

Taxes & Benefits

Question	Answer
<p>What are the benefits to the land owners? Is the land leased? Bought? Electric bill reductions? Etc.</p>	<p>We have wind easement agreements with our participating landowners where we essentially rent the use of the land from the private landowners. The only situations where we may look to purchase land would be for the project substation(s), or to build an Operations & Maintenance facility that will serve as the main shop and headquarters for the technicians and service team throughout project operations.</p> <p>Benefits to participating landowners, regardless of size of acreage, are provided based on three (3) primary things:</p> <ol style="list-style-type: none"> 1) Acreage payments will be made annually to signed leaseholders who own land in the final project footprint. These payments will be made regardless of whether or not any project infrastructure is placed on the land (i.e.: if you don't receive a turbine, but your neighbor does, you'll still receive rent payments throughout the life of the project). 2) A Residence payment of \$1,000 per year, that all participants receive regardless of acreage 3) A Turbine payment if a turbine is installed on your land. <p>There are also additional one-time payments made to landowners during construction, as well compensation for crop damage, drain tile repair and restoration.</p> <p>We estimate this project will generate more than \$100 million in landowner payments over the 30-plus-year life of the project.</p>
<p>Can you please explain how your community based model allows all property owners within the project area to participate and/or benefit, even if they own a single acre and a home? In other words, what benefit would I receive if I dont have a turbine on my property but my next door neighbor does? thanks</p>	<p>See above</p>
<p>Do the people of the county get discounted electricity for putting up with the drawbacks of having wind turbines in our county.</p>	<p>Montcalm Wind should not have a significant impact on local electricity prices, up or down. Electric rates are regulated by the Michigan Public Service Commission and state law prohibits discounted rates. However, everyone in the project area will have an opportunity to benefit from our project, though, through our community-based lease. The extra income can be used to pay electricity bills, pay property taxes, or go towards whatever the homeowner desires.</p>
<p>What are the benefits to the county and the people who don't have land where a turbine could be placed?</p>	<p>Anyone with property in the immediate project area is eligible to sign up as a participant and be compensated as part of the project.</p> <p>For people who choose not to participate, or who own land that lies outside the project area, those residents or property owners will still see benefits once the project is completed through improvements to local electrical and transportation infrastructure, new tax revenues for the township, county and other millage districts, more funding for local schools, county services, and the positive effects of increased economic investment in the local community. During construction there will also be significant spending at local businesses, restaurants, gas stations and supportive industries.</p> <p>Re: tax benefits, some communities have shared the extra revenue with all taxpayers by cutting taxes and reducing millages. That is a decision each township must make for itself once the extra revenue starts to come in. In other areas, the boost of new tax base has allowed some school debt millages to be reduced. This lightens the burden for all homeowners because these payments are often fixed and any new revenue from a wind farm shortens the payoff time and reduces the amount other taxpayers have to pay.</p> <p>As you get farther outside the project area, there will also be few noticeable impacts, aside from seeing some turbines in the distance.</p>
<p>Do we in Montcalm County benefit for this?</p>	<p>See above</p>

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Will non participants receive any type of monetary benefit	<p>Montcalm Wind uses a community-based leasing model where anyone who owns property in the project area is eligible to participate, including those with no facilities on their property.</p> <p>If someone choses not to participate, they will still see the community benefit through things like increased economic activity, increased local tax revenue, new job opportunities, improvements to certain roads and electrical infrastructure, and more money flowing into the community.</p>
are we going to see our taxes raised to support this? another most asked is, will this give us lower energy bills?	<p>No. Montcalm Wind is being built with private dollars and will not require any local tax abatements or taxpayer support to be constructed. If anything, Montcalm Wind will relieve pressure on local property taxes by expanding the tax base for townships, the county, local school districts, and any other entity that has raises revenue through millages.</p> <p>Also, this project will not directly impact electricity bills but because wind energy is one of the lowest cost sources of new electricity, wind farms help the utilities keep their costs down and hedge against future increases in global commodities like natural gas.</p>
why is Gratiot County electric bills increased after turbines?	<p>Electricity prices nationwide have gone up over the past decade, in large part due to the high costs of maintaining and upgrading an aging transmission system and retiring power plants. Those costs will continue to affect all of our electricity prices regardless of the types of new power that gets added to the grid, but the price of renewables are almost always the lowest costs of new power today and that will help keep the price of power lower than building more expensive power plants.</p>
so, if a township has more debt than an other they get more \$\$\$\$??	<p>Not exactly. The tax benefits are based on the existing millages at the township or county level. So, if a township has a higher tax rate (millage) they would get more money from the facilities that are installed in that township (turbines, underground collection line, etc.). Similarly, if one school district had a bond/debt/sinking fund millage and another does not, the school with the bond would collect taxes towards that bond, which will lighten the load for everyone else in the community and pay the bond off more quickly.</p>
is there a guaranteed revenue amount? how is it divided in Montcalm County?	<p>For tax revenues to the community as a whole, without final project details and knowing the value of the turbine we select we can't provide a guaranteed amount, and local millages and state tax rules are subject to change over time. That being said, using the current State Tax Commission depreciation tables, we would expect a single turbine valued at \$3.8 million fair cash value (\$1.9 million taxable value) to pay an estimated total of \$19,095 for every 1.00 mill of taxation over 25 years (\$1,900 per mill in year one depreciating to \$570 per mill in years 10-25).</p> <p>Once county, school debt, and township millages are factored in, most Montcalm County communities have between 21 and 25 mills being levied. That means an average turbine in Montcalm County would likely pay between \$400,000 and \$500,000 in taxes over its lifetime, which would total \$30-40 million for the project as a whole.</p>
How much tax abatement will Apex be asking for? I see most big developers wanting up to 50% for 12 years.	<p>We will not receive or request any tax abatements. That may sound funny, but it's true. Wind energy is different from many other types of economic development projects in that it does not require or ask for tax abatements. All taxes owed are paid starting year one.</p>
I may not be able to stay for the QA but I was wondering if the Isabella or Gratiot county reps could speak to how long it took from installation of the wind farm to the benefit of the tax revenue coming into the county. In addition how much of the tax revenue has went to local schools in each county?	<p>(live answered by Don Schurr)</p> <p>It takes about a year to construct, and during that time period, if it crosses the December 30th dateline, you can expect that the following year they will be fully on the tax roll, and the funds that are collected will be distributed to the municipalities, schools, and other millage receiving organizations throughout the county. The county has a regular allocation of millage in their regular budget. Wherever a turbine is located within that township, and then in the county in general, pays that tax, school debt, and any other relationships to any debt that is on the books as a millage will also get paid, and they will get paid in the first year and all the following years, just like it would be for the location of a large factory, or any other economic development project. So, it's steady and it's fairly quick.</p>
How much tax payer subsidies would this project receive?	<p>The project is built with private capital and does not receive tax abatements or state and federal subsidies. Operating wind farms are eligible for a federal production tax credit (PTC), but this is based on the annual production (how much electricity is produced) of the wind facility and only kicks in after the project is built and generating power. No credit is received during the development and construction phases. The credit is currently scheduled to phase out for projects beginning construction after 2021.</p>

