

February 8, 2013

COURIER

Ontario Energy Board
P.O. Box 2319
27th Floor
2300 Yonge Street
Toronto, ON M4P 1E4

Attention: Ms. K. Walli, Board Secretary

Dear Ms. Walli:

Re: Kerwood Wind, Inc. - Application for Leave to Construct Transmission Facilities (EB-2013-0041)

We are counsel to Kerwood Wind, Inc. (the "Applicant"). On behalf of the Applicant, we are hereby enclosing two copies of an application, pursuant to section 92 of the *Ontario Energy Board Act*, for leave to construct certain electricity transmission facilities in the Township of Adelaide Metcalfe and the Municipality of North Middlesex, both of which are in Middlesex County, Ontario, for purposes of connecting each of the Applicant's renewable energy generation facilities to the IESO-controlled grid (the "Application"). The Board has assigned file no. EB-2013-0041 to the Application.

Also enclosed is a CD-ROM containing one copy of the complete Application, which shall serve as the electronic filing for this Application. Please note that the landowner line list has been intentionally omitted from Appendix 1 of Exhibit F, Tab 1, Schedule 1 of the enclosed hard copies and electronic copy of the Application as it contains confidential information. This document is being filed concurrently under separate cover in accordance with Board requirements.

Yours truly,



Charles Keizer

Tel 416.865.7512
ckeizer@torys.com

cc: Mr. B. Greenhouse, Bornish Wind, LP
Mr. J. Myers, Torys LLP

ONTARIO ENERGY BOARD

IN THE MATTER OF the *Ontario Energy Board Act, 1998*, S.O. 1998, c. 15 (Sched. B);

AND IN THE MATTER OF an application by Kerwood Wind, Inc. for an Order or Orders pursuant to Section 92 of the *Ontario Energy Board Act, 1998* (as amended) granting leave to construct transmission facilities in the Township of Adelaide Metcalfe and the Municipality of North Middlesex, Middlesex County, Ontario.

APPLICATION FOR LEAVE TO CONSTRUCT

KERWOOD WIND, INC.

EB-2013-0041

February 8, 2013

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Exhibit List

EXHIBIT LIST

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EXHIBIT B - APPLICATION

**Exhibit B, Tab 1, Schedule 1
Application**

ONTARIO ENERGY BOARD

IN THE MATTER OF the Ontario Energy Board Act, 1998, S.O. 1998, c. 15 (Sched. B);

AND IN THE MATTER OF an application by Kerwood Wind, Inc. for an Order or Orders pursuant to Section 92 of the *Ontario Energy Board Act, 1998* (as amended) granting leave to construct transmission facilities in the Township of Adelaide Metcalfe and the Municipality of North Middlesex, Middlesex County, Ontario.

APPLICATION

1. Kerwood Wind, Inc. (“**Kerwood**” or the “**Applicant**”) is a corporation established under the laws of the Province of New Brunswick and is a wholly-owned subsidiary of NextEra Energy Canada, ULC (“NextEra Energy Canada”).
2. NextEra Energy Canada is a corporation that was established in 2006 under the laws of the Province of Alberta and which has its executive offices in Toronto, Ontario. NextEra Energy Canada is a leading renewable energy developer in Canada that owns and operates wind and solar generation facilities in Ontario, Alberta, Quebec and Nova Scotia. In Ontario, NextEra Energy Canada currently operates one wind and two solar generation facilities, and is developing seven additional wind energy generation facilities (including the project being developed by Kerwood), pursuant to contracts under the Ontario Power Authority’s (“**OPA**”) Feed-in Tariff (“**FIT**”) Program.
3. NextEra Energy Canada is wholly owned by NextEra Energy Resources, LLC. NextEra Energy Resources, LLC is a global leader in the generation of renewable energy and is the largest generator of both wind and solar power in North America. NextEra Energy Resources, LLC has over 18,200 MW of installed generation capacity from sources that include wind, natural gas, nuclear, hydroelectric and solar. NextEra Energy Resources, LLC has been operating wind energy facilities for over 20 years and currently operates

approximately 100 wind facilities or projects in 19 states and 4 provinces, with more than 9,600 wind turbines providing over 10,000 MW or 55.5% of NextEra Energy Resources, LLC's total generation capacity. NextEra Energy Resources, LLC employs approximately 4,700 people across North America. NextEra Energy Resources, LLC is owned by NextEra Energy, Inc. (NYSE: NEE), a leading clean energy company with consolidated revenues of approximately \$14.3 billion, more than 42,000 megawatts of generating capacity, and nearly 15,000 employees in 26 states and four Canadian provinces as of year-end 2012. NextEra Energy, Inc. is headquartered in Juno Beach, Florida.

4. The Applicant hereby applies to the Ontario Energy Board (the "**Board**") pursuant to Section 92 of the *Ontario Energy Board Act, 1998* (the "**Act**") for an order or orders granting leave to construct the following transmission and interconnection facilities:
 - (a) a collection substation located on Part Lot 7, Concession 3 in the Township of Adelaide Metcalfe, Middlesex County, to be owned by Kerwood, at which power from the 34.5 kV collection system associated with the Adelaide Wind Energy Centre will be transformed from 34.5 kV to 115 kV by means of one 115/34.5 kV, 51/68/85 MVA transformer (the "**Adelaide Collection Substation**"); and
 - (b) an approximately 10.8 km single circuit 115 kV transmission line, to be owned by Kerwood, connecting the Adelaide Collection Substation to the Bornish Customer Switching Station (described below) (the "**Transmission Line**").
5. The facilities described in paragraph 4 are collectively referred to in this Application as the "**Proposed Transmission Facilities**".
6. The Applicant further requests the approval of the Board pursuant to Section 97 of the Act for the forms of land agreements included in Exhibit F, Tab 2, Schedule 1.
7. Moreover, the Applicant requests the approval of the Board, either pursuant to Section 101 of the Act or pursuant to the Board's powers under Section 92 of the Act, for authority to construct portions of the Proposed Transmission Facilities upon, under or over a highway, utility line or ditch, as further described in Exhibit F, Tab 1, Schedule 1.

8. The Applicant is developing and planning to construct and operate a 59.9 MW wind generation facility, known as the Adelaide Wind Energy Centre, in the Township of Adelaide Metcalfe in Middlesex County pursuant to a contract under the OPA's FIT Program (the "**Adelaide Project**"). The Applicant requires the Proposed Transmission Facilities to enable it to convey electricity to the Independent Electricity System Operator ("**IESO**") controlled grid from the Adelaide Project, consistent with its obligations under its FIT contract, the objectives of the FIT Program and the renewable energy policies of the Province of Ontario.
9. Under a separate, concurrently-filed application, Kerwood together with Bornish Wind, LP ("**Bornish**") and Jericho Wind, Inc. ("**Jericho**") as co-owners (together, the "**Co-owners**"), is seeking leave to construct certain related transmission facilities that, in combination with the Proposed Transmission Facilities, will enable Kerwood to convey electricity from the Adelaide Project to the IESO-controlled grid (the "**Co-owners' LTC Application**"). The facilities that are the subject of the Co-owners' LTC Application include the Bornish Customer Switching Station to which the Proposed Transmission Facilities will connect, as well as the Parkhill Customer Transformer Station and a transmission line connecting the Bornish Customer Switching Station to the Parkhill Customer Transformer Station, each as described in the Co-owners' LTC Application.
10. The Applicant proposes to locate the Adelaide Collection Substation on private lands. To this end, the necessary private land rights have been secured. In particular, Bornish has entered into a Purchase and Sale Agreement for the relevant property. Although this transaction has not yet closed, it is intended that Bornish will convey the property to Kerwood prior to the commencement of construction.
11. The Applicant proposes to locate the Transmission Line along municipal road rights of way ("**ROWS**") that run from the Adelaide Collection Substation north along Kerwood Road to the Bornish Customer Switching Station. To this end, the Applicant intends to rely upon its rights under Section 41 of the *Electricity Act*. Although not currently anticipated, as a result of final engineering and project planning the Applicant may

determine that the use of certain private lands adjacent to the municipal road ROW may become necessary for construction, access or other purposes.

12. The Applicant received a final System Impact Assessment (“**SIA**”) Report from the IESO for the Adelaide Project dated December 21, 2011. The Applicant also received an SIA Addendum Report on June 6, 2012 and an SIA 2nd Addendum Report on December 12, 2012. These reports conclude that, subject to certain requirements set out therein, the proposed connection is expected to have no material adverse impacts on the reliability of the integrated power system. The IESO therefore recommended that a Notification of Conditional Approval for Connection be issued concurrently with the final SIA Report, as well as that addenda to such Notification be issued concurrently with each of the addendum reports.
13. The Applicant received a final Customer Impact Assessment (“**CIA**”) Report from Hydro One dated December 20, 2011, a CIA Addendum Report dated June 8, 2012 and a 2nd CIA Addendum Report dated February 1, 2013 from Hydro One in respect of the Proposed Transmission Facilities. These reports conclude that the Adelaide Project can be incorporated via the Proposed Transmission Facilities (and the facilities that are the subject of the Co-owners’ LTC Application) without adverse impacts on area customers, subject to the requirements set out in the CIA reports.
14. The Applicant is subject to the requirements of the Renewable Energy Approval (“**REA**”) process under Ontario Regulation 359/09 under the *Environmental Protection Act*. The final REA submission package for the Adelaide Project was submitted to the Ministry of the Environment on August 23, 2012 and was deemed complete on November 20, 2012. Based on the Ministry’s six-month service guarantee, the Applicant therefore anticipates that its REA will be issued on or before May 20, 2013.
15. The Applicant has carried out a comprehensive stakeholder consultation program in the context of its REA process. Through these consultations, the Applicant has provided notices and information to potentially interested stakeholders and held public meetings at

which the Applicant received feedback and information from stakeholders. The Applicant has taken this input into consideration in planning and designing the Proposed Transmission Facilities.

16. Subject to receipt of its REA, as well as other necessary permits and approvals, the Applicant plans to commence construction of the Proposed Transmission Facilities in July 2013. Construction is expected to take approximately 8 months to complete. The Proposed Transmission Facilities would then be commissioned and would go into service by Summer 2014 (subject to the Co-owners' transmission facilities being in-service).
17. The cost of the Proposed Transmission Facilities will be borne by the Applicant. As such, the Proposed Transmission Facilities will not affect electricity transmission rates in Ontario.
18. The evidence in support of this Application has been prepared in accordance with the requirements set out in Chapter 4 of the Board's *Minimum Filing Requirements for Transmission and Distribution Rate Applications and Leave to Construct Projects*, as amended May 17, 2012.
19. The Applicant requests that copies of all documents filed with or issued by the Board in connection with this Application be served on the Applicant and the Applicant's counsel as follows:

(a) The Applicant:

Kerwood Wind, Inc.
c/o NextEra Energy Canada, ULC
390 Bay Street, Suite 1720
Toronto, ON M5H 2Y2

Attention: Mr. Ben Greenhouse
Tel: 416.364.9714 x.13
Fax: 416.364.2533
Email: ben.greenhouse@nexteraenergy.com

(b) The Applicant's Counsel:

Torys LLP
Suite 3000
79 Wellington St. W.
Box 270, TD Centre
Toronto, ON M5K 1N2

Attention: Mr. Charles Keizer
Tel: 416-865-7512
Fax: 416-865-7380
Email: ckeizer@torys.com


- and -

Mr. Jonathan Myers
Tel: 416-865-7532
Fax: 416-865-7380
Email: jmyers@torys.com

20. Additional written evidence, as required, may be filed in support of this Application, which may be amended from time to time prior to the Board's final decision.
21. The Applicant requests that the Board proceed by way of written hearing, pursuant to Section 34.01 of the Board's *Rules of Practice and Procedure*.

Dated at Toronto, Ontario, this ^{9th} day of February, 2013.

KERWOOD WIND, INC.
By its counsel
Torys LLP



Charles Keizer

Exhibit B, Tab 1, Schedule 2
Procedural Orders, Correspondence, and Notices

PROCEDURAL ORDERS, CORRESPONDENCE & NOTICES

- 1 This tab is provided as a placeholder for any Procedural Orders, correspondence and notices that
- 2 may be filed in connection with the Application.

Exhibit B, Tab 2, Schedule 1
Summary of the Application

SUMMARY OF THE APPLICATION

1 1. **The Applicant**

2 Kerwood Wind, Inc. (“**Kerwood**” or the “**Applicant**”) is a corporation established under the
3 laws of the Province of New Brunswick. Kerwood is a wholly-owned subsidiary of NextEra
4 Energy Canada, ULC (“**NextEra Energy Canada**”), a leading renewable energy developer in
5 Canada. NextEra Energy Canada is in turn wholly owned by NextEra Energy Resources, LLC, a
6 global leader in the generation of renewable energy and the largest generator of both wind and
7 solar power in North America. Kerwood was established for the purpose of developing,
8 constructing and operating the Adelaide Wind Energy Centre (the “**Adelaide Project**”). The
9 Adelaide Project is a proposed 59.9 MW wind generation facility that will be located in the
10 Township of Adelaide Metcalfe in Middlesex County, Ontario.

11 2. **Approvals Sought**

12 Kerwood has applied to the Ontario Energy Board (the “**Board**”) pursuant to Section 92 of the
13 *Ontario Energy Board Act, 1998* (the “**Act**”) for an order or orders under Section 96 of the Act
14 granting leave to construct the following transmission and interconnection facilities:

- 15 (a) a collection substation located on Part Lot 7, Concession 3 in the Township of
16 Adelaide Metcalfe, Middlesex County, to be owned by Kerwood, at which power
17 from the 34.5 kV collection system associated with the Adelaide Wind Energy
18 Centre will be transformed from 34.5 kV to 115 kV by means of one 115/34.5 kV,
19 51/68/85 MVA transformer (the “**Adelaide Collection Substation**”); and
- 20 (b) an approximately 10.8 km single circuit 115 kV transmission line, to be owned by
21 Kerwood, connecting the Adelaide Collection Substation to the Bornish Customer
22 Switching Station (described below) (the “**Transmission Line**”).

23 Adelaide Collection Substation and the Transmission Line are collectively referred to in this
24 Application as the “**Proposed Transmission Facilities**”.

1 The Applicant further requests approval of the Board pursuant to Section 97 of the Act for the
2 forms of land agreements included in Exhibit F, Tab 2, Schedule 1.

3 Moreover, the Applicant requests approval of the Board either pursuant to Section 101 of the Act
4 or pursuant to the Board's powers under Section 92 of the Act for authority to construct portions
5 of the Proposed Transmission Facilities upon, under or over a highway, utility line or ditch, as
6 further described in Exhibit F, Tab 1, Schedule 1.

7 **3. Need for the Project**

8 In July 2011, the Ontario Power Authority awarded a contract under the Feed-in Tariff ("FIT")
9 Program in respect of the Adelaide Project. The Proposed Transmission Facilities are needed to
10 convey electricity from the Adelaide Project to the Bornish Customer Switching Station, which
11 will in turn be connected to the IESO-controlled grid. The Bornish Customer Switching Station
12 and related facilities are the subject of a separate Section 92 application that has been filed
13 concurrently with the present application by Kerwood, together with Bornish Wind, LP and
14 Jericho Wind, Inc. as co-owners. As the development of the Adelaide Project promotes the use
15 of renewable energy sources in a manner consistent with the policies of the Government of
16 Ontario, the Proposed Transmission Facilities are in the public interest pursuant to paragraph
17 96(2)2 of the Act.

18 **4. Description of the Project**

19 The Adelaide Project will consist of 37 General Electric 1.62 MW wind turbine generators, for a
20 total installed capacity of 59.9 MW, on privately-owned agricultural lots in the Township of
21 Adelaide Metcalfe, in Middlesex County. The Proposed Transmission Facilities, which are the
22 subject of this Application, are comprised of the Adelaide Collection Substation and the
23 Transmission Line. The Adelaide Collection Substation will be situated on private lands in the
24 Township of Adelaide Metcalfe in close proximity to the wind turbine generators. At the
25 Adelaide Collection Substation, the collector lines will converge and the voltage will be stepped
26 up from 34.5 kV to 115 kV. The 115 kV single circuit Transmission Line will run north from

1 the Adelaide Collection Substation for approximately 10.8 km within the Kerwood Road
2 municipal road right-of-way (“**ROW**”) until reaching the Bornish Customer Switching Station.

3 As noted, pursuant to a separate Section 92 application filed by Kerwood, together with Bornish
4 Wind, LP and Jericho Wind, Inc. as co-owners (together, the “**Co-Owners**”), the Co-Owners are
5 seeking leave to construct the Bornish Customer Switching Station, along with the Parkhill
6 Customer Transformer Station, a shared transmission line and related facilities. The Proposed
7 Transmission Facilities, together with these facilities that are the subject of the Co-Owners’
8 Section 92 application, will enable the Applicant to convey electricity from the Adelaide Project
9 to the IESO-controlled grid.

10 The Applicant proposes to locate the Adelaide Collection Substation on private lands. To this
11 end, the necessary private land rights have been secured. In particular, Bornish has entered into
12 a Purchase and Sale Agreement for the relevant property. Although this transaction has not yet
13 closed, it is intended that Bornish will convey the property to Kerwood prior to the
14 commencement of construction. The Applicant proposes to locate the Transmission Line within
15 the municipal road ROW along Kerwood Road between the Adelaide Collection Substation and
16 the Bornish Customer Switching Station and, in this respect, relies upon the statutory rights
17 granted under Section 41 of the *Electricity Act*. Although not currently anticipated, as a result of
18 final engineering and project planning the Applicant may determine that the use of certain
19 private lands adjacent to the municipal road ROW may become necessary for construction,
20 access or other purposes.

21 **5. Community and Stakeholder Consultations**

22 Kerwood has carried out a thorough stakeholder consultation program, primarily in the context
23 of its REA process. Through these efforts, the Applicant has consulted with the public, affected
24 municipalities, potentially affected Aboriginal communities and relevant provincial and federal
25 regulatory authorities. The Applicant has provided notices and information to potentially
26 interested stakeholders and held a number of public meetings at which the Applicant received

1 feedback and information from stakeholders. The Applicant has taken this input into
2 consideration in planning and designing the Proposed Transmission Facilities.

3 **6. Construction and In-Service Schedule**

4 Subject to receipt of its Renewable Energy Approval, as well as other necessary permits and
5 approvals, the Applicant plans to commence construction of the Proposed Transmission
6 Facilities in Summer 2013. Construction is expected to take approximately 8 months to
7 complete. The Proposed Transmission Facilities would be commissioned and would go into
8 service by Summer 2014 (subject to the Co-owners' transmission facilities being in-service).

9 **7. Impact Assessments**

10 The Applicant received a final System Impact Assessment (“SIA”) Report from the IESO for the
11 Adelaide Project in December 2011 and has subsequently received SIA addendum reports in
12 June 2012 and December 2012. These reports conclude that, subject to certain requirements set
13 out therein, the proposed connection is expected to have no material adverse impacts on the
14 reliability of the integrated power system. The IESO therefore recommended that a Notification
15 of Conditional Approval for Connection be issued. Such notification was issued concurrently
16 with the final SIA Report and addenda to such notification were issued concurrently with each of
17 the SIA addendum reports.

18 The Applicant received a final Customer Impact Assessment (“CIA”) Report from Hydro One in
19 December 2011 and has subsequently received a CIA addendum report in June 2012 and a 2nd
20 CIA addendum report in February 2013. These reports conclude that the Adelaide Project can be
21 incorporated via the Proposed Transmission Facilities (together with the facilities that are the
22 subject of the Co-owners' Section 92 application) without adverse impacts on area customers of
23 Hydro One, subject to the requirements set out in the CIA reports.

24 **8. Other Approvals**

25 A list of all approvals required or potentially required for the Proposed Transmission Facilities is
26 provided in Exhibit E, Tab 2, Schedule 1. Of particular note, Kerwood filed its Renewable

1 Energy Approval application with the Ministry of the Environment on August 23, 2012. The
2 Ministry deemed the application complete on November 20, 2012. As such, it is anticipated that
3 Kerwood will receive its Renewable Energy Approval by late May 2013.

4 **9. Project Costs**

5 The costs of the Proposed Transmission Facilities will be borne by the applicant and, as such, the
6 Proposed Transmission Facilities will not affect electricity transmission rates in Ontario.

Exhibit B, Tab 2, Schedule 2
Description of the Applicant

DESCRIPTION OF THE APPLICANT

1 Kerwood Wind, Inc. (“**Kerwood**” or the “**Applicant**”) is a corporation established under the
2 laws of the Province of New Brunswick. Kerwood is a wholly-owned subsidiary of NextEra
3 Energy Canada, ULC (“**NextEra Energy Canada**”) which is in turn wholly owned by NextEra
4 Energy Resources, LLC. Kerwood was established for the purpose of developing, constructing
5 and operating the Adelaide Wind Energy Centre (the “**Adelaide Project**”). The Adelaide
6 Project, which is described in greater detail in Exhibit D, Tab 1, Schedule 1, is a proposed 59.9
7 MW wind generation facility that will be located in the Township of Adelaide Metcalfe in
8 Middlesex County, Ontario. The Adelaide Project is being developed pursuant to a contract
9 under the FIT Program.

10 NextEra Energy Canada, which owns Kerwood, is a corporation established in 2006 under the
11 laws of the Province of Alberta and has its executive offices in Toronto, Ontario. NextEra
12 Energy Canada is a leading renewable energy developer in Canada that owns and operates the
13 22.9 MW Conestogo Wind Energy Centre, the 40 MW Moore Solar Energy Centre and the 40
14 MW Sombra Solar Energy Centre in Ontario; the 54 MW Mount Copper Wind Energy Centre
15 and the 54 MW Mount Miller Wind Energy Centre in the Province of Quebec; the 31 MW
16 Pubnico Point Wind Energy Centre in the Province of Nova Scotia; and the 82 MW Ghost Pine
17 Wind Energy Centre in the Province of Alberta. In addition, including the Adelaide Project,
18 NextEra Energy Canada is currently developing seven renewable energy generation facilities in
19 Ontario pursuant to contracts under the FIT Program. As noted, NextEra Energy Canada is
20 wholly owned by NextEra Energy Resources, LLC, which in turn is owned by NextEra Energy,
21 Inc. A corporate organizational chart illustrating the structure of the Applicant and its affiliates
22 is provided in Figure 1, below.

Figure 1 - Corporate Organizational Chart

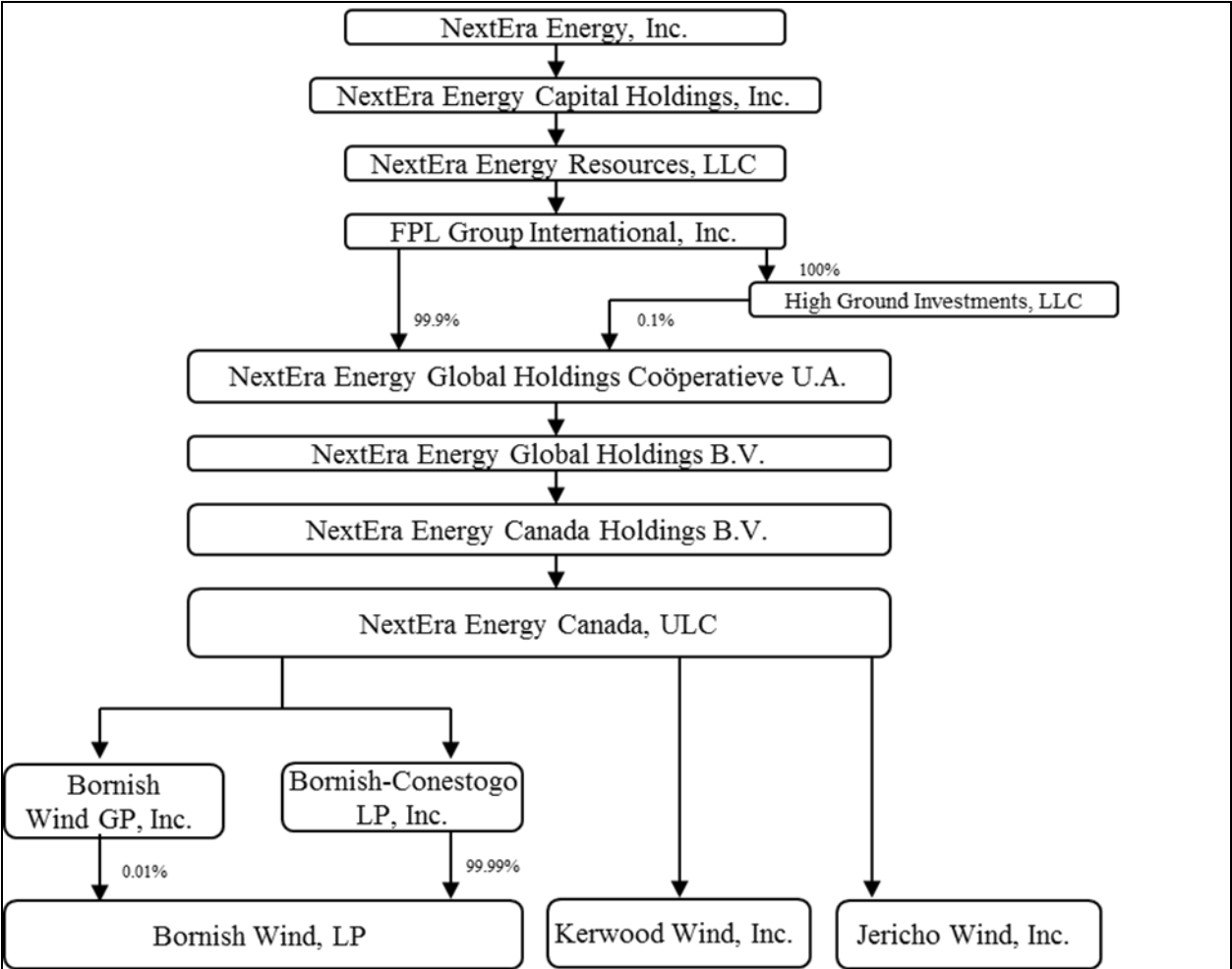


Exhibit B, Tab 2, Schedule 3
Project Location

PROJECT LOCATION

1 As indicated in Exhibit B, Tab 1, Schedule 1, the Proposed Transmission Facilities are being
2 developed to serve the Adelaide Project and to enable electricity from the project to be
3 transmitted to the IESO-controlled grid. The discussion below is focused on the locations of the
4 Proposed Transmission Facilities. Also described, for purposes of providing context, are the
5 locations of certain facilities that are ancillary to the Proposed Transmission Facilities, including
6 (a) the Adelaide Project, (b) certain transmission interconnection facilities that are the subject of
7 the Co-owners' LTC Application filed concurrently with this Application, and (c) certain
8 transmission facilities that are to be constructed, owned and operated by Hydro One.

9 1. **The Generation Project**

10 The 59.9 MW Adelaide Project will be located in the Township of Adelaide Metcalfe, in
11 Middlesex County, which is generally situated in southwestern Ontario between the City of
12 London and the shore of Lake Huron, as shown in Figure 1 of Exhibit B, Tab 2, Schedule 4. The
13 Adelaide Project will consist of 37 wind turbine generators installed on privately-owned
14 agricultural lots throughout the project site, as well as a 34.5 kV collection system connecting the
15 wind turbine generators to a collection substation (the "**Adelaide Collection Substation**"),
16 described below.

17 2. **The Proposed Transmission Facilities**

18 The main components of the Proposed Transmission Facilities are the Adelaide Collection
19 Substation and the Transmission Line. The locations of these components are described below.

20 (a) Adelaide Collection Substation

21 The Adelaide Collection Substation will be located on Part Lot 7, Concession 3 in the Township
22 of Adelaide Metcalfe, which is on the east side of Kerwood Road between Langan Drive and
23 Cuddy Drive, as shown in Figures 1 and 2(b) of Exhibit B, Tab 2, Schedule 4. The Adelaide
24 Collection Substation will have an area of approximately 2 acres. At the Adelaide Collection

1 Substation, electricity conveyed from the Adelaide Project along the collection system will be
2 transformed from 34.5 kV to 115 kV by means of a 115/34.5 kV, 51/68/85 MVA transformer.

3 (b) The Transmission Line

4 From the Adelaide Collection Substation, an approximately 10.8 km single circuit 115 kV
5 transmission line will run north along Kerwood Road until it connects into the Bornish Customer
6 Switching Station, which is described below (the “**Transmission Line**”). The Applicant plans
7 for the Transmission Line to be located within the municipal road ROW, as depicted in Figure 2
8 of Exhibit B, Tab 2, Schedule 4. Although final engineering and construction planning may
9 determine that the use of certain adjacent privately owned lands may be required, the need for
10 such adjacent lands is not currently anticipated. A detailed discussion of how the Applicant
11 determined the proposed Transmission Line route is provided in Exhibit B, Tab 4, Schedule 1.
12 The Transmission Line will be owned by the Applicant.

13 3. **The Co-owners’ Transmission Facilities**

14 The Transmission Line will connect to a 115 kV switching station that will be located on Part
15 Lot 9, Concession 16 in the Municipality of North Middlesex, Middlesex County, on the west
16 side of Kerwood Road between Elginfield Road and Cold Stream Road (the “**Bornish Customer**
17 **Switching Station**” or “**Bornish CSS**”), as shown in Figures 1 and 2(i) of Exhibit B, Tab 2,
18 Schedule 4. At the Bornish CSS, which will consist of a four breaker ring bus, the electricity
19 conveyed along the Proposed Transmission Facilities from the Adelaide Project will converge
20 with the electricity conveyed from each of the Bornish Wind Energy Centre and the Jericho
21 Wind Energy Centre. Accordingly, the Bornish CSS will be jointly owned by Kerwood Wind,
22 Inc., Bornish Wind, LP and Jericho Wind, Inc. (together, the “**Co-owners**”) as tenants in
23 common and is the subject of a separate application for leave to construct filed by the Co-owners
24 concurrently with the present Application (the “**Co-owners’ LTC Application**”).

25 In addition to the Bornish CSS, the Co-owners’ LTC Application seeks leave to construct an
26 approximately 12.6 km, 115 kV single circuit transmission line running from the Bornish CSS to
27 the north along Kerwood Road and then to the east, generally along Elginfield Road/Nairn Road

1 (the “**Shared Transmission Line**”) until it connects to a planned 500 kV transformer station that
2 will be located on Part Lot 18, Concession 17, in the Municipality of North Middlesex (the
3 “**Parkhill Customer Transformer Station**” or “**Parkhill CTS**”). Parkhill CTS is also the
4 subject of the Co-Owners’ LTC Application. At the Parkhill CTS, power transmitted from the
5 Bornish CSS along the Shared Transmission Line will be transformed from 115 kV to 500 kV by
6 means of two 500/115 kV 135/180/225 MVA transformers. As with the Bornish CSS and the
7 Shared Transmission Line, the Parkhill CTS will be jointly owned by the Co-owners as tenants
8 in common.

9 **4. Hydro One’s Transmission Facilities**

10 The Co-owners’ Parkhill CTS will be connected to a new 500 kV switching station that will be
11 constructed, owned and operated by Hydro One on Part Lot 18, Concession 17 in the
12 Municipality of North Middlesex (the “**Evergreen Switching Station**” or “**Evergreen SS**”), as
13 shown in Figure 1 of Exhibit B, Tab 2, Schedule 4. The Evergreen SS will include a 500 kV 3-
14 breaker ring bus that will split Hydro One’s existing 500 kV circuit B562L from Bruce A TS to
15 Longwood TS into two sections: Bruce A TS x Evergreen SS and Evergreen SS x Longwood TS.
16 This sectionalizing will occur approximately 36.5 km from Longwood TS. Evergreen SS will be
17 located adjacent to the proposed Parkhill CTS and to Hydro One’s existing transmission ROW
18 for circuit B562L. The Evergreen Switching Station is ancillary to and does not form part of
19 either the Proposed Transmission Facilities or the facilities that are the subject of the Co-owners’
20 LTC Application.

Exhibit B, Tab 2, Schedule 4
Maps

MAPS

The following maps are provided in this schedule:

Figure 1 General Project Location Map











Figure 2(a)-(i) Proposed Transmission Facilities Maps

Figure 1 - General Project Location Map



Project Location Map

Lambton and Middlesex County, Ontario, Canada

-  Proposed Transmission Line
-  Shared Transmission Facilities
-  Jericho Transmission Line
-  B562L HONI Transmission
-  Adelaide Collector Substation
-  Bornish Collector Substation
-  Bornish Customer Switching Station
-  Jericho Collector Substation
-  Parkhill Customer Transformer Station
-  Evergreen Switching Station (HONI)



Date: 1/30/2013
PROPRIETARY AND CONFIDENTIAL

Projection: NAD_1983_UTM_Zone_17N
 Datum: NAD 83

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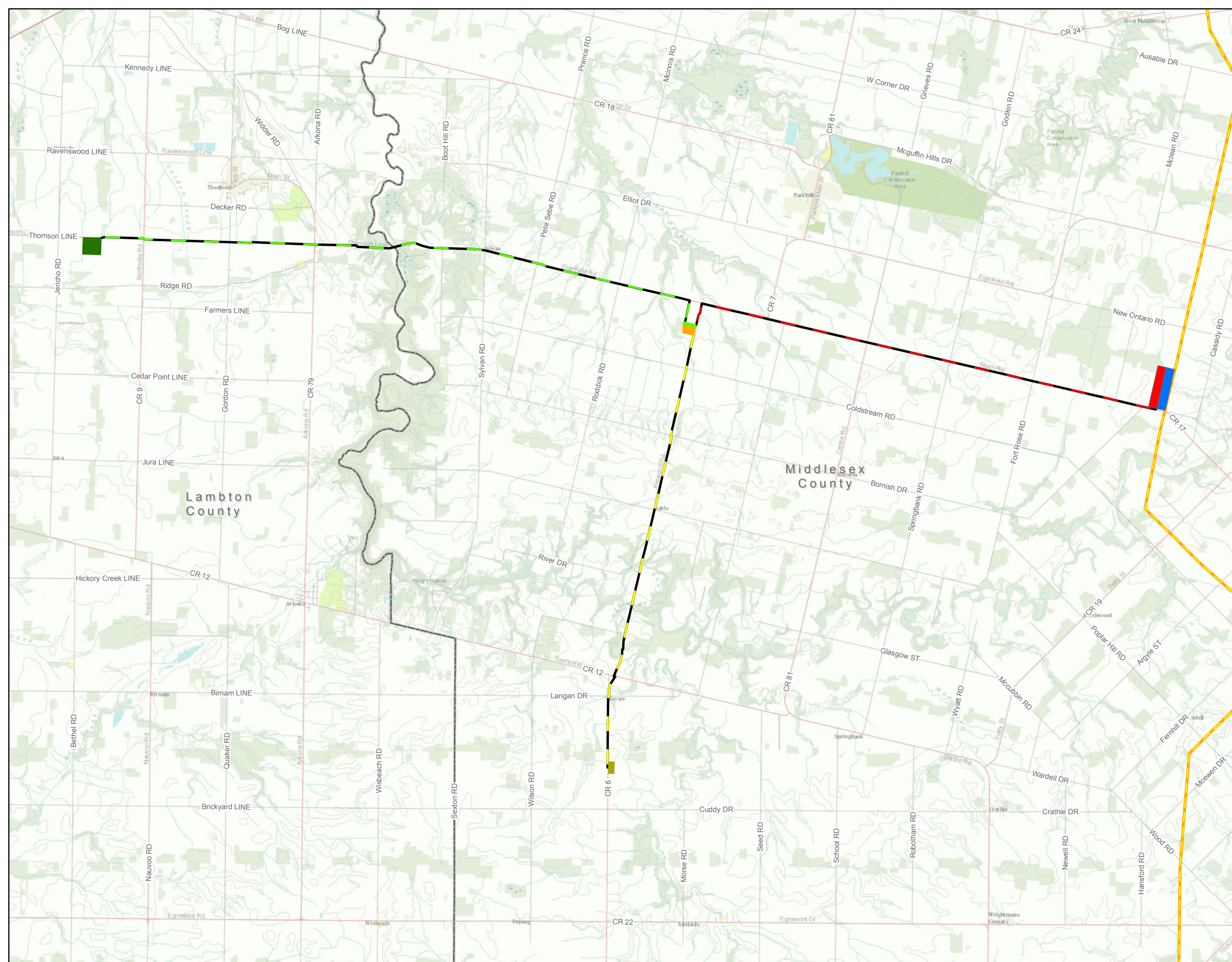
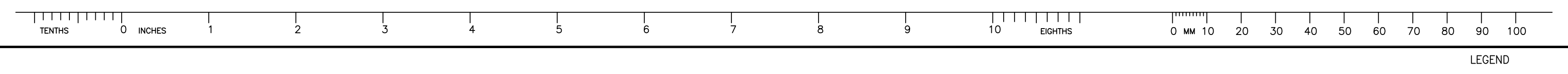


Figure 2 - Proposed Transmission Facilities

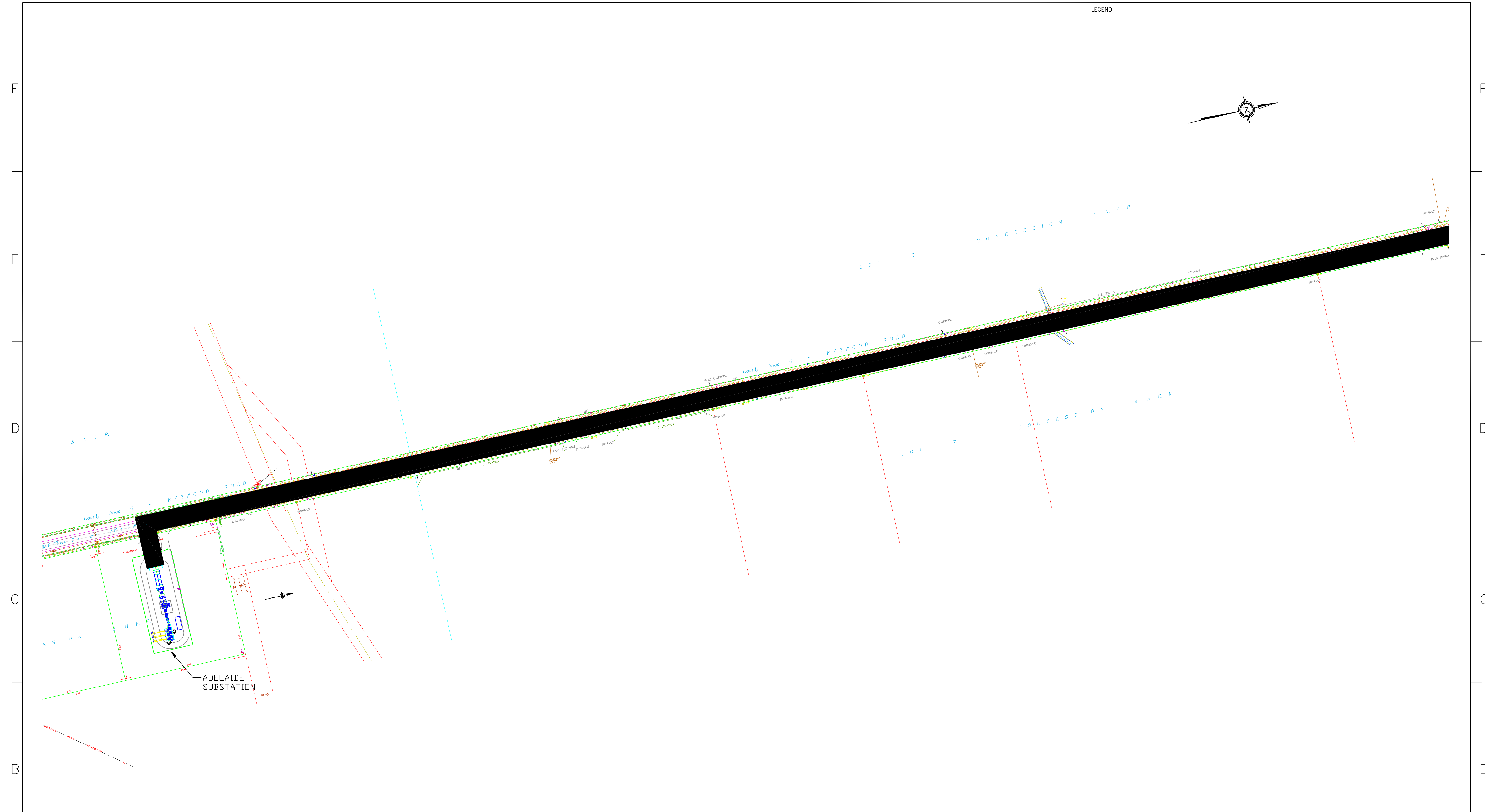
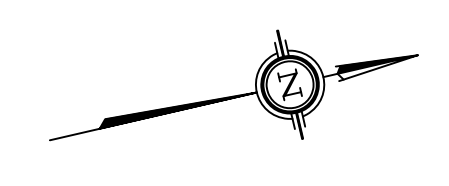
Map (a)

Figure 2 - Proposed Transmission Facilities

Map (b)



LEGEND



LEGEND:

- PROPOSED 115kV TL ROUTE (ADELAIDE TO BORNISH)
- PROPOSED 115kV TL ROUTE (BORNISH TO PARKHILL)
- PROPOSED 115kV TL ROUTE (JERICHO TO BORNISH)



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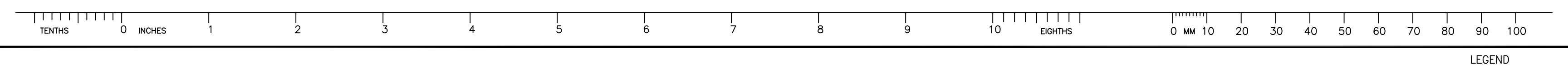
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		APP			
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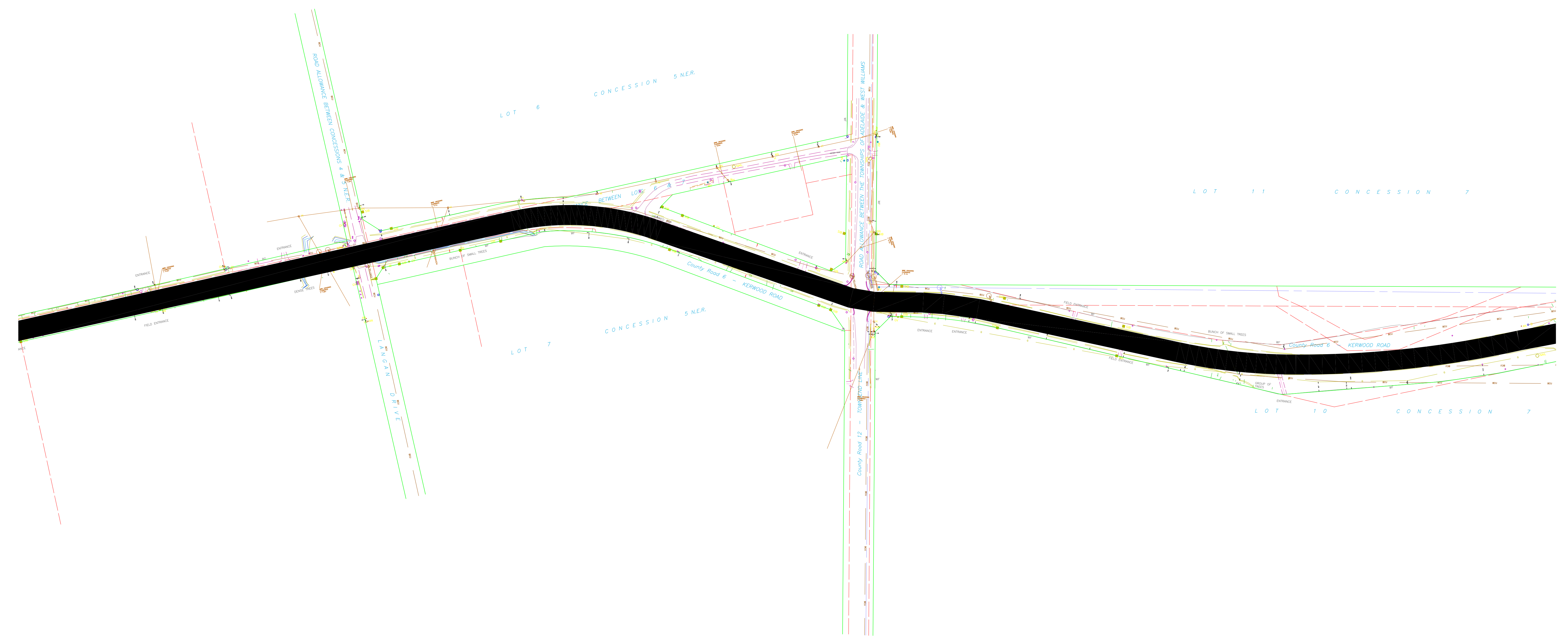
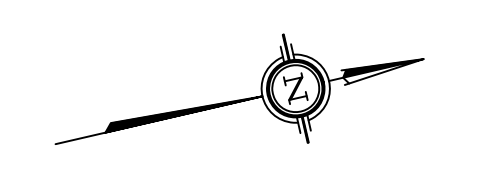
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DRAWING NO.	REV.
1235-1-P001-S01	B

Figure 2 - Proposed Transmission Facilities

Map (c)



LEGEND



LEGEND:

- PROPOSED 115kV TL ROUTE (ADELAIDE TO BORNISH)
- PROPOSED 115kV TL ROUTE (BORNISH TO PARKHILL)
- PROPOSED 115kV TL ROUTE (JERICHO TO BORNISH)



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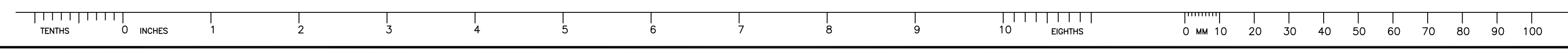
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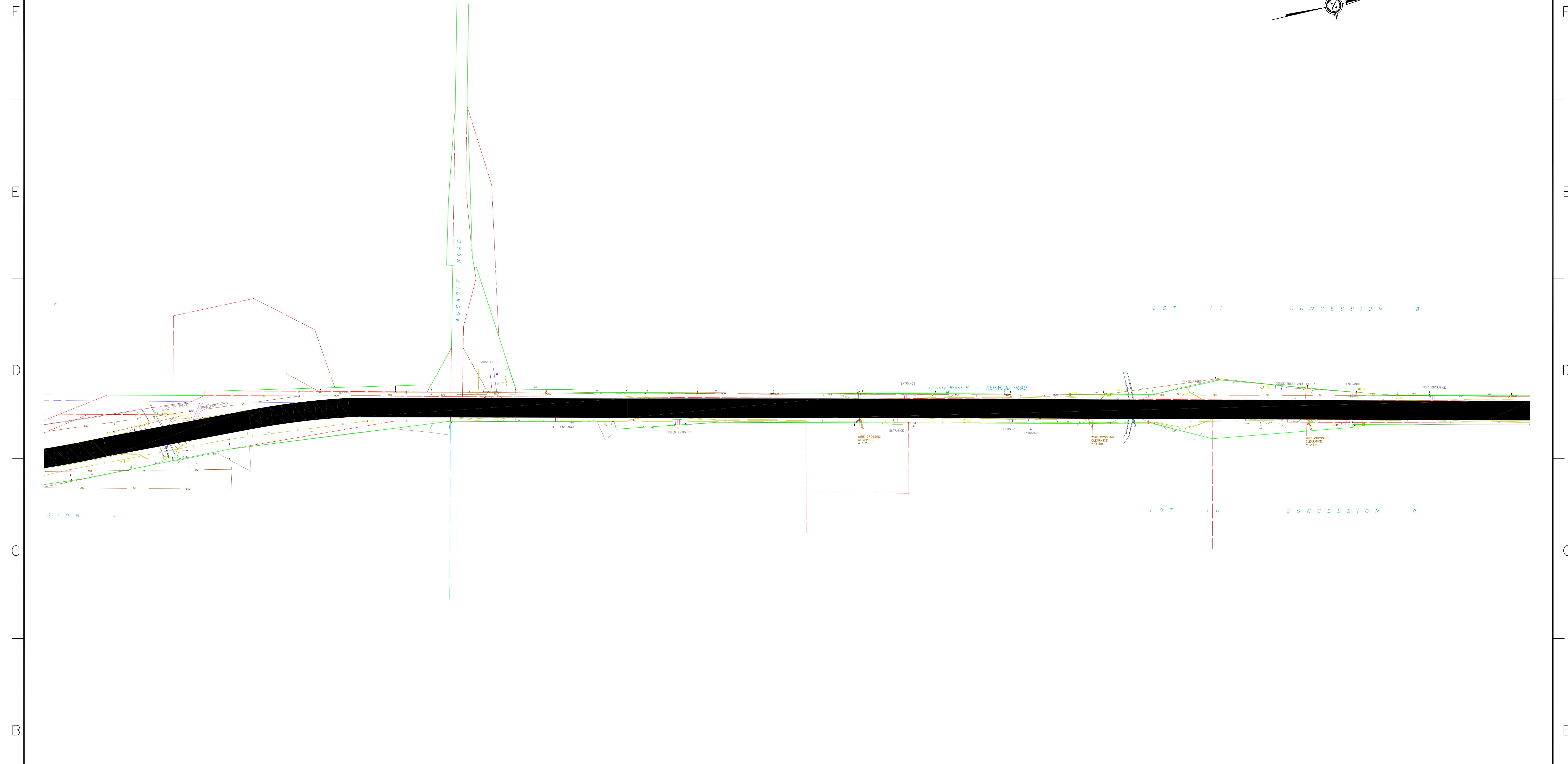
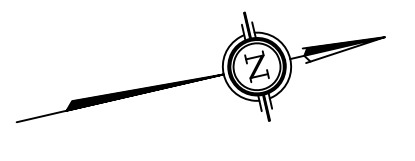
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		DRN	M.HUANG	21/01/13					
		CHK							
SCALE	PACKAGE CODE	APP						CLIENT DWG. NO.	
N.T.S.								DRAWING NO.	REV.
								1235-1-P001-S02	B

Figure 2 - Proposed Transmission Facilities

Map (d)



LEGEND



LEGEND:

- PROPOSED 115kV TL ROUTE (ADELAIDE TO BORNISH)
- PROPOSED 115kV TL ROUTE (BORNISH TO PARKHILL)
- PROPOSED 115kV TL ROUTE (JERICHO TO BORNISH)



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					CLIENT PROJECT MGR. DEPARTMENT MGR. PROJECT MGR.			AREA ADELAIDE WIND PROJECT	
					PROJECT PHASE			SUBJECT 1CCT 115kV TRANSMISSION LINE OVERALL SITE PLAN DRAWINGS SHEET 3	
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REF	NUMBER	TITLE

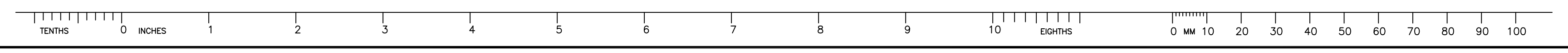
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F
E
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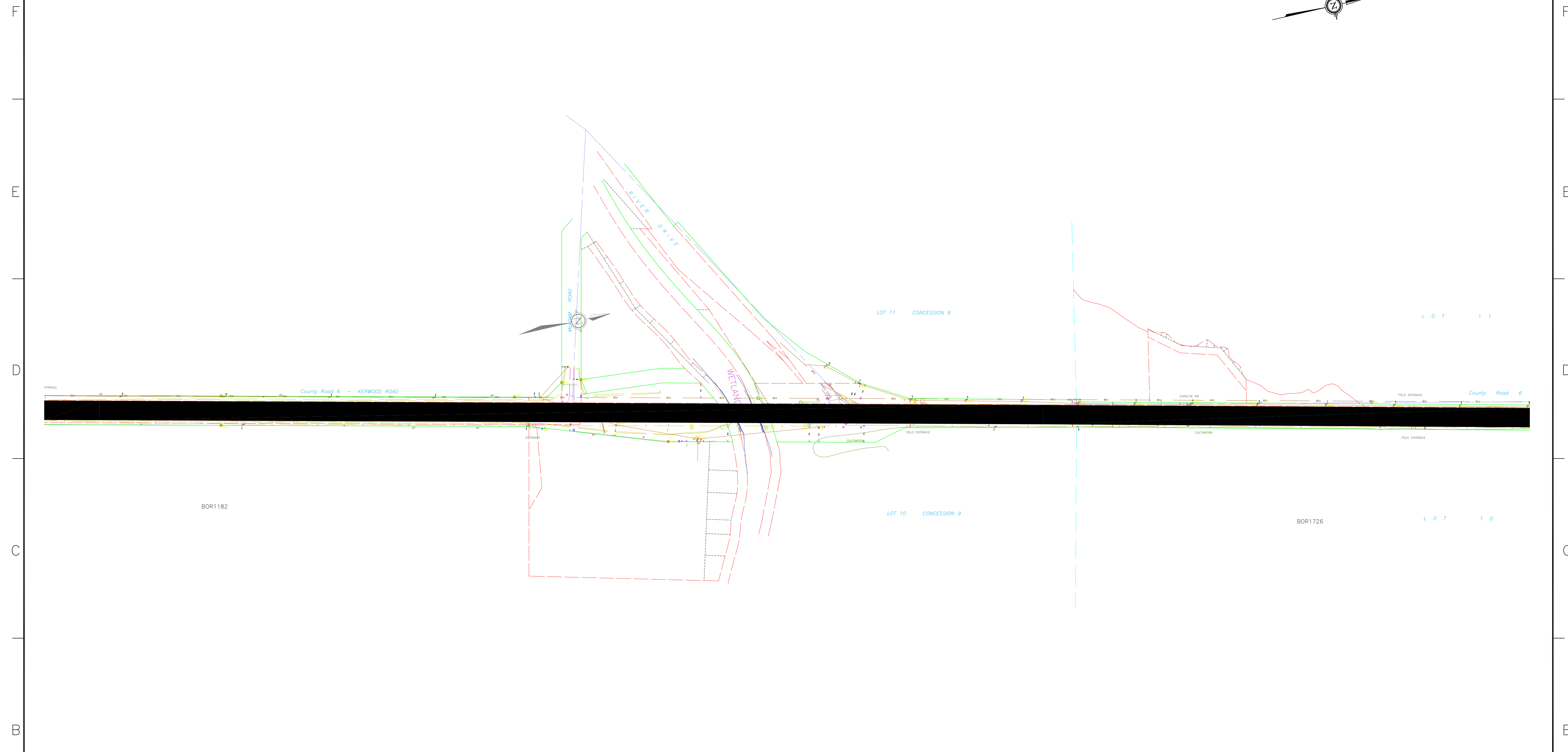
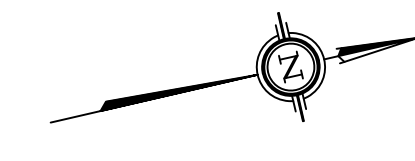
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Figure 2 - Proposed Transmission Facilities

Map (e)



LEGEND



LEGEND:

- PROPOSED 115kV TL ROUTE (ADELAIDE TO BORNISH)
- PROPOSED 115kV TL ROUTE (BORNISH TO PARKHILL)
- PROPOSED 115kV TL ROUTE (JERICHO TO BORNISH)

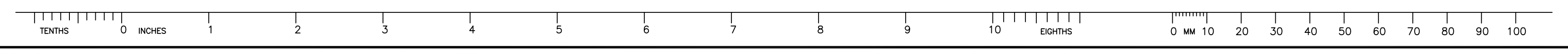


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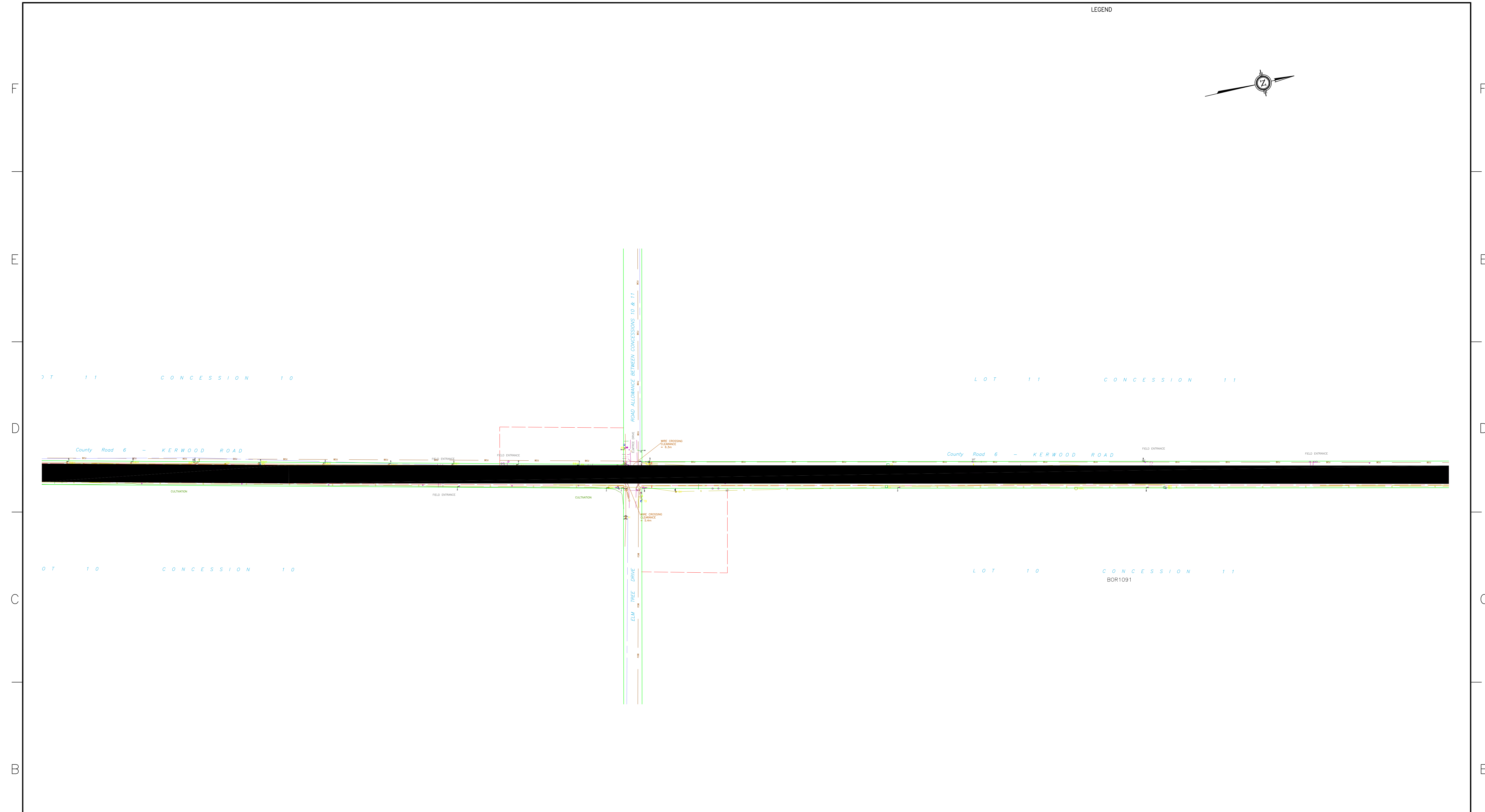
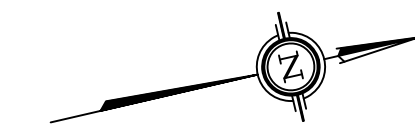
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Figure 2 - Proposed Transmission Facilities

Map (f)



LEGEND



LEGEND:

- PROPOSED 115kV TL ROUTE (ADELAIDE TO BORNISH)
- PROPOSED 115kV TL ROUTE (BORNISH TO PARKHILL)
- PROPOSED 115kV TL ROUTE (JERICHO TO BORNISH)



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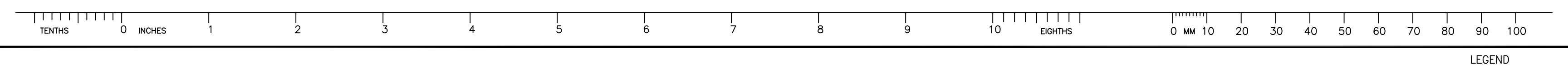
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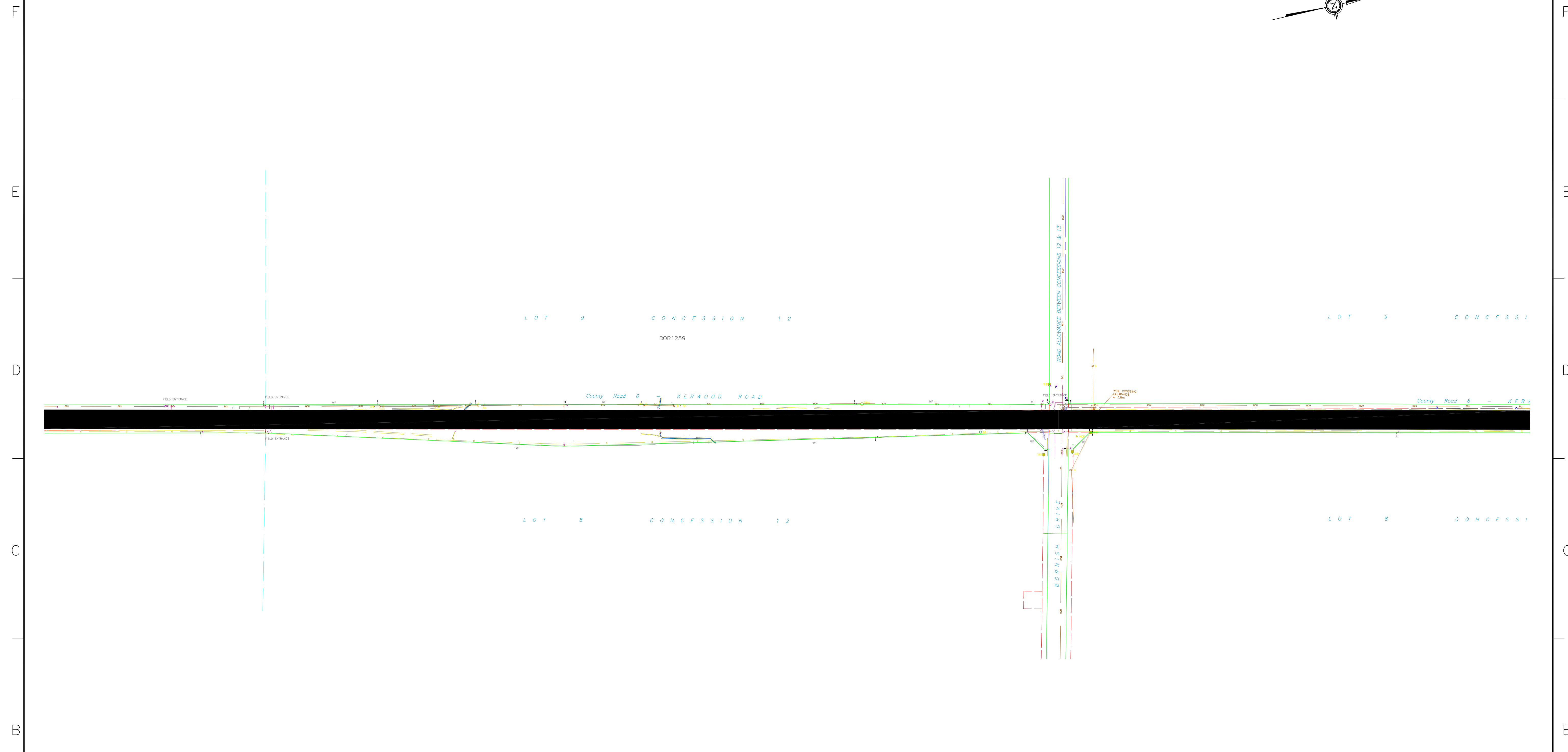
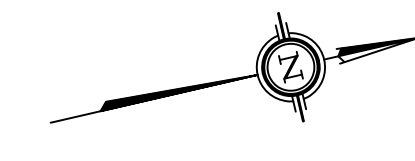
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Figure 2 - Proposed Transmission Facilities

