground) and by what routes and would not these routes affect many more properties and people than just the leased turbine sites?	Energy goes from the collection station to the grid interconnection station by overhead line. The length of the line will depend on the proximity of the collection station to the interconnection station. Any properties with overhead lines will have voluntary agreements with the project.
38	Are there any environmental hazards or risks to the area during or after construction of the turbines?	This can be found in the PSS in Sections 2.1.2.1 (page 12) for construction, 2.1.2.2 for operation (page 12), 2.1.5 (pages 14-15).
39	Do the rotors of the turbines begin turning by wind power alone?	A modern wind turbine has inductive coils in it that require a little bit of power to energize those coils. There is a little power that comes to it to let it run, then when the wind blows it generates power.
41.A	Where will the substation be located?	Ideally it will be located at the point of interconnect, which is the transmission grid. The exact location has not been decided yet. It will consist of several circuit breakers, some switchgear, and the transformer. The existing substation at the Kintigh Generating Station will not be used for LHW. A substation will be built specifically for the project. The exact location is yet to be determined, but will be on leased properties very near the existing power lines. Project construction staging areas have not yet been determined, and will be located on leased land.
41.B	No substation locations are shown on layout. Please define the locations.	
41.C	Where are the substations and transfer stations located and will new high voltage power lines be required?	
41.D	Where are you building this substation? I thought you were using the Kintigh substation.	
41.E	Will you place the substation below Lower Lake Rd (i.e.- toward the shore)?	
41.F	Where will the central substation area be? That has to be quite a large area?	
42.A	Where do you plan on locating the construction staging area?	
42.B	Where do you plan to put the staging area?	
42.C	Where will the staging area be?	
43	What is the size of the excavation required for the each turbine, diameter and depth?	Foundations will be approximately 75 feet in diameter and 11 feet deep. The need for blasting will depend on the depth of bedrock at each turbine location. Whether blasting is needed will be determined during the final geotechnical investigation. Foundations will require approximately 800 to 1,000 cubic yards of concrete for each foundation and 70 tons of rebar.
44	Will blasting be required for the foundations?	
45	How many yards of concrete per turbine foundation?	
46	How many tons of rebar per foundation?	
47	Where are the turbine components manufactured? Towers, generators, blades.	Vestas has manufacturing factories all over the world, including four for blades, towers, and nacelles in Colorado. The locations and contact information for its factories can be found here: https://www.vestas.com/en/about/find_vestas#!production
48	What radio frequency interference (RFI) mitigation measures have you planned?	This is covered in Section 2.11.2 on page 73 of the PSS. This concern during operations is also covered in Section 2.11.2.2.
49	For folds north of the turbine array, will cell service be affected? How? What precedent can you cite?	

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50.A	What is the capacity factor of a 200 megawatt wind farm?	
50.B	How is the capacity factor calculated?	
50.C	What is the output capacity of this project? Both max and calculated actual.	A power generation plant capacity is typically referred to as nameplate capacity, which is the full amount a generating facility could produce if it were operating at full capacity. For the Lighthouse Wind project, the nameplate capacity will be very near 200 MW. The current turbine being used for the project design is a 4.2 MW turbine. 4.2 x 47 turbines equals a project nameplate capacity of 197.4 MW.
51	Why do you continue to refer to a wind farm as 200 megawatts when you know the actual output is 33% of that?	Power generation plants rarely operate at their nameplate capacity. For example, the Kintigh Generating Station in Somerset, New York, has a nameplate capacity of 675 MW but has operated with a nominal capacity factor (NCF) of less than 20% in recent years. The Lighthouse Wind project will operate with an NCF of approximately 35%.
52	How much does a turbine blade weigh?	
53	How much does a nacelle weigh?	A wind blade for LHW will weight approximately 30,000 to 40,000 lbs.,
54	How many truck loads per turbine?	and the nacelle, once assembled, will weigh approximately 300,000 to 400,000 lbs., depending on the final generator configuration. Each turbine will require approximately 12 oversized truck loads.
57	What is the maximum transported weight per load? What is the maximum per axle load?	The heaviest load will be approximately 260,000 lbs., including the transport vehicle, with each axle load a maximum of 20,000 lbs.
55	The data sheets for the Vestas V150-4.2 and the Nordex 131 states that hub height is "site and country specific". What is the hub height envisioned here?	105 meters.
56	Will the turbines be equipped with radar to sense proximity of aircraft, only then illuminating any flashing red warning lights? At what distance?	The use of radar-activated lighting is uncertain at this time. There have been a number of radar-activated lighting systems designed. However, the technology is still very new. The Lighthouse Wind project will use a lighting system that first meets the FAA requirements, second meets the company's safety standards, and then takes into account new technologies for reducing impact. We expect the technology available to evolve between now and when the project is built. Therefore, we cannot commit to any specific type of system at this time.
58	Can you show the projected travel route for each component?	This is covered in Sections 2.10.4 and 2.12.5 on pages 71-72 in the PSS. We will do a transportation study of the existing roads to determine their make, width, and whether they are adequate for the component trucks, and then we will create a transportation route plan. This plan will be part of a road use agreement that will dictate what our responsibilities are for maintaining the roads and fixing them if they get damaged. We typically leave roads in better condition than they were in prior to a project's construction. Road use agreements typically dictate issues such as traffic flow management. Sometimes our work is limited by time of day (e.g., school bus routes, nighttime). Usually this is coordinated in the agreement process. A full component travel route will be planned and included with the project permit application; the transportation route has not been identified at this time. To get the turbine components to the project site, we will have to do some road updates, as well as build our own private access roads, and there will be some construction noise associated with that. The other infrastructure needed is the collection system, which is the trenching of the cable through the field, and the project substation; there will be typical construction noise associated with those as well.
61	How will Lighthouse manage and minimize any transportation problems for my commute based on large trailers bringing equipment in?	
130	What infrastructure is required to install towers, i.e. roadways, etc.?	
208	Are you going to fix all of our roads after all these structures are in place?	

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59	Identify where access roads will be cut through farmland and forested land?	The work of identifying construction access roads and underground collection lines has not been completed yet. The placement of these facilities will be affected by the final field studies that we are working to complete. This information will be available prior to submitting our permit application and will also be included in our permit application.
60	How do the new turbines compare to the old, as far as power output?	The turbines that we are contemplating here have 4.2 megawatt generators and that is a larger nameplate capacity than older technology. Ideally, as technology progresses with wind turbines, the turbines become more efficient and have larger generators and are a little taller, so they can capture faster wind speeds.
62	How many construction jobs would be created if this project proceeds, and for what duration? How many of those jobs would be from the local workforce?	During peak construction, a project of this size would probably have 200 to 300 construction workers. The project duration would be 6 to 8 months, so the entire 300 would not be working the whole time. With the sequence of construction, we will have the earth-work crews coming in first for construction of the roads, then foundation crews and turbine erection crews that will all come in. The local people versus people from other places doing the work is dependent on the contractor selected. The contractor selected typically does use local workers when available, because that's going to be the best price option.
63	What is the impact of 1,000 cubic yards of cement for each wind turbine foundation on Lake Ontario? The DEC frowns on concrete runoff into the lake and your pouring 47,000 cubic yards of it.	The concrete is not running off to the lake, it's getting built into a foundation that's underground at each of the turbine locations. The concrete, once cured, is inert. It gets poured, it starts to cure, and it stays there. There's not really a leeching in typical concrete. If the soils are super acidic, it could be possible, but that's not the case here. During construction, concrete trucks need to be washed, so there are wash stations at every turbine location. The concrete trucks are rinsed out there and remain in those wash pits until the concrete sets up, and then they can dispose of it. There is no free discharge of concrete anywhere.
64	You, Apex, are expending considerable efforts and resources to push this project through so, how will you dismantle all these turbines when they are determined to no longer be usable or useful?	A full decommissioning plan will be part of our permit application. All materials above four feet below ground surface depths will be removed. The plan will include financial security for the full cost of decommissioning. The project permit operational requirements will include periodic review and update for the decommissioning plan to account for any changes in financial, material, and labor markets.
65	How does Apex plan to protect children who are playing in their yards or waiting for their bus from "ice throw" from such large turbines?	This topic is covered in the Preliminary Scoping Statement on pg. 20, section 2.3.2.2.1. Studies on ice throw will be discussed in more detail in Exhibit 15 of the Certificate Application. The project is designed with appropriate safety setbacks from homes, roads, schools, ballfields, and property lines to avoid damage from ice throw.
66	Why don't you have pictures showing actual size? The pictures you show are not true to size.	Lighthouse Wind will be creating visual simulations of the project at full scale from a number of vantage points in both towns. We did not have time to create those simulations in time for the October 2 meeting.
212	What is maximum speed in RPMs?	12 RPMs for the current turbine under consideration. (It would be roughly the same for any turbine in this class that we are considering.)
213	At what wind speed will the turbines be started? What is the rated rotational speed? What is the tip speed?	The cut-in speed is at 3 m/s. 12 RPMs is the max rotational speed. The documentation from the turbine vendor does not provide a number for tip speed.

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213.A	<p>I hope one of you can answer my question. How will the bases for the turbines affect water sources for local wells? I know studies were done on water quality, erosion, run off, etc., but I haven't been able to find anything that specifically addresses well water sources. Could construction of these concrete bases change/divert water sources from existing wells? I believe I read somewhere that the bases are mostly underground and in a cone shape which makes me think they need a considerable amount of space.</p>	<p>The turbine foundations will have no impact on local wells, aquifers, or streams. The maximum depth of a wind turbine foundation will be 11 feet. Throughout the Northeast, water is often found at about 300 feet, and wells for household use usually range from about 100 feet to 500 feet deep. There are some places, however, where a well can be more than 1,000 feet deep.</p> <p>Further, the permit for the wind project will require a complete engineered water runoff management plan to control erosion and construction runoff from entering into wells, aquifers, or streams. During construction, LHW, like many large-scale construction projects, will employ best runoff and erosion control practices. No raw concrete will be allowed to enter water sheds. After construction, best practices will be employed to stabilize the ground surrounding turbines to control erosion. Once hardened, the concrete foundations are inert and will be mostly covered in earth. They will not leach affluent into local wells, aquifers, or streams, just as the foundation of your home does not leach affluent into local wells, aquifers, or streams.</p>
213.B	<p>The data sheet for the Vestas V150, your proposed model for Lighthouse Wind, is attached. On the lower right hand corner of this sheet is a graph, under which is stated:</p> <p>" Assumptions - One wind turbine, 100% availability, 0% losses, k factor=2"</p> <p>Questions:</p> <p>What factors would contribute to availability less than 100 percent, and how many hours per year might those factors be expected to reduce availability?</p> <p>What items would make up "losses" and to what extent do losses reduce the expected annual energy production?</p> <p>What is "K factor"?</p>	<p>The document shows a plot of annual energy production vs. yearly wind speed, which required several assumptions to produce: air density, wind speed distribution, and turbine availability.</p> <p>The power curve, which we use to convert the hub height wind speed to the resulting power production, is air density dependent. The manufacturer used the standard value of 1.225 kg/m³.</p> <p>The plot shows an average wind speed on the x-axis, but this wind speed comes from an average of a large distribution of windspeeds over the year. The k-value is a shape parameter that describes the skewness of the Weibull probability distribution.</p> <p>The plot assumes turbine availability of 100%, which in reality cannot be achieved. Turbines have a loss associated with the time the machine would undergo maintenance, scheduled and unscheduled. Independent engineers with vast databases of turbine performance typically estimate a range of 95% to 97% of turbine availability.</p>

