WCO | WIND CONCERNS ONTARIO

Submission to the
Standing Committee on Social Policy

Repealing Green Energy Act to Return Planning Authorities to Municipalities

October 30, 2018

INTRODUCTION

Overview of Situation

Recently, the Ontario government announced that it was returning planning authorities regarding wind turbines to municipalities by repealing the Green Energy Act. Wind Concerns Ontario applauds the objectives of this initiative. The approach put in place by the Green Energy Act, and the related Green Energy and Green Economy Act, forced wind turbine projects on local communities without consideration of local views resulting in many mistakes being made. People living among the turbines have had limited recourse to address their concerns because all by-laws enacted by a local municipal government were overridden by the Acts.

We strongly support the objective of strengthening of municipal authorities relative to the siting wind turbine projects, but note that there is a wide range of changes required at the provincial level. We understand Green Energy Act has been in place for almost 10 and it is not possible for a new government to reverse all of the mistakes in the first 100 days. Now that municipal powers have been identified as a priority, we look forward to working with the government on related changes identified in this submission.

Wind Concerns Ontario

Wind Concerns Ontario (WCO) is a volunteer-based coalition of about 30 community groups across the province representing people affected by wind turbine projects. We have a strong working relationship with municipalities affected by wind turbine projects, and have participated and advised on initiatives as communities struggled with wind power development.

Warren Howard is an Executive Vice-President of WCO and was a member of the Council of the Municipality of North Perth from 2010 to 2014. A 29-turbine wind power project was proposed for the Municipality during this term and Warren was involved in the municipal response to this proposal. He also was a member of the Multi Municipal Wind Turbine Working Group – a working committee of elected officials from 14 member municipalities primarily in Bruce, Grey, and Huron Counties.

THE CURRENT SITUATION

Status of Wind Turbine Program

Currently there are 2,441wind turbines operating across rural Ontario in 81 projects that have been developed since 2006. The Independent Electricity System Operator (IESO) now has three active contracts for the construction of an additional 152 turbines. Currently, Ontario has a surplus of electricity; the previous government suspended the procurement process to acquire additional wind power capacity. (For more information on the program, see Exhibit 1 – Wind Turbines by the Numbers.)

Complaints about Wind Turbine Operations

Between 2006 and 2016, the then Ministry of Environment and Climate Change received 4,562[1] complaints about turbine operations. Reports from WCO's member groups indicate that these numbers substantially understate the actual number of complaints filed. Ministry procedures for logging complaints were not consistently followed across the various Districts across Ontario. Comments by Ministry staff indicate that there was no central tracking of these complaints with records only held at the District level.

These complaints reported a broad range of Adverse Effects linked to the wind turbine operations including:

- Noise emissions interfere with normal activities/interrupt sleep.
- Vibrations/pulsing sensations linked to low frequency noise/infrasound.
- Headaches, nausea, ringing in the ears
- Forced to leave home to get relief from symptoms
- Sleep interrupted by shadow flicker (strobe-like effect created by sun-turbine blade interactions)
- Stray voltage/"dirty" electricity
- Transformer stations emitting low frequency noise

A review of the complaint records provided to us shows that 35% of reports explicitly note adverse health effects. Rather than addressing the source of the problem, the Ministry response to these health complaints logged in these complaint records varies from no response to Provincial Officers in the environment ministry recommending that the individual visit their physician, or the local emergency room.

In more than a few cases, people across Ontario have abandoned their homes because of the impact of wind turbine noise emissions. Even though the Ministry's Spills Action Line operates on a 24 hour-7 day per week basis and had the capability to respond on an emergency basis to other environment issues, the only response to wind turbine complaints was to advise the District Office who would respond in a day or so. There is no evidence of action being taken on requests by frustrated residents that turbines be turned off so that they could sleep.

The Renewable Energy Approvals (REAs) for all wind turbine projects contain very specific requirements for the proponent to be responsive to these complaints about any adverse effects created by the project's operation. Specifically the proponent is required:

- Maintain log of any complaint alleging an "Adverse Effect" caused by the operation
- Within 8 days, report to MECP measures taken to address each incident and to prevent a similar occurrence.

[1] Based on documents and information provided by the Ministry of Environment and Climate Change in response to series of requests made by WCO under the Freedom of Information Act.

The response of the environment ministry under the previous government focused almost solely on compliance with audible noise standards even though the Environmental Protection Act (EPA) assigns responsibility to the Ministry of Environment to protect residents of Ontario from a wide range of "Adverse Effects" which the Act (Section 1 [1]) defines as:

a) *impairment of the quality of the natural environment for any use that can be made of it,*
b) *injury or damage to property or to plant or animal life,*
c) *harm or material discomfort to any person,*
d) *an adverse effect on the health of any person,*
e) *impairment of the safety of any person,*
f) *rendering any property or plant or animal life unfit for human use,*
g) *loss of enjoyment of normal use of property, and*
h) *interference with the normal conduct of business*

Data provided to WCO indicated that between 2006 and 2014, there was no field response to 54% of complaints logged about wind turbine operations. Between 2015 and 2016, the response rate fell sharply with no field response reported for 95% of complaints. In late 2017, the Manager of the Ministry's Owen Sound District told the Municipal Council in Kincardine, as part of a requested presentation on what the ministry was doing toward enforcement of wind turbine noise regulations, that *the Ministry was not responding* to complaints if a noise audit was underway relative to the project involved. He also reported that there was a large backlog of these noise audits awaiting approval in the Ministry's Toronto office. As this mandatory process involved most wind turbine projects, this statement suggests that the Ministry had essentially stopped most enforcement activity.