Map (g)



LEGEND



LEGEND:

- PROPOSED 115kV TL ROUTE (ADELAIDE TO BORNISH)
- PROPOSED 115kV TL ROUTE (BORNISH TO PARKHILL)
- PROPOSED 115kV TL ROUTE (JERICHO TO BORNISH)



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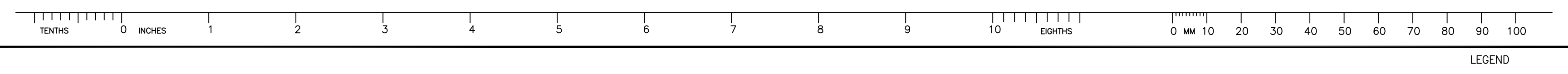
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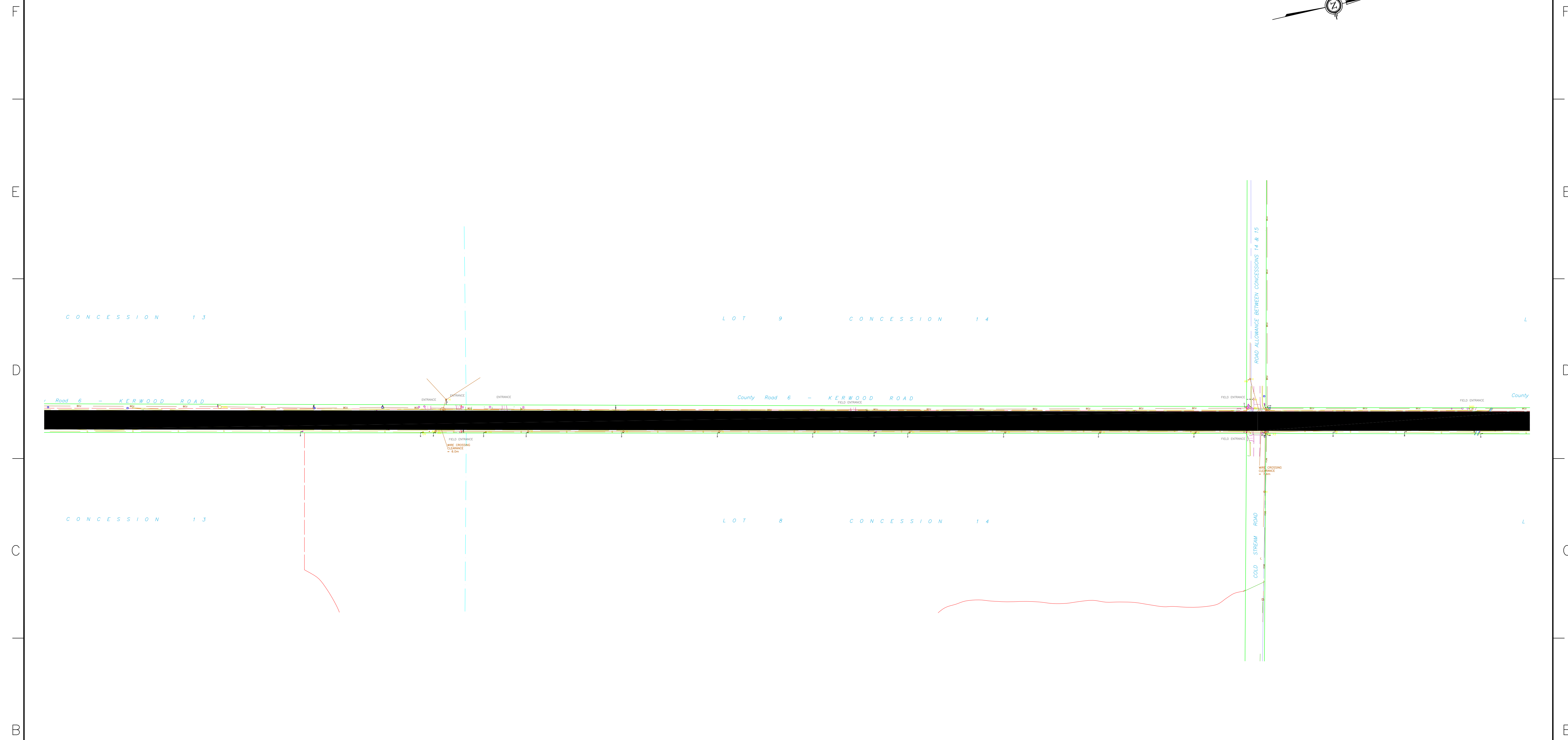
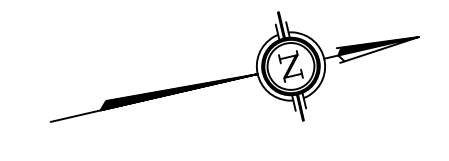
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N.T.S.					1235-1-P001-S06		1235-1-P001-S06		B

Figure 2 - Proposed Transmission Facilities

Map (h)



LEGEND



LEGEND:

- PROPOSED 115kV TL ROUTE (ADELAIDE TO BORNISH)
- PROPOSED 115kV TL ROUTE (BORNISH TO PARKHILL)
- PROPOSED 115kV TL ROUTE (JERICHO TO BORNISH)



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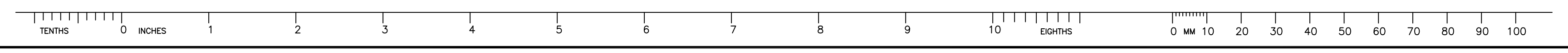
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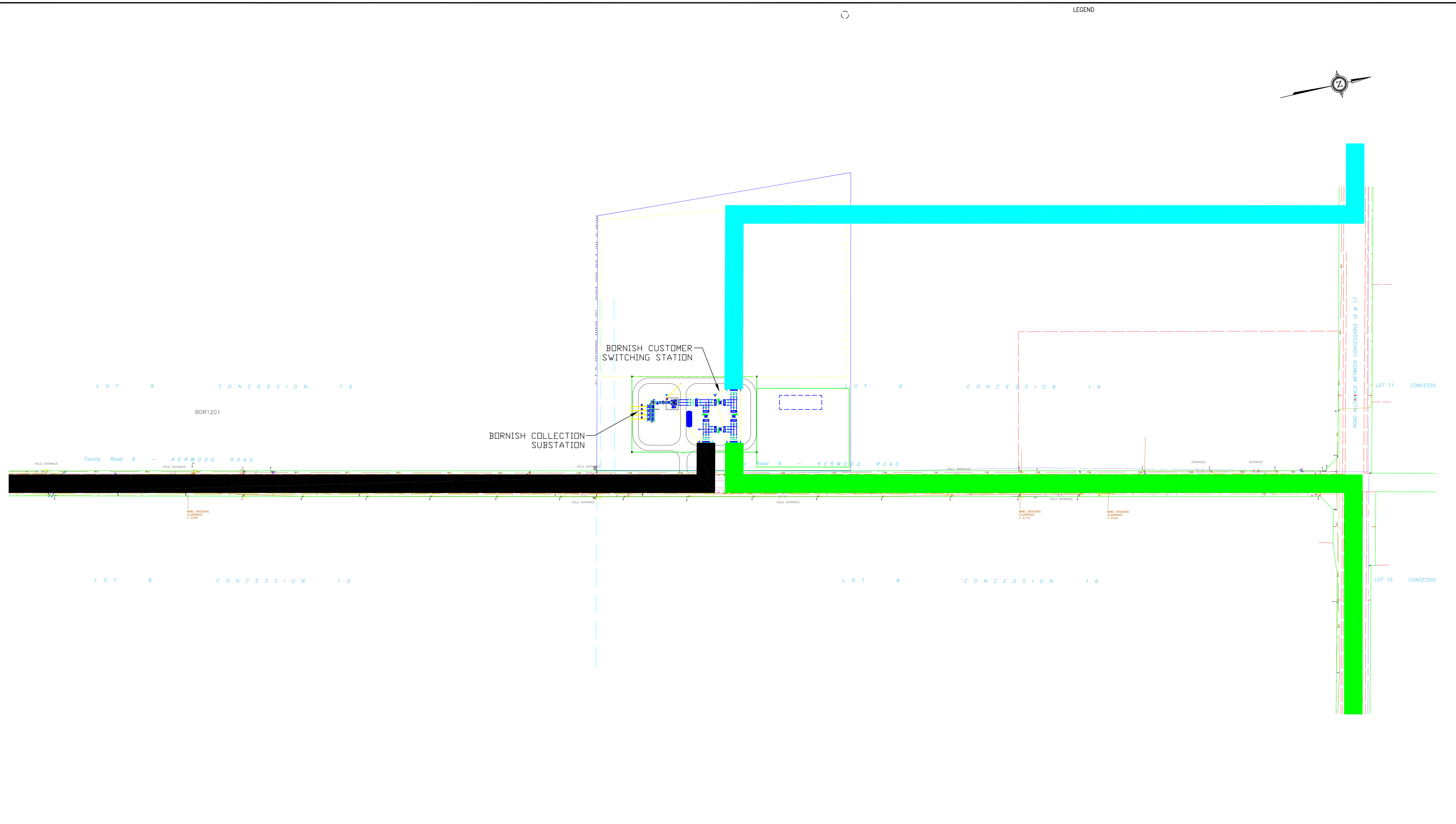
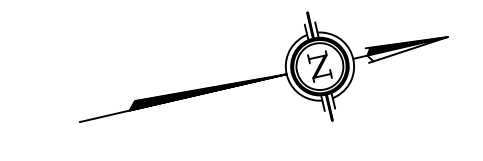
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DRN			M.HUANG			21/01/13			OVERALL SITE PLAN DRAWINGS			DRAWING NO.		
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APP												REV.		
												B		

Figure 2 - Proposed Transmission Facilities

Map (i)

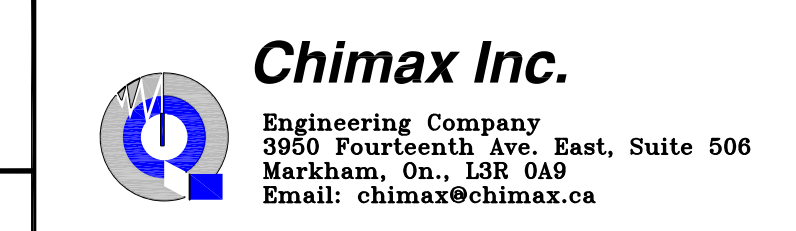


LEGEND



LEGEND:

- PROPOSED 115kV TL ROUTE (ADELAIDE TO BORNISH)
- PROPOSED 115kV TL ROUTE (BORNISH TO PARKHILL)
- PROPOSED 115kV TL ROUTE (JERICHO TO BORNISH)



REV	DDMMYY	REVISION	DR	CHK	APP	APP	APP	APP	ISS	DDMMYY	APP	ISSUED FOR	REF	NUMBER	TITLE
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		CHK					
SCALE	N.T.S.	PACKAGE CODE					

CLIENT DWG. NO.	
DRAWING NO.	REV.
1235-1-P001-S08	B

Exhibit B, Tab 2, Schedule 5
Drawings and Illustrations

DRAWINGS & ILLUSTRATIONS

The following drawings, station layouts and illustrations are included in this schedule:

Figure 1	Single Line Diagram
Figure 2	Station Layout - Adelaide Collection Substation
Figures 3(a)-(j)	Pole Structures and Framing

Figure 1 - Single Line Diagram

Adelaide Wind Energy Centre 59.9 MW Conceptual One Line Diagram

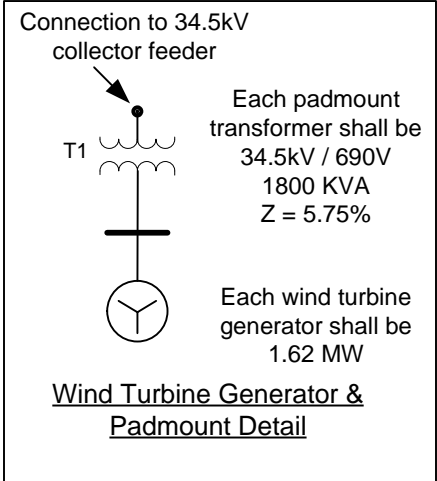
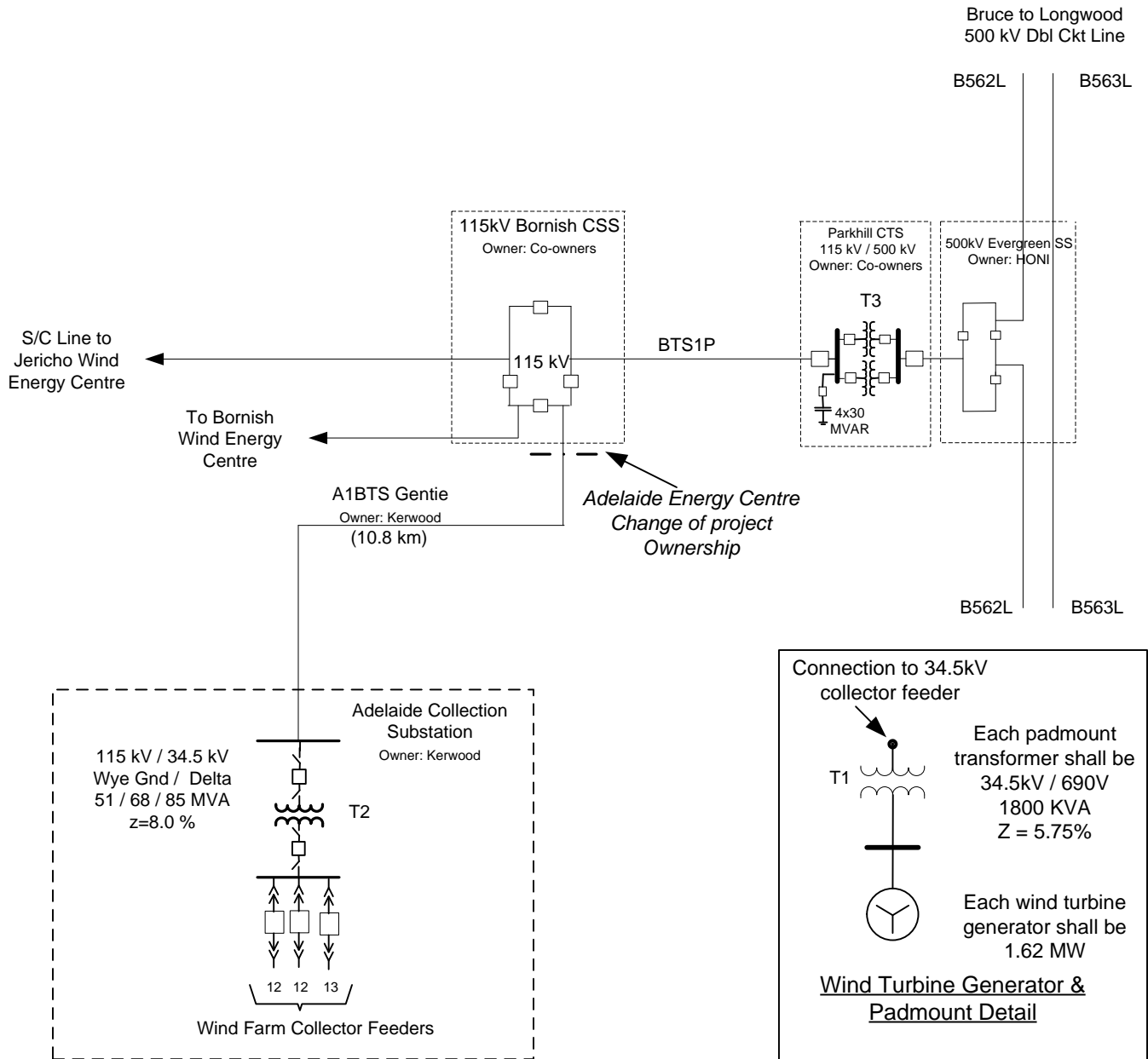
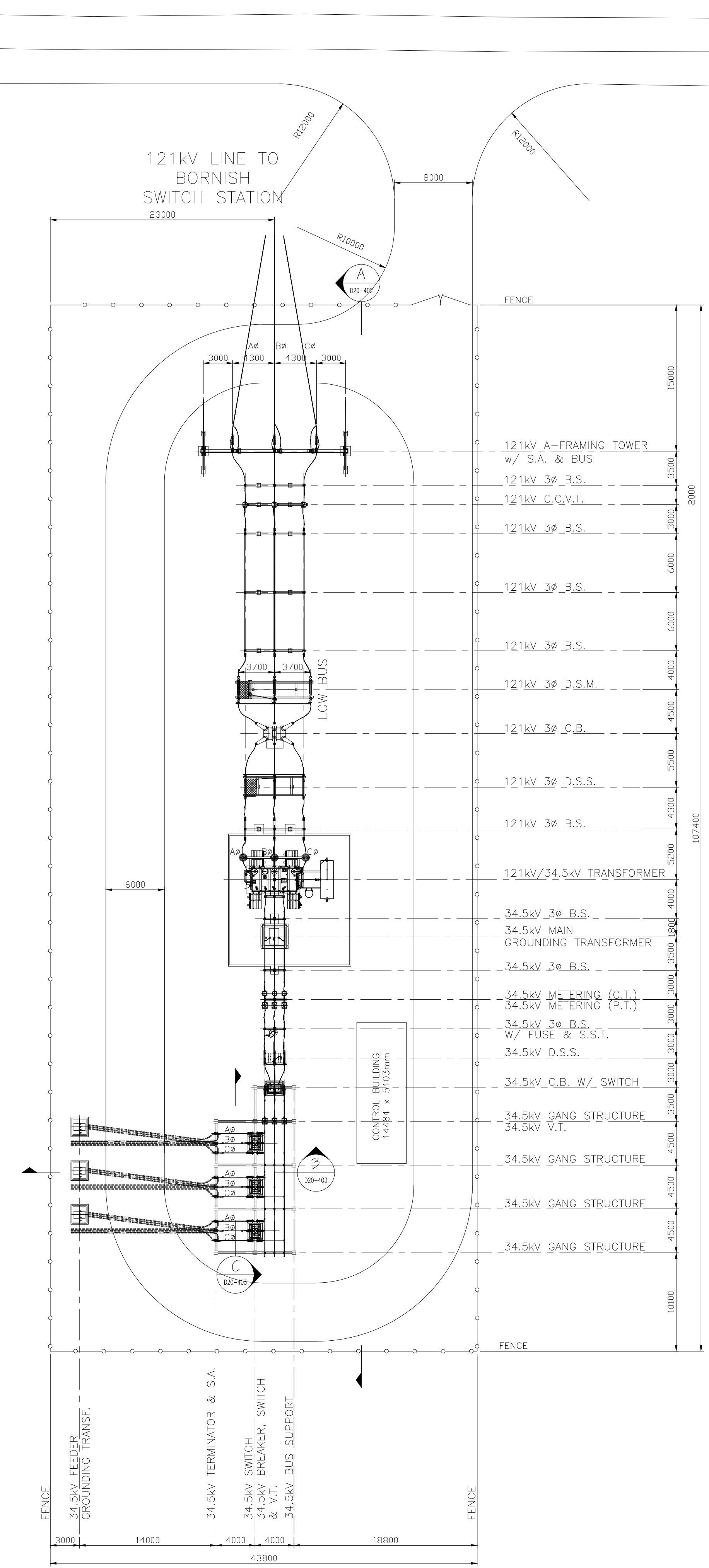
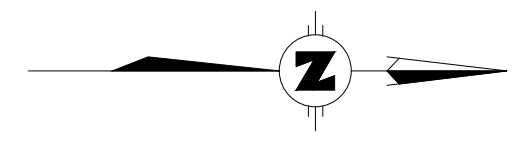


Figure 2 - Station Layout - Adelaide Collection Substation

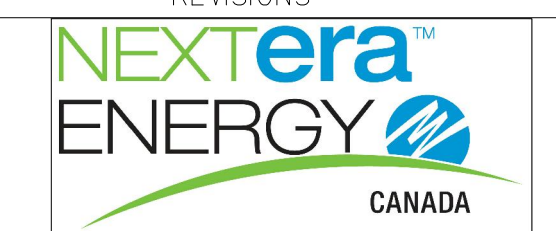
NOTES:
 1. FOR OVERALL SITE PLAN, SEE DWG# 12021-NEC-D20-400.
 2. FOR SECTION VIEW, SEE DWG# 12021-NEC-D20-402 & D20-403.
 3. ALL DIMENSION ARE METRIC-METER U.N.O.

LEGEND:
 121kV D.S.S. = 121kV DISC. SWITCH SUPPORT
 121kV 3Ø B.S. = 121kV 3 PHASE BUS SUPPORT
 121kV 1Ø B.S. = 121kV 1 PHASE BUS SUPPORT
 121kV C.B. = 121kV CIRCUIT BREAKER
 121kV C.C.V.T. = 121kV C.C.V.T. SUPPORT
 121kV S.A. = 121kV SURGE ARRESTERS
 121kV D.S.M. = 121kV DISC. SWITCH W/ MOTOR OPERATOR
 34.5kV D.S.S. = 34.5kV DISC. SWITCH SUPPORT
 34.5kV 3Ø B.S. = 34.5kV 3 PHASE BUS SUPPORT
 34.5kV S.S.T. = 34.5kV STATION SERVICE TRANSFORMER
 34.5kV C.B. = 34.5kV CIRCUIT BREAKER
 34.5kV V.T. = 34.5kV VOLTAGE TRANSFORMER



LIGHTNING PROTECTION IS TO BE ADVISED LATER

REV.	DATE	DESCRIPTION	CHK'D	APP'D
D	01/11/12	ISSUE FOR REVIEW	W.L.	K.W.
C	01/10/12	ISSUE FOR REVIEW	W.L.	K.W.
B	04/09/12	ISSUE FOR REVIEW	W.L.	K.W.
A	27/08/12	PRELIMINARY ISSUED	W.L.	K.W.



CLIENT:
 NEXTERA ENERGY CANADA, ULC

TITLE:
 121KV-34.5KV
 ADELAIDE COLLECTOR SUBSTATION
 EQUIPMENT LAYOUT PLAN

DRAWN BY: E.H.	CHECKED BY: W.L.	APPROVED BY: K.W.	SHEET No. 1 OF 1
SCALE: N.T.S.	DATE: 04/09/12	DWG. No. 12021-NEC-D20-401	REV. D

PRELIMINARY ISSUE

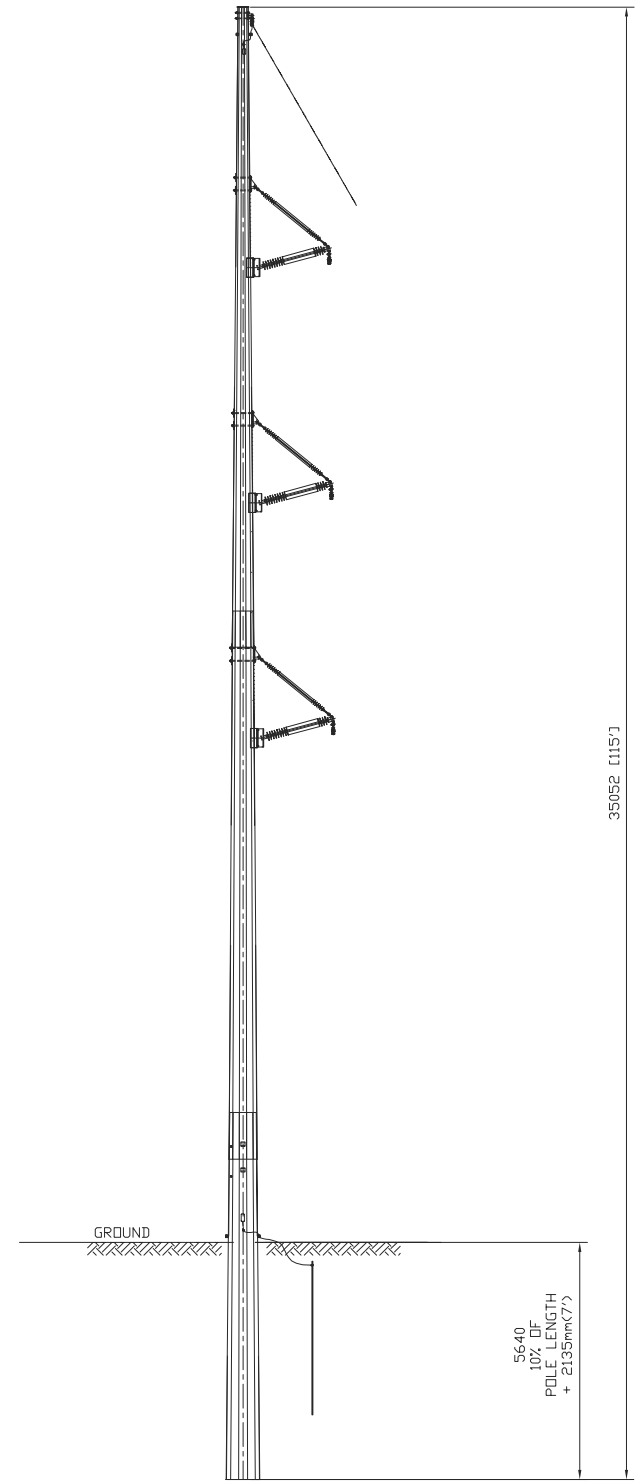
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EQUIPMENT LAYOUT PLAN

Figures 3(a)-(j) - Pole Structures and Framing

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1CCT 115kV TRANSMISSION LINE
TANGENT (0 - 5°) FRAMING



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N.T.S. (11"x17")	DSN. E.KWONG	11/09/12
	DRN. D.MAO	11/09/12

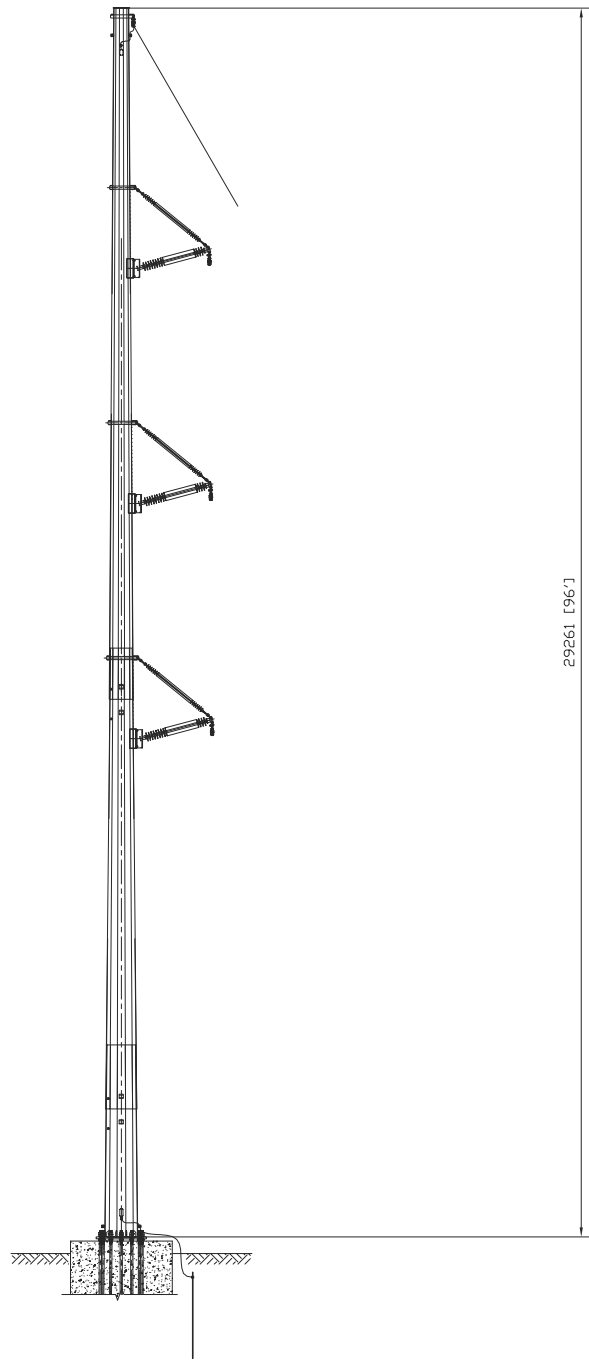
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SUBJECT	
1CCT 115kV TRANSMISSION LINE TANGENT (0 - 5°) FRAMING	

CLIENT DWG. NO.	
DRAWING NO.	1235-1-P310B
REV.	D
CADD FILE ADDRESS	1235-1-P310B-D

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1CCT 115kV TRANSMISSION LINE
LIGHT ANGLE (5 - 15°) FRAMING



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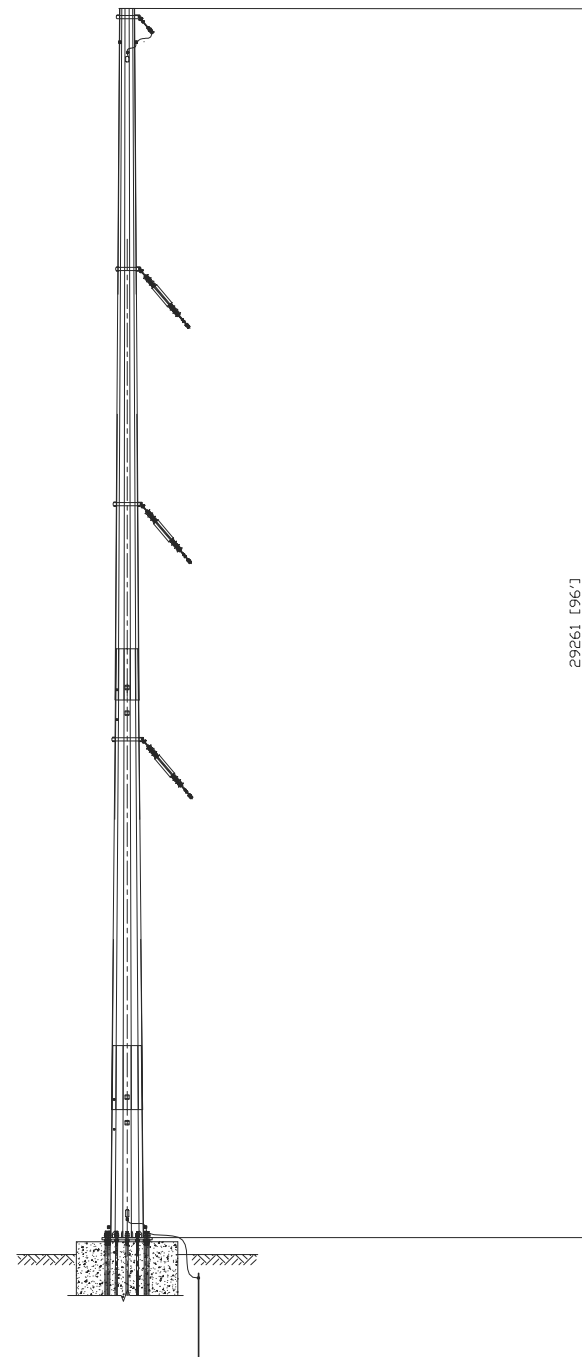
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PROJECT PHASE		
PROJECT NO.	ACTIVITY NO.	PACKAGE CODE
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	DRN. D.MAO	11/09/12

AREA	ADELAIDE WIND PROJECT
SUBJECT	
1CCT 115kV TRANSMISSION LINE LIGHT ANGLE (5 - 15°) FRAMING	

CLIENT DWG. NO.	
DRAWING NO.	1235-1-P311B
REV.	D
CADD FILE ADDRESS	1235-1-P311B-D

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1CCT 115kV TRANSMISSION LINE
MEDIUM ANGLE (15 - 45°) FRAMING



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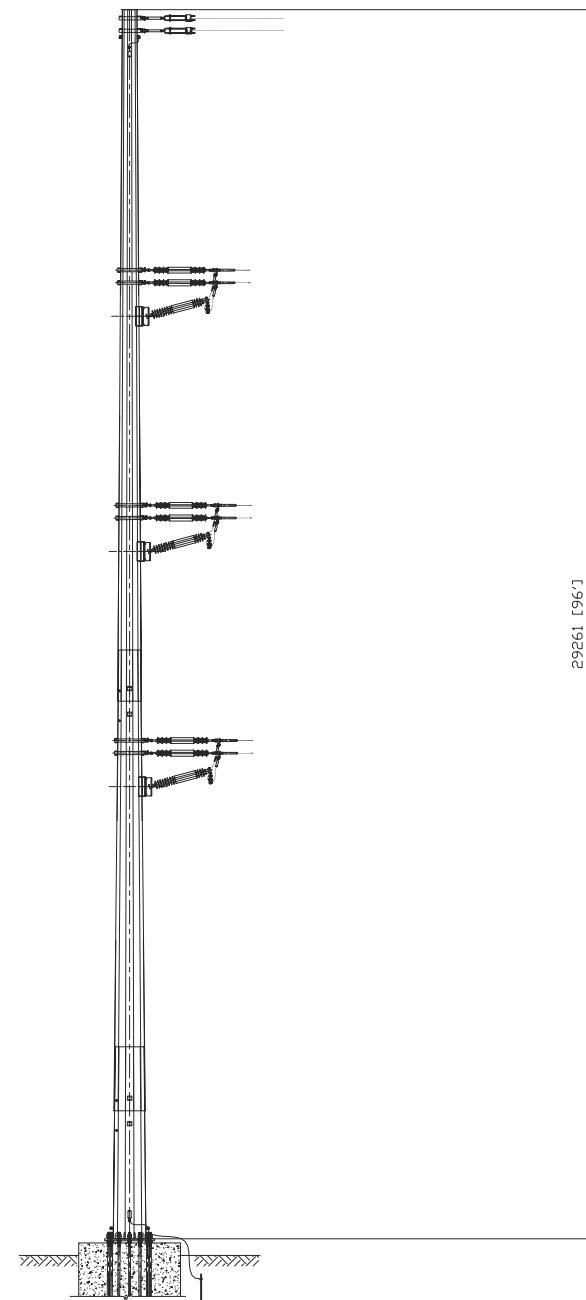
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PROJECT PHASE		
PROJECT NO.	ACTIVITY NO.	PACKAGE CODE
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N.T.S. (11"x17")		

AREA	ADELAIDE WIND PROJECT
SUBJECT	
1CCT 115kV TRANSMISSION LINE MEDIUM ANGLE (15 - 45°) FRAMING	

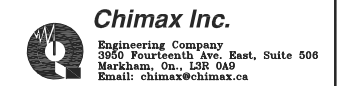
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CADD FILE ADDRESS	1235-1-P313B-D

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1CCT 115kV TRANSMISSION LINE
HEAVY ANGLE (45 - 60°) FRAMING



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PROJECT PHASE		
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	DRN. D.MAO	11/09/12

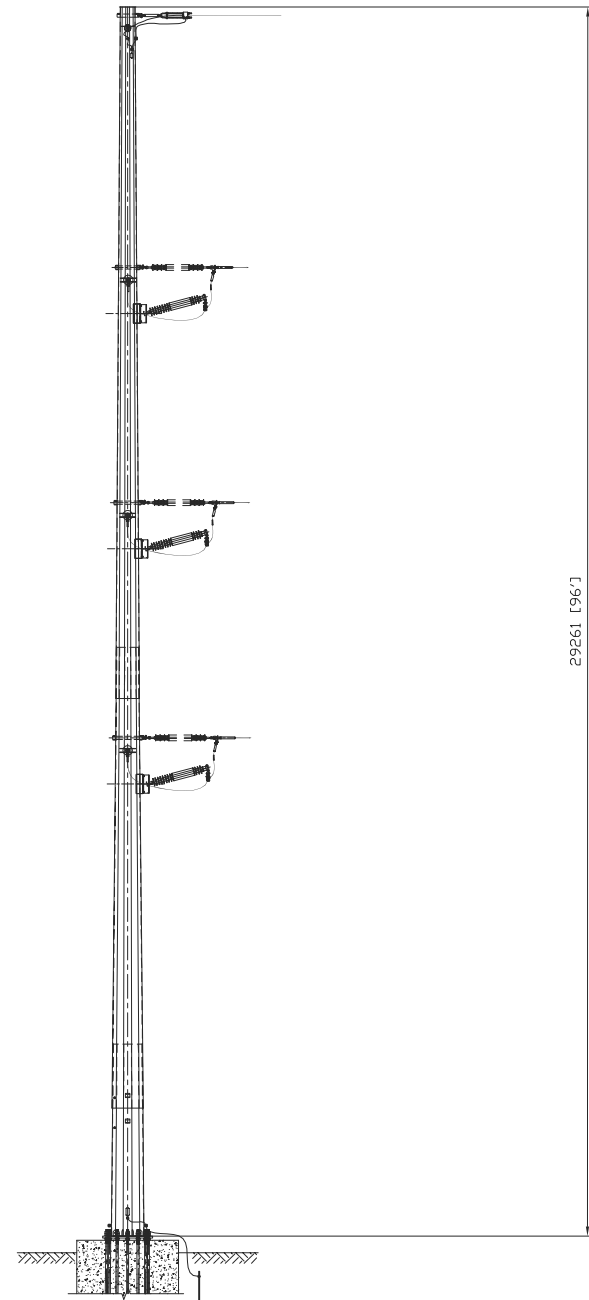
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SUBJECT	1CCT 115kV TRANSMISSION LINE HEAVY ANGLE (45 - 60°) FRAMING

CLIENT DWG. NO.	
DRAWING NO.	1235-1-P314B
REV.	D
CADD FILE ADDRESS	1235-1-P314B-D

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1CCT 115kV TRANSMISSION LINE
HEAVY ANGLE (60-90°) FRAMING



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SCALE		BY
N.T.S. (11"x17")		DSN. E.KWONG
		DRN. J.CHEN
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		30/01/13

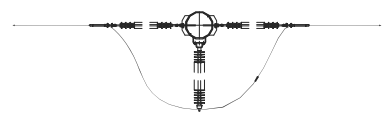
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SUBJECT	
1CCT 115kV TRANSMISSION LINE HEAVY ANGLE (60-90°) FRAMING	

CLIENT DWG. NO.	
DRAWING NO.	1235-1-P315B-S01
REV.	A
CADD FILE ADDRESS	1235-1-P315B-S01-A

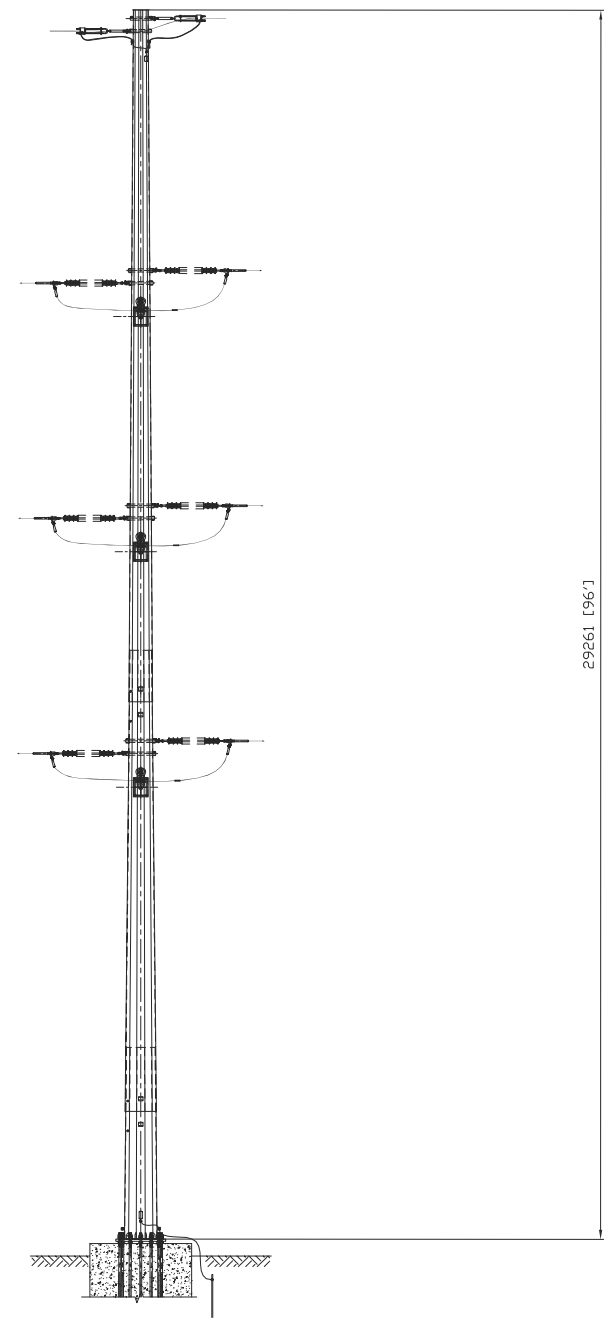
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PLAN VIEW



29261 [96']

1CCT 115kV TRANSMISSION LINE
DOUBLE DEADEND FRAMING



REV	D/M/Y	REVISION	DR	CHK	APP	APP	APP	APP	ISS	D/M/Y	ISSUED FOR	REF	NUMBER	TITLE	REFERENCES
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PROJECT NO.	ACTIVITY NO.	PACKAGE CODE
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	DRN. J.CHEN	30/01/13

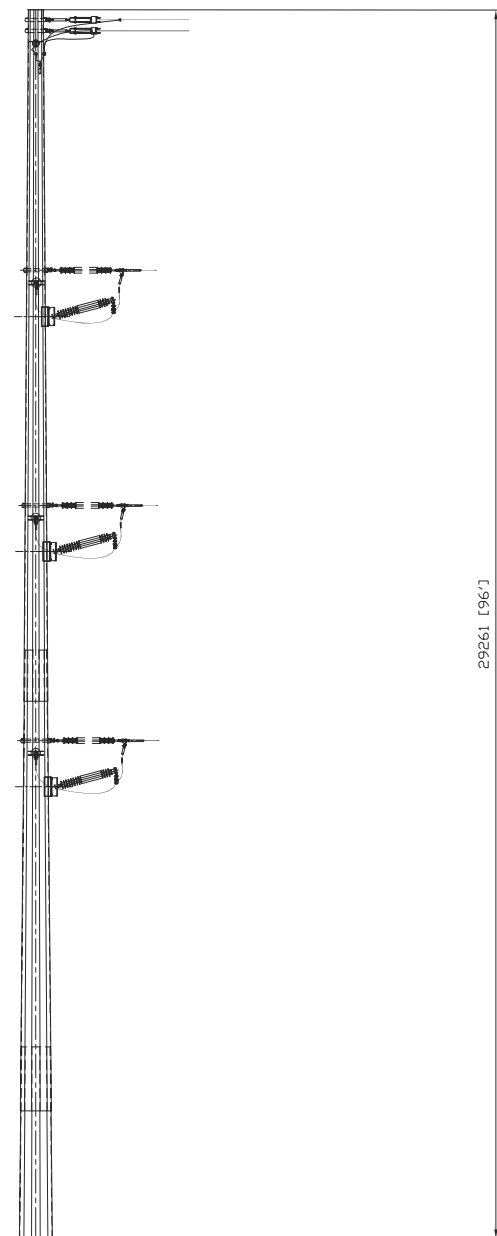
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SUBJECT	1CCT 115kV TRANSMISSION LINE DOUBLE DEADEND FRAMING

CLIENT DWG. NO.	
DRAWING NO.	1235-1-P316B-S01
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CADD FILE ADDRESS	1235-1-P316B-S01-A

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1CCT 115kV TRANSMISSION LINE
HEAVY ANGLE (60-90°) FRAMING
(FOR STATION TAP)



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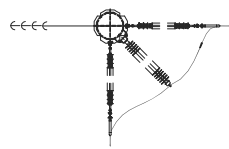
APPROVED FOR CONSTRUCTION			AREA	
CLIENT PROJECT MGR.	DEPARTMENT MGR.	PROJECT MGR.	ADELAIDE WIND PROJECT	
PROJECT NO.	ACTIVITY NO.	PACKAGE CODE	SUBJECT	
SCALE		BY	1CCT 115kV TRANSMISSION LINE HEAVY ANGLE (60-90°) FRAMING (FOR STATION TAP)	
N.T.S. (11"x17")		DSN. E.KWONG		
		DRN. J.CHEN		
		D/M/Y		
		30/01/13		

CLIENT DWG. NO.	REV.
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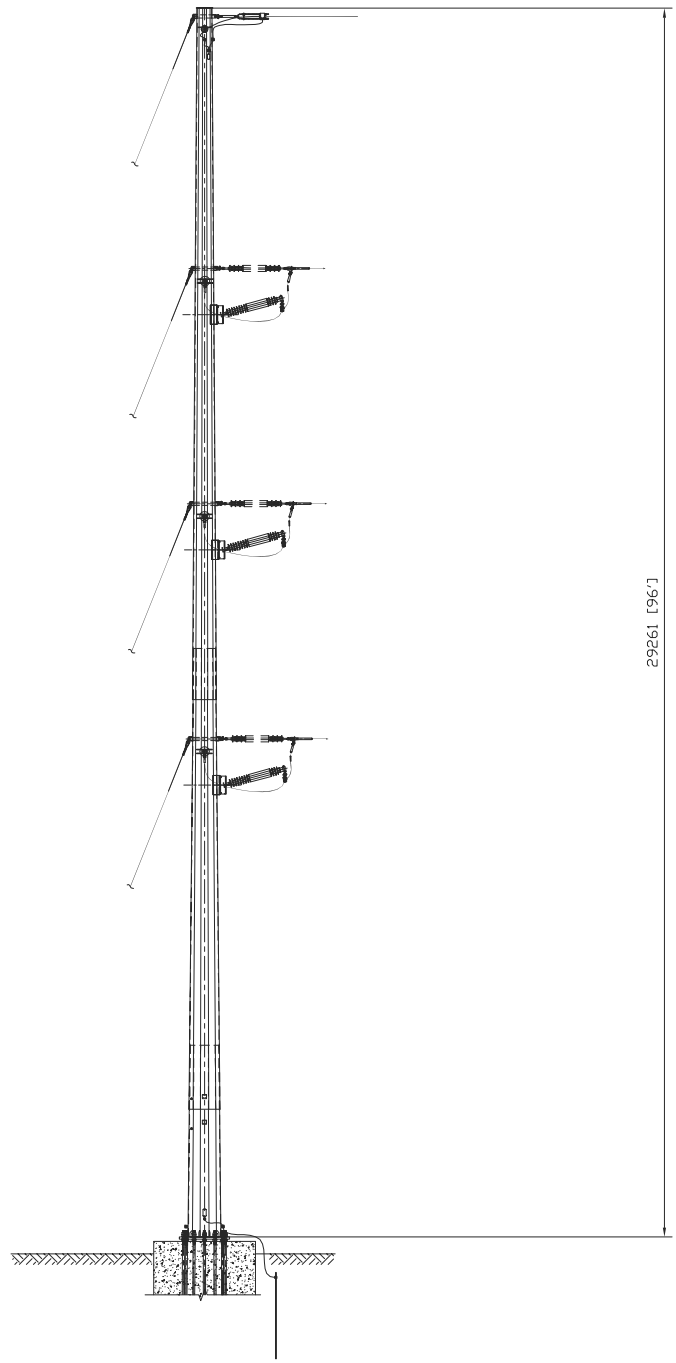
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PLAN VIEW



29261 (96')

1CCT 115kV TRANSMISSION LINE
HEAVY ANGLE (60-90°) FRAMING
(WITH DOWN GUY)



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	DRN. J.CHEN	30/01/13

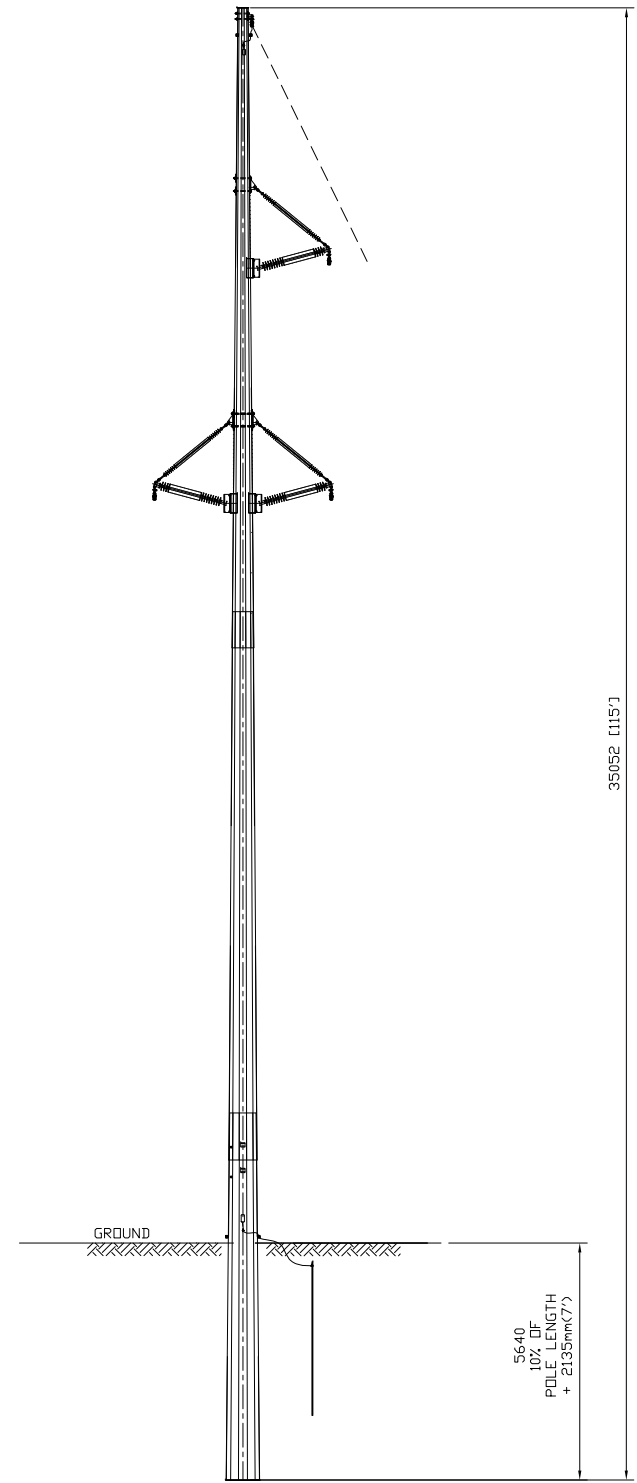
AREA	ADELAIDE WIND PROJECT
SUBJECT	
1CCT 115kV TRANSMISSION LINE HEAVY ANGLE (60-90°) FRAMING (WITH DOWN GUY)	

CLIENT DWG. NO.	
DRAWING NO.	1235-1-P319B-S01
REV.	A
CADD FILE ADDRESS	1235-1-P319B-S01-A

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1CCT 115kV TRANSMISSION LINE
TANGENT (0 - 5°) FRAMING
(TRIANGULAR CONFIGURATION)



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		ADELAIDE WIND PROJECT
PROJECT NO.	ACTIVITY NO.	PACKAGE CODE
SCALE	BY	D/M/Y
N.T.S. (11"x17")	DSN. E.KWONG	31/01/13
	DRN. M.HUANG	31/01/13

SUBJECT
1CCT 115kV TRANSMISSION LINE
TANGENT (0 - 5°) FRAMING
(TRIANGULAR CONFIGURATION)

CLIENT DWG. NO.	
DRAWING NO.	REV.
1235-1-P320B	A
CADD FILE ADDRESS	
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Exhibit B, Tab 3, Schedule 1
Need for the Project

NEED FOR THE PROJECT

1 In July 2011, the OPA awarded a contract under the FIT Program in respect of the Adelaide
2 Project.¹ The Adelaide Project will further the Government of Ontario's policy objective of
3 increasing the amount of renewable energy generation that forms part of Ontario's energy supply
4 mix. In particular, the Adelaide Project will contribute approximately 59.9 MW of renewable
5 energy capacity towards this objective. The Proposed Transmission Facilities are needed to
6 connect the Adelaide Project to the Bornish CSS, which will in turn be connected to the IESO-
7 controlled grid. As the development of the Adelaide Project promotes the use of renewable
8 energy sources in a manner consistent with the policies of the Government of Ontario, the
9 Proposed Transmission Facilities are in the public interest pursuant to paragraph 96(2)2 of the
10 *Ontario Energy Board Act, 1998*, which provides as follows:

11 **96. (2)** In an application under section 92, the Board shall only consider the
12 following when, under subsection (1), it considers whether the construction,
13 expansion or reinforcement of the electricity transmission line or electricity
14 distribution line, or the making of the interconnection, is in the public interest:

- 15 1. The interests of consumers with respect to prices and the reliability and quality
16 of electricity service.
- 17 2. Where applicable and in a manner consistent with the policies of the
18 Government of Ontario, the promotion of the use of renewable energy sources.

¹ See OPA announcement and list of projects for which FIT Contract offers were made on July 4, 2011 at <http://fit.powerauthority.on.ca/program-updates/newsroom/projects-enabled-bruce-milton-transmission-line-offered-contracts>

Exhibit B, Tab 4, Schedule 1
Transmission Alternatives Considered

TRANSMISSION ALTERNATIVES CONSIDERED

1 The Applicant employed a range of criteria in selecting the route for connecting the Adelaide
2 Project to the Bornish Customer Switching Station. This Schedule discusses the process that the
3 Applicant undertook in selecting the route for the Proposed Transmission Facilities, as well as in
4 reviewing potential alternative routes that were ultimately rejected.

5 1. **Selection Process**

6 The route for the Proposed Transmission Facilities was selected by the Applicant as the preferred
7 route for connecting the Adelaide Project to the Bornish Customer Switching Station following
8 extensive consultations with members of the community, municipal officials, Hydro One and
9 other stakeholders, as well as based on comprehensive technical and environmental reviews. In
10 particular, as part of its Renewable Energy Approval (“**REA**”) process, the Applicant issued
11 notices, delivered presentations, participated in meetings with local government officials and
12 held public meetings. A detailed discussion of the Applicant’s community and stakeholder
13 consultations is set out in Exhibit G, Tab 1, Schedule 1. During the course of these
14 consultations, the Applicant shared information and received feedback concerning the potential
15 route for the transmission facilities needed to connect the Adelaide Project. This feedback was
16 considered, together with the Applicant’s technical review of options and environmental
17 constraints identified through the REA process, in order to help identify the range of
18 transmission options available to the Applicant and relevant concerns.

19 Through its technical review of options and environmental considerations, the Applicant
20 identified a number of constraints on the range of potential transmission routes. In addition to
21 addressing these constraints, the Applicant has made refinements along the route corridor to the
22 extent feasible in order to address stakeholder concerns and other issues.

1 **2. Rationale for Selecting the Proposed Transmission Route**

2 The Proposed Transmission Facilities include a single circuit 115 kV overhead transmission line
3 that runs approximately 10.8 km from the proposed Adelaide Collection Substation in the
4 Township of Adelaide Metcalfe to the Bornish Customer Switching Station in the Municipality
5 of North Middlesex. As indicated, the Bornish Customer Switching Station is the subject of the
6 Co-owners' LTC Application.

7 Early in its development process, the Applicant recognized that the range of potential route
8 options for connecting the Adelaide Project to the Bornish Customer Switching Station would be
9 fundamentally constrained by the limited number of available crossings along the Ausable River
10 in the project area. The Ausable River runs from east of the project site to the west and
11 ultimately empties into Lake Huron. Given that the transmission line route must commence in
12 the south from the Adelaide Collection Substation, which needs to be located in close proximity
13 to the wind turbines that are associated with the Adelaide Project, and that it must terminate in
14 the north at the proposed Bornish Customer Switching Station, the location of which is described
15 in the Co-owners' LTC Application, it is unavoidable that the transmission line route must cross
16 the Ausable River at some point.

17 For crossing the Ausable River, the Applicant determined that it would be much less disruptive
18 to use an existing river crossing rather than seek to establish a new crossing. A new crossing
19 would necessitate the clearing of trees and vegetation in, and construction activities to be carried
20 out upon, natural areas on either side of the river that have the potential to be environmentally
21 significant areas.

22 A review of the existing river crossings in the vicinity of the Adelaide Project found that there
23 are a very limited number of crossings. The Applicant determined that the Kerwood Road river
24 crossing provides, by a significant margin, the most direct transmission line route from the
25 Adelaide Collection Substation to the Bornish Customer Switching Station. The next-closest
26 available river crossings, both to the east and to the west, would each add at least 10 km to the

1 total length of the transmission line route and would provide no identifiable advantages over the
2 route selected for the Proposed Transmission Facilities. Rather, the increased length of
3 transmission line would result in a greater number of property owners and members of the
4 community being affected as compared to the route selected for the Proposed Transmission
5 Facilities.

6 Given the additional length of transmission line that would be required to connect the Adelaide
7 Collection Substation to the Bornish Customer Switching Station via either of these alternative
8 river crossings, and the conclusion that the Kerwood Road crossing would facilitate the most
9 direct route affecting the smallest number of people, the Applicant determined that the Kerwood
10 Road crossing is the preferred location for crossing the Ausable River and that any transmission
11 route selected would need to pass through this location. Moreover, given the proximity of both
12 the Adelaide Collection Substation and the Bornish Customer Switching Station to Kerwood
13 Road, it became clear to the Applicant that a transmission line route running along Kerwood
14 Road would be the preferred transmission line route.

15 Accordingly, the Applicant's proposed Transmission Line route is comprised of a corridor that
16 runs along Kerwood Road from the site of the Adelaide Collection Substation on the east side of
17 Kerwood Road between Langan Drive and Cuddy Drive in the Township of Adelaide Metcalfe,
18 to the site of the Bornish Customer Switching Station on the west side of Kerwood Road
19 between Elginfield Road and Cold Stream Road in the Municipality of North Middlesex. The
20 Applicant has investigated the possibility of obtaining private easements immediately adjacent to
21 Kerwood Road and has also considered the options available to it with respect to the use of the
22 municipal road rights-of-way ("**ROWS**") along this corridor. Based on this analysis and related
23 consultations with affected landowners and stakeholders, the Applicant is currently planning for
24 the route to run entirely within the municipal road ROW.

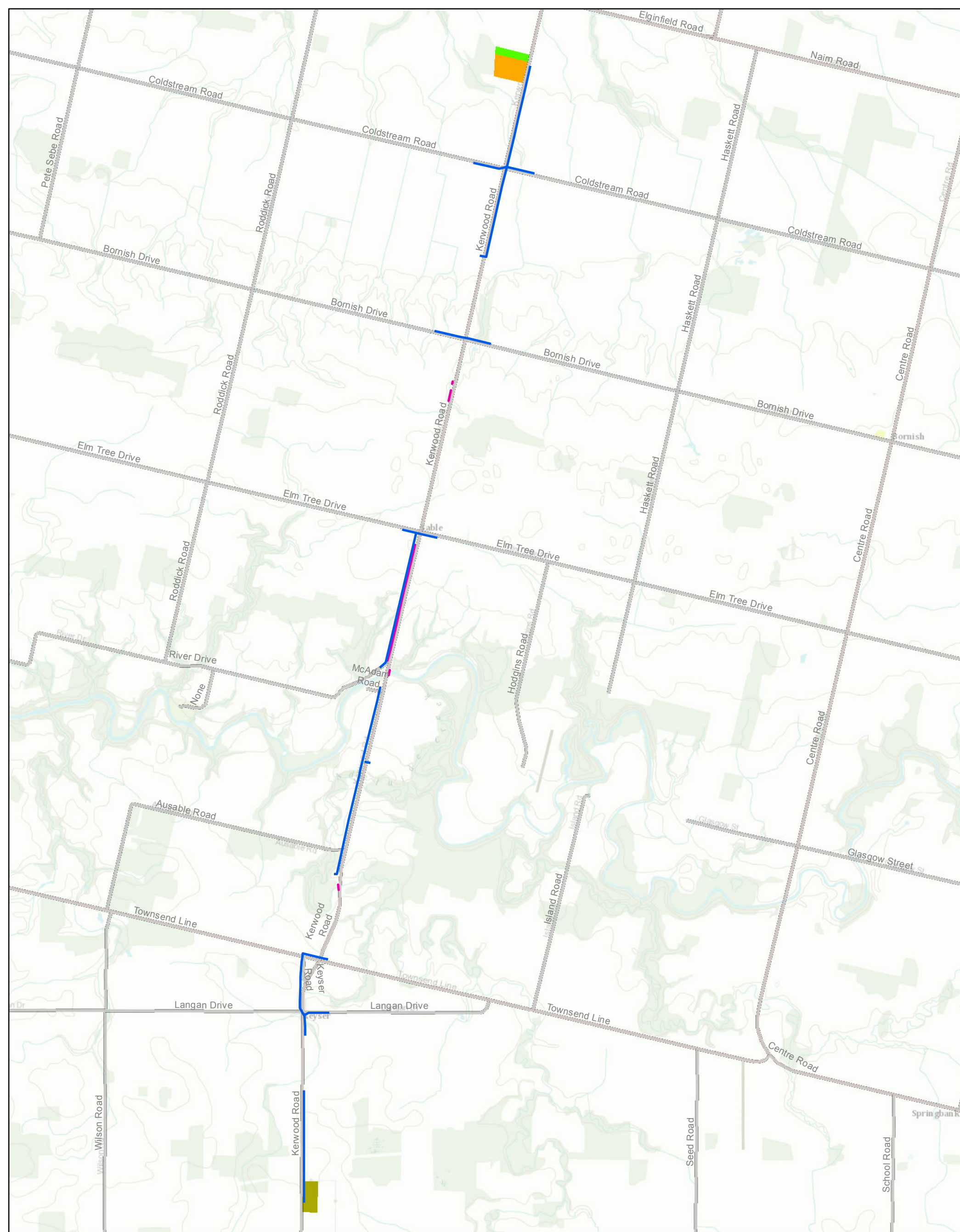
25 In looking at the existing use of the Kerwood Road ROW, the Applicant found that along
26 approximately 4.15 km or 39.5 % of the route there are no existing utility poles or structures in

1 the ROW. However, the Applicant also found that, along approximately 6.35 km or 60.5% of
2 the route, there are existing Hydro One distribution poles within the road ROW. These areas are
3 marked on the map provided in Appendix 'A' to this Exhibit B, Tab 4, Schedule 1. For
4 approximately four months, the Applicant consulted extensively with Hydro One concerning the
5 Applicant's interest in co-locating these portions of the Proposed Transmission Line along Hydro
6 One's existing distribution poles through a joint use arrangement. The outcome of these
7 consultations was that Hydro One advised that it has instituted an internal policy under which it
8 will not accommodate requests to co-locate transmission and distribution on the same poles.
9 Consequently, along the portion of the route where there are existing Hydro One distribution
10 facilities, the Applicant is planning to construct the Transmission Line within the municipal road
11 ROW, but on the opposite side of the road from the existing Hydro One facilities. Along the
12 portion of the route that crosses the Ausable River, while there are no Hydro One facilities, there
13 are existing Bell Canada overhead facilities on one side of the ROW. Along this segment, it is
14 the Applicant's intention for the Transmission Line to either (a) run along the side of the ROW
15 that is opposite to the Bell Canada facilities or (b) run overhead of the Bell Canada facilities. A
16 preliminary detailed description of the planned route within the municipal road ROW is provided
17 in Exhibit F, Tab 1, Schedule 1.

