

**Comments on the Supplemental Draft Environmental Impact Statement
(SDEIS) for the Cohocton Wind Power Project by Canandaigua Power
Partners, LLC (CPP)**

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Submitted by:

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Summary

A thorough and objective reading of the SDEIS and the preceding DEIS will conclude that Canandaigua Power Partners LLC (CPP) frequently overstated the potential benefits of this project while minimizing, ignoring, or misconstruing the actual costs and risks. Even accepting the data as presented, a conservative analysis of costs and benefits demonstrates that the project has no net positive economic value but will actually result in a net economic loss of more than \$248,000,000 for the residents of Cohocton and surrounding areas. Thus, the project fails to meet the Renewable Portfolio Standard's primary objective of "stimulating economic development". On this basis alone, the SDEIS must be rejected by the SEQR Lead Agency, the Town of Cohocton Planning Board.

Following a thorough and scientific examination of the SDEIS/DEIS and referenced studies, it is our conclusion that these documents are merely clever frauds, intentionally perpetrated by the developers through a group of consultants who work solely for the wind industry. The SDEIS/DEIS is not fair, accurate, scientific, or complete in its examination of the complex and serious environmental, economic, cultural, social, and public health impacts of this project. We trust that the Lead Agency, in addition to rejecting these documents, will also involve appropriate law enforcement agencies such as the NYS Attorney General and the Federal Bureau of Investigation to ensure that all who participated in this criminal conspiracy are brought to justice, and that appropriate compensation is provided to the many citizens who have had their lives seriously disrupted by the illegal actions of the developers and their consultants.

It is unfortunate, though understandable, that CPP chose to use only wind energy consultants. Had they been interested in a fair and honest examination of the ramifications of an industrial wind development, there are many legitimate third-party experts they could have employed. Cornell University, Rensselaer Polytechnic Institute, Rochester Institute of Technology, SUNY Buffalo, and other nearby schools have the expertise and objectivity to design and carry out scientific studies to accurately identify and evaluate the true environmental impacts of this project. An independent oversight committee could have been established to manage these studies and to act as a buffer between the developers and the researchers. Such an approach would ensure that the best interests of all parties were fairly protected. Additionally this approach would fully comply with the letter and the spirit of state and federal environmental regulations.

There is also a major legal compliance issue with the proposed layout of the 36 wind turbines. The primary approach to mitigate the many real public safety and health issues related to wind turbines is to establish appropriate and conservative setbacks from non-industrial activities. Consistent with this thinking the authors of Windmill Local Law #2 took reasonable precautions with regard to setbacks for industrial wind turbines. Section 2(a)(ii) states:

The minimum setback distance between each production wind power electric generation unit (wind turbine) from adjacent dwellings, areas or structures customarily used by the public shall be 1500 ft.

It is customary within the town of Cohocton for the shoulder areas of our public roads to be used for a wide variety of daily purposes. These purposes may include:

- Walking for recreation, commuting, or to and from school buses

- Running for exercise or training
- Snowmobiling
- All Terrain Vehicles
- Bicycling
- Hiking
- Bird watching
- Cross country skiing
- Snow shoeing
- Hunting, fishing, and trapping access.

It seems logical that, given this common usage, the shoulders of our roads would meet the definition of “areas customarily used by the public” and therefore would be subject to the carefully constructed and necessary setback of 1500 feet from each and every wind turbine.

In fact, most of the turbines in the latest site plan are much closer than 1500 feet from public roads and therefore are in direct violation of the law.

The site plan must be revised in order to comply with this important law protecting the health and safety of the general public.

Potential Project Benefits

1. **Electrical Generation.** CPP states that this project will produce a substantial amount of electrical power, 250,000 MWh annually. Their calculation is: 90MW (nameplate capacity) X 32% availability X 8,760 hours/year. Unfortunately this formula contains several errors. The SDEIS assumes an “availability” of 32%, although there are no data or references to support this assumption. Recent documented experience in Vermont indicates that the power generated is likely to be less than 20% of nameplate capacity. Since, according to GE Energy, the wind availability in upstate New York is “out of phase” with electrical demand, the actual usable energy would be only one third of the generated energy. So the correct equation would be: 90MW X 20% availability X 8,760 hours/year X 33% usability = 52,000 MWh per year. This is the amount of usable incremental energy that may be produced. This amount of energy would satisfy the average annual usage of 8,200 homes, not the 39,500 claimed by the consultants. The SDEIS estimate is wrong by a factor of five. That consultants with expertise in their fields would make an error of such magnitude should make one skeptical of their other conclusions as well.