Current Rules Governing Wind Turbine Projects

Regulation 359/09, issued under the Green Energy and Green Economy Act, established guidelines for the siting of wind turbines. Details are summarized in Exhibit 2.

A key assumption in the process is a statement in the Chief Medical Officer of Health 2010 report that stated that:

> "*No direct causal link between wind turbine noise and adverse health effects."*

Detailed requirements for siting of wind turbines are based on an assumption that 40 dB(A) is the threshold at which environmental noises causes health issues. This is based on the World Health Organization guidelines at the time for urban noise from road, rail and airport sources (but not turbines).

Using computer modeling, a set-back of 550 metres between residences and wind turbines was established as the distance required to ensure that residents were not exposed to noise levels above 40 dB(A).

Additional computer models are used to support the project approval process with noise levels outside of the home estimated using a series of assumptions about the transmission of noise.

When actual noise testing showed that this modeling did not accurate predict the actual noise levels experienced once the turbines were erected, the specified assumptions were change in 2016 but the old assumptions continued to be used for the five wind power projects for which contracts were issued before the changed assumptions were announced. The changed assumptions are estimated to increase the estimated noise levels at subject homes by about 2 d B(A).

No actual research on the existing wind turbine projects was conducted before these regulations were implemented, even though evidence from complaints from these projects as well as Ministry staff investigation of these complaints indicated that these guidelines were not sufficient to address complaints are being provided to the government. Regulations focused on audible noise even though many complaints were related to low frequency noise and infrasound. Complaints also indicated that focusing solely on noise levels outside of the home was inadequate — many residents were reporting problems with vibrations and pulsing sensations linked to low frequency noise and infrasound. Residents were also reporting that the noise levels were worse inside homes than outside of the homes. In fact some residents sought relief from night time noise inside their home by sleeping outside in tents and trailers.

Project Review Process Created by Green Energy and Green Economy Act

When the first wind power projects were proposed and then appealed at the Ontario Municipal Board, the then government response was to introduce the Green Energy and Green Economy Act in 2009 to expedite approvals of these projects. The net effect of course was to limit opportunities for municipalities and local community groups to provide input.

Regulation 359/09 places the authority for review of these projects with the Ontario environment ministry. The regulation requires a detailed list of reports to be submitted by the project proponent as part of the application for approval. Prior to submission, draft versions of these reports are circulated to municipalities and were made available to the affected community and two public meetings are held to receive community input.

Municipalities are provided with a consultation form that relates only to “municipal or local infrastructure and servicing”. Comments on the siting of the project are not solicited. The completed consultation form is provided to the proponent and becomes the basis of their report on municipal consultations and steps that they have taken to remediate concerns. There is no requirement that the proponent confirm with the municipality that these steps actually address the concerns raised. The process does not provide for any direct contact been the approval section and the municipality affected.

A good example of the need to return planning powers to the municipality occurred on October 16, 2018, at the appeal of the Nation Rise Renewable Energy Approval in North Stormont before the Environmental Review Tribunal (ERT). Building large wind power generators or turbines on unstable Leda Clay (also called “quick” clay) is a key issue in this approval; however, Shawn Kinney, a Ministry of Environment, Conservation and Parks technical expert who reviewed the application for this project, testified under oath that his assessment of the soil conditions was limited to a two-hour visit to quarries *outside of the project area* rather than an actual investigation of the sites where the turbines are

proposed. Municipal officials in North Stormont and indeed, Eastern Ontario, are familiar with the environmental and safety risks posed by building on this unstable clay, and would have objected if their views were to be considered in this process. However, the only direction in the process is to consult on "municipal or local infrastructure and servicing".

In fact, the process essentially depends solely on officials based in Toronto who have no knowledge of the local situation. Mr. Kinney also testified at this ERT hearing that he was not aware of the Leda Clay issue at all until after he had signed off on the application and completed his written submissions to the ERT for the appeal hearing. This information should have been included in the assessment of the soil conditions submitted by the power developer as part of its application for approval of the project. This omission, which is significant in protecting the health and safety of residents and of the environment, should be grounds for cancelling the Renewable Energy Approval for the Nation Rise project granted just days before the election period.

In the existing process, the final proposal for a wind power project is then submitted to the Ministry for approval. The first stage is a "Review for Completeness" – i.e., a simple check that all required documents been submitted. At this stage, there is no assessment of whether the documents actually address all site-specific issues. Next, the proposal undergoes Technical Review by the Ministry. This process is conducted with all discussions taking place solely with the proponent. Some changes to the project may result but the municipality and the community is not aware of or involved in the discussions.

Based on the Technical Review, a Renewable Energy Approval is issued. These include terms of the approval (like response to complaints) plus other conditions related to the construction of the project. Regulation 359/09 sets out very limited options for appeal to the Environmental Review Tribunal. The onus is placed on the appellant, rather than the proponent of the project, to prove the project *will* cause serious harm to human health or serious and irreversible harm to plant life, animal life or the natural environment. Various environmental-specialist lawyers have commented that this "test" is all but impossible to meet, even in situations of serious environmental concerns.

Most issues about the impact of the project on a municipality are excluded as grounds for appeal. The Environmental Review Tribunal decisions and the court decisions have interpreted the grounds of appeal as requiring evidence to prove near certainty of the impact of the proposed project to be successful. In the case of human health, the evidence is generally not available until after the project is built. One project was successfully appealed to the courts on the basis of harm to an endangered species, and the scope of another project was substantially reduced in size on the same basis. The appeal for one project was successful on the grounds of human health and it related to the high probability that an airplane approaching a community airport would hit a wind turbine placed close to the runway.