18 While it is the Applicant's intent to use one of the two planned locations for the segment that
19 crosses the Ausable River, as described above, the final location of these facilities within the
20 ROW will be subject to final engineering and design, as well as to any accommodations that may
21 be provided by Bell Canada. Although the Applicant has not secured any such accommodations
22 at this time, it is for this reason that the Applicant's request for approval is not limited to the
23 specific design within the ROW. Rather, the Applicant seeks approval for a route that includes
24 either side of the Kerwood Road ROW. Furthermore, it is not currently anticipated that private
25 lands adjacent to the ROW will be required. However, through final engineering and project
26 planning it may be determined that the use of certain lands adjacent to the municipal road ROW
27 is necessary for construction, access or other purposes. As such, the Applicant also requests the
28 Board's approval for the potential use of such adjacent lands for these purposes.

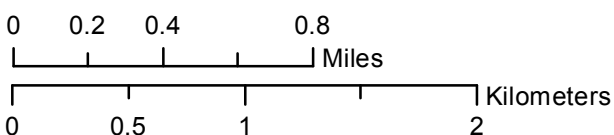
APPENDIX 'A'

EXISTING UTILITIES MAP



- Bell - Overhead
- HONI - Overhead
- Ontario Roads
- Adelaide Collector Substation
- Bornish Collector Substation
- Bornish Customer Switching Station

Existing Utilities Map



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Projection: NAD_1983_UTM_Zone_17N
Datum: NAD 83

Date: 1/30/2013

PROPRIETARY AND CONFIDENTIAL

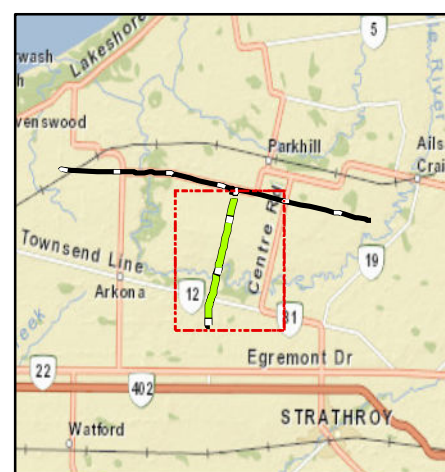


EXHIBIT C - PROJECT PLANNING

Exhibit C, Tab 1, Schedule 1

Construction and In-Service Schedule

CONSTRUCTION & IN-SERVICE SCHEDULE

1 The timing for construction of the Proposed Transmission Facilities will depend in part upon the
2 timing of the Board's decision in this Application and in the Co-owners' LTC Application, as
3 well as on the timing of the Renewable Energy Approval for Kerwood. It is currently expected
4 that:

- 5 • construction of the Adelaide Collection Substation will commence in the Summer of
6 2013 and be completed by early 2014; and
- 7 • construction of the Transmission Line will commence in September, 2013 and be
8 completed by the end of the 2013.

9 Based on this estimated construction schedule, and the estimated construction schedule in the
10 Co-owners' LTC Application, it is anticipated that the facilities will go into service by the
11 Summer of 2014. A Gantt Chart setting out the planned construction schedule is provided in
12 Figure 1.

Figure 1 - Gantt Chart

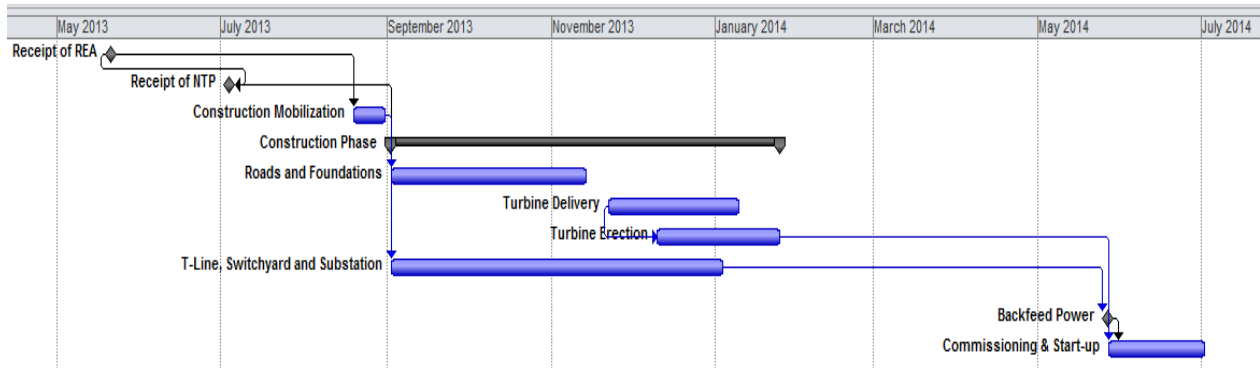


EXHIBIT D - PROJECT DETAILS

Exhibit D, Tab 1, Schedule 1

Physical Design Features

PHYSICAL DESIGN FEATURES

1 As indicated, the Proposed Transmission Facilities are required to connect the Adelaide Project
2 to the Bornish Customer Switching Station. The Bornish Customer Switching Station is the
3 subject of the Co-owners' LTC Application, under which the Co-owners also seek leave to
4 construct a transmission line and a customer transformer station that are necessary to connect the
5 Bornish Customer Switching Station to the IESO-controlled grid at the planned Evergreen
6 Switching Station, which is to be constructed, owned and operated by Hydro One. To provide
7 context for the description of the physical design features of the Proposed Transmission
8 Facilities, this schedule also describes the related generation facilities and certain ancillary
9 transmission facilities that are outside the scope of this Application.

10 1. **Wind Generation Facilities**

11 The Adelaide Project will be the source of electricity that will be conveyed along the Proposed
12 Transmission Facilities. The Adelaide Project will consist of 37 General Electric 1.62 MW wind
13 turbine generators, for a total installed capacity of 59.9 MW, on privately-owned agricultural lots
14 at the Adelaide Project site described in Exhibit B, Tab 2, Schedule 3.

15 2. **Proposed Transmission Facilities**

16 The Proposed Transmission Facilities that are the subject of this Application are comprised of
17 the following:

18 (a) **Adelaide Collection Substation**

19 The Adelaide Collection Substation will be located on Part Lot 7, Concession 3 in the Township
20 of Adelaide Metcalfe, which is on the east side of Kerwood Road between Langan Drive and
21 Cuddy Drive, as shown in Figures 1 and 2(b) of Exhibit B, Tab 2, Schedule 4. The Adelaide
22 Collection Substation will be an open-air facility, surrounded by a security fence, with an area of
23 approximately 2 acres. At the Adelaide Collection Substation, electricity conveyed from the
24 Adelaide Project along the collection system will be transformed from 34.5 kV to 115 kV by
25 means of a 115/34.5 kV, 51/68/85 MVA transformer. The location of the Adelaide Collection

1 Substation was determined based on its proximity to the wind turbines associated with the
2 Adelaide Project and so as to facilitate the connection with the Bornish Customer Switching
3 Station, which requires the route for the Transmission Line to cross the Ausable River at one of
4 the few available crossings, as discussed in Exhibit B, Tab 4, Schedule 1.

5 The main components of the Adelaide Collection Substation will be a 115/34.5 kV three-phase
6 power transformer and a control house. Bus work, pull-off towers, disconnect switches and
7 circuit breakers will also be on the premises, as further described in an illustration of the layout
8 for the Adelaide Collection Substation, provided in Exhibit B, Tab 2, Schedule 5 at Figure 2.

9 (b) Transmission Line

10 From the Adelaide Collection Substation, an approximately 10.8 km single circuit 115 kV
11 transmission line will run north along Kerwood Road until it connects into the Bornish Customer
12 Switching Station (the “**Transmission Line**”). The Transmission Line will run along a the
13 municipal road ROW, as depicted in Figure 2 of Exhibit B, Tab 2, Schedule 4. Although final
14 engineering and construction planning may determine that the use of certain adjacent privately
15 owned lands may be required, the need for such adjacent lands is not currently anticipated. The
16 location of the Transmission Line route was selected because it is necessary for the route to cross
17 the Ausable River and, of the few existing river crossings in the area, the Kerwood Road
18 crossing facilitates the most direct route between the Adelaide Collection Substation and the
19 Bornish CSS. A detailed discussion of the rationale for selecting the proposed Transmission
20 Line route is provided in Exhibit B, Tab 4, Schedule 1.

21 The Transmission Line will be constructed using wood, steel or concrete monopole structures
22 with an average height of 60 to 100 ft. above ground. Some angled poles may require guying
23 and anchoring. Nominal pole spacing will be approximately 150 m, with an estimated total of
24 approximately 70 poles being required along the entire length of the Transmission Line. Strung
25 along the poles will be single circuit lines of 115 kV power conductor, as well as optical ground
26 wire for lightening protection and communication. Illustrations of the proposed pole structures
27 and framing designs are provided in Figure 3 of Exhibit B, Tab 2, Schedule 5.

1 Though not part of the Proposed Transmission Facilities in the present Application, it is
2 important to note that, as described in Exhibit B, Tab 2, Schedule 3, from the Bornish CSS, a
3 three phase, single circuit, overhead 115 kV transmission line of approximately 12.6 km in
4 length will connect to the planned Parkhill CTS (the “**Shared Transmission Facilities**”).
5 Parkhill CTS, which is also not part of the Proposed Transmission Facilities in the present
6 Application, will in turn be connected to certain Hydro One facilities described below.

7 **3. Ancillary Hydro One Transmission Facilities**

8 As noted, certain Hydro One transmission facilities, which are ancillary to the Proposed
9 Transmission Facilities, are required to enable the Adelaide Project to connect, through the
10 Proposed Transmission Facilities and the Shared Transmission Facilities, to the IESO-controlled
11 grid. In particular, Hydro One will construct, own and operate a new 500 kV switching station,
12 which will be located on Part Lot 18, Concession 17 in the Municipality of North Middlesex (the
13 “**Evergreen Switching Station**” or “**Evergreen SS**”), as shown in Figure 1 of Exhibit B, Tab 2,
14 Schedule 4. Evergreen SS will consist of a 500 kV 3-breaker ring bus that will split Hydro
15 One’s existing 500 kV circuit B562L from Bruce A TS to Longwood TS into two sections:
16 Bruce A TS x Evergreen SS and Evergreen SS x Longwood TS. This sectionalizing will occur
17 approximately 36.5 km from Longwood TS, near tower #563 on Hydro One’s existing circuit
18 B562L. Parkhill CTS and Evergreen SS will be located adjacent to Hydro One’s existing
19 transmission right-of-way for circuit B562L.

**EXHIBIT E - DESIGN SPECIFICATIONS AND
OPERATIONAL DATA**

Exhibit E, Tab 1, Schedule 1

Operational Details

OPERATIONAL DETAILS

1 The Adelaide Project will include the erection of a permanent operations and maintenance
2 ("O&M") facility, or a suitable existing facility will be leased in close proximity to the project.
3 The O&M facility will be staffed, or have someone on-call, at all times. These staff will deal
4 with operational issues related to the Project and the Proposed Transmission Facility.

5 The Proposed Transmission Facility will include installation of maintenance, protection and
6 control systems capable of minimizing the severity and extent of disturbances to the
7 Transmission Line. Facilities will be monitored from the O&M building as well as remotely
8 from an operations center owned by the Applicant's parent company, NextEra Energy Resources,
9 LLC in Juno Beach, Florida. Visual transmission line inspections will be scheduled at least once
10 every year to ensure continued compliance with all applicable codes and standards. Detailed
11 thermography scans will be conducted on critical connection points immediately after
12 energization as well as at least once every year during the Project's operational life.

13 While the metering plan is still under development, it is anticipated that there will be a meter at
14 the Adelaide Collection Substation, and there is the potential for a meter at the Parkhill CTS, but
15 that has not been determined at this point.

Exhibit E, Tab 2, Schedule 1

Codes, Standards, and Other Regulatory Approvals

CODES, STANDARDS & OTHER REGULATORY APPROVALS

1 **1. Codes and Standards**

2 The Proposed Transmission Facilities will be constructed in accordance with applicable technical
3 codes and standards, including the Canadian Electrical Code, Part III (which incorporates by
4 reference CSA Standard C22.3), as well as applicable IEEE transmission line design and
5 construction standards. The Proposed Transmission Facilities will also comply, as required, with
6 applicable requirements of the Transmission System Code and the Market Rules for the Ontario
7 Electricity Market, including with respect to metering.

8 **2. Renewable Energy Approval**

9 Renewable energy projects (other than waterpower projects) are no longer subject to the
10 *Environmental Assessment Act*. Rather, the environmental protections that are built into the
11 environmental assessment process have been incorporated into the Renewable Energy Approval
12 (“**REA**”) process. Also significant is that renewable energy projects are no longer subject to
13 land use planning instruments under the *Planning Act*.

14 Most renewable energy projects in Ontario now require a REA from the Ministry of the
15 Environment. As a Class 4 wind facility (pursuant to subsection 6(1) of the REA Regulation, O.
16 Reg. 359/09 under the *Environmental Protection Act*), the Adelaide Project is no exception.
17 Kerwood is currently nearing completion of the REA process. In particular, Kerwood filed its
18 REA submission with the Ministry of the Environment August 23, 2012. The Ministry of the
19 Environment deemed the REA application complete on November 20, 2012. As such, based on
20 the Ministry’s six-month service guarantee, it is anticipated that Kerwood will receive its REA
21 from the Ministry on or before May 20, 2013

22 **3. Licences**

23 Although the Proposed Transmission Facilities will be used for the transmission of electricity
24 generated by the Adelaide Project, by application of Ontario Regulation 161/99 under the Act,
25 the Applicant will be exempt from the requirement to obtain a license to own or operate

1 transmission facilities pursuant to Section 57(b) of the Act. This is because the Applicant will be
 2 a transmitter that is also a generator and the Proposed Transmission Facilities will be used to
 3 transmit electricity only for the purpose of conveying electricity to the IESO-controlled grid.
 4 Moreover, the Applicant will not charge a price for transmitting electricity on the Proposed
 5 Transmission Facilities.

6 The Applicant will apply for a generator license in respect of its generation facility in due course.
 7 In accordance with the instructions set out on the Board's form of Application for an Electricity
 8 Generation Licence under the Feed-in Tariff Program, the Applicant will file its generator
 9 licence application following receipt of Notice to Proceed from the OPA pursuant to its FIT
 10 Contract.

11 **4. Other Permits, Approvals and Authorizations**

12 In addition to the codes, standards and REA requirements set out above, a number of other
 13 permits, licenses and approvals from other governmental authorities may be required before the
 14 Proposed Transmission Facilities can be constructed and operated. These are set out in Table 1,
 15 below.

Table 1 - Potentially Applicable Permits, Approvals and Authorizations

Government	Authority	Potentially Required Permit or Approval
Federal	Fisheries and Oceans Canada	Authorization under Subsection 35(2) of the <i>Fisheries Act</i> for watercourse crossings (or Letter of Advice)
Provincial	Ministry of Natural Resources	Approval and permitting requirements under the Renewable Energy Approval process
Provincial	Ministry of Natural Resources	Species at Risk Permit under the <i>Endangered Species Act</i> (if designated species habitat is impacted, which is to be confirmed)
Provincial	Conservation Authorities	Generic Regulations Permit for water crossings and works within floodplain
Provincial	Ministry of Tourism, Culture and Sport	Archeological and Cultural Heritage Clearances under the <i>Heritage Act</i>
Provincial	Ministry of Transportation	Compliance with the <i>Highway Traffic Act</i> and

Government	Authority	Potentially Required Permit or Approval
		<i>Road Safety Regulations</i> - Highway Entrance Permit, Transportation Permits (e.g. Oversize, Overweight Permit or Special Vehicle Configuration Permit), Crossing Permits
Provincial	Ontario Energy Board	Notice of Proposal under Section 81 of the <i>Ontario Energy Board Act</i>
Provincial	Ministry of Labour	Notice of Project prior to commencing construction (to be obtained by contractor)
Provincial	Hydro One Networks Inc.	Transmission Connection Agreement
Provincial	Independent Electricity System Operator	Facility Registration
Provincial	Independent Electricity System Operator	Metering Registration
Provincial	Independent Electricity System Operator	Connection Assessment Approval
Provincial	Electrical Safety Authority	Connection Authorization
Municipal	County and Municipal Governments	Building Permits and Entrance Permits (as applicable)

EXHIBIT F - LAND MATTERS

Exhibit F, Tab 1, Schedule 1

Land Matters

LAND MATTERS

1 **1. Land Area Required and Land Rights Acquired/to be Acquired**

2 The land area required for the Proposed Transmission Facilities consists of (a) the lands required
3 for the Adelaide Collection Substation, and (b) the lands required for the Transmission Line.
4 These land requirements are described in the sections below.

5 (a) Adelaide Connection Substation

6 As described in Exhibit B, Tab 2, Schedule 3, the Adelaide Collection Substation will have a
7 footprint of approximately 2 acres and will be situated on Part Lot 7, Concession 3 in the
8 Township of Adelaide Metcalfe, Middlesex County. This location is at the northeast corner of
9 Kerwood Road and Cuddy Drive, as shown in Figure 2(b) at Exhibit B, Tab 2, Schedule 4. This
10 property is comprised of a single, privately owned parcel. Bornish has entered into a Purchase
11 and Sale Agreement for the relevant property, which will support the Adelaide Collection
12 Substation, as well as any ancillary buildings, equipment and cables required to connect the
13 Adelaide Project to the Proposed Transmission Facilities. Although this transaction has not yet
14 closed, it is intended that Bornish will convey the property to Kerwood prior to the
15 commencement of construction.

16 (b) Transmission Line

17 Also as described in Exhibit B, Tab 2, Schedule 3, the Transmission Line will be approximately
18 10.8 km in length and will run north from the Adelaide Collection Substation along Kerwood
19 Road until it connects into the Bornish Customer Switching Station at Part Lot 9, Concession 16
20 in the Municipality of North Middlesex, Middlesex County, on the west side of Kerwood Road
21 between Elginfield Road and Cold Stream Road. With the exception of the segments of the
22 Transmission Line between the municipal road ROW and each of the Adelaide Collection
23 Substation and the Bornish Customer Switching Station, the Applicant plans for the
24 Transmission Line to run exclusively within the municipal road ROW along Kerwood Road.
25 Although final engineering and construction planning may determine that the use of certain

1 adjacent privately owned lands may be required, the need for such adjacent lands is not currently
2 anticipated.

3 As indicated in Exhibit B, Tab 4, Schedule 1, the Applicant is planning to construct the
4 Transmission Line on the opposite side of the ROW from existing Hydro One distribution
5 facilities, while remaining within the municipal road ROW. Consequently, it is the Applicant's
6 current plan that, subject to final engineering and design, commencing from the Adelaide
7 Collector Substation, the Transmission Line will:

- 8 (i) run from the northwest corner of the substation property, across Kerwood
9 Road,
- 10 (ii) run north within the municipal road ROW along the west side of Kerwood
11 Road for a distance of approximately 1.4 km,¹
- 12 (iii) cross over to the east side of Kerwood Road and continue north within the
13 municipal road ROW along the east side of Kerwood Road to Townsend
14 Line for a distance of approximately 0.58 km,²
- 15 (iv) cross over to the west side of Kerwood Road at a point that is on the south
16 side of Townsend Line and then continue north within the municipal road
17 ROW along the west side of Kerwood Road for a distance of
18 approximately 0.79 km,³
- 19 (v) cross over to the east side of Kerwood Road and then continue north
20 within the municipal road ROW along the east side of Kerwood Road for

¹ There are existing Hydro One distribution lines along the east side of the ROW in this segment.

² There are existing Hydro One distribution lines along the west side of a portion of this segment, north of Langan Drive.

³ There is a residence on the east side of Kerwood Road along this segment.

1 a distance of approximately 2.15 km to the north side of the Ausable
2 River,⁴

3 (vi) continue north within the municipal road ROW on the east side of
4 Kerwood Road for a distance of approximately 3.15 km to Bornish Drive,⁵
5 and

6 (vii) cross over to the west side of Kerwood Road at Bornish Drive and
7 continue north within the municipal road ROW along the west side of
8 Kerwood Road for a distance of 2.43 km, terminating at the Bornish
9 Customer Switching Station on Part Lot 9, Concession 16, in the
10 Municipality of North Middlesex.⁶

11 As the Applicant is planning for the Transmission Line to run exclusively within the municipal
12 ROWs along Kerwood Road, the Applicant does not anticipate that it will require any land rights
13 beyond those which are provided by legislation under Section 41 of the *Electricity Act*.

14 Although pursuant to Subsection 41(10) of the *Electricity Act* the Board does not have the
15 authority to determine the specific location of structures, equipment or facilities in public streets
16 and highways where the facilities are also subject to the need for leave to construct pursuant to
17 Section 92 of the *Ontario Energy Board Act*, it is the Applicant's understanding that the Board
18 has such authority either in connection with its powers under Section 92 or pursuant to Section
19 101 of the *Ontario Energy Board Act*, under which the Board may grant authority to construct
20 works upon, under or over a highway, utility line or ditch.

21 While the Applicant's current expectation is that the construction and ongoing operation of the
22 Transmission Line will not require the use of any adjacent lands outside of the municipal road

⁴ There are existing Hydro One distribution lines along the west side of the ROW along most of this segment and there are existing Bell Canada facilities along the east side of the ROW at the Ausable River crossing. As indicated in Exhibit B, Tab 4, Schedule 1, the Applicant may cross over to the west side of the ROW to cross the Ausable River.

⁵ There are existing Hydro One distribution lines along the west side of the ROW for most of this segment.

⁶ There are existing Hydro One distribution lines along the east side of the ROW for most of this segment and the Bornish Customer Switching Station is situated on the west side of Kerwood Road.

1 ROW, consultations are ongoing with the County and existing users of the ROW regarding the
2 specific location of the Transmission Line. In the event that final engineering and construction
3 planning determine it to be necessary, out of an abundance of caution the Applicant requests that
4 the granting of leave to construct include authorization for the Applicant to use such adjacent
5 lands for uses that include, but are not limited to, temporary construction access or laydown,
6 access for maintenance purposes, overhang or guying. To the extent that any such additional
7 land rights are required, the Applicant would offer the applicable land owners the relevant form
8 of land rights agreement as set out in Exhibit F, Tab 2, Schedule 1. Moreover, the Applicant
9 would seek and obtain necessary amendments to its REA or modifications to its REA
10 application, if required. No adjacent lands would be used by the Applicant unless and until any
11 such permits and approvals, including the REA, are received or amended, if necessary, so as to
12 authorize the intended use of such adjacent lands.

13 **2. Widths of Required ROWs**

14 The municipal road ROWs along which the Transmission Line will run range from 20 – 108
15 meters in width.

16 **3. Land Rights Acquisition Process**

17 The Applicant's land agents have been working in the area since September 2011 to secure the
18 necessary private land rights. Other than exercising the rights it currently has under option, the
19 Applicant has now secured all of the permanent, private land rights that it anticipates will be
20 required for the Proposed Transmission Facilities. For any additional temporary working rights
21 or private land rights that may be necessary, the Applicant will pursue such rights upon
22 completion of detailed engineering designs and construction plans, based on the relevant form of
23 agreement included in Exhibit F, Tab 2, Schedule 1.

APPENDIX 'A' - LANDOWNER LINE LIST

1 The following Landowner Line List and Adjacent Landowner Line List are each organized
2 geographically commencing at the Adelaide Collection Substation and ending at (but not
3 including) the Bornish Customer Switching Station. The Landowner Line List includes those
4 parcels upon which the Proposed Transmission Facilities will be situated. The Adjacent
5 Landowner Line List includes those parcels that are adjacent to the municipal road ROW.
6 Although not currently anticipated, as a result of final engineering and project planning the
7 Applicant may determine that the use of certain lands adjacent to the municipal road ROW may
8 be required for construction, access or other purposes. The Adjacent Landowner Line List is
9 being provided to address that possibility.

10 **[Note: The Landowner Line List and the Adjacent Landowner Line List contain personal**
11 **information of landowners and has therefore been filed in confidence with the Board**
12 **pursuant to Rule 9A.01 of the Board's Rules of Practice and Procedure and in accordance**
13 **with Section 4.3 of the Board's Practice Direction on Confidential Filings]**

Exhibit F, Tab 2, Schedule 1

Forms of Land Agreements

FORMS OF LAND AGREEMENTS

This schedule includes copies of the forms of land agreements that the Applicants have used and/or intend to use for the acquisition of the land rights required to construct, own, operate and maintain the Proposed Transmission Facilities. These include the following:

Appendix 'A'	Transmission Overhang Easement (Transfer of Overhang Easement)
Appendix 'B'	Transmission Easement Option Agreement
Appendix 'C'	Construction, Maintenance and Access Easement Agreement
Appendix 'D'	Purchase and Sale Agreement
Appendix 'E'	Option to Purchase (Interconnection)

Appendix 'A' - Transmission Overhang Easement

TRANSFER OF OVERHANG EASEMENT

THIS OVERHANG EASEMENT (IN GROSS) (“Grant”), is executed and made effective this ____ day of _____, 2013, (“Effective Date”) by and between _____ (“Grantor”) and **Kerwood Wind, Inc.**, whose mailing address is 390 Bay Street, Suite 1720, Toronto ON M5H 2Y2, Canada (“Grantee”).

PREMISES

A. Grantor is the registered owner of an estate in fee simple composed of certain parcels or tracts of land and premises more particularly described on **Exhibit A** attached hereto and made a part hereof (“Property”);

B. Grantee is or in the future will become the holder of certain easement and other related rights covering lands and premises located adjacent to and/or in the vicinity of the Property and as more particularly described on **Exhibit B** attached hereto (collectively, the “Benefited Property”); and

C. Grantor desires to grant and convey to Grantee a permanent, exclusive easement for the right to overhang a portion of the Property; and

IN CONSIDERATION of the foregoing and other good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, the parties hereto agree as follows:

1. Grant. Grantor does hereby grant and transfer unto Grantee, for the benefit of the Benefited Property, a permanent, exclusive easement (“Overhang Easement”) for the right and privilege to permit the above ground electric transmission facilities, including wires, cables and appurtenant equipment, (collectively “Facilities”) located on adjacent properties, including the Benefited Property, to overhang a portion of the Grantor’s Property as more particularly identified and shown on the Reference Plan attached hereto and made a part hereof as **Exhibit C** (“Overhang Easement Property”) Grantor shall not interfere with the operation of lines that overhang the Overhang Easement Property. The easement granted herein is for air rights exclusively. Grantee shall have no use of any ground areas except as specifically set forth herein. Once the final reference plan describing the extent of the Overhang Easement Property has been prepared and deposited by Grantee on title to the Property, Grantor confirms that Grantee is irrevocably authorized and directed to insert the Part No(s). and Reference Plan No. into the attached Exhibit C without the requirement of any further approval or action by Grantor.

2. Authority. Grantor hereby represents and warrants to Grantee that it is the registered owner of the Property in fee simple with a good and marketable title thereto subject to no liens, encumbrances, rights or interests in priority to this Overhang Easement and is fully authorized and empowered to grant the rights and benefits granted to Grantee in this Grant.

3. Payment. Grantee shall pay Grantor the amounts set forth in Exhibit D as the consideration for the Grant. The parties acknowledge and agree that the registration copy of this Grant will not contain the payment provisions set forth in **Exhibit D**, and it is understood and

agreed that the deletion of such payment provisions does not and will not in any way affect the validity of this Grant.

4. Assignment by Grantee; Mortgage Rights.

(a) Right to Mortgage & Assign. Grantee, upon notice to Grantor, but without Grantor's consent or approval shall have the right to mortgage, assign, charge, collaterally assign, or otherwise encumber and grant security interests in all or any part of its interest in this Overhang Easement or the Overhang Easement Property, or the Facilities (collectively, its "**Facilities Assets**"). These various security interests in all or a part of the Facilities Assets are collectively referred to as "**Mortgages**" and the holders of the Mortgages, their designees, successors and assigns are referred to as "**Mortgagees**." Grantee's notice to Grantor shall include the name and address of each Mortgagee and/or Assignee (as hereinafter defined). Grantee shall also have the right without Grantor's consent to sell, convey, lease, sublease, grant or assign all or any portion of its Facilities Assets on either an exclusive or a non-exclusive basis, or to grant sub-easements, co-easements, separate easements, leases, licenses or similar rights; however denominated (collectively, "**Assignment**"), to one or more persons or entities (collectively, "**Assignees**"). Assignees and Mortgagees shall use the Facilities Assets only for the uses permitted under this Grant. Assignees and Mortgagees shall have all rights and remedies allowed them under then existing laws except as limited by their individual agreements with Grantee, provided that under no circumstances shall any Mortgagee or Assignee have any greater rights of ownership or use of the Overhang Easement Property than the rights granted to Grantee in this Grant.

(b) Grantor Obligations. Grantor agrees to consent in writing to and to execute financing documents, including customary three party lender agreements, as may reasonably be required by Mortgagees. As a precondition to exercising any rights or remedies related to any alleged default by Grantee under this Grant, Grantor shall give written notice of the default to each Mortgagee and Assignee at the same time it delivers notice of default to Grantee, specifying in detail the alleged event of default and the required remedy. Subject to the following sentence, each Mortgagee and Assignee shall have the same amount of time to cure the default as to Grantee's entire interest or its partial interest in the Facilities Assets as is given to Grantee and the same right to cure any default as Grantee. The cure period for each Mortgagee and Assignee shall begin to run at the end of the cure period given to Grantee in this Grant, but in no case shall the cure period for any Mortgagee or Assignee be less than ninety (90) days after receipt of the default notice. Failure by Grantor to give a Mortgagee or Assignee notice of default shall not diminish Grantor's rights against Grantee, but shall preserve all rights of the Mortgagee or Assignee to cure any default.

(c) Mortgagee/Assignee Obligations. Any Mortgagee or Assignee that does not directly hold an interest in the Facilities Assets, or whose interest is held solely for security purposes, shall have no obligation or liability under this Grant prior to the time the Mortgagee or Assignee directly holds an interest in this Grant, or succeeds to absolute title to Grantee's interest. A Mortgagee or Assignee shall be liable to perform obligations under this Grant only for and during the period it directly holds such interest or absolute title. Any Assignment permitted under this Grant shall release Grantee or other assignor from obligations accruing after the date that liability is assumed by the Assignee.

(d) Right to Cure Defaults/Notice of Defaults/Right to New Overhang Easement.

(1) To prevent Grantor's exercise of any remedies available to it in respect of a default by Grantee under this Grant, the Overhang Easement, or any partial interest in this Grant and the Overhang Easement, Grantee, any Mortgagee or Assignee shall have the right, but not the obligation, at any time to perform any act necessary to cure any default and to prevent the exercise of Grantor's remedies in respect of a default by Grantee under this Grant or any interest in the Facilities Assets.

(2) In the event of an uncured default by the holder of Grantee's entire interest in this Grant, or in the event of a termination of this Grant by agreement, by operation of law or otherwise, each Mortgagee or Assignee of a partial interest in the Facilities Assets shall have the right to have Grantor either recognize the Mortgagee's or Assignee's interest or, in the event of a termination, grant a new easement substantially identical to this Grant and the Overhang Easement. Under the new easement, the Mortgagee or Assignee shall be entitled to, and Grantor shall not disturb, Mortgagee's or Assignee's continued use and enjoyment for the remainder of the term.

(e) Extended Cure Period. If any default by Grantee under this Grant cannot be cured without obtaining possession of all or part of the Facilities Assets, then any such default shall be deemed remedied if a Mortgagee or Assignee: (a) within ninety (90) days after receiving notice from Grantor as set forth in Section 4(b), acquires possession of all or part of the Facilities Assets, or begins appropriate judicial or non-judicial proceedings to obtain the same; (b) diligently prosecutes any such proceedings to completion; and (c) after gaining possession of all or part of the Facilities Assets cures defects that are reasonably capable of being cured and not otherwise personal to Grantor and performs all other obligations as and when the same are due in accordance with the terms of this Grant. If a Mortgagee or Assignee is prohibited by any court or by operation of any bankruptcy or insolvency laws from commencing or prosecuting the proceedings described above, the ninety (90) day period specified above for commencing proceedings shall be extended for the period of such prohibition.

(f) Certificates. Grantor shall execute estoppel certificates (certifying as to truthful matters, including without limitation that no default then exists under this Grant, if such be the case), consents to assignment, direct lender agreements and non-disturbance agreements as Grantee or any Mortgagee or Assignee may reasonably request from time to time. Grantor and Grantee shall cooperate in amending this Grant from time to time to include any provision that may be reasonably requested by Grantee or any Mortgagee or Assignee to implement the provisions contained in this Grant or to preserve a Mortgagee's security interest in the Facilities Assets.

5. Mortgagee Protection. Any Mortgagee, upon delivery to Grantor of notice of its name and address, for so long as its Mortgage is in existence shall be entitled to the following protections which shall be in addition to those granted elsewhere in this Grant:

(a) Mortgagee's Right to Possession, Right to Acquire and Right to Assign. A Mortgagee shall have the absolute right without Grantor's consent: (a) to assign its Mortgage; (b) to enforce its lien, including, to acquire title to all or any portion of the Facilities Assets by any

lawful means; (c) to take possession of and operate all or any portion of the Facilities Assets and to perform all obligations to be performed by Grantee under this Grant, or to cause a receiver or a receiver and manager to be appointed to do so; and (d) to acquire all or any portion of the Facilities Assets by foreclosure, by an assignment in lieu of foreclosure or by quit claim and thereafter without Grantor's consent to assign or transfer all or any portion of the Facilities Assets to a third party. A Mortgagee which assigns or transfers the Facilities Assets to a third party shall notify Grantor of the name and address of the Assignee or transferee.

(b) Opportunity to Cure.

(1) During any period of possession of the Overhang Easement Property by a Mortgagee (or a receiver or receiver and manager requested by a Mortgagee) and/or while any foreclosure, power of sale or other enforcement proceedings instituted by a Mortgagee are pending, the Mortgagee shall pay or cause to be paid the fees and all other monetary charges, if any, payable by Grantee under this Grant which have accrued and are unpaid at the commencement of the period and those which accrue thereafter during the period. Following acquisition of all or a portion of the Facilities Assets by the Mortgagee as a result of either foreclosure, acceptance of an assignment in lieu of foreclosure, quit claim or by a purchaser under a power of sale or judicial sale, this Grant shall continue in full force and effect and the Mortgagee or party acquiring title to the Facilities Assets shall, as promptly as reasonably possible, commence the cure of all defaults under this Grant and thereafter diligently process such cure to completion, whereupon Grantor's rights relating to such default shall be deemed waived; provided, however, that the Mortgagee or party acquiring title to the Facilities Assets shall not be required to cure those defaults which are not reasonably susceptible of being cured or performed by such party ("**non-curable defaults**"). Non-curable defaults shall be deemed waived by Grantor upon completion of foreclosure proceedings or acquisition of Grantee's interest in this Grant under a power of sale or judicial sale.

(2) Any Mortgagee or other party who acquires Grantee's interest in the Facilities Assets pursuant to foreclosure, assignment in lieu of foreclosure, quit claim, under a power of sale or judicial sale or otherwise shall not be liable to perform the obligations imposed on Grantee by this Grant incurred or accruing after the party no longer has ownership or possession of the Facilities Assets.

(c) New Easement.

(1) If this Grant is terminated for any reason, if the Facilities Assets are foreclosed, or if this Grant is rejected, repudiated, resiliated or disaffirmed pursuant to bankruptcy law or other law affecting creditor's rights and, within ninety (90) days after such event, Grantee or any Mortgagee or Assignee shall have arranged to the reasonable satisfaction of Grantor for the payment of all fees or other charges due and payable by Grantee as of the date of such event, then Grantor shall execute and deliver to Grantee or such Mortgagee or Assignee or to a designee of one of these parties, as the case may be, a new easement to the Overhang Easement Property which (i) shall be for a term equal to the remainder of the term before giving effect to such rejection, repudiation, resiliation or termination; (ii) shall contain the same covenants, agreements, terms, provisions and limitations as this Grant (except for any requirements that have been fulfilled by Grantee or any Mortgagee or Assignee prior to rejection,

repudiation, resiliation or termination of this Grant); and, (iii) shall include that portion of the Overhang Easement Property in which Grantee or such other Mortgagee or Assignee had an interest on the date of rejection, repudiation, resiliation or termination.

(2) After the termination, repudiation, resiliation, rejection or disaffirmation of this Grant and during the period thereafter during which any Mortgagee shall be entitled to enter into a new easement for the Overhang Easement Property, Grantor will not terminate the rights of any Assignee unless in default under its Assignment.

(3) If more than one Mortgagee makes a written request for a new easement pursuant to this provision, the new easement shall be delivered to the Mortgagee requesting such new easement whose Mortgage is prior in lien, and the written request of any other Mortgagee whose lien is subordinate shall be void and of no further force or effect.

(4) The provisions of this Section shall survive the termination, rejection, repudiation, resiliation or disaffirmation of this Grant and shall continue in full force and effect thereafter to the same extent as if this Section were a separate and independent contract made by Grantor, Grantee and each Mortgagee, and, from the effective date of such termination, rejection, repudiation, resiliation or disaffirmation of this Grant to the date of execution and delivery of such new easement, such Mortgagee may use and enjoy the Overhang Easement Property without hindrance by Grantor or any person claiming by, through or under Grantor; provided that all of the conditions for the new easement as set forth above are complied with.

(d) Mortgagee's Consent to Amendment, Termination or Surrender. Notwithstanding any provision of this Grant to the contrary, the parties agree that so long as there exists an unpaid Mortgagee, this Grant shall not be modified or amended, and Grantor shall not accept a surrender, abandonment, cancellation or release of all or any part of the Overhang Easement Property from Grantee, prior to expiration of the term without the prior written consent of the Mortgagee. This provision is for the express benefit of and shall be enforceable by each Mortgagee as if it were a party named in this Grant.

(e) No Merger. There shall be no merger of this Grant or of the Overhang Easement with the fee estate in the Overhang Easement Property by reason of the fact that this Grant or any interest in the Overhang Easement may be held, directly or indirectly, by or for the account of any person or persons who shall own any interest in the fee estate. No merger shall occur unless and until all persons at the time having an interest in the fee estate in the Overhang Easement Property and all persons (including each Mortgagee) having an interest in this Grant or in the estate of Grantor and Grantee shall sign and record a written instrument effecting such merger.

(f) Liens. On the Effective Date, title to the Overhang Easement Property shall be free and clear of all monetary liens other than those expressly approved by Grantee. With respect to any such liens approved by Grantee, Grantor shall nevertheless obtain either non-disturbance agreements or postponements from the holders of such liens in favour of Grantee and this Overhang Easement, such agreements or postponements, as the case may be, to be reasonably satisfactory to Grantee. Thereafter, any mortgage, deed of trust or other monetary lien registered against Grantor's interest in the Property shall be subject to and subordinate to this Grant, to any Assignment or Mortgage then in existence on the Facilities Assets. Grantor agrees

to cause any monetary liens registered against Grantor's interest in the Property in the future to incorporate the conditions of this Section.

(g) Further Amendments. At Grantee's request, Grantor shall amend this Grant to include any provision which may reasonably be requested by a proposed Mortgagee; provided, however, that such amendment shall not impair any of Grantor's rights under this Grant or increase the burdens or obligations of Grantor under this Grant. Upon the request of any Mortgagee, Grantor shall execute any additional instruments reasonably required to evidence such Mortgagee's rights under this Grant.

6. Legal Fees. In the event of any controversy, claim or dispute arising out of or relating to the Overhang Easement or the enforcement or breach hereof, the prevailing party shall be entitled to recover from the losing party the prevailing party's reasonable costs, expenses and solicitor's fees (including but not limited to those incurred at trial or on appeal).

7. Binding Effect; Governing Law. This Grant shall be binding upon and shall inure to the benefit of both Grantor and Grantee, and their respective heirs, successors and assigns, and shall be deemed a covenant running with the Property for all purposes. The provisions hereof shall be governed by and construed in accordance with the laws of the Province of Ontario. Grantee agrees that this Overhang Easement and the rights, privileges and easements granted pursuant thereto shall be declared to be for the purposes of electricity transmission lines or electricity distribution lines within the meaning of Part VI of the Ontario Energy Board Act, 1998, and (ii) an easement in favour of a generator, transmitter or distributor for the purpose of generation, transmission or distribution within the meaning of Section 42.1 of the Electricity Act, 1998.

8. Family Law Act. Grantor represents and warrants to Grantee that if Grantor is an individual, Grantor is either not married, or if married, his or her spouse either comprises a Grantor hereunder or such spouse has consented to the grant of the Overhang Easement to Grantee pursuant to the terms herein by executing a copy of this Overhang Easement, and if Grantor is a corporation, the Overhang Easement Property has never been occupied by any of the directors, officers or shareholders of Grantor or the spouses of such directors, officers or shareholders and there are no shares in existence entitling the holders of such shares to occupation of the buildings. Accordingly, the Overhang Easement Property does not comprise a family residence within the meaning of the Family Law Act.

9. Grantee's Statutory Rights. This Overhang Easement shall not affect or prejudice Grantee's statutory rights to acquire the Overhang Easement Property under any laws, including, without limitation, Grantee's statutory rights under the Ontario Energy Board Act, 1998, which rights may be exercised at Grantee's discretion, in the event, Grantor being unable or unwilling for any reason to perform this Overhang Easement, or, give to Grantee a clear and unencumbered title to the easement and right-of-way herein granted.

10. Registration. Grantee shall be entitled, at its cost and expense, to register this Overhang Easement or a notice in respect thereof, and any required reference plans in the applicable Land Registry Office, and, Grantor agrees to execute, at no cost to Grantee, all necessary instruments, plans and documentation for that purpose.

11. Setback Waiver. To the extent that (a) Grantor now or in the future owns or leases any land adjacent to the Overhang Easement Property, or (b) Grantee leases or holds an easement/license or a lease over land adjacent to Overhang Easement Property, and has installed or constructed or desires to install or construct any Facilities on said land at and/or near the common boundary between the Overhang Easement Property and said land, Grantor hereby waives any and all setbacks and setback requirements, whether imposed by law or by any person or entity, including, without limitation, any setback requirements described in the zoning by-laws of the County and/or the Province of Ontario or in any governmental entitlement or permit heretofore or hereafter issued to Grantee. If so requested by Grantee, Grantor shall promptly, without demanding additional consideration therefore, execute, and if appropriate cause to be acknowledged, any setback waiver, setback elimination or other document or instrument required by any governmental authority or that Grantee deems necessary or convenient to the obtaining of any entitlement or permit.

12. Termination. Grantee shall have the right to terminate this Grant at any time upon 30 days written notice to Grantor. Upon full or partial termination of the Overhang Easement, Grantee shall remove all physical material pertaining to the Facilities, if any, which may be overhanging the Overhang Easement Property. In the event of termination, Grantee has no right to recover any amounts previously paid to Grantor as consideration for this Grant.

13. Planning Act. This Overhang Easement and the provisions hereof which create, or, are intended to create an interest in the Overhang Easement Property shall be effective to create such an interest only if the subdivision control provisions of The Planning Act, R.S.O. 1990 c. P. 13, as amended are complied with.

14. Notices. All notices to be given hereunder shall be in writing and all such notices and any payments to be made hereunder may be made or served personally or by registered letter addressed to Grantor at:

To Grantor:

Attention: _____
Telephone: _____
Facsimile: _____

To Grantee:

Kerwood Wind, Inc.
390 Bay Street, Suite 1720
Toronto, ON M5H 2Y2, Canada

Attention: Business Management
Telephone: (416) 364-9714

With a copy to:

Kerwood Wind, Inc.
700 Universe Blvd.
Juno Beach, FL 33408
Attention: Business Management
Telephone: (561) 691-7171
Facsimile: (561) 691-7307

or such other address, as Grantor or Grantee respectively may from time to time advise and any such notices or payments shall be deemed to be given and received by the addressee upon personal service or, if served by registered letter, fourteen (14) days after mailing thereof, postage prepaid. In the event of a postal interruption, all notices to be given and all payments to be made hereunder may be made or served personally or delivered to the intended recipient at the address of the recipient set out above. Grantee shall also be permitted to make any payment to Grantor electronically at Grantee's discretion and subject to Grantor's consent.

15. Counterparts. This Grant may be executed in two or more counterparts, each of which will be deemed an original, but all of which together shall constitute one and the same instrument.

[Remainder of page intentionally left blank, signature page follows]

EXECUTED effective the day and year first hereinabove written.

Grantor:

Witness: Per: _____
Name: _____

Per: _____
Name: _____

Grantee:

KERWOOD WIND, INC.

Per: _____
John DiDonato, Vice President

EXHIBIT A

Legal Description of Property

EXHIBIT B

Benefited Property

EXHIBIT C

Legal Description of Overhang Easement Property

(Insert description from reference plan)

PT ___ LT ___, CON ___, DESIGNATED AS PART(S) _____ ON PLAN 18R - _____,
BEING PART OF PIN NO.

EXHIBIT D

Compensation

In consideration for granting the Overhang Easement to Kerwood Wind, Inc. (“Grantee”),
_____ (“Grantor”) shall receive the following compensation:

_____ Dollars (\$_____) within sixty days following the completion of
construction of the Facilities on the Benefited Property.

Payment shall be distributed as follows:

(Street Address, City, Province & Postal Code)

Phone: _____

Signature required for each payee:

Date

Date

STATUTORY DECLARATION

RE: PLANNING ACT

FLORIDA)
)
COUNTY OF PALM BEACH)
)
)
)
)
)

I, John DiDonato, of the Town of Juno Beach, in the State of Florida, DO SOLEMNLY DECLARE, in my capacity as Vice President of the Grantee, and without personal liability that:

1. I am the Vice President Kerwood Wind, Inc., the Grantee and, as such, am aware of the matters herein deposed to save where same are stated to be upon information and belief, and where so stated, I verily believe same to be true.

2. The Overhang Easement Property being acquired by the Grantee pursuant to the Easement are being acquired for the purpose of an electricity distribution line, electricity transmission line, hydrocarbon distribution line or hydrocarbon transmission line within the meaning of Part VI of the *Ontario Energy Board Act*, 1998, in respect of which this Statutory Declaration has been made pursuant to sub-clause 50(3)(d) of the *Planning Act* (Ontario), as amended.

AND I MAKE THIS SOLEMN DECLARATION conscientiously believing it to be true and knowing that it is of the same force and effect as if made under oath.

John DiDonato, Vice President

STATE OF FLORIDA)
)
)ss:
COUNTY OF PALM BEACH)
)

The foregoing instrument was acknowledged before me this _____ day of _____, 2013 by Dean R. Gosselin, as Vice President of Kerwood Wind, Inc.

In witness whereof, I hereunto set my hand and official seal.

(Seal) _____
Notary Public
My Commission Expires: _____

Appendix 'B' - Transmission Easement Option Agreement

TRANSMISSION EASEMENT OPTION AGREEMENT

THIS TRANSMISSION EASEMENT OPTION AGREEMENT (“Agreement”) is made as of the _____ day of _____, 2013 (hereinafter referred to as the “**Effective Date**”) by and between **Kerwood Wind, Inc.**, a company incorporated pursuant to the laws of the Province of New Brunswick and authorized to conduct business in the Province of Ontario (hereinafter, referred to as “**Developer**”) and _____ (hereinafter, referred to as “**Owner**”), who are sometimes individually referred to herein as a “**Party**” and collectively, as “**Parties**”.

WHEREAS, Owner is the registered and beneficial owner of the lands and premises legally described in **Schedule A** attached hereto (the “**Property**”); and

AND WHEREAS, Developer is a wind power developer and operator and is currently developing a wind power project known as the **Adelaide Wind Energy Centre** wind project (the “**Project**”) in the vicinity of the Property; and

AND WHEREAS, Developer and Owner have agreed to enter into this Agreement for the purpose of granting to Developer an exclusive option to acquire an easement and right-of-way over, along, across and through a portion of the Property for the purposes of erecting, constructing, replacing, relocating, improving, enlarging, removing, maintaining, operating and utilizing, from time to time, a line of transmission structures or poles (which may include lattice or truss towers or structures on the Property, but only with Owner’s consent which shall not be unreasonably withheld, conditioned or delayed), with such wires, guy wires, and/or cables (whether above ground or buried), for the transmission of electrical energy, and all necessary and proper foundations, footings, cross arms and other appliances, facilities and fixtures for use in connection therewith (collectively, the “**Transmission Facilities**”);

NOW THEREFORE THIS AGREEMENT WITNESSETH that in consideration of the mutual covenants and obligations contained herein and other good and valuable consideration the receipt and sufficiency of which is hereby acknowledged, the Parties covenant and agree as follows:

1. Option to Enter Into Easement and Right-Of-Way

1.1 Subject to the terms and conditions set out herein, Owner hereby grants Developer the exclusive option (“**Option**”) to acquire an easement and right-of-way in respect of any portion of the Property (the “**Optioned Property**”), for the purposes of constructing, owning and/or operating the Transmission Facilities on the Optioned Property. For greater certainty, the Optioned Property excludes certain portions of the Property identified in **Schedule B** attached hereto (the “**Excluded Property**”) and Developer acknowledges and agrees that it shall not be permitted to exercise the Option in respect of any portion of the Excluded Property with respect to the Transmission Facilities. The Option shall be exercisable by Developer upon its sole, absolute and subjective discretion. If, at the time Developer exercises the Option, the owner of the Property is the Owner as first named above, then Developer is irrevocably authorized and directed by the Owner to finalize the transmission easement attached hereto as **Schedule E** (hereinafter referred to as “**Easement**”) by

completing any missing information such as the Commencement Date and the description of the Easement Area (including, without limitation, the reference plan number and the parts identified thereon) and thereafter, Developer shall execute the Easement and provide the completed and fully executed Easement to Owner. If, at the time Developer exercises the Option, the owner of the Property is not the Owner as first named above, then such Owner agrees that it shall duly execute and deliver to Developer on such date as is specified by Developer to Owner, the Easement substantially in the form attached hereto as **Schedule E** upon the terms and conditions provided therein. In the event such Owner fails to execute and deliver to Developer the Easement by the date specified by Developer to Owner, then such Owner hereby irrevocably constitutes and appoints Developer the true and lawful attorney of such Owner to execute the Easement and all other instruments, approvals and documents as provided for in the Easement. The Option shall be exercised by Developer by providing written notice to Owner (the "**Exercise Notice**") at any time prior to the expiry of the Option Term (as herewith defined). Accompanying the Exercise Notice shall be a draft or final reference plan identifying the portion of the Optioned Property that will be the subject of the Easement. Owner hereby authorizes Developer to deposit the reference plan on title to the Property.

1.2 The Option shall be exercisable by Developer at any time from the Effective Date up to and including the date which is the third anniversary of the Effective Date ("**Option Term**"). Notwithstanding anything to the contrary herein, however, if Developer shall give written notice to the Owner prior to the expiry of the Option Term that Developer has submitted, or is in the process of submitting, an application to the Ontario Energy Board (or equivalent government or public authority) for approval to transmit or distribute energy pursuant to the Transmission Facilities and such application references this Option and/or the Optioned Property, then Developer may, in its sole discretion, elect to extend the Option Term for an additional period of two (2) years ("**Extended Option Term**") on the same terms, conditions and privileges as set forth hereunder, at the payment then being paid as herein provided, by providing written notice to Owner of such extension, which shall accompany payment pursuant to **Schedule D**, no less than sixty (60) days prior to the expiration of the Option Term. The Option Term and the Extended Option Term may sometimes be collectively referred to herein as the "**Term**".

1.3 Developer shall pay Owner the amounts set forth in **Schedule D** as the consideration for the Option Term ("**Option Payment**") within sixty (60) days after the Effective Date. The Parties acknowledge and agree that the registration copy of this Agreement will not contain the payment provisions set forth in **Schedule D**, and it is understood and agreed that the deletion of such payment provisions does not and will not in any way affect the validity of this Agreement.

1.4 Owner hereby grants to Developer, during the Term, the right to enter upon the Optioned Property, at such times as are agreed to by the Parties, acting reasonably, to allow Developer to undertake studies and tests on, above and below the Optioned Property and to construct and install scientific equipment and any other equipment necessary to perform required studies and tests (collectively "**Scientific Equipment**"). In the event any Scientific Equipment are located within the cultivated Optioned Property of Owner, and in the event any of the above materially interferes with Owner's farming practices, Developer shall pay Owner a one-time payment for crop damage resulting from the construction or installation of the hereinabove described transmission structures and/or poles or equipment. Owner shall provide written notice to Developer outlining the basis for Owner's assertion of damage to the Optioned Property, the exact nature of damage, the

source of the assertion that the alleged damage is the result of the exercise by Developer of the rights, privileges and license granted by this Agreement and satisfactory evidence of the damage including documentation showing the extent of the damage and the financial impact of such damage. In the event that the Parties cannot agree at any time on the amount of damage payable to Owner for such crop damage, the compensation paid by Developer to Owner for that use shall be the damages for the crops lost or destroyed in the area damaged as calculated below; in consideration of this payment, no additional damages shall be paid in future years for that episode of damage. Damages will be calculated by the following formula: Unit Price x Unit Yield Per Acre x Acres Damaged = Damages. Prices for damaged or destroyed crops will be based on the average of the previous March 1st and September 1st using the prices for the crop provided by the local grain elevator. Yield will be the average of the previous three (3) years' yields according to Owner's records for the smallest parcel of land that includes the damaged area. If Owner does not have yield records available, the Parties will use commonly used yield information available for the area. The Parties shall try in good faith to agree to the extent of damage and acreage affected. If they cannot agree, they shall have the area measured and extent of damage assessed by an impartial party such as a crop insurance adjuster or extension agent. Any costs for such assessment shall be paid by Developer. Payment shall be made within sixty (60) days after determining the extent of the damage. In the event that Developer requests that Owner move livestock located on the Optioned Property, Owner shall promptly move the livestock to a mutually acceptable location and Developer shall reimburse Owner for the reasonable cost of moving the livestock.

2. **Covenants, Representations & Warranties.**

2.1 Owner represents and warrants that, as of the Effective Date, Owner is:

(a) at least eighteen (18) years of age and either not a spouse within the meaning of the *Family Law Act*, R.S.O. 1990, c.F.3, as amended; or

(b) at least eighteen (18) years of age and if a spouse within the meaning of the *Family Law Act*, R.S.O. 1990, c.F.3, as amended, then this Agreement has been executed by both spouses together comprising Owner or consented to in writing by Owner's spouse as is evidenced by the signature of the spouse on the Consent attached hereto as **Schedule C**; or

(c) if a corporation, then no building(s) located on the Optioned Property has been ordinarily occupied by any officer, director or shareholder of the corporation or by any of their spouses as a family residence or matrimonial home within the meaning of the *Family Law Act*, R.S.O. 1990, c.F-3, as amended.

2.2 Developer hereby represents and warrants that it is a company, duly organized, validly existing and in good standing under the laws of New Brunswick, is authorized to conduct business in the Province of Ontario and has the right, power and privilege to execute and deliver this Agreement and to perform its obligations hereunder.

2.3 Owner acknowledges that Owner has had the full opportunity to obtain independent legal representation or advice in connection with this Agreement.

2.4 Owner hereby agrees and covenants:

(a) that subsequent to the execution and delivery of this Agreement and without any additional consideration made or cost to Owner, Owner will execute and deliver or cause to be executed and delivered any further legal instruments, including, without limitation, any required consents or acknowledgements in favour of Developer's lenders, and perform any acts which are or may become necessary to effectuate the purposes of this Agreement and to complete the transactions contemplated hereunder;

(b) that Owner will appoint Developer to act as Owner's agent for the purpose of executing such consents or authorizations as may be necessary for Developer to make any application for re-zoning or site plan approval pursuant to this Agreement, and agrees to cooperate in any such applications; and

(c) that any information which Owner has access to or which comes into Owner's possession relating to Developer's activities, including any wind assessment data or the terms and conditions of this Agreement (including the Easement) (collectively, the "**Confidential Information**") shall be held in the strictest confidence by Owner, and Owner shall not disclose any Confidential Information to any third party except as may be required by law, or on the same confidential basis as provided herein and then only to Owner's prospective purchasers or legal and financial advisors who have a bona fide and actual need to know same ("**Authorized Agents**"); (ii) Owner or the Authorized Agents will not use any such Confidential Information, other than as may be required or permitted to perform any of its obligations under this Agreement; and (iii) Owner or its Authorized Agents will not exploit (whether for commercial or other purposes) or otherwise use any such Confidential Information. Owner acknowledges that a breach of any of the provisions contained herein would cause Developer to suffer loss which could not be adequately compensated for by damages and Developer may, in addition to any other remedy or relief, enforce the performance of the provisions of this Section by injunction or specific performance upon application to a court of competent jurisdiction without proof of actual damage. Upon the expiration or earlier termination of this Agreement, all Confidential Information will continue to be kept confidential by Owner.

2.5 Developer hereby covenants that should it elect to exercise the Option, it shall, at its sole cost and expense and prior to accessing the Optioned Property for any purpose related to the assessment or construction of the Transmission Facilities contemplated to be erected by Developer herein, provide and maintain in full force and effect with financially responsible insurance carriers, insurance with commercially reasonable coverages, which shall remain in effect during the term of the Easement or any extension thereof or as otherwise specified herein and which shall, if applicable, include (but not be limited to):

(a) automobile liability insurance covering owned, non-owned, hired, leased and rented automobiles and automotive equipment providing coverage for injury, death, or property damage;

(b) commercial general liability insurance covering bodily injury, death, personal injury and damage to property; and

(c) workers compensation as required by the Ontario *Workplace Safety and Insurance Act* (Ontario) or similar legislation covering all persons employed by Developer or subcontractors for work performed under this Agreement,

2.6 Title Search

(a) If, after the Effective Date, Developer conducts a title search and such search reveals that Owner is not the legal and beneficial owner of the Optioned Property or does not have the legal right and authority to grant to Developer, its employees, servants, agents, consultants, contractors and sub-contractors, the rights under this Agreement or has granted an easement, right-of-way, lease, financial encumbrance or other property right(s) related to the Optioned Property (“**Prior Encumbrance**”) to any other person that would interfere with the rights granted to Developer hereunder, Developer may, in its sole discretion, terminate this Agreement effective immediately. If Developer elects not to terminate this Agreement, Owner agrees to cooperate with Developer to obtain from the holder of such Prior Encumbrance any non-disturbance agreement, postponement, mutual co-existence agreement or related agreements, that Developer or its lender(s) may reasonably require. Without limiting the generality of the foregoing, Owner covenants and agrees to use its best efforts to obtain from any prior mortgagee of the Property, either a postponement of such mortgage to this Agreement and any Easement or a non-disturbance agreement in favour of Developer.

(b) If the title search reveals a Prior Encumbrance, Developer, in its sole and absolute discretion, may decide to consult with the holder of such Prior Encumbrance and Owner shall cooperate with Developer to resolve any issues that may arise out of the exercise of the Option vis-à-vis the Prior Encumbrance with the goal of determining whether the Prior Encumbrance and the Easement can co-exist over the Optioned Property.

(c) Notwithstanding Section 2.6(b), Developer may choose to terminate this Agreement at any time pursuant to Section 2.6(a).

2.7 Owner hereby represents and warrants that it is the legal and beneficial owner[s] in fee simple of the Property and has the legal right and authority to grant to Developer, its servants, employees, agents, consultants, contractors and sub-contractors the rights under this Agreements on the terms and conditions set out herein and has not and will not grant an option, easement, lease or any other property rights related to the Optioned Property to any other person that would interfere with the rights granted to Developer hereunder, save and except for any easements, rights-of-way, petroleum or natural gas leases or any other property rights granted by the Owner prior to the Effective Date.

2.8 Owner covenants and agrees to execute all applications, consents, permissions, agreements, postponements, partial discharges and any other documents which Developer may require in connection with obtaining any and all approvals including, but not limited to, rezoning, governmental approvals, consents, permits or variances (collectively, “**Approvals**”) and in connection with entering into by Developer of any agreements with such governmental and public authorities as may be necessary to give due force and effect to and in furtherance of Developer’s applications, and the Owner shall produce all other documents and information which may be required in connection with such applications. All applications for Approvals shall be made by Developer, at its sole cost and expense and any costs associated with such Approvals shall be borne by Developer. Developer agrees that the obligation of the Owner pursuant to this paragraph shall be restricted to execution of documents and production of documents and information and shall not impose upon the Owner any financial obligation whatsoever.

2.9 Mutual Indemnities

(a) Developer shall indemnify and hold harmless the Owner against all actions, suits, claims, demands and expenses made or suffered by any person or persons, in respect of loss, injury, damage or obligation to compensate, arising out of or in connection with or as a result of:

- (i) the negligence or wilful misconduct of Developer; or
- (ii) any breach by Developer of the terms and conditions of this Agreement; or

provided that Developer shall not be liable under this Section to the extent to which such loss, damage or injury is caused or contributed to by the negligence or default of Owner, its servants or agents. For greater certainty, Developer shall not be liable to Owner for the actions of Owner, its agents, employees, invitees or representatives who enter upon the Optioned Property.