The approach used by CPP to determine energy production is not only wrong; it is incomplete as well. Conveniently CPP fails to disclose that wind turbines require a supply of energy in order to operate. Electricity (from the grid and apparently un-metered) is needed for the yaw mechanism, blade pitch control, lights, controllers, sensors, metering, data collection, heating and dehumidifying the nacelle, oil heater, gearbox cooler, hydraulic system for braking, thyristors, and magnetizing the stator. While the amount of energy consumed by a wind turbine is surely well known by the manufacturers and developers they have refused to make any of this data public. We can only assume that the reason for this secrecy is that the amount of electricity required is quite significant and that subtracting it from the produced power

would negatively impact their business case. That the grid operator is forced to purchase any power generated by a windfarm but is not able to bill the windfarm operator for the grid electricity that they consume is a rather bizarre arrangement. Perhaps the Lead Agency would like to find out if it is legal for a “customer” to take and use un-metered power from the grid.

The reason that there is such a difference between GE’s availability estimate of 30% and the actual Vermont experience of 20% lies in GE’s carefully contrived definition of availability. GE defines availability as the % of time that there is sufficient wind to cause the turbine rotors to move. According to the wind turbine specifications, the rotors begin to move when the wind speed reaches 8.0 mph. At this wind speed, the turbine produces a tiny fraction of its capacity. The turbine does not reach “rated nameplate capacity” until the wind speed is 27mph. Sustained wind of this magnitude is decidedly rare in the central Finger Lakes. That the consultants would maintain that the units would operate at nameplate capacity 30% of the time must mean that they either have very limited understanding of wind turbine operations or they intended to dishonestly overstate the economic value of this project. Other capacity-limiting factors that were omitted include planned downtime for maintenance (5% according to AWEA) and emergency downtime due to icing or lightning strikes (the DEIS references a European study in which 14% of turbines were so damaged by lightning strikes each year that they had to be removed from service for repair or reconstruction.)

There is an additional issue regarding the usability of wind-generated energy that was not addressed by CPP. According to NYSERDA, upstate New York generates more electricity than it consumes. It is a net exporter of electricity to the power grid. Downstate New York, on the other hand, generates less electricity than it consumes, and is a net importer from the grid. So any incremental wind energy (or its fossil fuel equivalent) generated locally needs to travel over three hundred miles for it to be consumed. Given this distance, there will be significant “line loss”. The 52,000 MWh that leave the Cohocton wind project will be much less by the time it arrives at the end users in Manhattan. From an intelligent environmental and economic perspective it would make much more sense to build windfarms closer to NYC (the Catskills and Long Island have more favorable wind profiles) or to build more conventional generating capacity along the lower Hudson.

CPP maintains that the power generated by the project “*greatly exceeds the energy required to construct and operate the project.*” This statement is not supported by any data or analysis. Nor does it appear that the consultants even attempted to calculate how much energy would be required for manufacture and delivery of components, cement manufacture and distribution (across Lake Ontario), and the hundreds of thousands of hours of large truck and construction vehicle operations. Diesel fuel consumption for cement mixers alone is estimated to exceed 25,000 gallons. If the usable capacity is really only 5.9 MW (calculated as 90MW X 20% availability X 33% usability), is it possible that the project generates less energy than it uses? CPP overstates the value of the power from this project by a factor of fifteen (90MW claimed output vs. 5.9MW actual output). Without further analysis, we will not know if this project passes even the most basic economics test required by the RPS.

The final economic benefit claimed by CPP states: “... *as a result of the RPS, the PSC anticipates that wholesale energy prices are likely to decline as the addition of substantial amounts of renewable energy offsets some of the program costs. The cumulative cost of premium payments, projected to range between \$582 million and \$762 million for renewable*

projects, is expected to be offset by approximately \$362 million in wholesale energy cost reductions as New York reduces its reliance upon fossil fuels.”

These statements are simply nonsense. Replacing a less expensive energy source (fossil fuel) with a more expensive energy source (wind) can only result in higher energy costs not lower. Additionally there is no evidence to suggest that intermittent wind-generated electricity will result in any reduction in fossil fuels. The only way to reduce fossil fuel consumption is for utility customers to agree that they will only use electricity when the wind is blowing. There are third world countries that operate this way.

Other (objective and independent) studies of the faulty economics of wind energy may be found in References 1 and 2.