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40	Why do other agencies, health departments, migratory bird agencies, for example, disagree so strenuously with your data?	We have not had our data contested by any particular agency.
67	Why do you buy "kill permits" for endangered species, such as bald and golden eagles?	<p>There are permits for what is called non-purposeful take of bald and golden eagles, and it is not as simple as buying one. We go through a study process to evaluate the risk. The standards required by the state and by the U.S. Fish and Wildlife Service for permitting take of eagles are very different, as are the required processes that go into evaluating risk and mitigating impacts. At a site like this where we know we have eagle activity, we document them in our surveys and utilize agency-recommended processes to evaluate the data. Because eagles are present, there is potential that over the life of the project, some may be killed. Therefore, we need to consider that carefully and offset that impact in order to comply with the applicable state and federal laws and to ensure no significant adverse impact to the species. The state standard is that we ensure a net conservation benefit to eagles, so in other words, if we are going to take three out of an area as a result of project operations, we are responsible for putting >3 (e.g., six) into the area to offset that impact. We can do that by working with the state to identify important mitigation projects, such as protecting a nest that may be at risk of future development to ensure long-term productivity at that location. Another option is putting a conservation easement on the land around a nest so that nest remains viable over the life of the project, or even in perpetuity. There are other techniques that could be used for mitigation, such as lead shot abatement for lead toxicity, funding wildlife rehabilitation to save sick or injured birds that might otherwise die, or retrofitting power poles to eliminate ongoing electrocution impacts.</p>
68	At the July town board meetings of Somerset and Yates, Paul Williamson stated that no turbine would be built within a mile of a bald eagle nest. Why are there turbines near the Somerset Operating Plant when there is at least one, maybe two bald eagle nests at that location?	An aerial survey was completed in April 2016 to identify the specific location of all bald eagle nests within 10 miles of the project boundary. The nearest proposed turbine location is >1.4 miles from the nest identified at the coal plant in order to minimize risk of impact to the eagles associated with this nest during construction and operations.
78	Where have bald eagle nests been identified, and can you show a one mile radius from those sites where you will not operate at all during construction or operation?	Eagle nest locations are considered confidential by NYSDEC; however, this nest location has been identified and considered in turbine siting. No other bald eagle nests were identified within 10 miles of the project.
79	The life expectancy of a bald eagle in the in the wild is 25 to 30 years. What is the life expectancy of bald eagle living among an industrial wind facility? Do you consider the use of a "take permit" to be an environmentally responsible way to protect bald eagles?	<p>The life expectancy of bald eagles in the wild varies, as some are killed by natural or human causes very early in life while others have been documented to live more than 25 years in the wild. The life expectancy of bald eagles living in proximity to the project would be expected to be similarly variable. Low levels of bald eagle activity have been documented onsite. Should this activity continue during operations, the project would pose some risk to those individuals using the site; however, the weight of evidence from operating projects with known bald eagle activity suggests that the risk of collision-related mortality is low.</p>

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81	How do you mitigate against the impact to nesting eagles? How many nesting pairs are here.	<p>There is one bald eagle nest site documented along the shoreline of Lake Ontario in the northeastern portion of the project site, on the coal plant property. The two years of eagle use study completed for the project did not indicate concentrated levels of bald eagle activity in this portion of the project, suggesting that the majority of activity associated with this nest is toward the lake and along the shoreline, where no turbines will be sited. Nonetheless, we are mitigating risk by siting turbines >1.4 miles from this nest location and would adhere to the NYSDEC 2016 Conservation Plan for Bald Eagles in New York State, with regard to construction setbacks, siting setbacks, etc. We also would monitor the effects of the turbines on potential eagle mortality throughout the life of the project. If we were to have mortality that was not authorized or was greater than what would be granted through a federal or state permitting process, it would be in violation of the federal Bald and Golden Eagle Protection Act and the state Endangered Species Act, so we take a lot of precautions to go through that process and establish a regulatory compliance framework for this issue. These permits have what are called "adaptive management triggers" in response to project-caused mortality that is above what is predicted and authorized. Let's say we estimate three eagles would be killed over the life of the project. If for some reason three were killed in the first year or in year 15, we would expect to violate our permit with the next mortality. Such a circumstance would trigger adaptive management, which might be a change in operations during the identified risk period or area of the project, or deployment of deterrents, or in increase in mitigation or a permit amendment. Any predicted take for that species is mitigated in advance of it occurring, so we actually are in a position to provide a lot of conservation funding when the project is approved to help the Fish and Wildlife Service and the DEC accomplish some of their regional landscape-level conservation goals during the conservation process with respect to eagles.</p>
69	A recent flyer sent by Apex indicated that wind turbines pose no significant threat to bird and bats and that cats kill more birds. What is the source of that cat information? Is it a series of peer-reviewed studies or is it just someone's estimate?	The statistics provided on the postcard were sourced from the National Audubon Society.
70	What species of bats have been found in the area? Does this study include the study area? If not, why not? Is it called the "study area" for some other reason other than to identify the area in which studies of the impact of the project to be conducted?	<p>We are not familiar with a list of bats considered species of concern by Bat Conservation International; however, of the bats with potential to occur onsite, one is classified by NYSDEC and USFWS as threatened (northern long-eared bat) and another is classified by NYSDEC as a "Species of Special Concern" (eastern small-footed bat). NYSDEC defines Species of Special Concern as warranting management attention and consideration, but current information, collected by the department, does not justify listing these species as either state-threatened or endangered.</p>
84	What species of bats are in the area?	<p>There are quite a few. The two state-listed bats generally of consideration in this part of the state are the Indiana bat and the northern long-eared bat. We are just out of the Indiana bat range; the studies we have done on the northern long-eared bat, which is both state- and federally threatened, have indicated probable absence during the summer roosting period, but we do know that it is likely to migrate through here, so that is when we take precautions during the migratory period. The precautions that we take for that species also minimize the risks for many other bat species that do occur.</p>
71	Are any species of bat found in the study area identified by Bat Conservancy International as species of concern which should be listed by the USFWS?	<p>We are not familiar with a list of bats considered species of concern by Bat Conservation International; however, of the bats with potential to occur onsite, one is classified by NYSDEC and USFWS as threatened (northern long-eared bat) and another is classified by NYSDEC as a "Species of Special Concern" (eastern small-footed bat). NYSDEC defines Species of Special Concern as warranting management attention and consideration but current information, collected by the department, does not justify listing these species as either state-threatened or endangered.</p>

Question #	Question	Answer
72	It has been found that bats may be attracted to the blinking red lights. What action can you take to minimize this attraction?	We are not familiar with this finding, but would appreciate any additional information that you can provide. As discussed in the meeting, the project will modify operations by feathering blades so they do not spin at night during periods of lower wind speeds (below 5m/s) during the season of higher bat risk. This dramatically reduces the likelihood of collision, as many species (smaller bats in particular) are less active at higher wind speeds.
73	What are the "proper precautions" you are taking to minimize bird/bat fatalities.	Starting with birds, the primary siting measure we are taking voluntarily is setting back to some extent from the shoreline (viewing that as a potentially higher activity area), avoiding wetlands, avoiding the bald eagle nest, avoiding forest habitats as much as we can, and trying to focus our ground disturbance on previously disturbed areas (e.g., tilled agriculture). For bats, we avoid the forested habitats and avoid tree clearing during periods when tree-roosting bats are likely to be roosting. We also plan to feather blades as described above during the fall bat migration period (July, August, and September in this part of the country), which is when we see an elevated risk or higher mortality of bats without such measures implemented. So we sacrifice a little bit of power production, but drastically reduce the bat mortality. The DEC estimates that the reduction in bat fatalities would be by about 80%.
82	You show bat habitats and turbines south of Golden Hill Park. What mitigation steps-start-up at 5.6 mps, radar sensing, red lights, etc.	We strive to avoid siting turbines within 1,000 feet of those habitats where possible, because bats likely to occur onsite during summer in particular tend to stay much closer than 1,000 feet to treed areas. They do move greater than that distance during migration and tend to be susceptible to collision in particular during the fall migration, so that is why operational curtailment is implemented during the fall migration period.
75	Will you consider turning off turbines during bird migratory periods? Turn off turbines at night to protect bats?	Currently, this measure is not known to reduce avian collision risk; however, the curtailment or feathering at winds below five meters per second for bats will be implemented during portions of the avian fall migration period. For birds, if there was an avian impact concern documented during a particular time period, that would be a viable approach. Another measure that has been tried is deploying avian radar, which consisted of recording passage rates of birds during those higher-use periods; when certain thresholds of avian activity within the rotor swept area were reached, turbines could be curtailed. This would focus such curtailment to the most effective periods, while minimizing energy production losses.
74	How far from a turbine of 591' tip height do you examine for bats, song birds, raptors?	<p>This question is in reference to fatality monitoring under turbines. The area evaluated is generally recommended by the agencies, but there is a lot of research that we rely on to evaluate that, and it can depend on the focus of the monitoring required. Most bats fall very close to a tower, within about 40 meters. When monitoring for bats, it is wasted effort to focus a search out beyond that distance.</p> <p>For raptors, individuals can fall even beyond the rotor radius. For these studies, we utilize what is called an area correction factor, where if we do a survey out to 60 or 100 meters, then we have to compensate for those areas we haven't studied by mathematically modeling the portion of study specimens that were not detected. There are a number of techniques and considerations that go into which areas to choose that will provide the most accurate search results. These methods have been used and improved upon with the study of hundreds of wind projects over the past 20 years.</p> <p>An appropriate technique for this site will likely include studying a combination of roads and pads at a high number of turbines, and cleared plots at a number of representative turbines.</p>

Question #	Question	Answer
76	Some of your avian studies are 18 years old. Why are they valid today in 2018?	Studies for this project site began in December 2014. Bird studies continued for two years to December 2016 to evaluate annual variation on the site. The habitat and land use has not changed in a manner since 2016 to the point where changes to the wildlife community (species composition, activity, and spatial use patterns) would be reasonably expected to occur.
77	The large number of environmental and bird experts who are in the POWER Coalition oppose the project. Are they misinformed? What do you say to them?	To our knowledge, the environmental and bird experts in the POWER Coalition are not experts on wind-wildlife conflict. They may be, and we are interested in their input; however, we would need additional information on these experts in order to provide an informed response to this question. Regardless, studies have been completed in response to recommendations from agency personnel that manage and regulate the environmental and bird resources that may be affected by the project. The study data from the Lighthouse Wind project area and the extensive data from operating projects across the country, including many in nearshore settings, demonstrate that Lighthouse Wind can be operated in a responsible manner with low impact. We believe that objective groups will arrive at the same conclusion after reviewing the full set of information that will be made available in the final permit application. We also understand that there are some groups and individuals that have established a preconceived position opposed to the project without taking an objective look at the facts.
80	When was your most recent avian survey? Are more planned? During the winter of 2017-2018 there was a significant interruption in snowy owls in the area.	We did two years of avian survey that ended in December 2016. The reason those are multi-year surveys is to address the annual variation that does occur. We did identify areas of concentrated activity for other raptors (northern harrier and short-eared owl) and snowy owls were recorded in January of 2015. Those are areas we have taken into consideration with our layout so as not to disturb those important wintering habitats.
83	Do you hide the number of raptor kills from the public?	In New York State, wind project fatality monitoring studies are public, so we cannot or would not hide the number of raptor kills from the public. In New York, through the state permitting process, a monitoring plan is required and that data is required to be disclosed.
84	How will you mitigate for the thousands of birds that migrate through here year round?	The number of birds that migrate through this area is substantially higher than thousands. Fortunately, most will be unaffected by the project and those impacts that do occur are not likely to rise to a level that would result in unstable or decreasing populations. Therefore, no mitigation is required to offset the low level of impact likely to occur to birds. There are operating projects in similar shoreland setting across the United States with similarly high migratory passage rates. These projects have demonstrated low impacts.