(b) Owner shall indemnify and hold harmless Developer against all actions, suits, claims, demands and expenses made or suffered by any person or persons, in respect of loss, injury, damage or obligation to compensate, arising out of or in connection with, or as a result of the negligence or wilful misconduct of Owner, as well as, in respect of any loss, injury or damage arising out of or in connection with, any breach by Owner of the terms and conditions of this Agreement; provided that Owner shall not be liable under this Section to the extent to which such loss, damage or injury is caused or contributed to, by the negligence or default of Developer, its servants or agents. For greater certainty, Owner shall not be liable to Developer for the actions of: (i) Developer, its agents, employees, or representatives who enter upon the Optioned Property, or (ii) any trespasser or unauthorized person who enters upon the Optioned Property.

(c) Notwithstanding the foregoing, the Parties hereto shall only be liable for reasonably anticipated and foreseeable damages.

3. Termination

3.1 Except as otherwise stipulated herein, this Agreement shall terminate at the earlier of:

(a) failure by Developer to pay the requisite payments provided for hereunder, after written demand by the Owner, unless otherwise agreed to by the Parties;

(b) receipt by the Owner of notice from Developer of Developer's desire to terminate the Agreement at any time during the Term;

(c) termination by Developer pursuant to Section 2.6; or

(d) the expiry of the Term of the Option as set out in Section 1.2.

3.2 The representations, warranties, covenants and agreements contained in Section 2 hereof shall survive the termination of this Agreement and remain in full force and effect.

3.3 In the event that this Agreement is terminated on the date stipulated in Section 3.1(b) (the “**Early Termination Date**”), Developer shall be released from having to pay any further Option Payment under this Agreement.

4. **Notices**

4.1 Any notice or other writing required or permitted to be given under this Agreement or for the purposes of this Agreement (referred to in this Section as a “**Notice**”) to the other Party shall be sufficiently given if delivered personally, or if sent by prepaid registered mail or if transmitted by fax or other form of recorded communication tested prior to transmission to such other Party:

In the case of Notice to Developer, to:

Kerwood Wind, Inc.
390 Bay Street, Suite 1720
Toronto, ON, M5H 2Y2, Canada
Attention: Business Management
Telephone: (416) 364-9714

With a copy to:

Kerwood Wind, Inc.
700 Universe Blvd.
Juno Beach, FL 33408
Attention: Business Management
Telephone: (561) 691-7171
Facsimile: (561) 691-7307

In the case of the Owner, to:

Telephone:

or at such other address as the Party to whom such writing is to be given shall have last notified to the Party giving the same in the manner provided in this Section. Any notice personally delivered to the Party to whom it is addressed as provided in this Section shall be deemed to have been given and received on the day it is so delivered at such address, provided that if such day is not a Business Day then the notice shall be deemed to have been given and received on the Business Day next following such day. Any notice mailed to the address and in the manner provided for in this Section shall be deemed to have been given and received on the fifth Business Day next following the date of its mailing in Ontario. Any notice transmitted by fax shall be deemed to have been given and received on the first Business Day after its transmission.

4.2 For the purposes of this Section, the term “**Business Day**” means every day except Saturdays, Sundays and statutory holidays in the Province of Ontario.

5. General Provisions

5.1 This Agreement shall be governed by the laws of the Province of Ontario and the federal laws of Canada applicable therein.

5.2 All matters in dispute between the Parties pursuant to this Agreement shall be resolved by good-faith negotiation. If the Parties are unable to resolve amicably any dispute arising out of or in connection with this Agreement, each shall have all remedies available at law or in equity. **Each Party waives all right to trial by jury and specifically agrees that trial of suits or causes of action arising out of this Agreement shall be to the Court.** Time is of the essence with regard to the terms and conditions of this Agreement.

5.3 Assignment

(a) Subject to Subsection 5.3(c) below, this Agreement may be assignable by Owner to a successor in title.

(b) Subject to Subsection 5.3(c) below, Developer shall be able to assign this Agreement or any portion of its interest in the Optioned Property derived under the Agreement and the Easement to be granted thereunder to one or more persons or entities without the prior consent of Owner to any persons, including to its lender(s) as security for Developer's obligations to such lender(s). Owner shall execute and deliver any consent and acknowledgement reasonably requested by such lender.

(c) No assignment by Owner shall be effective unless and until the assignee executes an assumption agreement ("**Assumption Agreement**") with respect to this Agreement agreeing to be bound by the terms hereof to the same extent as if it had been an original party hereto. For greater certainty, Owner covenants and agrees that in the event Owner transfers or conveys the Property or any portion that comprises the Optioned Property, Owner will obtain from any such transferee or purchaser an Assumption Agreement in favour of Developer.

5.4 This Agreement shall be binding upon and inure to the benefit of the Parties hereto, their respective heirs, executors, administrators and other legal representatives and, to the extent permitted hereunder, their respective successors and permitted assigns.

5.5 If any provision of this Agreement is determined to be invalid or unenforceable in whole or in part, such invalidity or unenforceability shall attach only to such provision (or part thereof) and everything else in this Agreement shall continue in full force and effect.

5.6 No change or modification of this Agreement shall be valid unless it is in writing and signed by each Party hereto.

5.7 This Agreement constitutes the entire agreement between the Parties hereto with respect to the subject matter of this Agreement. The Parties hereto acknowledge that there is no representation, warranty, and agreement or understanding between them, whether express or implied, which has induced any of the Parties hereto to enter into this Agreement except as expressly stated herein.

5.8 No failure on the part of any Party to exercise, and no delay by any Party in exercising, any right under this Agreement shall operate as a waiver of such right, unless the Party gives written notice to the other Party of its intention to waive such right.

5.9 This Agreement shall commence on the Effective Date.

5.10 Time shall be of the essence of this Agreement.

5.11 The section headings herein have been inserted for ease of reference only and shall not affect the construction or the interpretation of this Agreement.

5.12 This Agreement may be executed in several counterparts, each of which so executed shall be deemed to be an original, and such counterparts together shall constitute but one and the same instrument.

5.13 Delivery of this Agreement by facsimile transmission shall constitute valid and effective delivery.

5.14 Any monies to be paid pursuant to this Agreement shall be in Canadian funds.

5.15 This Agreement shall be effective to create an interest in the Optioned Property for the Term.

5.16 Developer shall be entitled, at its cost and expense, to register this Agreement or a notice in respect thereof and any required reference plans in the Land Registry Office for the area in which the Property is situated and Owner agrees to execute, at no cost to Developer, all necessary instruments, plans and documentation for that purpose.

5.17 This Agreement shall be effective to create an interest in the Optioned Property only if the subdivision control provisions of the *Planning Act* (Ontario) are complied with.

[Remainder of page intentionally left blank, signature page follows]

IN WITNESS WHEREOF the Parties hereto have executed this Agreement on the date first above written.

Owner:

Witness:

Name: _____
Address: _____

Date: _____

Name: _____

Witness:

Name: _____
Address: _____

Date: _____

Name: _____

Developer:

Kerwood Wind, Inc.
a New Brunswick company

Per: _____
John DiDonato, Vice President
"I have the authority to bind the corporation"

SCHEDULE A

TO TRANSMISSION EASEMENT OPTION AGREEMENT

DESCRIPTION OF PROPERTY

BEING THE WHOLE OF PIN NO

Stipulated Acreage:

SCHEDULE B

TO TRANSMISSION EASEMENT OPTION AGREEMENT

DEPICTION OF PROPERTY AND EXCLUDED PROPERTY

SCHEDULE C

TO TRANSMISSION EASEMENT OPTION AGREEMENT

CONSENT OF SPOUSE

I, _____, being the spouse of _____,
do hereby give my consent to the grant of the option made in the Transmission Easement Option
Agreement dated _____, 20__ in respect of the following property:

DATED this _____ day of _____, 20__.

WITNESS:

SPOUSE OF OWNER

Name:
Address:

Name:
Address:

SCHEDULE "D"
TO TRANSMISSION OPTION
Compensation

Payment terms available upon request by a person who has an interest in the subject lands.

In consideration for granting a Transmission Option to **Kerwood Wind, Inc.**, a company incorporated pursuant to the laws of the Province of New Brunswick and authorized to conduct business in the Province of Ontario ("**Developer**"), ("**Owner**") shall receive the following compensation:

1. The greater of (a) a lump sum payment of [REDACTED] Dollars (\$ [REDACTED]), or (b) [REDACTED] Dollars (\$ [REDACTED]) per acre for the number of acres depicted as the Optioned Property, less the Excluded Property, on Schedule "B", for the Option Term.
2. The greater of (a) a lump sum payment of [REDACTED] Dollars (\$ [REDACTED]), or (b) [REDACTED] Dollars (\$ [REDACTED]) per acre for the number of acres depicted as the Optioned Property, less the Excluded Property, on Schedule "B", for the Extended Option Term, if applicable.
3. All payments shall include harmonized sales tax ("**HST**"), if applicable.

Payment shall be distributed as follows:

100% to ***{INSERT NAME OF PAYEE}***
Address
Telephone

Signature required for each payee:

Witness:

Name:

Name:
Address:
Date: _____

Witness:

Name:

Name:
Address:
Date: _____

SCHEDULE E

TO TRANSMISSION EASEMENT OPTION AGREEMENT

FORM OF TRANSMISSION EASEMENT

(See Attached)

TRANSMISSION EASEMENT

(in Gross)

THIS TRANSMISSION EASEMENT (IN GROSS) (“Grant”), is executed and made effective this _____ day of _____, 2013, (“Effective Date”) by and between _____ (“Grantor”) and **Kerwood Wind, Inc.**, a company incorporated pursuant to the laws of the Province of New Brunswick and authorized to conduct business in the Province of Ontario (“Grantee”).

PREMISES

A. Grantor is the registered owner of an estate in fee simple composed of certain parcels or tracts of land and premises more particularly described on **Exhibit A** attached hereto and made a part hereof (“Property”); and

B. Grantor desires to grant, convey and transfer to Grantee an exclusive easement and right-of-way in perpetuity for the erection, installation and maintenance of certain facilities for the transmission of electric power over and across a certain portion of the Property.

IN CONSIDERATION of the foregoing and other good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, the parties hereto agree as follows:

1. **Grant.** Grantor does hereby grant, convey and transfer to Grantee, an exclusive easement and right-of-way in perpetuity (the “**Transmission Easement**”) in, on, over, across, along and under that portion of the Property more particularly described on **Exhibit B** (“**Easement Area**”), with such persons, vehicles and equipment necessary for the purposes of erecting, constructing, replacing, relocating, improving, enlarging, removing, maintaining, operating and utilizing, from time to time, a line of transmission structures or poles (which may include lattice or truss towers or structures in the Easement Area, but only with Owner’s consent which shall not be unreasonably withheld, conditioned or delayed) , with such wires, guy wires, and/or cables (whether above ground or buried), for the transmission of electrical energy, and all necessary and proper foundations, footings, cross arms and other appliances, facilities and fixtures for use in connection therewith (collectively, the “**Transmission Facilities**”) in, on, over, across, along and under the Easement Area; together with (i) the right of ingress to and egress from the Transmission Facilities over and along the Property; and (ii) a temporary non-exclusive easement and right-of-way in, over, across, along and under the Property during the initial construction and installation of the Transmission Facilities (the “**Construction Easement**”). Once the final reference plan describing the extent of the Easement Area has been prepared and deposited by Grantee on title to the Property, Grantor confirms that Grantee is irrevocably authorized and directed to insert the Part No(s). and Reference Plan No. into the attached **Exhibit B** without the requirement of any further approval or action by Grantor.

2. **No Interference.** Grantor covenants and agrees that it shall not construct, install, or permit to be constructed or installed, any improvements, fences, structures, buildings, foliage or vegetation, utility lines or other improvements of any type whatsoever upon or near the Easement Area which would inhibit or impair any of Grantee’s rights or benefits as set forth in this Grant. Grantee shall have the right, without compensation to Grantor, to cut, prune and remove or otherwise dispose of any foliage or vegetation on or near the Easement Area that Grantee deems a threat or potential

threat to Grantee's Transmission Facilities or its rights hereunder. Grantor shall not grant or permit any person or person(s) claiming through Grantor, other than Grantee, any right-of-way, encumbrance, easement or other right or interest in, to or affecting the Easement Area, without the prior written consent of Grantee in each instance, which consent Grantee may grant, withhold or deny in its sole, absolute and subjective discretion.

3. **Term.** The term of this Grant shall commence on the Effective Date and continue in perpetuity (the "Term").

4. **Authority.** Grantor hereby represents and warrants to Grantee that it is the sole registered owner of the Property in fee simple, subject to no liens or encumbrances registered in priority to this Transmission Easement, except as may be disclosed by registered title to the Property on or before the Effective Date, and is fully authorized and empowered to grant the rights, privileges and benefits granted to Grantee in this Grant.

5. **Compensation.** Grantee shall pay Grantor the amounts set forth in **Exhibit C** as the consideration for the Grant. The parties acknowledge and agree that the registration copy of this Grant will not contain the payment provisions set forth in **Exhibit C**, and it is understood and agreed that the deletion of such payment provisions does not and will not in any way affect the validity of this Grant.

6. **Crop Compensation.** Crop damage that can be reasonably demonstrated to have been caused by Grantee as a result of performing the activities authorized in this Grant, shall be paid for by Grantee according to the established yield per acre as documented in crop insurance documentation for the Property and using the price provided by the local grain elevator. Each time Grantee exercises its rights under the Transmission Easement, Grantee shall compensate Grantor for all crops lost or damaged by reason of the use.

7. **Indemnification and Insurance.** Grantee shall maintain general liability insurance insuring Grantee and Grantor against loss caused by Grantee's use of the Property. The amount of insurance shall be not less than \$3,000,000.00 of combined single limit liability coverage. Grantee shall indemnify and at its expense defend Grantor against liability for injuries and claims for direct damage to the extent that they are caused by Grantee's exercise of rights granted in this Grant. This indemnity does not cover losses of rent, business opportunities, crop production, and profits that may result from Grantor's loss of use of the Property and for greater certainty, Grantee shall only be liable for reasonably anticipated and foreseeable damages.

8. **Grantee's Property.** Notwithstanding that in constructing, maintaining and operating the Transmission Facilities, Grantee may install equipment and appurtenances in, on, over, along, under or across the Easement Area in such a manner that it or they become affixed to the Easement Area, the title to such equipment and appurtenances shall at all times remain the personal property of Grantee.

9. **Assignment by Grantor.** It will be a condition to any transfer or conveyance of the whole or any part of the Property by Grantor that Grantor shall cause the purchaser of any portion of the Property to execute an agreement in favour of Grantee agreeing to be bound by the terms hereof to

the same extent as if such purchaser had been an original party hereto. The purchaser shall also agree to extract a similar covenant from any future purchaser of any portion of the Property.

10. **Assignment by Grantee; Mortgage Rights.**

(a) **Right to Mortgage & Assign.** Grantee, upon notice to Grantor, but without Grantor's consent or approval shall have the right to mortgage, charge, collaterally assign, or otherwise encumber and grant security interests in all or any part of its interest in this Transmission Easement or the Easement Area, or the Transmission Facilities (collectively, its "**Facilities Assets**"). These various security interests in all or a part of the Facilities Assets are collectively referred to as "**Mortgages**" and the holders of the Mortgages, their designees, successors and assigns are referred to as "**Mortgagees**". Grantee's notice to Grantor shall include the name and address of each Mortgagee and/or Assignee. Grantee shall also have the right without Grantor's consent to sell, convey, lease, sublease, grant or assign all or any portion of its Facilities Assets on either an exclusive or a non-exclusive basis, or to grant sub-easements co-easements, separate easements, leases, licenses or similar rights, however denominated (collectively, "**Assignment**"), to one or more persons or entities (collectively, "**Assignees**"). Assignees and Mortgagees shall use the Facilities Assets only for the uses permitted under this Grant. Assignees and Mortgagees shall have all rights and remedies allowed them under then existing laws except as limited by their individual agreements with Grantee, provided that under no circumstances shall any Mortgagee or Assignee have any greater rights of ownership or use of the Property than the rights granted to Grantee in this Grant.

(b) **Grantor Obligations:** Grantor agrees to consent in writing to and to execute financing documents, including customary three party lender agreements, as may reasonably be required by Mortgagees. As a precondition to exercising any rights or remedies related to any alleged default by Grantee under this Grant, Grantor shall give written notice of the default to each Mortgagee and Assignee at the same time it delivers notice of default to Grantee, specifying in detail the alleged event of default and the required remedy. Each Mortgagee and Assignee shall have the same amount of time to cure the default as to Grantee's entire interest or its partial interest in the Facilities Assets as is given to Grantee and the same right to cure any default as Grantee or to remove any property of Grantee, Mortgagees or Assignees located on the Easement Area. The cure period for each Mortgagee and Assignee shall begin to run at the end of the cure period given to Grantee in this Grant, but in no case shall the cure period for any Mortgagee or Assignee be less than ninety (90) days after receipt of the default notice. Failure by Grantor to give a Mortgagee or Assignee notice of default shall not diminish Grantor's rights against Grantee, but shall preserve all rights of the Mortgagee or Assignee to cure any default and to remove any property of Grantee, the Mortgagee or Assignee located on the Easement Area.

(c) **Mortgagee/Assignee Obligations.** Any Mortgagee or Assignee that does not directly hold an interest in the Facilities Assets, or whose interest is held solely for security purposes, shall have no obligation or liability under this Grant prior to the time the Mortgagee or Assignee directly holds an interest in this Grant, or succeeds to absolute title to Grantee's interest. A Mortgagee or Assignee shall be liable to perform obligations under this Grant only for and during the period it directly holds such interest or absolute title. Any Assignment permitted under this Grant shall release Grantee or other assignor from obligations accruing after the date that liability is assumed by the Assignee.

(d) Right to Cure Defaults/Notice of Defaults/Right to New Transmission Easement.

(1) To prevent Grantor's exercise of any remedies available to it in respect of a default by Grantee under this Grant, the Transmission Easement, or any partial interest in this Grant and the Transmission Easement, Grantee, any Mortgagee or Assignee shall have the right, but not the obligation, at any time to perform any act necessary to cure any default and to prevent the exercise of Grantor's remedies in respect of a default by Grantee under this Grant or any interest in the Facilities Assets.

(2) In the event of an uncured default by the holder of Grantee's entire interest in this Grant, or in the event of a termination of this Grant by agreement, by operation of law or otherwise, each Mortgagee or Assignee of a partial interest in the Facilities Assets shall have the right to have Grantor either recognize the Mortgagee's or Assignee's interest or, in the event of a termination, grant new easements substantially identical to this Grant and the Transmission Easement. Under the new easements, the Mortgagee or Assignee shall be entitled to, and Grantor shall not disturb, Mortgagee's or Assignee's continued use and enjoyment for the remainder of the Term.

(e) Extended Cure Period. If any default by Grantee under this Grant cannot be cured without obtaining possession of all or part of the Facilities Assets, then any such default shall be deemed remedied if a Mortgagee or Assignee: (a) within ninety (90) days after receiving notice from Grantor as set forth in Section 10(b), acquires possession of all or part of the Facilities Assets, or begins appropriate judicial or nonjudicial proceedings to obtain the same; (b) diligently prosecutes any such proceedings to completion; and (c) after gaining possession of all or part of the Facilities Assets cures defects that are reasonably capable of being cured and not otherwise personal to Grantor and performs all other obligations as and when the same are due in accordance with the terms of this Grant. If a Mortgagee or Assignee is prohibited by any court or by operation of any bankruptcy or insolvency laws from commencing or prosecuting the proceedings described above, the ninety (90) day period specified above for commencing proceedings shall be extended for the period of such prohibition.

(f) Certificates. Grantor shall execute estoppel certificates (certifying as to truthful matters, including without limitation that no default then exists under this Grant, if such be the case), consents to assignment, direct lender agreements and non-disturbance agreements as Grantee or any Mortgagee or Assignee may reasonably request from time to time. Grantor and Grantee shall cooperate in amending this Grant from time to time to include any provision that may be reasonably requested by Grantee or any Mortgagee or Assignee to implement the provisions contained in this Grant or to preserve a Mortgagee's security interest in the Facilities Assets.

11. Mortgagee Protection. Any Mortgagee, upon delivery to Grantor of notice of its name and address, for so long as its Mortgage is in existence shall be entitled to the following protections which shall be in addition to those granted elsewhere in this Grant:

(a) Mortgagee's Right to Possession, Right to Acquire and Right to Assign. A Mortgagee shall have the absolute right without Grantor's consent: (a) to assign its Mortgage; (b) to enforce its lien, including, to acquire title to all or any portion of the Facilities Assets by any lawful means; (c) to take possession of and operate all or any portion of the Facilities Assets and to perform all

obligations to be performed by Grantee under this Grant, or to cause a receiver or a receiver and manager to be appointed to do so; and (d) to acquire all or any portion of the Facilities Assets by foreclosure, by an assignment in lieu of foreclosure or by quit claim and thereafter without Grantor's consent to assign or transfer all or any portion of the Facilities Assets to a third party. A Mortgagee which assigns or transfers the Facilities Assets to a third party shall notify Grantor of the name and address of the Assignee or transferee.

(b) Opportunity to Cure.

(1) During any period of possession of the Easement Area by a Mortgagee (or a receiver or receiver and manager requested by a Mortgagee) and/or while any foreclosure, power of sale or other enforcement proceedings instituted by a Mortgagee are pending, the Mortgagee shall pay or cause to be paid the fees and all other monetary charges, if any, payable by Grantee under this Grant which have accrued and are unpaid at the commencement of the period and those which accrue thereafter during the period. Following acquisition of all or a portion of the Facilities Assets by the Mortgagee as a result of either foreclosure, acceptance of an assignment in lieu of foreclosure, quit claim or by a purchaser under a power of sale or judicial sale, this Grant shall continue in full force and effect and the Mortgagee or party acquiring title to the Facilities Assets shall, as promptly as reasonably possible, commence the cure of all defaults under this Grant and thereafter diligently process such cure to completion, whereupon Grantor's rights relating to such default shall be deemed waived; provided, however, that the Mortgagee or party acquiring title to the Facilities Assets shall not be required to cure those defaults which are not reasonably susceptible of being cured or performed by such party ("**non-curable defaults**"). Non-curable defaults shall be deemed waived by Grantor upon completion of foreclosure proceedings or acquisition of Grantee's interest in this Grant under a power of sale or judicial sale.

(2) Any Mortgagee or other party who acquires Grantee's interest in the Facilities Assets pursuant to foreclosure, assignment in lieu of foreclosure, quit claim, under a power of sale or judicial sale or otherwise shall not be liable to perform the obligations imposed on Grantee by this Grant incurred or accruing after the party no longer has ownership or possession of the Facilities Assets.

(c) New Easement.

(1) If this Grant is terminated for any reason, if the Facilities Assets are foreclosed, or if this Grant is rejected, repudiated, resiliated or disaffirmed pursuant to bankruptcy law or other law affecting creditor's rights and, within ninety (90) days after such event, Grantee or any Mortgagee or Assignee shall have arranged to the reasonable satisfaction of Grantor for the payment of all fees or other charges due and payable by Grantee as of the date of such event, then Grantor shall execute and deliver to Grantee or such Mortgagee or Assignee or to a designee of one of these parties, as the case may be, a new easement to the Easement Area which (i) shall be for a term equal to the remainder of the Term before giving effect to such rejection, repudiation, resiliation or termination; (ii) shall contain the same covenants, agreements, terms, provisions and limitations as this Grant (except for any requirements that have been fulfilled by Grantee or any Mortgagee or Assignee prior to rejection, repudiation, resiliation or termination of this Grant); and, (iii) shall include that portion of the Easement Area in which Grantee or such other Mortgagee or Assignee had an interest on the date of rejection, repudiation, resiliation or termination.

(2) After the termination, repudiation, resiliation, rejection or disaffirmation of this Grant and during the period thereafter during which any Mortgagee shall be entitled to enter into new easements for the Easement Area, Grantor will not terminate the rights of any Assignee unless in default under its Assignment.

(3) If more than one Mortgagee makes a written request for a new easement pursuant to this provision, the new easements shall be delivered to the Mortgagee requesting such new easement whose Mortgage is prior in lien, and the written request of any other Mortgagee whose lien is subordinate shall be void and of no further force or effect.

(4) The provisions of this Section shall survive the termination, rejection, repudiation, resiliation or disaffirmation of this Grant and shall continue in full force and effect thereafter to the same extent as if this Section were a separate and independent contract made by Grantor, Grantee and each Mortgagee, and, from the effective date of such termination, rejection, repudiation, resiliation or disaffirmation of this Grant to the date of execution and delivery of such new easements, such Mortgagee may use and enjoy the Easement Area without hindrance by Grantor or any person claiming by, through or under Grantor; provided that all of the conditions for the new easements as set forth above are complied with.

(d) Mortgagee's Consent to Amendment, Termination or Surrender. Notwithstanding any provision of this Grant to the contrary, the parties agree that so long as there exists an unpaid Mortgagee, this Grant shall not be modified or amended, and Grantor shall not accept a surrender, abandonment, cancellation or release of all or any part of the Easement Area from Grantee, prior to expiration of the Term without the prior written consent of the Mortgagee. This provision is for the express benefit of and shall be enforceable by each Mortgagee as if it were a party named in this Grant.

(e) No Merger. There shall be no merger of this Grant or of the Transmission Easement with the fee estate in the Easement Area by reason of the fact that this Grant or any interest in the Transmission Easement may be held, directly or indirectly, by or for the account of any person or persons who shall own any interest in the fee estate. No merger shall occur unless and until all persons at the time having an interest in the fee estate in the Easement Area and all persons (including each Mortgagee) having an interest in this Grant or in the estate of Grantor and Grantee shall sign and record a written instrument effecting such merger.

(f) Liens. On the commencement of the Term, title to the Easement Area shall be free and clear of all monetary liens other than those expressly approved by Grantee. With respect to any such liens approved by Grantee, Grantor shall nevertheless obtain either non-disturbance agreements or postponements from the holders of such liens in favour of Grantee and this Transmission Easement, such agreements or postponements, as the case may be, to be reasonably satisfactory to Grantee. Thereafter, any assignment of this Grant, mortgage, deed of trust or other monetary lien placed on the Easement Area by Grantor, or permitted by Grantor to be placed or to remain on the Easement Area, shall be subject to and subordinate to this Grant, to any Assignment or Mortgage then in existence on the Facilities Assets as permitted by this Grant, to Grantee's right to encumber the Facilities Assets, and to any and all documents executed or to be executed by Grantor in connection with Grantee's development of all or any part of the Easement Area. Grantor agrees to

cause any monetary liens placed on the Easement Area by Grantor in the future to incorporate the conditions of this Section.

(g) **Further Amendments.** At Grantee's request, Grantor shall amend this Grant to include any provision which may reasonably be requested by a proposed Mortgagee; provided, however, that such amendment shall not impair any of Grantor's rights under this Grant or increase the burdens or obligations of Grantor under this Grant. Upon the request of any Mortgagee, Grantor shall execute any additional instruments reasonably required to evidence such Mortgagee's rights under this Grant.

12. **Legal Fees.** In the event of any controversy, claim or dispute arising out of or relating to the Transmission Easement or the enforcement or breach hereof, the prevailing party shall be entitled to recover from the losing party the prevailing party's reasonable costs, expenses and legal fees.

13. **Binding Effect; Governing Law.** This Grant shall be binding upon and shall inure to the benefit of both Grantor and Grantee, and their respective heirs, successors and assigns, and shall be deemed a covenant running with the land for all purposes. The provisions hereof shall be governed by and construed in accordance with the laws of the Province of Ontario. Grantee agrees that this Transmission Easement and the rights, privileges and easements granted pursuant thereto shall be declared to be: (i) for the purposes of electricity transmission lines or electricity distribution lines within the meaning of Part VI of the *Ontario Energy Board Act*, 1998, and (ii) an easement in favour of a generator, transmitter or distributor for the purpose of generation, transmission or distribution within the meaning of Section 42.1 of the *Electricity Act*, 1998.

14. **Termination.** Grantee shall have the right to terminate this agreement at any time upon 30 days written notice to Grantor. Upon full or partial termination of the Transmission Easement, Grantee shall remove all physical material pertaining to the Transmission Facilities and restore the area formerly occupied by the Transmission Easement to substantially the same physical condition that existed immediately before the installation of the Transmission Facilities. In the event of termination, Grantee has no right to recover any amounts previously paid to Grantor as consideration for this Grant.

15. **Notices.**

All notices to be given hereunder shall be in writing and all such notices and any payments to be made hereunder may be made or served personally or by registered letter addressed to Grantor at:

To Grantor:

Telephone:

To Grantee:

Kerwood Wind, Inc.
390 Bay Street, Suite 1720
Toronto, ON, M5H 2Y2, Canada

Attention: Business Management
Telephone: (416) 364-9714

With a copy to:

Kerwood Wind, Inc.
700 Universe Blvd.
Juno Beach, FL 33408
Attention: Business Management
Telephone: (561) 691-7171
Facsimile: (561) 691-7307

or such other address, as Grantor or Grantee respectively may from time to time advise and any such notices or payments shall be deemed to be given and received by the addressee upon personal service or, if served by registered letter, fourteen (14) days after mailing thereof, postage prepaid. In the event of a postal interruption, all notices to be given and all payments to be made hereunder may be made or served personally or delivered to the intended recipient at the address of the recipient set out above. Grantee shall also be permitted to make any payment to Grantor electronically at Grantee's discretion and subject to Grantor's consent.

16. **Severability.** If any term or provision of this Transmission Easement, or the application thereof to any person or circumstances shall, to any extent, be determined by judicial order or decision to be invalid or unenforceable, the remainder of this Transmission Easement or the application of such term or provision to persons or circumstances other than those as to which it is held to be invalid, shall be enforced to the fullest extent permitted by law.

17. **Counterparts.** This Transmission Easement may be executed in two or more counterparts, each of which will be deemed an original, but all of which together shall constitute one and the same instrument.

18. **Family Law Act.** Grantor represents and warrants to Grantee that if Grantor is an individual, Grantor is either not married, or if married, his or her spouse either comprises a Grantor hereunder or such spouse has consented to the grant of the Transmission Easement to Grantee pursuant to the terms herein by executing a copy of this Transmission Easement, and if Grantor is a corporation, the Easement Area has never been occupied by any of the directors, officers or shareholders of Grantor or the spouses of such directors, officers or shareholders and there are no shares in existence entitling the holders of such shares to occupation of the buildings. Accordingly, the Easement Area does not comprise a family residence within the meaning of the *Family Law Act*.

19. **Grantee's Statutory Rights.** This Transmission Easement shall not affect or prejudice Grantee's statutory rights to acquire the Easement Area under any laws, including, without limitation, Grantee's statutory rights under the *Ontario Energy Board Act*, 1998, which rights may be exercised at Grantee's discretion, in the event, Grantor being unable or unwilling for any reason to perform this Transmission Easement, or, give to Grantee a clear and unencumbered title to the easement and right-of-way herein granted.

20. **Planning Act.** This Transmission Easement and the provisions hereof which create, or, are intended to create an interest in the Easement Area shall be effective to create such an interest only if the subdivision control provisions of the *Planning Act*, R.S.O. 1990 c. P. 13, as amended are complied with.

21. **Registration.** Grantee shall be entitled, at its cost and expense, to register this Transmission Easement or a notice in respect thereof, and any required reference plans in the applicable Land Registry Office, and, Grantor agrees to execute, at no cost to Grantee, all necessary instruments, plans and documentation for that purpose.

22. **Setback Waiver.** To the extent that (a) Grantor now or in the future owns or leases any land adjacent to the Easement Area, or (b) Grantee leases or holds an easement/license or a lease over land adjacent to Easement Area, and has installed or constructed or desires to install or construct any Transmission Facilities on said land at and/or near the common boundary between the Easement Area and said land, Grantor hereby waives any and all setbacks and setback requirements, whether imposed by law or by any person or entity, including, without limitation, any setback requirements described in the zoning by-laws of the County and/or Province or in any governmental entitlement or permit heretofore or hereafter issued to Lessee. If so requested by Grantee, Grantor shall promptly, without demanding additional consideration therefore, execute, and if appropriate cause to be acknowledged, any setback waiver, setback elimination or other document or instrument required by any governmental authority or that Grantee deems necessary or convenient to the obtaining of any entitlement or permit.

23. **Removal of Debris.** Within 120 days of the Commercial Operations Date, Grantee shall remove all debris from Property. For purposes of this Agreement "Commercial Operations Date" shall mean the date that the Transmission Facilities at the Project are commercially operational and delivering energy, as determined by the Grantee.

24. **Drainage Tile.** If any drainage tiles on or under the Easement area have been damaged as a direct result of Grantee's activities in connection with the construction of the Transmission Facilities, Grantee shall pay to Grantor the cost to repair or replace the drainage tiles.

25. **Fencing.** Grantee shall not fence the Easement Area or any part thereof, with the exception of transformer stations, without the written consent of the Grantor.

[Remainder of page intentionally left blank, signature page follows]

EXECUTED effective the day and year first hereinabove written.

Grantor:

Witness:

Name:

Address:

Date:

Name:

Witness:

Name:

Address:

Date:

SPOUSE OF GRANTOR

Grantee:

Kerwood Wind, Inc.
a New Brunswick company

Per: _____
John DiDonato, Vice President
"I have the authority to bind the corporation"

EXHIBIT A

TO TRANSMISSION EASEMENT

Legal Description of Property

{INSERT LEGAL DESCRIPTION OF PROPERTY}.

BEING THE WHOLE OF PIN NO

Stipulated Acreage:

EXHIBIT B

TO TRANSMISSION EASEMENT

Legal Description of Easement Area

(Insert description from reference plan)

PT ___ LT ___, CON _____, DESIGNATED AS PART(S) _____ ON PLAN - _____,
BEING PART OF PIN NO. _____

EXHIBIT C
TO TRANSMISSION EASEMENT

Compensation

Payment terms available upon request by a person who has an interest in the subject lands.

In consideration for granting a Transmission Easement to **Kerwood Wind, Inc.** a company incorporated pursuant to the laws of the Province of New Brunswick and authorized to conduct business in the Province of Ontario (“**Grantee**”), • (“**Grantor**”) shall receive the following compensation:

1. The greater of (a) a lump sum payment of [REDACTED] Dollars (\$ [REDACTED]), or (b) Fifteen Thousand Dollars (\$15,000.00) per acre for the number of acres depicted as the Easement Area on Exhibit “B”.
2. A one-time payment of [REDACTED] Dollars (\$ [REDACTED]) per pole constructed on the Property or a one-time payment of [REDACTED] Dollars (\$ [REDACTED]) per pole constructed on the property that is completely located more than 5' from a surveyed property boundary.
3. A one-time payment of [REDACTED] Dollars (\$ [REDACTED]) per guy wire anchor constructed upon the Property.
4. All payments shall include harmonized sales tax (“HST”), if applicable.

Payment shall be made to Grantor as follows: Fifty percent (50%) of the total amount due shall be paid within sixty (60) days of the Effective Date. Fifty percent (50%) shall be paid within thirty (30) days after completion of a final survey of the entire transmission line. Said survey shall determine the exact lineal footage/acreage upon which payment shall be made from Grantee to Grantor.

Payment shall be distributed as follows:

100% to ***{INSERT NAME OF PAYEE}***
Address
Telephone

Signature required for each payee:

Witness:

Name:

Name:

Address:

Date: _____

Witness:

Name:

Name:

Address:

Date: _____

STATUTORY DECLARATION

RE: PLANNING ACT

FLORIDA

-) IN THE MATTER OF the easement (the “**Easement**”)
-) in favour of Kerwood Wind, Inc. (the “**Grantee**”), with
-) respect to the lands more particularly described in
-) Exhibit “A” hereto (the “**Easement Lands**”)

COUNTY OF PALM BEACH

I, John DiDonato, of the Town of Juno Beach, in the State of Florida, DO SOLEMNLY DECLARE, in my capacity as Vice President of the Grantee, and without personal liability that:

1. I am the Vice President of Kerwood Wind, Inc. the Grantee and, as such, am aware of the matters herein deposed to save where same are stated to be upon information and belief, and where so stated, I verily believe same to be true.
2. The Easement Lands being acquired by the Grantee pursuant to the Easement are being acquired for the purpose of an electricity distribution line, electricity transmission line, hydrocarbon distribution line or hydrocarbon transmission line within the meaning of Part VI of the *Ontario Energy Board Act*, 1998, in respect of which this Statutory Declaration has been made pursuant to sub-clause 50(3)(d) of the *Planning Act* (Ontario), as amended.

AND I MAKE THIS SOLEMN DECLARATION conscientiously believing it to be true and knowing that it is of the same force and effect as if made under oath.

STATE OF FLORIDA)
) ss:
 COUNTY OF PALM BEACH)

John DiDonato, Vice President

The foregoing instrument was acknowledged before me this _____ day of _____, 2013 by John DiDonato as Vice President of Kerwood Wind, Inc.

In witness whereof I hereunto set my hand and official seal.

(Seal)

 Notary Public
 My Commission Expires: _____

**Appendix 'C' - Construction, Maintenance and
Access Easement Agreement**

CONSTRUCTION, MAINTENANCE and ACCESS EASEMENT AGREEMENT

THIS CONSTRUCTION MAINTENANCE AND ACCESS EASEMENT Agreement (IN GROSS) (“**Agreement**”), is executed and made effective this ____ day of _____, 2013, (“**Effective Date**”) by and between ● (“**Grantor**”) and **Kerwood Wind, Inc.**, whose mailing address is 390 Bay Street, Suite 1720, Toronto, ON, M5H 2Y2, Canada (“**Grantee**”).

PREMISES

A. Grantor is the registered owner of an estate in fee simple composed of certain parcels or tracts of land and premises more particularly described on **Exhibit A** attached hereto and made a part hereof (“**Property**”); and

B. Grantee intends to construct (i) Transmission Facilities, which shall mean all improvements whose purpose is to deliver electrical power to an electrical power grid or other system, including without limitation transformers and overhead and underground electrical transmission and distribution lines and interconnection facilities and (ii) Telecommunication Facilities, which shall mean all improvements whose purpose is to provide telecommunication services, including telephone, closed-circuit television, microwave, internet, computer data and other telecommunication services related to the operation of the Transmission Facilities, the said Transmission Facilities and Telecommunication Facilities to be constructed over certain lands adjacent to the Property (“**Transmission and Telecommunication Easement**”); and

C. Grantor agrees to grant to Grantee certain easements over a portion of the Property as depicted on the attached Exhibit B on the terms and conditions contained in this Agreement;

IN CONSIDERATION of the foregoing and other good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, the parties hereto agree as follows:

1. Grants.

(a) Construction Easement and Guy Easement. Grantor hereby grants to Grantee, for the benefit of Grantee and its successors and assigns, a temporary, exclusive easement (“**Construction Easement**”) on, over, along and under that portion of the Property as depicted on the attached **Exhibit B** (“**Construction Easement Area**”) for the purposes of: (1) the construction and installation of guy stub(s), anchors and necessary guy wires (collectively “**Guy Facilities**”) to support the Transmission Facilities and Telecommunication Facilities to be constructed on the Transmission and Telecommunication Easement adjacent to the Construction Easement Area; (2) the storage of materials and equipment during construction of the Guy Facilities and during construction of the Transmission Facilities and Telecommunication Facilities; and (3) the construction and installation of the Transmission Facilities and Telecommunication Facilities to be constructed on the Transmission and Telecommunication Easement adjacent to the Construction Easement Area. The Construction Easement shall terminate upon completion of construction of the Guy Facilities and the Transmission Facilities and Telecommunication Facilities constructed on the Transmission and Telecommunication

Easement adjacent to the Construction Easement Area, provided that for greater certainty, the term of the Construction Easement shall not, in any event exceed 2 years from the Effective Date. Grantor hereby grants to Grantee, for the benefit of Grantee and its successors and assigns, an exclusive easement in perpetuity (“**Guy Easement**”) on, over, along and under that portion of the Property located within the one hundred and sixty-five foot (165’) area as measured from the point of intersection of the center line of the Transmission and Telecommunication Facilities as depicted on the attached **Exhibit B (“Guy Easement Area”)** for the purposes of maintaining, using, operating, repairing, replacing, relocating and removing the Guy Facilities. Grantee agrees to prepare an “as built” survey or reference plan of the actual Guy Easement Area, and the parties agree to execute and register on title to the Property an amendment to this Agreement which references the “as built” survey or reference plan identifying the actual Guy Easement Area. Once the final reference plan describing the extent of the Construction Easement Area and Guy Easement Area has been prepared and deposited by Grantee on title to the Property, Grantor confirms that Grantee is irrevocably authorized and directed to insert the Part No(s). and Reference Plan No. into the attached Exhibit B without the requirement of any further approval or action by Grantor.

(b) Access Easement. Grantor grants to Grantee a permanent non-exclusive easement (the “**Access Easement**”) for vehicular and pedestrian ingress and egress over, across and along the Property to and from the Construction Easement Area and Guy Easement Area by means of any existing roads or lanes thereon, or otherwise by such route or routes as Grantee or Grantor may construct from time to time. If Grantee needs to construct a road on the Property, it shall have the right to remove trees and clear the portion of the Property reasonably necessary to construct the road and shall coordinate the location of the road with Grantor. Grantee agrees to maintain and repair all roadway improvements constructed by Grantee on the Property for the joint use thereof by Grantor and Grantee for ingress and egress over, across, and along the Property; provided, however, Grantor shall reimburse Grantee for any costs and expenses incurred by Grantee to repair any damage or perform any special maintenance of the roadway caused by any person using the roadway with Grantor's permission. The Telecommunications Easement, Construction Easement, Guy Easement and Access Easement shall hereinafter be referred to collectively herein as “**Easements**”.

2. Ownership. Grantor represents and warrants that it is the registered owner, in fee simple, of the Property with a good and marketable title thereto, and has the right, without the joinder of any other party, to enter into this Agreement and grant Grantee the Easements. Grantor agrees to warrant and defend its ownership of fee simple title to, or an easement over, the Property and Grantee's interest in this Agreement against any other party claiming to have any ownership interest in the Property.

3. Interference. Grantor shall not construct, erect or place or permit to be constructed, erected or placed any buildings, improvements, structures, plants, or other obstructions on or in the vicinity of the Construction Easement Area and Guy Easement Area which would interfere with the operation and maintenance of the Guy Facilities. In addition, Grantor shall not excavate within a twenty-five (25’) radius of the Guy Easement Area. Grantee is granted the right to remove existing trees and other vegetation located on the Construction Easement Area and Guy Easement Area, the mature height of which exceeds fourteen feet (14’) and to remove existing trees on adjacent portions of the Property in order to be able to have

access to the Construction Easement Area and Guy Easement Area for construction and maintenance purposes. There shall be no replacement of trees except that which has been specifically agreed upon in writing between Grantor and Grantee prior to execution of this Agreement. Grantee shall also have the right and privilege to trim, cut down, or control the growth of trees or any other vegetation on the Property, as in the sole judgment of Grantee may interfere with maintenance, operation, use of, or which in falling might touch any Guy Facilities.

4. Payment. Grantee shall pay Grantor the amounts set forth in **Exhibit C** as the consideration for the Easements. The parties acknowledge and agree that the registration copy of this Agreement will not contain the payment provisions set forth in **Exhibit C**, and it is understood and agreed that the deletion of such payment provisions does not and will not in any way affect the validity of this Agreement.

5. Assignment by Grantee; Mortgage Rights.

(a) Right to Mortgage & Assign. Grantee, upon notice to Grantor, but without Grantor's consent or approval shall have the right to mortgage, assign, charge, collaterally assign, or otherwise encumber and grant security interests in all or any part of its interest in this Agreement, the Easements, or the Guy Facilities (collectively, its "**Facilities Assets**"). These various security interests in all or a part of the Facilities Assets are collectively referred to as "**Mortgages**" and the holders of the Mortgages, their designees, successors and assigns are referred to as "**Mortgagees.**" Grantee's notice to Grantor shall include the name and address of each Mortgagee and/or Assignee (as hereinafter defined). Grantee shall also have the right without Grantor's consent to sell, convey, lease, sublease, grant or assign all or any portion of its Facilities Assets on either an exclusive or a non-exclusive basis, or to grant sub-easements co-easements, separate easements, leases, licenses or similar rights, however denominated (collectively, "**Assignment**"), to one or more persons or entities (collectively, "**Assignees**"). Assignees and Mortgagees shall use the Facilities Assets only for the uses permitted under this Agreement. Assignees and Mortgagees shall have all rights and remedies allowed them under then existing laws except as limited by their individual agreements with Grantee, provided that under no circumstances shall any Mortgagee or Assignee have any greater rights of ownership or use of the Property or portions thereof than the rights granted to Grantee in this Agreement.

(b) Grantor Obligations: Grantor agrees to consent in writing to and to execute financing documents, including customary three party lender agreements, as may reasonably be required by Mortgagees. As a precondition to exercising any rights or remedies related to any alleged default by Grantee under this Agreement, Grantor shall give written notice of the default to each Mortgagee and Assignee at the same time it delivers notice of default to Grantee, specifying in detail the alleged event of default and the required remedy. Subject to the following sentence, each Mortgagee and Assignee shall have the same amount of time to cure the default as to Grantee's entire interest or its partial interest in the Facilities Assets as is given to Grantee and the same right to cure any default as Grantee or to remove any property of Grantee, Mortgagees or Assignees located on the Construction Easement Area of Guy Easement Area. The cure period for each Mortgagee and Assignee shall begin to run at the end of the cure period given to Grantee in this Agreement, but in no case shall the cure period for any Mortgagee or Assignee be less than ninety (90) days after receipt of the default notice. Failure by Grantor to give a Mortgagee or Assignee notice of default shall not diminish Grantor's rights against

Grantee, but shall preserve all rights of the Mortgagee or Assignee to cure any default and to remove any property of Grantee, the Mortgagee or Assignee located on the Construction Easement Area or Guy Easement Area.

(c) Mortgagee/Assignee Obligations. Any Mortgagee or Assignee that does not directly hold an interest in the Facilities Assets, or whose interest is held solely for security purposes, shall have no obligation or liability under this Agreement prior to the time the Mortgagee or Assignee directly holds an interest in this Agreement, or succeeds to absolute title to Grantee's interest. A Mortgagee or Assignee shall be liable to perform obligations under this Agreement only for and during the period it directly holds such interest or absolute title. Any Assignment permitted under this Agreement shall release Grantee or other assignor from obligations accruing after the date that liability is assumed by the Assignee.

(d) Right to Cure Defaults/Notice of Defaults/Right to New Agreement.

(1) To prevent Grantor's exercise of any remedies available to it in respect of a default by Grantee under this Agreement, or any partial interest in this Agreement, Grantee, any Mortgagee or Assignee shall have the right, but not the obligation, at any time to perform any act necessary to cure any default and to prevent the exercise of Grantor's remedies in respect of a default by Grantee under this Agreement or any interest in the Facilities Assets.

(2) In the event of an uncured default by the holder of Grantee's entire interest in this Agreement, or in the event of a termination of this Agreement by operation of law or otherwise, each Mortgagee or Assignee of a partial interest in the Facilities Assets shall have the right to have Grantor either recognize the Mortgagee's or Assignee's interest or, in the event of a termination, grant new easements substantially identical to this Agreement. Under the new easements, the Mortgagee or Assignee shall be entitled to, and Grantor shall not disturb, Mortgagee's or Assignee's continued use and enjoyment for the remainder of the term.

(e) Extended Cure Period. If any default by Grantee under this Agreement cannot be cured without obtaining possession of all or part of the Facilities Assets, then any such default shall be deemed remedied if a Mortgagee or Assignee: (a) within ninety (90) days after receiving notice from Grantor as set forth in Section 5(b), acquires possession of all or part of the Facilities Assets, or begins appropriate judicial or nonjudicial proceedings to obtain the same; (b) diligently prosecutes any such proceedings to completion; and (c) after gaining possession of all or part of the Facilities Assets cures defects that are reasonably capable of being cured and not otherwise personal to Grantor and performs all other obligations as and when the same are due in accordance with the terms of this Agreement. If a Mortgagee or Assignee is prohibited by any court or by operation of any bankruptcy or insolvency laws from commencing or prosecuting the proceedings described above, the ninety (90) day period specified above for commencing proceedings shall be extended for the period of such prohibition.

(f) Certificates. Grantor shall execute estoppel certificates (certifying as to truthful matters, including without limitation that no default then exists under this Agreement, if such be the case), consents to assignment, direct lender agreements and non-disturbance agreements as Grantee or any Mortgagee or Assignee may reasonably request from time to time. Grantor and Grantee shall cooperate in amending this Agreement from time to time to include any provision

that may be reasonably requested by Grantee or any Mortgagee or Assignee to implement the provisions contained in this Agreement or to preserve a Mortgagee's security interest in the Facilities Assets.

6. Mortgagee Protection. Any Mortgagee, upon delivery to Grantor of notice of its name and address, for so long as its Mortgage is in existence shall be entitled to the following protections which shall be in addition to those granted elsewhere in this Agreement:

(a) Mortgagee's Right to Possession, Right to Acquire and Right to Assign. A Mortgagee shall have the absolute right without Grantor's consent: (a) to assign its Mortgage; (b) to enforce its lien, including, to acquire title to all or any portion of the Facilities Assets by any lawful means; (c) to take possession of and operate all or any portion of the Facilities Assets and to perform all obligations to be performed by Grantee under this Agreement, or to cause a receiver or a receiver and manager to be appointed to do so; and (d) to acquire all or any portion of the Facilities Assets by foreclosure, by an assignment in lieu of foreclosure or by quit claim and thereafter without Grantor's consent to assign or transfer all or any portion of the Facilities Assets to a third party. A Mortgagee which assigns or transfers the Facilities Assets to a third party shall notify Grantor of the name and address of the Assignee or transferee.

(b) Opportunity to Cure.

(1) During any period of possession of the Construction Easement Area, the Guy Easement Area or the Property by a Mortgagee (or a receiver or receiver and manager requested by a Mortgagee) and/or while any foreclosure, power of sale or other enforcement proceedings instituted by a Mortgagee are pending, the Mortgagee shall pay or cause to be paid the fees and all other monetary charges, if any, payable by Grantee under this Agreement which have accrued and are unpaid at the commencement of the period and those which accrue thereafter during the period. Following acquisition of all or a portion of the Facilities Assets by the Mortgagee as a result of either foreclosure, acceptance of an assignment in lieu of foreclosure, quit claim or by a purchaser under a power of sale or judicial sale, this Agreement shall continue in full force and effect and the Mortgagee or party acquiring title to the Facilities Assets shall, as promptly as reasonably possible, commence the cure of all defaults under this Agreement and thereafter diligently process such cure to completion, whereupon Grantor's rights relating to such default shall be deemed waived; provided, however, that the Mortgagee or party acquiring title to the Facilities Assets shall not be required to cure those defaults which are not reasonably susceptible of being cured or performed by such party ("**non-curable defaults**"). Non-curable defaults shall be deemed waived by Grantor upon completion of foreclosure proceedings or acquisition of Grantee's interest in this Agreement under a power of sale or judicial sale.

(2) Any Mortgagee or other party who acquires Grantee's interest in the Facilities Assets pursuant to foreclosure, assignment in lieu of foreclosure, quit claim, under a power of sale or judicial sale or otherwise shall not be liable to perform the obligations imposed on Grantee by this Agreement incurred or accruing after the party no longer has ownership or possession of the Facilities Assets.

(c) New Easement.

(1) If this Agreement is terminated for any reason, if the Facilities Assets are foreclosed, or if this Agreement is rejected, repudiated, resiliated or disaffirmed pursuant to bankruptcy law or other law affecting creditor's rights and, within ninety (90) days after such event, Grantee or any Mortgagee or Assignee shall have arranged to the reasonable satisfaction of Grantor for the payment of all fees or other charges due and payable by Grantee as of the date of such event, then Grantor shall execute and deliver to Grantee or such Mortgagee or Assignee or to a designee of one of these parties, as the case may be, new easements to the Construction Easement Area, the Guy Easement Area and the Property which (i) shall be for a term equal to the remainder of the term before giving effect to such rejection, repudiation, resiliation or termination; (ii) shall contain the same covenants, agreements, terms, provisions and limitations as this Agreement (except for any requirements that have been fulfilled by Grantee or any Mortgagee or Assignee prior to rejection, repudiation, resiliation or termination of this Agreement); and, (iii) shall include that portion of the Construction Easement Area, the Guy Easement Area and the Property in which Grantee or such other Mortgagee or Assignee had an interest on the date of rejection, repudiation, resiliation or termination.

(2) After the termination, repudiation, resiliation, rejection or disaffirmation of this Agreement and during the period thereafter during which any Mortgagee shall be entitled to enter into new easements for the Construction Easement Area, the Guy Easement Area and the Property, Grantor will not terminate the rights of any Assignee unless in default under its Assignment.

(3) If more than one Mortgagee makes a written request for new easements pursuant to this provision, the new easements shall be delivered to the Mortgagee requesting such new easements whose Mortgage is prior in lien, and the written request of any other Mortgagee whose lien is subordinate shall be void and of no further force or effect.

(4) The provisions of this Section shall survive the termination, rejection, repudiation, resiliation or disaffirmation of this Agreement and shall continue in full force and effect thereafter to the same extent as if this Section were a separate and independent contract made by Grantor, Grantee and each Mortgagee, and, from the effective date of such termination, rejection, repudiation, resiliation or disaffirmation of this Agreement to the date of execution and delivery of such new easements, such Mortgagee may use and enjoy the Construction Easement Area, the Guy Easement Area and the Property without hindrance by Grantor or any person claiming by, through or under Grantor; provided that all of the conditions for the new easements as set forth above are complied with.

(d) Mortgagee's Consent to Amendment, Termination or Surrender. Notwithstanding any provision of this Agreement to the contrary, the parties agree that so long as there exists an unpaid Mortgagee, this Agreement shall not be modified or amended, and Grantor shall not accept a surrender, abandonment, cancellation or release of all or any part of the Construction Easement Area, the Guy Easement Area and the Property from Grantee, prior to expiration of the term without the prior written consent of the Mortgagee. This provision is for the express benefit of and shall be enforceable by each Mortgagee as if it were a party named in this Agreement.

(e) No Merger. There shall be no merger of this Agreement or of the Agreement with the fee estate in the Property by reason of the fact that this Agreement or any interest in the Agreement may be held, directly or indirectly, by or for the account of any person or persons who shall own any interest in the fee estate. No merger shall occur unless and until all persons at the time having an interest in the fee estate in the Property and all persons (including each Mortgagee) having an interest in this Agreement or in the estate of Grantor and Grantee shall sign and record a written instrument effecting such merger.

(f) Liens. On the Effective Date, title to the Property shall be free and clear of all monetary liens other than those expressly approved by Grantee. With respect to any such liens approved by Grantee, Grantor shall nevertheless obtain either non-disturbance agreements or postponements from the holders of such liens in favour of Grantee and this Agreement, such agreements or postponements, as the case may be, to be reasonably satisfactory to Grantee. Thereafter, any mortgage, deed of trust or other monetary lien registered against Grantor's interest in the Property, shall be subject to and subordinate to this Agreement, to any Assignment or Mortgage then in existence on the Facilities Assets as permitted by this Agreement, and to Grantee's right to encumber the Facilities Assets. Grantor agrees to cause any monetary liens registered against Grantor's interest in the Property in the future to incorporate the conditions of this Section.

(g) Further Amendments. At Grantee's request, Grantor shall amend this Agreement to include any provision which may reasonably be requested by a proposed Mortgagee; provided, however, that such amendment shall not impair any of Grantor's rights under this Agreement or increase the burdens or obligations of Grantor under this Agreement. Upon the request of any Mortgagee, Grantor shall execute any additional instruments reasonably required to evidence such Mortgagee's rights under this Agreement.

6. Legal Fees. In the event of any controversy, claim or dispute arising out of or relating to the Agreement or the enforcement or breach hereof, the prevailing party shall be entitled to recover from the losing party the prevailing party's reasonable costs, expenses and solicitors' fees (including but not limited to those incurred at trial, or on appeal).

7. Binding Effect; Governing Law. This Agreement shall be binding upon and shall inure to the benefit of both Grantor and Grantee, and their respective heirs, successors and assigns, and shall be deemed a covenant running with the Property for all purposes. The provisions hereof shall be governed by and construed in accordance with the laws of the Province of Ontario. Grantee agrees that this Agreement and the rights, privileges and easements granted pursuant thereto shall be declared to be an easement in favour of a generator, transmitter or distributor for the purpose of generation, transmission or distribution within the meaning of Section 42.1 of the *Electricity Act*, 1998.

8. Family Law Act. Grantor represents and warrants to Grantee that if Grantor is an individual, Grantor is either not married, or if married, his or her spouse either comprises a Grantor hereunder or such spouse has consented to the grant of Easements to Grantee pursuant to the terms herein by executing a copy of this Agreement, and if Grantor is a corporation, the portions of the Property subject to the Easements have never been occupied by any of the directors, officers or shareholders of Grantor or the spouses of such directors, officers or

shareholders and there are no shares in existence entitling the holders of such shares to occupation of the buildings. Accordingly, the portions of the Property subject to the Easements do not comprise a family residence within the meaning of the *Family Law Act*.

9. Grantee's Right to Assign. Grantee shall have the right, but without the need for Grantor's consent or approval, to assign or convey all or any portion of the Agreement to an assignee or assignees, on an exclusive or nonexclusive basis.

10. Grantee's Statutory Rights. This Agreement shall not affect or prejudice Grantee's statutory rights to acquire the portions of the Property subject to the Easements under any laws, including, without limitation, Grantee's statutory rights under the *Ontario Energy Board Act*, 1998, which rights may be exercised at Grantee's discretion, in the event, Grantor being unable or unwilling for any reason to perform this Agreement, or, give to Grantee a clear and unencumbered title to the easement and right-of-way herein granted.

11. Planning Act. This Agreement and the provisions hereof which create, or, are intended to create an interest in the Property shall be effective to create such an interest only if the subdivision control provisions of The Planning Act, R.S.O. 1990 c. P. 13, as amended are complied with. Grantee hereby declares that the interest in the Property being acquired by Grantee pursuant to this Agreement is for the purposes of a renewable energy generation facility or a renewable energy project in accordance with Section 50 (3)(d.1) or 50 (5)(c.1) of the *Planning Act* (Ontario).

12. Registration. Grantee shall be entitled, at its cost and expense, to register this Agreement or a notice in respect thereof, and any required reference plans or survey in the applicable Land Registry Office, and, Grantor agrees to execute, at no cost to Grantee, all necessary instruments, plans and documentation for that purpose.

13. Setback Waiver. To the extent that (a) Grantor now or in the future owns or leases any other land adjacent to the Property, or (b) Grantee leases or holds an easement/license or a lease over other land adjacent to Property, and has installed or constructed or desires to install or construct any Transmission Facilities on said land at and/or near the common boundary between the portions of the Property subject to the Easements and said land, Grantor hereby waives any and all setbacks and setback requirements, whether imposed by law or by any person or entity, including, without limitation, any setback requirements described in the zoning by-laws of the County and/or the Province of Ontario or in any governmental entitlement or permit heretofore or hereafter issued to Grantee. If so requested by Grantee, Grantor shall promptly, without demanding additional consideration therefore, execute, and if appropriate cause to be acknowledged, any setback waiver, setback elimination or other document or instrument required by any governmental authority or that Grantee deems necessary or convenient to the obtaining of any entitlement or permit.

14. Termination. Grantee shall have the right to terminate this Agreement at any time upon 30 days written notice to Grantor. Upon full or partial termination of the Agreement, Grantee shall remove all physical material pertaining to the Guy Facilities and restore the portions of the Property previously subject to the Easements to substantially the same physical condition that existed immediately before the installation of the Guy Facilities. In the event of

termination, Grantee has no right to recover any amounts previously paid to Grantor as consideration for this Agreement.

15. Notices. All notices to be given hereunder shall be in writing and all such notices and any payments to be made hereunder may be made or served personally or by registered letter addressed to Grantor at:

To Grantor:

Attention: _____
Telephone: _____
Facsimile: _____

To Grantee:

Kerwood Wind, Inc.
390 Bay Street, Suite 1720
Toronto, ON M5H 2Y2, Canada
Attention: Business Management
Telephone: (416) 364-9714

With a copy to:

Kerwood Wind, Inc.
700 Universe Blvd.
Juno Beach, FL 33408
Attention: Business Management
Telephone: (561) 691-7171
Facsimile: (561) 691-7307

or such other address, as Grantor or Grantee respectively may from time to time advise and any such notices or payments shall be deemed to be given and received by the addressee upon personal service or, if served by registered letter, fourteen (14) days after mailing thereof, postage prepaid. In the event of a postal interruption, all notices to be given and all payments to be made hereunder may be made or served personally or delivered to the intended recipient at the address of the recipient set out above. Grantee shall also be permitted to make any payment to Grantor electronically at Grantee's discretion and subject to Grantor's consent.

16. Counterparts. This Agreement may be executed in two or more counterparts, each of which will be deemed an original, but all of which together shall constitute one and the same instrument.

17. Ownership of Guy Facilities. Notwithstanding any rule of law or equity, all property and equipment placed or operated on the Guy Easement Area by or on behalf of

Grantee shall, at all times, remain the personal property of Grantee even though the same maybe attached to the Guy Easement Area.

EXECUTED effective the day and year first hereinabove written.

Grantor:

Witness:

Per: _____
Name: _____

Per: _____
Name: _____

Grantee:

KERWOOD WIND, INC.

Per: _____
John DiDonato Vice President

EXHIBIT A

Legal Description of Property

EXHIBIT B

**Legal Description of Construction Easement Area
and Guy Easement Area**

(Insert description from reference plan)

PT ___LT ___, CON ___, DESIGNATED AS PART(S) _____ ON PLAN 18R - _____,
BEING PART OF PIN NO.