- 2. PILOT and Lease Payments.** There is no question that PILOT and lease payments provide some positive economic value to the recipients. However there are serious questions about the negotiation process for the PILOT as well as their long-term reliability. A fairly negotiated PILOT would reflect the actual economic value of the project. According to the SDEIS the economic cost of the project is \$120M. The economic value must be higher than that to enable a profit for the developers. However, taking a conservative approach and using \$120,000,000 as the economic value for real estate tax purposes, the developers should pay \$3,600,000 in PILOT each year, not the \$700,000 that is derived from the SDEIS data.

CPP fails to address the reliability of future payments; it just assumes that they will be there. In fact, these payments will continue only as long as the developers or future owners have the financial capacity and willingness to do so. As a Limited Liability Company with no assets of significance they can walk away any time and be free from any future liability.

There are two likely scenarios that could lead to an end to the PILOT and lease payments. One, the owners may simply go bankrupt. The DEIS does not consider the financial condition of the developers. We have not had the opportunity to examine audited financial statements for the last five years nor have we seen the financial results that demonstrate a successful track record of windfarm development. Until such documents are made available we cannot assess their financial position and determine the degree of future risk.

The second likely scenario is that government subsidies may be reduced or eliminated. New York has the second highest electricity costs in the nation (Center for Governmental Research). These costs are a substantial barrier to economic development. Wind energy is even more expensive, and as more windfarms come online our electricity costs will continue to rise, furthering our economic disadvantage. Political leaders in Europe are now recognizing the folly of wind energy and are reducing or eliminating their once generous subsidies (Reference 3). Sooner or later subsidies will end here as well. Without subsidies there are no PILOT or lease payments. This risk must be fairly considered to assess the project's economic impact. In the business world, this is called a sensitivity analysis, a comparison of probabilities, risks, and weighted outcomes.

Given all of the problems associated with PILOT and leases we strongly recommend that the developers be required to purchase the property for each turbine site. This will enable town assessors to add 100% of the actual value of this project to our tax rolls. It will also define a

more direct liability path in the likely event that there are safety and health problems associated with the turbines. However we also recognize the legal protection afforded UPC by the use of an LLC.

Potential Risks and Costs

1. Construction.

There are several aspects of the construction process that require additional study to ensure a complete and true picture of impact:

- **Wind Turbine Foundations:** the DEIS states that each foundation will require “approximately 300 cubic yards of concrete”. However, given the actual dimensions of the foundations, they will require 1,046 yards (the proper equation is $\text{Pi} \times \text{radius-squared} \times \text{depth}$). 36 turbines will require 37,656 cubic yards, or 3,766 cement mixer loads. The calculations by CPP are simply wrong. An error of this magnitude justifies further detailed analysis and evaluation by an objective third party to determine what other errors have been made by the consultants in their sloppy review of construction issues.
- **Waste Removal:** to make room for the 38,000 cubic yards of concrete, at least that amount of dirt and rock will need to be removed and transported to an approved disposal site. The DEIS does not comment on this activity or identify the disposal site. Nor does it consider the thousands of additional truckloads necessary to accomplish this.
- **Impact on Local Traffic:** the DEIS claims that the impact will be minor. In fact the impact of thousands of construction vehicles will be major. The turbine component delivery vehicles are very large and very slow. Every one of these trailers (168 in all) will cause the complete closure of Routes 21 and 371, and every other road they use, for hours and days at a time. The consultants failed to consider the tens of thousands of gallons of excess fuel that will be wasted as traffic is re-routed around these closures. There is also reason to believe that these deliveries may not go smoothly. The vast majority of residents and business people in the central Finger Lakes are dead-set against this project. Picketing or other disruptions are to be expected. What are the plans to deal with several thousand SUNY students engaging in peaceful protest at the Route 390 exit ramp? The cost of police overtime for a year of civil disobedience should be added to the overall project price tag.
- **Condition of local roadways:** according to manufacturer’s specifications, the “Allowable Vehicle Grades” cannot exceed 10%. Additionally, there are limitations for “Allowable Bumps and Dips” (no more than 6” for every 50’ of roadway). Surely our local roads do not meet these specifications. Yet the Transportation Study fails to address these significant restrictions. Once again, it appears that important details necessary for a fair analysis are overlooked, either intentionally or through incompetence.

2. **Decommissioning.** It is inevitable that at some time in the future the windfarm will no longer be viable. For public safety and aesthetic reasons it will then have to be removed and the sites remediated. It is essential that sufficient funds be set aside for this purpose. CPP, without any supporting detail, simply states that they will be compliant with local laws regarding decommissioning. The vagueness of this undefined financial instrument makes one question whether such funds will ever be available. Based on our knowledge of CPP's finances, it appears that 100% of their assets will be used to build the windfarm, meaning that there are no funds available to purchase the required financial instrument (which would have a net present value of approximately \$120,000,000).