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<p>Most of the questions I hear is, does this mean more taxes we will endure ? Does this mean we will see lower energy bills. Please explain what benefits we will see through this</p>	<p>(live answered by Don Schurr) No. There is no tax implication or tax charge to any local individual or property owner. All taxes that are paid on the wind project are paid by the utility or the developer that owns the wind turbines. So, there's no cost to the local taxpayer. In fact, there's really no local expenses for having and hosting a wind project, a wind farm, in any given township. They are essentially are just there generating electricity, and there's no ongoing cost to the township at all. There is no direct correlation between the power that's generated by a wind farm and your utility bill.</p>
<p>Do any of the potential turbine build sites fall within opportunity zones? and if so are these eligible for the funding sources from Opportunity Zones from the private investors?</p>	<p>We do not have proposed turbine locations at this time but regardless of turbine locations Montcalm County has only a few parts of the county designated as opportunity zones and only a fraction of that land is located within our area of interest. Honestly, we're not 100% certain how Opportunity Zones would work in this context.</p>
<p>Does the energy you receive off the windmills in Montcalm County go where?</p>	<p>The energy generated by Montcalm Wind will go on the local electric grid via an existing transmission line that runs through the county. From there the electricity will be used both locally and wherever it is needed. Michigan is currently short on in-state generation and frequently has to import higher cost power from neighboring states. Replacing more expensive generation from retiring coal and nuclear plants with low-cost wind energy from Montcalm Wind will help the state meet its energy needs with clean Pure-Michigan electricity. Some of the electricity from Montcalm Wind will be used locally. However, the project will produce more power than the local community needs, and the electrons will follow the path of least resistance once they're put on the grid.</p>
<p>Will the power output of the turbines be contained in each county? Or, will extra power be sent out to different counties and / or states?</p>	<p>Power will be plugged into the grid here in Montcalm County, and will be used across portions of Montcalm County, but will also flow to neighboring counties in Michigan. This project will generate more power than can be used locally and Michigan, like most of the U.S., has a power grid that's interconnected. Generation is added at many points along the grid, but it's never stopped at a county line.</p>
<p>Is all of the electrcity generated and fed to the "grids" remain in Montcalm county and/or Michigan?</p>	<p>See above</p>
<p>Will the power output of the turbines be contained in each county? Or, will extra power be sent out to different counties and / or states?</p>	<p>See above</p>

Question	Answer
<p>Where does the money come from to pay for the land leases?</p>	<p>All the money that goes into paying for land leases and all other aspects of development and construction is private money. The Federal Government, the State of Michigan and local townships do not pay subsidies for this work to take place.</p> <p>All the money is private, and comes from Apex (or Apex borrows, as quite often is necessary to purchase turbines and pay for construction).</p>
<p>who are the private donors that pay for the turbines?</p>	<p>Apex Clean Energy is a private U.S.-based company. We work with a variety of private investors to raise the capitol for the development and construction of our projects.</p>
<p>Apex is spending a lot of money to get this wind project up and running and then will be paying a ton of money in taxes. How is Apex actually making money off the turbines? If they sell the electric back to power companies, doesn't that money eventually come from the the public for use of the electric service?</p>	<p>Apex Clean Energy develops, constructs, and operates renewable energy projects throughout the country. Renewable energy facilities are revenue-producing assets, and there are a wide variety of investors who are interested in becoming a part of America's energy transition by owning these facilities, including Michigan's utilities, which have set a goal to transition to renewable energy.</p> <p>The majority of the costs associated with a renewable energy facility occur during the development and construction phases of the project. While those early costs can be high, renewable energy facilities more than pay these costs back through the revenue they generate over their 25-plus-year lifetimes, especially considering there is no fuel cost. Apex Clean Energy typically makes its money in these transactions when it sells a shovel-ready or fully-built project to a facility owner.</p> <p>Depending on who purchases the power generated by the project, it may be rate-payers who see the cost savings from the addition of renewables or a private power buyer (as an example, Michigan-based Steelcase entered a 12-year power purchase agreement with Apex Clean Energy in 2016 for 25 megawatts of wind power, about 70% of the company's U.S. electricity usage).</p>
<p>Does the decommissioning include complete removal of the large underground base?</p>	<p>As part of the decommissioning process, foundations and infrastructure will be removed up to a depth of 48 inches below the surface. Portions of foundations and inert materials that are not harmful to the environment and are more than 4 feet below the surface will often be left in place, provided that no permits or other requirements require their removal. Collection lines are also generally left buried so that construction crews do not have to interfere with drain tile and disrupt farmers' fields more than necessary.</p>
<p>Is there a escrow account to pay for decomisioning of wind turbines in the evnt APEX goes bankrupt?</p>	<p>Typically, local ordinances require wind projects to submit plans for decommissioning the facility at the project owner's expense. A decommissioning bond would be posted in favor of the county or local jurisdiction and assessed based on the presumed per turbine cost of removal. Removal is then the responsibility of the project owner, whether that be the original developer, a utility, or another company that may own and operate the project in the future. If something happens to the project owner's finances in the future, that decommissioning bond is already in place to provide the resources to remove the turbines once they are no longer in use.</p> <p>If the need to remove a turbine or close a wind farm does arise, every landowner who signs an agreement with Apex is also protected from the cost and burden of decommissioning through a protected financial security outlined and required in the easement agreement. The site must also be restored to the same condition that existed prior to construction upon decommissioning.</p>

Question	Answer
<p>How will this affect spray plane pilots? They already fly so close to the ground level to protect our crops, will more obstacles inhibit this process that is necessary to fertilize?</p>	<p>Aerial applicators play an important role in the local ag economy and we have made working with them a priority for Montcalm Wind. Since development work began in 2019, we have maintained close coordination with local aerial applicators for notification of the placement of meteorological towers and ensuring any associated guywires are adequately marked.</p> <p>There are many examples of aerial applicators working safely around wind farms all over the country and most flying occurs on days when there is not a lot of wind. However, by using modern, more efficient turbines we will design this project with fewer turbines than are found in neighboring communities and this means fewer obstructions to fly around. Site plan review by landowners utilizing aerial application can also include consultation with pilots spraying their fields to ensure those operations can continue safely and with full awareness of turbine, transmission line, and meteorological tower locations.</p> <p>Beyond these considerations, Montcalm Wind and Apex Clean Energy will also work with local aerial applicators and the Michigan Agricultural Aviation Association to provide training opportunities for flying around wind farms.</p>
<p>what about crop spraying with plains?</p>	<p>See above</p>
<p>Montcalm county is noted as a having a level 3 wind rating per the federal government. What is this rating and what does it mean?</p>	<p>If you are referring to the Wind Power Classes as described by the National Renewable Energy Laboratory, a Class 3 Wind Resource denotes an area with an average annual wind speed measuring between 6.4–7.0 meters per second, measured at 50 meters. Our Isabella Wind project, as an example, utilized a turbine with a 114m hub height.</p> <p>We are measuring wind speeds and consistency with the MET towers that we have installed across portions of the county and will use that data to determine where a project is feasible.</p>
<p>If Montcalm County's current average wind speed levels are 8 mph, what is Apex requirement for a wind project to move forward? If Montcalm is below this requirement why was this county looked at as a development area?</p>	<p>We are measuring wind speeds and consistency with the MET towers that we have installed across portions of the county and will use that data to determine whether a project is feasible. There are other examples of successful wind projects in central Michigan, and Montcalm is likely to have a similar wind resource</p>
<p>What agencies or companies have conducted wind studies in this area? Where can we get that data? Who has conducted studies?</p>	<p>We can't answer if there are other companies who have conducted wind studies in Montcalm County, but Apex is conducting those studies as we speak. The data is not available at this point and is generally private information.</p>
<p>Where's the wind data for Montcalm County? Your staff admits that it takes years to gather and yet the WES towers were just put up.</p>	<p>Our first meteorological tower went up in Montcalm County in late 2019 and will stay up for several years. See above regarding wind data.</p>
<p>Why are the townships required to develop ordinances? Who mandated this for the Townships?</p>	<p>Communities in Michigan follow local zoning. In Montcalm County, most of the townships are independently zoned, and none of them follow county zoning. Therefore, zoning and permitting is the responsibility of the township and with a few rare exceptions they must allow for all legal business uses to exist within their jurisdiction. As a valid land use and legal business operation, wind energy must be allowed within a zoned jurisdiction and the ordinances will be developed by townships if they want to set rules for the development of this land use.</p>
<p>So are you saying that you will not hold to township restrictions?</p>	<p>We will comply with township ordinances. In many cases we will be able to do better than the minimum standards that an ordinance requires. In addition to township ordinances, there are also state and federal regulations that we must follow.</p>