COMPENSATION

In consideration for granting the Easements to Kerwood Wind, Inc. (“**Grantee**”),
_____ (“**Grantor**”), within thirty (30) days following a final ALTA
Survey depicting the Final Easements and Guy Facilities, shall receive the following payment:

_____ Dollars (\$ _____)

Payment shall be distributed as follows:

(Street Address, City, Province & Postal Code)

Phone: _____

Signature required for each payee:

Date

Date

STATUTORY DECLARATION

RE: PLANNING ACT

STATE OF FLORIDA)
COUNTY OF PALM BEACH)

DECLARATION REQUIRED UNDER SECTION 50 OF THE PLANNING ACT, R.S.O. 1990, as amended

I, John DiDonato, Vice President, of the Town of Juno Beach, State of Florida,

DO SOLEMNLY DECLARE THAT

- 1. I am the Vice President of Kerwood Wind, Inc., ("Grantee") and as such have knowledge of the matters herein deposed to.
2. The use of or right in the land described in the Construction, Maintenance and Access Easement Agreement to which is this declaration is attached is being acquired by Grantee, for a period of 21 or more years but not more than 50 years for the purpose of a renewable energy generation facility or renewable energy project in accordance with Section 50(3)(d.1) or 50(5)(c.1) of the Planning Act (Ontario) and I hereby make this declaration that it is being acquired for such purpose.

AND I make this solemn declaration conscientiously believing it to be true and knowing that it is of the same force and effect as if made under oath, and by virtue of The Canada Evidence Act.

John DiDonato, Vice President

STATE OF FLORIDA)
COUNTY OF PALM BEACH)ss:

The foregoing instrument was acknowledged before me this ___ day of ___, 2013 by John DiDonato, as Vice President of Kerwood Wind, Inc.

In witness whereof, I hereunto set my hand and official seal.

(Seal)

Notary Public
My Commission Expires: _____

Appendix 'D' - Purchase and Sale Agreement

PURCHASE AND SALE AGREEMENT

THIS PURCHASE AND SALE Agreement (the "**Agreement**") is made as of the ____ day of ("**Effective Date**")

B E T W E E N:

Kerwood Wind, Inc.

(hereinafter referred to as "**Purchaser**")

-and-

(together herein referred to as the "**Seller**")

WHEREAS the Seller are the owners, subject to any registered encumbrances, of those certain lands in the Township of Adelaide-Metcalf, in the County of Middlesex, in the Province of Ontario, described on the attached **SCHEDULE "A"** (the "**Property**")

AND WHEREAS the Seller have agreed to grant Purchaser the right to purchase a portion of the Property described in the attached **SCHEDULE "B"** (the "**Lands**"), subject to and in accordance with the terms of this Agreement;

NOW THEREFORE THIS AGREEMENT WITNESSES that in consideration of the mutual covenants and agreements herein contained, the parties covenant and agree as follows:

PURCHASE PRICE

1. The Seller hereby agrees to sell to the Purchaser the Lands based on the terms and conditions set forth in this Agreement.

(a) The Purchase Price shall be [REDACTED] plus all applicable taxes including Harmonized Sales Tax and Land Transfer Tax. The Purchase Price shall be payable as follows:

(1) Deposit. [REDACTED] (\$ [REDACTED]) in the form of Purchaser's check in Canadian funds, shall be deposited by Purchaser within five (5) days of the Effective Date, with _____ ("**Escrow Agent**") to be held in escrow, pending Purchase in accordance with Section 1(c) hereof ("**Deposit**"). Escrow Agent agrees to hold the Deposit in an interest bearing account, with interest earned thereon refunded to Purchaser, in accordance with the terms of this Agreement.

(2) Cash Balance. [REDACTED] subject to adjustments, shall be payable at or prior to the Purchase (as defined in Section 1(c) hereof) by Purchaser in the form of Purchaser's certified check in Canadian funds to Escrow Agent ("**Cash Balance**").

(b) The completion of the purchase and sale of the Lands shall occur on the earlier of January 31, 2011 or the first business day that is thirty (30) days after the expiration of the appeal period on the consent and rezoning set forth in Sections 2 and 3 of this Agreement (the “Purchase” or “Purchase Date”).

(c) The Seller agrees that they shall convey to Purchaser good and marketable title to the Lands free and clear of all liens and encumbrances, except registered easements, any conservation authority regulations applicable to the Lands, municipal drains and/or assessments affecting the Lands and zoning and municipal regulations for the current use of the Lands. Purchaser shall have until Ten (10) days before the Purchase Date to examine the title to the Lands. If within the said time for examining title, any valid objection to title is made in writing to the Seller or to the Seller’ solicitor, which the Seller are unable to cure, Purchaser may at its option and at its own expense take all reasonable steps to do so on behalf of and as agent for the Seller and the Seller hereby irrevocably appoint Purchaser their attorney for that purpose. It is understood and agreed that in procuring the release and discharge of any mortgage or other lien or charge against the Lands that secure a debt or other monetary obligation, Purchaser may pay to the secured party on behalf of the Seller so much of the Purchase Price as may be reasonably required to secure the release and discharge and such payment shall be deemed to have been made to the Seller on account of the Purchase Price. If Purchaser decides that it will not waive a valid title objection, then this Agreement shall be at an end and neither party shall be liable to the other for any costs or damages save however that in such event the Seller shall forthwith refund to Purchaser the Deposit. Save as to any valid objection so made within such time and except for any objection going to the root of title, Purchaser shall be conclusively deemed to have accepted the Seller’ title to the Lands.

(ii) Seller shall not be bound to produce or furnish any title deeds, documents of title, evidence of title or other documents except those are in their possession or control.

(iii) The purchase and sale of the Lands shall be closed on the Purchase Date, whereupon the Purchase Price, subject to any adjustments or credits as provided in this Agreement, shall be paid by way of certified cheque or wire transfer upon delivery of documents of title conveying the Lands to Purchaser.

(iv) Purchaser shall be credited towards the Purchase Price with the amount, if any, that Purchaser may be required to withhold and pay to the Minister of National Revenue in respect of tax payable by the Seller under the non-residency provisions of the *Income Tax Act* (Canada) by reason of the sale of the Lands. Purchaser shall not claim such credit if the Seller deliver on closing the prescribed certificate or a statutory declaration that the Seller are not then non-residents of Canada.

PLANNING ACT

2. The parties agree that this Agreement is subject to the condition that it shall be effective only if the provisions of section 50 of the *Planning Act* (Ontario) are complied with, including a

consent to sever the Lands from the Property ("**Consent Application**"). Purchaser shall be responsible for all costs associated with the Consent Application, including application fees, legal fees and survey costs. The Purchaser agrees to prepare and file a Consent Application with the Township of Adelaide-Metcalf within ten (10) days of the execution of this Agreement by the parties. .

REZONING

3. The parties agree that this Agreement is subject to the condition that it shall be effective only if rezoning of the Lands shall be granted (if required) to enable the use of the Lands for the purposes required by Purchaser ("**Rezoning Application**"). In such event, then Purchaser agrees to use reasonable efforts to prepare and file a Rezoning Application with the Township of Adelaide-Metcalf within ten business (10) days of the execution of this Agreement by the parties and Seller agrees that they shall support a rezoning application and shall execute all such consents and other documents as may be requested by Purchaser. It is understood and agreed that (i) Purchaser shall be responsible for all costs relating to a Rezoning Application, including application fees, legal fees and survey costs; and (ii) Purchaser shall not file any Rezoning Applications unless it is not in default under this Agreement. Seller agrees to execute an authorization authorizing Purchaser to act as its agent for the purpose of filing the Consent Application and Rezoning Application referred to in Sections 2 and 3 herein.

SURVEYS

4. Seller grants Purchaser, its employees, agents, contractors and consultants, the right to enter the Lands at any time and from time to time after the date hereof, to conduct surveys, tests and soil examinations, provided that Purchaser shall restore or compensate the Seller for any damage caused to the Lands or fences or crops thereon. Purchaser shall complete a Reference Plan of Survey for the Lands and property to be retained by Seller so that the Seller continues to have a registerable legal description for the retained lands. Purchaser shall forthwith after the execution of this Agreement retain an Ontario Land Surveyor to complete a sketch for the purposes of the Consent Application and Rezoning Application.

CONDITION OF LANDS

5. Seller warrants that to the best of their knowledge and belief, the Lands do not contain any materials defined as hazardous waste, hazardous recyclable material, or prescribed non-hazardous waste pursuant to the *Canadian Environmental Protection Act, 1999* (Canada) or as hazardous waste under the General Regulation - Waste Management made under the *Environmental Protection Act* (Ontario). Notwithstanding the preceding sentence, the Lands shall be purchased on an "as is" basis by Purchaser subject to the right of Purchaser to complete an Environmental Assessment ("**EA**") on the Lands, at the sole cost and expense of Purchaser. Seller shall have the right to approve the Purchaser's consultant conducting the EA, but such approval shall not be unreasonably withheld or delayed. Purchaser shall notify Seller when such EA shall occur on the Lands and a representative of Seller shall have the right to be present during the EA. Purchaser shall initiate the Environmental Assessment within ten (10) days of the execution of this Agreement.

CONFIDENTIALITY

6. For the purposes of this Agreement, “**Confidential Information**” means the terms and conditions of this Agreement, including but not limited to the Purchase Price, which are not a matter of public record. Seller agrees that Confidential Information shall not, without Purchaser’s prior written consent, be disclosed, divulged or communicated to any other person other than the Seller’s professional advisors and any lenders, bona fide third party purchasers or potential purchasers who shall have a “need to know” the Confidential Information, it being understood that such parties shall be informed at the time of disclosure of the confidential nature of such Confidential Information and shall be directed to treat the Confidential Information as such.

NOTICES

7. Any notice, demand or request which any party shall give to any other party shall be in writing and may be delivered or mailed by registered mail and shall be deemed:

- (a) in the case of delivery to have been given when the same is personally delivered to the addressees at the addresses set forth below; and
- (b) in the case of dispatch by registered mail, except during a postal disruption, to have been duly given at 5:00 in the afternoon (local time to the sender) on the third (3rd) business day after the day the same was mailed, if addressed to such party at its addresses set forth below.

To the Seller, as follows:

With a copy to:

and to Purchaser as follows:
c/o NextEra Energy Canada, ULC
390 Bay Street, Suite 1720
Toronto, ON M5H 2Y2 Canada
Attention: Business Management
Telephone: (416) 364-9714

With a copy to:

NextEra Energy Canada, ULC
700 Universe Blvd.
Juno Beach, FL 33408
Attention: Business Management
Telephone: (561) 691-7171
Facsimile: (561) 691-7307

Any party may change its address for notices by notice given as aforesaid.

SEVERABILITY

8. If any covenant, obligation or agreement in this Agreement or the application thereof to any person or circumstance shall, to any extent, be invalid or unenforceable, the remainder of this Agreement or the application of such covenant, obligation or agreement to persons or circumstances other than those as to which it is held invalid or unenforceable, shall not be affected thereby and each covenant, obligation and agreement in this Agreement shall be separately valid and enforceable to the fullest extent possible.

HEADINGS

9. The section headings in this Agreement have been inserted for convenience of reference only shall not be referred to in the interpretation of this Agreement.

APPLICABLE LAW

10. This Agreement shall be construed in accordance with the laws of the Province of Ontario and no action or other proceeding shall be brought to construe or enforce this Agreement except in those courts having jurisdiction in the Province of Ontario.

REGISTRATION

11. It is understood and agreed that Purchaser shall register the deed to the Lands on the Purchase Date.

ASSIGNMENT

12. Seller or Purchaser shall have the right at any time and from time to time to assign or convey to other persons or corporations, all or any of the powers, rights and interests obtained by or granted to it hereunder.

FURTHER ASSURANCES

13. Seller and Purchaser agree that they will each do and perform all such acts and things and execute all such deeds, documents and writings and give all such assurances as may be necessary to give effect to this Agreement.

ENUREMENT

14. This Agreement shall run with the Lands and shall enure to the benefit of and be binding upon the parties hereto and their respective heirs, executors, administrators, successors and assigns, as the case may be.

RULES OF CONSTRUCTION

15. This Agreement has been negotiated by the attorneys for the respective Parties, and, in the event of a dispute as to the meaning or intent of any of its terms, no party shall be entitled to the benefit of the rule of construction that ambiguous terms should be construed against the drafter.

MISCELLANEOUS

16. Sellers have an existing Wind Farm Option and Lease Agreement dated December 17, 2007 with Canadian Green Power Investment & Management Services, Inc. (the "**Wind Option**"). The Wind Option has been assigned to Purchaser, and Purchaser will continue to

make any and all payments due Seller under the Wind Option until the Purchase Date. After the Purchase Date, payments under the Wind Option will no longer be due from Purchaser to Seller as to the Lands purchased from Seller by Purchaser. Notwithstanding anything herein to the contrary, if, following the date when all turbines and other improvements for the wind farm contemplated by the Wind Option have been constructed and installed and the entire wind farm has achieved the status of a commercially operable wind powered electrical generation and transmission facility, no improvements or turbines are located on any portion of the property subject to the Wind Option, then Purchaser shall release and terminate the Wind Option.

ATTORNEYS FEES

17. If Seller signs the Agreement, then Purchaser shall reimburse Seller \$ [REDACTED], which represents the amount that Seller has expended to date in attorney's fees for this transaction. In addition, Purchaser shall pay to Seller for the reasonable attorneys' fees expended in closing the transaction not to exceed [REDACTED] contingent and due upon the completion of the purchase and sale of the Lands on the Purchase Date.

RIGHT TO REPURCHASE

18. If Purchaser desires to resell all or part of the Lands to a third party that is not an affiliate or subsidiary of Purchaser within five (5) years of the Purchase Date, than Seller shall have a right of first refusal to re-purchase such Lands from Purchaser.

HST

19. If this transaction is subject to Harmonized Sales Tax ("HST") then such tax shall be in addition to the Purchase Price. Seller will not collect HST if Purchaser provides to Seller a warranty that Purchaser is registered under the Excise Tax Act for HST purposes, together with a copy of the Purchaser's ETA registration, a warranty that Purchaser shall self-assess and remit the HST payable and file the prescribed form and shall indemnify the Seller in respect of any HST payable. The foregoing warranties shall not merge but shall survive the completion of this transaction.

IN WITNESS WHEREOF the parties hereto have executed this Agreement.

SIGNED, SEALED & DELIVERED)
in the presence of)

_____))
Witness)
_____))
_____))

Witness

KERWOOD WIND, INC.

By: _____
Name: _____
Title: _____

"I have authority to bind the Corporation"

SCHEDULE "A"

Legal Description of Property

SCHEDULE "B"

Legal Description of Lands

Appendix 'E' - Option to Purchase (Interconnection)

THIS OPTION TO PURCHASE AGREEMENT (this "**Option Agreement**") is made as of _____, 2013 by and between • (hereinafter referred to as "**Grantor**" or "**Seller**") and **Kerwood Wind, Inc.**, a company incorporated pursuant to the laws of the Province of New Brunswick and authorized to conduct business in the Province of Ontario ("**Grantee**" or "**Buyer**"). Grantee and Grantor are sometimes referred to herein individually as a "**Party**" or collectively as the "**Parties.**"

RECITALS

- A. Grantor is the registered and beneficial owner of an estate in fee simple of and in that certain parcel or tract of land situate, lying and being in the Province of Ontario as more particularly described in the attached **Exhibit "A"** ("**Property**");
- B. Grantee desires to obtain an option to purchase a portion of the Property, together with the right to obtain certain license and/or easement rights over a portion of the Property for ingress and egress in order to construct and operate Interconnection Facilities, as defined herein, on a portion of the Property to serve a wind energy project, such project to be located on the Property and/or within the vicinity of the Property ("**Wind Energy Project**"). For the purposes of this Option Agreement, "**Interconnection Facilities**" shall include any and all buildings, switchyard facilities, circuit breakers (all fenced in), control and protective devices, and metering facilities or any other devices, buildings, electrical transmission cables (above ground or below ground), required to connect the Wind Energy Project from the Interconnection Facilities, to and with the applicable transmission system, up to and on a delivery point.
- C. Grantor desires to grant and convey to Grantee an option for the exclusive right to purchase a portion of the Property comprising approximately ____ acres ("**Interconnection Facilities Parcel**"), together with the exclusive right to acquire a permanent easement over, across and along a portion of the Property for purposes of ingress and egress to and from the public highway known as the road allowance between _____, and which easement will benefit the Interconnection Facilities Parcel ("**Access Easement**"). The Access Easement will be created in the transfer/deed for the Interconnection Facilities Parcel and it shall permit Grantee, *inter alia*, to construct replace and use an access road for vehicular and pedestrian purposes and as more particularly described and depicted in the preliminary sketch, plan, or survey attached hereto as **Exhibit "A-1"** (the "**Draft Plan**"). For greater certainty, the Buyer shall have the right, at any time during the Term, subject to Seller's approval acting reasonably, to amend the Draft Plan and description of the Property and the Access Easement Lands by providing to the Lessor a reference plan (the "Reference Plan") which identifies the amended description of the Property and the Access Easement Lands that are to be conveyed to Buyer. The Seller hereby irrevocably authorizes and directs the Buyer to deposit such plan on title to the Property. Upon the delivery by the Buyer to the Seller of the Reference Plan, the description of the Property, as set out in Schedule "A-1", shall automatically be replaced by the amended description of the Property and Access Easement as set out in the Reference Plan without the requirement of any further action on behalf of either the Buyer or Seller, provided that the Seller agrees that it shall, at the request of the Buyer, execute an amendment to the agreement which sets out the amended description of the Property and Access Easement Lands in accordance with the Reference Plan.

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, Grantee and Grantor hereby agree as follows:

1. **Grant of Option.** Grantor hereby grants to Grantee and its successors and assigns, subject to the terms and conditions set forth in this Option Agreement, an exclusive, irrevocable option to purchase and acquire from Grantor, the Interconnection Facilities Parcel and the Access Easement, together with such additional rights as are more fully described herein (the "**Option**"), for the payments and on the terms and conditions hereinafter set forth.
2. **Grant of License.** Grantor hereby grants and conveys to Grantee an irrevocable license over, and across the Property to come upon the Property and to install, operate, and maintain such equipment as may be necessary to conduct studies of wind energy, wind profiles, transmission interconnection, soils, and other meteorological and geotechnical data (including measurement devices, controls, and instrumentation) (the "**License**"). Grantor must be present for the performance of any geotechnical testing. This License shall be effective throughout the entire Option Term (as defined below). The License also includes the right to construct, use, repair, replace, relocate, transport and remove said equipment and appropriate vehicles over existing roads and pathways on the Property and the right to carry out, at Grantee's expense and without liability to Grantor, such tests, including but not limited to environmental audits, surveys and inspections of the Property as Grantee may deem necessary. Grantee agrees to repair any damage caused by any such tests at Grantee's expense in a good and workmanlike manner. The License may be exercised by Grantee and by Grantee's employees, agents, contractors, permittees and invitees. Grantee will consult with Grantor to schedule and coordinate Grantee's activities on the Property. The location of any equipment to be installed on the Property shall be agreed to by the parties acting reasonably and without undue delay taking into consideration the purpose of the studies to be conducted and the need for certain studies to be conducted in specific locations. Once determined, the location of the equipment shall not be changed save by the agreement of the parties who shall act reasonably and without undue delay. Grantee will give 24 hours notice, written or oral, to Grantor prior to entering the Property.
3. **Term.** This Option will become effective when all Parties have signed this Option Agreement (the "**Effective Date**") and will end three (3) years after the Effective Date unless earlier terminated in accordance with the provisions herein (the "**Option Term**").
4. **Option Payment.** On the Effective Date, unless earlier terminated in accordance with the provisions herein, Grantee shall pay Grantor [REDACTED] Dollars (CAN \$ [REDACTED]) and [REDACTED] Dollars (\$ [REDACTED]) per acre comprising the Property, plus all harmonized sales tax applicable thereon ("**HST**"); and on the first anniversary thereof, unless earlier terminated in accordance with the provisions herein, Grantee shall pay Grantor a further sum of [REDACTED] Dollars (CAN \$ [REDACTED]) and Ten Dollars (\$ [REDACTED]) per acre comprising the Property, plus all applicable HST.
5. **Access Easement Payment.** As consideration for the grant of the Access Easement and the rights to improve said Access Easement on the Access Easement Lands, Grantee shall pay to Grantor an annual payment of [REDACTED] Dollars (CAD\$ [REDACTED]) per acre for the area of the roadway located on the Access Easement Lands, plus all HST (the "**Annual Access Easement Compensation**") applicable thereon. The acreage of the roadway shall be calculated by Grantee or

its consultant, each acting reasonably, whose determination shall be final and binding on Grantor and Grantee. Commencing on the first anniversary of the Commercial Operation Date and on each anniversary thereafter during the term of the Access Easement, the Annual Access Easement Compensation shall increase by two percent (2%) annually. The first Annual Access Easement Compensation payment will be mailed to Grantor within sixty (60) days of the Commercial Operation Date and on each anniversary date thereafter. As used herein, the “**Commercial Operations Date**” shall mean the date when all the improvements required for the Wind Energy Project being constructed by Grantee, shall have been fully and completely constructed and installed and the entire Wind Energy Project has achieved the status of a commercially operable wind powered electrical generation and transmission facility.

6. **Grantor’s Authority.** Grantor represents and warrants to Grantee that Grantor is the sole legal and beneficial owner in fee simple of the Property with a good and marketable title thereto and has the unrestricted right, power, privilege and authority to execute and deliver this Option; to grant Grantee the rights granted in this Option; and, to complete the transactions contemplated by the Purchase Agreement (as defined below) if Grantee exercises this Option.

7. **Status of Grantor.**

7.1 Grantor represents and warrants to Grantee that if Grantor is an individual, Grantor is either not married, or if married, his or her spouse either comprises a Grantor hereunder or such spouse has consented to the grant of the Option to Grantee pursuant to the terms herein by executing a copy of this Transmission Easement, and if Grantor is a corporation, the Easement Area has never been occupied by any of the directors, officers or shareholders of Grantor or the spouses of such directors, officers or shareholders and there are no shares in existence entitling the holders of such shares to occupation of the buildings. Accordingly, the Easement Area does not comprise a family residence within the meaning of the *Family Law Act*.

7.2 Grantor acknowledges that Grantor has had the full opportunity to obtain independent legal representation or advice in connection with this Option Agreement and the Purchase Agreement and has arranged for the completion and execution of the Certificate included as **Exhibit “B”**.

8. **Exercise of Option.** At any time during the Option Term, Grantee may exercise this Option by delivering to Grantor a notice of exercise of the Option (“**Exercise Notice**”). The Exercise Notice shall reference this Option and shall state that Grantee is exercising its right to purchase the Interconnection Facilities Parcel in accordance with the terms and conditions contained in the agreement of purchase and sale attached hereto as **Exhibit “C”** (the “**Purchase Agreement**”) and accompanying such Exercise Notice shall be a copy of the deposited Draft Plan, to the extent the same has been deposited on title. Upon the delivery of the Exercise Notice to Grantor, a binding agreement of purchase and sale pursuant to which Grantor shall sell and Grantee shall purchase the Interconnection Facilities Parcel and acquire the Access Easement, shall be created without the necessity of any further action on behalf of Grantor or Grantee, subject however to the terms and conditions contained in the Purchase Agreement.

9. **Effect of Option Agreement; Interest in Real Property.** The Parties intend that this Option Agreement create a valid and present interest in the Interconnection Facilities Parcel in favour of Grantee. Therefore, the Option shall be deemed an interest in and encumbrance upon the Property which shall run with the land and shall be binding upon the Property and Grantor and its successors and assigns and shall inure to the benefit of each of the Parties hereto and their respective successors and assigns. Grantor covenants and agrees that during the Option Term, Grantor shall not, except as otherwise provided herein, convey the Property and the Interconnection Facilities Parcel or any interest therein or permit any lien or encumbrance to attach to the Property and the Interconnection Facilities Parcel.

10. **Grantee's Right to Assign.** Grantee may, without the consent of Grantor, sell, assign or transfer all or any portion of its interest in the Option and/or this Option Agreement ("**Assignment**"). Upon an Assignment, Grantee shall have no further liability to Grantor. Any such transfer shall be subject to the terms and requirements of this Option Agreement.

11. **Early Termination.** Grantee shall have the right, at any time during the Option Term, and on written notice to Grantor, to terminate this Option and surrender to Grantor all of Grantee's right, title and interest in and to the Property by executing and delivering to Grantor, or registering against title to the Property, a quitclaim deed, surrender or release respecting the Property. This Option shall terminate on delivery of any such notice of termination, and Grantee shall have no further obligation for any Option Payments hereunder.

12. **Notice**

12.1 **Writing.** All notices given or permitted to be given hereunder shall be in writing; provided, however, that no writing other than the cheque or other instrument representing the Option payment itself need accompany such payment.

12.2 **Delivery.** Where this Option Agreement or the Purchase Agreement requires notice to be delivered by one Party to the other, such notice shall be given in writing and delivered either personally or by prepaid registered post, or by printed electronic transmission by the Party wishing to give such notice, or by the solicitor acting for such Party, to the other Party or to the solicitor acting for the other Party at the addresses noted below. Such notice shall be deemed to have been given, in the case of personal delivery, on the date of delivery, where given by post, on the third business day following the posting thereof and, where given on a business day by printed electronic transmission prior to 5:00 p.m., on the date of transmission and after 5:00 p.m. on the first business day following such transmission. It is understood that in the event of a threatened or actual postal disruption in the postal service in the postal area through which such notice must be sent, notice must be given, on a business day, personally as aforesaid or by means of printed electronic or printed telephonic communication in which case notice shall be deemed to have been given on the date of transmission thereof:

Notice to Grantor:

Notice to Grantee:

Kerwood Wind, Inc.
390 Bay Street, Suite 1720
Toronto, ON M5H 2Y2, Canada
Attention: Business Management
Telephone: (416) 364-9714

With a copy to:

Kerwood Wind, Inc.
700 Universe Blvd. LAW/JB
Juno Beach, FL 33408
U.S.A.
Attention: General Counsel
Telephone: (561) 691-2359
Facsimile: (561) 691-7103

13. **Further Assurances.** Each Party agrees to cooperate with the other Party and to execute any additional documents reasonably necessary or proper to carry out the provisions and spirit of this Option Agreement. Without limiting the generality of the foregoing, Grantor hereby agrees and covenants that subsequent to the execution and delivery of this Option Agreement and, without any additional consideration, it shall execute and deliver or cause to be executed and delivered any further legal instruments, including, without limitation, any required consents (including, without limitation, those required under Section 27 below), acknowledgements or lender agreements in favour of Grantee's lenders, and perform any acts which are or may become necessary to effectuate the purposes of this Option Agreement and to complete the transactions contemplated hereunder and if applicable, under the Purchase Agreement. Grantee agrees to reimburse Grantor its actual, reasonable costs incurred in the consideration of, or response to, a request by Grantee to execute any additional documents (as described above) reasonably necessary or proper to carry out the provisions and spirit of this Option Agreement. Grantee will obtain all governmental permits, licenses, certificates, approvals, variances and other entitlements for use ("**Permits**") necessary for the construction, installation and operation of the Interconnection Facilities. Grantor hereby gives its consent to any action taken by Grantee in applying for any and all Permits Grantee finds necessary or desirable for the construction, installation or operation of the Interconnection Facilities. Grantor agrees to assist and reasonably cooperate with Grantee in obtaining the Permits, and Grantor hereby appoints Grantee its agent for applying for such Permits. Grantee will carry out the activities set forth in this Section 13 in accordance with all applicable laws, rules, codes and ordinances.

14. **Construction of Agreement**

14.1 **Governing Law.** The laws of the Province of Ontario and the federal laws of Canada applicable therein shall govern the interpretation and enforcement of this Option Agreement and the rights and covenants granted hereunder. The venue for any application to interpret or enforce the provisions of this Option Agreement shall be Toronto, Ontario, Canada.

14.2 Interpretation. The Parties agree that the terms and provisions of this Option Agreement embody their mutual intent and that such terms and conditions are not to be construed more liberally in favour, nor more strictly against, either Party.

14.3 Partial Invalidity. If any term or provision of this Option Agreement, or the application thereof to any person or circumstance shall, to any extent, be invalid or unenforceable, a provision shall be added to this Option Agreement as similar in terms to such invalid or unenforceable provision as may be possible, and be legal, valid and enforceable, and the remainder of this Option Agreement or the application of such term or provision to persons or circumstances other than those to which it is held invalid or unenforceable, shall not be affected thereby.

15. Solicitors' Fees. In the event of a dispute arising out of or relating to this Option Agreement and resulting in litigation or arbitration between or affecting the Parties hereto, the prevailing Party shall be entitled to recover reasonable solicitors' fees and costs.

16. Registration of Option Agreement. Grantee shall be entitled, at its cost and expense, to register this Option Agreement or a notice thereof and any required reference plans, in the applicable Land Registry Office having jurisdiction over the Property, and Grantor agrees to execute, at no cost to Grantee, all necessary instruments, plans and documentation for that purpose.

17. Counterparts. This Option Agreement may be executed and recorded in counterparts, each of which shall be deemed an original and all of which, when taken together, shall constitute one and the same instrument.

18. Time of the Essence. Time shall be of the essence in this Option Agreement.

19. Currency. Any monies to be paid pursuant to this Option Agreement shall be in Canadian funds.

20. Planning Act. This Option Agreement shall be effective to create an interest in the Property only if the subdivision control provisions of the *Planning Act* (Ontario) are complied with.

21. Additional Requirements of Grantor. Within thirty (30) days following the execution of this Option Agreement by both Parties, Grantor will deliver to Grantee, to the extent in Grantor's possession or control, the following:

21.1 all current surveys, easement plans, servicing plans, grading plans and other plans (collectively the "**Plans**") relating to the Property and the buildings, if any buildings are located thereon (the "**Buildings**");

21.2 copies of all contracts, leases or other obligations, (including, without limitation, maintenance, servicing, management and equipment contracts) deed restrictions, subdivision agreements and site plan agreements, development agreements and any other agreements with any governmental authorities, if any, relating to the Property and the Buildings other than those registered on title to the Property;

21.3 copies of all tests, inspections, studies and reports thereof relating to the Property and the Buildings, if any, including, without limitation, environmental, geotechnical, soil quality and bore hole reports as well as any and all studies;

21.4 any current governmental notices relating to the Property and the Buildings, including, without limitation, tax bills and assessments, work order or deficiency notices, stop work orders and any notices relating to the zoning of the Property for the last 3 years, and any expropriation notices, any notices or decisions pertaining to any development charges, special assessments, levies or fees from the Municipality of North Middlesex/East Williams relating to the Property and the Buildings; and

21.5 any and all historical information, not covered above, relating to the Property and Buildings, including, but not limited to, all annual maintenance requirements of the Property and Buildings, all capital upgrades, renovations and investments made in the Property and Buildings over the last 3 years.

22. **Additional Representations of Grantor.** Grantor represents and warrants to Grantee that as of the Effective Date:

22.1 to the best of the Grantor's knowledge, information and belief, there are no outstanding work orders, directions or notices relating to any defects in the state of the Property or the Buildings or any notice or direction requiring or recommending any alteration, repair, improvement or other work to be done with respect to the Property or the Buildings or relating to any non-compliance with any building permit, building restriction, by-law, regulation or municipal agreement or any threatened or pending expropriation, save as disclosed in writing by Grantor to Grantee prior to the Effective Date;

22.2 that (1) Grantor, previous to the time of execution of this Option Agreement, has not leased the Property, or any part thereof, under any lease or other instrument that is currently effective except for any lease that is registered against title to the Property as of the date of this Option Agreement; (2) this Option Agreement and the Purchase Agreement created hereby with respect to the Interconnection Facilities Parcel is free from encumbrances done, made, or suffered by Grantor, or any person claiming under Grantor, except for such encumbrances that are registered against title to the Interconnection Facilities Parcel as of the date of this Option Agreement; and (3) all persons having any ownership interest in the Property and Buildings (including spouses) have consented to the execution of this Option Agreement;

22.3 to the best of the Grantor's knowledge, information and belief, there are no physical conditions of the Property which would prevent or significantly restrict Grantee's development of the Interconnection Facilities Parcel for the purposes of connecting the Wind Energy Project to the proposed Interconnection Facilities or which could, with the passage of time, or the giving of notice, constitute a violation of any governmental law, ordinance, order, rule or regulation;

22.4 to the best of the knowledge of Grantor, the Property and Buildings comply with the provisions of the *Environmental Protection Act* and each has never been used as a landfill or waste disposal site or for underground fuel storage;

22.5 Grantor has the power and authority to enter into this Option Agreement and to carry out the transaction contemplated herein;

22.6 Grantor is not aware of any litigation, expropriation, change in zoning or other judicial or administrative proceeding existing, pending or threatened relating to the Property or the Buildings;

22.7 to the best of the Grantor's knowledge, information and belief, Grantor has not withheld any material document or information in its possession or control relating to the Property or the Buildings;

22.8 the Interconnection Facilities Parcel contains an area of approximately twenty-five (25) acres; and

22.9 no person has an option or right of first refusal to purchase the Property or any part thereof or the Buildings.

23. **Insurance.** At all times during which Grantee or any of its consultants are conducting any activities on the Property, Grantee or such consultants shall, at their own cost and expense, obtain and maintain in effect commercial general liability insurance, including bodily injury coverage with minimum limits of One Million Dollars (\$1,000,000) per occurrence.
24. **Indemnification.** Grantee shall save Grantor harmless from any expense arising as a result of any damage to the Property; where such damage is caused by Grantee or any of its representatives or consultants.
25. **Crop Compensation.** **Within ninety (90) days prior to the end of the Option Term,** Developer shall pay Owner a one-time payment for crop damage resulting from the construction or installation of the hereinabove described towers or equipment. Owner shall provide written notice to Developer outlining the basis for Owner's assertion of damage to the Property, the exact nature of damage, the source of the assertion that the alleged damage is the result of the exercise by Developer of the rights, privileges and license granted by this Agreement and satisfactory evidence of the damage including documentation showing the extent of the damage and the financial impact of such damage. In the event that the Parties cannot agree at any time on the amount of damage payable to Owner for such crop damage, the compensation paid by Developer to Owner for that use shall be the damages for the crops lost or destroyed in the area compacted as calculated below; in consideration of this payment, no additional damages shall be paid in future years for that episode of compaction. Damages will be calculated by the following formula: Unit Price x Unit Yield Per Acre x Acres Damaged = Damages. Prices for damaged or destroyed crops will be based on the average of the previous March 1st and September 1st using the prices for the crop provided by the local grain elevator. Yield will be the average of the previous three (3) years' yields according to Owner's records for the smallest parcel of land that includes the damaged area. If Owner

does not have yield records available, the Parties will use commonly used yield information available for the area. The Parties shall try in good faith to agree to the extent of damage and acreage affected. If they cannot agree, they shall have the area measured and extent of damage assessed by an impartial party such as a crop insurance adjuster or extension agent. Any costs for such assessment shall be paid by Developer. Payment shall be made within sixty (60) days after determining the extent of the damage. In the event that Developer requests that Owner move livestock located on the Property, Owner shall promptly move the livestock to a mutually acceptable location and Developer shall reimburse Owner for the reasonable cost of moving the livestock.

26. **Drainage Tile Damage:** (a) Grantee shall be liable for physical and tangible damage done to any tile drains or crops by reason of the exercise by Grantee of any or all the rights, privileges and easements granted by this Option (excepting damage caused to the property of Grantor by his own act or that of his servants, agents or contractors and excepting damage caused to the Property.

27. **Severance of Interconnection Facilities Parcel.** Grantor covenants and agrees with Grantee as follows:

27.1 at any time following the Effective Date, Grantee shall have the right to make an application to the local land division committee or Committee of Adjustment for the from the Municipality of North Middlesex/East Williams (the “Committee”) to have the Interconnection Facilities Parcel severed from the Property and to create the Access Easement, together with any necessary minor variance applications associated with the creation of the Interconnection Facilities Parcel, all at Grantee’s sole cost and expense (the “Severance/Minor Variance Applications”). Notwithstanding the foregoing, Grantee shall not be required to appeal the decision of the Committee in the event that the Severance/Minor Variance Applications are not successful, nor shall Grantee be required to proceed with the transactions contemplated by this Option Agreement and the Purchase Agreement if the decisions provide for conditions that are not satisfactory to Grantee, in its sole, absolute and subjective discretion. In the event the Committee does not approve the Severance/Minor Variance Applications during the Option Term and Grantee does not wish to appeal the decisions or in the event the decisions are successful but Grantee is not satisfied with the conditions relating to the severance and/or the minor variances, then this Option Agreement shall be at end and it is agreed that neither Party shall have any further rights or obligations hereunder.

27.2 Grantor agrees, at Grantee’s sole cost and expense, to assist with the satisfaction of all reasonable conditions imposed by the Committee, if any, as a pre-condition to the issuance of the severance, consent and/or minor variances and Grantor hereby agrees to authorize and appoint and does hereby authorize and appoint Grantee as its agent in connection with any Severance/Minor Variance Applications and Grantor further agrees that it shall execute any and all documentation required in order to confirm the appointment of Grantee as aforesaid and shall further cooperate with Grantee in connection with the Severance/Minor Variance Applications and delivery of any required information reasonably required by the Committee in connection with the consideration of the severance and minor

variances and satisfying any conditions related thereto. Notwithstanding anything to the contrary contained in this Option Agreement or the Purchase Agreement, in the event that the consent and decision in a final, binding and unappealable form is not obtained by June 30, 2014, then save as the Parties may otherwise agree in writing, this Option Agreement and any Purchase Agreement resulting from the exercise of the Option shall be null and void and of no further force and effect

27.3 If said severance, consent, and or minor variances are declined by the municipality, Grantor and Grantee agree that Grantee shall have the right to purchase all of the Property for [REDACTED] Dollars (\$ [REDACTED]) per acre. Grantor shall have the first right of refusal to lease the Property from Purchaser.

28. **REIMBURSEMENT OF SELLER'S LEGAL EXPENSES.** The Grantee agrees to reimburse the Grantor up to a maximum of [REDACTED] Dollars (\$ [REDACTED]) on account of legal fees incurred by the Grantor in connection with both the Option Agreement and the Agreement of Purchase and Sale.

[Remainder of page intentionally left blank, signature page follows]

IN WITNESS WHEREOF, the Parties have executed this Option Agreement as of the Effective Date.

“GRANTOR”

Witness:

Name:

Address:

Date: _____

Name:

“GRANTEE”

Kerwood Wine, Inc.
a New Brunswick company

Per: _____
John DiDonato, Vice President
“I have the authority to bind the corporation”

EXHIBIT "A" TO OPTION AGREEMENT

LEGAL DESCRIPTION OF THE PROPERTY

**ALL AND SINGULAR that certain parcel or tract of land and premises, situate, lying
and being in the Municipality •**

BEING THE WHOLE OF PIN •

EXHIBIT "A-1" TO OPTION AGREEMENT
PRELIMINARY PLAN AND LEGAL DESCRIPTION OF
THE INTERCONNECTION FACILITIES PARCEL

(See attached)

EXHIBIT "B" TO OPTION AGREEMENT

GRANTOR'S CERTIFICATE OF INDEPENDENT LEGAL ADVICE

I, •, of the Town of •, in the Province of Ontario, Barrister and Solicitor, do hereby certify that I was consulted in my professional capacity by • (the "**Grantor**") named in the Option Agreement and the associated Exhibits, dated _____, 2013 with Kerwood Wind, Inc., (the "**Grantee**") as to its obligations and rights under the said agreement, that I acted solely for and explained fully to the Grantor the nature and effect of the said agreement and the Grantor did acknowledge and declare that the Grantor fully understood the nature and effect thereof and did execute the said documents in my presence and did acknowledge and declare and it appeared to me that the Grantor was executing the said documents of its own volition and without fear, threats, compulsion or influence by Grantee or any other person.

DATED at _____, Ontario this ____ day of _____, 2013

Name of Solicitor

EXHIBIT "C" TO OPTION AGREEMENT
PURCHASE AGREEMENT

Agreement of Purchase and Sale
Commercial



BUYER, Kerwood Wind, Inc. (the "Buyer") (Full legal names of all Buyers), agrees to purchase from

SELLER, (the "Seller") (Full legal names of all Sellers), the following

REAL PROPERTY:

Address fronting on the side of in the See Schedule "C" and having a frontage of more or less by a depth of more or less and legally described as (the "property"). (Legal description of land including easements not described elsewhere)

PURCHASE PRICE: Dollars (CDN\$)

DEPOSIT:

Buyer submits Dollars (CDN\$) (Herewith/Upon acceptance)

by negotiable cheque payable to (the "Deposit Holder") to be held in trust without interest pending completion or other termination of this Agreement and to be credited toward the Purchase Price on completion. Buyer agrees to pay the balance as more particularly set out in Schedule A attached.

SCHEDULE(S) A, B and C attached hereto form(s) part of this Agreement.

1. CHATELS INCLUDED:

All

2. FIXTURES EXCLUDED:

All

3. RENTAL ITEMS: The following equipment is rented and not included in the Purchase Price. The Buyer agrees to assume the rental contract(s), if assumable:

None

4. IRREVOCABILITY: This Offer shall be irrevocable by (Seller/Buyer) until p.m. on the day of See Schedule "B", 20, after which time, if not accepted, this Offer shall be null and void and the deposit shall be returned to the Buyer in full without interest.

5. COMPLETION DATE: This Agreement shall be completed by no later than 6:00 p.m. on the day of See Schedule "B", 20. Upon completion, vacant possession of the property shall be given to the Buyer unless otherwise provided for in this Agreement.

6. NOTICES: Seller hereby appoints the Listing Broker as Agent for the purpose of giving and receiving notices pursuant to this Agreement. Only if the Co-operating Broker represents the interests of the Buyer in this transaction, the Buyer hereby appoints the Co-operating Broker as Agent for the purpose of giving and receiving notices pursuant to this Agreement. This offer, any counter offer, notice of acceptance thereof, or any notice shall be deemed given and received, when hand delivered to the address for service provided in the Acknowledgement below, or where a facsimile number is provided herein, when transmitted electronically to that facsimile number.

FAX No. (For delivery of notices to Seller) FAX No. (For delivery of notices to Buyer)

7. GST: If this transaction is subject to Goods and Services Tax (GST), then such tax shall be in addition to the Purchase Price. The Seller will not collect GST if the Buyer provides to the Seller a warranty that the Buyer is registered under the Excise Tax Act ("ETA"), together with a copy of the Buyer's ETA registration, a warranty that the Buyer shall self-assess and remit the GST payable and file the prescribed form and shall indemnify the Seller in respect of any GST payable. The foregoing warranties shall not merge but shall survive the completion of the transaction. If this transaction is not subject to GST, Seller agrees to certify on or before closing, that the transaction is not subject to GST.

8. TITLE SEARCH: Buyer shall be allowed until 6:00 p.m. on the day of See Schedule "B", 20, (Requisition Date) to examine the title to the property at his own expense and until the earlier of: (i) thirty days from the later of the Requisition Date or the date on which the conditions in this Agreement are fulfilled or otherwise waived or; (ii) five days prior to completion, to satisfy himself that there are no outstanding work orders or deficiency notices affecting the property, that its present use () may be lawfully continued and that the principal building may be insured against risk of fire. Seller hereby consents to the municipality or other governmental agencies releasing to Buyer details of all outstanding work orders affecting the property, and Seller agrees to execute and deliver such further authorizations in this regard as Buyer may reasonably require.

9. FUTURE USE: Seller and Buyer agree that there is no representation or warranty of any kind that the future intended use of the property by Buyer is or will be lawful except as may be specifically provided for in this Agreement.

INITIALS OF BUYER(S):

INITIALS OF SELLER(S):



10. **TITLE:** Provided that the title to the property is good and free from all registered restrictions, charges, liens, and encumbrances except as otherwise specifically provided in this Agreement and save and except for (a) any registered restrictions or covenants that run with the land providing that such are complied with; (b) any registered municipal agreements and registered agreements with publicly regulated utilities providing such have been complied with, or security has been posted to ensure compliance and completion, as evidenced by a letter from the relevant municipality or regulated utility; (c) any minor easements for the supply of domestic utility or telephone services to the property or adjacent properties; and (d) any easements for drainage, storm or sanitary sewers, public utility lines, telephone lines, cable television lines or other services which do not materially affect the present use of the property. If within the specified times referred to in paragraph 8 any valid objection to title or to any outstanding work order or deficiency notice, or to the fact the said present use may not lawfully be continued, or that the principal building may not be insured against risk of fire is made in writing to Seller and which Seller is unable or unwilling to remove, remedy or satisfy or obtain insurance save and except against risk of fire in favour of the Buyer and any mortgagee, (with all related costs at the expense of the Seller), and which Buyer will not waive, this Agreement notwithstanding any intermediate acts or negotiations in respect of such objections, shall be at an end and all monies paid shall be returned without interest or deduction and Seller, Listing Broker and Co-operating Broker shall not be liable for any costs or damages. Save as to any valid objection so made by such day and except for any objection going to the root of the title, Buyer shall be conclusively deemed to have accepted Seller's title to the property.
11. **CLOSING ARRANGEMENTS:** Where each of the Seller and Buyer retain a lawyer to complete the Agreement of Purchase and Sale of the Property, and where the transaction will be completed by electronic registration pursuant to Part III of the Land Registration Reform Act, R.S.O. 1990, Chapter L4 and the Electronic Registration Act, S.O. 1991, Chapter 44, and any amendments thereto, the Seller and Buyer acknowledge and agree that the exchange of closing funds, non-registrable documents and other items (the "Requisite Deliveries") and the release thereof to the Seller and Buyer will (a) not occur at the same time as the registration of the transfer/deed (and any other documents intended to be registered in connection with the completion of this transaction) and (b) be subject to conditions whereby the lawyer(s) receiving any of the Requisite Deliveries will be required to hold same in trust and not release same except in accordance with the terms of a document registration agreement between the said lawyers, the form of which is as recommended from time to time by the Law Society of Upper Canada. Unless otherwise agreed to by the lawyers, such exchange of the Requisite Deliveries will occur in the applicable Land Titles Office or such other location agreeable to both lawyers.
12. **DOCUMENTS AND DISCHARGE:** Buyer shall not call for the production of any title deed, abstract, survey or other evidence of title to the property except such as are in the possession or control of Seller. If requested by Buyer, Seller will deliver any sketch or survey of the property within Seller's control to Buyer as soon as possible and prior to the Requisition Date. If a discharge of any Charge/Mortgage held by a corporation incorporated pursuant to the Trust And Loan Companies Act (Canada), Chartered Bank, Trust Company, Credit Union, Caisse Populaire or Insurance Company and which is not to be assumed by Buyer on completion, is not available in registrable form on completion, Buyer agrees to accept Seller's lawyer's personal undertaking to obtain, out of the closing funds, a discharge in registrable form and to register same, or cause same to be registered, on title within a reasonable period of time after completion, provided that on or before completion Seller shall provide to Buyer a mortgage statement prepared by the mortgagee setting out the balance required to obtain the discharge, and, where a real-time electronic cleared funds transfer system is not being used, a direction executed by Seller directing payment to the mortgagee of the amount required to obtain the discharge out of the balance due on completion.
13. **INSPECTION:** Buyer acknowledges having had the opportunity to inspect the property and understands that upon acceptance of this Offer there shall be a binding agreement of purchase and sale between Buyer and Seller.
14. **INSURANCE:** All buildings on the property and all other things being purchased shall be and remain until completion at the risk of Seller. Pending completion, Seller shall hold all insurance policies, if any, and the proceeds thereof in trust for the parties as their interests may appear and in the event of substantial damage, Buyer may either terminate this Agreement and have all monies paid returned without interest or deduction or else take the proceeds of any insurance and complete the purchase. No insurance shall be transferred on completion. If Seller is taking back a Charge/Mortgage, or Buyer is assuming a Charge/Mortgage, Buyer shall supply Seller with reasonable evidence of adequate insurance to protect Seller's or other mortgagee's interest on completion.
15. **PLANNING ACT:** This Agreement shall be effective to create an interest in the property only if Seller complies with the subdivision control provisions of the Planning Act by completion and Seller covenants to proceed diligently at his expense to obtain any necessary consent by completion.
16. **DOCUMENT PREPARATION:** The Transfer/Deed shall, save for the Land Transfer Tax Affidavit, be prepared in registrable form at the expense of Seller, and any Charge/Mortgage to be given back by the Buyer to Seller at the expense of the Buyer. If requested by Buyer, Seller covenants that the Transfer/Deed to be delivered on completion shall contain the statements contemplated by Section 50(22) of the Planning Act, R.S.O.1990.
17. **RESIDENCY:** Buyer shall be credited towards the Purchase Price with the amount, if any, necessary for Buyer to pay to the Minister of National Revenue to satisfy Buyer's liability in respect of tax payable by Seller under the non-residency provisions of the Income Tax Act by reason of this sale. Buyer shall not claim such credit if Seller delivers on completion the prescribed certificate or a statutory declaration that Seller is not then a non-resident of Canada.
18. **ADJUSTMENTS:** Any rents, mortgage interest, realty taxes including local improvement rates and unmetered public or private utility charges and unmetered cost of fuel, as applicable, shall be apportioned and allowed to the day of completion, the day of completion itself to be apportioned to Buyer.
19. **TIME LIMITS:** Time shall in all respects be of the essence hereof provided that the time for doing or completing of any matter provided for herein may be extended or abridged by an agreement in writing signed by Seller and Buyer or by their respective lawyers who may be specifically authorized in that regard.
20. **TENDER:** Any tender of documents or money hereunder may be made upon Seller or Buyer or their respective lawyers on the day set for completion. Money may be tendered by bank draft or cheque certified by a Chartered Bank, Trust Company, Province of Ontario Savings Office, Credit Union or Caisse Populaire.
21. **FAMILY LAW ACT:** Seller warrants that spousal consent is not necessary to this transaction under the provisions of the Family Law Act, R.S.O.1990 unless Seller's spouse has executed the consent hereinafter provided.
22. **UFFI:** Seller represents and warrants to Buyer that during the time Seller has owned the property, Seller has not caused any building on the property to be insulated with insulation containing ureaformaldehyde, and that to the best of Seller's knowledge no building on the property contains or has ever contained insulation that contains ureaformaldehyde. This warranty shall survive and not merge on the completion of this transaction, and if the building is part of a multiple unit building, this warranty shall only apply to that part of the building which is the subject of this transaction.
23. **LEGAL, ACCOUNTING AND ENVIRONMENTAL ADVICE:** The parties acknowledge that any information provided by the broker is not legal, tax or environmental advice, and that it has been recommended that the parties obtain independent professional advice prior to signing this document.
24. **CONSUMER REPORTS:** The Buyer is hereby notified that a consumer report containing credit and/or personal information may be referred to in connection with this transaction.
25. **AGENCY:** It is understood that the brokers involved in the transaction represent the parties as set out in the Confirmation of Representation below.
26. **AGREEMENT IN WRITING:** If there is conflict or discrepancy between any provision added to this Agreement (including any Schedule attached hereto) and any provision in the standard pre-set portion hereof, the added provision shall supersede the standard pre-set provision to the extent of such conflict or discrepancy. This Agreement including any Schedule attached hereto, shall constitute the entire Agreement between Buyer and Seller. There is no representation, warranty, collateral agreement or condition, which affects this Agreement other than as expressed herein. For the purposes of this Agreement, Seller means vendor and Buyer means purchaser. This Agreement shall be read with all changes of gender or number required by the context.

INITIALS OF BUYER(S):

INITIALS OF SELLER(S):



27. **SUCCESSORS AND ASSIGNS:** The heirs, executors, administrators, successors and assigns of the undersigned are bound by the terms herein.

DATED at.....this..... day of....., 20¹¹.....

SIGNED, SEALED AND DELIVERED in the presence of: IN WITNESS whereof I have hereunto set my hand and seal:

..... DATE....., 2013
(Witness) (Buyer/Authorized Signing Officer) (Seal)
..... DATE....., 2013
(Witness) (Buyer/Authorized Signing Officer) (Seal)

I, the Undersigned Seller, agree to the above Offer. I hereby irrevocably instruct my lawyer to pay directly to the Listing Broker the unpaid balance of the commission together with applicable Goods and Services Tax (and any other taxes as may hereafter be applicable), from the proceeds of the sale prior to any payment to the undersigned on completion, as advised by the Listing Broker to my lawyer.

DATED at.....this..... day of....., 20¹¹.....

SIGNED, SEALED AND DELIVERED in the presence of: IN WITNESS whereof I have hereunto set my hand and seal:

..... DATE.....
(Witness) (Seller/Authorized Signing Officer) (Seal)
Per: DATE....., 2013
(Witness) (Seller/Authorized Signing Officer) (Seal)

SPOUSAL CONSENT: The Undersigned Spouse of the Seller hereby consents to the disposition evidenced herein pursuant to the provisions of the Family Law Act, R.S.O.1990, and hereby agrees with the Buyer that he/she will execute all necessary or incidental documents to give full force and effect to the sale evidenced herein.

..... DATE.....
(Witness) (Spouse) (Seal)

CONFIRMATION OF EXECUTION: Notwithstanding anything contained herein to the contrary, I confirm this Agreement with all changes both typed and written was finally executed by all parties at.....a.m./p.m. this.....day of....., 20..... (Signature of Seller or Buyer)

CONFIRMATION OF REPRESENTATION

Listing Broker..... Tel.No..... Represents.....
Co-op/Buyer Broker..... Tel.No..... Represents.....

ACKNOWLEDGEMENT

I acknowledge receipt of my signed copy of this accepted Agreement of Purchase and Sale and I authorize the Agent to forward a copy to my lawyer. DATE..... (Seller)
I acknowledge receipt of my signed copy of this accepted Agreement of Purchase and Sale and I authorize the Agent to forward a copy to my lawyer. DATE..... (Buyer)
DATE..... (Seller) DATE..... (Buyer)
Address for Service..... Tel.No..... Address for Service..... Tel.No.....
Seller's Lawyer..... Buyer's Lawyer.....
Address..... Address.....
Tel.No. FAX No. Tel.No. FAX No.

FOR OFFICE USE ONLY **COMMISSION TRUST AGREEMENT**
To: Co-operating Broker shown on the foregoing Agreement of Purchase and Sale;
In consideration for the Co-operating Broker procuring the foregoing Agreement of Purchase and Sale, I hereby declare that all moneys received or receivable by me in connection with the Transaction as contemplated in the MLS Rules and Regulations of my Real Estate Board shall be receivable and held in trust. This agreement shall constitute a Commission Trust Agreement as defined in the MLS Rules and shall be subject to and governed by the MLS Rules pertaining to Commission Trust.
DATED as of the date and time of the acceptance of the foregoing Agreement of Purchase and Sale. Acknowledged by:
Signature of Listing Broker or authorized representative Signature of Co-operating Broker or authorized representative

This Schedule is attached to and forms part of the Agreement of Purchase and Sale between:

BUYER,....., and

SELLER,.....

for the purchase and sale of...the property legally described in Schedule “C-1” hereto.....

Buyer agrees to pay the balance as follows:

(I) The deposit shall be invested by the Deposit Holder in an interest bearing account or term deposit with interest to accrue to the benefit of the Buyer. If the transaction contemplated by this Agreement is not completed for any reason (other than the direct default of the Buyer), the deposit and interest accrued thereon shall be returned to the Buyer forthwith without further direction from the Seller or Buyer and the Deposit Holder is hereby authorized to do so.

(II) Buyer agrees to pay the balance of the Purchase Price by certified cheque, bank draft or wire transfer on Closing subject to the adjustments set forth herein.

This form must be initialed by all parties to the Agreement of Purchase and Sale.

INITIALS OF BUYER(S):

○

INITIALS OF SELLER(S):

○



SCHEDULE "B" TO PURCHASE AGREEMENT

forming part of an agreement of purchase and sale between Kerwood Wind, Inc. as Buyer, and •, as Seller, for the lands legally described in Schedule "C" (the "Property")

ARTICLE 1 – DEFINITIONS

1.01 The terms defined herein shall have, for all purposes of this Agreement, the following meanings, unless the context expressly or by necessary implication otherwise requires:

"Access Easement" means a permanent easement over, across and along the Access Easement Lands for purposes of ingress and egress to and from the public highway known as the road allowance between • (Municipality of •) with the right of the Buyer to construct, replace and use an access road for vehicular purposes, and which easement will benefit the Property.

"Access Easement Lands" means the portion of the Seller's Property described as Part 2 on the Draft Plan.

"Agreement" means this agreement of purchase and sale and the schedules attached hereto, as amended from time to time; "Article", "Section" and "Subsection" mean and refer to the specified article, section and subsection of this Agreement.

"Annual Access Easement Compensation" has the meaning ascribed thereto in Article 6.

"Commercial Operation Date" has the meaning ascribed thereto in Article 6.

"Committee" has the meaning ascribed thereto in Article 6.

"date of this Agreement" shall mean the date of receipt by the Seller of the Exercise Notice (as defined in the Option Agreement).

A. **"Draft Plan"** means the preliminary reference plan attached hereto as Schedule "C-1". The Access Easement will be created in the transfer/deed for the Interconnection Facilities Parcel and it shall permit Grantee, *inter alia*, to construct replace and use an access road for vehicular and pedestrian purposes and as more particularly described and depicted in the preliminary sketch, plan, or survey attached hereto as **Exhibit "A-1"** (the **"Draft Plan"**). For greater certainty, the Buyer shall have the right, at any time during the Term, with the Seller's approval, to amend the Draft Plan and description of the Property and the Access Easement Lands by providing to the Lessor a reference plan (the "Reference Plan") which identifies the amended description of the Property and the Access Easement Lands that are to be conveyed to Buyer. The Seller hereby irrevocably authorizes and directs the Buyer to deposit such plan on title to the Property. Upon the delivery by the Buyer to the Seller of the Reference Plan, the description of the Property and the Access Easement Lands, as set out in Schedule "C" and depicted in Schedule "C-1", shall automatically be replaced by the amended description of the Property and Access Easement Lands as set out in the Reference Plan without the requirement of any further action on behalf of either the Buyer or Seller, provided that the Seller agrees that it shall, at the request of the Buyer, execute an amendment to the

agreement which sets out the amended description of the Property and Access Easement Lands in accordance with the Reference Plan.

“**Interconnection Facilities**” shall include any and all buildings, switchyard facilities, circuit breakers (all fenced in), control and protective devices, and metering facilities or any other devices, buildings, electrical transmission cables (above ground or below ground), required to connect the Wind Energy Project from the Interconnection Facilities, to and with the applicable transmission system, up to and on the delivery point.

“**License**” has the meaning ascribed thereto in Article 7.

“**Option Agreement**” means the option agreement dated _____, 2013 between the Buyer and the Seller to which this Agreement is attached.

“**Seller’s Property**” means • (Legal Description).

“**Severance/Minor Variance Applications**” has the meaning ascribed thereto in Article 6.

“**Wind Energy Project**” means the wind energy project to be located on the Property and/or within the vicinity of the Property.

ARTICLE 2 – INSPECTION PERIOD

2.01 Within five (5) days following the date of this Agreement, the Seller will deliver to the Buyer, to the extent in the Seller’s possession or control and to the extent not previously delivered to the Buyer, the following:

- (a) all current surveys, easement plans, servicing plans, grading plans and other plans (collectively the “**Plans**”) relating to the Property;
- (b) copies of all contracts, leases or other obligations, (including, without limitation, maintenance, servicing, management and equipment contracts) deed restrictions, subdivision agreements and site plan agreements, development agreements and any other agreements with any governmental authorities, if any, relating to the Property other than those registered on title to the Property;
- (c) copies of all tests, inspections, studies and reports thereof relating to the Property, including, without limitation, environmental, geotechnical, soil quality and bore hole reports as well as any and all studies;
- (d) any current governmental notices relating to the Property, including, without limitation, tax bills and assessments, work order or deficiency notices, stop work orders and any notices relating to the zoning of the Property for the last 3 years, and any expropriation notices, any notices or decisions pertaining to any development charges, special assessments, levies or fees from the Municipality • relating to the Property; and

- (e) any and all historical information, not covered above, relating to the Property, including, but not limited to, all annual maintenance requirements of the Property, all capital upgrades, renovations and investments made in or to the Property over the last 3 years.

2.02 The Buyer's obligations in this Agreement are conditional upon the following conditions being satisfied or waived, which conditions (the "**Buyer's Conditions**") are for the sole benefit of the Buyer and which Buyer's Conditions or any one of them may, at any time up to and including the Condition Date (as hereinafter defined), by notice in writing to the Seller, be waived or declared satisfactory in whole or in part by the Buyer, namely that:

- (a) all the items provided to the Buyer pursuant to Section 2.01 of this Schedule "B" are satisfactory to the Buyer, in its sole, absolute and subjective discretion;
- (b) the Buyer is satisfied in its sole, absolute and subjective discretion as to the physical and environmental condition and state of repair of the Property, the buildings and the location and nature of all easements and rights-of-way which affect the Property. The Seller shall permit the Buyer access to the Property and buildings at all reasonable times up to and including the date of Closing for the purpose of examining, testing and inspecting the Property and buildings, provided that the Buyer covenants to restore the Property and buildings to its present state and condition following such examinations, tests and inspections in the event that the Buyer does not complete this transaction;
- (c) the Buyer is satisfied in its sole, absolute and subjective discretion that the Property and buildings comply with all the provisions of all environmental laws and contains no polychlorinated biphenyls, hazardous substances or toxic wastes;
- (d) the Buyer is satisfied in its sole, absolute and subjective discretion, with the economic viability or feasibility of purchasing the Property; and
- (e) the Buyer is satisfied in its sole, absolute and subjective discretion that the zoning of the Property will permit the Buyer's intended use thereof.
- (f) Any and all leases or agreements affecting the Property shall be released prior to closing.

If the Buyer's Conditions or any of them are not satisfied or waived by notice on or before that date which is one hundred and eighty (180) days following the date of this Agreement (the "**Condition Date**" or "**Requisition Date**"), the Buyer may in its discretion, by notice in writing at any time up to and including the Condition Date, declare this Agreement null and void in which event, the deposit shall be returned to the Buyer with interest and without deduction and the Seller hereby irrevocably instructs the Deposit Holder holding the deposit to release same as herein provided. If no notice of waiver or satisfaction of the Buyer's Conditions is given by the Buyer, the Buyer's Conditions shall, notwithstanding any intermediate negotiations, be deemed to have not been satisfied, this Agreement shall be declared null and void and the deposit shall be returned to the Buyer as described in this paragraph.