Question #	Question	Answer
85	<p>If you're killing birds, how do you solve the problem? How do you solve the migration issue? Will you prove to us that you mitigate or replace each bird kill?</p>	<p>Through the Article 10 permitting process there is an Article 11, which addresses state endangered or listed species. The permitting conservation plan and mitigation proposed would be clearly laid out in that plan and evaluated and adjusted and/or approved by the agency. Typically, that is the best available science. If we were predicting the take of 13 northern long-eared bats, there are resource equivalency analyses that are available to us. In other words, models to determine how many caves we should gate to ensure protected caves result in winter hibernacular protection to the bats, or how many acres of habitat would we need to protect, restore, or enhance to offset that number of bats. The people behind it are generally reputable scientists, usually from the USGS (United States Geological Survey) and the U.S. Fish and Wildlife service who have helped develop those models. We rely on the best available science and those kind of techniques. Some mitigation projects can have a monitoring component, whereby you collect baseline data. For instance, if you are taking a habitat and converting or managing it for a particular species, you may collect baseline data to determine what is there and then monitor it at annual or five-year intervals to see what is there in 5, 10, 15, 30 years (i.e. was your mitigating effective?). Like property values, that is really hard to gauge. If you have three bats in a 100-acre parcel one year, and you go back 10 years and you have 30, you don't really know if it's because of the trees you planted or trees you cut. But if you have zero and you did all these effective mitigating efforts, you still don't know what is causing the decline.</p>
86	<p>Even Dave Phillips says this project is in a migratory pattern. He showed us pretty pictures and diagrams. How many eagles will be killed here? If you know this is a bird migratory path, how can this be a good site? Endangered bats are located just below Golden Hill. There are 8 turbines sited in that location? What data could possibly deter this project?</p>	<p>Indeed. Most areas of our country experience varying degrees of migratory activity by birds, and the area south of Lake Ontario is no exception. In fact, USFWS has completed radar studies that demonstrate that the area south of Lake Ontario experiences high avian passage rates, particularly during spring migration, which is consistent with both the nocturnal radar and daytime observational studies we have completed. In my presentation, I also presented information regarding annual avian fatality rates at operating projects throughout the U.S. and region, some of which are from projects operating near the Great Lakes shorelines and coastal areas where significantly larger numbers of birds migrate through or winter near operating wind projects. The weight of evidence from these credible studies suggest that avian mortality is generally low for most species, even when birds are present in high numbers. We are aware of no mass casualty events for birds from wind turbine collision, despite these projects operating in high use areas. Regarding how many eagles will be killed here, we have not generated estimates of eagle mortality expected for the project based on the data collected to date. Bald eagle mortality at this site is likely to be very low, should it occur; however, we will work through a process with NYSDEC and USFWS to carefully evaluate this risk to fully mitigate that predicted level of mortality should it be likely to occur. Regarding bats, this topic is a) carefully studied in coordination with the agencies and no endangered bats were documented using the site, and b) we implement siting and operational protocols to minimize risk.</p>

Question #	Question	Answer
87	On the west side of the project you have 5 turbines within sight of a bald eagle nest. How can you guarantee not to affect this bird?	<p>There is one bald eagle nest site documented along the shoreline of Lake Ontario in the northeastern portion of the project site, on the coal plant property. The two years of eagle use study completed for the project did not indicate concentrated levels of bald eagle activity in this portion of the project, suggesting that the majority of activity associated with this nest is toward the lake and along the shoreline, where no turbines will be sited. Nonetheless, we are mitigating risk by siting turbines >1.4 miles from this nest location and would adhere to the NYSDEC 2016 Conservation Plan for Bald Eagles in New York State, with regard to construction setbacks, siting setbacks, etc. We also would monitor the effects of the turbines on potential eagle mortality throughout the life of the project. If we were to have mortality that was not authorized or was greater than what would be granted through a federal or state permitting process, it would be in violation of the federal Bald and Golden Eagle Protection Act and the state Endangered Species Act, so we take a lot of precautions to go through that process and establish a regulatory compliance framework for this issue. These permits have what are called "adaptive management triggers" in response to project-caused mortality that is above what is predicted and authorized. Let's say we estimate three eagles would be killed over the life of the project. If for some reason three were killed in the first year or in year 15, we would expect to violate our permit with the next mortality. Such a circumstance would trigger adaptive management, which might be a change in operations during the identified risk period or area of the project, or deployment of deterrents, or an increase in mitigation or a permit amendment. Any predicted take for that species is mitigated in advance of it occurring, so we actually are in a position to provide a lot of conservation funding when the project is approved to help to Fish and Wildlife Service and the DEC accomplish some of their regional landscape level conservation goals during the conservation process with respect to eagles.</p>
88	New York State's final supplemental environmental EIS recommends setbacks from shores of five miles. You are not abiding by this. Why?	We are not familiar with this setback recommendation, nor the specific EIS to which the question refers.
89.A	Instead of mitigating for raptors and bats, why not build this project 3 miles away from the shores? Ten miles sounds good.	<p>1) It is much windier near the shoreline than inland; therefore, more clean renewable energy can be generated more efficiently than at an inland project. 2) As a result of this higher average windspeed, the amount of curtailment needed to minimize risk to bats is lower, thus allowing the project to operate more consistently. 3) There is existing transmission line capacity at this location; therefore, no new above ground transmission lines are needed. 4) The environmental impacts associated with this site are not expected to be unique or higher than at a similar sized project located inland.</p>

Question #	Question	Answer
89.B	<p>Why aren't you following the guidelines set forth by the US Fish and Wildlife service regarding setbacks from Great Lakes? No turbines should be near them (3-5 miles) due to the area being a major migratory fly away.</p>	<p>The U.S. Fish and Wildlife land-based wind energy guidelines for siting wind turbines, to my knowledge, do not make this recommendation. There is also eagle conservation plan guidance, which is specific to eagles, and this recommendation is not made in that guidance either. So, with all due respect, I believe the question misrepresents the guidelines applicable to the project. What each does recommend is a process for coordinating with the agencies, where you basically work with them on identifying if the area is appropriate to proceed and completing the studies that are necessary to evaluate risks, informing siting and project operations as well as identifying periods or areas that may warrant operational studies. As a company, we're very committed to adhering to those guidelines and coordinating with those agencies on all of our projects. Our work, studies, and project design all go into the state Article 10 permit application, which is reviewed and carefully considered by New York State.</p> <p>This question appears to be referring to a letter sent to Apex on May 6 from David Stilwell of the U.S. Fish and Wildlife Service. The letter states: "Previously, the Service has recommended that wind energy projects be constructed at least three miles from the shoreline of the Great Lakes to reduce this risk."</p> <p>The letter does not provide the recommendation to the Lighthouse Wind project; it simply notes that such recommendations have been provided in the past.</p> <p>The letter also notes that the service has not yet reviewed all of the wildlife data from the project studies. It is important to note that this recommendation is in reference to a 2008 and 2009 recommendation for a MI project. We've had a lot of operational project information become available since then that demonstrates that projects in these areas do not have notably different fatality rates from that documented at inland projects, neither of which are significant with regard to causing population declines or influencing population stability or viability for the affected species. This recommendation is unsupported by the facts, but did seem intuitively correct at the time. Fortunately, the concerns were not realized when these nearshore projects became operations along the Great Lakes, Atlantic Coast, and Texas Gulf Coast.</p>
89.C	<p>Can you show a line on your map identifying the three mile limit from the lakeshore, as recommended by the US Fish and Wildlife Service?</p>	<p>No such recommendation has been made for Lighthouse Wind from the U.S. Fish and Wildlife Service. Please see the answer to question 89.B. The project maps provided are to scale and include a scale bar in the lower left corner, which can be used to determine the relative position of the turbines with respect to other mapped features.</p>
89.D	<p>If you place turbines within three miles of Lake Ontario, you will be breaking Yates Town Law and the recommendations of the US Fish and Wildlife Service. How is that possible?</p>	<p>The Lighthouse Wind project is being developed within jurisdiction and allowances of the laws for the State of New York. It is our intention and preference to work with the local towns to design the project in a responsible manner. To do so, we hope that local laws will accurately reflect those of the State of New York, and adequately provide allowances and protections for landowner and business rights. We believe that with accurate information about the project, the citizens of Somerset and Yates will support the project and develop local laws accordingly. The response to the previous question 89.B details our efforts to work with all permitting agency guidelines.</p>

Question #	Question	Answer
89.F	If you say you're working with agencies, why are you ignoring the US Fish and Wildlife recommendations for Great Lakes? "Avoid wind energy within five miles of Great Lakes Shoreland", distributed sediment from construction can be lethal to fish, birds...	As discussed, there has been no 3-mile limit recommended by the USFWS for this project. Please refer to the response to Question 89.B
89.G	Why are they within 3 miles from the shore, the US Fish and Wildlife suggested to keep them 3 miles from the shore of catastrophic damage would occur to avian life?	
89.H	Will Apex comply with the US Fish and Wildlife recommendation of a 3 mile setback from the shoreline?	
89.I	You never reference the warnings you have been given by Fish and Wildlife. Do you plan to ignore them?	We work closely with the USFWS on all of our wind energy projects, including this one. Their recommendations are carefully considered, and most often implemented as it relates to siting, operations, monitoring, and permitting. In situations where recommendations are not supported by facts or data, or are actually refuted by facts or data, we also challenge agencies to consider that data and work with us on that particular issue. An example might be to set turbines five miles from an eagle nest, or three miles from a lakeshore. While we haven't received these recommendations for this project, we would certainly coordinate with the agency on available information to demonstrate why such a response is inappropriate, unsupported by science, and effectively a taking of private landowners' rights to utilize their property for otherwise lawful activities.
90	What is the impact on animals and wildlife other than birds? Example: deer	Some studies of large ungulates have been completed (deer, elk, pronghorn) to evaluate impacts; however, no evidence has been obtained to suggest that a wind project interferes with movement patterns, use of an area, or productivity. Therefore, this is generally not raised as a concern at modern wind projects.
91	Industrial wind turbines will force wildlife from the surrounding area. Many citizens enjoy hunting in Orleans and Niagara counties. How will Apex mitigate the loss of game for hunters and wildlife enthusiasts.	We would not expect game populations to decline or current land use practices to change as a result of the project. If anything, it may allow the land to remain in its current use for a long time, thus ensuring available game habitat and hunting opportunities that might otherwise have been lost in response to other forms of development (e.g., residential development).
92	Mr. Phillips, what studies in Yates and Somerset have you personally done?	Aside from high-level site assessment work, all ecological studies completed for the project have been done by unbiased, qualified professionals.
93.A	Are you aware of studies showing that bird losses from wind turbines are 35 times less than bird losses from fossil fuels per megawatt of electricity produced?	I have seen both popular articles on this topic, and some limited "research" on the topic, but am not aware of the specific study being referenced. However, this is a great question because it puts the issue of avian deaths in context that allow consideration of the true costs and benefits involved in producing electricity from wind power, which competes with many options including energy efficiency, nuclear power, gas and coal-fired turbines, hydro electric, geothermal, etc. Looking at bird deaths and other social and environmental costs for wind turbines, and ignoring the impacts and costs of fossil fueled and nuclear options, can most certainly be misleading.
93.B	Studies show coal, oil, and gas facilities kill 35 times more birds per unit on electricity than turbines. Do you agree?	
93.C	What is the bird kill of the fossil fuel industry?	

Question #	Question	Answer
95	When will we see the results of your environmental studies?	They will be published in the Certificate Application. They are made public as part of the Article 10 application, which will include 41 exhibits and the related studies that support those exhibits unless they're not applicable. All of those studies and the information that supports the application would be submitted at one time.
96	What will Lighthouse Wind do if the environmental studies/data so far are wrong? Will you stop using turbines/will you stop during migration etc., or will you just continue killing animals?	We would work closely with the appropriate agencies to identify and respond to the issue. This is called monitoring and adaptive management, and is an important part of the tiered decision making process outlined in the USFWS Land-based Wind Energy Guidelines.
97	A wind turbine expert shared with us that new research shows infrastructure noise travels 20 miles. What will be the effect on the fish along Lake Ontario? This is an international tourist area for fishing. Is this studied? I see fish on your studied species.	I assume they meant infrasound. We don't study that, but what I would suggest is yes, infrasound travels long distances. But infrasound generated by boats in the lake is going to create more sound in the water than a wind turbine on land.
101	What environmental impact studies will be done before the project is approved?	This is covered in Section 2.7.3 on pages 51-52 of the PSS.
207	Was that New Jersey wind farm just five turbines?	Yes, this is the ACUA Jersey Atlantic Wind Farm, located in Atlantic City, NJ.
211	When you take into consideration turbines in NY state function at about 15% capacity, mitigation for migration, bats, etc. Where do you anticipate the actual output will be?	One of the reasons this site is so good from that perspective is because it has a higher average wind speed than most inland areas where wind development could occur; therefore, the efficiency and output of this project will be unique. The project is expected to have a net capacity factor near 35%. The impact of raising cut in speeds to 5 m/s during nighttime to minimize risk to bats during their fall migration period is less impactful on the energy output than it would be at most inland project sites.