Question	Answer
<p>I want to know what study and how long you all have studied vertigo and the effects of shadow flicker, inner ear issues, and are you going to pay full value on my house if effects me because of my neighbor signing</p>	<p>Hundreds of thousands of people around the world live near and work in proximity to operating wind turbines without adverse health effects. Credible, peer-reviewed scientific data and various government reports in the United States, Canada, Australia, and the United Kingdom—now totaling more than 20—refute the claim that wind farms cause negative health impacts. Links to many of these studies can be found on our website at www.montcalmwind.com/health.</p> <p>As for property values, the vast majority of studies conducted on this topic show that property values are not negatively affected by the presence of a wind farm. Not just by number of studies but by number of homes and transactions considered. The data suggesting that there is no negative correlation vastly outweighs any indication that there would be a negative impact. It has been studied extensively.</p>
<p>How is Shadow Flicker Measured?</p>	<p>The term shadow flicker refers to the shadows cast by wind turbine blades as they rotate in front of the sun, like the shadow cast by a tree blowing in the wind or a vehicle passing by. Apex conducts site-specific studies at each project to understand how local residences may be impacted by turbine shadows and how to position the turbines to minimize flicker impacts on homes. Though not all homes in a project will experience shadowing, Apex ensures that no home experiences this effect for more than a few minutes per day, on average, by positioning wind turbines at a carefully calculated angle and distance from dwellings. Shadow flicker only occurs at certain times during the day, when the sun is low, and it does not occur at all during cloudy days or when fog is present, or when turbines are not operating. Shadow flicker diminishes rapidly with distance and can be accurately modeled and predicted to determine exactly when shadow flicker may take place at a given location. This analysis will be included in a proposed site plan and as a requirement in township ordinances.</p> <p>Several effective mitigation strategies exist to eliminate the impacts of flickering even in those instances where conditions are right for it to occur. These strategies include turbine curtailment, vegetative screening solutions, or high-quality shades in affected homes.</p> <p>In Michigan and throughout the country, industry best practice is to limit shadow flicker to no more than 30 hours per year. That means shadow flicker would only be allowed to occur during less than 1% of all daylight hours over an entire year.</p>
<p>what about the flickering?...we all see. that home that no matter what curtains open or closed you could see that all day long every day?</p>	<p>Shadow flicker does not occur all day long. See above.</p>
<p>what about the flickering that you can see in a home all day ?</p>	<p>Shadow flicker does not occur all day long. See above.</p>
<p>What is the probability of ice chunks flying off the blades during winter, or is this a myth? If ice does get flung, how far can these travel and what is the average size? (Sorry if this topic was already addressed, I had to step away from the computer for a few minutes)</p>	<p>The risk of "ice throw" from wind turbines is frequently exaggerated by those opposed to wind development. Wind turbines have been safely operating for three decades in locations where icing can occur. Ice buildup on a turbine is detectable through multiple technologies and cold-weather packages on modern turbines can actually heat turbine blades and help prevent icing in the first place.</p> <p>In the event that icing does occur and is detected by onboard sensors, turbines can be shut down during icing and thawing conditions to further minimize the risk and ensure ice melting off of turbines falls straight down.</p> <p>In the unlikely event that the operational procedures designed to protect against icing are not completely effective, the average ice fragment shed from a turbine is quite small and the probability of an impact at Apex's standard setbacks is on the range of one in a million based on recommendations from the Finnish Meteorological Institute and virtually impossible beyond 2x the height of the turbine based on the Massachusetts Department of Health's Wind Turbine Health Impact Study.</p>

Question	Answer
<p>What about electromagnetic energy fields from the turbines. Is there health problems from them</p>	<p>No there are not. Based on multiple peer-reviewed studies and specific measurements from operating wind farms, there is nothing unique about EMF levels produced by wind turbines. As an example, a 2004 study measuring the Kingsbridge Wind Farm near Goderich, Ontario, Canada found that the magnetic field levels in the vicinity of wind turbines were lower than those produced by many common household electrical devices and were well below any existing regulatory guidelines with respect to human health. (Sources: https://ehjournal.biomedcentral.com/articles/10.1186/1476-069X-13-9; https://www.nhmrc.gov.au/about-us/publications/nhmrc-information-paper-evidence-wind-farms-and-human-health)</p>
<p>What studies have been done in regards to the stroboscopic effect of turbines?</p>	<p>When the sun passes behind a spinning turbine (at sunset or sunrise), it can create a temporary shadowing effect. This effect only occurs at certain times of year, during specific times of day, when the skies are clear. Some people refer to this effect as “shadow flicker.” Shadow flicker can often be mitigated with affordable, low-tech solutions such as window shades and plantings.</p> <p>The effects of shadow flicker on human health have been studied, and no evidence has been found that shadow flicker poses a human health risk. As part of its paper, "Review of additional evidence for NHMRC information paper: evidence on wind farms and human health, Final report," the National Health and Medical Research Council of Australia found no link between moving shadows produced by wind turbines and adverse health impacts. Similar research from the U.S. and Canada has documented the same conclusion.</p> <p>Research by the Epilepsy Foundation looking specifically at the relationship between shadow flicker and epileptic seizures has found that the rate at which wind turbine shadows “flicker” (less than 2 Hz) is far below the frequency associated with seizures.</p>
<p>What are the side effects of people and the ? Sleep disturbance. headaches dizziness ear pressure</p>	<p>More than 20 peer-reviewed, scientific studies have been completed around the world to evaluate the relationship between wind turbines and adverse human health effects. In every case, these studies have found no direct negative health impacts from the presence or operation of turbines. This includes the large and well-regarded Health Canada Study that captured data from a large number of individuals living near wind farms and concluded that, “No evidence was found to support a link between exposure to wind turbine noise and any of the self-reported illnesses (such as dizziness, tinnitus, migraines) and chronic conditions (such as heart disease, high blood pressure, diabetes). No association was found between the multiple measures of stress (such as hair cortisol, blood pressure, heart rate, self-reported stress) and exposure to wind turbine noise.”</p> <p>Another more recent study from Iowa found that “There is no authoritative evidence that sound from wind turbines represents a risk to human health among neighboring residents.” —Peter S. Thorne, David Osterbert and Kerri Johannsen, “Wind Turbines and Health,” Environmental Health Sciences Research Center, Iowa Policy Project and Iowa Environmental Council, January 2019.</p>