ARTICLE 3 – REPRESENTATIONS

3.01 The Seller represents and warrants to the Buyer that as of the date of this Agreement and as of Closing:

- (a) there are no outstanding work orders, directions or notices relating to any defects in the state of the Property or any notice or direction requiring or recommending any alteration, repair, improvement or other work to be done with respect to the Property or relating to any non-compliance with any building permit, building restriction, by-law, regulation or municipal agreement or any threatened or pending expropriation, save as disclosed in writing by the Seller to the Buyer prior to the expiry of the Condition Date;
- (b) to the best of the knowledge of the Seller, but without independent inquiry, the Seller knows of no unregistered leases or agreements affecting the Property and, Seller knows of no physical conditions of the Property which would constitute a violation of any governmental law, ordinance, order, rule or regulation.
- (c) to the best of the knowledge of the Seller, the Property complies with the provisions of the *Environmental Protection Act* and has never been used as a landfill or waste disposal site or for underground fuel storage;
- (d) the Seller is the owner of the Property in fee and has the power and authority to enter into this Agreement and to carry out the transaction contemplated herein;
- (e) the Seller is not aware of any litigation, expropriation, change in zoning or other judicial or administrative proceeding existing, pending or threatened relating to the Property or any buildings thereon;
- (f) the Seller has not withheld any material document or information in its possession or control relating to the Property or any buildings thereon;
- (g) the Property contains an area of approximately • acres;
- (h) vacant possession to the Property shall be given to the Buyer on Closing free from any claims of any person; and
- (i) no person has an option or right of first refusal to purchase the Property or any part thereof or any buildings thereon.

ARTICLE 4 – SELLER'S COVENANTS

4.01 The Seller covenants and agrees with the Buyer that:

- (a) on Closing, there will be no leases, agreements, contracts, written or oral, granted in connection with the operation, management or maintenance of the Property. The Buyer will not be responsible for any of the Seller's staff relating to the Property or

the buildings as of and from Closing and the Seller will terminate all staff in respect of the Property or the buildings on or before Closing;

- (b) all amounts for labour and/or materials in respect of construction or improvements supplied to or in connection with the Property prior to Closing will be fully paid on Closing and no one shall have the right to claim a construction lien in respect of the Property or the buildings;
- (c) from and after the date of this Agreement, the Seller shall not enter into any contract or agreement or lease in any way relating to the Property or the buildings without the written consent of the Buyer;
- (d) it will discharge at its own expense, on or prior to Closing, all construction liens, charges, mortgages and encumbrances affecting the Property;
- (e) it will ensure that its use of the Property is not altered from the use as of the date of this Agreement;
- (f) it will ensure that Property is cleaned of any of the Seller's scrap, garbage, fuel storage tanks;
- (g) at all times prior to Closing, a reasonable level of insurance is maintained on the Property covering common insurable events; and
- (h) at all times prior to Closing, it will permit the Buyer to make site plan, building permit and other development applications to the Municipality and will consent to, and if necessary, execute same provided all costs related thereto are borne by the Buyer.
- (i) Seller will sign all necessary agreements required by Buyer to conduct the operation of the Wind Energy Project and to ensure the operation of the Interconnection Facilities on the remainder of Seller's Property, including but not limited to, any and all necessary Transmission Easements and any other document as may be required by Hydro One Networks Inc. and Buyer. All reasonable costs incurred by the Seller in compliance with this subsection shall be paid by the Buyer.

The provisions within this Section 4.01 shall survive and not merge with the Closing.

ARTICLE 5 – CLOSING DOCUMENTS

5.01 On or before Closing, the Seller shall deliver to the Buyer the following;

- (a) a transfer in registerable form in favour of the Buyer, or as the Buyer may direct, for the Property.

- (b) a statement of adjustments which, notwithstanding anything contained to the contrary, shall be delivered at least five (5) days prior to Closing;
- (c) a mutual undertaking to re-adjust items of adjustment after Closing;
- (d) a certificate of the Seller confirming that the covenants of the Seller have been performed and that the representation and warranties of the Seller set forth in this Agreement are true and accurate on Closing and do not merge but survive Closing for a period of one (1) year from Closing;
- (e) a general conveyance of all right, title and interest in and to all reports, studies, drawings and specifications prepared by or for the Seller to date relating to the Property;
- (f) an indemnity in respect of liens under the *Construction Lien Act*, as amended arising after Closing relating to services or materials supplied to the Property prior to Closing; and
- (g) such other documents as may be usual for transactions of this nature, including, without limitation, a statutory declaration of possession in respect of the Property.

5.02 On or before Closing, the Buyer shall deliver to the Seller the following:

- (a) the balance of the Purchase Price;

ARTICLE 6 – SEVERANCE OF PROPERTY

6.01 ANNUAL ACCESS EASEMENT PAYMENT

As consideration for the grant of the Access Easement and the rights to improve said Access Easement on the Access Easement Lands, the Buyer shall pay to the Seller an annual payment of [REDACTED] Dollars (CAD\$ [REDACTED]) per acre for the area of the roadway located on the Access Easement Lands, plus all HST (the “**Annual Access Easement Compensation**”) applicable thereon. The acreage of the roadway shall be calculated by the Buyer or its consultant, each acting reasonably, whose determination shall be final and binding on the Seller and the Buyer. Commencing on the first anniversary of the Commercial Operation Date and on each anniversary thereafter during the term of the Access Easement, the Annual Access Easement Compensation shall increase by two percent (2%) annually. The first Annual Access Easement Compensation payment will be mailed to the Seller within sixty (60) days of the Commercial Operation Date and on each anniversary date thereafter. As used herein, the “**Commercial Operations Date**” shall mean the date when all the improvements required for the Wind Energy Project being constructed by the Buyer, shall have been fully and completely constructed and installed and the entire Wind Energy Project has achieved the status of a commercially operable wind powered electrical generation and transmission facility.

6.02 SEVERANCE OF PROPERTY

The Seller covenants and agrees with the Buyer as follows:

- (a) at any time following the date of this Agreement, the Buyer shall have the right to make an application to the local land division committee or Committee of Adjustment for the Municipality of • (the “**Committee**”) to have the Property severed from the balance of the Seller’s Property together with any necessary minor variance applications associated with the creation of Property, all at the Buyer’s sole cost and expense (the “**Severance/Minor Variance Applications**”). Notwithstanding the foregoing, the Buyer shall not be required to appeal the decision of the Committee in the event that the Severance/Minor Variance Applications are not successful, nor shall the Buyer be required to proceed with the transactions contemplated by this Agreement if the decisions provide for conditions that are not satisfactory to the Buyer, in its sole, absolute and subjective discretion.
- (b) the Seller agrees, at the Buyer’s sole cost and expense, to assist with the satisfaction of all reasonable conditions imposed by the Committee, if any, as a pre-condition to the issuance of the severance consent and/or minor variances and the Seller hereby agrees to authorize and appoint and does hereby authorize and appoint the Buyer as its agent in connection with any Severance/Minor Variance Applications and the Seller further agrees that it shall execute any and all documentation required in order to confirm the appointment of the Buyer as aforesaid and shall further cooperate with the Buyer in connection with the Severance/Minor Variance Applications and delivery of any required information reasonably required by the Committee in connection with the consideration of the severance and minor variances and satisfying any conditions related thereto.
- (c) If said severance, consent, and or minor variances are declined by the municipality, Buyer and Seller agree that Grantee shall have the right to purchase all of the Property for •. Seller shall have the first right of refusal to lease the Property from Purchaser as defined in the Option Agreement.

ARTICLE 7 – GENERAL PROVISIONS

7.01 GRANT OF LICENSE

The Seller hereby grants and conveys to the Buyer an irrevocable license on over, and across the Seller’s Property to come upon Seller’s Property and to install, operate, and maintain such equipment as may be necessary to conduct studies of wind energy, wind profiles, transmission interconnection, soils, and other meteorological and geotechnical data (including measurement devices, controls, and instrumentation) (the “**License**”). This License shall be effective commencing on the date of this Agreement until Closing. The License also includes the right to construct, use, repair, replace, relocate, transport and remove said equipment and appropriate vehicles over existing roads and pathways on the Property and the right to carry out, at the Buyer’s expense and without liability to the Seller, such tests, including but not limited to environmental audits, surveys and inspections of the Property as the Buyer may deem necessary. The Buyer agrees to repair any damage caused by any such tests at the Buyer’s expense in a good and workmanlike manner. The

License may be exercised by the Buyer and by the Buyer's employees, agents, contractors, permittees and invitees. The Buyer will consult with the Seller to schedule and coordinate the Buyer's activities on the Property. The location of any equipment to be installed on the Property shall be agreed to by the parties acting reasonably and without undue delay taking into consideration the purpose of the studies to be conducted and the need for certain studies to be conducted in specific locations. Once determined, the location of the equipment shall not be changed save by the agreement of the parties who shall act reasonably and without undue delay.

7.02 CLOSING

This Agreement shall be completed on the thirtieth (30th) day following the later of: (a) the Condition Date; and (b) Buyer obtaining: (i) the consent of the Committee to the severance of the Property from the balance of the Seller's Property (ii) approval from the Committee with respect to any necessary minor variances, with all applicable appeal periods having lapsed with no appeals having been filed, provided that if such date falls on a date that is not a business day, it shall take place on the next business day thereafter (herein referred to as the "**Closing Date**" or "**Closing**" or "**Date of Closing**" or "**Completion Date**"). Notwithstanding anything to the contrary contained in this Agreement, if such consent and decision with respect to the minor variances, in a final, binding form, have not been obtained in accordance with Section 6.01 by • ("**Final Closing Date**"), then save as the parties may otherwise agree in writing, this Agreement shall be null and void, further force and effect and the Deposit shall be forthwith returned to the Buyer and neither party shall have any further obligations to the other. If, however, Buyer's consent and severance application is conditioned upon the receipt of a final Renewable Energy Approval, then the Final Closing date shall automatically extend ten days after that final condition is satisfied but in any event shall not be later than •.

7.03 ADJUSTMENTS

There shall be adjusted on Closing all usual items of income and expense in transactions of this nature including realty taxes, utility charges, local improvement charges and other similar allowances. Where applicable, each of the adjustments shall be apportioned and allowed up to the date of Closing (it being understood that the date of Closing itself is to be apportioned to the Buyer who shall bear the responsibility for and receive the benefit of that date).

7.04 NOTICES

Where this Agreement requires notice to be delivered by one party to the other, such notice shall be given in writing and delivered either personally or by prepaid registered post, or by printed electronic transmission by the party wishing to give such notice, or by the solicitor acting for such party, to the other party or to the solicitor acting for the other party at the addresses noted below. Such notice shall be deemed to have been given, in the case of personal delivery, on the date of delivery, where given by post, on the third business day following the posting thereof and, where given on a business day by printed electronic transmission prior to 5:00 p.m., on the date of transmission and after 5:00 p.m. on the first business day following such transmission. It is understood that in the event of a threatened or actual postal disruption in the postal service in the postal area through which such notice must be sent, notice must be given, on a business day,

personally as aforesaid or by means of printed electronic or printed telephonic communication in which case notice shall be deemed to have been given on the date of transmission thereof:

To the Buyer:

Kerwood Wind, Inc.
390 Bay Street, Suite 1720
Toronto, ON M5H 2Y2, Canada
Attention: Business Management
Telephone: (416) 364-9714

With a copy to:
Kerwood Wind, Inc.
700 Universe Blvd. LAW/JB
Juno Beach, FL 33408
U.S.A.
Attention: General Counsel
Telephone: (561) 691-2359
Facsimile: (561) 691-7103

To the Seller:

7.05 LAWS OF ONTARIO

This Agreement shall be construed in accordance with the laws of the Province of Ontario and the laws of Canada applicable therein and shall be treated in all respects as an Ontario contract.

7.06 ASSIGNMENT

The Buyer shall be entitled to assign its rights and obligations under this Agreement to one or more persons or entities without the consent of the Seller. Upon effecting such assignment, the Buyer shall be released from its covenants and obligations set forth herein. The Buyer shall deliver notice of any such assignment to the Seller.

7.07 COMMISSIONS

Each of the Buyer and the Seller represent and warrant to the other (which representation and warranty shall survive Closing) that it has not dealt with any agent or broker in connection with the purchase of the Property or buildings.

7.08 ENUREMENT

This Agreement shall run with the Seller's Property and shall enure to the benefit of and be binding upon the parties hereto and their respective heirs, executors, administrators, successors and assigns, as the case may be.

7.09 CONFIDENTIALITY

For the purposes of this Agreement "**Confidential Information**" means the terms and conditions of this Agreement, including but not limited to the Purchase Price, which are not a matter of public record. Seller agrees that Confidential Information shall not, without Purchaser's prior written consent, be disclosed, divulged, or communicated to any other person other than the Seller's professional advisors and any lenders, bona fide third party purchasers or potential purchasers who shall have a "need to know" the Confidential Information, it being understood that such parties shall be informed at the time of disclosure of the confidential nature of such Confidential Information and shall be directed to treat the Confidential Information as such.

7.10 TOP SOIL

All top soil not used by Buyer in the construction of the Facilities shall remain on Seller's Property.

[Remainder of page intentionally left blank]

SCHEDULE "C" TO PURCHASE AGREEMENT

LEGAL DESCRIPTION OF THE PROPERTY

**SCHEDULE "C-1" TO PURCHASE AGREEMENT
DRAFT PLAN**

**EXHIBIT G - COMMUNITY AND
STAKEHOLDER CONSULTATION**

Exhibit G, Tab 1, Schedule 1
Community and Stakeholder Consultation

1 **COMMUNITY & STAKEHOLDER CONSULTATION**

2 The community and stakeholder consultation undertaken by the Applicant has been carried out in
3 the context of the Renewable Energy Approval (“**REA**”) process. The focus of this schedule
4 will be on those consultation activities that are related to the proposed Transmission Facilities,
5 rather than the related generation facilities associated with the Adelaide Project.

6 The Applicant classifies its consultation activities as (a) public consultations, (b) municipal
7 consultations, (c) agency consultations, and (d) Aboriginal consultations. Moreover, it is
8 important to note that the Adelaide Project has been in development since 2007 and that certain
9 consultation activities were carried out in respect of the project prior to the Province of Ontario
10 establishing the REA process in 2009. The Adelaide Project went through two distinct phases.
11 Prior to 2010, the project was being designed to interconnect south of the project and any
12 consultation considered this configuration. In 2010, after the results of the first round of Feed in
13 Tariff contracts, it was clear that the original interconnect no longer had the capacity to absorb
14 the Adelaide Project’s injection. As such a new interconnect, the current proposed location, was
15 considered and submitted to the OPA as a new proposed point of interconnect. Public
16 consultation on this new configuration did not begin until after the Feed in Tariff contract was
17 awarded in July of 2011.

18 With respect to public consultations in the period prior to the REA process being established, an
19 initial public meeting was held in February 2008 and the general project study area was
20 communicated to potentially affected stakeholders and agencies through a notice of public
21 meeting in March 2009. Under the REA process, notice of the first public meeting was issued in
22 November 2009. This notice and the related public meeting included information on the general
23 project. In November 2011, after a Feed in Tariff contract was awarded, a public meeting was
24 held to notify the public of the change to the proposed point of interconnect. Further public
25 meetings were held in July 2012 and August 2012. Additional consultations were carried out
26 with landowners specifically located within the vicinity of the proposed transmission line.
27 Furthermore, the Applicant held a ‘telephone town hall’ meeting in February 2012 that attracted

1 over 1300 community members. The Applicant has also regularly used its project website to
2 provide information related to the Adelaide Project and the proposed Transmission Facilities.
3 Notably, the November 2011 public meeting was common to the Adelaide Project, the Bornish
4 Project and the Jericho Project, including the Shared Transmission Facilities. Through these
5 consultations, the Applicant received numerous comments and questions. In respect of the
6 proposed transmission facilities, the main issues raised were in respect of the timing for
7 presentation of a final transmission route and whether the transmission lines will produce any
8 significant noise impacts.

9 With respect to municipal consultations held prior to the REA process coming into effect,
10 meetings were held with and presentations were made to representatives of the Township of
11 Adelaide Metcalfe and the County of Middlesex beginning in February 2007. Under the REA
12 process, the Municipal Consultation Form was submitted to the County of Middlesex and the
13 Township of Adelaide Metcalfe in November 2009. Responses were received in early 2010 and
14 a number of meetings were held throughout 2011 and 2012. A further Municipal Consultation
15 Form was provided to these same municipalities, as well as the Municipality of North Middlesex,
16 in February 2012, with responses being received in May 2012. This coincided with the posting
17 of draft REA documents for municipal review.

18 With respect to agency consultations, the Applicant has consulted with a wide range of
19 governmental authorities having relevant or potentially relevant jurisdiction over permits and
20 approvals potentially required for the planned generation and proposed transmission facilities.
21 This includes consultations related to the heritage, archaeological and natural heritage studies
22 prepared as part of the REA process, the scope of which included the proposed transmission
23 facility locations. No significant feedback specifically related to the proposed transmission
24 facilities was received through agency consultations.

25 With respect to Aboriginal consultations, the Applicant notes that it has undertaken a thorough
26 program of consultation with Aboriginal communities. These consultations are described in
27 detail in Appendix C of the Consultation Report filed by the Applicant as part of its REA

1 Submission to the Ministry of the Environment. The Applicant notes that, as explained in the
2 Board's *Filing Requirements for Transmission and Distribution Applications*, the Board does not
3 consider issues relating to the Crown's duty to consult with Aboriginal peoples in Section 92
4 applications.¹

¹ See p. 17 of the *Filing Requirements*.

EXHIBIT H - IMPACT ASSESSMENTS

Exhibit H, Tab 1, Schedule 1
Overview of Impact Assessments

OVERVIEW OF IMPACT ASSESSMENTS

1 The IESO issued a System Impact Assessment (“SIA”) Final Report in respect of the Adelaide
2 Project on December 21, 2011. Subsequently, the IESO issued an SIA Addendum Report on
3 June 6, 2012 and an SIA 2nd Addendum Report on December 12, 2012. Each of these SIA
4 reports are provided in Exhibit H, Tab 2, Schedule 1. The purposes of the June 6, 2012
5 Addendum Report were (a) to consider connection requirements needed for the Bornish,
6 Adelaide and Jericho projects together with the Suncor Energy Cedar Point Wind Power Project,
7 and (b) to address changes to the means by which potential over-voltage will be mitigated. The
8 purpose of the December 12, 2012 2nd Addendum Report was to consider the potential
9 implications of the proposal to connect to the 500 kV system via two separate autotransformers
10 rather than a single autotransformer. In these SIA reports, the IESO concludes that the proposed
11 connection, by means of the Proposed Transmission Facilities and subject to the requirements
12 specified in each of the SIA reports, is expected to have no material adverse impacts on the
13 reliability of the integrated power system. The SIA Final Report was issued together with a
14 Notification of Conditional Approval, and each of the addendum reports were issued together
15 with addendums to this Notification of Conditional Approval. These are provided in Exhibit H,
16 Tab 2, Schedule 1.

17 Hydro One issued a Customer Impact Assessment (“CIA”) Final Report dated December 20,
18 2011 in respect of the Adelaide Project. Subsequently, Hydro One issued a CIA Addendum
19 Report on June 8, 2012 and a 2nd CIA Addendum Report on February 1, 2013. These CIA
20 reports are provided in Exhibit H, Tab 3, Schedule 1. The purpose of the June 8, 2012
21 Addendum Report was to consider the incorporation of the Suncor Energy Cedar Point Wind
22 Power Project into the proposed connection to the Hydro One’s system and to address changes to
23 the means by which potential over-voltage will be mitigated. The purpose of the 2nd Addendum
24 Report was to consider the potential implications of the proposal to connect to the 500 kV system
25 via two separate autotransformers rather than a single autotransformer. In these CIA reports,
26 Hydro One concludes that the proposed connection, by means of the Proposed Transmission

- 1 Facilities and subject to the requirements specified in each of the CIA reports, will not have any
- 2 adverse impact on existing Hydro One customers in the area.

Exhibit H, Tab 2, Schedule 1
System Impact Assessment

SYSTEM IMPACT ASSESSMENT

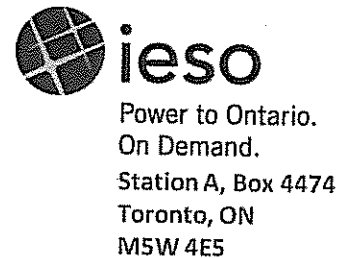
- 1 The following are provided with this schedule:
- 2 Appendix 'A' - Notification of Conditional Approval of Connection Proposal
- 3 Appendix 'B' - Final SIA Report
- 4 Appendix 'C' - Final SIA Report - Addendum
- 5 Appendix 'D' - Final SIA Report - Addendum #2

APPENDIX 'A'

NOTIFICATION OF CONDITIONAL APPROVAL OF CONNECTION PROPOSAL

December 21st 2011

Ben Greenhouse
Project Director – NextEra Energy Canada ULC
5500 North Service Road Suite 205
Burlington, Ontario
L7L 6W6



Dear Mr.Greenhouse:

RE: *Adelaide Wind Energy Centre*
Notification of Conditional Approval of Connection Proposal
CAA ID Number: 2011-446

The IESO has now had an opportunity to review and assess your company's proposed connection of the Adelaide Wind Energy Centre as described in your System Impact Assessment application. The IESO has concluded that the proposed connection will not result in a material adverse impact on the reliability of the integrated power system. The IESO is therefore pleased to grant "conditional" approval as detailed in the attached System Impact Assessment report. Please note that any further material change to your proposed connection may require a re-assessment by the IESO and may result in a nullification of the conditional approval.

You may now initiate the IESO's "Market Entry" process. To do so, please contact Registration & Compliance Support at market.entry@ieso.ca at least eight months prior to your expected energization date. The SIA report, attached hereto, details the requirements that your company must fulfill during this process, including demonstrating that the facility *as installed* will not be materially different from the facility *as approved* by the IESO. The document entitled "Market Entry: A Step-by-Step Guide" provided in the approval email describes the key steps in the Market Entry process.

Please also be advised that the Market Rules governing the connection of renewable generation facilities in Ontario are currently being reviewed through the SE-91 stakeholder initiative and, therefore, new connection requirements (in addition to those outlined in the attached SIA), may be imposed in the future. More details can be found through the following link:

http://www.ieso.ca/imoweb/consult/consult_se91.asp

When your company has successfully completed the IESO's "Facility Registration/Market Entry" process, the IESO will provide you with a "final" approval, thereby confirming that the facility is fully authorized to connect to the IESO-controlled grid.

If you have any questions or require further information, please contact me.

Yours truly,

Michael Falvo
Manager – Market Facilitation
Telephone: (905) 855-6209
Fax: (905) 855-6319
E-mail: mike.falvo@ieso.ca
cc: IESO Records

All information submitted in this process will be used by the IESO solely in support of its obligations under the *Electricity Act, 1998*, the *Ontario Energy Board Act, 1998*, the *Market Rules* and associated policies, standards and procedures and in accordance with its licence. All information submitted will be assigned the appropriate confidentiality level upon receipt.

June 6, 2012



Mr. Ben Greenhouse
Project Director – NextEra Energy Canada ULC
5500 North Service Road Suite 205
Burlington, Ontario
L7L 6W6

Dear Mr.Greenhouse:

Adelaide Wind Energy Centre
Notification of Addendum of Conditional Approval to Connection Proposal
CAA ID Number: 2011-446

Thank you for the updated information regarding the proposed *Adelaide Wind Energy Centre*. From the new information provided, we have concluded that the proposed changes at *Adelaide Wind Energy Centre* will not result in a material adverse impact on the reliability of the integrated power system.

The IESO is therefore pleased to grant **conditional approval** for the modification detailed in the attached addendum to the System Impact Assessment (SIA) report. Any material changes to your proposal may require re-assessment by the IESO in accordance with Market Manual 2.10, and may nullify your conditional approval.

Final approval to connect the facility to the IESO-controlled grid will be granted upon successful completion of the IESO Market Entry process including, without limitation, satisfactory completion of the requirements set out in the addendum to the SIA report. During this process you will be expected to demonstrate that you have fulfilled the requirements and that the facility you have installed is materially unchanged from the proposal assessed by the IESO. Please refer to the "**Market Entry: A Step-by-Step Guide**" attachment in your approval email for key steps in the Market Entry process. In order to initiate this process, please contact Market Entry at market.entry@ieso.ca at least eight months prior to your energization date.

For further information, please contact the undersigned.

Yours truly,

Michael Falvo
Manager – Market Facilitation
Telephone: (905) 855-6209
Fax: (905) 855-6319
E-mail: mike.falvo@ieso.ca
cc: IESO Records

All information submitted in this process will be used by the IESO solely in support of its obligations under the *Electricity Act, 1998*, the *Ontario Energy Board Act, 1998*, the *Market Rules* and associated policies, standards and procedures and in accordance with its licence. All information submitted will be assigned the appropriate confidentiality level upon receipt.

December 12, 2012



Mr. Ben Greenhouse
Project Director – NextEra Energy Canada ULC
5500 North Service Road Suite 205
Burlington, Ontario
L7L 6W6

Dear Mr.Greenhouse:

*Adelaide Wind Energy Centre
Notification of Addendum of Conditional Approval to Connection Proposal
CAA ID Number: 2011-446*

Thank you for the updated information regarding the proposed *Adelaide Wind Energy Centre*.

From the new information provided, we have concluded that the proposed changes at *Adelaide Wind Energy Centre* will not result in a material adverse impact on the reliability of the integrated power system.

The IESO is therefore pleased to grant **conditional approval** for the modification detailed in the attached addendum to the System Impact Assessment (SIA) report. Any material changes to your proposal may require re-assessment by the IESO in accordance with Market Manual 2.10, and may nullify your conditional approval.

Final approval to connect the facility to the IESO-controlled grid will be granted upon successful completion of the IESO Market Entry process including, without limitation, satisfactory completion of the requirements set out in the addendum to the SIA report. During this process you will be expected to demonstrate that you have fulfilled the requirements and that the facility you have installed is materially unchanged from the proposal assessed by the IESO. Please refer to the "**Market Entry: A Step-by-Step Guide**" attachment in your approval email for key steps in the Market Entry process. In order to initiate this process, please contact Market Entry at market.entry@ieso.ca at least eight months prior to your energization date.

If you have any questions or require further information, please contact me.



Michael Falvo
Manager – Market Facilitation
Telephone: (905) 855-6209
Fax: (905) 855-6319
E-mail: mike.falvo@ieso.ca
cc: IESO Records

All information submitted in this process will be used by the IESO solely in support of its obligations under the *Electricity Act, 1998*, the *Ontario Energy Board Act, 1998*, the *Market Rules* and associated policies, standards and procedures and in accordance with its licence. All information submitted will be assigned the appropriate confidentiality level upon receipt.

APPENDIX 'B'

FINAL SYSTEM IMPACT ASSESSMENT REPORT



Power to Ontario.
On Demand.

System Impact Assessment Report

CONNECTION ASSESSMENT & APPROVAL PROCESS

Final Report

CAA ID: 2011-446
Project: Adelaide Wind Energy Centre
Applicant: Kerwood Wind Inc

Market Facilitation Department
Independent Electricity System Operator

Date: December 21st 2011

REPORT

Document ID	IESO_REP_0772
Document Name	System Impact Assessment Report
Issue	Final Report
Reason for Issue	First Issue
Effective Date	December 21 st 2011

System Impact Assessment Report

Acknowledgement

The IESO wishes to acknowledge the assistance of Hydro One in completing this assessment.

Disclaimers

IESO

This report has been prepared solely for the purpose of assessing whether the connection applicant's proposed connection with the IESO-controlled grid would have an adverse impact on the reliability of the integrated power system and whether the IESO should issue a notice of conditional approval or disapproval of the proposed connection under Chapter 4, section 6 of the Market Rules.

Conditional approval of the proposed connection is based on information provided to the IESO by the connection applicant and Hydro One at the time the assessment was carried out. The IESO assumes no responsibility for the accuracy or completeness of such information, including the results of studies carried out by Hydro One at the request of the IESO. Furthermore, the conditional approval is subject to further consideration due to changes to this information, or to additional information that may become available after the conditional approval has been granted.

If the connection applicant has engaged a consultant to perform connection assessment studies, the connection applicant acknowledges that the IESO will be relying on such studies in conducting its assessment and that the IESO assumes no responsibility for the accuracy or completeness of such studies including, without limitation, any changes to IESO base case models made by the consultant. The IESO reserves the right to repeat any or all connection studies performed by the consultant if necessary to meet IESO requirements.

Conditional approval of the proposed connection means that there are no significant reliability issues or concerns that would prevent connection of the proposed project to the IESO-controlled grid. However, the conditional approval does not ensure that a project will meet all connection requirements. In addition, further issues or concerns may be identified by the transmitter(s) during the detailed design phase that may require changes to equipment characteristics and/or configuration to ensure compliance with physical or equipment limitations, or with the Transmission System Code, before connection can be made.

This report has not been prepared for any other purpose and should not be used or relied upon by any person for another purpose. This report has been prepared solely for use by the connection applicant and the IESO in accordance with Chapter 4, section 6 of the Market Rules. The IESO assumes no responsibility to any third party for any use, which it makes of this report. Any liability which the IESO may have to the connection applicant in respect of this report is governed by Chapter 1, section 13 of the Market Rules. In the event that the IESO provides a draft of this report to the connection applicant, the connection applicant must be aware that the IESO may revise drafts of this report at any time in its sole discretion without notice to the connection applicant. Although the IESO will use its best efforts to advise you of any such changes, it is the responsibility of the connection applicant to ensure that the most recent version of this report is being used.

Hydro One

The results reported in this report are based on the information available to Hydro One, at the time of the study, suitable for a System Impact Assessment of this connection proposal.

The short circuit and thermal loading levels have been computed based on the information available at the time of the study. These levels may be higher or lower if the connection information changes as a result of, but not limited to, subsequent design modifications or when more accurate test measurement data is available.

This study does not assess the short circuit or thermal loading impact of the proposed facilities on load and generation customers.

In this report, short circuit adequacy is assessed only for Hydro One circuit breakers. The short circuit results are only for the purpose of assessing the capabilities of existing Hydro One circuit breakers and identifying upgrades required to incorporate the proposed facilities. These results should not be used in the design and engineering of any new or existing facilities. The necessary data will be provided by Hydro One and discussed with any connection applicant upon request.

The ampacity ratings of Hydro One facilities are established based on assumptions used in Hydro One for power system planning studies. The actual ampacity ratings during operations may be determined in real-time and are based on actual system conditions, including ambient temperature, wind speed and facility loading, and may be higher or lower than those stated in this study.

The additional facilities or upgrades which are required to incorporate the proposed facilities have been identified to the extent permitted by a System Impact Assessment under the current IESO Connection Assessment and Approval process. Additional facility studies may be necessary to confirm constructability and the time required for construction. Further studies at more advanced stages of the project development may identify additional facilities that need to be provided or that require upgrading.

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Executive Summary

Project Description

Kerwood Wind Inc (the “connection applicant”) is proposing to construct a 60 MW wind energy project named Adelaide Wind Energy Centre (the “project”) in Kerwood, Ontario. The project will connect to Hydro One’s 500 kV circuit B562L via a 121 kV network to which two other projects, Bornish and Jericho Wind Energy Centres, will also be connected. The System Impact Assessment (SIA) study was performed as a cluster, with requirements being developed for the combination of the Adelaide, Bornish and Jericho Wind Energy Centres (the “projects”).

The Adelaide Wind Energy Centre has been awarded a Power Purchase Agreement under the Feed-In Tariff (FIT) program with the Ontario Power Authority. The project in-service date is July 1, 2013.

Findings

The following conclusions were derived from the study results:

1. The proposed connection arrangement and equipment for the projects are acceptable to the IESO.
2. The asymmetrical fault current at Bruce A 230 kV switchyard before and after the incorporation of the project will exceed the interrupting capability of the existing breakers. Hydro One has planned to replace the Bruce 230 kV breakers to improve fault current interrupting capability in the long term. Before the circuit breakers are replaced, temporary operational mitigation measures have been developed by Hydro One in collaboration with the IESO.
3. Circuit S2S will be required to operate open-loop under certain conditions after the integration of the committed generation in the Bruce Area to prevent thermal overloading
4. The projects are connecting in the Bruce Area where transmission connected generation projects participate in the Bruce Special Protection Scheme (BSPS).
5. The reactive power capability of the wind turbine generators (WTGs) along with the impedance between the WTGs and the IESO controlled grid results in a reactive power deficiency at the connection point which has to be compensated with additional reactive power devices.
6. The features of the proposed wind farm control system meet the requirements in the Market Rules.
7. Some outage conditions and contingencies cause the voltage at the 500 kV Evergreen SS to exceed maximum permissible voltage levels. This can be mitigated by connecting a reactor at the 500 kV Evergreen SS bus. The reactor would control voltage by being automatically switched in service upon detection of a high voltage condition.
8. The WTGs of the projects and the power system are expected to be transiently stable following recognized fault conditions.
9. The proposed WTGs are expected to remain connected to the grid for recognized system contingencies which do not remove the projects by configuration.
10. Protection adjustments identified by the Hydro One in the Protection Impact Assessment (PIA) to accommodate the projects have no adverse impact on the reliability of IESO-controlled grid.

11. The relay margins on the affected circuits after the incorporation of the projects conform to the Market Rules' requirements.
12. In the event of high flows eastward towards Toronto, there is a low probability of congestion that may require the applicant to curtail its output.

IESO Requirements for Connection

Transmitter Requirements

The following requirements are applicable to the transmitter for the incorporation of the projects:

- (1) Hydro One is required to review the relay settings of the 500 kV sectionalized circuits of B562L and any other circuits affected by the project, as per solutions identified in the PIA.

Modifications to protection relays after this SIA is finalized must be submitted to IESO as soon as possible or at least six (6) months before any modifications are to be implemented. If those modifications result in adverse reliability impacts, the connection applicant and the transmitter must develop mitigation solutions.

- (2) The transmitter shall modify the existing BSPS to incorporate the new facility.
- (3) A reactor of at least 120 MVar@ 500 kV is required to be installed at the 500 kV Evergreen SS to control voltages at the new 500 kV stations under certain operating scenarios. The reactor shall be connected through a circuit switcher or a circuit breaker to allow for automatic switching. Switching of the reactor shall be controlled based on the voltage at the stations and in coordination with the capacitor switching at the 121 kV Parkhill CTS. The applicant and the transmitter shall work together on appropriate high voltage settings and timings for reactor/capacitor switching control to avoid damage to any equipment. These settings shall be provided to the IESO for approval.

Applicant Requirements

Specific Requirements: The following *specific* requirements are applicable for the incorporation of the projects. Specific requirements pertain to the level of reactive compensation needed, operation restrictions, special protection system, upgrading of equipment and any project specific items not covered in the *general* requirements. These requirements are based on the projects' grid connection point being at the 500 kV Parkhill CTS.

- (1) The projects are required to have the capability to inject or withdraw reactive power continuously (i.e. dynamically) at a connection point up to 33% of its rated active power at all levels of active power output.

Based on the equivalent collector impedance parameters provided by the connection applicant, a static capacitive compensation device of at least 65 MVar at 121 kV installed at the 121 kV Parkhill CTS bus would satisfy the reactive power requirement. The required capacitive compensation would need to be arranged into at least 2 approximately equal steps to allow for flexibility in adjustment of reactive power production.

The voltage profile along the projects' network greatly impacts their ability to provide full reactive support from the WTGs. The IESO recommends that projects' internal system voltages be controlled via automatic ULTC such that voltages remain within acceptable ranges, ultimately facilitating the WTGs ability to provide full reactive support.

The wind farm voltage control system shall be designed as per the philosophy described in Section 6.5.

The connection applicant is required to provide a finalized copy of the functional description of the wind farm control systems for the IESO's approval before the project is allowed to connect.

The connection applicant has the obligation to ensure that the wind farm has the capability to meet the Market Rules' requirements at the connection point and be able to confirm this capability during the commission tests.

- (2) The applicant shall work with the transmitter on appropriate high voltage settings and timings for reactor/capacitor switching control to avoid damaging any equipment.
- (3) The projects will be required to participate in the Bruce Special Protection Scheme (BSPS). Special protection system facilities must be installed at the projects to accept a pair (A & B) of Generation Rejection (G/R) signals from the BSPS. These signals will disconnect the projects from Evergreen SS without intentional delay when armed for G/R by the IESO, following a triggering contingency. These special protection system facilities must also comply with the NPCC Directory #7 for special protection systems. In particular, if the SPS is designed to have 'A' and 'B' protection at a single location for redundancy, they must be on different non-adjacent vertical mounting assemblies or enclosures. Also, two independent trip coils are required on breakers that are part of the SPS. The applicant must provide two dedicated communication channels, separated physically and geographically diverse, between the projects and the Bruce NGS.

To disconnect the project from the system for G/R, simultaneous tripping of the 500 kV and 121 kV breakers at Parkhill CTS shall be initiated with no accompanying breaker failure response.

After being tripped by the BSPS, the closing of the breakers is not permitted until approval is obtained from the IESO. Alternative solutions to disconnect the project from the system for G/R may be acceptable upon the approval of the IESO.

General Requirements: The connection applicant shall satisfy all applicable requirements and standards specified in the Market Rules and the Transmission System Code. The following requirements summarize some of the general requirements that are applicable to the proposed projects, and presented in detail in section 2 of this report.

- (1) The connection applicant shall ensure that the projects have the capability to operate continuously between 59.4Hz and 60.6Hz and for a limited period of time in the region above straight lines on a log-linear scale defined by the points (0.0s, 57.0Hz), (3.3s, 57.0Hz), and (300s, 59.0Hz).

The project shall respond to frequency increase by reducing the active power with an average droop based on maximum active power adjustable between 3% and 7% and set at 4%. Regulation deadband shall not be wider than $\pm 0.06\%$. The projects shall respond to system frequency decline by temporarily boosting its active power output for some time (i.e. 10 s) by recovering energy from the rotating blades, if this technology is available.

- (2) The connection applicant shall ensure that the projects have the capability to supply continuously all levels of active power output for 5% deviations in terminal voltage.

The project shall inject or withdraw reactive power continuously (i.e. dynamically) at a connection point up to 33% of its rated active power at all levels of active power output except where a lesser continually available capability is permitted by the IESO.

The project shall have the capability to regulate automatically voltage within $\pm 0.5\%$ of any set point within $\pm 5\%$ of rated voltage at a point whose impedance (based on rated apparent power

and rated voltage) is not more than 13% from the highest voltage terminal. If the AVR target voltage is a function of reactive output, the slope $\Delta V/\Delta Q_{\max}$ shall be adjustable to 0.5%. The response of the projects for voltage changes shall be similar or better than that of a generation facility with a synchronous generation unit and an excitation system that meets the requirements of Appendix 4.2.

- (3) The project shall have the capability to ride through routine switching events and design criteria contingencies assuming standard fault detection, auxiliary relaying, communication, and rated breaker interrupting times unless disconnected by configuration.
- (4) The connection applicant shall ensure that the 500 kV equipment is capable of continuously operating between 490 kV and 550 kV. Protective relaying must be set to ensure that transmission equipment remains in-service for voltages between 94% of the minimum continuous value and 105% of the maximum continuous value specified in Appendix 4.1 of the Market Rules.
- (5) The connection applicant shall ensure that the connection equipment is designed to be fully operational in all reasonably foreseeable ambient temperature conditions. The connection equipment must also be designed so that the adverse effects of its failure on the IESO-controlled grid are mitigated. This includes ensuring that all circuit breakers fail in the open position.
- (6) The connection applicant shall install at the projects a disturbance recording device with clock synchronization that meets the technical specifications provided by the transmitter.
- (7) The connection applicant shall ensure that the new equipment at the projects is designed to sustain the fault levels in the area. If any future system change result in fault levels exceeding the equipment's capability, the connection applicant is required to replace the equipment with higher rated equipment capable of sustaining the increased fault level, up to maximum fault level specified in Appendix 2 of the Transmission System Code.

Fault interrupting devices must be able to interrupt fault currents at the maximum continuous voltage of 550 kV.

- (8) Appendix 2 of the Transmission System Code states that the maximum rated interrupting time for the 500 kV breakers must be 2 cycles or less. Thus, the connection applicant shall ensure that the installed breakers meet the required interrupting time specified in the Transmission System Code.
- (9) The connection applicant shall ensure that the new protection systems at the projects are designed to satisfy all the requirements of the Transmission System Code and any additional requirements identified by the transmitter.

As currently assessed, the projects are not part of the Bulk Power System (BPS). However, being 500 kV connected facilities, the projects are designated as essential to the power system by the IESO and as such must meet the TSC requirements for essential elements.

The protection systems within the project must only trip the appropriate equipment required to isolate the fault.

The auto-reclosure of the high voltage breakers at Parkhill CTS must be blocked. Upon its opening for a contingency, the high voltage breaker must be closed only after the IESO approval is granted.

Any modifications made to protection relays after this SIA is finalized must be submitted to the IESO as soon as possible or at least six (6) months before any modifications are to be implemented on the existing protection systems.

- (10) The connection applicant shall ensure that the telemetry requirements are satisfied as per the applicable Market Rules requirements. The determination of telemetry quantities and telemetry testing will be conducted during the IESO Facility Registration/Market Entry process.
- (11) If revenue metering equipment is being installed as part of the projects, the connection applicant should be aware that revenue metering installations must comply with Chapter 6 of the IESO Market Rules. For more details the connection applicant is encouraged to seek advice from their Metering Service Provider (MSP) or from the IESO metering group.
- (12) The project must be compliant with applicable reliability standards set by the North American Electric Reliability Corporation (NERC) and the North East Power Coordinating Council (NPCC) that are in effect in Ontario as mapped in the following link: <http://www.ieso.ca/imoweb/ircp/orcp.asp>.
- (13) The connection applicant will be required to be a restoration participant. Details regarding restoration participant requirements will be finalized at the Facility Registration/Market Entry Stage.
- (14) The connection applicant must complete the IESO Facility Registration/Market Entry process in a timely manner before IESO final approval for connection is granted.

Models and data, including any controls that would be operational, must be provided to the IESO at least seven months before energization to the IESO-controlled grid. This includes both PSS/E and DSA software compatible mathematical models. The models and data may be shared with other reliability entities in North America as needed to fulfill the IESO's obligations under the Market Rules, NPCC and NERC rules.

The connection applicant must also provide evidence to the IESO confirming that the equipment installed meets the Market Rules requirements and matches or exceeds the performance predicted in this assessment. This evidence shall be either type tests done in a controlled environment or commissioning tests done on-site. The evidence must be supplied to the IESO within 30 days after completion of commissioning tests. If the submitted models and data differ materially from the ones used in this assessment, then further analysis of the projects will need to be done by the IESO.

- (15) The Market Rules governing the connection of renewable generation facilities in Ontario are currently being reviewed through the SE-91 stakeholder initiative and, therefore, new connection requirements (in addition to those outlined in the SIA), may be imposed in the future. The connection applicant is encouraged to follow developments and updates through the following link: http://www.ieso.ca/imoweb/consult/consult_se91.asp.

Notification of Conditional Approval

The proposed connection of the Adelaide Wind Energy Centre, operating up to 60 MW, subject to the requirements specified in this report, is expected to have no material adverse impact on the reliability of the integrated power system.

It is recommended that a *Notification of Conditional Approval for Connection* be issued for the Adelaide Wind Energy Centre subject to the implementation of the requirements outlined in this report.

– End of Section –

1. Project Description

Kerwood Wind Inc is proposing to construct a 60 MW wind energy project named Adelaide Wind Energy Centre in Kerwood, Ontario. The project has been awarded a Power Purchase Agreement under FIT program with the Ontario Power Authority. The project in-service date is July 1st, 2013.

The project will consist of 37 GE 1.6 MW Wind Turbine Generators (WTGs). The WTGs are doubly fed induction generator (GE1.6MW) rated at 690 V and 60 Hz with pad-mounted 690 V to 34.5 kV Generator Step-Up (GSU) transformers.

The collector system will have a total of three 34.5 kV collector feeders. At the Adelaide collector station, the voltage will be stepped up to 121 kV using a power transformer Delta-connected on the 34.5 kV side and Wye-grounded on the 121 kV side. The transformer has ONAN/ONAF/OFAF ratings of 51/68/85 MVA and is sized to carry maximum generation from the wind farm. The Adelaide collector station will connect to the Bornish 121 kV switching station using an 11.5 km circuit. The two other generation projects, Bornish and Jericho Wind Energy Centres, will also connect to the Bornish 121 kV switching station.

Power from the projects (Adelaide, Bornish and Jericho) will be transmitted to the 500/121 kV Parkhill CTS substation through a 11.4 km line called BTS1P. Additional capacitor banks will be installed at the 121 kV bus at Parkhill CTS to provide reactive power compensation. The voltage level will subsequently be stepped up to 500 kV using a power transformer Delta-connected on the 121 kV side and Wye-grounded on the 500 kV side, rated at 189/252/315 MVA (ONAN/ONAF/OFAF). Parkhill CTS will be connected to one of the Bruce by Longwood circuits, B562L, which will be sectionalized by the new Evergreen SS 500 kV ring bus at the connection point of the project. Evergreen SS will be approximately 36.5 km from Longwood TS.

The single line diagram and the connection point of the project are illustrated in Figure 1 and Figure 2, Appendix A, respectively.

Sectionalizing circuits B562L and B563L at Evergreen SS and Ashfield SS (for connection of the K2 wind project) respectively resulted in four new 500 kV circuits. Figure 2 shows the names of these circuits: B562E, E562L, B563A, and A563L. The nomenclature assumed for the new circuits is for the purpose of this report and the names may differ at the time of connection.

This System Impact Assessment and its requirements are based on the projects' grid connection point being at the 500 kV Parkhill CTS.

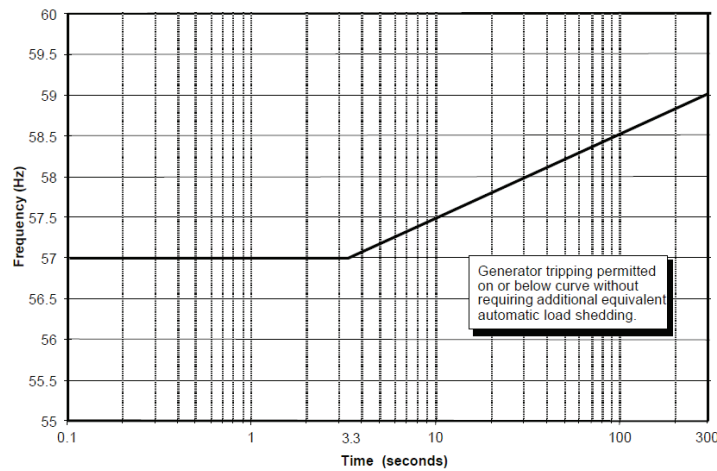
– End of Section –

2. General Requirements

The connection applicant shall satisfy all applicable requirements and standards specified in the Market Rules and the Transmission System Code. The following sections highlight some of the general requirements that are applicable to the proposed project.

2.1 Frequency/Speed Control

As per Appendix 4.2 of the Market Rules, the connection applicant shall ensure that the project has the capability to operate continuously between 59.4 Hz and 60.6 Hz and for a limited period of time in the region above straight lines on a log-linear scale defined by the points (0.0 s, 57.0 Hz), (3.3 s, 57.0 Hz), and (300 s, 59.0 Hz), as shown in the following figure.



The project shall respond to frequency increase by reducing the active power with an average droop based on maximum active power adjustable between 3% and 7% and set at 4%. Regulation deadband shall not be wider than $\pm 0.06\%$. The project shall respond to system frequency decline by temporarily boosting its active power output for some time (i.e. 10 s) by recovering energy from the rotating blades. This usually refers to “inertia emulation control” function within the wind farm control system. It is not required for wind facilities to provide a sustained response to system frequency decline. The connection applicant will need to indicate to the IESO whether the function of inertia emulation control is commercially available for the proposed type of wind turbine generator at the time when the wind farm comes into service. If this function is available, the connection applicant is required to implement it before the project can be placed in-service. If this function is commercially unavailable, the IESO reserves the right to ask the connection applicant to install this function in the future, once it is commercially available for the proposed type of wind turbine generator.

2.2 Reactive Power/Voltage Regulation

The project is directly connected to the IESO-controlled grid, and thus, the connection applicant shall ensure that the project has the capability to:

- supply continuously all levels of active power output for 5% deviations in terminal voltage. Rated active power is the smaller output at either rated ambient conditions (e.g. temperature,

- head, wind speed, solar radiation) or 90% of rated apparent power. To satisfy steady-state reactive power requirements, active power reductions to rated active power are permitted;
- inject or withdraw reactive power continuously (i.e. dynamically) at a connection point up to 33% of its rated active power at all levels of active power output except where a lesser continually available capability is permitted by the IESO. If necessary, shunt capacitors must be installed to offset the reactive power losses within the project in excess of the maximum allowable losses. If generators do not have dynamic reactive power capabilities, dynamic reactive compensation devices must be installed to make up the deficient reactive power;
 - regulate automatically voltage within $\pm 0.5\%$ of any set point within $\pm 5\%$ of rated voltage at a point whose impedance (based on rated apparent power and rated voltage) is not more than 13% from the highest voltage terminal. If the AVR target voltage is a function of reactive output, the slope $\Delta V/\Delta Q_{\max}$ shall be adjusted to 0.5%. The response of the project for voltage changes shall be similar to or better than the response of a generation facility with a synchronous generation unit and an excitation system that meets the requirements of Appendix 4.2.

2.3 Voltage Ride Through Capability

The project shall have the capability to ride through routine switching events and design criteria contingencies assuming standard fault detection, auxiliary relaying, communication, and rated breaker interrupting times unless disconnected by configuration.

2.4 Voltage

Appendix 4.1 of the Market Rules states that under normal operating conditions, the voltages in the 500 kV system are maintained within the range of 490 kV and 550 kV. Also, protective relaying must be set to ensure that transmission equipment remains in-service for voltages between 94% of the minimum continuous value and 105% of the maximum continuous value.

2.5 Connection Equipment Design

The connection applicant shall ensure that the connection equipment is designed to be fully operational in all reasonably foreseeable ambient temperature conditions. The connection equipment must also be designed so that the adverse effects of its failure on the IESO-controlled grid are mitigated. This includes ensuring that all circuit breakers fail in the open position.

2.6 Disturbance Recording

The connection applicant is required to install at the project a disturbance recording device with clock synchronization that meets the technical specifications provided by the transmitter. The device will be used to monitor and record the response of the project to disturbances on the 500 kV system in order to verify the dynamic response of generators. The quantities to be recorded, the sampling rate and the trigger settings will be provided by the transmitter.

2.7 Fault Level

The Transmission System Code requires the new equipment to be designed to sustain the fault levels in the area where the equipment is installed. Thus, the connection applicant shall ensure that the new equipment at the project is designed to sustain the fault levels in the area. If any future system changes result in an increased fault level higher than the equipment's capability, the connection applicant is required to replace the equipment with higher rated equipment capable of sustaining the increased fault level, up to maximum fault level specified in the Transmission System Code. Appendix 2 of the Transmission System Code establishes the maximum fault levels for the transmission system. For the 500 kV system, the maximum 3 phase symmetrical fault level is 63 kA and the maximum single line to ground symmetrical fault level is 80 kA (usually limited to 63 kA).

Fault interrupting devices must be able to interrupt fault currents at the maximum continuous voltage of 550 kV.

2.8 Breaker Interrupting Time

Appendix 2 of the Transmission System Code states that the maximum rated interrupting time for the 500 kV breakers must be 2 cycles or less. Thus, the connection applicant shall ensure that the installed breakers meet the required interrupting time specified in the Transmission System Code.

2.9 Protection System

The connection applicant shall ensure that the protection systems are designed to satisfy all the requirements of the Transmission System Code as specified in Schedules E, F and G of Appendix 1 and any additional requirements identified by the transmitter. New protection systems must be coordinated with the existing protection systems.

Facilities that are essential to the power system must be protected by two redundant protection systems according to section 8.2.1a of the TSC. These redundant protection systems must satisfy all requirements of the TSC, and in particular, they must not use common components, common battery banks or common secondary CT or PT windings. As currently assessed by the IESO, this project is not on the current Bulk Power System list, however it is considered essential to the power system due to its 500 kV connection and as such must meet the TSC requirements for essential elements.

The protection systems within the project must only trip the appropriate equipment required to isolate the fault. After the project begins commercial operation, if an improper trip of the 500 kV circuits emanating from Evergreen SS occurs due to events within the project, the project may be required to be disconnected from the IESO-controlled grid until the problem is resolved.

The auto-reclosure of the high voltage breakers at Parkhill CTS must be blocked. Upon its opening for a contingency, the high voltage breaker must be closed only after the IESO approval is granted.

Any modifications made to protection relays after this SIA is finalized must be submitted to the IESO as soon as possible or at least six (6) months before any modifications are to be implemented on the existing protection systems. If those modifications result in adverse impacts, the connection applicant and the transmitter must develop mitigation solutions

2.10 Telemetry

If applicable according to Section 7.3 of Chapter 4 of the Market Rules, the connection applicant shall provide to the IESO the applicable telemetry data listed in Appendix 4.15 of the Market Rules on a continual basis. The data shall be provided in accordance with the performance standards set forth in Appendix 4.19, subject to Section 7.6A of Chapter 4 of the Market Rules. The data is to consist of certain equipment status and operating quantities which will be identified during the IESO Facility Registration/Market Entry Process.

To provide the required data, the connection applicant must install at this project monitoring equipment that meets the requirements set forth in Appendix 2.2 of Chapter 2 of the Market rules. As part of the IESO Facility Registration/Market Entry process, the connection applicant must also complete end to end testing of all necessary telemetry points with the IESO to ensure that standards are met and that sign conventions are understood. All found anomalies must be corrected before IESO final approval to connect any phase of the project is granted.

2.11 Revenue Metering

If revenue metering equipment is being installed as part of this project, the connection applicant should be aware that revenue metering installations must comply with Chapter 6 of the IESO Market Rules. For more details the connection applicant is encouraged to seek advice from their Metering Service Provider (MSP) or from the IESO metering group.

2.12 Reliability Standards

Prior to connecting to the IESO controlled grid, the project must be compliant with the applicable reliability standards established by the North American Electric Reliability Corporation (NERC) and reliability criteria established by the Northeast Power Coordinating Council (NPCC) that are in effect in Ontario. A mapping of applicable standards, based on the proponent's/connection applicant's market role/OEB license can be found here: <http://www.ieso.ca/imoweb/ircp/orcp.asp>

This mapping is updated periodically after new or revised standards become effective in Ontario.

The current versions of these NERC standards and NPCC criteria can be found at the following websites:

<http://www.nerc.com/page.php?cid=2|20>

<http://www.npcc.org/documents/regStandards/Directories.aspx>

The IESO monitors and assesses market participant compliance with a selection of applicable reliability standards each year as part of the Ontario Reliability Compliance Program. To find out more about this program, write to orcp@ieso.ca or visit the following webpage:

<http://www.ieso.ca/imoweb/ircp/orcp.asp>

Also, to obtain a better understanding of the applicable reliability compliance obligations and engage in the standards development process, we recommend that the proponent/ connection applicant join the IESO's Reliability Standards Standing Committee (RSSC) or at least subscribe to their mailing list by contacting rssc@ieso.ca. The RSSC webpage is located at:

http://www.ieso.ca/imoweb/consult/consult_rssc.asp.

2.13 Restoration Participant

Based on the SIA application, the connection applicant meets the restoration participant criteria. Please refer to the Market Manual 7.8 to determine its applicability to the project. Details regarding restoration participant requirements will be finalized at the Facility Registration/Market Entry Stage.

2.14 Facility Registration/Market Entry

The connection applicant must complete the IESO Facility Registration/Market Entry process in a timely manner before IESO final approval for connection is granted.

Models and data, including any controls that would be operational, must be provided to the IESO. This includes both PSS/E and DSA software compatible mathematical models representing the new equipment for further IESO, NPCC and NERC analytical studies. The models and data may be shared with other reliability entities in North America as needed to fulfill the IESO's obligations under the Market Rules, NPCC and NERC rules. The connection applicant may need to contact the software manufacturers directly, in order to have the models included in their packages. This information should be submitted at least seven months before energization to the IESO-controlled grid, to allow the IESO to incorporate this project into IESO work systems and to perform any additional reliability studies.

As part of the IESO Facility Registration/Market Entry process, the connection applicant must provide evidence to the IESO confirming that the equipment installed meets the Market Rules requirements and matches or exceeds the performance predicted in this assessment. This evidence shall be either type tests done in a controlled environment or commissioning tests done on-site. In either case, the testing must be done not only in accordance with widely recognized standards, but also to the satisfaction of the IESO. Until this evidence is provided and found acceptable to the IESO, the Facility Registration/Market Entry process will not be considered complete and the connection applicant must accept any restrictions the IESO may impose upon this project's participation in the IESO-administered markets or connection to the IESO-controlled grid. The evidence must be supplied to the IESO within 30 days after completion of commissioning tests. Failure to provide evidence may result in disconnection from the IESO-controlled grid.

If the submitted models and data differ materially from the ones used in this assessment, then further analysis of the project will need to be done by the IESO.

2.15 Other Connection Requirements

The Market Rules governing the connection of renewable generation facilities in Ontario are currently being reviewed through the SE-91 stakeholder initiative and, therefore, new connection requirements (in addition to those outlined in the SIA), may be imposed in the future. The connection applicant is encouraged to follow developments and updates through the following link:

http://www.ieso.ca/imoweb/consult/consult_se91.asp

-End of Section-

3. Data Verification

3.1 Connection Arrangement

The connection arrangement of the project as shown in Figure 1, Appendix A, will not reduce the level of reliability of the integrated power system and is, therefore, acceptable to the IESO.

3.2 GE 1.6 MW WTG

The GE 1.6 MW WTG is a variable pitch and speed doubly-fed induction generator with a power converter interfacing the rotor to the grid. Its specifications are show in Table 1.

Table 1: Specifications of GE 1.6 MW WTG

Type	Rated Voltage	Rated MVA	Rated MW	Transformer			Q _{max} (MVar)	Q _{min} (MVar)	X _d '' (pu)
				MVA	R	X			
GE 1.6 MW	690 V	1.837	1.62	1.8	0.76%	5.70%	0.78	-0.78	0.33

Voltage Ride-Through Capability

The GE 1.6 MW WTG provides voltage ride through capability, including the ZVRT (Zero Voltage Ride Through) option. Table 2 summarizes the voltage ride through settings.

Table 2: GE 1.6 MW WTG voltage ride-through specifications

Voltage Range (% of base voltage)	Minimum time for WTGs to Remain Online (s)
V<15	0.2
15<V<30	0.7
30<V<50	1.2
50<V<75	1.9
110 < V < 115	1.0
V>115	0.1

The low voltage ride-through (LVRT) capability of the proposed WTGs was verified by performing the studies outlined in Section 6.10.

Frequency Ride-Through Capability

The GE 1.6 MW WTG is able to operate continuously for a frequency range of $\pm 5\%$ (57 to 63 Hz).

The Market Rules state that the generation facility directly connecting to the IESO-controlled grid shall operate continuously between 59.4Hz and 60.6Hz and for a limited period of time in the region above straight lines on a log-linear scale defined by the points (0.0s, 57.0Hz), (3.3s, 57.0Hz), and (300s, 59.0Hz).

Therefore, the frequency ride-through capability of the proposed WTGs meets the Market Rules' requirements.

3.3 Step-Up Transformers

Table 3: Main step-up transformer data

Unit	Transformation	Rating (MVA) (ONAN/ONAF/OFAF)	Positive Sequence Impedance (pu) SB= 189 MVA	Configuration		Tap
				HV-Side	LV-Side	
T3	525kV/121kV	189/252/315 MVA	0.0022+j0.09997	Yg	Δ	±10% ULTC@ LV 33 steps, 0.625% each

Table 4: Intermediate step-up transformer data

Unit	Transformation	Rating (MVA) (ONAN/ONAF/OFAF)	Positive Sequence Impedance (pu) SB= 51 MVA	Configuration		Tap
				HV-Side	LV-Side	
T2	121kV/34.5kV	51/68/85 MVA	0.0023+j0.0799	Yg	Δ	±10% ULTC@ LV 33 steps, 0.625% each

3.4 Collector and Intermediate Transmission System

Table 5: Equivalent impedance of collectors

Circuit	Unit	MW	Positive-Sequence Impedance (pu, $S_B=100\text{MVA}$)			Zero-Sequence Impedance* (pu, $S_B=100\text{MVA}$)		
			R	X	B	R	X	B
C1	G1	19.44	0.059	0.07	0.012	-	-	-
C2	G2	19.44	0.083	0.062	0.015	-	-	-
C3	G3	21.06	0.093	0.105	0.017	-	-	-

(*) Zero-sequence impedance has not been provided. Typical data was assumed during the SIA. The connection applicant needs to provide these data during the IESO Market Entry process.

Table 6: Equivalent impedance of intermediate transmission line

Circuits $V_B =$ 115 kV	Positive-Sequence Impedance (pu, $S_B=100\text{MVA}$)			Zero-Sequence Impedance (pu, $S_B=100\text{MVA}$)		
	R	X	B	R	X	B
A1BTS	0.00414	0.03783	0.00575	0.03484	0.09223	0.00368
BTS1P	0.002052	0.02622	0.008208	0.032604	0.08014	0.00456

3.5 Connection Equipment

3.5.1 121 kV Switches

Table 7: Specifications of 121 kV switches

Identifier	Voltage Rating	Continuous Current Rating	Short Circuit Symmetrical Rating
All	145 kV	2000 A	40 kA

3.5.2 121 kV Circuit Breakers

Table 8: Specifications of 121 kV circuit breakers

Identifier	Voltage Rating	Interrupting time	Continuous Current Rating	Short Circuit Symmetrical Rating
All	145 kV	50 ms	2000 A	40 kA

3.5.3 500 kV Switches

Table 9: Specifications of 500 kV switches

Identifier	Voltage Rating	Continuous Current Rating	Short Circuit Symmetrical Rating
All	550 kV	4000 A	63 kA

All switches meet the maximum continuous voltage rating requirement of 550 kV.

3.5.4 500 kV Circuit Breakers

Table 10: Specifications of 500 kV switches

Identifier	Voltage Rating	Interrupting time	Continuous Current Rating	Short Circuit Symmetrical Rating
All	550 kV	33 ms	4000 A	63 kA

All circuit breakers meet the maximum continuous voltage rating requirement of 550 kV. The interrupting time and short circuit symmetrical duty ratings meet the requirements of the Transmission System Code (TSC).

3.5.5 Tap Line

Parkhill CTS connects to Evergreen SS using a short tap line. Due to its short length, it was modeled as a zero impedance line.

3.6 Wind Farm Control System

The proposed wind farm will be equipped with the GE WindCONTROL System. This control system is designed to interface with each WTG in the wind farm for regulating system voltage, system power factor and real and actual power for the entire wind farm. It has also the capability to coordinate and control fixed reactor and capacitor banks when the total reactive requirements for the farm cannot be supplied by the reactive capability of the WTGs.

Voltage Control

The WindCONTROL System has the following functions related to the voltage control:

- Voltage, VAR and Power Factor Control

The WindCONTROL System has a voltage or power factor closed loop regulator controlling voltage at the connection point or reactive power injected by the wind farm at the connection point by regulating the reactive output of the WTGs.