Awarding New Contracts

Based on municipal concerns, changes were introduced into the process of awarding new contracts for renewable energy projects. Under the Request for Proposal Process introduced by the Independent

Electrical System Operator (IESO) contracts were to be awarded to "Willing Host" communities based on a point system that included municipal support for the project being one of three criteria worth 80/100 points. Other points were awarded for aboriginal participation, adjacent landowner support and price. On March 7, 2016, then Energy Minister stated that it was "virtually impossible" for a contract to be awarded under this system to a community without municipal support. Three days later the successful bidders were announced. Four out of six projects awarded wind turbine contracts did not have municipal support (one had conducted a municipal referendum which resulted in a vote of 84% of the population opposed to the power project).

Municipal Resolutions on Renewable Energy Projects

The failure of procurement process to respect municipal concerns about their limited role in siting wind turbine projects resulted in resolutions asking for the return of local land-use planning powers to municipalities for wind power projects. When the Liberals indicated that they were looking for "Willing Hosts" for wind turbine projects in Premier Wynne's first Throne Speech, 95 municipalities passed resolutions declaring themselves, "Unwilling Hosts."

Those resolutions were not considered when the contracts were awarded in 2016. North Frontenac Council initiated a resolution asking the IESO to make municipal support a requirement for any future requests for proposal/RFP processes. A total of 117 municipalities endorsed the North Frontenac resolution or a similar resolution. The list of municipalities endorsing this resolution is included as Exhibit 3. The group of municipalities included some cities---Ottawa and Hamilton—and many communities in Northern Ontario which had not previously expressed concerns about the siting of renewable energy projects. These resolutions demonstrate strong municipal support for the returning of planning powers relative to renewable energy projects to municipalities.

Legal Framework for Municipalities

When it became clear that the previous government was not going to live up to its role to protect residents of rural Ontario from the problems created by wind turbines, the residents turned to their local municipal governments for help. Despite the limitations of the Green Energy and Green Economy Act, the Municipal Act sets out various powers that make municipalities accountable for activities within their area of jurisdiction. These include:

- Health, safety and well-being of persons (Section 11(2)(6))
- Public nuisances (Section 128)
    - matters that, in the opinion of council, are or could become public nuisances
    - opinion of council, if arrived at in good faith, is not subject to review by any court
- Noise, vibration, odour, dust (Section 129)

The government's commitment to restore municipal planning powers is one appropriate response. In the absence of provincial action to enforce the requirements of wind project REAs to resolve the issues being created by wind turbines, residents will also continue to look to their municipalities for solutions based on these wider municipal powers.

The sections below highlight some actions that have been taken by municipalities in response to the problems created by wind turbines.

1. Wainfleet

The actions by the Township of Wainfleet under Mayor April Jeffs are a good example of municipal action regulating turbines using a municipal zoning by-law. Based on the negative experiences with a small project constructed in the municipality, and with research confirming that the provincial setbacks of 550 metres were not sufficient to protect the residents' health, they enacted a zoning by-law requiring a 2,000-metre setback for turbines from residences. While this approach still permitted wind turbines to be built, the wind power developer successfully argued in court that the size of the setback conflicted with provincial regulations and effectively prevented any new turbines from being erected in the municipality. The courts found against the municipality and assessed substantial court costs, to be borne by the taxpayers. The current provincial setbacks are not adequate to protect residents' health, but until provincial rules are amended, municipalities are powerless to address this matter even if planning powers are returned to the municipality.

2. Saugeen Shores

The Canadian Auto Workers (now Unifor) applied for an approval to install a single wind turbine in the parking lot for its recreational centre on the southern edge of Port Elgin. The application pre-dated the residential setbacks established under Regulation 359/09 and the application was grandfathered under previous rules, even though there were more than 700 residents living inside the 550-metre distance that is currently recognized as the minimum required to protect residents from noise emissions. Included in this area affected by the turbine was a sizeable subdivision that the municipality had approved and was under development.

Even though it is only a single turbine, the project ranks fourth, with 328 complaints, among all projects in the number of complaints that have been registered with the Ministry of Environment, Conservation and Parks. The response has been a series of tests of audible noise and numerous interventions have been made by the Municipality of Saugeen Shores on behalf of residents. Given inaction by the provincial government, the municipality considered commissioning independent assessment of the noise emissions from the turbine. The MECP has finally confirmed that the turbine was not operating within the audible noise standards of its approval. In response, Unifor proposed and the Ministry approved an abatement plan to reduce audible noise. It has been implemented, but complaints about the turbine noise continue, confirming that the MECP's focus on audible noise is not sufficient to address the full range of issues created by wind turbines.

3. Plympton-Wyoming

The municipality of Plympton-Wyoming under Mayor Lonny Napper attempted to fill this regulatory gap by enacting a noise by-law that placed controls on low frequency noise emissions from wind turbines to protect residents, but its authority was challenged and expensive legal action was threatened by the wind power developer. The municipality was forced to back down based on legal advice that it could not

be successful in this case and failure would be costly. This is another example of how the provincial government needs to replace the current noise regulations with more comprehensive rules.

4. Kawartha Lakes

A turbine project was approved for Kawartha Lakes to be located on sensitive ground water recharge areas related to the Oak Ridges Moraine, which was supposed to be protected under provincial legislation. The proponent assumed that it could use an un-opened road allowance to gain access to one of the sites on the moraine. This road allowance was in active use as a hiking trail and was bordered by a stand of butternut trees, which are classified as an endangered species in Ontario. On this basis, the City Council refused to approve the by-law needed to open the road allowance to allow construction and operate the turbine. The proponent took the City to court which overruled the City's decision. The city then appealed the court decision and lost. The proponent was awarded substantial damages by the courts. The road allowance has been opened, the trees have been cut down and the turbine has been constructed on the sensitive site.