Question	Answer
<p>Have there been any studies conducted on the effects of infrasound on animals and/or humans? Can you site any studies?</p>	<p>No peer-reviewed or government study has linked wind turbine infrasound to direct health impacts. Specific citations below:</p> <p>“Infrasound and low-frequency sound can be generated by the operation of wind turbines; however, neither low-frequency sound nor infrasound in the context of wind turbines or in experimental studies has been associated with adverse health effects.” - American College of Occupational and Environmental Medicine. (Source: Robert J. McCunney MD, MPH, et al., “Wind Turbines and Health: A Critical Review of the Scientific Literature,” Journal of Occupational and Environmental Medicine, 2014.)</p> <p>“Noise from wind turbines, including low frequency noise and infrasound, is similar to noise form many other natural and human-made sources. There is no reliable or consistent evidence that proximity to wind farms directly causes health effects.” (Source: Australian National Health and Medical Research Council “Evidence on Wind Farms and Human Health”, 2015)</p> <p>“Based on our ongoing review of scientific literature about wind turbines and health, [WDHS] continues to conclude that levels of noise, shadow flicker, and infrasound measured from contemporary wind turbines do not reach exposure levels associated with objectively-verifiable human health concerns, such as decreased sleep quality or elevated blood pressure.” (Source: Wisconsin Department of Health Services)</p>
<p>If infrasound is not a health issue, why did the US and other countries look to use infrasound as a weapon for warfare? What about the study out of Germany that showed health issues related to infrasound?</p>	<p>See above. This is also a good article explaining the frequent confusion and misunderstanding about how much infrasound wind turbines can even produce: https://www.theatlantic.com/science/archive/2017/06/wind-turbine-syndrome/530694/</p>

Question	Answer
Where can we access all of the studies that you have had commissioned for Montcalm County? Also where is the information about the bird studies / bald eagle nests?	<p>We are still in the process of conducting those studies, and will hold a public presentation later in this calendar year. We don't have a date set, but will keep people informed as we get the point of being ready to share this info. Ultimately, the final study data will need to be shared with the state and federal agencies such as the U.S. Fish & Wildlife Service and the Michigan Department of Environment, Great Lakes, and Energy (EGLE) and we will need to be in compliance with their requirements.</p> <p>Some of the data will be public, but other information, such as the locations of threatened or endangered species is not typically released by the U.S. Fish & Wildlife Service in order to protect these species from interference. There will also be other pieces that are public in the site plan review process when we get ready to submit an application to any of the townships.</p>
I live on a lake here in Montcalm County. we have eagles that fly to our lake all summer long. I am not sure where the nest is how will that affect the eagles on my lake?	<p>Vehicular collisions are by far the greatest threat to bald eagles in Michigan, representing 69% (532) of eagle fatalities from 1986-2017. In that time there are 3 documented cases of eagle fatalities by wind turbine collision in Michigan in the last 30 years. (Source: The Journal of Wildlife Management. "Sources of Mortality in Bald Eagles in Michigan, 1986–2017," April 2020.) (https://www.freep.com/story/news/local/michigan/2020/08/07/leading-killer-bald-eagles-michigan-isnt-what-you-think/5572129002/)</p>
What about all the Bald eagles that are near my house and effects of migration and animals, I want to know how long you have studied this.	See above. We will be continuing eagle nest and avian use surveys this year prior to project design.
1. your bird/nest study only goes to 2020, but your plans go to 2022. what happens to the last 2 years? no more studies?	<p>live answered by Albert Jongewaard:</p> <p>That means we may have started some of those studies in 2020. If the timeline expired on 2020, then as it relates to bird studies, we're continue those into this year, so it's 2021 those studies will continue. We'll continue eagle and raptor nest studies, as well as presence and absence studies into this year.</p>
How many birds are killed a year in Michigan by existing blades on average?	We are not aware of a Michigan-specific study available on this topic.
What is the impact of the wildlife? How about birds? I see that they estimate 234,000 to 328.000 a year are killed by wildlife.	<p>While birds unfortunately do occasionally collide with turbine blades, modern wind farms are far less harmful to birds than buildings, communication towers, power lines, and vehicles. In fact, wind turbines account for only a small fraction—about 0.007%—of all human-related bird deaths, which is less than 1/100th of a percent. That is also far smaller than the impact from other sources of energy, such as coal. (Source: Loss, S.R., et al., "Direct Mortality of Birds from Anthropogenic Causes," Annual Review of Ecology, Evolution, and Systematics vol. 46, no. 1 (2015), pp. 99–120, doi:10.1146/annurev-ecolsys-112414-054133)</p>
Hasn't climate always changed? Do we really want to stop it?	<p>While the climate has indeed changed over the course of the 4.5 billion-year history of Earth, the warming we are seeing today is far more rapid than has been seen by natural cycles. Changes that typically happen over tens or hundreds of thousands of years are now being seen over a manner of decades. These rapid changes coincide with increasing levels of carbon dioxide in the atmosphere due to human activity since the industrial revolution. Coal, oil and gas combustion, and deforestation have all played a role in the increase. As a result, 17 of the 18 warmest years on record have taken place since 2001.</p>
can you give information on this 3rd party you use for the avian and environmental studies?	<p>We use different 3rd party consultants for environmental work based on the purpose of the study and what expertise is needed. Wildlife studies are completed by certified wildlife biologists and ecologists that have done this type of work on many projects across the country. To date, we have worked with Western Ecosystems Technology, Inc. and Copperhead Consulting, Inc. for wildlife work that has been completed at this Project.</p>
22 Lakes in Montcalm County, Why was this county targeted for this project since you state there are setbacks from lakes, watersheds & wetlands.	<p>Almost every county in Michigan has lakes and there are more than 6,500 lakes greater than 10 acres in the State of Michigan. The presence of lakes does not preclude the existence of a wind farm or suggest increased environmental risk, which is why we conduct thorough environmental and other studies to understand site-specific factors that need to be considered in Project siting and design.</p>
How's your relationship with the Michigan Audubon Society?	<p>We generally try to meet with local environmental organizations and other stakeholders and have met with representatives from the Michigan Audubon Society, among other groups, regarding this project.</p>