- Fixed Reactor and Cap Bank Control and Coordination

The WindCONTROL System is able to control and coordinate the insertion of up to 4 fixed capacitor or reactor banks. These banks may be operated automatically in conjunction with the voltage or power factor regulator.

- Line Drop Compensation / Voltage Droop Compensation

The voltage regulator and the power factor regulator can implement line drop-compensating logic to correct for voltage drops and VAR losses on the line. The voltage regulator can be configured with voltage droop compensation, which allows tightly coupled adjacent voltage regulators to share in the voltage regulation of a point that is common to all the adjacent regulators.

The voltage control functions enable the proposed wind farm to operate in voltage control mode and control voltage at a point whose impedance (based on rated apparent power and voltage of the project) is not more than 13% from the connection point. Thus, it is acceptable to the IESO.

The function of voltage control meets the requirements of the Market Rules.

Frequency Control and Inertia Emulation

The WindCONTROL System has a function of frequency droop control which controls the wind farm power output based upon the grid frequency. This function is similar to governor droop control for a conventional rotating generator.

The WindCONTROL System has also a feature of WindINERTIA. This feature supports the grid during under-frequency events by providing a temporary increase in power production for a short duration, contributing towards frequency recovery.

This is achieved by tapping into the stored kinetic energy in the rotor mass. The response is equivalent to that of a synchronous generator with an inertia constant of 3.5 sec.

The function of frequency control meets the requirements of the Market Rules.

-End of Section-

4. Short Circuit Assessment

Fault level studies were completed by the transmitter to examine the fault levels at existing facilities in the area. Studies were performed to analyze the fault levels in the surrounding area with and without the projects and other recently committed generation projects.

The short circuit study was carried out with the following primary system assumptions:

(1) Generation Facilities In-Service

East

Lennox	G1-G4	Chenau	G1-G8
Kingston Cogen	G1-G2	Mountain Chute	G1-G2
Wolf Island	300 MW	Stewartville	G1-G5
Arnprior	G1-G2	Brockville	G1
Barrett Chute	G1-G4	Havelock	G1
Chats Falls	G2-G9	Saunders	G1-G16
Cardinal Power	G1, G2		

Toronto

Pickering units	G1, G4-G8	Sithe Goreway	G11-13, G15
Darlington	G1-G4	TransAlta Douglas	G1-G3
Portlands GS	G1-G3	GTAA	G1-G3
Algonquin Power	G1, G2	Brock west	G1
Whitby Cogen	G1		

Niagara

Thorold GS	GTG1, STG2	Beck 2	G11-G26
Beck 1	G3-G10	Beck 2 PGS	G1-G6
Decew	G1, G2, ND1		

South West

Nanticoke	G1, G2, G5-G8	Kingsbridge WGS	39.6 MW
Halton Hills GS	G1-G3	Amaranth WGS	199.5 MW

Bruce

Bruce A	G1-G4	Ripley WGS	76 MW
Bruce B	G5-G8	Underwood WGS	198 MW
Bruce A Standby	SG1		

West

Lambton units	G3-G4	Imperial Oil	G1
Brighton Beach	G1, G1A, G1B	Kruger Port Alma WGS	101.2 MW
Greenfield Energy Centre	G1-G4	Gosfield Wind Project	50.6 MW
St. Clair Energy Centre	CTG3, STG3, CTG4, STG4	Kruger Energy Chatham WF	101 MW
East Windsor Cogen	G1-G2	Raleigh Wind Energy Centre	78 MW
TransAlta Sarnia	G861, G871, G881, G891	Talbot Wind Farm	98.9 MW
Ford Windsor CTS	STG5	Dow Chemicals	G1, G2, G5
TransAlta Windsor	G1, G2	Port Burwell WGS	99 MW
West Windsor Power	G1, G2	Fort Chicago London Cogen	23 MVA
		Great Northern Tri-Gen Cogen	15 MVA

(2) Previously Committed Generation Facilities

- Bruce G1, G2
- Big Eddy GS and Half Mile Rapids GS
- White Pines Wind Farm
- Amherst Island
- York Energy Centre
- Conestogo Wind Energy Centre 1
- Dufferin Wind Farm
- Summerhaven Wind Farm
- Port Dover and Nanticoke
- Grand Renewable Energy
- Greenfield South
- Comber East C24Z
- Comber West C23Z
- Pointe-Aux-Roches Wind
- South Kent Wind Farm

(3) Recently Committed Generation Facilities

- Bluewater Wind Energy Centre
- Jericho Wind Energy Centre
- Bornish Wind Energy Centre
- Goshen Wind Energy Centre
- Cedar Point Wind Power Project Phase II
- Adelaide Wind Energy Centre
- Grand Bend Wind Farms
- Grand Valley Wind Farms (Phase 3)
- Erieau Wind
- East Lake St. Clair Wind
- Adelaide Wind Power
- Gunn's Hill Wind Farm
- Silvercreek Solar Park
- K2 wind
- Armow
- Beaverdale
- Dundalk
- Kingston

(4) Existing and Committed Embedded Generation

- Essa area: 264 MW
- Ottawa area: 90 MW
- East area: 580 MW
- Toronto area: 168 MW
- Niagara area: 52 MW
- Southwest area: 348 MW
- Bruce area: 26 MW
- West area: 585 MW

(5) Transmission System Upgrades

- Leaside - Bridgman reinforcement: Leaside TS to Birch JCT: new 115 kV circuit (CAA2006-238);
- St. Catherines 115 kV circuit upgrade: circuits D9HS, D10S and Q11S (CAA2007-257);
- Tilbury West DS second connection point for DESN arrangement using K2Z and K6Z (CAA2008-332);
- Second 500kV Bruce-Milton double-circuit line (CAA2006-250);
- Woodstock Area transmission reinforcement (CAA2006-253);
 - Karn TS in service and connected to M31W & M32W at Ingersol TS
 - W7W/W12W terminated at LFarge CTS
 - Woodstock TS connected to Karn TS
- Lower Mattagami expansion - H22D line extension from Harmon to Kipling (CAA2006-239);
- Rodney (Duart) TS DESN connected to W44LC and W45LS 230 kV circuits (CAA2007-260)

(6) System Operation Conditions

- Lambton TS 230 kV operated *open*
- Claireville TS 230 kV operated *open*
- Leaside TS 230 kV operated *open*
- Leaside TS 115 kV operated *open*
- Middleport TS 230 kV bus operated
- Hearn SS 115 kV bus operated *open*
- Cherrywood TS north & south 230kV buses operated *open*
- Richview TS 230 kV bus operated *open*
- All tie-lines in service & phase shifters on neutral taps
- Maximum voltages on the buses

Table 11 summarizes the projected fault levels at facilities near the project before and after the 3rd round of FIT contracts, under which the project was awarded a contract.

Table 11: Fault levels at facilities near the Adelaide Wind Energy Centre

Station	Before the projects		After the projects and other committed projects		Lowest Rated Circuit Breaker (kA)
	3-Phase	L-G	3-Phase	L-G	
<i>Symmetrical Fault (kA)*</i>					
Bruce A 500 kV	37.18	41.77	38.25	42.80	63
Longwood 500 kV	20.1	21.0	21.11	22.46	63
Longwood 230 kV	37.45	44.83	38.74	46.55	63
Bruce A 230 kV	42.97	54.36	44.63	56.15	60***
Evergreen SS	-	-	15.78	13.95	63
Bornish TS 121 kV	-	-	11.90	9.05	40
<i>Asymmetrical Fault (kA)*</i>					
Bruce A 500 kV	54.47	63.21	55.99	64.65	74.9
Longwood 500 kV	24.43	26.74	25.81	28.73	68.9
Longwood 230 kV	45.82	58.1	47.74	60.59	78
Bruce A 230 kV	57.65	78.45**	59.73	80.82**	72.6****
Evergreen SS	-	-	19.14	17.49	63****
Bornish TS 121 kV	-	-	15.30	9.63	40****

* Based on a pre-fault voltage level of 550 kV for 500 kV buses, 250 kV for 230 kV buses, and 127 kV for 115 kV buses.

**The asymmetrical fault level is based on a breaker contact parting time of 44 ms.

***Three lower rated Bruce A 230 kV breakers (D1L81, K1L82 and L23T25) are scheduled to be replaced by December 2012 (see CAA ID#2010-EX511). The listed lowest rated circuit breaker value for Bruce A 230 kV assumes these breakers being replaced.

****The symmetrical rating was used as the asymmetrical rating was not provided by the applicant.

Table 11 shows the interrupting capability of the 500 kV and 121 kV circuit breakers of the project are adequate for the anticipated fault levels.

The results also show that the line-to-ground asymmetrical fault current at Bruce A 230 kV before and after the incorporation of the projects and other committed projects will exceed the interrupting capability of the existing breakers. This issue has been investigated in the 2nd SIA addendum for the project of Bruce G1 and G2 restart (CAA ID 2004-163), where the IESO has identified a requirement to replace all the Bruce 230 kV breakers with higher fault current interrupting capability and assessed potential mitigation measures for this issue until these circuit breakers are replaced. Hydro One has planned to replace the Bruce 230 kV breakers.

With the exception of Bruce A 230 kV, the interrupting capability of the lowest rated circuit breakers near the project will not be exceeded after the incorporation of the project.

-End of Section-

5. Protection Impact Assessment

A Protection Impact Assessment (PIA) was completed by Hydro One, included in Appendix B of this report, to examine the impact of the project on existing transmission system protections. The summary of the PIA report is presented below.

Protection Changes

The changes to the existing transmission protection systems required to incorporate the project, which were included in the system impact studies, are summarized in Table 12.

In addition, with either the Evergreen-by-Longwood or Bruce-by-Evergreen circuit out of service, low infeed from the wind farm can result in delayed fault clearing. With low infeed, a fault near Evergreen SS would not be seen by the Evergreen SS protections nor by the remote stations' Zone 1 due to the fault location being within Zone 2 reach; resulting in a fault clearing time of up to 400 ms. Hydro One will implement a relay logic design to address the weak infeed scenario which will be elaborated in the planning document in preparation of the detailed design.

Table 12: Proposed Protection Changes to Circuit B562L

Station	Zone	Existing Reach (km)	Revised Reach (km)	Comments
Bruce A TS	1	149	120	Set at 80% of the line segment impedance to Evergreen SS.
	2	233	188	Set at 125% of the maximum apparent impedance seen for a fault at Evergreen SS.
Longwood TS	1	149	29	Set at 80% of the line segment impedance to Evergreen SS.
	2	233	46	Set at 125% of the maximum apparent impedance seen for a fault at Evergreen SS.
Evergreen SS to Longwood TS	1	-	29	Set at 80% of the line segment impedance to Longwood TS.
	2	-	46	Set at 125% of the maximum apparent impedance seen for a fault at Longwood TS.
Evergreen SS to Bruce A TS	1	-	120	Set at 80% of the line segment impedance to Bruce A TS.
	2	-	188	Set at 125% of the maximum apparent impedance seen for a fault at Bruce A TS.

Telecommunication Requirements

New communications will be required between the projects and Longwood TS, as well as between the projects and Bruce A TS. The connection applicant is responsible to establish a dual telecommunication link to transmit protection signals to both terminal stations and other generators on the subject lines. Therefore, new digital and PLC facilities shall be installed at the Evergreen SS in order to establish necessary connections.

The PIA concluded that it is feasible to connect the projects at the proposed location as long as the PIA proposed changes to the transmission configuration, protection hardware, protection settings, and telecommunications are made.

-End of Section-

6. System Impact Studies

The technical studies focused on identifying the impact of the projects on the reliability of the IESO-controlled grid. They include a thermal loading assessment of transmission lines, system voltage performance assessment, transient stability assessment of the proposed and major surrounding generation units, ride-through capability of the project and relay margin evaluation for transmission circuits. This chapter also investigates the performance of the proposed control systems and the reactive power capability of the project in comparison to the Market Rules' requirements.

6.1 Study Assumptions

In this assessment, the 2014 summer base cases were used with the following assumptions:

- (1) **Transmission facilities:** All existing and committed major transmission facilities with 2014 in-service dates or earlier were assumed in service. The committed facilities primarily include:
 - Leaside - Bridgman reinforcement: Leaside TS to Birch JCT: new 115 kV (CAA2006-238);
 - St. Catherines 115 kV circuit upgrade: circuits D9HS, D10S and Q11S (CAA2007-257);
 - Tilbury West DS second connection point for DESN arrangement using K2Z and K6Z (CAA2008-332);
 - Second 500kV Bruce-Milton double-circuit line (CAA2006-250);
 - Woodstock Area transmission reinforcement (CAA2006-253);
 - Karn TS in service and connected to M31W & M32W at Ingersol TS
 - W7W/W12W terminated at LFarge CTS
 - Woodstock TS connected to Karn TS
 - Rodney (Duart) TS DESN connected to W44LC and W45LS 230 kV circuits (CAA2007-260);
 - Nanticoke and Detweiler SVCs;
- (2) **Generation facilities:** All existing and committed major generation facilities with 2013 in-service dates or earlier were assumed in service. The primary committed generation facilities are outlined in the assumptions for short circuit study, Section 4.
- (3) **Basecases:** Three basecases in terms of load level were used in this SIA studies: peak load, shoulder load, and light load. The generation dispatch philosophies for the three cases are as follows:

Peak load basecase

- All committed and existing generation in the Southwest and Bruce areas were maximized, including 8 units at Bruce;
- Gas generation, in conjunction with maximum wind generation, in the West area was dispatched to achieve a NBLIP transfer of approximately 2000MW;
- Generation in the North areas was dispatched to achieve a Flow South transfer of approximately 1250MW;
- Generation in the Greater Toronto Area included two Pickering units, four Darlington units and four Sithe Goreway units;

Shoulder load basecase

- All committed and existing generation in the Bruce area was maximized;

- Renewable and minimum level gas generation in the West was dispatched to achieve an NBLIP transfer of approximately 986MW;
- Generation in the North areas was dispatched to achieve a Flow North transfer of approximately 500MW;
- Generation in the Greater Toronto Area included two Pickering units and four Darlington units;
- Generation in the Southwest area was then dispatched to balance the load;

Light load basecase

- All dispatchable gas units out of service;
- Minimum hydraulic generation;
- Nuclear generation limited to three Pickering units, two Darlington units and five Bruce units;
- Existing Southwest, West and Bruce area wind generation in service;
- Incorporation of the projects into the system;

The system demand and the primary interface flows after the incorporation of the project are listed in

Table 13.

Table 13: System demand and primary interface flows for basecases (MW)

Basecase	System Demand	NBLIP	FABC	FETT	QFW	FS	FIO
Peak Load	26880	2023	6412	6913	1146	1250	1585
Shoulder Load	20716	986	6412	6707	1055	-488	1309
Light Load	11621	643	3845	906	34	-1048	746

6.2 Special Protection System (SPS)

The BSPS is a collection of special protection systems installed at the Bruce B switching station (SS) and other stations which perform pre-defined control actions, including generation rejection, load rejection and reactor switching. These control actions are initiated in response to recognized contingencies by monitoring the electrical connection between nodes in southern Ontario. The primary purpose of the BSPS is to allow increased pre-contingency transfers on the existing transmission facilities emanating from the Bruce nuclear generation station (NGS).

The BSPS is classified as a “Type 1 Special Protection System”, and conforms to criteria and guidelines specified in NPCC Directory #7 for special protection system.

The IESO has identified a requirement that wind generation stations connecting near the Bruce NGS must connect to and participate in the BSPS, as detailed in the SIA report and addendum for Hydro One BSPS modifications (CAA ID 2005-EX222). The incorporation of wind generation rejection (G/R) to the BSPS is considered a new BSPS control action. This new control action will provide the IESO with increased operating flexibility during transmission outage conditions.

Special protection system facilities must be installed at the projects to accept a single pair (A & B) of G/R signals from the BSPS, and disconnect from circuit B562L with no intentional time delay, when armed by the IESO following a triggering contingency. These special protection system facilities

must also comply with the NPCC Directory #7 for special protection systems. In particular, if the SPS is designed to have 'A' and 'B' protection at a single location for redundancy, they must be on different non-adjacent vertical mounting assemblies or enclosures. Also, two independent trip coils are required on breakers that are part of the SPS. The applicant must provide two dedicated communication channels, separated physically and geographically diverse, between the projects and the Bruce NGS.

To disconnect the project from the system for G/R, simultaneous tripping of the 500 kV and 121 kV breakers at Parkhill CTS shall be initiated with no accompanying breaker failure response. After being tripped by the BSPS, the closing of the breakers is not permitted until approval is obtained from the IESO.

Alternative solutions to disconnect the project from the system for G/R may be acceptable upon the approval of the IESO.

6.3 Reactive Power Compensation

The Market Rules require generators to inject or withdraw reactive power continuously (i.e. dynamically) at a connection point equal to up to 33% of the generator's rated active power at all levels of active power output; except where a lesser continually available capability is permitted by the IESO. A generating unit with a power factor range of 0.90 lagging and 0.95 leading at rated active power connected via impedance between the generator and the connection point not greater than 13% based on rated apparent power provides the required range of dynamic reactive capability at the connection point.

Dynamic reactive compensation (e.g. D-VAR or SVC) is required for a generating facility which cannot provide a reactive power range of 0.90 lagging power factor and 0.95 leading power factor at rated active power. For a wind farm with an impedance between the generator and the connection point in excess of 13% based on rated apparent power, provided the WTGs have the capability to provide a reactive power range of 0.90 lagging power factor and 0.95 leading power factor at rated active power, the IESO accepts that the wind farm compensate for excessive reactive losses in the projects' collector system with static shunts (e.g. capacitors and reactors).

This SIA proposes a solution for the projects to meet the reactive power capability requirements in the Market Rules. However, the applicant can deploy any other solutions which result in its compliance with the Market Rules. The applicant must be able to confirm this capability during the commission tests.

Dynamic Reactive Power Capability

The GE 1.6 MW WTGs have an optional power factor range of 0.9 inductive to 0.9 capacitive. The WTGs for this project will use this option. Thus, the dynamic reactive capability of the project satisfies IESO's requirements.

Static Reactive Power Capability

In addition to the dynamic reactive power requirement identified above, the projects have to compensate for the reactive power losses within the projects' network to ensure that it has the capability to inject or withdraw reactive power up to 33% of its rated active power at the connection point. As mentioned above, the IESO accepts this compensation to be made with switchable shunt admittances.

Load flow studies were performed to calculate the static reactive compensation, based on the equivalent parameters provided by the connection applicant for the projects.

The reactive power capability in lagging power factor of the projects was assessed under the following assumptions:

- typical voltage of 545 kV at the connection point;
- maximum active power output from the equivalent WTG;
- maximum reactive power output (lagging power factor) from the equivalent WTG, unless limited by the maximum acceptable WTG terminal voltage;
- maximum acceptable WTG voltage of 1.1 pu, as per WTG voltage capability;
- main and intermediate level step-up transformer ULTCs are available to adjust the LV voltage as close as possible to 1 pu voltage; while ensuring the intermediate transmission and collector bus voltages do not exceed 1.05 pu.

The reactive power capability in leading power factor of the projects was assessed under the following assumptions:

- typical voltage of 545 kV at the connection point;
- minimum (zero) active power output from the equivalent WTG;
- reactive power consumption (leading power factor) as required to meet the Market Rules requirement from the equivalent WTG.
- minimum acceptable WTG voltage is 0.9 pu, as per WTG voltage capability;
- main and intermediate level step-up transformer ULTCs are available to adjust the LV voltage as close as possible to 1 pu voltage; while ensuring the intermediate transmission and collector bus voltages do not fall below 0.95 pu.

The IESO's reactive power calculation used the equivalent electrical model for the WTG and collector feeders as provided by the connection applicant. It is important that the project have proper internal design to ensure that the WTGs are not limited in their capability to produce active and reactive power due to terminal voltage limits or other project internal limitations. For example, it is expected that the transformation ratio of the WTG step up transformers will be set in such a way that it will offset the voltage profile along the collector, and all the WTG would be able to contribute to the reactive power production of the project in an equal amount.

Based on the equivalent parameters for the wind farm provided by the connection applicant, a static capacitive reactive power compensation rated 65 MVar at 121 kV is required to be installed at the Parkhill 121 kV bus to meet the reactive power injection requirement at the connection point. No reactor is required to meet the reactive power withdrawal requirement. A detailed summary of the results with reactive power compensation is provided in Table 14.

Table 14: Reactive Power Capability at the PCC

Operation	Intermediate Bus Voltage (pu)	Collector Bus Voltage (pu)	Max/Min Generator Terminal Voltage (pu)	PCC Reactive Power (MVar)	PCC Voltage (kV)
Lagging PF	1.00	1.00	1.057	95.4 MVar	545 kV
Leading PF	1.00	1.00	0.97	-115.8 MVar	545 kV

The required capacitive compensation will need to be arranged into at least 2 approximately equal steps to allow for flexibility in adjustment of reactive power production. It shall also be implemented

as a part of wind farm control system that automatically controls the switching of capacitor banks to regulate the overall WTGs' reactive output to around zero.

Static Reactive Power Switching

The IESO requires the voltage change on a single capacitor switching to be no more than 4 % at the any point in the IESO Controlled Grid. A switching study was carried out to investigate the effect of the new shunt capacitor banks on the voltage changes. It was assumed that the largest capacitor step size is 32.5 MVar. To reflect a reasonably restrictive system condition, the voltage change study was studied under light load conditions and assumed one Bruce to Longwood circuit out of service.

Table 15: Voltage Changes due to Static Reactive Compensation Switching

Capacitor at 121 kV bus	Parkhill 121 kV voltage	Evergreen SS voltage
Pre-switching	120.4 kV	544.0 kV
Post-switching	122.5 kV	545.5 kV
ΔV	1.7%	0.3%

Table 15 shows that switching a single capacitor of 32.5 MVar results in less than 4 % voltage change at the connection point, therefore meeting the Market Rules' requirement.

6.4 Overvoltage Control at Evergreen SS

Due to the long length of Bruce-by Evergreen 500 kV circuit, voltages at Evergreen SS may exceed maximum permissible levels under certain operating scenarios. This overvoltage concern must be addressed by the introduction of a new reactor at Evergreen SS after the projects are integrated into the system.

The voltage analysis was carried out under the following assumptions:

- voltage of 550 kV at Bruce A TS
- Evergreen-by-Longwood circuit out of service
- WTGs off line with the connection applicant's network connected

Table 16 lists the voltages at Evergreen SS with and without the proposed reactor at Evergreen SS to address the overvoltage concern.

Table 16: Voltage Analysis Results at Evergreen SS

Bus	Voltage with Evergreen-by-Longwood circuit out of service	
	Without reactor	With a reactor rated 120 MVar@500 kV at Evergreen SS
Evergreen SS 500kV	562 kV	548.9 kV

Based on the study results, a reactor of 120 MVar @500 kV is required to be installed at the 500 kV Evergreen SS to prevent exceeding maximum voltage levels at the connection point and in the applicant's network under certain operating scenarios. The reactor shall be connected through a circuit switcher or a circuit breaker to allow for automatic switching. The switching of the reactor shall be controlled based on the voltage at the connection point and in coordination with the capacitor switching within the wind farm. The applicant and the transmitter shall work together on appropriate high voltage settings and timings for reactor/capacitor switching control to avoid damage to any equipment. These settings must be submitted to the IESO for approval.

6.5 Wind Farm Voltage Control System

As per the Market Rules requirements, the wind farms shall operate in voltage control mode by using all voltage control methods available within the projects. The automatic voltage regulation philosophy for the projects is summarized as follows:

- (1) All WTGs control the voltage at a point whose impedance (based on rated apparent power and voltage of the projects) is not more than 13% from the connection point. Appropriate control slope is adopted for reactive power sharing among the WTGs as well as with adjacent generators. The reference voltage will be specified by the IESO duration operation.
- (2) Capacitor banks are automatically switched in/out to regulate the overall WTGs' reactive generation to around zero output. The dead band for capacitor switching will be set to about $\pm 60\%$ size of the smallest capacitor to avoid control hunting.
- (3) The main transformer ULTC is adjusted to regulate the collector bus voltage such that it is within normal range and close to about 1 pu. The IESO recommends the automatic control for this ULTC. Appropriate dead band shall be adopted to avoid voltage hunting.

In this control system, the voltage control by WTGs and the overall WTGs' reactive control by capacitor banks need to be coordinated by using different time constants.

In the event that the wind farm voltage control is not available, the IESO requires that each WTG control the power factor at its own terminal to unity. Depending on system conditions, further action such as curtailing the output of the project may be required for reliability purposes.

6.6 Thermal Analysis

The *Ontario Resource and Transmission Assessment Criteria* requires that all line and equipment loads be within their continuous ratings with all elements in service, and within their long-term emergency ratings with any element out of service. Immediately following contingencies, lines may be loaded up to their short-term emergency ratings where control actions such as re-dispatch, switching, etc. are available to reduce the loading to the long-term emergency ratings.

The continuous rating for conductors was calculated at the lowest of the sag temperature or 93°C operating temperature, with a 35°C ambient temperature and 4 km/h wind speed. The long term emergency rating (LTE) for conductors was calculated at the lowest of the sag temperature or 127°C operating temperature, with a 35°C ambient temperature and 4 km/h wind speed. The short-term emergency rating (STE) for conductors was calculated at the sag temperature, with a 35°C ambient temperature, 4 km/h wind speed and 100% continuous pre-load.

The return of Bruce G1 and G2 combined with the addition of new Bruce and Southwest Ontario generation results in a higher flow eastward from Bruce. This naturally increases the flow along the 115 kV path of circuit S2S from Owen Sound TS to Stayner TS when circuit S2S is operated closed-loop. Table 17 shows the pre-contingency thermal results with S2S operated closed-loop under the defined shoulder load condition. It indicates the overloading of both circuit S2S from Meaford TS to Stayner TS and Stayner T1. To prevent the thermal overloading, circuit S2S will be required to operate open-loop under certain conditions after the integration of the committed generation projects in the area of Bruce and Southwest Ontario. Hydro One has investigated this mitigating action and is in agreement with it.

Table 17: Pre-contingency thermal results with S2S close-loop under shoulder load conditions

Circuit	Pre-Contingency Flow	Summer Continuous Rating	Loading (%)
S2S (Meaford-Stayner)	650 A	590 A*	110
Stayner T1	136 MVA	125 MVA	109

* Circuit continuous ratings are obtained based on 35°C ambient temperature at 4 km/hr wind velocity, with 93°C maximum operating temperature or individual sag temperature if lower.

6.6.1 Primary Thermal Impact

Due to the fact that the opening of circuit S2S results in increased flows on the parallel 230 kV and 500 kV circuits emanating from Bruce, circuit S2S was assumed open-loop at Owen Sound for SIA studies.

The peak-load basecase was used for thermal analysis due to the high flows out of the Bruce Area. Preliminary simulation results show the incorporation of the projects primarily increase flow on the 500 kV circuits emanating from Bruce TS and Longwood TS. This reduces the loading on 500 kV auto-transformers at Bruce A TS and Longwood TS and marginally increases the flow on 230 kV corridors from Bruce/Longwood to the GTA area. Therefore, only the 500 kV circuits were examined to assess the primary thermal impact of the projects.

Table 18: Circuit Ratings

Circuit	From	To	Continuous Rating (A)	LTE Rating (A)
B560V	Bruce A TS	Claireville TS	2820	3620
B561M	Bruce B TS	Milton TS	2820	3620
B501M	Bruce B TS	Milton TS	2820	3660
B502M	Bruce A TS	Milton TS	2820	3660
B562E	Bruce A TS	Evergreen SS	2820	3660
E562L	Evergreen SS	Longwood TS	2820	3660
B563A	Bruce B TS	Ashfield SS	2820	3660
A563L	Ashfield SS	Longwood TS	2820	3660
N582L	Nanticoke TS	Longwood TS	2820	3660

Pre-contingency thermal loadings of 500 kV circuits are shown in

Table 19. It shows that there is no pre-contingency equipment overloading.

Table 19: Pre-Contingency Thermal Assessment Results – Circuits

Circuit	Circuit Loading Pre-Contingency (A)	Summer Continuous Rating (A)	Percent of Continuous Rating (%)
B560V	1514	2820	53.69
B561M	1533	2820	54.36
B501M	1527	2820	54.15
B502M	1513	2820	53.65
B562E	134	2820	4.75
E562L	453	2820	16.06
B563A	60	2820	2.13
A563L	279	2820	9.89
N582L	1348	2820	47.80

The following contingencies were simulated for the circuit thermal analysis:

- (1) **Simultaneous loss of 500 kV circuits B560V and B561M:** 500 kV circuits B560V and B561M are main arteries out of the Bruce Area. The loss of these circuits results in higher transfers on the remaining circuits emanating from Bruce area.
- (2) **Simultaneous loss of 500 kV circuits E562L and A563L:** This loss results in the projects and K2 generating radially onto the Bruce 500 kV system, resulting in a higher flow emanating from Bruce TS.

Post-contingency circuit loading results are summarized in Table 20. The results show that there is no post-contingency thermal concern on the 500 kV circuits.

Table 20: Post-Contingency Thermal Assessment Results – Circuits

Circuit	Circuit Loading Pre-Contingency (A)	Summer Continuous Rating (A)	Percent of Continuous Rating (%)	Long Term Emergency Rating (A)	Loss of B560V+B561M		Loss of E562L+A563L	
					Circuit Loading Post (A)	% of LTE	Circuit Loading Post (A)	% of LTE
B560V	1514	2820	53.69	3620	0	0.00	1659	45.83
B561M	1533	2820	54.36	3620	0	0.00	1693	46.77
B501M	1527	2820	54.15	3660	2528	69.07	1685	46.04
B502M	1513	2820	53.65	3660	2510	68.58	1672	45.68
B562E	134	2820	4.75	3660	479	13.09	385	10.52
E562L	453	2820	16.06	3660	829	22.65	0	0.00
B563A	60	2820	2.13	3660	393	10.74	280	7.65
A563L	279	2820	9.89	3660	675	18.44	0	0.00
N582L	1348	2820	47.80	3660	1859	50.79	938	25.63

Therefore, the studies show that projects do not introduced any thermal constraints and that injection into a single line is acceptable.

6.6.2 New Area Generation Impact

The impact of the projects on the overall system, in conjunction with other committed projects, was examined to identify if any system congestion issues exist in Central and Southwest Ontario due to 230 kV circuit or 500 kV auto-transformer thermal constraints. The studies concluded that under exceptionally high power transfers towards Toronto, generating stations in Bruce and Southwest Ontario may be required to curtail their outputs to relieve congestion. However, the flow into Toronto at the levels examined is not expected to materialize for the next several years. Future planning assessments for the west Greater Toronto Area (GTA) are currently being undertaken by the agencies.

With the addition of new committed generation projects in Bruce and Southwest Ontario, flows east into Toronto were maximized to reach 6913 MW under the defined peak load basecase. Under this high flow scenario, the additional new generation projects contributed to overloading some limiting elements in the central area. Table 21 and Table 22 show the thermal results of limiting circuits and transformers in Central area under peak load conditions after the integration of new committed generation projects. It shows both pre-contingency and post-contingency overloading of the limiting elements. Additional simulation results based on the defined shoulder load basecase show post-contingency overloading on circuits E8V/E9V for the loss of the companion circuit. If flows were to reach these high levels, the generating plants in the Bruce and Southwest Ontario may be required to curtail their outputs.

Table 21: Thermal results of limiting circuits in central area under peak-load conditions

Circuit	Contingency	Pre-Contingency Flow (A)	Continuous Rating (A)*	Pre-Contingency Loading (%)	Post-Contingency Flow (A)	LTE Rating (MVA) **	Percent of LTE (%)
R14T (Trafalgar-Erindale)	R17T	1059	1110	95	1577	1460	108
R17T (Trafalgar-Erindale)	R14T	1063	1110	96	1576	1460	108
R19TH (Erindale-Hanlan)	R14T+R17T	792	840	94	1131	1090	107

* Continuous ratings are obtained based on 35°C ambient temperature at 4 km/hr wind velocity, with 93°C maximum operating temperature or individual sag temperature if lower.

** Long-Term Emergency (LTE) ratings are obtained based on 35°C ambient temperature at 4 km/hr wind velocity, with 127°C maximum operating temperature or individual sag temperature if lower.

Table 22: Thermal results of limiting transformers in central area under peak-load conditions

Transformer	Pre-Contingency Flow (MVA)	Summer Continuous Rating (MVA)	Pre-Contingency Loading (%)	LTE Rating (MVA)	Loss of Trafalgar T15	
					Post-Contingency Flow (MVA)	Percent of LTE (%)
Trafalgar T14	858.84	750	114.51	1004	1078.02	107.37
Trafalgar T15	830.20	750	110.69	1132	0.00	0.00
Claireville T13	782.34	750	104.31	988	846.71	85.70
Claireville T14	796.55	750	106.21	995	861.85	86.62
Claireville T15	789.09	750	105.21	995	853.96	85.83

In the event of high flows eastward towards Toronto, there is a low probability of congestion that may require the applicant to curtail its output.

6.7 Voltage Analysis

The *Ontario Resource and Transmission Assessment Criteria (ORTAC)* states that with all facilities in service pre-contingency, the following criteria shall be satisfied:

- The pre-contingency voltages on 500 kV buses must not exceed 550 kV or be less than 490 kV and voltages on 230 kV buses cannot exceed 250 kV or be less than 220 kV;
- The post-contingency voltages on 500 kV buses must not exceed 550 kV or be less than 470 kV and voltages on 230 kV buses cannot exceed 250 kV or be less than 207 kV;
- The voltage drop following a contingency must not exceed 10% pre-ULTC and 10% post-ULTC.

The voltage performance of the IESO-controlled grid was evaluated by examining if pre- and post-contingency voltages and post-contingency voltage changes remain within criteria at various facilities.

The following two contingencies were simulated:

- (1) **Simultaneous loss of 500 kV circuits B560V and B561M:** 500 kV circuits B560V and B561M are main arteries of the FETT interface which feeds the load centre in the GTA. This contingency is the most severe contingency for the GTA voltage profile. The contingency was simulated assuming automatic switching of the Bruce and Longwood reactors post-contingency.
- (2) **Loss of the Bornish TS connected wind farms:** As generating stations help control voltage pre-contingency, the simultaneous loss of the Adelaide, Bornish and Jericho Wind Energy Centres may result in a significant voltage change. Two scenarios were studied, one with maximum VAR injection and the other with maximum VAR withdrawal. It was assumed that the capacitive reactive compensation at Parkhill CTS was in service pre-contingency for the maximum VAR injection case,

To simulate the scenarios resulting in the largest voltage change, the loss of the projects when absorbing and injecting maximum reactive power was studied using the light load and peak load case respectively. The loss of B560V and B561M was simulated using the peak load and light load cases; however only results for the peak load case are provided as simulation results exhibited that peak load is a worse condition for its voltage performance.

The study results are summarized in Table 23, Table 24 and Table 25. They demonstrate that both pre-ULTC and post-ULTC voltages are within limits and decline values in the GTA for the loss of B560V and B561M as well as in the vicinity of the project for the loss of the three projects are within the IESO's criteria of 10%.

Table 23: Voltage Analysis Results – Loss of B560V + B561M

Monitored Busses		Pre-Cont Voltage kV	Loss of B560V + B561M			
Bus Name	Base kV		Pre-ULTC		Post-ULTC	
			kV	%	kV	%
Milton	500	529.2	506.3	-4.33	511.8	-3.29
Claireville	500	526.9	508	-3.59	513.9	-2.47
Claireville	220	248.2	239.4	-3.55	242.9	-2.14
Richview	220	248.7	239.2	-3.82	243.1	-2.25

Table 24: Voltage Analysis Results – Loss of the projects' WTGs with max VAR injection

Monitored Busses		Pre-Cont Voltage kV	Loss of the projects' WTGs with maximum VAR injection			
Bus Name	Base kV		Pre-ULTC		Post-ULTC	
			kV	%	kV	%
Longwood TS	500	545.5	544.9	-0.1%	545	-0.1%
Bruce A TS	500	548.3	548.3	0.0%	548.3	0.0%
Evergreen SS	500	549.9	548.7	-0.2%	548.9	-0.2%

Table 25: Voltage Analysis Results – Loss of the projects’ WTGs with max VAR withdrawal

Monitored Busses		Pre-Cont Voltage kV	Loss of the projects’ WTGs with maximum VAR withdrawal			
Bus Name	Base kV		Pre-ULTC		Post-ULTC	
			kV	%	kV	%
Longwood TS	500	544.7	547.9	0.6%	549.2	0.8%
Bruce A TS	500	548.3	548.3	0.0%	548.3	0.0%
Evergreen SS	500	545.9	551.3*	1%	552.3*	1.2%

* There are no concerns with this voltage exceeding 550 kV as there is provision for a reactor auto-switching scheme to be used when voltages reach this level (see section 6.4).

6.8 Transient Stability Performance

Transient stability simulations were performed to determine if the power system can be transiently stable for recognized fault conditions. In particular, rotor angles of generators at Bruce GS, Darlington GS, Pickering GS, Greenfield GS and Saunders GS were monitored. Simulations were performed under both the peak and shoulder load conditions, however only results for the peak load condition are provided as the flows out of the Bruce Area were higher; representing the more critical case for transient stability performance.

Transient stability analyses were performed considering recognized faults in Southwest Ontario. Four contingencies were simulated as shown in Table 26.

The simultaneous loss of B560V and B561M was simulated since it is the worst contingency in terms of the transient stability of Bruce generating units and GTA voltage stability.

The simultaneous loss of B563A and B562E was simulated since it results in having the projects and K2 wind farm radially connected to Longwood TS, to evaluate the transient stability performance of the West area.

The simultaneous loss of A563L and E562L was simulated since it results in having the projects and K2 wind farm radially connected to Bruce TS, to evaluate the transient stability performance of Bruce generating units.

Finally, an un-cleared 3-phase fault at the Parkhill 121 kV bus was simulated to ensure that the failure of the projects’ internal protections does not adversely impact the stability of the IESO controlled grid.

Table 26: Simulated Contingencies for Transient Stability

Contingency	Location	Fault Type	Fault Clearing Time (ms)		B/L RSS* (ms)	Reclosure Time	Reclosure Location
			Local	Remote			
B560V+B561M	Bruce	LLG	66	91	124	10s for B560V 15s for B561M	Claireville Milton
B563A + B562E	Bruce	LLG	66	91	-	10s	Ashfield Evergreen
A563L + E562L	Longwood	LLG	75	100	-	10s	Longwood
LV side of main step-up transformer	Parkhill 121 kV	3 phase	Un-cleared		-	-	-

*B/L RSS denotes the Bruce and Longwood Reactor Switching Schemes

Figure 3 to Figure 10, Appendix A show the transient responses of rotor angles and bus voltages. The transient responses show that the generators remain synchronized to the power system and the oscillations are sufficiently damped following all simulated contingencies. It can be concluded that none of the simulated contingencies causes transient instability or un-damped oscillations.

It can be also concluded that the protection changes proposed in the PIA report do not have materially adverse impact on the transient stability of the IESO-controlled grid.

6.9 Steady-State Voltage Stability

The *Ontario Resource and Transmission Assessment Criteria (ORTAC)* states that the maximum acceptable pre-contingency power transfer must be 10% lower than the voltage instability point of the pre-contingency P-V curve, and 5% lower than the voltage instability point of the post-contingency P-V curve.

The voltage performance of the IESO-controlled grid was evaluated by examining if the FABC (Flow Away from Bruce Complex) transfer after the incorporation of the facility meets the above requirement based on pre- and post-contingency and post-contingency P-V curves under peak load conditions. The peak load basecase was used since it had higher transfers to the Toronto load centre than the shoulder case. The contingency of simultaneous loss of B560V+B561M was selected for studying the post-contingency steady-state voltage stability as it is the worst-case contingency in terms of system voltage stability. For this recognized contingency, two post-contingency scenarios, either tripping the reactors at Bruce and Longwood or no tripping of these reactors are investigated. Only the voltage responses at Claireville 500kV were recorded as it is the most critical point in the system in terms of system voltage stability performance.

Figure 11 shows the steady-state voltage responses at Claireville 500kV as the FABC transfer increases under the pre-contingency scenario and two post-contingency scenarios. It indicates that the maximum FABC transfer under the pre-contingency scenario, post-contingency reactor tripping scenario, and post-contingency no reactor tripping scenario are 8748 MW, 7256 MW, and 6766 MW, respectively. The pre-contingency FABC transfer is 6412 MW. Thus, the pre-contingency FABC transfer is 10% lower than the voltage instability point of the pre-contingency P-V curve, and 5% lower than the voltage instability point of the post-contingency P-V curve, under either reactor tripping or no reactor tripping scenario. It can be concluded that the steady-state voltage stability of the system after the incorporation of the project conforms to the Market Rules' requirement.

6.10 Voltage Ride-Through Capability

The IESO requires that the wind turbine generators and associated equipment within the projects be able to withstand transient voltages and remain connected to the IESO-controlled grid following a recognized contingency unless the generators are removed from service by configuration. This requirement is commonly referred to as the voltage ride-through (VRT) capability.

The GE 1.6 MW WTGs to be installed will be equipped with the GE ZVRT option. The ZVRT capability of the wind turbines is shown in Table 2.

The LVRT capability of the WTGs was assessed based on the terminal voltages of the WTGs under simulated contingencies in Table 27. These contingencies result in the lowest transient voltages at the projects.

Table 27: Simulated contingencies for LVRT

Contingency	Location	Fault Type	Fault Clearing Time (ms)		B/L RSS* (ms)
			Local	Remote	
A563L	Longwood	3 phase	75	100	-
A563L	Longwood	LG+BKF	169	202	-
B560V+B561M	Bruce	LLG	66	91	124

*B/L RSS denotes the Bruce and Longwood Reactor Switching Schemes

Figure 12, Appendix A shows the terminal voltage response of the GE 1.6 MW WTGs. It shows that the terminal voltages of the WTGs dip, in the worst case, to approximately 0.3 pu and remain below 0.6 pu for about 200 ms, and recover thereafter. As compared with the ZVRT/LVRT capability of the GE 1.6 MW model, the proposed WTGs are able to remain connected to the grid for recognized system contingencies that do not remove the project by configuration.

However, when the project is incorporated into the IESO-controlled grid, if actual operation shows that the WTGs trip for out of zone faults, the IESO will require the voltage ride-through capability be enhanced by the applicant to prevent such tripping.

The voltage ride-through capability must also be demonstrated during commissioning by either providing manufacturer test results or monitoring several variables under a set of IESO specified field tests and the results should be verifiable using the PSS/E model.

6.11 Relay Margin

The Market Manual 7.4 Appendix B.3.2 requires that, following fault clearance or the loss of an element without a fault, the margin on all instantaneous and timed distance relays that affect the integrity of the IESO-controlled grid, including generator loss of excitation and out-of-step relaying at major generating stations, must be at least 20 and 10 percent, respectively.

Relay margin analysis was performed to determine if circuits B562E or E562L will trip for out of zone faults due to the incorporation of the projects. The shoulder load basecase was used as it had the highest transfers on the Bruce-by-Longwood circuits. The contingencies listed in Table 28 were simulated with the results shown in Figure 13 to Figure 24, Appendix A.

Table 28: Simulated contingencies for relay margin

Contingency	Location	Fault Type	Fault Clearing Time (ms)		B/L RSS* (ms)	Reclosure Time	Reclosure Location
			Local	Remote			
B560V+B561M	Bruce	LLG	66	91	124	10s for B560V 15s for B561M	Claireville Milton
A563L	Longwood	3 phase	75	100	-	10s	Longwood
B563A	Bruce	3 phase	66	91	-	10s	Ashfield

*B/L RSS denotes the Bruce and Longwood Reactor Switching Schemes

The relay margin plots show that the impedance trajectories at both ends of circuits B562E and E562L do not penetrate the relay characteristics and have a margin of greater than 20%, thereby meeting the Market Manual requirement.

It can be also concluded that the protection adjustments proposed in the PIA report have no material adverse impact on the IESO-controlled grid with respect to relay margins.

-End of Section-

Appendix A: Figures

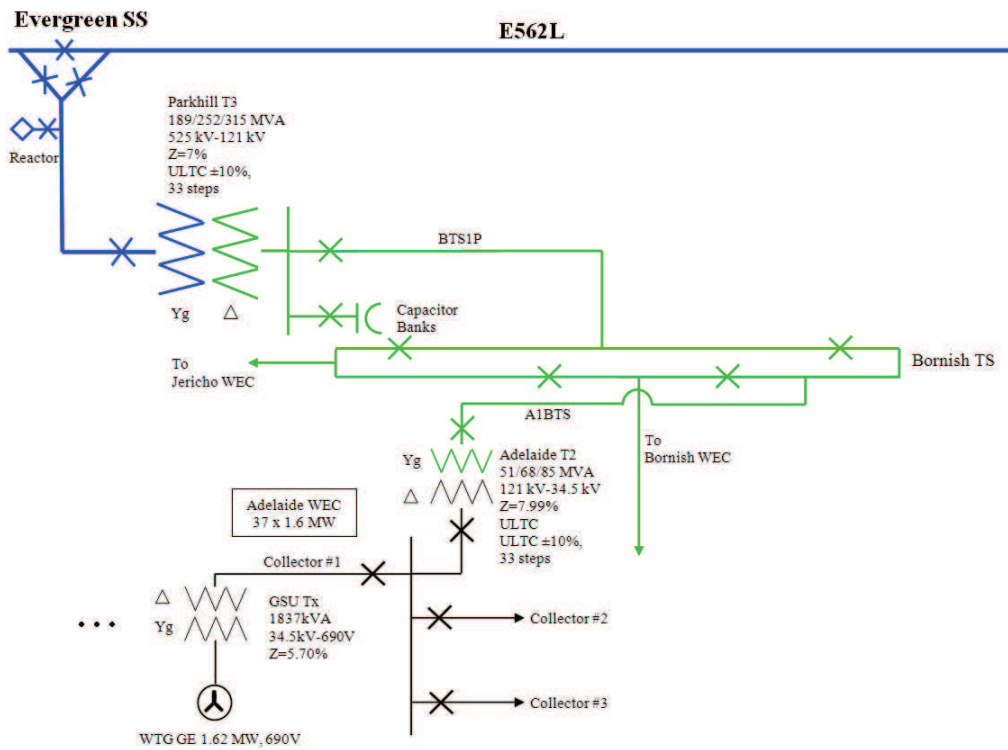


Figure 1: Adelaide Wind Energy Centre Single Line Diagram

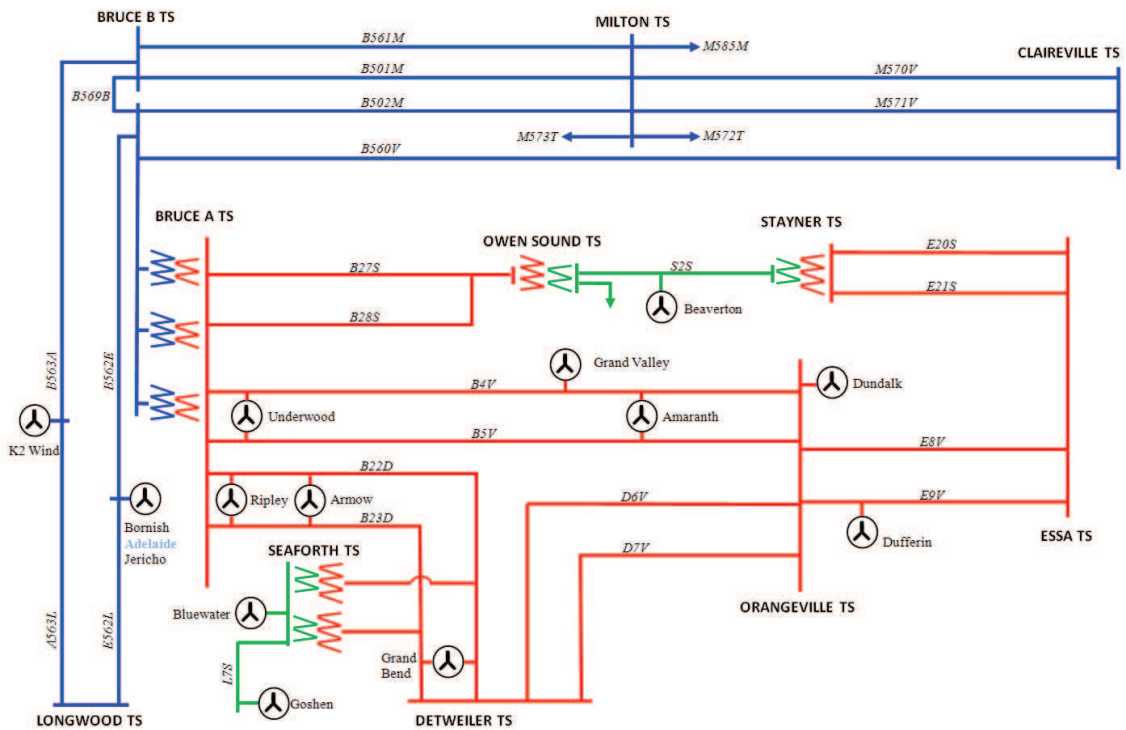


Figure 2: Location of Adelaide Wind Energy Centre

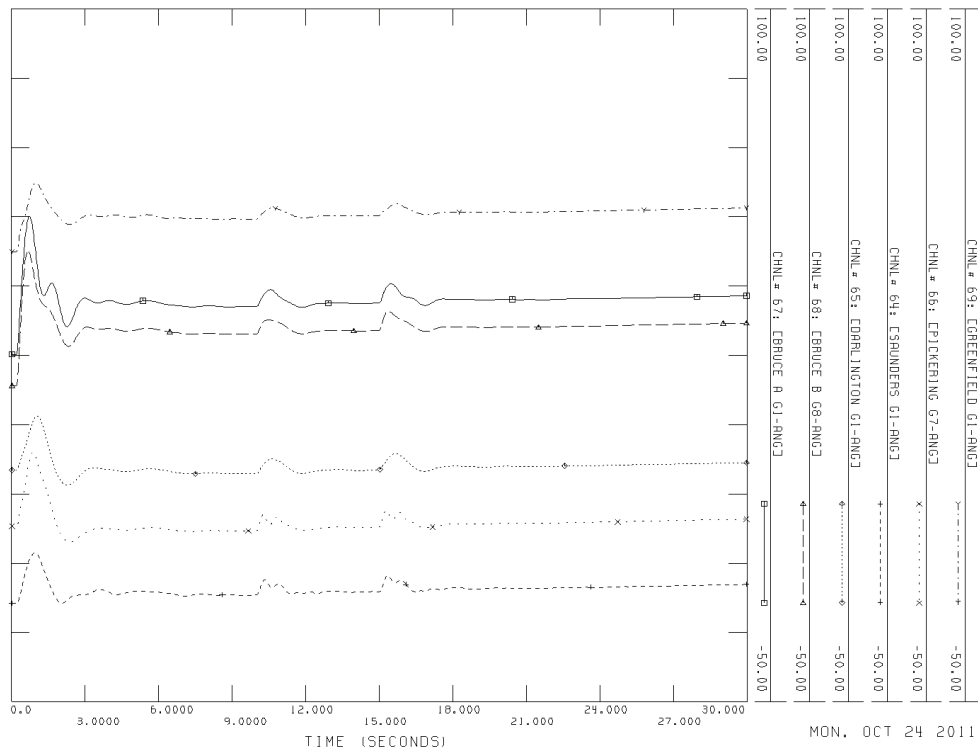


Figure 3: Major generator angle response due to a LLG fault on circuits B560V and B561M at Willow Creek Junction – with reclosure

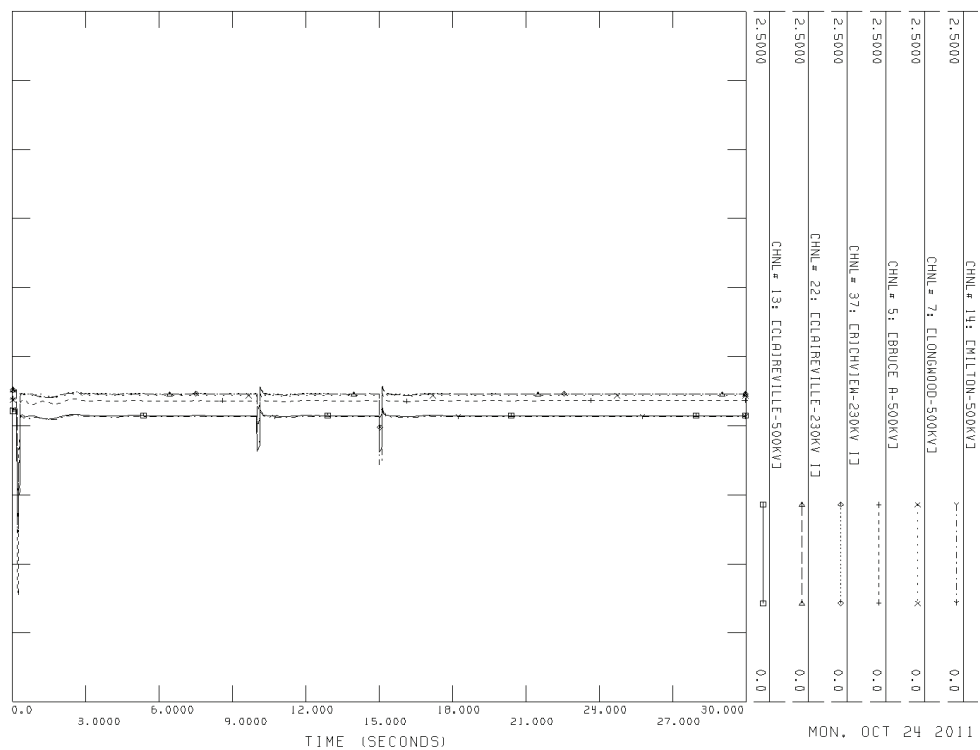


Figure 4: Voltage response due to a LLG fault on circuits B560V and B561M at Willow Creek Junction – with reclosure

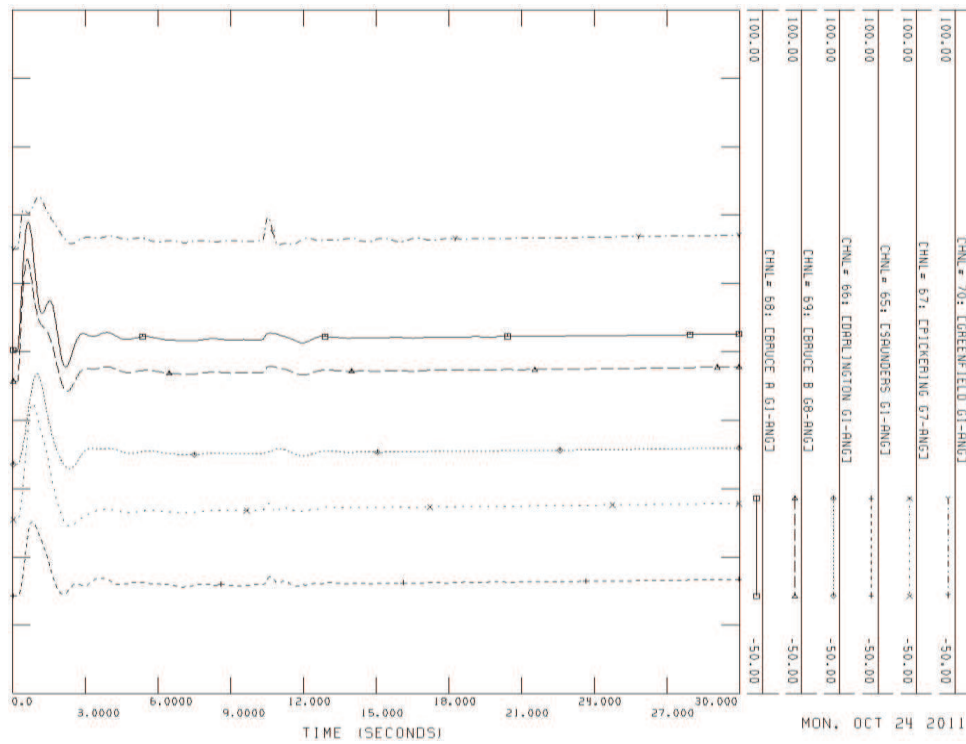


Figure 5: Major generator angle response due to a LLG fault on circuits B562E and B563A at Bruce Junction – with reclosure

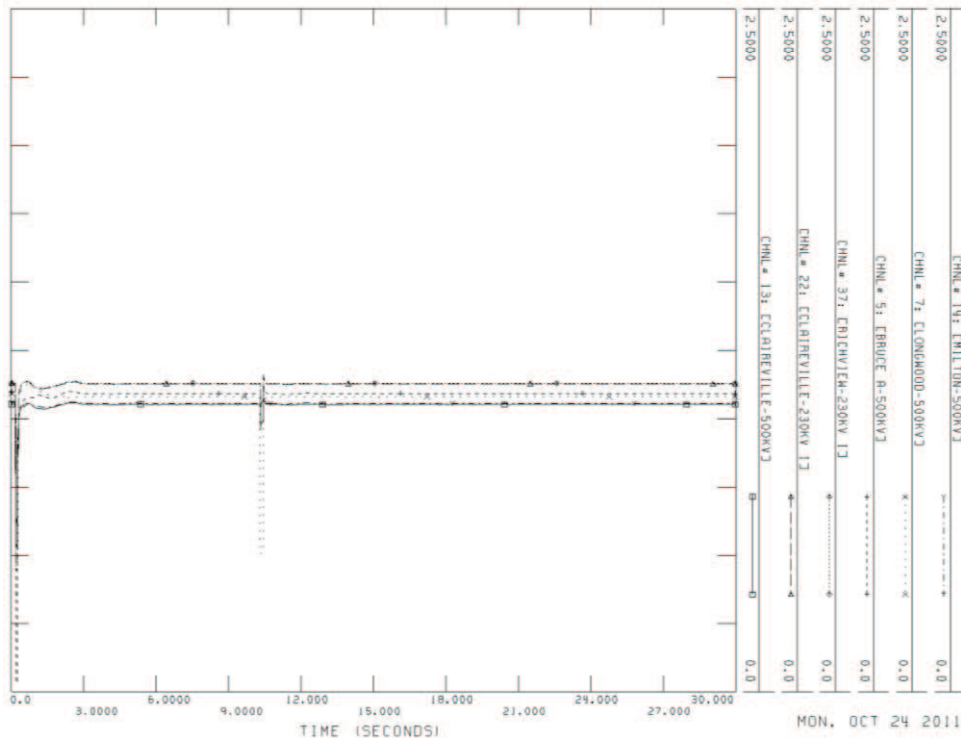


Figure 6: Voltage response due to a LLG fault on circuits B562E and B563A at Bruce Junction – with reclosure

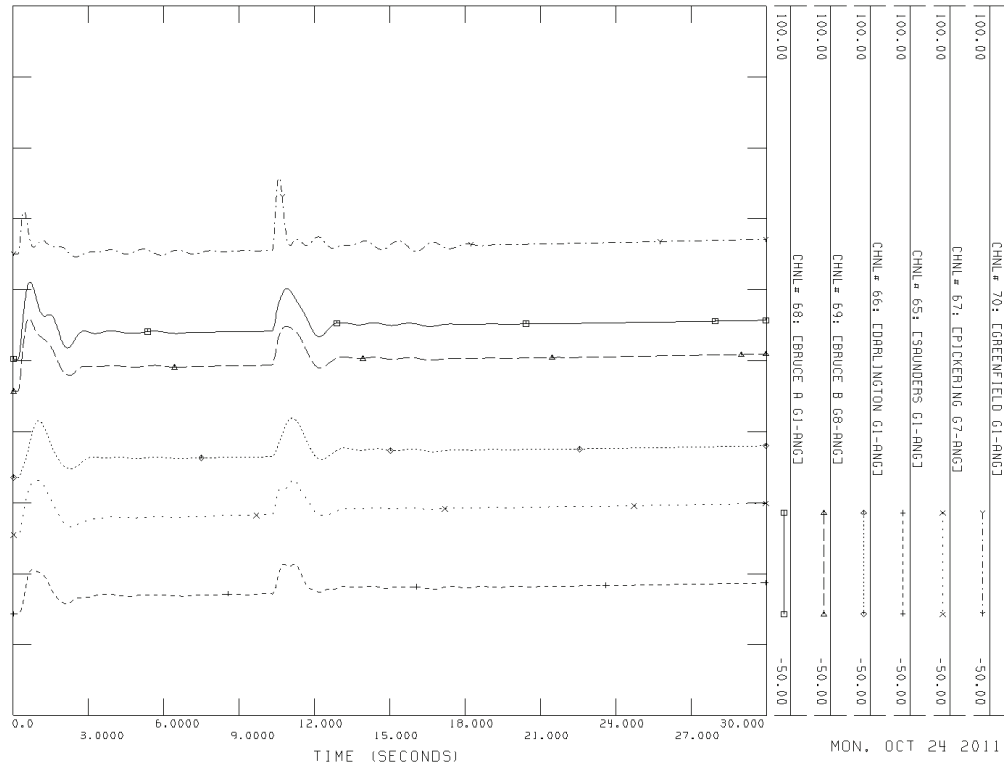


Figure 7: Major generator angle response due to a LLG fault on circuits E562L and A563L at Longwood – with reclosure

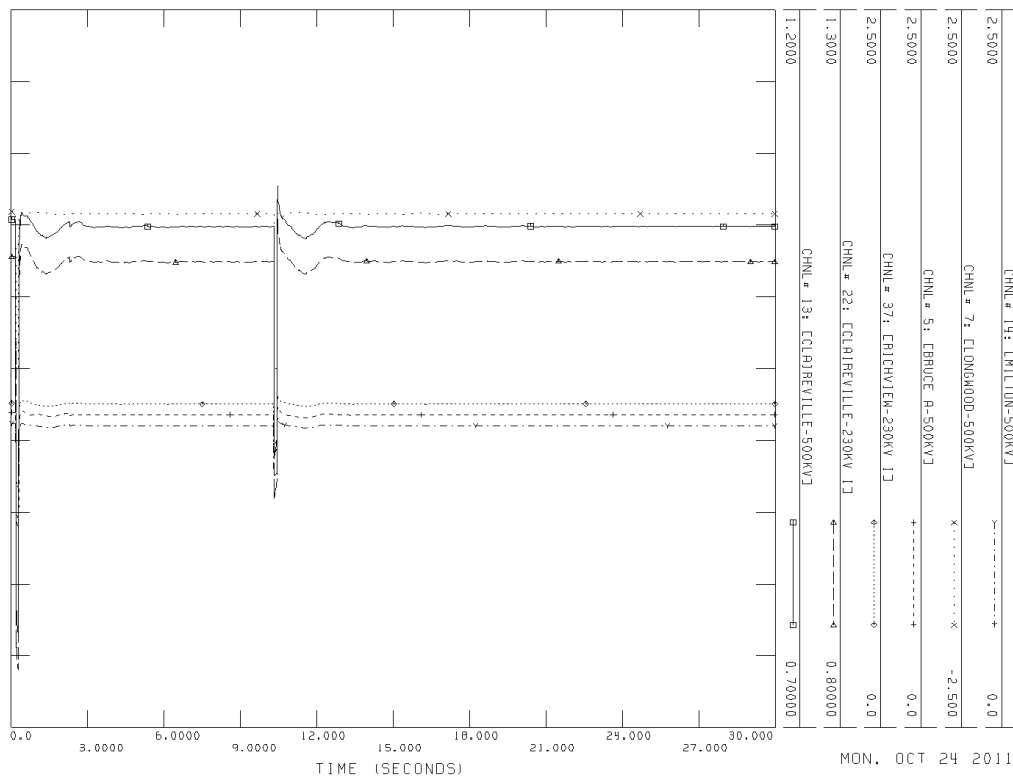


Figure 8: Voltage response due to a LLG fault on circuits E562L and A563L at Longwood – with reclosure

