**VIA ELECTRONIC FILING & REGULAR POST**

April 15, 2013

Ontario Energy Board

P.O. Box 2319

2300 Yonge Street, 27th Floor

Toronto, ON

M4P 1E4

Attention: Ms. Kirsten Walli,

 Board Secretary\_

Dear Ms. Walli:

**RE: Board File Number: EB-2012-0458**

 **K2 Wind Ontario Limited Partnership;**

 **Application for Leave to Construct (the “Application”)**

The Residents Group would like to make the following submission on the K2 Wind motion for an order striking out the affidavits filed by us on March 24, 2013.

THE AFFIDAVIT OF MICHAEL LEITCH:

One of the primary interests of the Residents Group in this hearing is to ensure that if the Board grants K2 leave to construct, the approval is in the

public interest.

As set out in our application to intervene, the Residents Group’s primary interest is seeing that public safety is adequately addressed with regard to the proposed 230 KV transmission line since this is the one aspect of the proposed facilities which will be constructed in the public realm. We have submitted no comments regarding the transformer station and substation as these will not be accessible to the general public.

In Procedural Order No. 1, February 19, 2013, the Board granted the Residents Group intervenor status. In granting this request the Board stated the following:

*In its request for intervenor status, the Residents Group states among other things that “We feel that there are significant safety considerations that need to be addressed with such a high voltage underground line on public land near fences, ditches and drains.” The Board considers this to be a substantial interest, which is relevant to “the interests of consumers with respect to…the reliability and quality of electrical service”, as contemplated by s.96(2) of the Act.*

And:

*The Board considers that the Residents Group primarily represents a public interest relevant to the Board’s mandate and hereby grants cost eligibility to the Residents Group.*

It is well within the Board’s mandate and interest to ensure that all relevant opinions are heard on a matter of such importance as the safety of the public, regardless of whether these opinions differ from those put forward by the Applicant. The Residents Group is confident that the Board is very capable of reviewing such an affidavit and determining the merits of the arguments put forward therein.

The Residents Group was granted intervenor status on the basis of a substantial interest related to safety. It is clear, from the extensive comments submitted to the Board by residents of Ashfield Colborne Wawanosh, that these concerns are shared by many in the community - residents who do not have the background, education or relative work experience to provide technical input or comment on the design of the proposed transmission line. What these residents have made very clear is that they strongly support the Residents Group and trust the Residents Group to represent them in this matter.

The Residents Group takes the position that the reliability and quality of the electricity service encompasses issues of safety pertaining to the design and construction of the proposed line. These are the issues that Mr. Leitch’s affidavit speaks to.

In his affidavit, Mr. Leitch raised what are some concerns with the sufficiency of the construction application provided by K2 Wind and the deficiencies surrounding the particulars provided in the application. The affidavit sets out that Mr. Leitch has vast personal experience relating to the issues raised in his affidavit based on his extensive work history with Hydro One Networks designing and working with high voltage lines.

Ms. Newland has made the argument that Mr. Leitch’s affidavit relates to technical aspects of construction activities and is therefore outside of the Board’s jurisdiction. However, construction activities are not the focus of Mr. Leitch’s affidavit. His affidavit speaks to gaps and inadequacies in the design parameters of the proposed underground 230 KV line. These gaps and inadequacies are significant safety considerations in regard to the issue of public safety and the reliability and quality of the transmission services which will be provided. In his affidavit, Mr. Leitch sought to explain to the Board, in a step by step process, citing relevant safety standards and examples, why he has concerns regarding the proposed design of the 230 KV transmission line.

If Ms. Newland’s argument is to be accepted, then in theory one could apply to the OEB with a line drawn on the back of a napkin and the OEB would be obligated to accept it if the Board has no mandate to require reasonable standards of design that ensure public safety and ensure the reliability and quality of the services to be provided in an undertaking of this magnitude.

Chapter 4 of the OEB document EB-2006-0170 (dated May 17, 2012), sets out the filing requirements for electricity transmission and distribution applications. Section 4.1 of these requirements sets out a broad scope for what the Board may consider:

*The filing requirements set out in this document are not intended to limit applicants in terms of what information they may want to present. Nor do these filing requirements limit the discretion of the Board in terms of what information and evidence it may wish to see.[[1]](#footnote-1)*

The K2 wind project involves the construction of a transformer station, a substation, a 230,000 volt underground transmission line, a switching yard and a network of ancillary electrical lines. It is not a case of a landowner seeking to hook up a solar panel to the grid. The magnitude of the proposed project elevates it well above the status of a simple project of that nature. The placement of a 230 KV underground transmission line, on a public road allowance, with its associated safety risks, elevates the project in terms of the rigor with which the application must be assessed. This is particularly true when the applicant is not an entity such as Hydro One Networks with extensive experience in the design and development of such facilities. The applicant in a project of this magnitude should be able to demonstrate the technical ability to engineer, plan, construct, operate and maintain the project. The Board should be convinced that the applicant’s proposed practices are consistent with the equivalent practices in place throughout the Province for an application of this magnitude.