Sound

Question	Answer
How many of Apex's projects has your company been involved with?	Mike Hankard (who was one of the presenters at the Virtual Public Meeting and to whom this question was directed) regularly consults on the issue of noise with a range of stakeholders in the renewable energy field, including local and county boards, facility developers and owners, utilities, and public service commissions and staff. Hankard Environmental has conducted field surveys at operating wind farms to determine compliance with noise limits. They have used measurement results to validate mathematical "models" to predict noise levels on proposed projects in different locations. Mike has regularly testified to the scientific rigor of his analyses before local boards, state public service commissions, and in court proceedings. Prior to this evening's presentation for Montcalm Wind, Mike has attended meetings regarding 3 other proposed projects in development by Apex Clean Energy in Illinois and Indiana.
Wind rustling through trees can be viewed as pleasant. Do people have pleasant comments of turbine swoosh?	At a distance of 1,200 feet from a turbine, sound measurements show noise levels that are generally no louder than a kitchen refrigerator or a standard air conditioning unit. Depending on the wind speed and other conditions it can often be difficult to distinguish the sound of a turbine from the wind blowing through corn stalks or nearby trees, but even when the noise is discernable it is kept at a level that is scientifically understood to be safe.
If you were standing 100 feet from a turbine would you hear it?	Yes. Even though the turbine is audible, one can carry on a conversation with another person right under a turbine without a problem. We encourage people to visit an operating turbine and explore this for yourself.
Droning noise..... I have a pivot engine about 1/4 mile away, that's runs each summer. Overall the engine noise is acceptable, yet when I lay down in bed there is an ungodly droning noise heard. Will this be the case of a turbine near me? Thank you for a great well explained presentation!	(live answered by Mike Hankard) That's a little hard to answer because I've heard pivot pumps and various pumps and they can be loud, and there are different sizes and different distances. Turbine noise will be audible at some people's homes, and it could be audible inside a home. And to the degree that is annoying is very much a personal thing.
4. when speaking of sound, you've compared it to birds, cars, tractors, trees. etc. the problem is, those are NOT 24/7 you are hearing CONSTANTLY . No Stopping at all!	As Mike mentioned in his presentation, wind turbines are only operating at their maximum sound output about 25% of the time, on average. Another 25% of the time turbines are typically not operating due to low wind speed. The remaining 50% of the time falls somewhere in between and at Apex's standard setbacks the project will be designed to produce sound levels no greater than 50 dBA (defined as the loudest one-hour) at a residence.
why does APEX suggest an ordinance with a 55 dBA leq if the noise levels basically never exceed levels somewhere in the 40's???????	Some townships have based their ordinances on the Gratiot County model. In Gratiot County, they adopted 55 dbA as their sound limit. Apex's internal design standard would be no more than 50 dbA at a residence, regardless of whether a local ordinance allows a higher limit. This is measured as a "loudest hour" or Leq(1 hour).
So why do they want 55 decibel?	See above
is it 50 feet way, or 100 feet way?? that is double or another. where do you actually measure?	If you're referring to the site plan example we shared from Isabella - the turbines are 583' tip height. So, two times that height = 1,166', and the pink circle that depicted 50 dba was less than that. The measurements depicted in the site plan were taken from the location of the turbine. Generally, setbacks are from homes or property lines, depending on what the specific setback is. But, in order to demonstrate compliance in a site plan, we need to measure from the turbine and show that the "rings" do not cross the setback requirement.
how does mike not know anything about infrasound, its been used for 30 years, the police use sound cannons and the military has developed weapons with the same technology? The cuban government was accused of using on their citizens a few years ago	Mike knows well the science and research regarding infrasound from turbines and other sources. He said that it is not routinely measured on projects. There is no scientific evidence that wind turbine infrasound, which is orders of magnitude below the human hearing threshold, has a direct negative impact on human health or welfare.
How loud is 50 decibels?	Two people talking at a distance of six feet apart in a normal voice produce about 60 decibels. So, it's not even as loud as two people talking. Another example might be on a day when there's a little bit of wind, not a lot, but there's some wind and you can hear the trees, that might produce about 50. That's a little bit of a range there. Then I think the second part of the question, what's perhaps an acceptable range, if you will? That's community to community, state to state, country to country, but I can tell you from working on 50 plus projects all over the country, the limits tend to range anywhere from 45 to 55. I'd say that encompasses almost every single limit in every county. The local counties tended to be a little higher, 50 to 55, and some of the states are a little lower, 45 to 50. (Answered by Mike Hankard)

Sound

Question	Answer
<p>Why should anyone who lives in the country, have to experience any noise they do not want? If our quiet little country is normally 30dBa, why should my family have to hear anything more than that? I moved here to get away from they city, due to the noise? Is there something a neighbor could sign saying they don't want to hear the noise?</p>	<p>In circumstances when sound levels are in the 25 to 30 dBA range, ground-level wind speeds are typically calm. Under these conditions, the wind turbines will likely not be operating. 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.</p>
<p>What is the noise varilables?</p>	<p>Wind speed and whether turbines are operating is the greatest variable. Sound modeling is intended to calculate the loudest sound level over a given period of time (i.e. 10 minutes, one hour, etc.), so we look at the highest wind speed and use that to calculate the maximum expected sound levels. Obviously if the wind drops during the course of the night sound levels will go down. The highest sound levels are based on the highest wind speed.</p>
<p>What's decibel level at your substations</p>	<p>The primary noise source at a substation is the step-up transformer(s), which are loudest with their cooling fans on. Substations are not routinely the cause of noise complaints, and their noise can be easily controlled if necessary through design changes such as location, shielding (wall), or low-noise equipment.</p>
<p>what is the acceptable range or goal range of sound that would be at any residence</p>	<p>(live answered by Mike Hankard) That's a determination to be made community to community, state to state, country to country, but from working on 50 plus projects all over the country, the limits tend to range anywhere from 45 to 55. I'd say that encompasses almost every single limit in every county. The local counties tended to be a little higher, 50 to 55, and some of the states are a little lower, 45 to 50.</p>
<p>Michael have you been out to any of the people who have had health issues and done sturdies? What studies are really being done to research these peoples complaints and resolve issues?</p>	<p>Yes. Mike has had personal discussions with numerous people who have either issued complaints about noise and health issues, moved, or entered litigation with a wind project. He has conducted noise measurements outside of and inside some of these homes, and even slept a night in one. He has also testified alongside a doctor who physically examined some complainants. See the Health & Safety questions for more information on studies that have been done regarding this topic.</p>
<p>Is it scientific that we will not be out on our patios when its windy and the turbines are loud?</p>	<p>No that is not a scientific statement. Wind turbines will generate the most noise when it is windy outside and little to no noise when it is calm.</p>
<p>Can a wind turbine that needs service generate more noise than normal.</p>	<p>It is possible that mechanical issues could cause a turbine to generate more noise than normal and if that were the case local technicians would be dispatched to repair the turbine an bring it back into compliance.</p>

Property Values

Question	Answer
<p>What changes in property value has been noted in Isabella and Gratiot counties for those adjacent to turbine properties?</p>	<p>Despite claims to the contrary, there is no evidence that wind energy development negatively impacts nearby property values.</p> <p>In fact, the largest studies conducted on the topic by the Lawrence Berkeley National Laboratory in 2013 and again in 2014 analyzed a total of over 170,000 home sales and found “no statistical evidence that operating turbines had any measurable impact on home sales prices.” (Source: “The Impact of Wind Power Projects on Residential Property Values in the United States: A Multi-Site Hedonic Analysis”)</p> <p>The Michigan Department of Treasury also compiles data on State Equalized Value (SEV) of real property in Michigan’s 83 counties. This data does not include the value of the wind turbines themselves (which are personal property). State data shows that the total increase in value for all Michigan counties from 2011 to 2019 was only 12.11% and SEV decreased in 13 counties. In contrast, the taxable value of property in the 4 counties (Huron, Tuscola, Sanilac, and Gratiot) hosting the largest number of wind farms increased significantly, by an average of 27.5%, from 2011 to 2019. SEV also increased by an average of 14.3% in 6 other Michigan counties hosting wind turbines (Mason, Missaukee, Osceola, Delta, Saginaw, and Emmet).</p>
<p>How does this affect homeowner policies and underwriting?</p>	<p>Apex Clean Energy develops wind projects across the country. After some investigation, it became clear that we have never seen or heard of a homeowner policy being cancelled due to the presence of a wind project.</p> <p>Insurance for all turbines and related infrastructure will be covered under a policy held by the developer or project owner, and there is no need for any homeowner to take out additional liability insurance. Our landowner agreements also include requirements to maintain comprehensive liability insurance protecting both the project and the landowner. This provides added protection for landowners to avoid any impact to their personal insurance policy.</p> <p>As an example, according representatives of Fremont Insurance, a local firm that has historically been very conservative with risk, they currently insure homes with wind leases and their farm underwriting team is generally where these policies come from. Fremont was very clear, they always look at every policy on a case by case basis but they would never say “outright no” to wind turbines, even if it’s smaller wind turbines installed by a landowners for personal use.</p> <p>Regardless, landowners should be sure to speak with their licensed insurance agent about any changes to their property to avoid any confusion over how turbines are covered.</p>
<p>Also want to know that my insurance here in stanton will not cover if something happens, who do I sue?</p>	<p>See above</p>
<p>Question is regarding property value: We understand the benefit to large property owners but how does it affect property value to property owners that don't sign lease? How do the small one-acre home owner that aren't in the lease footprint affected? In other counties, did property values increase or decrease?</p>	<p>The evidence from Gratiot County on residential values is that they continued to increase at about the same rate regardless of whether wind turbines were in the township or not. Property sales records bear this out as well based on the largest national studies that have been done on the topic. (more on this at www.montcalmwind.com/property_values)</p> <p>For small parcels that may be outside of the project area, those residents or property owners still see benefits through improved electrical and transportation infrastructure in the township/county, more funding for local schools, townships, and county services, and the positive effects of increased economic investment in the community (new jobs, support of family farms, and significant spends at local businesses during construction).</p> <p>Some communities may share the benefit with all taxpayers through tax cuts and millage reductions, though that is a decision each county or township would have to make. Some school debt millages may automatically be reduced for homeowners because of the big boost in local tax base these projects provide. These payments are often fixed, meaning new tax revenue from a wind farm reduces the burden on other taxpayers.</p>
<p>Have residents in areas with turbines indicated any adverse affects to the value of their home or marketability should they be looking to sell their home?</p>	<p>See above</p>