Question #	Question	Answer
4	How was the \$1.5 million figure arrived at?	Lighthouse Wind considered state tax policy and historical community benefit agreements in New York with the application to existing generation plants to come up with that estimate. It is only an estimate at this time. By engaging in constructive dialogue with Lighthouse Wind, the host communities of Somerset and Yates can shape the investment from Lighthouse Wind to create the best benefits for the communities. Without such dialogue, the communities may not receive as many benefits directed to the most appropriate needs or long-term tax certainty. We encourage the towns to have a voice at the table.
18	With only eight turbines in the town of Yates, what would be our share of monies allocated for the town of Yates and Lyndonville school system?	The exact share for each town, county, and school system is still uncertain. Through constructive dialogue with the project, a benefit package can be created that best fits the community's needs and provides long-term tax and investment certainty.
194	Will the towns of Somerset and Yates be better off with a pilot and host community agreement or just a full value assessment on the project?	We believe the towns will be best served by discussing tax and community benefits in detail with Lighthouse Wind. Through that process, all parties can identify and agree on which scenario will create the most value for the towns, while also creating long-term certainty and financial stability.
195	Quickly doing the math for the tax benefit for the IWT project in Cohocton- \$168 million (if I got the number correct) for county, town and school since 2009. This equals \$186,666 per year for 9 years if divided equally between three entities - county, town and school- this equals \$62,222 for each every year. You consider this amount significant enough to brag about? It seems like not much money to compensate for what is lost- sleep, wildlife, peace and quiet, view, stars at night, etc.	<p>The Lighthouse Wind project will be over twice the size of the Cohocton Project, and the financial investment will be significantly larger. We estimate investments in local communities and taxes to exceed \$1.5 million per year. As demonstrated by the Town of Cohocton, that money can have a significantly beneficial impact on the citizens living in the towns. Lighthouse Wind can be a source for initiating an economic revival in the region with the proper planning.</p> <p>The concerns over the project have been greatly exaggerated. Numerous communities throughout New York are thriving with the presence of wind projects. When considering the benefits balanced with a realistic view of the impacts of the projects, the benefits from the project are something the citizens of both towns will celebrate for many years to come.</p>
196	Is this short-term revenue or are you here for the long haul?	Lighthouse Wind is being planned to operate for at least 30 years. We welcome the opportunity for the project to be a long-term partner of the communities and provide a source of business investment and job creation for the region.
197	Based on the figures given tonight approximately 40% of the revenue would go to leaseholders and approximately 60% of the revenue will go to the communities. When does Apex want to start negotiations on host agreements?	The \$1.5 million investment we referenced at the meeting is 100% of the monies estimated for taxes and community benefits. This does not include the lease payments to the landowners. We hope to engage the communities in productive discussions regarding benefits as soon as possible. It is our goal to be a long-term partner for investment in the local communities, and the input from citizens is essential for that process.
198	Our town will not give you a pilot. Neither will the county. How will you proceed without pilots?	Lighthouse Wind has modeled the tax assessment using the laws and standards for New York for the project under a number of scenarios. The project can be built and operated without a PILOT. However, the local communities will likely receive greater benefit from the project by engaging in constructive dialogue to best shape a community benefit and tax agreement.
199	How will the community benefit?	<p>The communities may benefit from tax revenues, payments made under a community benefit agreement, job creation, and local business activities that will be required to support the operations of the project as well as support those that are hired to provide those operations. Contractors, parts suppliers, clothing merchants, restaurants and diners, barber shops, and more businesses will experience an increase in business in the area throughout the life of the project.</p> <p>With proper management, the payments made to the communities can also be used to support local business growth, reduce taxes, and attract additional investment to the area.</p>
200	Aside from revenue what are other benefits to the community?	See the response to question 199.

Question #	Question	Answer
201	How many and what types of permanent jobs will be created and what are the salaries of each?	Please refer to Page 6 Section 1.5 of PSS. Lighthouse Wind will create between 200 and 300 construction jobs and up to 13 full-time, local positions. The median U.S. salary for a wind turbine technician in 2015 was \$51,050 annually. As the U.S. economy continues to evolve, wind is creating the careers of the future: wind turbine technician is one of America's two fastest-growing jobs, along with solar installer, according to the U.S. Bureau of Labor Statistics.
202	How many sustained jobs for locals? After construction? What about deconstruction?	

Question #	Question	Answer
94	What are dBL levels of power plants? Compressor stations?	Sound levels of these sources will vary. For example, the Dunbar Compressor Station approval in Broome County (Case 10-T-0350) limited sound levels to 40 dBA at a residence. Sound levels from recent power plant approvals were not explicitly included in permit conditions.
98	Does infrasound move through the ground? Is that studied?	Yes, infrasound moves through the ground and is currently present in almost all aspects of modern life. It is present at locations where waves lap a shore, traffic travels on a road, and machinery such as farm equipment is operated. It is even created from foot traffic of people and animals. Infrasound within the ground specifically generated by wind turbines is not unique compared to these other sources and will not be studied for this project.
100	Please address the issue of infrasound and health effects.	<p>As noted, infrasound is currently present in almost all parts of life. You and your body are subject to high levels of infrasound when you ride in your car, use machinery such as a lawn mower, are in the presence of road traffic, on or near a beach with waves and surf, and in the presence of your son or daughter's music with the base turned up high. It would be reasonable to conclude that if infrasound from wind turbines which is no different from infrasound from other sources causes health effects, then people should already be experiencing such affects. However, numerous empirical health studies have shown no evidence that infrasound from wind turbines cause negative health effects, and that sound and infrasound at moderate to low levels does not cause health effects. A recent study done in Massachusetts is conclusive on this issue.</p> <p>Studies have demonstrated that noise above 45 dBA can cause annoyance and sleep deprivation. Sleep deprivation can cause health effects, but not infrasound or low to moderate level sound directly. Because Lighthouse Wind is being designed to operate within limits where the night time sound level is maintained below 45 dBA outside of non-participating residences, we do not expect there to be any health effects from sound generated by the project.</p>
103	Do you accept the concept of infrasound affecting sleep patterns that can cause chronic disease?	Audible sound at levels above 45 dBA can affect sleep patterns. Sleep deprivation can cause health effects. However, there is no evidence that low and moderate level sound directly causes health effects. Lighthouse Wind being designed to operate within limits where the night time sound level is maintained below 45 dBA outside of non-participating residences, we do not expect there to be any health effects from sound generated by the project. Responses to concerns with infrasound are provide to Question 100.
104	Do you deny that industrial wind turbines produce low-frequency noise or infrasound?	Of course, we are well aware that wind turbines produce low frequency noise and infrasound just like many other sources that are already present in the community today. We noted this during the information meeting.
105	Even though the low frequencies are not heard by human ears, hasn't it been shown that this disruption in air pressure and vibration can cause health problems (in breathing, digestive problems, headaches, sleep problems, nausea, dizziness, etc.)? Residents near turbines are reporting these issues.	Numerous empirical studies have been performed on this issue and none have concluded that infrasound causes the health problems listed in the question. As you are already living with abundant infrasound in your surroundings at levels much greater than the infrasound that will be generated by the Lighthouse Wind project, you are currently an example of this fact.
115	What are the remedies for residents who are exposed to more than the maximum (45 dBA) sound levels?	We feel pretty confident that that will not be the case with a properly designed and modeled project. Hypothetically speaking, if one of the turbines, for example, was not performing properly and the sound levels were over 45 decibels, there are curtailments that are possible in a turbine called the noise reduction option, where the turbine can be curtailed to generate lower noise but also less power, which is not desirable, but there are remedies available in extreme cases.
106	What protocols will be established to deal with complaints of noise, shadow flicker, and infrasound?	Section 1001.19(m) of the Article 10 regulations requires a complaint handling protocol which will be submitted as part of the Article 10 Application.

Question #	Question	Answer
107	How well do field results agree with modeling? If noise is much worse than modeled, what mitigation methods are effective in reducing the noise to acceptable levels? Given that these nuisances can come and go based on wind speed, direction, time of day, etc., how quickly will Lighthouse Wind respond to investigate these issues? Will Lighthouse Wind begin to refuse to respond to those persons who they might deem as "chronic complainers".	As part of the Article 10 process, conservative (worst-case) sound modeling assumptions are used to ensure actual sound levels are equal to or less than predicted modeled levels. In the case of complaints, see response to question 106 above.
120	NY State data says rural nighttime dBA levels can be as low as 25-30 dBA, and that increases of 6-10 dBA would be annoying. How will you address issues of annoyance? Will you write off "chronic complainers". Wind can be low at ground level but higher at hub, resulting in noise. Amplitude modulation makes it worse, does it not?	In circumstances when sound levels are in the 25-30 dBA range, ground-level wind speeds are typically calm. Under these conditions, the wind turbines will not be operating even though wind speeds might be higher at hub height. Even under some operating conditions when wind turbines are "audible", it does not automatically make them "annoying" as many sounds are audible in a community.
133	What will Apex do if the sound level exceeds the 45 dBA at a non-participating residence?	The applicant is required to fix it. They have to make it less than 45 decibels, that will be part of the permit condition. Ultimately, if the project is approved it will be approved with a number of conditions. A lot of the conditions will reflect mitigation measures and other regulatory standards that have been mentioned here tonight. If the project is not in operation in compliance with those certificate conditions then there are enforcement mechanisms that will be built into the certificate as well as under the law that would force compliance with those certificate conditions.
108	You said we don't hear low frequency infrasound. But we are affected bodily. What are the effects on the human body daily year after year?	You and everyone you know is already in the presents of infrasound each day. At times these levels are much higher than the infrasound people will experience from wind turbines, such as listening to a loud radio, driving in a car or operating machinery. What affect do you currently feel from the infrasound that you are already exposed to?
109	At 500', 1600' apart, there are 3.2 rotor diameters. Studies say 5.8 rotor diameters. Why are they so low? Recent study says 15 diameters to minimize noise.	We are not aware of any study recognized by the industry or government agencies that suggest wind turbines be placed 15 diameters apart. Such distances would be impractical and inefficient for most wind project applications. The distance between turbines varies across the site for a variety of reasons, but the minimum distance between turbines as currently modeled is 2.51 rotor diameters. By having turbines closer together, the disturbance to landowners is minimized by shortening the lengths of access roads and collection cables. The sound from the turbine dissipates logarithmically with distance squared from the source, with every residence modeled at the site to be below a maximum sound level of 45dBa, the standard nighttime value determined by the World Health Organization and NYSDEC. At 15 rotor diameters the sound would be less than 35dBa, a value lower than the average ambient outdoor sound level.
110	How well does modeling agree with actual noise results? How can you mitigate when it's wrong?	Mitigation is covered in Sections 2.4.4 and 2.4.5 on page 33 of the PSS
112	Can you make a plot of human threshold at each frequency and the sound spectra expected for Lighthouse Wind?	Assume this question means "human audibility." The audibility threshold of each octave band will be provided in the Application, along with the expected sound spectra for Lighthouse Wind at each sensitive receptor.
113	What about dBA sound issues?	dBC weighted sound levels will be provided at each sensitive receptor in the Application.
114	Ambient nighttime background noise may be as low as 20-25 dBA. However, wind at higher elevation will result in turbine operation. NY State Dept of Health has stated that noise level increases of 6-10 dBA can be annoying. How will you mitigate this nuisance to surrounding property owners?	Mitigation is covered in Sections 2.4.4 and 2.4.5 on page 33 of the PSS

Question #	Question	Answer
116	45 dBA for 30 days per year- what about the other 335 days?	If 45 decibels is the maximum, the other days of the year will be less than that. The hypothetical graph showed sound levels over the course of a year. I would expect the typical range of a turbine to be more than 10 decibels from the loudest sound, which is what we modeled and what we calculate to get to that 45 or less, so it could be anywhere from 35 to 36 to 37. The sound level cannot be over 45 any of the 365 days per year.
118	Is 3 dBA equal to a sound that is three times louder?	No. A change of 10 dBA (for example from 40 dBA to 50 dBA) would seem about twice as loud to the human ear.
119	As I looked at the sound level graph, there were many points where the sound level was more than 35 to 40 decibels. How much time at 40 decibels? 40 is loud!	It is unclear what sound level graph the question refers to since no sound levels for Lighthouse Wind were presented at the 10/2 forum. For perspective on sound levels, the World Health Organization (WHO) notes that sound levels outside a house should be 45 dBA to prevent sleep disturbance.
121	What does 45 dBA sound like? Is it louder than a whisper?	Yes it is louder than a whisper. If we are all quiet in a room and nobody talks, and we just listen to the HVAC system and nothing else, that is between 48 and 50 decibels. The highest sound level will be less than that, but it is louder than a whisper.
122	Are noise levels measured from the turbine blades? How is it different than the noise from the turbine (nacelle)?	The sound that is measured on the ground or at someone's house is the total sound, that is the sound from everything, the three blades spinning which is the aerodynamic sound, any mechanical noise that would be coming from the turbine from the nacelle (which is generally very minimal these days, they are very well insulated and very well controlled). What we measure with our sound instrument is everything from the turbine, everything that could possibly be from it. It is measured from the ground, typically by a house.
123	Why are you only addressing decibel level of non-participating properties? Aren't decibel levels for participating houses much higher (i.e. 60-70 dBA)?	Every property, whether they are participating or non-participating will be modeled as part of the application. The limit we are talking about of 45 decibels is at a non-participating residence. At a participating residence, there will also be a limit. It is higher, it has generally been 55 decibels in other applications. But participating residences will be modeled and submitted as part of the application.
124	Why should anyone believe your sound studies will be accurate when around the world they have proven to be false predictions?	Sound level modeling conducted using appropriate inputs has proven to be accurate, and those will be used for this project. Ultimately the project will need to prove their sound modeling accuracy through post-construction compliance testing.
125	What do I tell my neighbors who are concerned about the sound the turbines might have?	You should tell them the accurate truth. The project is being designed so that the sound limit at the exterior of residence will not exceed 45 dBA. As an example, a babbling brook and a home computer produce sound levels of approximately 40 dBA, and light traffic and a refrigerator produce sound at approximately 50 dBA. While operating, people will occasionally hear the wind turbine machinery from the generators, or the sound of the blades moving through the air. However, at 45 dBA outside of residences, the sound will not cause significant disturbance.
126	How would you be able to test the sound generated by multiple turbines to be certain they would not exceed 40 dBA?	Post-construction sound level testing will be conducted with all wind turbines running simultaneously.