5. Kincardine

Before the Green Energy and Green Economy Act removed the municipal role in siting wind turbine projects, the Kincardine Council approved the plans and zoning by-law amendments need to that allowed the 115 turbine Enbridge Tiverton project to proceed. When additional projects were proposed under the new Green Energy and Green Economy Act rules, Kincardine approved a policy that prohibited new wind turbines within 2 kilometers of areas designated as growth areas in the Official Plan as required by the Ministry of Municipal Affairs and Housing. The guidelines also created an exclusion zone around the Kincardine airport which has an important role in servicing the Bruce Nuclear station. Both of these sensible policies were ignored when the province approved the siting of the Armow wind turbine project. At appeal, the tribunal rejected the argument that turbines placed near approaches to runways constituted potential for serious harm for human health.

6. Clearview/Collingwood

The conflict between wind turbines and aerodromes or airports subsequently resurfaced relative to a project proposed adjacent to the Collingwood municipal airport as well as the private Clearview airport. The three municipalities raised concerns about the impact of this project on the operation of these airports, with the Collingwood airport being critical to access for emergency air rescue and the area's tourist economy. These arguments were rejected in the environment ministry's Technical Review of the project and the Renewable Energy Approval (REA) was issued. Among other grounds involved in the appeal of this decision was the serious threat to human health caused by the potential for an airplane to collide with one of the turbines placed too close to the runway approaches. The County of Simcoe, the Town of Collingwood and the Township of Clearview were all represented at the ERT hearings by outside legal counsel and in the end, the tribunal decided that wind turbines on runway approaches did qualify as "serious" harm to human health, rejecting the proponent's proposed mitigation plans which involved non-standard approaches to the airports. Total legal fees related to stopping this project amounted to $1.5 million for the three municipalities involved, a cost which will, again, be borne by taxpayers.

7. Grey Highlands

This municipality was proactive in addressing the potential effects by wind turbines on municipal infrastructure and service needs. It leveraged the need for road access permits from the municipality to negotiate plans how municipal road infrastructure would be used during the construction of the project and to require security deposits to ensure that any changes to roads during construction would be returned to the previous condition, and additionally, that any damage caused by project construction would be repaired on a timely basis by the proponent. These deposits varied depending on the nature of the road being used with $200,000 required for a road with a bridge, $150,000 for a road with a culvert and $50,000 for a road with neither a bridge nor a culvert. Grey Highlands also had fees if the company wanted to place elements of the project in road allowances. The base fee was $6,500 plus a security deposit of $20,000 per kilometre.

There are no provincial fire safety standards for wind turbines. The municipality passed a by-law requiring alarm systems be installed and connected to the township's 911 service and that sprinkler systems be installed in the nacelles of all turbines. They also required the proponents to provide their own staff trained in high angle rescue. This service is commonly provided by large urban municipalities with multiple high rise buildings, but it is generally not available in rural municipalities because it is not widely required and is costly to provide in a community using volunteer fire fighters to provide emergency service.

8. North Perth

While a project was being considered for North Perth, the municipality adopted a shadow flicker by-law to fill a gap in provincial regulations. Shadow flicker is a strobe-like effect that occurs at either sunrise or sunset when a wind turbine is positioned between the sun and an observer. This is critical issue early in the morning when the moving shadows penetrate bedrooms where people are sleeping creating moving shadows on the walls that wake the resident. It is also a concern for operators of large farm machinery when shadows can cause a distraction when working fields or to drivers on nearby public roads.

There is no provincial regulation dealing with shadow flicker. Response to complaints about it vary between MECP Districts. North Perth enacted a simple by-law which prohibited activities that cast shadows that would extend beyond the boundaries of the land that controlled by person responsible for the activity. Shadow flicker is easy for a wind turbine operator to control as the time period during which it would extend beyond the land controlled by the operator is easy to predict and the turbines can be turned off automatically.

As the project proposed for North Perth did not proceed, this by-law has not been tested. When the Town of Grand Valley used North Perth's shadow flicker by-law as a model to enact a similar by-law, it was immediately challenged by the wind power developer as being beyond municipal powers. The Municipality of Grand Valley decided it was prudent to repeal the by-law.

Building permit fees have been another contentious area between municipalities and wind turbine companies. Even though the project is approved by the province, the municipality is still required to

issue a building permit and exercise some supervision over the construction process as there is no provincial authority managing implementation of these projects.

Under the Building Code Act, municipalities are authorized to recover their costs of administering the Act through user fees set by the Council. These fees are not allowed to generate surplus revenue for the municipality but rather to allow the Building Departments to operate on a cost recovery basis over the longer term. While municipal building departments have trained staff to supervise normal construction, wind turbines require specialized expertise that is not available in most municipalities. The permit fee implemented by North Perth of $20,000 per turbine was mid-point among municipalities with the fee being $35,000 in Grey Highlands and $15,000 in Municipality of Bluewater.

GOING FORWARD

Specific Changes Required to Address Municipal Concerns

The preceding section showed that municipalities have been called upon to take a range of regulatory actions by their residents' concerns about proposed wind turbine projects. Returning planning powers is part of the solution, but a wider assessment is required as outlined in the following sections.