Property Values

Question	Answer
Do you guarantee neighbors of turbines the before turbines value of their home if they try to sell after turbines?	Due to the variety of factors that can impact home values, we are not able to offer property value guarantees. To consider the complications here, it helps to imagine how unreasonable it would seem for Apex to ask a project neighbor to pay the wind farm for any increase in value to their home or agricultural property after the project is built.

Turbine Technology

Question	Answer
Is there a specific brand of turbines that are used?	We have not yet selected a turbine model, but some of the companies that manufacture wind turbines include General Electric (GE), Vestas, Siemens Gamesa, and Nordex, to name a few. Some turbine components are manufactured right here in Michigan at Ventower in Monroe.
What company manufacturers these turbines?	See above
Approx. how many turbines would be needed to create the desired energy for the montcalm project?	We think it will be about 75 turbines across the entire project footprint. In Isabella County, we built a project of similar electrical output, and used 136 turbines. The difference is that in Montcalm we will use newer turbines that are more efficient and produce more electricity per turbine, so we will need fewer of them.
why did you say Isabella is producing 350 mw for their 140 turbines a year but assume montcalm will produce 325 mw with 75 turbines of the same size?	Isabella Wind has a generation capacity of 385 MW using 136 turbines. The turbines are made by GE, measure 583' in tip height and can each produce 2.82 MW of power. Montcalm Wind is being designed to produce 375 MW of electricity, and we are considering turbines that can produce 5 MW of power per tower.
Why do the turbines need to be so high?	Like any industry, wind energy has evolved and improved over time. As they have increased slightly in size, they have become more efficient, quieter, and able to produce more power per turbine. The power output of a turbine has a direct relation to its rotor diameter - the swept area of the blades. A 20% increase in permitted tip height can increase annual electricity production by up to 90%, reducing the number of turbines needed for a given project.
So what's the tallest turbine - from ground to top of tip of blade - you expect to install in Montcalm County?	We have not yet selected a turbine model.
3. What IS the Maximum Speed?	Modern turbines have governors on them and the maximum rotation speed depends on the turbine model, but as an example the maximum speed of the Isabella Wind turbines is about 18 rotations per minute (RPM)
Is the power produced stored anywhere like in a battery? And, if so, where are these storage facilities located?	We currently do not have plans to include battery storage as part of Montcalm Wind. Michigan, however, does have one of the world's largest batteries in the Ludington Pumped Storage facility. More on that here: https://youtu.be/PLaY13fi2_0
Is hydraulic oil present in the system? If so how often does this get changed? How much is used for each turbine?	Yes, depending on the turbine model, a wind turbine may utilize different lubricants for the gearbox and hydraulic systems that control blade pitch, yaw, and braking. The amount used and maintenance schedule is dependent on the turbine model. A gearbox could contain up to 100 gallons of fluid. Each blade pitch gear box may hold approximately one gallon each and turbine yaw drives could contain about 4 gallons each. These systems are typically equipped with sensors to automatically detect problems such as loss of pressure or a potential leak, as well as containment systems to prevent any accidental release from leaving the turbine nacelle or tower.
Want to know how hazardous is your oil that runs gears and motors	There is nothing special with the oil in any of the gearboxes that makes it more hazardous than any other common oil found in, for example, farm equipment or automobiles.
I've heard you have to mine for some of the turbines components , is this true?	The majority of a turbine's components are made of steel, copper, and fiberglass. Many people think rare earths are a necessary component of wind turbines, but only about two percent of the U.S. wind turbine fleet uses these metals at all, and that number shouldn't change much in the years to come.
what do you do with broken turbines?	If there are components of the turbine that break over the life of the project, the turbine in question will be shut down and repaired.
What happens to broken turbine parts? They are huge and can be an eyesore.	See above
How much area in square foot or acres do the wind turbines need to occupy? And, is there additional safety zone around the turbine?	Wind turbines and their access roads generally take up less than an acre and a half each. The access roads will generally be 16' wide and maintained by the project owner throughout the life of the project. Apex's internal setbacks are at least 1,225ft from a residence, but there is no additional safety or "hazard" zone around the turbine beyond our standard setbacks.
How many megawatts does one turbine produce on an average day in Montcalm county?	This would depend on a number of factors including the turbine model, generating capacity, and the wind speed on that day.