Question #	Question	Answer
127	It looks like our house will have 9 proposed turbines within about a mile of us. How do you know what the total sound will be? Where can we go to hear what that sounds and feels like with the same size turbines?	The way the modeling is done is that we assume all 47 turbines, including the 9 around the questioner's house, are operating at full production simultaneously. We assume all 9 of those are producing their highest possible sound levels and calculate those at every residence in the study area, including the questioners. There are a number of turbines in New York in the permitting process that are in advance to this project. This turbine is a more advanced model than you will see at the existing operating projects in New York. At the same time, this is actually a much lower noise generating model than the previous. With every generation of these turbines being created, the technology is improving, the sound levels are going down, blade technology is improving, including putting serrated edges on the blade which reduces the amount of noise. The Vestas V150 4.2, which is the current turbine considered for this project, has been submitted in other permit applications in NY, most recently the Bluestone project is looking at that turbine as well. I have seen the sound spec sheets and I can confirm that the sound levels from this turbine, even though it's larger than some of the existing turbines in New York, because of the technology, the serrated edges that Vestas puts on these now is actually quieter than the older turbines. Even though you can't see a 4.2 operating right now in New York, the sound profile is quieter than some of the older ones.
128	Is the worst case scenario map an average over time or is it just a peak sound?	It's generally what you would expect to see if you measured for an hour or less. It is the worst case wind blowing at that time. The sound level from the turbine once it reaches a certain wind speed isn't going to increase anymore. You may get increased sound from a gust of wind itself, which may increase the sound level due to the wind gust but not from the turbine sound. So the map that I showed before as an example and the ones that you will see in the Article 10 application will be the short term highest sound levels.
129	Sound travels far and wide on the Great Lake Plains. There are no mountains or rolling hills in this area to dampen the audible or infrasounds from wind turbines. How will Apex protect our inhabitants from this noise pollution?	Mitigation is covered in Sections 2.4.4 and 2.4.5 on page 33 of the PSS
131	What infrastructure is required to install towers? What is the impact on noise level? I have read it increases 4x.	This is covered in the PSS on pg 28-29 in section 2.4.2.1. There are sound levels of construction machinery sited from U.S. Department of Transportation (USDOT) (2006). Required as part of Article 10 process is a construction noise analysis. We will take that information and we will do sound level calculations of the diesel powered construction equipment at various locations within the project area, on the nearest homes to the construction of those turbines and roads, etc. We will have expected construction sound levels as part of the application.
134	Please name the wind projects you and your company have "rejected"	Apex Clean energy does not reject or approve energy projects. Our process explores the viability of a project with an effort to secure appropriate lands with either wind or solar resources, interconnection to the local grid, and needed permits required to build such projects. Not all concepts initiated by Apex have made it through the complete process resulting construction. The process is complex and there are many factors that may delay or stop a projects development. There are too many examples to name here.
135	What is the maximum audible sound level in the house? Why don't you have to comply with town laws (i.e. setbacks)?	r
136	The W.H.O will be issuing new sound guidelines on October 10th that do include turbines. Will you abide by them?	These Guidelines are currently being evaluated. Appropriate sound level limits will be imposed through the Article 10 process.
147	Why do you deny that vibroacoustic disease exists?	The independent, unbiased literature found that this is not a real disease caused by wind turbines (Wind Turbine Health Impact Study: Report of Independent Expert Panel, January 2012, Prepared for: Massachusetts Department of Environmental Protection, Massachusetts Department of Public Health).

Question #	Question	Answer
209	Potential v150 turbines may be quieter, but will the other potential turbine models be quieter?	All wind turbine models under consideration for the project will be evaluated for compliance with the sound criteria.
210	I understand new turbines and serrated edges can cut down noise. But the infrasound from change in air pressure as blade passes tower (3x per turn) cannot be heard but can be felt. Why was no mention of this effect on body?	Infrasound is covered in Section 2.4.2.2 on page 29 of the PSS.

Question #	Question	Answer
137.A	How many sections of Somerset's local laws are violated by the layout as currently envisioned? How about Yates town law?	There are a number of unreasonably burdensome sections of the towns of Yates and Somerset's laws that the project, as designed, will not be able to adhere to. If an Applicant cannot comply with substantive provisions of local laws, the Public Service Law requires the Applicant to seek a waiver of local laws from the State Siting Board, and under the law, the Board has been granted the authority by the State Legislature to waive certain local laws. Details regarding which sections of the local laws that the Applicant seeks a waiver for will be identified in the Article 10 Application, Exhibit 31.
137.B	How many local laws does this project currently violate?	
137.C	Do the Towns of Somerset and Yates Wind Ordinances in conflict with the project's developer right to due process since they passed these laws twice long after the project was commenced?	This question involves potential state and federal constitutional rights that are potentially beyond the scope of this Article 10 proceeding and process for a Certificate to construct and operate the project.
138.A	Do you believe Article 10 should pre-empt home rule?	Article 10 is the current state law, and the projects that are going through the Article 10 process don't have the opportunity to either opt in or opt out. It is a mandatory provision of the public service law that if a proposed project is 25 megawatts or greater in size, it has to go through the Article 10 process. Up until the time that the legislation changes or something else happens, there is really no choice in the matter.
138.B	Has Article X been tested constitutionally, given NY State's "home rule"?	If the question is "Has there been a challenge filed against Article 10 in a civil court challenging its constitutionality?," then the answer is no.
140	Since both towns have opted out of tax code 487, how will the turbines affect landowners' assessments?	The opt out of Real Property Tax Law 487 does not impact landowners' assessments.
141	Where can we go to see a similar wind farm with the proposed sized turbines?	There are a number of projects in New York that have recently submitted permit applications, or that are submitting permit applications with turbines at a similar scale as those proposed for Lighthouse Wind. Some of these projects should be built within the next one to three years. At this time, the Hancock Wind Project in Hancock County, Maine, is probably the closest project with similar sized turbines. This does not include any consideration for Canadian projects.
142	Article 9 of the constitution of New York specifies that the land use is dictated by the citizens of any particular area. This is the so-called homerule amendment. As the constitution of the State of New York is the supreme law of the land and a referendum taken in the Town of Somerset indicates the people of Somerset do not want the proposed wind farm here, how can Apex continue its pushing for location of its wind project in Somerset?	Lighthouse Wind is following the New York State Article 10 process and all activities conducted by the project in the past or future will be in compliance with the New York permitting process and the state constitution.
144	During the public comment period on stipulations, a number of commenters requested acknowledgment of receipt of their email or letter to you. Why did no one receive such an acknowledgement.	We did send receipts of email; those can be found in the project's March/April email log.
145	Maple Ridge is attempting to have the turbines classified as "personal property" exempt from property taxes. What is your position in this matter?	Lighthouse Wind and Apex Clean Energy do not have a position on the tax assessment of the Maple Ridge Project. Each project and host community may have unique interests in regards to tax assessment and agreement.

Question #	Question	Answer
102	Do you have medical experts on staff?	No.
146	Why do you think that we want to deal with the infranoise that affects our health?	Infrasound is currently present in almost all parts of life. You and your body are subject to high levels of infrasound when you ride in your car, use machinery such as a lawnmower, are in the presence of road traffic, are on or near a beach with waves and surf, or are in the presence of your son or daughter's music with the bass turned up high.
147	Why do you deny that vibroacoustic disease exists?	<p>As noted, infrasound is currently present in almost all parts of life. You and your body are subject to high levels of infrasound when you ride in your car, use machinery such as a lawnmower, are in the presence of road traffic, are on or near a beach with waves and surf, or are in the presence of your son or daughter's music with the bass turned up high. It would be reasonable to conclude that if infrasound from wind turbines, which is no different from infrasound from other sources, causes health effects, then people should already be experiencing such effects. However, numerous empirical health studies have shown no evidence that infrasound from wind turbines cause negative health effects, and that sound and infrasound at moderate to low levels does not cause health effects. The independent, unbiased literature found that this is not a real disease caused by wind turbines (Wind Turbine Health Impact Study: Report of Independent Expert Panel, January 2012, Prepared for: Massachusetts Department of Environmental Protection, Massachusetts Department of Public Health).</p> <p>Studies have demonstrated that noise above 45 dBA can cause annoyance and sleep deprivation. Sleep deprivation can cause health effects, but not infrasound or low to moderate level sound directly. Because Lighthouse Wind is being designed to operate within limits where the nighttime sound level is maintained below 45 dBA outside of nonparticipating residences, we do not expect there to be any health effects from sound generated by the project.</p>
148	There are reports from around the world on the negative health effects realized by people near industrial wind turbines. Even the World Health Organization recognizes that there are problems. Why aren't health concerns on tonight's agenda?	
149	I have been to Sheldon- it was not good. What health guarantees will you offer to people already susceptible to side effects of infrasound? What compensation do you offer people who develop vibroacoustic issues?	
150	Health issues are very important to me. Why is Apex resisting a complete health study?	
151	Have any health studies been conducted on how wind turbines affect the health of humans and animals?	A successful baseline health risk assessment program must first have a toxicology or epidemiological basis for determining a potential health impact. Government- and university-sponsored studies around the world have repeatedly confirmed that modern wind turbines pose no threat to public health. Over 17 independent reviews of the existing science on wind energy and health have reached the same conclusion: "There is no evidence for a set of health effects from exposure to wind turbines that could be characterized as a 'Wind Turbine Syndrome.'" To date, we are unaware of the Niagara or Orleans County Boards of Health making a contrary determination and finding a causal connection between wind projects and health effects.
152	What health impact study will be done on the number and size of turbines prior to siting?	
153	Why do you cling to outdated studies to support your claims of no significant health impacts? When studies claim "inconclusive evidence", you often interpret this as supporting your theories...	
154	Why do you continue to deny negative health impacts on neighboring residents?	
155	Why are you avoiding the discussion of health impacts at this lecture?	

Question #	Question	Answer
156	Your health expert Chris Ollson (illegible) favored pre-construction health studies before he was hired by you. Your thoughts? What changed?	We are not aware of Chris Olson's preference on this matter.
157	Do you plan to ignore the call for pre-construction health studies from the Niagara and Orleans Boards of Health?	A successful baseline health risk assessment program must first have a toxicology or epidemiological basis for determining a potential health impact. Government- and university-sponsored studies around the world have repeatedly confirmed that modern wind turbines pose no threat to public health. Over 17 independent reviews of the existing science on wind energy and health have reached the same conclusion: "There is no evidence for a set of health effects from exposure to wind turbines that could be characterized as a 'Wind Turbine Syndrome.'" To date, we are unaware of the Niagara or Orleans County Boards of Health making a contrary determination and finding a causal connection between wind projects and health effects.