Municipal By-laws "Inoperative"

In repealing the Green Energy Act (GEA), the government stated that it was returning municipal planning powers to municipalities. While some changes have been made, the current wording of Bill 34 does not seem to align with these public statements by the government. One of the most problematic areas of the GEA was Section 5 which stated that municipal by-laws were "inoperative" relative to renewable energy projects. The current version of Bill 34 does not repeal this clause; it simply transfers it to the Electricity Act as clause 25.35.1 with the exact same wording as the GEA:

> *Permissive designation of renewable energy projects, etc.*
> *5 (1) The Lieutenant Governor in Council may, by regulation, designate renewable energy projects, renewable energy sources or renewable energy testing projects for the following purposes:*
>
> *1. To assist in the removal of barriers to and to promote opportunities for the use of renewable energy sources.*
>
> *2. To promote access to transmission systems and distribution systems for proponents of renewable energy projects.*
>
> *Effect of designation*
> *2) A person is permitted to engage in activities with respect to a designated renewable energy project, a designated renewable energy source or a designated renewable energy testing project in such circumstances as may be prescribed, despite any restriction imposed at law that would otherwise prevent or restrict the activity, including a restriction established by a municipal bylaw, a condominium by-law, an encumbrance on real property or an agreement.*
>
> *Same (3)*
> *A restriction imposed at law that would otherwise prevent or restrict an activity with respect to a designated renewable energy project, a designated renewable energy source or a designated renewable energy testing project is inoperative to the extent that it would otherwise prevent or restrict the activity.*

It is not clear how municipal powers have been improved if municipal by-laws affecting renewable energy projects continue to be "inoperative". Similar concerns exist with Section 4 of the Green Energy Act which deals with technologies related to energy conservation. It is transferred to the Electricity Act as Section 25.35.

Protection from Litigation/Appeals

As shown in the review of municipal activities relative wind turbine projects, a number of municipalities have had to defend their actions against litigation initiated or threatened by wind companies. The preamble to Bill 34 also states that the Planning Act will be amended to provide immunity from litigation arising from the restoration of municipal planning authority and to remove the ability to appeal municipal refusals of applications to amend official plans and zoning by-laws to allow a renewable energy undertaking. Our understanding of the wording of Bill 34 is that the immunity from appeals only applies to actions that that *support* renewable energy undertaking.

It is proposed that Subsection 22 (7.2) of the Planning Act be amended to only prevent appeals of a municipal action to:

> *(d) authorize a renewable energy undertaking.*

Similarly, the new subsection 11.0.07 only covers actions that *permit* a renewable undertaking:

> *11.0.07 There is no appeal in respect of all or any part of an application for an amendment to a bylaw if the amendment or part of the amendment proposes to permit a renewable energy undertaking.*

As shown in the preceding review of municipal activities, our experience is that most challenges to municipal by-laws actions to various types of rules that effectively *exclude*, rather than *permit*, the use of land within the municipality for wind turbines. Bylaws that impose restrictions on wind turbines do not seem to be protected under the current wording of Bill 34.

Residents of rural Ontario expected that a new government represented change relative to the draconian measures implemented by the Green Energy and Green Economy Act. Repealing the GEA, while maintaining the same ability to override municipal planning in the Electricity Act, and leaving the draconian measures included in the Green Energy and Green Economy Act in place, raises the question whether anything has really changed.

Municipal Role in Renewable Energy Projects

Changes to the municipal ability to comment on renewable energy projects proposed for their municipality is another concern that is not addressed by the narrow repeal of the Green Energy Act, which leaves the rest of the measures in the Green Energy and Green Economy Act related to municipalities and local communities in place. The current renewable energy project review process limits municipal input to a very narrow range of topics related to “municipal or local infrastructure and servicing”. Similarly, limiting appeals of REAs to the impact on human health and the natural environment excludes many areas that are important concerns for municipalities. Both processes do not allow the wider impact on the community or related development plans to be considered. This process also needs to be repealed or substantially revised.

Bill 34 also does not address the serious concerns about a municipal role in the awarding of any new renewable energy contracts. The RFP process used for the last round of contract awards as municipal

concerns were easily overridden by other considerations. The result was a broad support for making municipal support resolutions mandatory — a request to which the IESO has not responded.

Other Regulations/Policy Statements

Provincial regulations and policy statements provide direction to municipal planning activities and also limit the municipal ability to change zoning requirements or create by-laws regulating many aspects of wind turbines. This also applies to other by-laws regulated some aspects of turbine operations as municipal by-laws cannot conflict with provincial regulations. Municipalities are hearing from residents who have first-hand experience with the problems and are looking for the flawed policies to be updated to reflect recent research showing the broader range of impact of wind turbines.

Ministry of Municipal Affairs and Housing – Provincial Policy Statements

When creating an Official Plan, all municipalities are required to comply with directions contained in the Provincial Policy Statements issued by the Ministry of Municipal Affairs and Housing. Bill 34 confirms that these rules apply to sections dealing with renewable energy projects. The current version of this document issued in 2014 requires:

> *"1.6.11 Energy Supply*
>
> *1.6.11.1 Planning authorities should provide opportunities for the development of energy supply including electricity generation facilities and transmission and distribution systems, to accommodate current and projected needs.*
> *1.6.11.2 Planning authorities should promote renewable energy systems and alternative energy systems, where feasible, in accordance with provincial and federal requirements."*

Any municipality that approved a municipal plan indicating that it does not want to host wind turbine projects would be operating contrary to this provincial direction. While municipal plans do need to assess the impact of the proposals on energy, the wording in this section should, as a minimum, be altered to "consider" rather than "provide" opportunities for renewable energy projects. This would make provisions for municipalities that consider, and then reject, renewable generation.