Turbine Technology

Question	Answer
How long does it take for a wind turbine to be fully installed?	The entire construction process for a project takes between 12 and 18 months. Once a turbine foundation has been installed, the erection of the tower happens pretty quickly and a tower can be fully installed within a week.
Is any fuel used in running these turbines?	No. The fuel is the wind. There is not diesel or gas backup to power the turbines when the wind does not blow. They're powered by the wind.
Recycling research is just starting, and any recycling is more expensive. Is Apex willing to commit to recycling all their blades in Montcalm County? If not why, I thought this is all about being more green?	Questions around recycling may not be Apex's decision to make at the end of the day, but details about our plans for recycling, reuse, and disposal of turbine components will be included in our decommissioning plan as part of local permitting.
How do you handle decommission and reclamation of the land?	See above regarding decommissioning. Site restoration during the spring following construction is the project's responsibility and will include tile repair, decompacting impacted ground and restoring disturbed land for agricultural production.
What is the life expectancy of a turbine? Who manages the waste?	The average life of a wind turbine is 25 years or more. The project owner is responsible for decommissioning and that is guaranteed by a financial security that is posted in favor of the local government. If by waste you mean the turbine components after decommissioning, that will be the responsibility of the project owner.
What happens to the turbine after it's useful life has been exhausted?	There are two options for what happens to a turbine at the end of its useful life - repowering or decommissioning. See above for information about decommissioning.
How can turbines be efficient if they run 25 % of the time? Is there a formula including the cost vs. benefit?	All energy sources have some down time. A project's capacity is its maximum power output. Different electricity sources have difference "capacity factors" - the amount of power generated on average versus its maximum capacity. According to the U.S. Energy Information Administration, Natural Gas plants have a capacity factor of about 57%, Coal's is 47.5%, Hydroelectric 39%, and Wind at 35%, on average. This does not mean that wind farms are only generating electricity 35% of the time, it means that averaged over an entire year they are generating 35% of their maximum theoretical capacity if the wind was always blowing at optimal speed.
my understanding from the apex rep that came out to talked with me, the power produced from this project is contracted to DTE. is this the case?	Montcalm Wind does not yet have a power or project purchase agreement with DTE or any other party.
What size are the windmills/turbines on George's land?	The turbines in Isabella produce 2.82 MW and are made by GE. The specific tower on Mr. Green's property measures 583' tip height.
What percentage of the turbines are manufactured in USA. Not just assembled.	It depends on the turbine manufacturer and availability of the company's supply chain at the time the turbines are being sourced. For example, most turbine companies, even European turbine companies, have built out manufacturing capabilities in the U.S. So, there could be a global supply chain, but at the same time many of the components are able to come from the US and often do.
Will local collection lines be underground or overhead?	Local collection lines between turbines will be located underground.
What's the working lifespan a blade? What are they made of?	Turbine blades generally consist of a carbon-composite material with several different layers. The blades are hollow and tend to have a steel frame where the base plugs into the rotor, and a majority of the rest of the blade is made of balsa wood framing and carbon fiber composite material. The working lifespan of a blade is dependent on environmental conditions and manufacturer, but they generally last around 20 years. Sometimes blades are replaced or sooner depending on evolving technology.
And what's the oldest wind farm in MI?	During the presentation Albert misspoke and stated that he thought the first project was built in McBain. This was incorrect. The first full wind farm in the state was the Harvest Wind Farm in the Thumb, which opened in December 2007 and contained 32 turbines with a capacity of 53 MW. The first wind turbine installed in the state, a 0.6 MW model, was constructed in Traverse City in 1996.
What are the dimensions of the cement foundation needed to support a 600 ft turbine including the depth.	This will depend on a number of conditions that will be determined by geotechnical studies, including soil type and water table levels. For example, in Isabella we had five (5) different foundation types. Each was a little different and ranged in diameter from 60 to 80 feet, and about 10ft deep.
How deep are the foundations these towers sit on? How will they affect the water tables?	The turbine foundations should have no impact on the water table, but will range in size and design based on water table levels, turbine model, soil conditions and other factors. See above for related information.

Question	Answer
<p>What is the brightness of the light?</p>	<p>The FAA requires wind turbines to be lit at night with red L-864 medium intensity aviation lighting. These have a brightness level of 2,000 candela (cd). Lighting technology has come a long way for wind turbines and projects are starting to come online that will utilize what is called Aircraft Detection Lighting Systems, or ADLS. These systems can detect when low flying aircraft are nearby so that the lights only flash when aircraft are in the area. This can significantly reduce nighttime lighting if the system is approved by the FAA. We are exploring whether Montcalm Wind will be able to utilize ADLS or other alternative lighting systems.</p>
<p>How do you know when to change the light when it is out? I myself seen a light out for two months by Shepard before it was replaced.</p>	<p>Apex Clean Energy is not in a position to answer questions about the turbines in Shepherd because we were not involved in that project, but the turbines we use will have sensors to notify us if a light burns out or is not working for any reason. When this happens, the SCADA system sends us a notification and we schedule the repair.</p>

Setbacks

Question	Answer
Is the setback from a residence from the house or the property lines? Does this setback include outbuildings such as barns and animal dwellings? Is it 1000 or 1500 Feet?	Setbacks usually apply in multiple ways, including setbacks from a residence and non-participating property lines. In total, there could be more than 25 different types of setbacks set by the township, state and Federal Government that we must follow. Apex's internal minimum setback is 1,225ft from a residence and a minimum of 1.1x tip height from a non-participating property line.
What about setback from live stock???	Outbuildings are not generally considered homes do the same setbacks to homes would not apply, but any property line setbacks or other restrictions specific to outbuildings could apply. Livestock operations are compatible with wind energy and in many farming environments, cattle, sheep, and other livestock can be found grazing next to turbines or huddled up in the shade created by the tower.
question: shouldn't the setbacks for distance, noise levels, and property flicker be set at the PROPERTY LINE, so as not to affect a non participating land owner at any point, anywhere on their property? i'm sorry but i have young children and we spend as much of our time outside as possible, and do not want to have to listen to 55 dBa AVERAGE or deal with any sort of shadow flicker at all, at any point from our home or our yard.	Many different setbacks are used, including setbacks from non-participating property lines. Sound levels are typically measured at a residence as the goal is to avoid disturbing a home, as opposed to an empty field.
In regards to the setbacks are those set by the state? County? Townships?	Montcalm County townships are independently zoned or unzoned, so many setbacks are set in local ordinances. There are also a number of setbacks imposed by several state and Federal Government agencies. We must adhere to all of them.
Is there a set back for pivots? Thank you for this meeting!	You are very welcome. Thank you for tuning in. There is not a specific or specially designated setback from a pivot, but we have added language to our lease so that anyone who participates is guaranteed that we cannot and will not disrupt the operation of your pivot without your permission to do so.
2.on your map of Buildable areas, you stated you don't put by lakes, yet your map Shows Buildable area IS right at a lake. why? what's the set back?	The map was denoting a wetland/pond, not a lake, and factored in standard wetland setbacks.
What is your setback from area lakes in our county?	There is no specific setback from all lakes, but for Montcalm Wind we expect to use a 1/2 mile setback from major lakes and Lake Residential zoning districts.
What is the set back for lakes?	See above.
what is your setback from area lakes in this county?	See above.
How is it possible to place turbines without disrupting the lake view?	Depending on the setback and turbine locations, viewshed impacts can be mitigated.
How far away from an airport do windfarms have to be?	This depends on a number of different factors, but the distance is measured in miles. Length and direction of the runways, local ordinances, the number and types of flights that use the airport, and radar systems are all examples of the factors that the FAA and DOT use when determining setbacks from airports.
Regarding turbine C19- and speaking in feet- how far away is the pick circle from the turbine, and how far away is the green circle from the turbine?	The 50 dBA circle was approximately 900ft from the turbine. The green outer circle we showed in the site plan from Isabella represented 2x tip height or 1,166ft.
So the pink line and the green line has the same decibel level?	No. The pink line depicted on the site plan we showed from Isabella was the threshold of where 50dba is measured. The green line is the physical distance of 2x tip height of the turbine. At that point, the sound measurement will be less than 50 decibels.
How far west in the county are you considering? Is the panhandle area also included?	We are currently evaluating land in 11 townships, including portions of Belvidere, Cato, Day, Douglass, Home, Maple Valley, Montcalm, Pierson, Pine, Sidney and Winfield. The project will not be built across 11 townships and we expect the final project footprint to be smaller.
Is it true that you own the path to the windmill (and no one can cross it, because it is then owned by you?)	No, landowners are able to utilize the access roads on their property.
Are proposed Turbines in Montcalm 600 ft tall?	We have not yet selected a turbine model but expect Montcalm Wind turbines to be a similar size to those used for our Isabella Wind project or somewhat taller.
Why are you saying if set backs of 1200 & 1500 feet now and you have previously stated 1000 ft from homes	Our standard minimum setback is 1,225ft and for our Isabella Wind project no turbine was placed closer than 1,500ft to a residence. Isabella County and many townships in Gratiot County use 1,000 ft setbacks from homes in their ordinances, but Apex designs projects to go above and beyond the local requirements when possible.