The obscure undefined financial instrument is not a financially prudent approach, and it should be removed from consideration. In its place we should demand a minimum of 120 million dollars in an interest-bearing escrow account, at our local bank, held jointly by the bank and the town government. An escrow account or some other type of guaranteed financial instrument is the only way to avoid being bankrupted by the cost of decommissioning.

3. **Avian Mortality.** The various studies conducted by EDR on raptors, birds, and bats lack rigor and consistency and do not demonstrate even a basic understanding of scientific methods, experimental design, or avian biology.

- **Raptors:** consultants (unidentified and uncredentialed) claimed to have spent several days in Clute field looking for raptors. They reported that they did find some, but admitted that the numbers appeared "very low". For reasons unknown, they stopped their observations each day at 3pm even though the peak hour for sightings was from 2 until 3. The graphs indicate that that many more raptors would have been seen had they continued to observe for the remaining daylight hours. It is interesting that they did report seeing a bald eagle even though the text argues that bald eagles would not frequent the windfarm area because of "*unsuitable aquatic habitat*". In fact, bald eagles do frequent the windfarm area, as they are quite fond of the bass and trout in the streams and ponds throughout the project area. The Fish and Wildlife Service has collected a large number of sightings of bald eagles in the proximity of the project area, and the NYSDEC reports three nesting sites just north of the project.
- **Birds:** consultants conducted radar surveys on a number of nights to try and estimate the numbers of resident and migrating birds. Unfortunately they chose a radar unit that was both unsuited for the task (marine radar with a wave guide antenna not a parabolic one) and underpowered (10kW vs. the recommended 50kW; please see Reference 4). Their approach to setting up and operating the unit demonstrated zero understanding of basic radar principles. Thus, it is not surprising that they found few birds. It would have been very difficult to do so given their equipment, their techniques, and their appalling lack of expertise.

We have only learned within the last few days that the methodology described by the consultants for radar data collection and processing was a falsified. The consultants reported that:

The radar display was connected to the video software of a computer. During surveillance mode, 15 one-minute samples of the radar display were recorded onto the computer. During vertical mode a single 10-minute video sample was collected.

An eyewitness to this “collection” has now surfaced. It is his statement that the radar display was not connected to a computer but that the operator was manually counting the blips on the screen. Such outright and intentional fabrication surely raises questions regarding the accuracy and validity of the entire Biological Study. It is obvious that without a connection between the radar and the computer no “video samples” could have been collected. The eyewitness can be brought forward should the Lead Agency so request.

EDR has been asked to provide information regarding the qualifications of the field workers but they have not responded to this request. EDR has been asked to provide actual source data and details regarding the “proprietary software” they used to determine the number of birds, elevations, direction, and airspeed. They have not responded to this request. This lack of response is perhaps significant in that the airspeed of a bird cannot be determined without knowing the wind velocity and direction at the bird’s actual altitude. Since EDR had no wind-sensing devices and they used only a single radar unit (preventing real time comparison of bird direction and altitude) they could not possibly have determined the flight speed of birds. This is not a miscalculation or misrepresentation; it is an outright fabrication. The fact that they are not willing to share source data and software algorithms suggests that they may not have actually conducted the field studies as reported. Perhaps they just rewrote the avian studies from other Draft Environmental Impact Statements.

- Bats: the bat fieldwork, its explanation, and conclusions just do not make any sense. They did a small amount of mist netting. They also operated two “Anabat II” acoustic detectors. However they could not acquire sufficient data to reach any conclusions. There were two reasons for this. First, one cannot obtain relevant data from mist netting because it is not a statistically valid sample that can be calibrated and extrapolated. As for the acoustic detectors, their working range, according to the DEIS, is only 10 to 15 meters meaning that their sample area was minuscule compared to the many square miles of the project area. Having failed to generate any meaningful information from their fieldwork, they went to wind energy literature to look for other data. On p. 82 they state that “*Johnson and Strickland documented bat mortality rates of 46.2 fatalities per turbine per year at wind projects sited along forested ridgelines in the Appalachians.*” In fact, Johnson and Strickland documented no such thing. They couldn’t have because their experimental design and intent would not allow it. Johnson and Strickland were not interested in “bat mortality rates”; they were merely trying to determine if two specific endangered species might be impacted by a proposed wind development. Their sampling was infrequent, inconsistent, and incomplete. They apparently used college students with no specific expertise and they only searched for dead bats at the base of the turbine rather than the 10 acre circle around the turbine where animals struck by the spinning blades would be thrown. There is nothing in the Johnson study about 46.2 fatalities; the consultants simply made it up.