Ministry of Health and Long Term Care – Chief Medical Officer of Health Statement

Since the turbines in wind power projects began operating, citizens have been approaching local Municipal Councils to use their powers under the Municipal Act related to protection of residents' health to address the widespread problems caused by wind turbines that are sited too close to their homes or workplaces. The ability of local Councils to respond to these concerns is undermined by the 2010 Report of the Chief Medical Officer of Health, which still stands as a statement of government policy.

The statement was based on a selective literature and was controversial at the time it was made. As the 2015 Australian Senate review of wind turbine policy in particular noted that there is a "disconnect" between statements that turbines cause no harm and the large number of health-related complaints

linked to wind turbines. The experience in Ontario parallels the situation in Australia with 35% of the over 4,500 complaints reported to the government about wind turbine noise specifically mentioning adverse health effects. As shown in Exhibit 4, many new literature reviews and studies show that this linkage does exist.

Despite this evidence, and much more, in practice, the government continues to rely on the outdated and incomplete 2010 report. Wind Concerns Ontario's position is that there is sufficient research evidence to support a decision by the new Ministry of Health and Long Term Care to *withdraw* the 2010 statement as government policy. This would allow municipalities to respond to citizen complaints about wind turbines without being challenged as they conflict with provincial government policy. Though we recognize it would take some time, this report should be replaced with a new statement that would direct future planning assessments for wind turbines.

Ministry of Environment, Conservation and Parks – Regulation 359/09

Under the previous government, setbacks between wind turbines and people's home were established at 550 metres. This was not based on actual research but rather on the European urban noise standards of 40 dB(A) for road, rail and airport noise (not wind turbines). This noise level was then applied to rural Ontario without any research or field studies to assess whether this standard was applicable to this very different environment and unique noise source. The specific setback was developed using computer modeling rather than actual noise measurements (a fact noted as a "key data gap" in the 2010 Chief Medical Officer of Health report). Only audible noise was assessed with no consideration was given to low frequency noise or infrasound emissions that come from the turbines.

The number and content in complaints from residents living among these turbines confirm that these rules for siting wind turbines are inadequate to protect the health of the people living among the turbine projects. Other jurisdictions have established larger setbacks based on research available research and the need to use the precautionary principle when matters of human health are involved.

The Ministry of Environment, Conservation and Parks recently announced amendments to Regulation 359/09 which sets out a range of parameters related to the implementation of wind turbine projects. We will be suggesting in our input in the consultation process on these changes that a wider set of changes to the regulations be made at the same time.

Ministry of Environment, Conservation and Parks – Noise Testing Protocol

The Ministry of Environment, Conservation and Parks has also created a protocol for assessing wind turbine noise emissions. Even though it was just implemented in 2017, it is badly flawed. Key elements in the protocol seem to be designed to narrowly focus on certain aspects of wind turbine noise emissions while ignoring situations that people living among the turbines find particularly problematic. Most important, the protocol excludes low frequency noise and infrasound from the assessments of wind turbine emissions.

The current ministry protocol has no credibility as it is focused on average assessments of noise emissions that seem to be designed to mask any non-compliant turbine emissions As a result, wind power projects can be found to be operating "in compliance" with standards even though residents continue to experience problems with the emissions affecting their homes. Municipalities have noise enforcement powers, but are limited in the scope of their enforcement actions by flawed provincial assessment rules and decisions that the project is operating in compliance with all standards.

Wind Concerns Ontario has provided the staff in Minister Phillips' office with detailed information on the problems with this protocol and included recommendations on key areas that need to be changed. These changes should be made so that municipalities can undertake appropriate enforcement actions.

Ministry of Finance – Property Taxes Applied to Wind Turbine Infrastructure

The Ministry of Finance has established fixed assessments for wind turbines per turbine based on a base amount adjusted to reflect nameplate capacity. This formula results in turbines making minimal contributions to municipal revenues while activities related to the construction and operation place severe stress on the road and bridge infrastructure. In rural municipalities, the property tax on homes is higher than the taxes for these large, highly profitable industrial installations. As the current regulations are established by the Ministry of Finance directive, municipalities are not able to correct this unfair taxation system.

Enhanced Oversight of Wind Turbine Projects Required

In addition to changes required for new wind turbine projects, municipalities are also looking for the provincial government to initiate enhanced enforcement relative to the 81 wind turbine project currently operating in Ontario. When this enforcement has not taken place, local residents have turned to municipalities for help.

There are several high-profile situations where the problems are already well documented, and the tools needed for addressing the issues already exist based on the approval terms in the Renewable Energy Approvals and in the Environmental Protection Act. The terms of the Renewable Energy Approvals issued for all wind turbine projects include requirements that the operator address *each* complaint about an adverse effect and make changes in operations to ensure that the situation does not reoccur. The Environmental Protection Act gives the Ministry of Environment, Conservation and Parks authority to take action against sources of these adverse effects.

Action on even a few straight-forward situations would send an important message to both municipalities and their residents that action is underway to address these long-term problems. It is understood that complete resolution of the problems created over the life of the wind turbine program cannot be solved immediately, but some movement on obvious issues would be well received by both municipalities and the people of rural and small-town Ontario.

SUMMARY

There is widespread evidence that the program to add industrial-scale or utility-scale wind turbines to Ontario's electrical generation system has been a failure.

The contracts related to these turbines have driven up hydro costs forcing many seniors and others into energy poverty and affecting the attractiveness of Ontario's job-creating businesses.

Through its complaint tracking process, the MECP holds a well-documented record of the impact of these turbines on the people who have been forced to live among these turbines and experience the full range of their emissions.