Setbacks

Question	Answer
Do each of you live near a wind turbine? If you advocate for these near homes you should have to live next to them too.	George Green, who participated in the panel, does in fact live next to multiple turbines and has one on his property.
"What percentage of landowners that sign leases live within 2000 feet of their turbines, and what percentage live over a mile away from the turbines. "	This may be an impossible question to answer and depends on a huge number of different factors over multiple projects. There are currently tens of thousands of people living safely around operating wind farms across the United States of America.

Lease & Zoning

Question	Answer
Does APEX own the property or lease it?	We do NOT own the property. We will lease it. The landowner continues to own the property, can exercise their own personal property rights, and we just pay rent throughout the life of the project.
How much property do you need to own in order to be considered for a lease?	Any amount of property qualifies for a lease, depending on where the property is located. It does not matter if it is a single acre or 1,000 acres as long as it is located in the project area.
If someone buys the project at a later date how is the Hold Harmless Agreement handled?	The project entity (Montcalm Wind) would continue to exist and all obligations under the lease would apply to the project owner.
Want to know why there is a gag order in your lease on clients that have signed!	No such provision exists in our easement with landowners.
you said you cannot touch someone's property without permission.. does this apply to touching, or crossing someone's property during the construction process? trespass zoning?	We are not able to install facilities or cross someone's property during the construction process, other than via public rights-of-way.
So if you have to "touch" my property, and i say no.... you can not do anything:) awesome! Because you are not allowed on my property and you are not allowed to even look at my property- I am unsure if that is in our current ordinance- BUT IT SHOULD BE!	<p>We will not touch property that is not under lease. Montcalm Wind will be developed on entirely on private property and these projects can only be built if the owners of that property have voluntarily determined that hosting turbines represents a valid use of their property.</p> <p>In the U.S., our laws protect private property rights and ensure that private landowners have the right to make the decision to locate a turbine on their property, much as they have the right to locate a silo, barn, or other agricultural structure there. Because wind turbines present no health or safety risks to owners of neighboring properties, courts across the country have determined that the decision to host a turbine on one's property is within his or her private property rights.</p>
What would happen if a land owner signed an agreement with Apex for turbines and later the land owner decided that a wind farm was not what they wanted?	If a participating landowner wishes to revisit the easement agreement they should contact our development team.
If a landowner signs a lease/contract prior to a turbine being built are they able to terminate that lease/contract with Apex and how?	See above
Why did Apex reach out to just the people who had a lot of land prior to the community? And why did they have to sign medical waivers, that they can't go back on Apex with any health issues?	<p>We have reached out to numerous community leaders, landowners, and other stakeholders throughout this entire process and have been attending public township meetings for some time. We look forward to continuing the conversation with the entire community in the coming months and mailed invitations to this public meeting to all residents of our area of interest.</p> <p>No medical waivers have been requested or signed by participating landowners.</p>

Construction

Question	Answer
have you decided on a location for the collection substation	We have not.
who will own the substation.	The substation will be owned either by the project owner, or possibly ITC at the point of interconnection where the power plugs into the grid.
If construction is going to proceed when will building begin and how much land do you need to own to be considered for the project	Construction will likely not occur for this project until 2023/2024 and anyone in the final project area can participate. Smaller landowners can benefit even though they wouldn't end up with a wind turbine on their property due to our standard setbacks - there is no minimum acreage requirement for participation. We anticipate signing wind easements on between 35,000 and 50,000 acres to design the project.
When will construction start?	See above
How many people does it take to assemble one wind turbine?	Construction crews for a wind farm number in the hundreds with numerous workers involved in the different steps necessary to fully construct a turbine, including different crews for excavating the foundation site, pouring the foundation, transporting the turbine components, operating the cranes, building access roads, laying collection line, fixing drain tile, building the substation, wiring the towers and electricians to ensure the power flows, to name a few or the roles.

General Info and Timeline

Question	Answer
Will Apex hold additional meetings to discuss project progress?	Yes this is the first of many meetings and community conversations we plan on holding.
How will we be notified of future meetings?	Depending on the type of meeting, folks should expect notices in newspapers, online, or through the mail, as well as in-person opportunities in the future.
Is or will there be an available map of the land lots on where these are being installed?	We do not have a map at the moment because we do not yet know where turbines will go. Once we have a better idea of proposed turbine locations, and before we submit an application to the townships, yes. Right now we do not have a layout.
What about a map of your intention?	Once we have a proposed layout and may to share we look forward to sharing that and getting community feedback - we still have a lot of data to gather before we get to that point.
Can we have a copy of the Project Footprint for Montcalm County?	See above
when will land owners be able to see a layout of the project	Landowners will be approached with potential turbine locations first because the lease requires that we (the developers) seek approvals and consultation from each landowner before we move forward with additional plans. We do not have a proposed timeline for that at this point.
If 2 years of data collection is needed to determine if a project moves forward. When did data collection begin in Montcalm County and what is the earliest this project will break ground?	Our first meteorological tower went up in Montcalm County in 2019. Our goal for project completion is 2024 and that would mean construction would likely begin in 2023.
Illinois. Ted Hartke has documents - did you buy his land? Why? Do you enjoy staying at your property where you live right next to a turbine? If you do not own a property that has a house that is next to a turbine, many questions. Also this is suppose to made public	No we did not purchase any land from Ted Hartke. Mr. Hartke is a surveyor who comes from Vermilion County, Illinois. He began to actively oppose wind energy after he was removed from the engineering team for a wind energy project in that county and has frequently provided incorrect data regarding wind projects constructed by Apex and other companies in his efforts to oppose these projects.

Miscellaneous

Question	Answer
Where are the 2 million homes powered powered at? How many of these are in Michigan?	Our projects are located throughout the country, including operating projects in Texas, Virginia, Oklahoma, Illinois, Iowa, and Michigan, to name a few. In Michigan, our Isabella Wind project generates enough clean electricity to power about 97,000 homes each year.
What is a Pivot?	When we talk about pivots we're referring to irrigation pivots that are commonly used in Montcalm County to irrigate farm fields.
Can I tour a wind turbine?	Yes. We look forward to working to organize some opportunities when COVID-related restrictions on public gatherings are lifted and welcome you to contact us to set up a private tour.
Can you provide a copy of all questions and answers to the participants?	A copy of the video from the meeting, PowerPoint, and questions can be found at https://www.montcalmwind.com/feb2021_publicmeeting .
How are these answered delivered after this meeting closes?	A question log will be published to the Montcalm Wind website.
Are you answering questions on the Q & A and the chat?	During the meeting questions were answered via the Q&A tool.
If this is a fair and open forum, why are you not answering my questions and only answering the questions that you can turn a good light on the project?	Due to the volume of questions not every question was answered live, but all were included and answered in this log.
All! are you answering everyone's questions and not mine?	See above
You said you would make all questions public- proof if mine are not	All questions and responses were made public. Chat or commentary that did not include a question was not included (this comment being the lone exception).
Who was in charge of the timeline of this presentation?	We definitely ran about 30 minutes over in our presentation and decided to take more time to answer as many questions as possible. We will strive to keep on schedule for future events.