Question #	Question	Answer
35	What is going to happen in 20-25 years at the end of the wind turbine's life? Is money set aside to remove them at the end of their life?	Based on current technology, the typical lifespan of a modern wind turbine is approximately 30 years. At the end of a turbine's useful life, turbines will be decommissioned, which means they will be removed from the facility site. A detailed decommissioning plan, including provisions for financial security to ensure funds are available to decommission turbines, will be included as part of the Article 10 application in Exhibit 29. The decommissioning plan and financial security will be mandated by the Siting Board as part of the Certificate Order if it is issued.
139.A	A recent flyer sent out by Apex detailed the decommissioning process. Have any turbines been decommissioned in NY state as of this date?	No.
139.B	How many industrial wind turbines have been decommissioned and at what cost?	Apex Clean Energy does not track this information.
143	Are there any industrial wind turbines that have reached a useful life of 30 years?	Yes.
203	How many wind farms have Apex or Lighthouse Wind decommissioned?	The projects that Apex Clean Energy has developed and built are all still currently operating and producing clean energy for U.S. citizens.
204	If the foundation is 11 feet deep why are you restoring the land to only 4 feet deep at the time of decommissioning?	General industry practice and the acceptable standard set by New York is to remove all facilities to four feet below the surface; doing so allows the land to be used for other general purposes such as agriculture or tree growth without conflict.
205	When a turbine is damaged or decommissioned what happens to the components? How much of an IWT can/will be recycled? How much will be sent to a landfill? Who will be responsible to cover the real cost? How will the ground be rehabilitated? How many IWTs has Apex seen through to decommissioning?	<p>At the end of a turbine's useful life, turbines will be decommissioned, which means they will be removed from the facility site. A detailed decommissioning plan, including provisions for financial security to ensure funds are available to decommission turbines, will be included as part of the Article 10 application in Exhibit 29. The decommissioning plan and financial security will be mandated by the Siting Board as part of the Certificate Order if it is issued.</p> <p>The financial security is pledged for the lifetime of the project, so that if we as a company ever go away, the financial resources needed to decommission that project still remain. Per the Certificate Order, the decommissioning plan needs to be revisited every few years, and any changes in market forces, cost of materials, cost of labor, or expected cost of decommissioning are updated and, if needed, the financial security that goes along with the decommissioning plan is updated as well. The decommissioning itself is just the reverse of the construction process. Cranes would be brought in and turbines would be taken down piece by piece and then hauled off. All component materials are removed to a depth of four feet below the surface. The land is then restored and can be used for other purposes. Unless a landowner wanted to keep them, the access roads would come out; the stones would be taken out and de-compacted and it could be farmed over.</p> <p>Component materials are largely recycled and have value in the scrap commodities market, including the towers, machinery, copper wiring, and more.</p>
206	Can you please reiterate what happens to a turbine/tower at the end of its service life?	

Question #	Question	Answer
17A	How will non-lease property owners be compensated for reduced property values?	We are confident that all residents in the towns of Somerset and Yates will experience the benefits of the wind project through local investment and tax payments. There is no agreed-upon conclusive evidence that wind projects cause a reduction in property values. There is very definitive proof that property values are negatively affected in areas with high tax burden, low income, decline in business and reduction of business investment, declining schools, and aging populations. All of these trends are present in the towns of Somerset and Yates. We know that the investment from the Lighthouse Wind project, with proper local involvement and fiscal management, can be a potential source for reversing some of these trends.
158	Are the windmills taxable property? Who will pay this tax? The property owner or Apex?	Based on our agreements with the landowners, we verify any additional taxes assessed onto a property that are specifically due to the project and/or any facilities that we put onto the property; in those cases, we are responsible for those additional taxes. We are not responsible for the base-level taxes of the real estate itself that already existed. But we are responsible for any added assets; the landowner is not responsible for those additional costs.
159.A	Do you plan to guarantee property values after turbines are up?	It is difficult to look at any one area and determine what causes property values to go up or down. There are so many different market forces. Trying to identify one specific activity or business that is responsible for increases or decreases of property values is typically impossible with the variables and market forces both inside and outside of the community. One of the things we do know that is absolutely true is that a healthy community continues to have highly valued properties. In order to have a healthy community, you need community renewal investment. A community can't be stagnant; it needs to have a diverse tax base and diverse businesses and jobs to be healthy. It needs to have low and consistent taxes, healthy infrastructure, and a good educational system. This project is a fantastic vehicle to help accomplish all of those goals in both of these communities, and if we focus on those goals, then we can partner with you to make sure this area is a high-value community in which to live and work.
159.B	If you truly believe an industrial wind farm will not negatively impact our property values, then why won't you sign a property value guarantee?	
159.C	If industrial wind turbines don't devalue property that they are near, why doesn't Apex guarantee what my house is assessed for if I decide to sell?	
160	Do you know that property values drop significantly with turbines in sight? Why should we take a hit on our property when we sell?	
161	The property value research was done by Lawrence Berkley, a far left leaning university, and said there is no loss in property values. Forbes, a financial magazine, featuring articles on finance, industry, and investing, states after researching real estate markets there is a property value loss of 25%-40%. Both studies are five years old, what is the current trend? Or what current studies have you done?	Regarding property value guarantees, the concept sounds reasonable on paper, but it is highly flawed in practice, as there is no single issue or market force that determines changes in property values. We all know that it would be inappropriate to ask town officials to guarantee property values in light of the policy decisions they make, or to ask all the local farmers to guarantee that the use of manure does not retard property value increases.
162	When will we get details on exact tax savings for my taxes?	We hope to engage the communities in discussions about community benefits and tax payment agreements in the coming months. The result of this process will be to provide all citizens with a clear understanding of how the project will benefit everyone directly. We encourage you and all citizens to be involved in that planning process to be sure that the investment we bring to the area have the effects that you feel would be most beneficial, whether those benefits are tax savings or are realized in another way.
163	You recently sent out a postcard claiming that wind turbines do not negatively impact property values, and based on that conclusion on one study conducted by Mr. Ben Hoen and others at the Lawrence Berkeley National Laboratory. What are the authors' credentials in property appraisal and valuation? I recently gave you a listing of some 20 to 30 research articles which counter his claim. Do you discount all those reports because they do not support your position? I have a report by a credentialed property appraiser which calls the LBNL report horsesh**.	There have been a number of studies performed on this issue. Many of the studies, including those referenced in the question, were performed with a preconceived bias to demonstrate a negative impact on property values. Review of the independent studies that have been performed using empirical data demonstrates that there is no conclusive evidence that parties can agree on that demonstrates an impact on property values specifically from the presence of a wind project.

Question #	Question	Answer
164.A	Who is selecting the questions being responded to tonight?	Rita Graham was the moderator for the Oct 2 event. She is the owner of COLEMAN-GRAHAM, a business in Southwestern Pennsylvania that provides meeting facilitation, mediation and leadership training services. Rita is an independent contractor with 35 years of experience in environmental and agricultural matters.
164.B	How do you determine which questions to ask tonight and which ones not to ask?	First, the questions needed to be legible. We grouped together similar questions, then asked those that were posed the most. We tried to give the panelists some hardball questions. All the questions will be answered, but we could only select some to be asked at the forum. We tried to make them as representative as possible.
165	Please provide the qualifications of the moderator.	Rita Graham was the moderator for the Oct 2 event. She is the owner of COLEMAN-GRAHAM, a business in Southwestern Pennsylvania that provides meeting facilitation, mediation and leadership training services. Rita is an independent contractor with 35 years of experience in environmental and agricultural matters.
166.A	Are all the slides presented tonight to be available to the public? Where?	The slides will be available at www.lighthousewind.com .
166.B	Can the slides be made available to the public?	
166.C	Will you share your PowerPoint presentations with is online, please? Thank you for the handouts, but could you please share your presentation from tonight?	
167	How do we access the video that you made tonight so we can, as you said, show it to our friends and neighbors?	The video will be made available at www.lighthousewind.com .

Question #	Question	Answer
168	Other than working for Apex, what are the qualifications of each member of tonight's panel in the areas in which they are answering questions?	<p>Paul Williamson is the Senior Development Manager for Lighthouse Wind. Paul joined Apex Clean Energy in 2015 and has managed projects in Maine and other areas of the Northeast. Paul is a native resident of Maine and has worked in the wind industry since 2008. His prior experience includes seeking economic growth areas for companies and employees through the nonprofit Maine & Ocean Wind Industry Initiative (MOWII), and working with Maine's workforce and economic development systems to enhance economic and employment development in the state. Paul's passion encompasses the opportunity to enhance job growth and economic opportunities throughout the Northeast.</p> <p>Dave Phillips is the Vice President of Environmental for Apex Clean Energy, where he oversees environmental-related activities for Apex's land-based wind and solar projects. Dave leads a coordinated effort with Apex's development, business and asset management teams to carefully select greenfield sites, support the environmental aspects of project operations, sales and acquisitions and bring projects to market that are fully compliant with state and federal regulations. Important aspects of his role at Apex include overcoming permitting obstacles with respect to eagles and listed species, and working proactively with consultants and regulators to find reasonable solutions for studies, impact avoidance, mitigation and permitting. Dave is also a member of the board for the American Wind Wildlife Institute and serves on the Wind Wildlife Research Fund Advisory Council.</p> <p>Tracy Butler is the Director of Civil Engineering for Apex Clean Energy where he manages the civil engineering design and optimization of Apex's utility-scale wind and solar projects. This work consists of overseeing all aspects of portfolio-wide civil engineering from the development stage through construction and into operations.</p> <p>Steve Wilkinson, P.E. is a Senior Project Manager with Fisher Associates, P.E., L.S., L.A., D.P.C. where he manages the civil engineering and permitting for wind projects throughout the country - from concept to construction support. With more than 20 years of experience in civil engineering, his expertise in civil/site design, stormwater analysis, permitting and transportation design fit the uniqueness of wind power projects. Steve Wilkinson is a licensed engineer in seven states.</p> <p>Robert O'Neal is a Managing Principal at Epsilon Associates, Inc. with over 30 years of experience in the areas of community noise impact assessments and meteorological data analyses. He is a Certified Consulting Meteorologist (CCM) by the American Meteorological Society and Board Certified through the Institute of Noise Control Engineering (INCE). Mr. O'Neal's noise impact evaluation experience includes design and implementation of sound level measurement programs, modeling of future impacts, conceptual mitigation analyses and compliance testing. He has been involved in assessing noise from wind projects for over 14 years, and has presented the results of wind turbine low-frequency noise and infrasound research at national conferences and to peer reviewed scientific journals. Mr. O'Neal has provided expert witness testimony before state and local boards, courts of law and</p>

Question #	Question	Answer
		<p>adjudicatory hearings.</p> <p>Jim Muscato is at the forefront of New York energy issues, including siting and development strategies for energy projects. With experience developing wind, solar, hydroelectric, biomass and electric and gas transmission projects, as well as emerging technologies, such as battery storage systems and distributed generation technologies, Jim leads the energy division at the law firm of Young Sommer. Over the last decade, his experience has resulted in the permitting of over 1200 MW of renewable energy generation in New York. Jim also provides legal services and advice regarding more traditional forms of commercial development, including brownfield and pollution cleanup programs. He is well-versed both in the requirements of key environmental and energy permitting programs and in the nuances of the New York environmental and energy review process under such laws as the New York Public Service Law ("PSL"), Article 10, Article VII, the New York State Environmental Conservation Law ("ECL"), and the State Environmental Quality Review Act ("SEQRA").</p>
232	Thank you to the moderator-you did a great job!	Thank you for the comment.