Despite these costs and environmental issues, the wind turbines have failed to live up to their hype. Given the intermittent nature of the wind resource needed to power this equipment, they are not been a major contributor to Ontario's generation capacity. Because of the need for fossil fuel backup to fill gaps when the wind resource is not available, adding wind turbines to Ontario's already green generating system actually *increases* carbon emissions. (Source: Ontario Society of Professional Engineers)

Implementation of the program was rushed without impact analysis and with siting rules based on assumptions and computer modeling that was not tested in the field. Even though results from the early implementation indicated problems, these rules were implemented through the Green Energy and Green Economy Act which also created a review process that limited input prior to approval and provided only narrow conditions for appeal with ridiculously high success standards.

One has to conclude that the goal was to implement the wind power program as quickly as possible and to actually place barriers blocking citizen input into the process. When complaints escalated as the number of turbines increased, investigative procedures became a process of issues management, rather than a response to the real issues being reported by Ontario families. Bureaucratic procedures suggested endless rounds of inconclusive testing until the people making the complaints gave up. The issues were not, and have not been, resolved.

Bill 34 and these hearings bring a focus to these problems.

Returning planning powers to municipalities is a first step in the correcting the problems created by the Green Energy and Green Economy Act. In a period where there is a surplus of generation capacity and new generation capacity will not be required for some time, addressing the problems from the operating turbines becomes the priority focus for government action. There are options for the province to solve many of these problems by aggressively enforcing the terms of the existing REAs using existing powers in the EPA.

EXHIBIT #1

Wind Energy by the Numbers

Number of Turbines:

- 2,440 operational (81 projects)
- 152 more under contract (3 projects)
    - Henvey Inlet, Parry Sound
    - Nation Rise – North Stormont
    - Romney Wind – Chatham-Kent

Capacity

- Nameplate Output - 5,470 MW;
- Effective Output (@ 29%) - 1,586 MW
- 70% of wind capacity does not match supply capability needs[2]

Annual Cost of Wind

- Purchase Commitments - $1,863 M
- Cost of displaced electricity - $970 M
- Total Average Cost per Household - $590

Wind Share

- 13.1% of Generation Costs vs. 7.2% of output

Carbon Emissions[3]

- Total generation system - 40 grams of CO2/kWh
- Wind/Solar with gas back-up - 200 grams of CO2/kWh

[2] Marc Brouillette, Ontario Emissions and the Long Term Energy Plan, Submission to IESO, December 2016
[3] Ontario Society of Professional Engineers, Energy Task Force, April 2015

EXHIBIT #2

Key Wind Turbine Regulations

Ontario Chief Medical Officer of Health's Report

- "No direct causal link between wind turbines and health problems"

Noise Levels – 40 d B (A)

- Average measures only audible noise outside homes
    - Ignores low frequency noise/infrasound
    - Noise levels inside homes
- Based on European WHO standard for road, rail and airport noise (not turbines)
- Assumption - You cannot be harmed by noise you cannot hear.

Setbacks – 550 metres to centre of homes

- Distance needed to limit audible noise to 40 d B(A) at homes

Computer Models vs. Actual Studies of Turbine Noise

- Regulatory standards/approval process based on computer models
- Assumptions made regarding weather conditions, ground absorption
- Post-construction testing shows modeling shown is flawed
- New assumptions specified but 2016-approved projects allowed to use old rules.

Types of Response Set Out in Noise Testing Protocol

Hand-Held Sound Meters – Ministry Staff

- Compliance Officers visit site to assess levels of audible noise
- Visits usually occur days or weeks after complaint filed

Extended Noise Testing – Ministry Staff

- Equipment to monitor audible noise set up for 1 – 2 week period
- Residents flag problem periods by triggering equipment
- MOECC staff retrieves/analyses data; identifies "potential" problems

Compliance Audits – Approval Holder

- 2 to 3 sites per project
- Conducted by acousticians working for project operator
    - No resident input on problem timeframes
- Noise data grouped by wind speeds and averaged
    - No audit trail of data included and excluded
- Summary report presented to Ministry for review
- Process not transparent – no sharing of data or detailed results

EXHIBIT #3

Mandatory Municipal Support Resolution

Councils in the following municipalities endorsed the 2016 North Frontenac resolution or a similar resolution calling on the Independent Electrical System Operator (IESO) to make "Municipal Support Resolutions" a mandatory condition for awarding of future Renewable Energy Contracts.