Had the consultants actually wanted to conduct valid surveys of raptor, bird, and bat activity, they could have used the type of equipment specially designed for this task under contract with the U.S. Navy, and used a methodology that has proven to be both accurate and reliable (please see Reference 4). Another readily available alternative is Doppler weather radar that is able to detect between thirty and fifty times more birds than the low power marine radar that was used by EDR (Avian Risk Assessment, p.10).

Without question, these consultants intended to conclude that the wind turbines would not be hazardous to avian populations and they planned their fieldwork, misquoted sources, and made up numbers to reach that very conclusion. Had they been more diligent in their literature search they would have found official documents from the U.S. Fish and Wildlife Service (reference 5), which estimate that stationary communications towers kill five million birds a year, or about one thousand kills per tower. Given that the rotor sweep area of a wind turbine is more than 50 times the cross-sectional area of a typical communications tower, it is reasonable to assume that a wind turbine would be more deadly to avian wildlife than a stationary communications tower. If the turbines are only twice as deadly, these 36 turbines will kill more than seventy thousand raptors, birds, and bats every year. CPP's claim that wind turbines kill only one or two birds a year is not credible.

Since the work on avian mortality is totally without merit, new studies must be conducted to determine the biological impact of the project. These studies must comply with the previously issued instructions from the U.S. Fish and Wildlife Service. Some of these requirements are:

- Conduct studies in and around the project area.
- Conduct studies under various weather conditions.
- Conduct studies over a multi-year period. Cover both spring and fall migration, and breeding seasons.
- Utilize remote sensing technology (radar, acoustic, and infrared).
- Sample day and night, season-to-season, and year-to-year.
- Work with Fish and Wildlife to develop draft study design prior to conducting new studies.
- Utilize a combination of acoustic monitoring and vertical and horizontal radar.
- Collect data at several sites in the project area.
- Include an analysis of the cumulative effect of (multiple) projects on natural resources.

4. **Regional Economic Development.** One of the key objectives of the 2002 State Energy Plan is “stimulating economic growth”. When it comes to economic impact, this project has many significant risks that are not appropriately addressed by CPP.

- **Tourism.** CPP maintains that impact on tourism will be negligible, basing this claim on studies that were paid for by the American Wind Energy Association and the British Wind Energy Association. Both are blatantly biased and have since been completely discredited. The wind association studies stated that tourists were generally not affected by windfarms and that some actually liked them.

In 2003 the tourism board in Scotland released a 190 page report that completely contradicted the earlier BWEA survey. This new report concluded that 15% of tourists

would definitely avoid areas with windfarms and that an additional 10% would be less likely to return. Over 50% of tourists agreed that windfarms spoiled the look of the countryside. The study concluded that plans for additional windfarms would eliminate 4,000 to 6,000 tourism jobs, and result in \$120M to \$210M in lost tourism revenue.

The Wales Tourist Board reached a similar conclusion as well. A survey of 19 tourism businesses revealed, “over half of the respondents thought windfarms have already and will continue to have an adverse effect on tourism.” In a survey of 205 tourists who had seen wind turbines, 30% stated that the wind turbines “detracted from the experience” And when shown actual pictures of existing windfarms in Wales, 65% expressed negative reactions. Without question, significant portions of tourists to the countryside are clearly turned off windfarms, and will choose to spend their money elsewhere.

The Southern Tier is the third largest tourist destination in New York State (per the SCIDA website). Tourism in the Central Finger Lakes supports almost 15,000 jobs, and brings in over \$200 million annually. A mere 10% drop in tourism would cost us twenty million dollars each year, more than 30 times the annual payments promised by CPP. These economic risks are decidedly and hugely negative. It is foolhardy to risk damage to a sector with 15,000 jobs for a project that may create 4 to 6.