The Board has in the past allowed the introduction of material and evidence which relates to issues around the design parameters for transmission lines. In EB-2007-0034, which dealt with the Wolfe Island Wind Project, the Board accepted evidence and testimony related to the design parameters of the proposed underground 230 KV line. This case is one of the only two examples (as provided by K2 Wind) of an existing underground 230 KV transmission line in the Province of Ontario.The following excerpts are taken directly from the transcript of the hearing for EB-2007-0034.

Excerpt – Pgs 29-31[[2]](#footnote-2)

1. MS. WONG: Can you give us a layperson’s explanation
2. as to what induced voltage is and what causes it.
3. MR. NICHOLSON: Induced voltage on the pipe is a
4. result of the rate of change of a magnetic flux created by
5. current flowing in a conductor.
6. There are a significant number of parameters that will
7. impact how much it is, but directly – it is basically
8. directly proportional to the amount of current flowing in
9. the conductor. It’s basing from – between the conductor
10. and the pipeline, the length that runs in parallel with the
11. content of the pipeline, the material, the resistivity,
12. permeability, soil resistivity, the location of the cable
13. and pipe, whether it is above ground, below ground.
14. I think that is…
15. MS. WONG: Let me see if I can sort of break that down
16. for us. The conductor in this case is the transmission
17. line, the CREC transmission line?
18. MR. NICHOLSON: The CREC insulated buried cable.
19. MS. WONG: That insulated buried cable with current
20. flowing through it will cause induced voltages or can cause
21. induced voltages on metallic pipelines in the vicinity?
22. MR. NICHOLSON: Correct.
23. MS. WONG: So this study was to determine what
24. voltages would be caused or induced on the Utilities
25. Kingston pipelines?
26. MR. NICHOLSON: Correct.
27. MS. WONG: Is there a standard in place that CREC has
28. to meet?
29. MR. NICHOLSON: The Canadian Standards Association,
30. the CSA, has a standard C22.3, number 6, that is titled
31. “Principles and Practices of Electrical Coordination
32. Between Pipelines and Electrical Supply Lines”.
33. And this falls within that and meets the requirements
34. listed in that standard.
35. MS. WONG: Okay. So the purpose of this study was to
36. determine whether or not the transmission line would cause
37. voltages on the Utilities Kingston line and whether it
38. would be within the acceptable limits of the CSA standard?
39. MR. NICHOLSON: Correct.
40. MS. WONG: Okay. And, in general, what were the
41. results of the study?
42. MR. NICHOLSON: The results of the study indicated
43. that we’re well below the 15 volts, that the standard
44. requires, no mitigation. We did some analysis to test our
45. assumptions and on how long. We varied the length of
46. parallel, the soil resistivity and several other
47. parameters, to find how much impact it would have, and it
48. had very little impact on the overall results, which were
49. significantly below the 15 volts that are measured.
50. MS. WONG: So just so I am clear, you did it based
51. upon current design expectations?
52. MR. NICHOLSON: Correct.
53. MS. WONG: And you were well below the CSA standard?
54. MR. NICHOLSON: Yes.
55. MS. WONG: And then you changed some of the parameters
56. and made it – for instance, you changed the soil
57. resistivity parameters and you increased the length of the
58. paralleling?
59. MR. NICHOLSON: Correct.
60. MS. WONG: That was really just to check; a safety
61. factor, if you will?
62. MR. NICHOLSON: Yes.
63. MS. WONG: You were still well below the CSA standard?
64. MR. NICHOLSON: Correct.
65. MS. WONG: Thank you. I think those are all of the
66. questions I have for Mr. Nicholson on that point.

Excerpt – Pages 39-41[[3]](#footnote-3)