Question #	Question	Answer
40	Why do other agencies, health departments, migratory bird agencies, for example, disagree so strenuously with your data?	To our knowledge, there are no state agencies that have fully reviewed and disagreed with the data that has been gathered for the Lighthouse Wind project.
111	Why have the Falmouth Mass Turbines been shut down?	Apex Clean Energy has no direct involvement wind energy projects in Falmouth, Massachusetts.
215	Re: Incentives to energy producers- How about on a mw generated basis? How does that compare?	The Renewable Electricity Production Tax Credit (PTC) is an income tax credit of 2.3 cents per kWh for electricity from wind turbines. However, this tax credit is being phased out and only a portion of the credit may apply to the project when it is built. Unlike a grant or direct payment to wind energy companies, the PTC reduces income tax for wind project owners based on the amount of energy produced in the first 10 years of operation. This savings allows a project to charge lower rates for its energy. Thus, like all energy incentives, the PTC helps save money for consumers while also creating American jobs in construction, turbine component manufacturing, supply industries, trucking companies, and more.
216	Are you planning to sell the power out of state? How does that help our towns?	<p>The true benefit comes to the local community that hosts the project through the investment in the local economy from the project. Imagine a new factory opened to make widgets in Somerset or Yates. The factory sells the widgets to customers from all over. The income from those sales creates local jobs, and the factory pays taxes that are part of the tax base to provide services to the citizens. The factory makes purchases that support local businesses. New businesses are created to support the factory. The factory also supports local events, causes, and financial needs through a variety of investments.</p> <p>A wind power project is essentially a factory that is creating electrons. Those electrons are sold around the state. The proceeds from that sale comes back to the host community in the variety of forms noted above. And here is the best part: it does not cost the community anything to receive this investment.</p>
224	Where will whatever electricity is generated go? Will it stay in Somerset or Yates?	
217	When not moving (which I see a lot)-does it generate power?	A wind turbine only generates power when the wind is moving the blades. For the Lighthouse Wind project, that will be approximately 35% of the time.
218	Are taxes paid guaranteed over time?	The old saying is, "The only things in life that are certain are death and taxes." The project will be required to pay taxes as long as it is in place. If the towns enter into an agreement with the project over community benefits and taxes, the towns will have a stronger say in what types of payments are made over time. This will create longer-term financial certainty for the towns as compared to not having any agreement at all.
219	What is he expected Capacity Factor? Is that a gross factor or net of downtime? What is expected up hours per year? What is the expected average output from the facility during the months of July and August, when demand for electricity in NY State is highest, and wind speeds are lowest?	The net capacity factor will be approximately 35%. We cannot share the output estimates for July and August at this time.
220	Why do you give the Town of Somerset wind data from the MET towers at 20 meters but not 60 meters? Why is one more confidential than the other? Revealing information to competitors can't be a valid argument since Apex has locked up all the willing property owners.	We provide the met tower data to the town of Somerset per the special permit requirements. The higher-level data is confidential and does have value to competitors considering projects within the region.

Question #	Question	Answer
221	What is your expected wind speed extrapolation factor from 20 meters to hub height? On what surface roughness factor is that based? What wind class is found in the project area?	This question is beyond the scope of the information prepared for and presented at the October 2 meeting and the subject matter experts that were employed for this meeting. We may address such questions at a future date should it be applicable to the interest of public information about the project.
222	What is the Wind Stability in the project area? How does it vary throughout the year?	This question is beyond the scope of the information prepared for and presented at the October 2 meeting and the subject matter experts that were employed for this meeting. We may address such questions at a future date should it be applicable to the interest of public information about the project.
223	How can these turbine's supply a large amount of power when you have hot days and need immediate power to this area? As with the power plant-you can start it up and get immediate power.	<p>Wind projects are part of a number of generation technologies that make up the New York energy supply. Each energy resource has valuable attributes. Although wind energy is variable, when it is operating it provides the opportunity to reduce the use of fossil fuel generation, which reduces ratepayer costs and reduces carbon emissions.</p> <p>An example of the value of having different energy resources available would be a typical home that has an oil furnace and a wood stove. The homeowner saves money on oil when operating the wood stove. However, the oil furnace provides heat when the homeowner is away, while the wood fire goes out.</p>
225	As a meteorologist you know that turbines array creates non weather (just look at weather maps) radar maps south of Buffalo. What is the current thinking of weather effects from this project?	This question is beyond the scope of the information prepared for and presented at the October 2 meeting and the subject matter experts that were employed for this meeting. We may address such questions at a future date should it be applicable to the interest of public information about the project.
226	What is the expected wholesale cost and retail cost per megawatt from this facility? What is the expected dollar impact on a 700 mW Hr monthly bill to the consumer? (Please don't skirt the issue by hiding behind LBMP discussion. You must have had a number in mind as part of your project analysis. What is that number?)	<p>Wind is a price taker because there is a zero-fuel cost to generating--energy is injected to the grid and it receives the wholesale price available at the time of generation. Because wind adds to the available generation, independent of price, it has the effect of lowering the LBMP that would exist absent the wind generation. Several studies have been completed to demonstrate this effect. In addition, Article 10 requires a production cost modeling analysis (Exhibit 8) that will analyze the impact of the specific projects on nearby LMP price level. Retail power pricing is a function of underlying wholesale prices; however, it is not necessarily direct because retail providers may engage in differing term contracts, so the wholesale price will not track directly with retail. It is difficult to say what the absolute impact of the project would be on retail prices beyond that "in theory" it should serve to lower them. Confirmation of that would have to come from the Exhibit 8 analysis.</p>
227	Since wind turbines are subsidized in order to reduce carbon, how much carbon will Lighthouse Wind reduce in the atmosphere? Does this account for the fossil fuel that will be used to produce electricity when the wind does not blow?	The best resource to answer this question can be found at https://cleantechnica.com/2014/05/07/wind-power .
228	What is the net gain projected profit for Apex Energy over five years 2023-2028 upon completion of the project?	This question is beyond the scope of the information prepared for and presented at the October 2 meeting and the subject matter experts that were employed for this meeting. We may address such questions at a future date should it be applicable to the interest of public information about the project.
229	What type of maintenance is required and at what cost during the useful service life of the turbine?	Wind turbine maintenance includes typical generator services such as periodic fluid changes, electrical component replacement, and blade repairs if damaged by lightning. A crew of wind turbine technicians will be on a schedule to routinely provide service to all the turbines within the project over a managed service cycle. Wind turbines are expected to operate for 30 years.
230	Can you quantify (photons/cm2-s) the amount of light deposited into the local night sky by this turbine array? Are the tower lights narrow band? Do you have the spectrum of these lights?	This question is beyond the scope of the information prepared for and presented at the October 2 meeting and the subject matter experts that were employed for this meeting. We may address such questions at a future date should it be applicable to the interest of public information about the project.

Question #	Question	Answer
231	I live on the shore of Lake Ontario and have a clear view of dozens of IWTs that line the Canadian Southern Shore in Ontario. I clearly see the red flashing lights on most nights of the year. The lights from this project will pollute our tranquil scenery for many miles beyond the project boundaries. The Niagara Escarpment will be changed forever.	Thank you for your comment.
233	How are you obtaining a "certificate of need" when we don't need the energy here? Niagara Falls is renewable energy and only operating at 60% capacity. In addition, transmission/grid is unable to deliver this where it is needed-downstate.	New York's electricity landscape is continually evolving, as is energy policy. Since the first days of electricity, old generation resources have been retired, and new generation resources have come online, all while demand also evolves. New York grid operators and policymakers are constantly planning for these changes. The Lighthouse Wind project is responding to the current demands within the market for clean, low-cost renewable energy. The certificate of need will be provided if Lighthouse demonstrates that it can meet the current needs.
234	On the reverse side of this card is a Doppler radar image from a clear but windy day. The radar blips you see are from wind turbines in Wyoming County, NY. -Can we expect similar radar interference from Lighthouse Wind? -Can this interference be mitigated?-At what cost and who pays for it?	The Lighthouse Wind project permitting process will include studies on the effects of radar systems to ensure that the project does not have unmanageable effects on radar systems. This includes a review from the FAA, Department of Defense, and NORAD.

Question #	Question	Answer
235	What is the percent reduction in global carbon emissions resulting from this project? How about on a national or NY state basis? How about if you displace hydro power with Lighthouse Wind power? By how many degrees is this project expected to reduce global warming?	<p>According to a report on Wind Energy by the Intergovernmental Panel on Climate Change, a scientific intergovernmental body under the auspices of the United Nations, many studies report the energy payback time of wind power plants (i.e., the amount of time a wind power plant must operate in order to produce an equivalent amount of energy that was required to build, operate, and decommission it). The median reported energy payback time for wind power plants is 5.4 months, with a 25th to 75th percentile range of 3.4 months to 8.5 months.</p> <p>The Global Wind Energy Council (GWEC) finds: "It takes a turbine just three to six months to produce the amount of energy that goes into its manufacturing, installation, operation, maintenance and decommissioning after its 20-25 year lifetime. During its lifetime a wind turbine delivers up to 80 times more energy than is used in its production, maintenance and scrapping. Wind energy has the lowest 'lifecycle emissions' of nearly all energy production technologies."</p> <p>In the U.S., electricity production accounted for 31% of the carbon emissions in 2013; 34% of that electricity production is used for residential and commercial buildings. Making the energy that is used to power our homes is an important contributor to carbon emissions and the entire carbon footprint of the U.S.</p> <p>According to the U.S. Environmental Protection Agency (EPA), "Total U.S. energy-related emissions of carbon dioxide (CO₂) by the electric power sector¹ in 2014 were 2,043 million metric tons, or about 38% of the total U.S. energy-related CO₂ emissions of 5,404 million metric tons in 2014."</p> <p>CO₂ emissions from U.S. electricity generation by source, 2014</p> <p>Source/Million metric tons/Share of total</p> <p>Coal/1,562/76%</p> <p>Natural gas/444/22%</p> <p>Petroleum/23/1%</p> <p>Other/11/<1%</p> <p>Total=2,043</p> <p>Source: EPA</p> <p>The "Other" category represents "CO₂ emissions from the combustion of miscellaneous waste materials made from fossil fuels and by some types of geothermal power generation." Wind energy doesn't even make the list.</p> <p>One of the ways the EPA suggests we reduce our carbon emissions from electricity is by "using renewable energy sources rather than fossil fuel to generate electricity." This can be done by "increasing the share of total electricity generated from wind, solar, hydro, and geothermal sources and from certain biofuel sources."</p> <p>If you are looking to reduce your carbon footprint and the carbon footprint of our country, the opportunity is right at everyone's fingertips in Orleans and Niagara County because the Lighthouse Wind project will produce enough power for 53,000 New York homes. Let's all pledge to reduce our carbon footprints by supporting the development of Lighthouse Wind and other New York State wind energy projects.</p>
236	Your diagram shows turbines very near to Lower Lake Rd. How can you do that to the shore?	The Lighthouse Wind project is being designed with appropriate safety and environmental setbacks from all features to allow for responsible operation, including Lake Ontario.
237	Do lease payments help farmers keep their farms?	Lease payments are a source of diverse income for farmers. Each turbine takes up a very small amount of space, allowing farmers to continue to use their lands for current practices. Because of this, wind energy and agriculture have become very compatible economic partners throughout rural part of the country.
238	Are the turbines equipped with fire detection and suppression systems? What is extinguishing agent is used? -Are the suppression systems equipped with redundant back-up? Are these redundant back-up systems manually or automatically activated?	Turbines are equipped with fire suppression systems. This is covered in the PSS on page 21, section 2.3.2.2.4, and will be covered in more detail in Exhibit 15 of the Certificate Application. You can view the Vestas Fire Prevention Systems brochure at: http://nozebra.ipapercms.dk/Vestas/Communication/Productbrochure/TurbineOptions/FirePreventionSystems/?page=2