1. Addington Highlands, Lennox and Addington County
2. Adelaide-Metcalfe, Middlesex County
3. Alfred & Plantagenet, Prescott-Russell County
4. Amaranth, Dufferin County
5. Asphodel-Norwood. Peterborough County
6. Algonquin Highlands, Haliburton County
7. Armour, District of Parry Sound
8. Arran-Elderslie, Bruce County
9. Ashfield-Colborne-Wawanosh, Huron County
10. Bayham, Elgin County
11. Bluewater, Huron
12. Brethour, Timiskaming District
13. Brockton, Bruce
14. Brooke-Alvinston, Lambton County
15. Bruce Mines, Algoma District
16. Cavan-Monaghan, Peterborough
17. Central Elgin, Elgin
18. Central Huron, Huron
19. Chamberlain, Timiskaming
20. Champlain, Prescott-Russell
21. Chatsworth, Grey County
22. Clarington, Region of Durham
23. Dutton-Dunwich, Elgin
24. Dufferin, County of
25. East Ferris, Nipissing District
26. East Hawkesbury, Prescott-Russell
27. Edwardsburgh, Leeds and Grenville County
28. Elgin, County of
29. Elizabethtown-Kitley, Leeds and Grenville
30. Essex, Essex County
31. Enniskillen, Lambton County
32. Fauquier-Strickland, Cochrane District
33. Gananoque, Leeds and Grenville
34. Georgian Bay, Muskoka
35. Georgian Bluffs, Grey
36. Greater Madawaska, Renfrew County
37. Greater Napanee, Lennox and Addington
38. Grey Highlands, Grey
39. Hamilton, City of
40. Hastings, County of
41. Hastings Highlands, Hastings County
42. Havelock-Belmont-Methuen, Peterborough
43. Hawkesbury, Prescott-Russell
44. Hornepayne, Algoma
45. Howick, Huron
46. Huron, County of
47. Huron East, Huron
48. Huron-Kinloss, Bruce
49. Kawartha Lakes, City of
50. Killaloe, Hagarty and Richards, Renfrew
51. Killarney, Sudbury District
52. Kincardine, Bruce
53. Lakeshore, Essex
54. Lambton, County of
55. LaSalle, Essex
56. Laurentian Hills, Renfrew County
57. La Vallee, Rainy River
58. Leeds and the Thousand Islands, Leeds and Grenville
59. Lennox & Addington, County of
60. Madawaska Valley, Renfrew
61. Mapleton, Wellington

62 Magnetawan, Parry Sound
63 Marathon, Thunder Bay District
64 McDougall, Parry Sound
65 McNabb Braeside, Renfrew
66 Meaford, Grey
67 Merrickville-Wolford, Leeds and Grenville
68 Newbury, Middlesex
69 Mono, Dufferin County
70 Morris-Turnberry, Huron
71 Nairn and Hyman, Sudbury District
72 Nation/La Nation, Prescott-Russell
73 North Frontenac, Frontenac County
74 North Glengarry; Stormont, Dundas and Glengarry
75 North Grenville, Leeds and Grenville
76 North Kawartha, Peterborough
77 North Middlesex, Middlesex
78 North Perth, Perth
79 North Stormont; Stormont, Dundas & Glengarry
80 Northern Bruce Peninsula, Bruce
81 Norwich, Oxford
82 Ottawa, City of
83 Perth, County of
84 Perth East, Perth
85 Peterborough, County of
86 Pickering, Durham
87 Plympton-Wyoming, Lambton
88 Port Colborne, Niagara
89 Prescott-Russell, United Counties of
90 Prince Edward, County of
91 Rainy River, Rainy River District
92 Ramara, Simcoe County
93 Sarnia, Lambton
94 Simcoe, County of
95 South Algonquin, Nipissing
96 South Bruce Peninsula, Bruce
97 Southgate, Grey
98 Southwold, Elgin
99 Stratford, Perth
100 Sundridge, Parry Sound
101 Tillsonburg, Oxford
102 Timmins, City of
103 Trent Lakes, Peterborough
104 Tiny, Simcoe
105 Tudor and Cashel, Hastings
106 Tweed, Hastings
107 Tyendinaga, Hastings
108 Uxbridge, Durham
109 Val Rita-Harty, Cochrane District
110 Warwick, Lambton
111 Wainfleet, Niagara Region
112 Welland, Niagara
113 Wellington North, Wellington
114 West Elgin, Elgin
115 West Grey, Grey
116 West Lincoln, Niagara
117 Zorra, Oxford

EXHIBIT #4 - Other Research into Wind Turbine Emissions

NASA Research - 1985 – 1988 - Neil Kelley

- Wind turbines emit peak sound power as infrasound between 1-10 HZ
- Turbine infrasound is impulsive (pulsating, containing peaks and valleys)
- Residents reported sleep disturbance linked to sounds they could "feel" more than hear.

Bruce-Grey Health Board Literature Review - 2014

- Association found between wind turbines and distress in humans
- Dose-response relationship exists with distance from turbine

Health Canada Findings - 2014

- Conflicting findings - Relationship found between estimated turbine noise and health issues over past 12 months: No relationship over past 30 days.
- Issues begin at 35 dB(A); turbine noise worse than road, rail, airport noise

Council of Canadian Academies - 2015

- Literature review linked wind turbine noise to health issues
- Low frequency components not properly captured by dB(A) measures
- Amplitude modulation not captured by time-averaged measures.

Cape Bridgewater, Australia - 2014

- Study funded by wind project owners found:
    - dB(A) measures do not explain noise complaints
    - Complaints linked to specific changes in turbine operations

Bavaria Set-Back Requirements, 2014

- State of Bavaria in Germany implemented setback requirements of ten time the turbine height
- Turbines proposed for North Stormont are 200 meters in height which would require a setback of 2,000 in Bavaria.

Australian Select Committee on Wind Turbines – 2015

- Disconnect – “turbines cause no harm” vs. adverse health effect complaints.
- Take health effects reported by people near wind turbines seriously.
- Need standards on infrasound, low frequency sound and vibration.

Polish Health Institute - 2016

- Setback requirements need to reflect range of impacts:
    - 500 to 750 metres for audible noise,
    - 1300 to 3000 metres for low frequency noise and infrasound.

Markus Weichenberger, et al – 2017

- German study using MRI to understand brain response to sub-audible noise
- Stimulated cochlear nucleus (attention/control) waking people at night

Huron County Health Unit wind turbine and noise project

- Initiated under authority of the Health Promotion and Prevention Act because of high number of complaints about wind turbine noise and adverse effects
- Study ongoing until December 2018 but interim results show 60% of participants are experiencing problems due to exposure to wind turbine noise emissions