1. MS. WONG: Thank you. Mr. Pinter, I meant to ask you
2. a question when we were dealing with the technical matters
3. and forgot, so I will ask you now.
4. Could you describe for us how the transmission line
5. will be monitored and whether there is any need for any
6. additional monitoring.
7. MR. PINTER: The transmission line will be – is
8. monitored at both ends by electronic protection relays.
9. They’re very sensitive devices that detect any anomalies in
10. the characteristics of the line and will remove the line
11. from service if there is a problem.
12. MS. WONG: And who does that monitoring?
13. MR. PINTER: Hydro One and both CREC monitor the line
14. from both ends.
15. MS. WONG: And when you say that it will detect
16. problems, what – potentially what kind of problems could
17. those be?
18. MR. PINTER: For instance, if the insulation of the
19. cable itself breaks down, there is a ground wire around the
20. outside of the cable that is part of the assembly, and, if
21. the cable broke down, the voltage would come in contact
22. with that ground wire and it would remove the cable from
23. service.
24. Also, there is protection called differential, which,
25. basically, it monitors what goes in one end and what comes
26. out the other end of the cable, and it is very sensitive.
27. So if power goes into one end of the cable and doesn’t
28. come out the other, which means that it is leaking, then
29. the cable would, again, be removed from service.
30. MS. WONG: Perhaps you could just describe for us,
31. when the cable is buried, how far underground is it buried.
32. MR. PINTER: It is buried at 1.2 metres below surface.
33. MS. WONG: Is the cable itself covered or encased in
34. anything?
35. MR. PINTER: The cable itself is buried in sand
36. bedding to protect it from mechanical damage, and then
37. above that there will be 100-millimetre layer of concrete
38. that is dyed red for identification in case someone digs in
39. that area. Then above that, there will be a warning tape
40. that is placed above the concrete, so if anybody digs down
41. towards the cable, they will see the warning tape first,
42. identifying to them that there is buried cable below that
43. portion.
44. Then the concrete provides mechanical protection, so
45. if it is a backhoe, they won’t be able to come into contact
46. with the cable if they’re digging in that area.
47. MS. WONG: Thank you. Those are all of my questions
48. for the witnesses.

Mr. Leitch is a concerned citizen living in the Township of Ashfield Colborne Wawanosh with 32 years of experience working and designing high voltage transmission lines. Mr. Leitch has a wealth of information pertaining to design parameters for projects such as the one being proposed by K2 Wind. It is the Residents Group’s position that, based on the test set out by the Supreme Court of Canada in *Mohan*, Mr. Leitch is in fact an expert witness with respect to the design of these high voltage lines.

As set out above, Procedural Order No. 1 granted the Residents Group intervenor status on the grounds of significant safety considerations which the Board found to be relevant to the “interests of consumers with respect to …the reliability and quality of electrical services” as contemplated by s. 96(2) of the *Act*. Given these parameters, the Residents Group respectfully submits that the evidence put forth the in the affidavit of Mr. Leitch meets the first requirement of the *Mohan* test in that the information is relevant to the issues before the Board.

The second requirement of the *Mohan* test is that the evidence be necessary to assisting the trier of fact. The Board is statutorily obliged to ensure that any proposed work is in the public interest in respect to the interest of consumers with respect to the reliability and quality of the electricity services. The affidavit of Mr. Leitch highlights the deficiencies in the design advanced by K2 Wind and raises concerns regarding the reliability and quality of the electrical services in light of these design deficiencies. It is submitted that the Leitch affidavit meets the second requirement of the *Mohan* test.

Finally, the Residents Group submits that Mr. Leitch is a properly qualified witness. Mr. Leitch sets out in his affidavit the following:

*I recently retired in September 2012, from Hydro One Networks Incorporated, after 32 years. I have a diploma from Fanshawe College as an Electrical Engineering Technician. I started my career as a Construction Electrical Engineering Technician at the Bruce and then moved to the Darlington Generating Stations working in the plants and switch yards. In 1985, I transferred to the Strathroy Area Office and then in 2003, to the Clinton Area Office as an Area Distribution Engineering Technician. I worked out of the Clinton Office until my retirement.* ***My job involved the design of high voltage lines and I have a thorough knowledge and understanding of the design and construction of these lines and the safety issues involved in high voltage situations. I worked on Hydro One’s portions of the K1 Wind Project in Ashfield Colborne Wawanosh Township design*** *and as such**have knowledge of the matters hereinafter deposed. [emphasis added].*

Given the extensive experience of Mr. Leitch with respect to the design and construction of high voltage lines and the very application before the Board, it is respectfully submitted that Mr. Leitch is a qualified expert in respect of the information contained within his affidavit.

The Residents Group would respectfully like to point out that K2 Wind, in response to the Resident Group’s interrogatories, was unable to even identify the persons responsible for producing the proposed design of the underground 230 KV transmission line, let alone provide their relevant experience in designing such a high voltage line. That being the case, given the issues of public interest and safety in the reliability and quality of the electrical services, the information provided in the affidavit of Mr. Leitch ought to be before the Board and should not be struck.

THE AFFIDAVIT OF ROSS & DARLENE BRINDLEY:

Board Staff Interrogatories

INTERROGATORY 1

Board Preamble

Reference (c) states : “By Unanimous Shareholders’ Agreement, the shareholders of K2 Wind Ontario have agreed that following completion of the K2 Wind Power Project, SRE Wind GP Holdings Inc. will transfer a portion of its shares to Capital Power Generation Services Inc. and Pattern K2 GP Holdings Inc. for nominal consideration, so that the shareholders will then hold shares in the general partner in proportion to their interests (including interests held by affiliates) in the Applicant.”