Question #	Question	Answer
239	How many panel members and Apex employees live within 5 Miles of a wind turbine?	Jessica Walsh lives about 3.75 miles from a wind turbine. Carmen O'Keefe is 6.5 miles from a wind turbine. The turbines are from the Steel Winds project in Lackawanna, NY. Paul Williamson lived approximately 3/4 of a mile from the Fox Island Wind project for 3 fall months.
240	Who do we hold accountable when we have legitimate claims after the project is active? Due to illness, destruction of roads, property and wildlife, quality of life?	The project will have an office with full-time staff once operational and will be required to meet New York laws and all of the requirements set forth in the final permit certificate.
241	When the power plant @ Barker was built, the underground grids attracted large electrical fields and when we had lightening storms, the created severe lightening strikes, many more and very strong. What are you going to do to mitigate some effects here?	Grounding grids are installed to safely direct any lightning strikes to the ground, thus preventing damage to the facilities. They do not induce lightning.
242	What will happen to AES Somerset upon completion of the project? Will it be rendered obsolete?	The Somerset Plant has been decreasing production in recent years. The trend suggests that this may continue. This is largely due to a number of energy market factors, and Lighthouse Wind will not likely have a direct impact on the future operations of the plant.
243	There has been no mention of the faults running under the shoreline of Lake Ontario. The coal plant was changed from nuclear due to these faults. Has this ben looked at? What about the effects of the cement foundations and engineering etc. on the ground?	The foundations for wind turbines will only be approximately 11 feet deep. At this depth the foundations will have no impact on geological fault lines.
244	Some people say that much smaller kinds of renewable energy could solve climate change without building there big turbines. What is youth answer to this opinion?	Our society will need to employ numerous clean energy resources and changes in the public uses of energy in order to effectively address climate change. The UN recently published a report noting that the global community will face dramatic negative affects if major changes are not implemented within 12 years. New York has established a goal to produce 50% of the state's energy from renewables by 2030. However, with the current rate of renewable energy development the state is not on pace to meet that goal. We will need to use both large and small renewable energy resources to meet our goals and ensure a healthy planet for our children.
245	Please compare the energy efficiency of your proposed Lighthouse Wind to the neighboring Robert Moses Hydroelectric power station in Lewiston, NY.	We are not able to perform this comparison at this time.
246	There is a surplus of energy production in WNY currently. Hydro power is not being used to full capacity. Please explain why this project is necessary.	LHW would challenge the premise that hydro power is not being used to full capacity. Part of the Article 10 review process includes analysis of the impact of the facility (wind project) to the generating source composition and to make a showing that there is a benefit to the generating mix. That assessment will identify the impact, if any, to the generating profile of hydro power in New York.
247	How much oil is inside the nacelle?	A 4 MW turbine has approximately 1,000-1,500 liters (~300 gallons) of lubricant in the gear box, and about 15-20 liters (~4.5 gallons) of fluid in the hydraulic system.
248	Will TV reception be affected by this project for antenna TVs in the town of Yates and Somerset?	Turbines can in some cases impact air television signals. Should this occur, Lighthouse Wind would work with the property owner to mitigate any impact with changes to antenna reception.
249	How many energy companies have met their projected energy output?	I suspect most energy companies have, although projected energy output differs greatly by industry and energy resource.
250	Why out of common courtesy did you not give our town supervisors there plans in advance?	Lighthouse Wind is interested in providing accurate project information to all local citizens and stakeholders equally.

Question #	Question	Answer
251	How are campers at Golden Hill Park going to enjoy the shadow flicker and noise? Did you take that into consideration?	Modeling the park using the current turbine model and locations for sound and shadow flicker show a minimal impact. The eastern area of the park should only see up to approximately 20 minutes of shadow flicker during December and January if the conditions allow for shadow flicker to occur. The western portion of the park is located outside of the shadow flicker wings. The overall sound output by the lake in the park is below 39dBa, typically below ambient sound.
252	What compensation will be given to people who have well water?	<p>We do not anticipate the need to compensate people with well water. The wind turbine foundations will have no impact on local wells, aquifers, or streams. First, the maximum depth of a wind turbine foundation will be 11 feet. Throughout the Northeast, water is often found at about 300 feet, and wells for household use usually range from about 100 feet to 500 feet deep. There are some places, however, where a well can be more than 1,000 feet deep.</p> <p>Second, the permit for the wind project will require a complete engineered water runoff management plan to control erosion and construction run off from entering into wells, aquifers, or streams. During construction, the project, like many large-scale construction projects, will employ best runoff and erosion control practices. No raw concrete will be allowed to enter watersheds. After construction, best practices will be employed to stabilize the ground surrounding turbines to control erosion. Once hardened, the concrete foundations are inert and will be mostly covered in earth. They will not leach affluent into local wells, aquifers, or streams, in the same way your home's foundation does not leach affluent into local wells, aquifers, or streams.</p>
253	To: Apex Wind-why has Germany the world's leader in wind research and installation, declared a moratorium on any further wind farm construction?	<p>Germany is Europe's largest wind energy market. There is no current moratorium on wind energy in Germany. In May 2018, Germany held an auction for the procurement of wind energy with 604 MW of onshore wind bidding into the auction. The government has promised an additional 4000 MW of wind capacity by 2020.</p>
254	Why are your "peer reviewed" studies better than their "peer reviewed" studies of the opposition?	Peer review is an important benchmark to ensure that entities that engage in studies are following accepted procedures and basing the studies on empirical information. One peer review is not better than another peer review. However, it is important that the public receives information from peer-reviewed studies, as there are many individuals and organizations that perform their own studies with a bias in mind.
255	Why should we believe "government-sponsored studies"	For the same reason you believe government-sponsored studies on the health of your food, the safety of products available to the consumer, the safety of air traffic control, and the safety of bridges and highways. Our society relies on an accountable government that is responsible for basing policy and activities upon objective and reliable information.
256	Why did you import union workers to attend the public hearing in Somerset?	Unions have a sincere interest in the large number of jobs and opportunities that renewable energy has brought to the state of New York and will bring in the future. We always have, and will continue to welcome all stakeholders to be involved in the discussion for advancing the economy of western New York

Question #	Question	Answer
169	How have you incentivized or contributed to any of the people who come from out of the area?	Other than professional subject matter experts who are employed by Lighthouse Wind for the purpose of project evaluation, design and permit preparation, no other individuals were paid to attend the Information forum hosted on October 2nd.
170	"My right to swing my fist ends just short of my neighbor's nose". Why should I have to endure such a monstrosity on my neighbor's land?	As the question indicates, people are typically allowed to do what they like in their personal space as long as their actions are not detrimental to others. In the case of the Lighthouse Wind project, we are working with private landowners who should be allowed to use their properties in a responsible manner that is not detrimental to surrounding properties. Lighthouse Wind is being designed carefully with proper safety setbacks, sound limits, and environmental considerations so that the operation of the project will not be detrimental to surrounding properties. Surrounding properties will experience all of the benefits the project does bring to the host communities and the greater region.
171	Why did you not tell us that Article 10 removed local control of this process?	Article 10 is a state permitting process. Lighthouse Wind is following the process per state requirements. We do not believe that the process removes all reasonable local control.
172	Thought this was zoned out by both towns. What is the community's need for this? Or do you just override us?	The State of New York's long-term energy planning relies on clean energy projects like Lighthouse Wind. There are many local citizens that are excited to enjoy the environmental, economic, and social benefits to the area.
173	Is your intention to bankrupt these two towns until they capitulate to your wishes?	Lighthouse Wind hopes to work cooperatively with the Towns of Yates and Somerset. The project represents an opportunity for both towns to experience significant economic improvements. Lighthouse Wind hopes to work cooperatively with the towns of Yates and Somerset. The project represents an opportunity for both towns to experience economic improvements.
174	Our towns have made it clear we do not want this project. Why will you not respect our desires and go away? Apex is not welcome here	We understand that a limited number of people in the Towns and Somerset are opposed to the project. However, they do not represent the opinions and attitudes of all citizens of both towns.
175	You act like this is a done deal. It's not. We do not want these eyesores, environmental and health issues in our quiet, pastoral, beautiful tourist area. Why not do this in an area that wants turbines?	Developing a wind project is a complex undertaking. Lighthouse Wind looks forward to working through the final of steps of the project to bring environmental, economic, and social benefits to the area.
176	Apex just said (speaker) they want to have best need and desires of community, yet you are ignoring that the community does not want turbines. Why do you feel we should be forced to have a project that is not wanted and does not meet the needs and desires of the community?	We understand that a limited number of people in the Towns and Somerset are opposed to the project. However, they do not represent the opinions and attitudes of all citizens of both towns.
177	What does it take to get you SOB's out of here? Is this another one of Andy's dirty deals?	This question is not appropriate nor relevant
178	How do you sleep at night?	The employees at Apex Clean Energy are very proud of the work we do to accelerate the shift to clean energy while bringing economic, environmental, and social benefits to the regions we work in.
179	You've had our input for 4 years. How much more do you need?	Developing a wind project is a complex and lengthy undertaking. Lighthouse Wind looks forward to working through the final of steps of the project to bring environmental, economic, and social benefits to the area. We hope that the project will begin operating in 2022.
180	You said that you want our input with regard to this project. Do you not understand that our protest of this is our input?	Apex Clean Energy fully understands individuals' rights to freedom of speech and to use that right to support or protest the Lighthouse Wind project.

Question #	Question	Answer
181	Why does working next to each turbines mean more than humans?	The meaning and intent of this question is difficult to understand. We appologize for not being able to provide an answer.
182	How much do you pay residents who sign your "Good Neighbor Agreement"?	Apex Clean Energy has a number of private contracts with individuals. Like most private contracts, the terms are held by the parties.
183	When did American's lose their right to free speech?	The right to free speech is still a fundamental right for Americans. We are glad that you have had the opportunity to exercise that right and express yourself here.
184	You should be ashamed of yourselves	The employees at Apex Clean Energy are very proud of the work we do to accelerate the shift to clean energy while bringing economic, environmental, and social benefits to the regions we work in.
185	Tom Padoleski: Are you Apex/Lighthouse prepared for confrontation just exactly like standing rock?	Lighthouse Wind hopes to work cooperatively with the Towns of Yates and Somerset. The project represents an opportunity for both towns to experience economic improvements.
186	After receiving strong opposition for nearly four years, why haven't you selected a town that wants a wind farm?	In most towns, you might expect that people may be in support of or opposed to any major project. Our goal is to work cooperatively with host communities so that they understand the factual information about Lighthouse Wind and the benefits the project will bring. We believe that with the proper information, both towns will largely support the project and be very pleased when it is operating. Unfortunately, much of the dialogue about the project has been based on misinformation and misunderstanding. We will work cooperatively with the citizens of both communities to correct that dynamic.
187	What do you think is SOS's most valid point?	Many members of Save Ontario Shores have brought forward legitimate topics and questions. We cannot list all of the legitimate questions here. However, part of a learning process includes objectively digesting the information presented in response to concerns and questions to allow perspectives to evolve with advanced knowledge. We hope that the members of SOS will be objective enough to take this next step after they have had the chance to express their concerns.
188	Why did you come into Somerset and Yates and approach home (and landowners) very quietly and secretly to get them under contract before anyone knew anything about your company. After getting landowners to sign our dubious contracts with the promise of substantial payments, then you approached the towns with your project- isn't this a backward way of doing business for a reputable company? Are you a reputable company? Do you have any references other than employees of Apex? We have been unable to find any.	In 2013 and 2014, a representative from Apex Clean Energy came to the area to explore the potential for a wind energy project. During that year, the representative met with Town Managers, Town Board Members, landowners, and general citizens. The record clearly indicates that the development of the project has never been conducted in a secretive fashion.
189	No more met towers, right? Note: Atty Muscato publicly stated no more at Yates Town Board Meeting.	Lighthouse Wind does not intend to erect any additional temporary meteorological towers at this time.
190.A	Who is paying the security tonight?	The Orleans County Sheriff's Department did not request payment for providing a local presence October 2. We were informed officers often prefer to reinforce local community events at the onset when people are coming in from different areas, and the actual number of people who may be in attendance is not known in advance. Prior to the scheduled event, Apex was advised to have security present at the school. School and district administration also communicated security concerns on various occasions leading up to October 2.

Question #	Question	Answer
190.B	Why all the security tonight? Are you concerned that those under lease who do not have a turbine located on their property will get violent with you?	Apex Clean Energy coordinated with the Orleans County Sheriff's Dept. and made security precautions for the satisfaction of the district and school operators, and for the consideration and comfort of those who would be attending the information session. The department did not request payment. There was no coordination with State Police for October 2. Apex was merely informed by local law enforcement that the State Police typically have an officer /vehicle on patrol in the area.
190.C	What are your reasons for having security here tonight? Is Apex paying for this security or am I, as a taxpayer, paying?	
190.D	Why did you feel the need to have both State Police and County Sheriffs at this meeting? Did you expect a riot?	
191.A	Why was this called a forum? The majority of the program was presentation. The Q&A was not representative.	
191.B	Why do you call this a forum when you set the agenda and speakers and you will determine what is asked in public?	Forum is a word for a public meeting or assembly. We did not determine what was asked in public on October 2. The gathering of questions was done in a transparent manner in front of all attendees, and Apex committed to answering all questions covered during the 2 1/2-hour program. As the moderator detailed, similar topics submitted in the highest quantities were given priority that evening. The remaining questions & answers are detailed in writing and have been made available on our website at lighthousewind.com
192	You reference benefits to lease holders and income. Do you realize that retirees in the area will not have an increase in income? We will see losses in (illegible). How is that fair?	Leaseholders will benefit from the Lighthouse Wind project. In addition, all citizens of the host communities, including the elderly, will benefit from the tax revenues and direct and indirect economic investments the project brings to the area.