- **Real Estate Tax Base.** An analysis of property values in the Cohocton area reveals that there has been significant growth in the number of “higher end” (>\$100,000) properties over a 5 year timeframe while the lower end of the market (<\$60,000) is unchanged. This growth reflects two new dynamics that are operating in the local housing market. The first is the trend for existing property owners to convert from seasonal to permanent residency by building new homes or expanding existing structures. The second dynamic is the movement of people from urban/suburban areas back to the country. These new permanent residents have chosen to move here not because of the amenities, not because of the convenience, not because of plentiful jobs – we don’t have those attractions here. Rather they come for the rural culture, peace and quiet, scenic beauty, low crime, good schools, and recreational opportunities. These people are overwhelmingly against the type of industrial development that CPP represents because it diminishes the quality of life factors that enticed them in the first place. These new arrivals represent an important economic development engine for towns across Steuben County. New home construction dollars go to local workers and suppliers. Real estate tax rolls are enhanced by the new assessments, and these folks tend to spend locally for other goods and services. This positive migration of new money to our communities will come to a screeching halt if the windfarm is built. People desiring a rural experience will not choose to live near an industrial development. Even before construction this project has started to erode property values, and prevent real estate sales. Once it is built, this erosion will accelerate. The fact that the wind industry funded two bogus studies (one written by an un-credentialed graduate student, the other by staff at the American Wind Energy Association) on real estate values is irrelevant; the damage to our own property values will be very real. Please see Reference 6 for the professional opinion of a local real estate expert.
- **Impact on Other Economic Development.** By changing the character of this area from rural/recreational to commercial/industrial, CPP will have a chilling effect on other economic development. Businesses that are considering expansion or relocation must be

confident that they will be able to quickly fill their openings with highly capable people. A Steuben County business with technical or professional openings will have to attract candidates from outside the area as we have a very limited supply of such talent here. Highly capable technical and professional people have a great many opportunities. Every company and every community competes against one another for these people. The fact of the matter is that very few in this talent pool want to live and work in a rural area such as ours. Places like Boston, San Diego, Chicago, Austin, Seattle, and Silicon Valley are perceived to have a lot more to offer than Bath or Hornell. Our recruiting challenge is to find that small sliver of the talent pool that would be interested in the rural experience we offer. In other words we try and match our genuine features with their actual desires. Those willing to trade the inconvenience of rural life for its benefits (peace and scenic beauty, recreation, etc.) may choose to come here to live and work. However CPP and the eight other proposed developments will transform our region from rural to industrial and essentially shut down our very limited talent pipeline. If I can't fill my openings with top talent I cannot afford to and will not choose to do business here. It is that clear and simple. No more new business here. Steuben County, the home of the largest industrial windfarms east of the Mississippi, may become the epicenter of a vast economic development wasteland.

The amount of economic value from all the wind projects is but a small fraction of the value derived by the decision of a single company like ALSTOM S.A. to invest \$50M and create 750 jobs in Hornell. It is either the windfarms or the ALSTOMs. We can't have both. From every rational economic, environmental, or social perspective, ALSTOM wins hands down.

5. **Public Health and Safety.** Concerns with blade flicker, ice throw, low frequency noise, and lightning have been documented by a number of objective third parties (unaffiliated with the wind industry). The consultants ignore all of these studies and rely only on studies from their own paid consultants. There is no science in these studies; their authors have minimal, if any, credentials. They simply make broad unsubstantiated claims that there are no public health and safety concerns. In fact, all industrial facilities pose potential hazards to the public. In the case of large industrial windfarms we need much more coordinated research to understand the exact risk profiles that are present. This will lead to changes in turbine design, turbine siting, and turbine size, as well as setbacks from property lines, residences, public highways, etc. To address legitimate health and safety concerns in a responsible manner, experts in industrial safety, risk management, public health (particularly morbidity and mortality), fetal development, acoustics, audiology, and neurology should be commissioned to objectively review the existing literature and recommend an appropriate path forward. Moving forward without the benefit of such studies opens the door to massive civil liability suits that will bankrupt the town of Cohocton, and much of the rest of Steuben County.

The risks associated with Low Frequency Noise (LFN) are not even mentioned in the DEIS or the SDEIS even though they have been well documented by medical researchers in numerous studies. Recently the French Academy of Medicine reviewed the potential hazards of LFN and issued an advisory that setbacks for wind turbines be increased to 5,000 feet. One of the most unsettling concerns with LFN is the probability that, based on occupational exposure studies, LFN may be a risk for unborn children, and that exposure to LFN from wind turbines may cause an increase in birth defects and stillbirths. Without a doubt, this project should be

delayed until sound scientific studies can be completed that will give us needed insight on the effect of turbine LFN on public health.

Additional professional medical opinion on turbine-related public health risks, including Vibra-Acoustic Disease, may be found in Reference 7.