In response to the OEB questions about ownership, K2 indicates that “K2 Wind is a limited partnership among affiliates of Samsung renewable Energy, Pattern Energy and Capital Power” and “While Capital Power is not a party to the GEIA, it made its Kingsbridge 11 project, including land rights and engineering and environmental studies, available to Samsung and Pattern for purposes of the GEIA in consideration of a one-third interest in K2 Wind.” (pg 4 of 39, Filed March 14, 2013).

INTERROGATORY 4

Board Preamble

With respect to the Applicant’s experience, the reference discusses the experience of the three partners in acquiring, developing, operating, and maintaining renewable generation, and manufacturing solar and wind equipment, but does not give further information on constructing, operating and maintaining transmission facilities.

The OEB specifically asked about examples of similar projects that have been undertaken and about what human resources will be pooled from any of the three participating partners.

In response, K2 Wind states “K2 Wind, through Capital Power (formerly EPCOR), has construction and operational experience with several relevant facilities, a selection of which are outlined in the table on the following page” and then specifically lists the Kingsbridge 1 Wind Operation (pgs 13-14, Filed March 14, 2013).

The Residents Group submits that if K2 Wind considers it justified and is clearly proud to cite Kingsbridge 1 as an example of its depth of experience in constructing a wind project, it is equally valid for the OEB to consider local residents’ experience with that same project, particularly what problems it created on the electrical grid and how they were dealt with. In our initial discussion with the OEB staff, we specifically asked what type of evidence we could submit and were given the example of problems with turbines of which we are aware and, more particularly, problems which residents have personally experienced and tracked. It is fair to say that many residents in ACW are aware of at least some of the problems with the K1 Project.

In regard to the two projects being distinct and separate, K2 Wind’s response to the Board clearly shows that they are directly affiliated with Capital Power (formerly EPCOR) and are relying on this affiliation for experience. The local corporate office for K2 is located at the same address in Goderich as K1 and K1 staff handled and received comments for K2 Wind’s proposal at this location.

If the residents’ experience is dismissed, then all experience related to other projects should also be dismissed. It is not acceptable for K2 Wind to cherry pick the good experiences from the bad experiences. The Brindleys’ affidavit speaks to the issue of stray voltage, which is within the OEB’s mandate, and to the reliability and quality of the electrical services to be provided and raises issues of public interest that should be considered by the Board in determining whether or not to grant the order for construction. The Brindleys do not claim to be experts. They seek to provide evidence to which they have knowledge and personal experience.

If the Board has any questions with regard to the evidence which the Brindleys have submitted with respect to the graphs relating to the electrical grid, Mr. Leitch would be able to address those questions. He was the Hydro One Networks employee responsible for monitoring the high voltage complaint lodged by the Brindleys with Hydro One Networks and he is prepared to submit an affidavit to that effect, outlining the findings of Hydro One’s monitoring, should the Board request same. It should also be noted that these graphs were also submitted to ACW Council by K1 Wind and are part of the public record**.**

THE AFFIDAVIT OF MARIANNE & PAUL BOLLINGER:

In its evidence filed with the OEB, K2 Wind included an extensive section on community and stakeholder consultation. Tab 1-3-1 – Comment/Response Summary Table indicates that several form letters of objection were received as part of the public consultation process and the applicant states that K2 Wind was reviewing the questions and would be responding shortly. The letter that was submitted as part of the Bollingers’ affidavit was provided to ACW Council and to local residents as K2 Wind’s answer to those citizens’ concerns. Since K2 Wind filed evidence which outlines their responses to residents’ verbal comments at open houses and also their written responses to earlier letters they received, there seems to be no reason to exclude their response in this case. The Bollingers have simply attested to the fact that they were present at a Council meeting where the letter was discussed and, furthermore, that Council members stated they had concerns with the letter. This is all information that is available on the public record.

If K2 Wind’s response in one case is not applicable, the Residents Group submit that the remainder of the K2 Wind public consultation information is equally not applicable and should be stricken from the record.

It is the position of the Residents Group that the affidavits submitted (Leitch, Brindley and Bollinger) should be before the Board as all of the affidavits speak to the reliability and quality of the purported electrical service and is all information that the Board should consider in making its decision in the public interest, in respect of this application.

The Residents Group respectfully submits that the K2 Wind Motion to Strike should be denied based on the arguments set out in this submission.

Respectfully,

*Original Signed By*

Anita L. Frayne

On Behalf of the Residents Group

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1. EB-2006-0170, May 17, 2012, Chapter 4 of the Filing Requirements For Electricity Transmission and Distribution Applications, pg.2 [↑](#footnote-ref-1)
2. EB-2007-0034, Sept 24, 2007, Transcript of Hearing on an Application by Canadian Renewable Energy Corporation, pgs. 29-31. [↑](#footnote-ref-2)
3. Ibid, pgs 39-41. [↑](#footnote-ref-3)