6. **Cumulative Effects of Nine Local Windfarms.** Because windfarm development in Steuben and surrounding counties has been segmented into nine separate and independent projects, there is no serious attempt in the DEIS to gather the data necessary to consider the cumulative impact of more than 500 wind turbines that form a nearly contiguous industrial complex across many miles of rural hilltops. Some of the cumulative effects that should be analyzed prior to construction include the following.
 - **Stability of the Electrical Grid.** The total nameplate capacity of the nine projects under consideration is 779.5 MW. To put this in perspective, this aggregate capacity is 59% greater than the Ginna nuclear plant and 15% more than the coal-fired plant at Somerset. Adding this amount of intermittent, variable, and unreliable power to the grid is a recipe for disaster. The impact of this mega-plant capacity must be carefully analyzed to make sure that we do not compromise the integrity of the entire northeastern grid. Please see Reference 8 for Prepared Witness Testimony on grid stability related to the Northeast blackout of 2003.
 - **Regional Economic Issues.** Most people consider a few turbines to be a curiosity. Many people consider a windfarm of 15 or 20 turbines an eyesore. It doesn't appear that anyone has yet considered the reaction to a windfarm of 519 turbines. At present the largest windfarm east of the Mississippi, Maple Ridge, has 140. The aggregated nine local projects are almost four times larger than Maple Ridge. An industrial development of such scale would completely change, for the worse, the rural character of the region, and could have a devastating effect on our quality of life and our economy. Certainly it is both prudent and responsible to adopt a regional moratorium on industrial windfarms so that the future impact of such a mega-development can be assessed, before spending hundreds of millions on construction.
 - **Avian Mortality.** As discussed earlier it is logical, based on Fish and Wildlife Service studies, to project that a single turbine will kill 1,000 to 5,000 raptors, birds, and bats each year. Therefore, 519 turbines would kill between 519,000 and 2,595,000 raptors, birds, and bats annually. Over its twenty-year useful life this giant windfarm could kill between 10,380,000 and 51,900,000 creatures. Of course, declining populations due to this mortality may reduce the number of kills over time.

Quantitative Analysis of Project Benefits and Costs

Project Benefits

According to the DEIS, and from corrected calculations, the maximum (20 year) benefits of the project are:

- 52,000 MWh of usable annual electrical generation, which is worth, over twenty years, \$79M, at \$0.0764 per KWh (NYSEG day rate, 1-15-06)
- \$700,000 in annual PILOT and lease payments which equals \$14M over twenty years
- \$300,000 in annual wages worth a total of \$6M.

Thus the aggregate **gross economic value of the project is \$99M** over the life of the project.

Project Costs

1. **Tourism.** Given the third party studies in Europe it is reasonable to expect that tourism revenue (currently \$200M per year) in the Central Finger Lakes will be adversely affected. The European studies concluded that the adverse affect of new windfarms would be in the range of 15 to 25%. A very conservative projection of a mere 5% decline would cost \$10M a year, for a **life cycle cost of \$200M**. In addition, such a decline would cause the elimination of 750 jobs in the local tourism industry.

Related to the tourism issue is the proposal to build a luxury hotel and spa at Reservoir Creek in Naples. Construction of nearby windfarms will destroy the business case for this project. 120 permanent jobs will be lost. This is not a rational trade-off. Losing 870 jobs to gain 6 defies logic and common sense.

2. **Property Values.** No one knows for certain the exact impact CPP will have on property values. The wind industry “studies” conclude that there is no impact. However, our local real estate experts believe that the impact will be substantial, particularly at the higher end of the market. The more your property is worth now, the less it will be worth in the future. High-end properties with turbines in prime viewsheds may become virtually worthless (in terms of the value of residences). A loss of only 15% in value for Cohocton amounts to a **total loss of over \$10M**. There will also be losses for properties adjacent to Cohocton if turbines damage the viewsheds, or there are blade flicker or noise issues. Unfortunately CPP did not acquire the relevant data for these adjacent properties so this loss cannot be quantified at this time.
3. **Construction Delays.** The construction phase of this project will cause massive traffic stoppages when tens of miles of roads are widened and re-built, and when hundreds of huge machines are creeping down our highways. Assuming that 3,000 people will be held up an average of 45 minutes a day for 90 days of construction results in 202,500 hours of delays. If we further assume that our time is only worth \$5 an hour, the inconvenience has an economic cost of **\$1.01M**.

4. **Decommissioning.** Given that the developers do not have sufficient cash to pay for decommissioning, it is very likely that the taxpayers of Cohocton will have to pay that \$120M bill (this is equivalent to \$104,000 for each residence in the town).
5. **Avian Mortality.** Raptors, birds, and bats have both intrinsic and extrinsic value, which varies widely from person to person. Many people would say that bald eagles, a majestic endangered national symbol, have a great deal of value. There are many who feel that songbirds are of unique and special value (witness the billions we spend each year on wild bird food). Certainly the delight our grandchildren experience watching the hummingbirds feed is of value. And there are many bat advocates who appreciate that these tiny mammals effectively control mosquito populations.

The challenge is to transform this perceived value into an accurate economic value. Because the perceived value does vary widely, we will utilize a range of possible values, a range broad enough to have a high probability of capturing the true average value. Let's assume that the average economic value of an avian life ranges from fifty cents to \$5.00. (Individual values could range from a few cents for a "nuisance" bird such as a grackle to tens of thousand of dollars for bald or golden eagles. With a very conservative estimate that the windfarm will kill 1,440,000 creatures over 20 years, the aggregate economic cost of that carnage ranges from \$720,000 (50 cents each) to \$7,200,000 (\$5 each). Erring far to the conservative side we suggest an overall economic cost of **\$2M** for avian mortality.

6. **Public Health and Safety.** Given that research on windfarms and human morbidity and mortality is still in its infancy (primarily due to stiff opposition from the wind industry), it is difficult to calculate the economic value of human lives that are diminished or lost. However we do know that there is a range of human susceptibility for different windfarm effects. For example, blade flicker may not affect most people; it is likely a problem for just 20 to 30% of the population, and a severe problem for less than 10%. It is reasonable to expect that low frequency noise may affect some people quite significantly while others may not have any adverse reaction. Though we do not know the exact percent of the population that will be negatively impacted, we can construct a simple model for examination and quantification. This would be a "best case", not a "worst case" scenario.

To be very conservative, we will assume that the wind turbines will adversely affect only 10% of the population. Assuming a total population of 3,000 people (residents plus transients), 10 % would be 300 people. Let's further assume that two thirds of the susceptible population do not live, work, or travel close enough to turbines to be affected. This leaves us with 100 residents who will have their quality of life or health diminished by CPP. The next step is to determine the economic value of the lives of our residents.

One simple method of valuing human life is to say that we are worth only what we earn in a lifetime. No other contributions will be considered. So the researcher who cures cancer will only be considered to be worth her paycheck. Given that the average individual annual income is \$30,000, over a 40-year career this amounts to \$1,200,000. This is the gross economic value of the average person in our community.

If we assume that the diminishment in quality of life or health is minimal, i.e. only 10%, the total economic loss for the 100 citizens is ($\$1,200,000 \times 100 \times 10\%$) which amounts to

\$12M. Should we assume that the diminishment of quality of life or health is more substantial, say 35%, this loss rises to more than \$40M.

**Summary of Project Benefits and Costs for Cohocton Wind Power Project
(over 20 years of operation)**

Economic Benefits	\$
Wages	6,000,000
Electric Power	79,000,000
PILOT	14,000,000
Lease Payments	8,260,000
Gross Economic Benefit	\$107,260,000
Economic Costs	
Tourism	(\$200,000,000)
Property Values	(\$20,000,000)
Construction Delays	(\$1,000,000)
Avian Mortality	(\$2,000,000)
Public Health and Safety	(\$12,000,000)
Decommissioning	(\$120,000,000)
Gross Economic Cost	(\$355,000,000)
Net Economic Impact (Loss)	(\$247,740,000)

Comparing the costs associated with this project to the benefits described by the developers, we quickly conclude that this project has enormously negative economic value for the community, and that it deserves to be rejected without further discussion. Given that the benefits were calculated as “maximum possible benefits” over a full 20 years and that the costs were calculated using conservative assumptions, it is likely that the actual economic damage from this project will be greater than \$247,740,000.

Conclusions

This CPP documents are not fair, accurate, scientific, or complete in the examination of the complex and serious environmental impacts of this project. The quality of the experimental design, execution, and analysis is often inept and frequently naive. The consultants who supposedly did the work lack the knowledge, skills, credentials, and experience necessary for a fair and thorough examination of the issues. There are numerous situations where the consultants deliberately misrepresented and manipulated the facts. In some cases they just made up their own numbers. In other cases they intentionally left out pertinent information because it did not support the conclusion they were being paid to reach. An objective examination of these documents concludes that they are a poorly assembled and intentionally fraudulent fabrication that is without merit or credibility. It cannot be relied upon for informed decision-making, nor does it represent the best interests of the citizens of Cohocton. We trust that the Town of Cohocton Planning Board will, in its capacity as SEQR Lead Agency, put an end to the Cohocton Wind Power Project. The degree of fraud evidenced by this SDEIS should prohibit giving CPP a second chance.

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