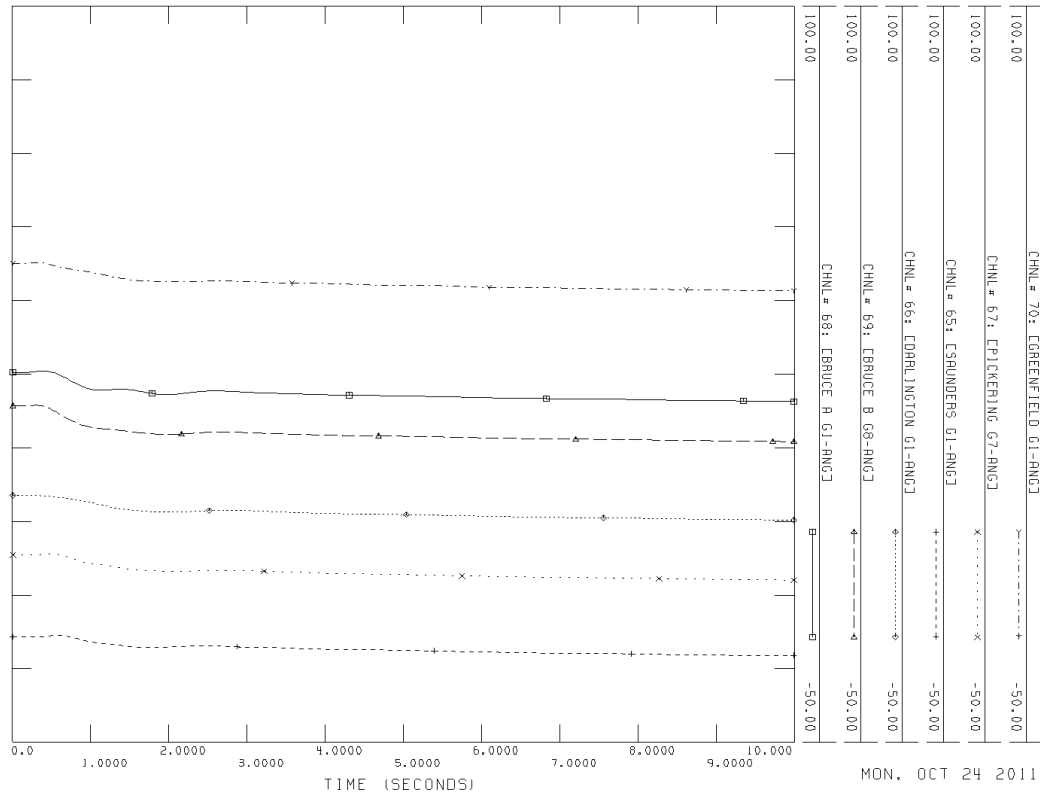


Figure 9: Major generator angle response due to an un-cleared 3 phase fault at the Parkhill 121 kV bus

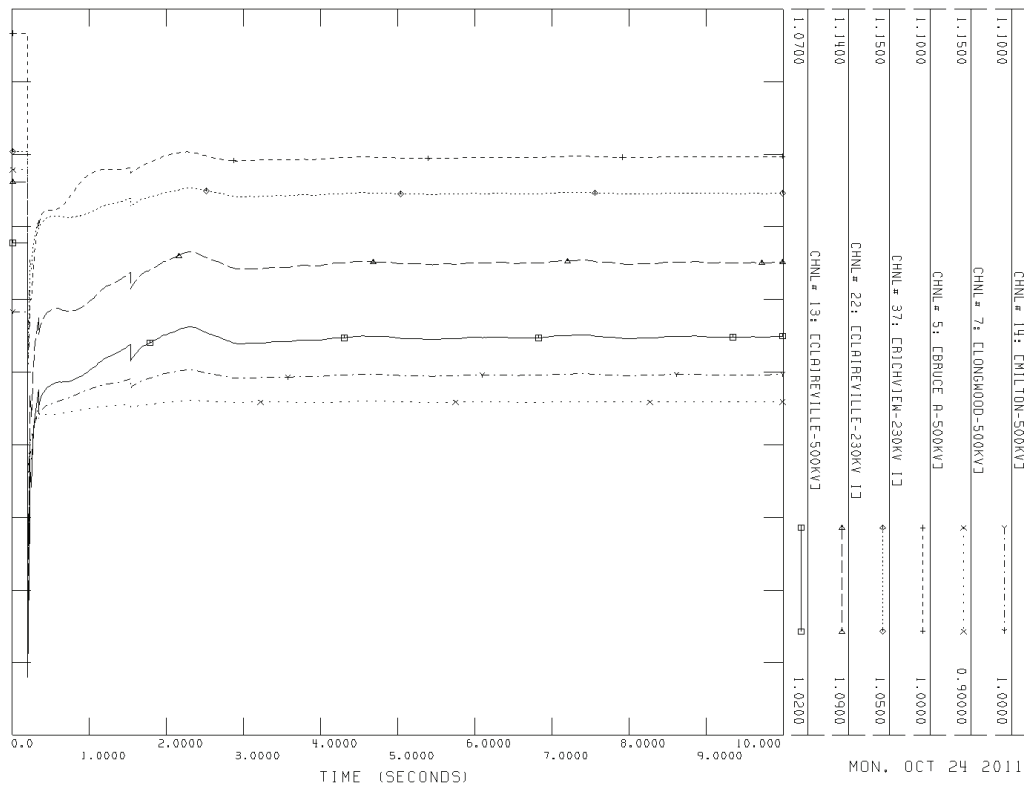


Figure 10: Voltage response due to an un-cleared 3 phase fault at the Parkhill 121 kV bus

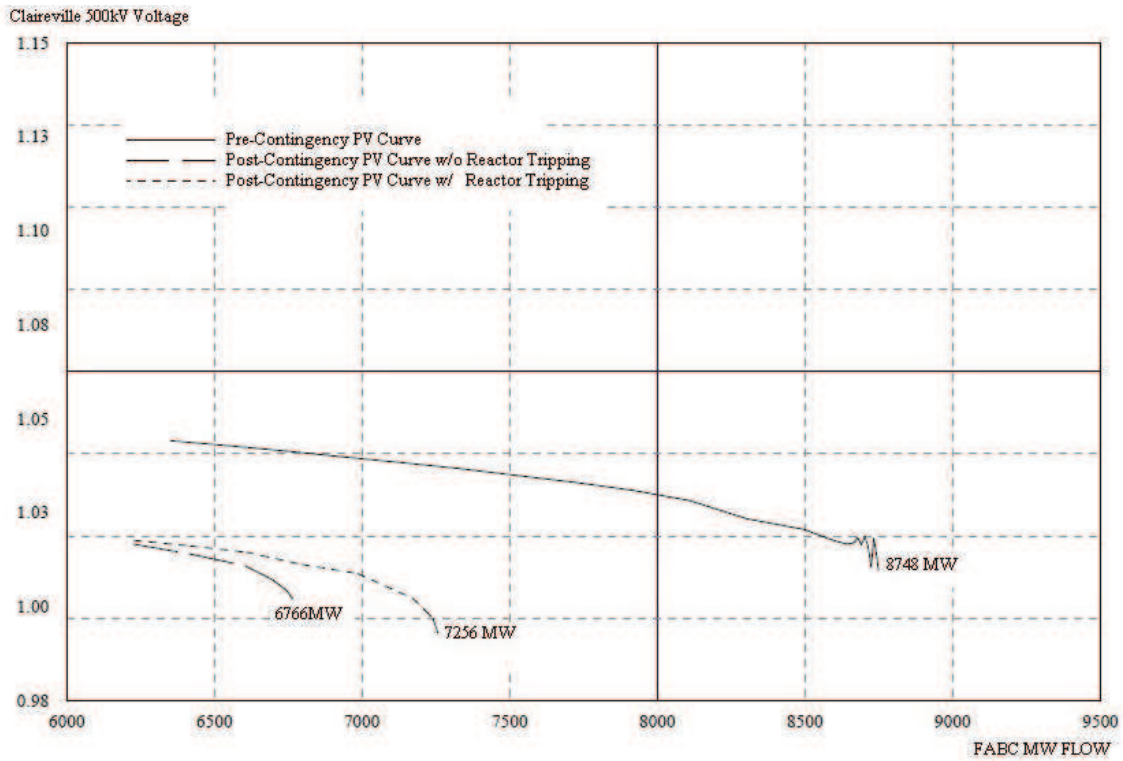


Figure 11: Voltage performance at Claireville 500kV vs. FABC transfer under defined scenarios

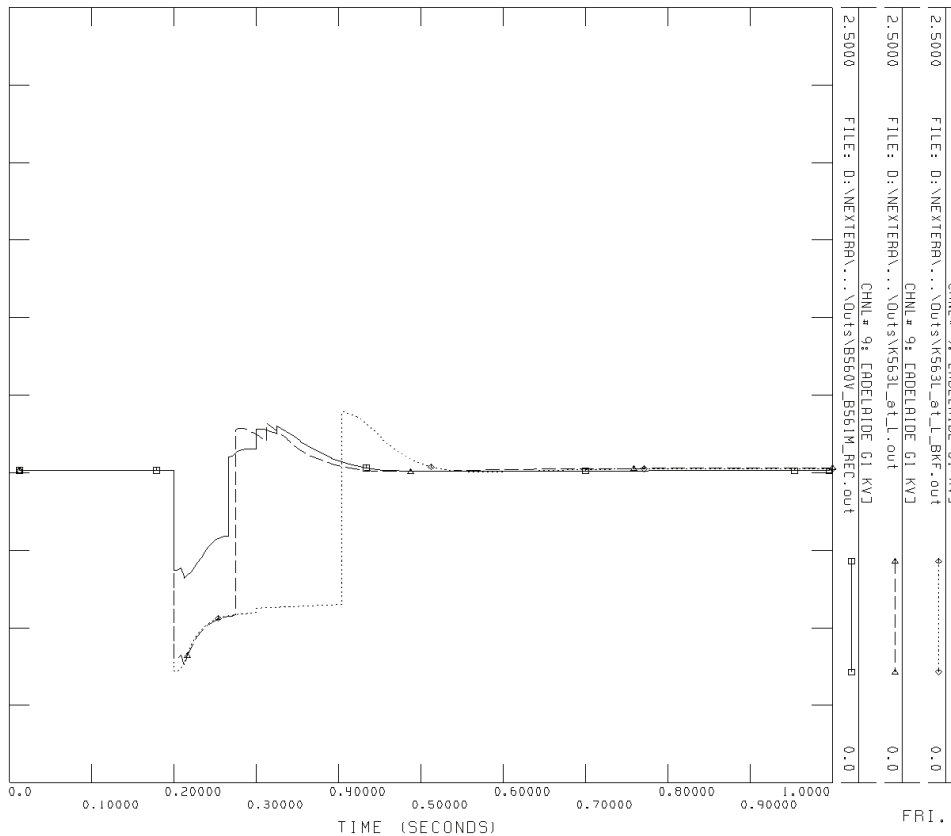


Figure 12: Adelaide 1.6 MW WTG terminal voltages for studied contingencies

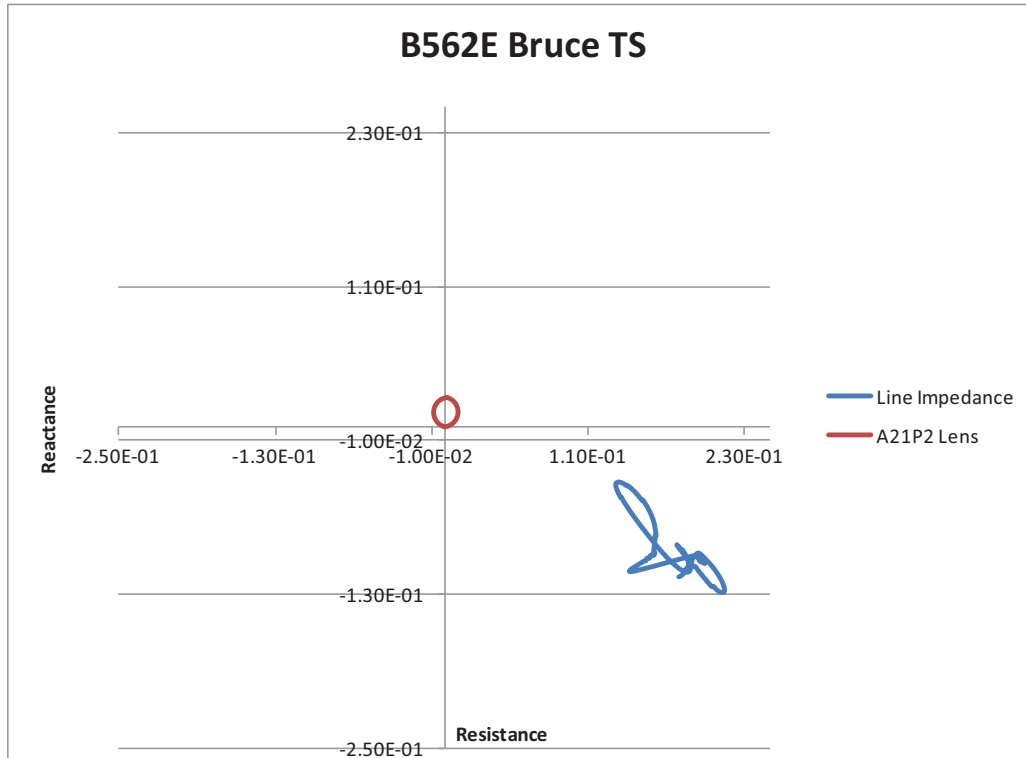


Figure 13: B562E at Bruce TS trajectory due to a LLG fault on circuits B560V and B561M at Willow Creek Junction

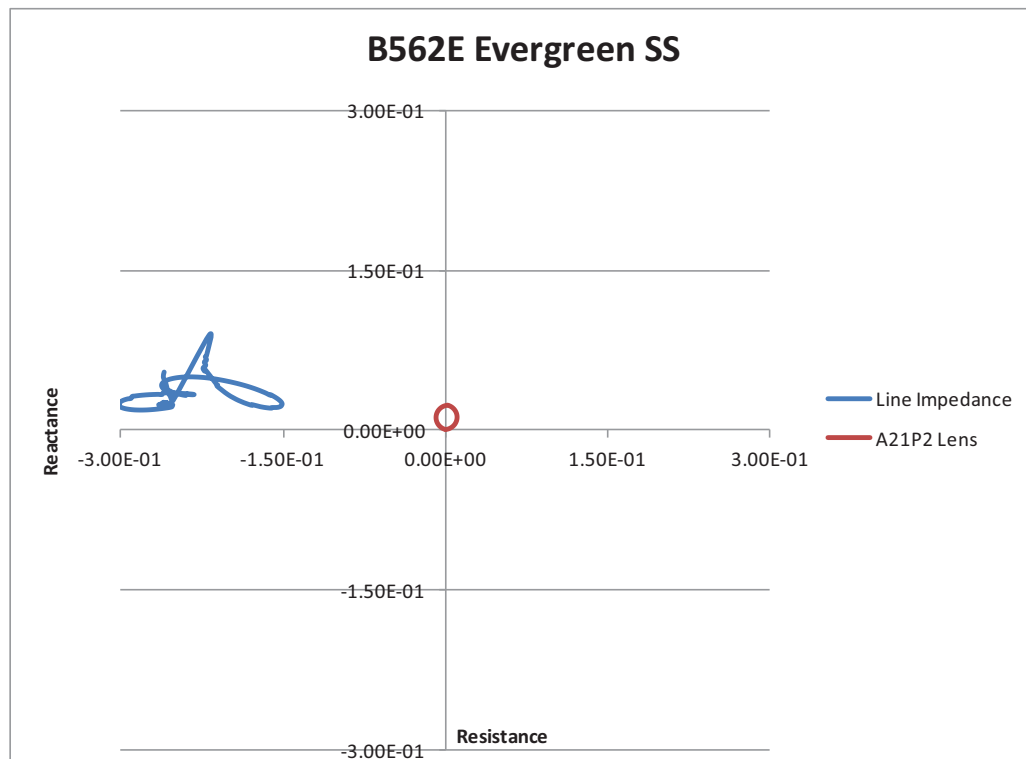


Figure 14: B562E at Evergreen SS trajectory due to a LLG fault on circuits B560V and B561M at Willow Creek Junction

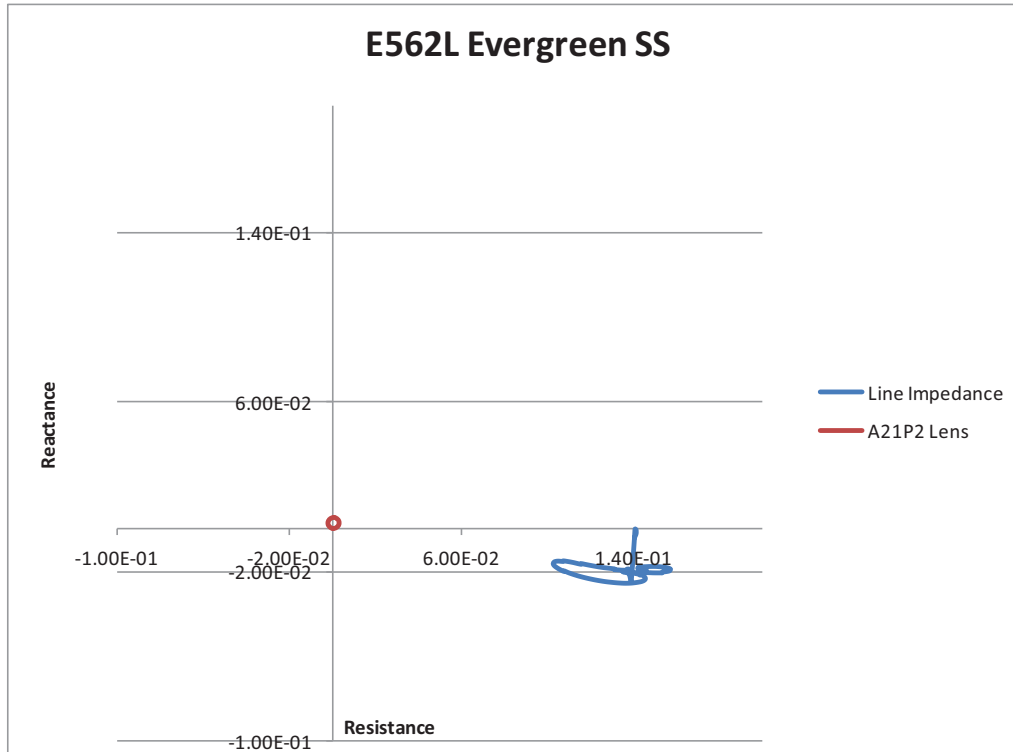


Figure 15: E562L at Evergreen SS trajectory due to a LLG fault on circuits B560V and B561M at Willow Creek Junction

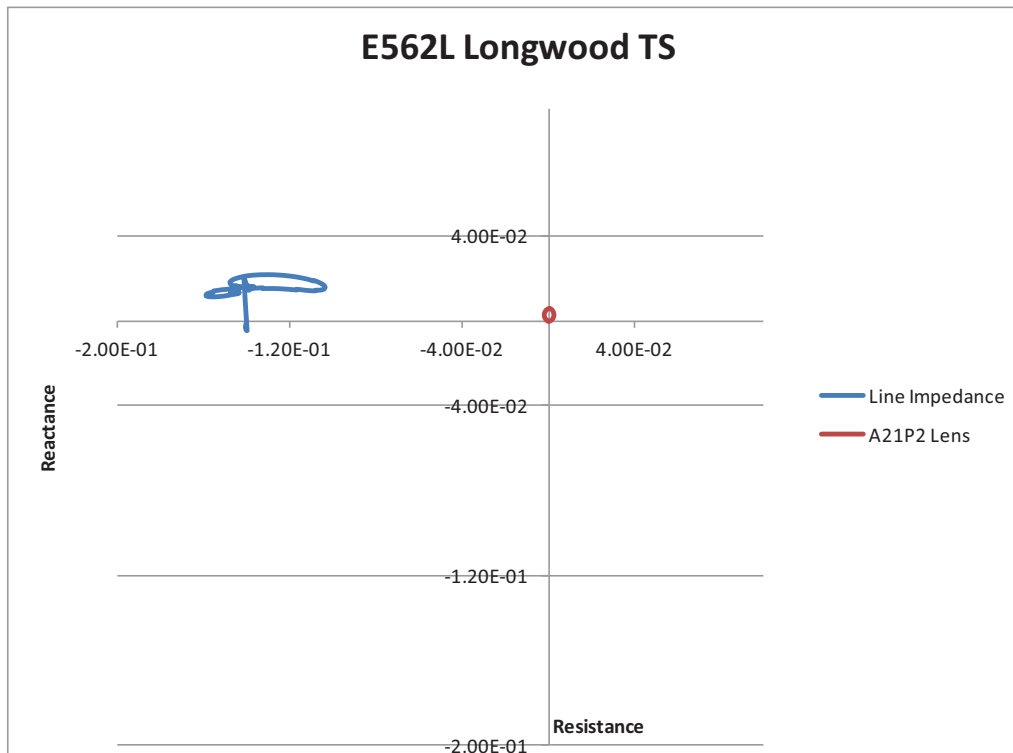


Figure 16: E562L at Longwood TS trajectory due to a LLG fault on circuits B560V and B561M at Willow Creek Junction

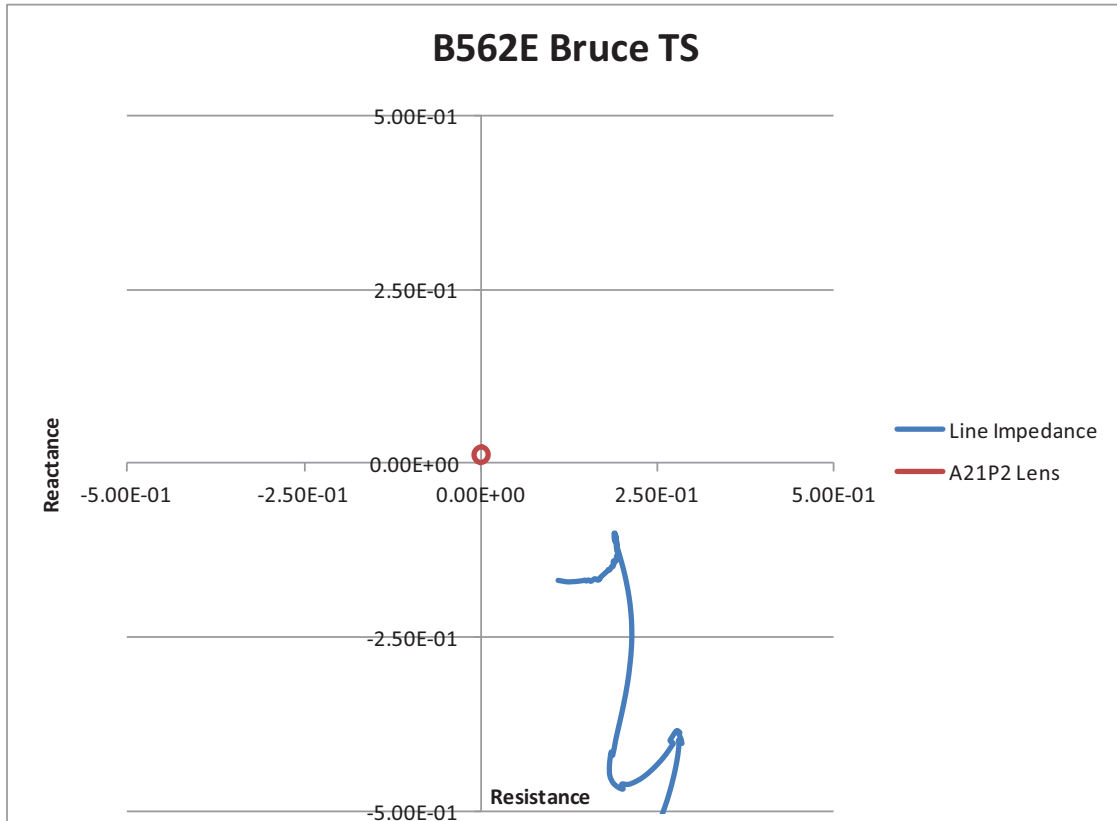


Figure 17: B562E at Bruce TS trajectory due to a 3 phase fault on circuit B563A at Bruce

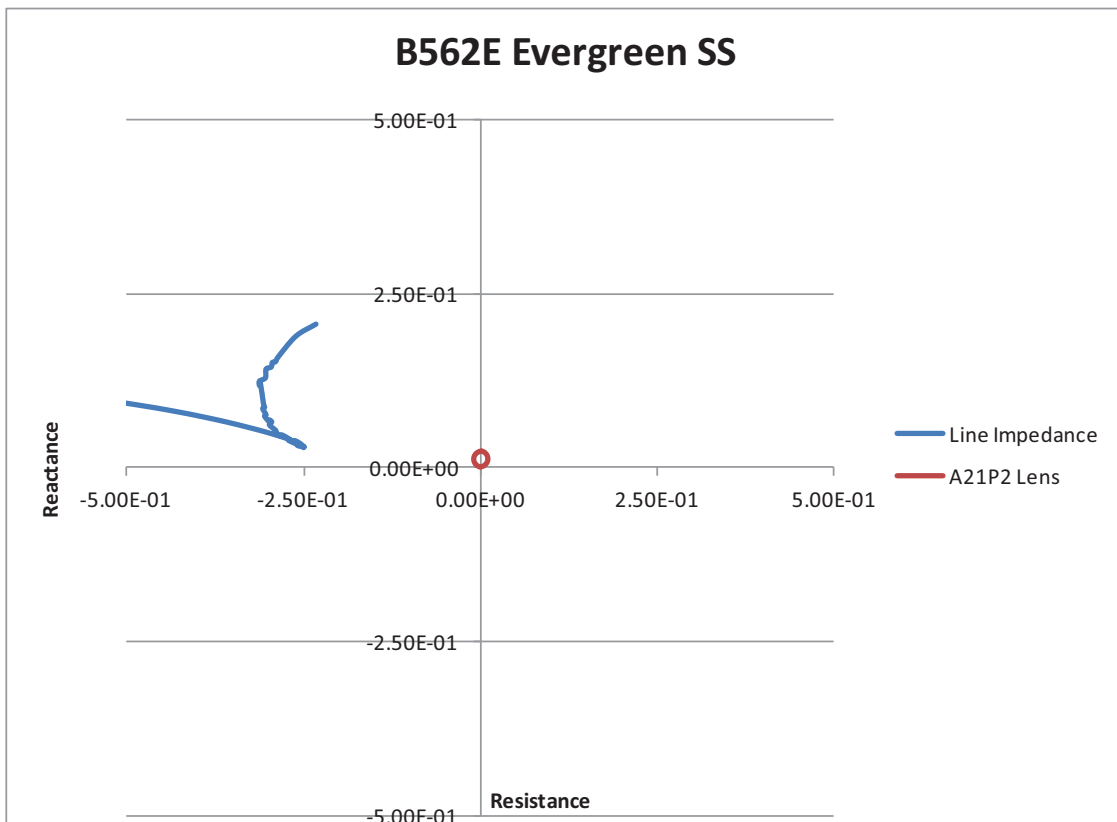


Figure 18: B562E at Evergreen SS trajectory due to a 3 phase fault on circuit B563A at Bruce

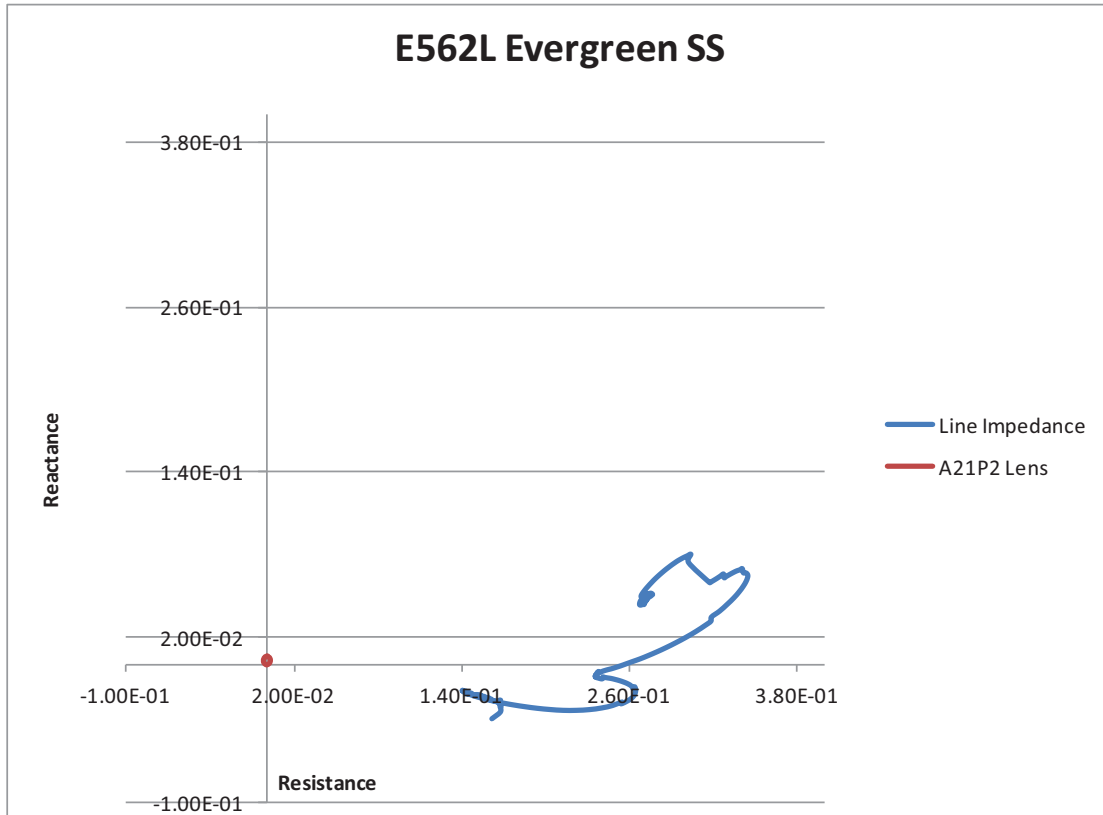


Figure 19: E562L at Evergreen SS trajectory due to a 3 phase fault on circuit B563A at Bruce

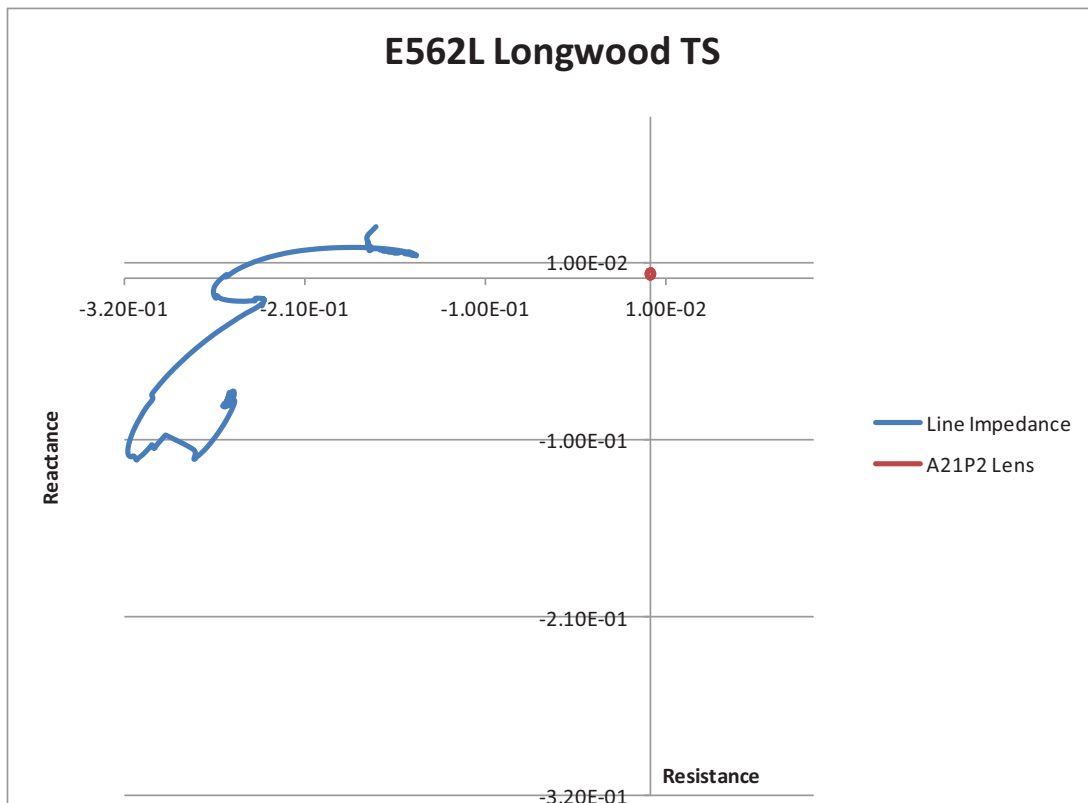


Figure 20: E562L at Longwood TS trajectory due to a 3 phase fault on circuit B563A at Bruce

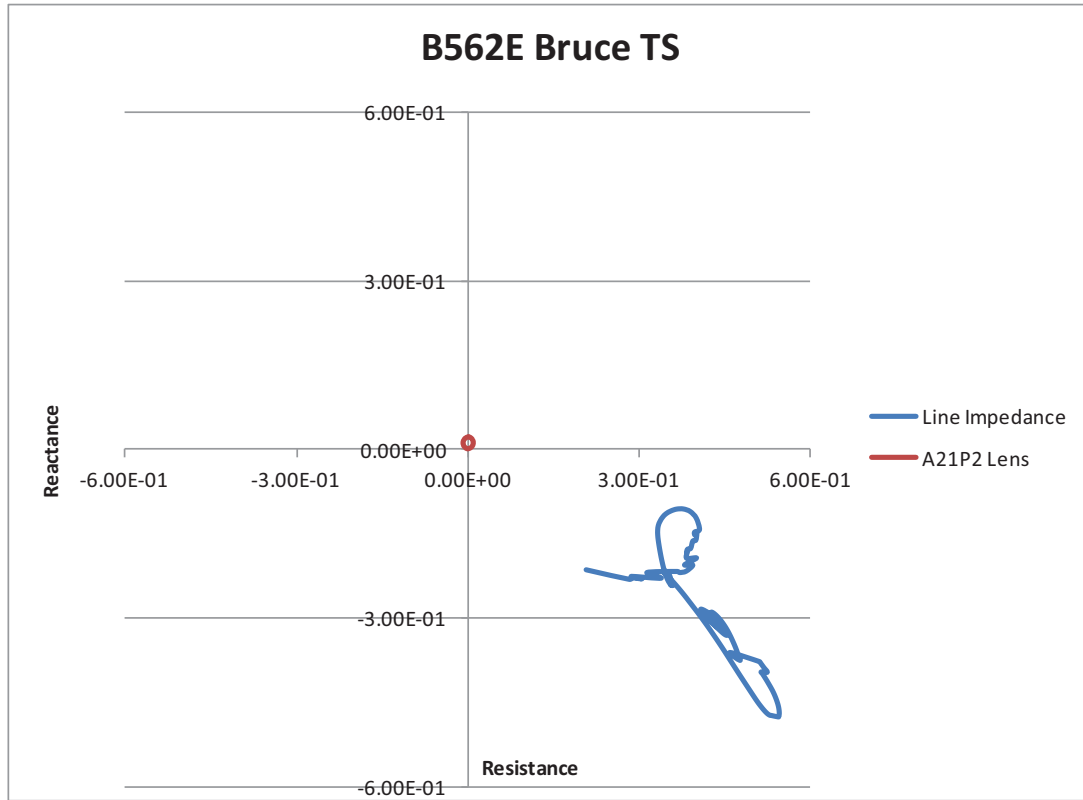


Figure 21: B562E at Bruce TS trajectory due to a 3 phase fault on circuit A563L at Longwood

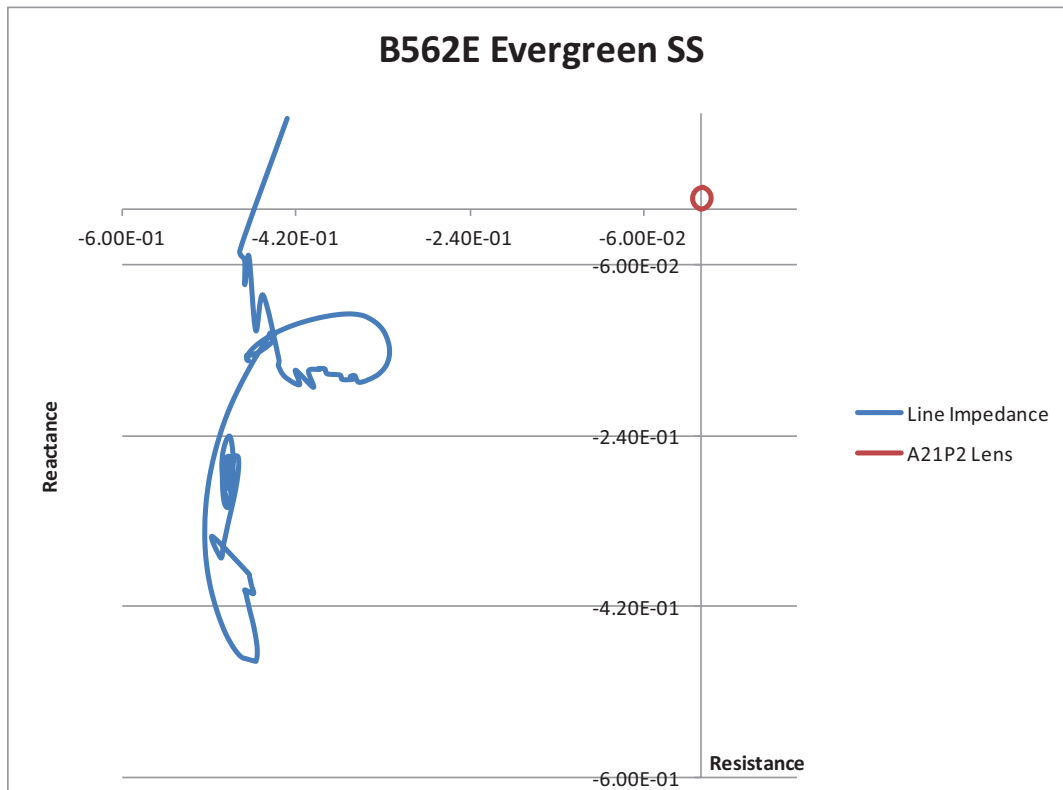


Figure 22: B562E at Evergreen SS trajectory due to a 3 phase fault on circuit A563L at Longwood

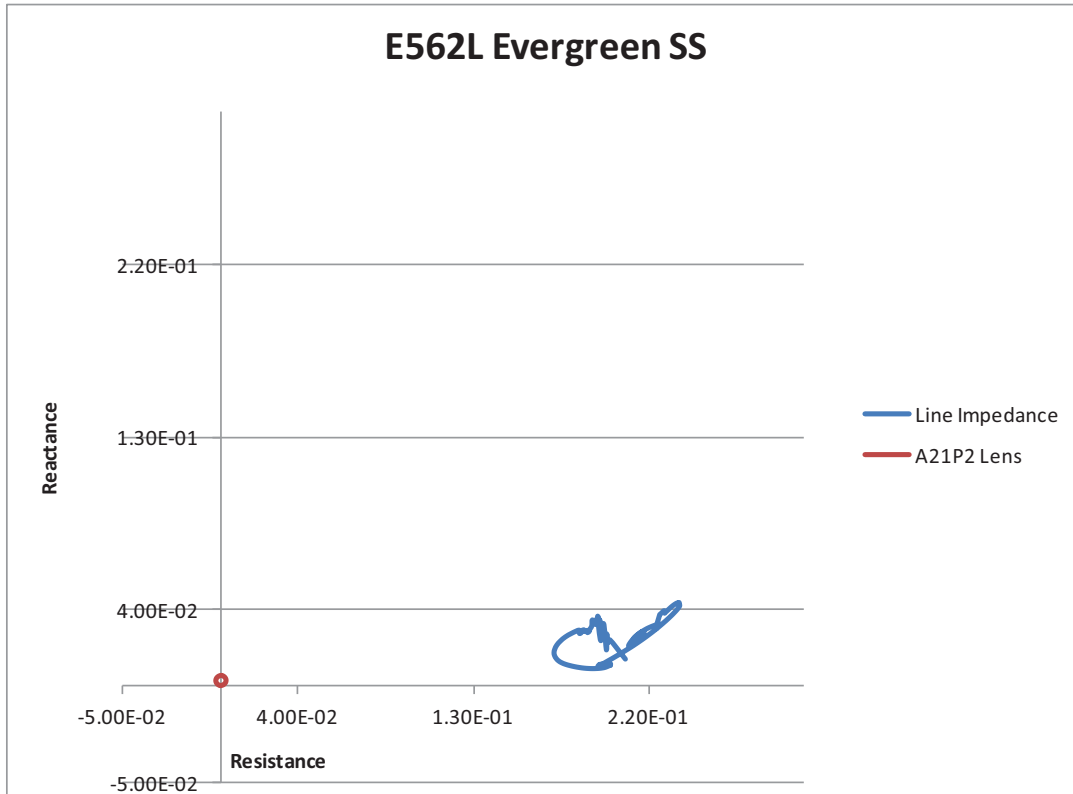


Figure 23: E562L at Evergreen SS trajectory due to a 3 phase fault on circuit A563L at Longwood

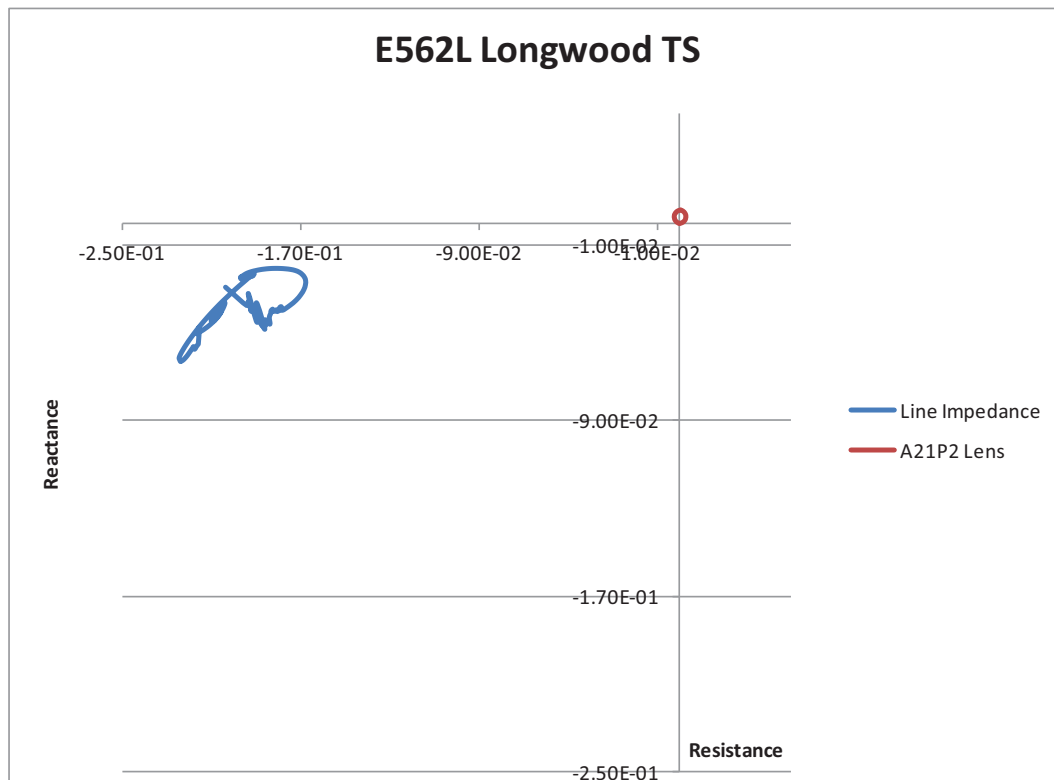


Figure 24: E562L at Longwood TS trajectory due to a 3 phase fault on circuit A563L at Longwood

Appendix B: PIA Report

Hydro One Networks Inc.
483 Bay Street
Toronto, Ontario
M5G 2P5



PROTECTION IMPACT ASSESSMENT
NEXTERA/SUNCOR WIND FARM PROJECTS
283.5 MW / 100 MW WIND GENERATORS
GENERATION CONNECTION

Date: November 7, 2011
P&C Planning Group Project #: PCT-291-PIA

Prepared by

Hydro One Networks Inc.

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Disclaimer

This Protection Impact Assessment has been prepared solely for the IESO for the purpose of assisting the IESO in preparing the System Impact Assessment for the proposed connection of the proposed generation facility to the IESO-controlled grid. This report has not been prepared for any other purpose and should not be used or relied upon by any person, including the connection applicant, for any other purpose.

This Protection Impact Assessment was prepared based on information provided to the IESO and Hydro One by the connection applicant in the application to request a connection assessment at the time the assessment was carried out. It is intended to highlight significant impacts, if any, to affected transmission protections early in the project development process. The results of this Protection Impact Assessment are also subject to change to accommodate the requirements of the IESO and other regulatory or legal requirements. In addition, further issues or concerns may be identified by Hydro One during the detailed design phase that may require changes to equipment characteristics and/or configuration to ensure compliance with the Transmission System Code legal requirements, and any applicable reliability standards, or to accommodate any changes to the IESO-controlled grid that may have occurred in the meantime.

Hydro One shall not be liable to any third party, including the connection applicant, which uses the results of the Protection Impact Assessment under any circumstances, whether any of the said liability, loss or damages arises in contract, tort or otherwise.

Revision History

Revision	Date	Change
R0	September 6, 2011	First draft
R1	October 27, 2011	Change in requirements for multiple setting groups and the name of the switching station to Evergreen SS.
R2	November 7, 2011	New approach for low WF infeed.

EXECUTIVE SUMMARY

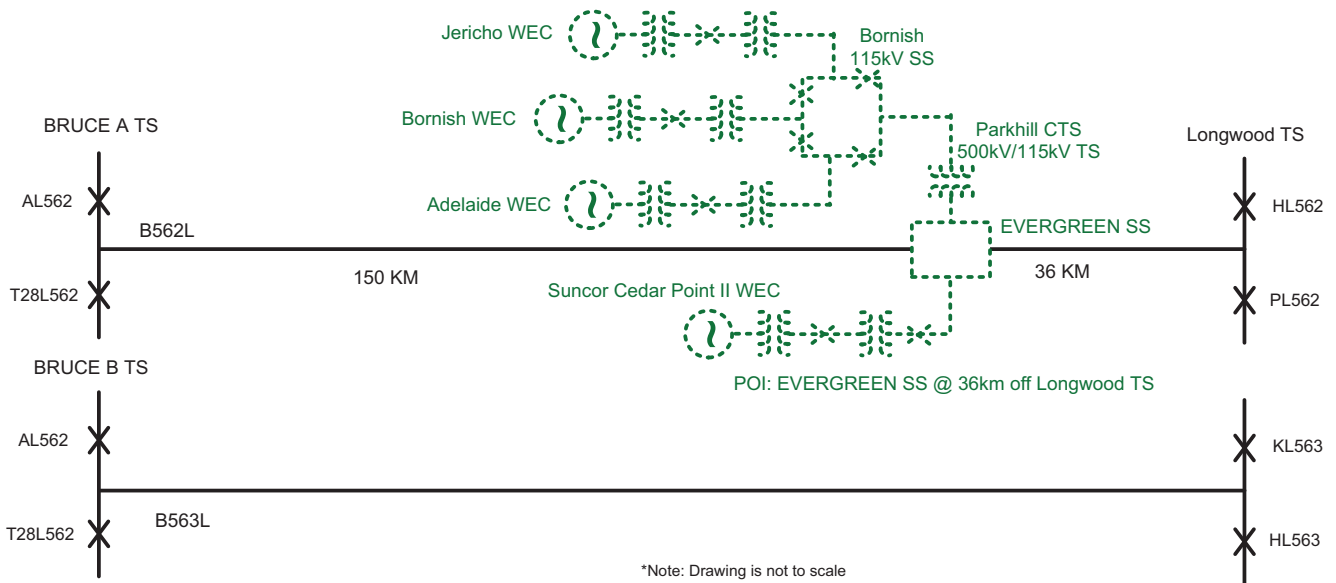


Figure 1: NextEra/SUNCOR WF Connection to HONI Transmission System

It is feasible for both NextEra and Suncor to connect the proposed generation project (NextEra 283.5MW and Suncor 100 MW) at the location shown in Figure 1. Two scenarios were analyzed, which require the following changes:

SCENARIO #1

NextEra 500 kV Projects Connected at Evergreen SS to Circuit B562L with a Three Breaker Ring Bus

LINE SECTIONALIZATION

NextEra proposes to construct a ring bus that sectionalizes line B562L as shown in Figure 1. Line segment between Bruce TS and Evergreen SS will be approximately 150km. Line segment between Evergreen SS and Longwood TS will be approximately 36.5 km. It is recommended to protect both the new 150km and the 36.5 km line segments by using a line distance scheme.

PROTECTION HARDWARE

The present relays at Bruce TS Longwood TS shall be upgraded to standard line distance relays meeting NPCC separation requirements. One of the relays (‘B’ group) at Bruce TS may be retained if feasible. This will trigger upgrading the 4 breaker (2 in each Bruce TS and Longwood TS) failure protections. New standard line protection relays will also have to be installed at Evergreen SS.

PROTECTION SETTINGS

Permissive Overreaching Schemes shall be implemented in both new line segments (previously part of B562L). New settings will be required for both Bruce TS and Longwood TS as the new three-breaker ring bus sectionalizes the line.

For the case where one of the line segments is open and the infeed from the wind farm is low, if a fault occurs close to Evergreen SS it will not be seen by Evergreen SS due to low infeed nor by the terminal station Zone 1

due to the fault location being within only Zone 2 reach, resulting in potentially long fault clearing time (up to 400ms). This scenario will require implementation of a relay logic design for the weak infeed solution which will be elaborated in the planning document in preparation of the detailed design.

New settings will also be required for relays at Evergreen SS. Essentially, the protection over B562L will have to be modified to protect two new line segments.

TELECOMMUNICATIONS

New telecommunication links (redundant with geographic path diversity) need to be established to transmit protection signals among all stations that are required for the reliable fault clearing. The provision of new telecommunication facilities that are required to facilitate this connection (subject to final design considerations) is responsibility of the proponent. New telecommunication facilities will be required at the new Evergreen SS (digital microwave and PLC) and telecommunication links shall be established to both Bruce TS and Longwood TS. The proponent is also responsible for establishing the communication links to IESO and HONI control centers for SCADA.

NEXTERA RESPONSIBILITIES

The customer shall be responsible to reliably disconnect their equipment for a fault on the line in case of a single contingency in their equipment. New relays shall be installed at Evergreen SS as described above. Teleprotection signals such as transfer trip shall be transmitted to both terminal stations from Evergreen SS as well as Breaker Fail shall be initiated upon receiving TT signals from any of the terminal stations. Adequate signal exchange shall be established between Evergreen SS and customer's step-up station Parkhill CTS.

SCENARIO #2

NextEra and Suncor Cedar Point II 500 kV Projects Connected at Evergreen SS to Circuit B562L with a Three Breaker Ring Bus

LINE SECTIONALIZATION

Like in Scenario #1, it is recommended to protect both resulting line segments by using a line distance scheme.

PROTECTION HARDWARE

The same as under Scenario #1.

PROTECTION SETTINGS

The same as under Scenario #1.

TELECOMMUNICATIONS

The same as under Scenario #1.

NEXTERA AND SUNCOR RESPONSIBILITIES

The same as under Scenario #1.

APPENDIX 'C'

FINAL SYSTEM IMPACT ASSESSMENT REPORT - ADDENDUM



System Impact Assessment Report

CONNECTION ASSESSMENT & APPROVAL PROCESS

Addendum Report

CAA ID: 2011-446
Project: Adelaide Wind Energy Centre
Applicant: Kerwood Wind Inc

Market Facilitation Department
Independent Electricity System Operator

Date: June 6, 2012

REPORT

Document ID	IESO_REP_0772
Document Name	System Impact Assessment Report
Issue	Addendum Report
Reason for Issue	Revised connection configuration
Effective Date	June 6, 2012

System Impact Assessment Report

Acknowledgement

The IESO wishes to acknowledge the assistance of Hydro One in completing this assessment.

Disclaimers

IESO

This report has been prepared solely for the purpose of assessing whether the connection applicant's proposed connection with the IESO-controlled grid would have an adverse impact on the reliability of the integrated power system and whether the IESO should issue a notice of conditional approval or disapproval of the proposed connection under Chapter 4, section 6 of the Market Rules.

Conditional approval of the proposed connection is based on information provided to the IESO by the connection applicant and Hydro One at the time the assessment was carried out. The IESO assumes no responsibility for the accuracy or completeness of such information, including the results of studies carried out by Hydro One at the request of the IESO. Furthermore, the conditional approval is subject to further consideration due to changes to this information, or to additional information that may become available after the conditional approval has been granted.

If the connection applicant has engaged a consultant to perform connection assessment studies, the connection applicant acknowledges that the IESO will be relying on such studies in conducting its assessment and that the IESO assumes no responsibility for the accuracy or completeness of such studies including, without limitation, any changes to IESO base case models made by the consultant. The IESO reserves the right to repeat any or all connection studies performed by the consultant if necessary to meet IESO requirements.

Conditional approval of the proposed connection means that there are no significant reliability issues or concerns that would prevent connection of the proposed project to the IESO-controlled grid. However, the conditional approval does not ensure that a project will meet all connection requirements. In addition, further issues or concerns may be identified by the transmitter(s) during the detailed design phase that may require changes to equipment characteristics and/or configuration to ensure compliance with physical or equipment limitations, or with the Transmission System Code, before connection can be made.

This report has not been prepared for any other purpose and should not be used or relied upon by any person for another purpose. This report has been prepared solely for use by the connection applicant and the IESO in accordance with Chapter 4, section 6 of the Market Rules. The IESO assumes no responsibility to any third party for any use, which it makes of this report. Any liability which the IESO may have to the connection applicant in respect of this report is governed by Chapter 1, section 13 of the Market Rules. In the event that the IESO provides a draft of this report to the connection applicant, the connection applicant must be aware that the IESO may revise drafts of this report at any time in its sole discretion without notice to the connection applicant. Although the IESO will use its best efforts to advise you of any such changes, it is the responsibility of the connection applicant to ensure that the most recent version of this report is being used.

Hydro One

The results reported in this report are based on the information available to Hydro One, at the time of the study, suitable for a System Impact Assessment of this connection proposal.

The short circuit and thermal loading levels have been computed based on the information available at the time of the study. These levels may be higher or lower if the connection information changes as a result of, but not limited to, subsequent design modifications or when more accurate test measurement data is available.

This study does not assess the short circuit or thermal loading impact of the proposed facilities on load and generation customers.

In this report, short circuit adequacy is assessed only for Hydro One circuit breakers. The short circuit results are only for the purpose of assessing the capabilities of existing Hydro One circuit breakers and identifying upgrades required to incorporate the proposed facilities. These results should not be used in the design and engineering of any new or existing facilities. The necessary data will be provided by Hydro One and discussed with any connection applicant upon request.

The ampacity ratings of Hydro One facilities are established based on assumptions used in Hydro One for power system planning studies. The actual ampacity ratings during operations may be determined in real-time and are based on actual system conditions, including ambient temperature, wind speed and project loading, and may be higher or lower than those stated in this study.

The additional facilities or upgrades which are required to incorporate the proposed facilities have been identified to the extent permitted by a System Impact Assessment under the current IESO Connection Assessment and Approval process. Additional project studies may be necessary to confirm constructability and the time required for construction. Further studies at more advanced stages of the project development may identify additional facilities that need to be provided or that require upgrading.

1. Notification of Conditional Approval

Bornish, Adelaide and Jericho Wind Energy Centres are three wind generating projects proposing to connect to 500 kV circuit B562L, via a 121 kV network and 525/121 kV step up transformer, both proponent owned. Initial System Impact Assessments (SIA) CAA ID 2011-441, CAA ID 201-443 and CAA ID 2011-446 were issued on December 21st, 2011, where the connection of the three projects to the IESO controlled grid was examined and given a Notice of Conditional Approval.

Suncor Energy Products Inc. is proposing to construct a 100 MW wind energy project named Cedar Point II Wind Power Project, which would connect to circuit B562L via the same 121 kV network as the three aforementioned projects. As agreed upon with the connection applicants for all four projects, new SIA studies were performed for the four projects as a cluster with requirements being developed for the combination of the Cedar Point II, Bornish, Adelaide and Jericho wind projects (the “projects”).

Hydro One and the connection applicants are proposing an alternative solution to manage the high voltage concern identified in the original SIA at the 500 kV connection stations. Rather than installing a reactor, equipment at Parkhill CTS (generation side) and Evergreen SS (transmission side) will be upgraded to ensure that a maximum continuous voltage of at least 570 kV can be sustained.

This Addendum addresses changes to requirements previously developed for Bornish, Adelaide and Jericho Wind Energy Centres before the incorporation of the Cedar Point II Wind Power Project, as well as changes proposed by the transmitter and the proponents to mitigate potential over-voltages at the connection station Evergreen SS.

This assessment concludes that the proposed changes are expected to have no material adverse impact on the reliability of the integrated power system. Therefore, the IESO recommends that a *Notification of Conditional Approval for Connection* be issued for the Adelaide Wind Energy Centre subject to implementation of the requirements outlined in this report and the original SIA report.

2. IESO Requirements for Connection

Transmitter Requirements

The following requirements are applicable to the transmitter for the incorporation of the projects:

- (1) Equipment at Evergreen SS must be able sustain a continuous voltage up to 561 kV. Fault interrupting devices at Evergreen SS must be able to interrupt fault currents at voltages as high as 561 kV. Alternate solutions to manage the high voltage concern may be acceptable upon the approval of the IESO.

This requirement supersedes transmitter requirement (3) in the Executive Summary of the original SIA report.

- (2) The circuit breakers at Evergreen will have a short circuit symmetrical rating of at least 50 kA at its maximum continuous operating voltage. This rating is sufficient in meeting the short circuit levels at Evergreen SS as presented in the original SIA. If any future system changes results in an increased fault level higher than the capability of the fault interrupting devices, these fault interrupting devices must be replaced with higher rated equipment capable of sustaining the increased fault level up to the maximum fault level specified in Appendix 2 of the Transmission System Code.

- (3) The transmitter shall modify the existing Bruce Special Protection Scheme (BSPS) to incorporate the new project and the new switching station. The BSPS shall be expanded to recognize the disconnection of the circuits in the Bruce x Longwood corridor. A description of the modifications to the BSPS has to be provided to the IESO in a timely manner to allow for the required approvals of the BSPS to be obtained. A Facility Description Document (FDD) describing the functionality of the expanded BSPS has to be provided to the IESO during the market entry /facility registration process.

Applicant Requirements

Specific requirements:

- (1) The projects are required to have the capability to inject or withdraw reactive power continuously (i.e. dynamically) at the connection point up to 33% of its rated active power at all levels of active power output.

Based on the equivalent collector impedance parameters provided by the connection applicant, a static capacitive compensation device of at least 120 Mvar@121 kV installed at the 121 kV Parkhill CTS bus would satisfy the reactive power requirement. The required capacitive compensation would need to be arranged into at least 4 approximately equal steps to allow for flexibility in adjustment of reactive power production.

The voltage profile along the projects' network greatly impacts their ability to provide full reactive support from the WTGs. The IESO recommends that projects' internal system voltages be controlled via automatic ULTC such that voltages remain within acceptable ranges, ultimately facilitating the WTGs ability to provide full reactive support.

The connection applicant has the obligation to ensure that the wind farm has the capability to meet the Market Rules' requirements at the connection point and be able to confirm this capability during the commission tests.

This requirement supersedes the applicant's specific requirement (1) in the Executive Summary of the original SIA report.

- (2) The connection applicant shall ensure that the equipments within the project have the capability to operate when the voltage at Evergreen SS is as high as 561 kV.

This requirement supersedes the applicant's specific requirement (2) in the Executive Summary of the original SIA report.

General Requirements:

- (1) The connection applicant shall ensure that the 500 kV equipment is capable of continuously operating between 490 kV and 561 kV. Protective relaying must be set to ensure that transmission equipment remains in-service for voltages between 94% of the minimum continuous value and 105% of the maximum continuous value.

This requirement supersedes general requirement (4) in the Executive Summary of the original SIA report.

- (2) The connection applicant shall ensure that all equipment within their facility is capable to sustain the fault levels in the area. If any future system changes results in an increased fault level higher than the equipment's capability, the connection applicant is required to replace the equipment with

higher rated equipment capable of sustaining the increased fault level, up to maximum fault level specified in Appendix 2 of the Transmission System Code.

Fault interrupting devices must be able to interrupt fault currents at voltages as high as 561 kV.

The requirement supersedes general requirement (7) in the Executive Summary of the original SIA report.

3. Assessment

The initial System Impact Assessments examined the connection of the Bornish, Adelaide and Jericho Wind Energy Centres to 500 kV circuit B562L, via a 121 kV network and 525/121 kV step up transformer, both proponent owned.

Suncor Energy Products Inc. is proposing to construct a 100 MW wind energy project named Cedar Point II Wind Power Project, which would connect to circuit B562L via the same 121 kV network as the three aforementioned projects. As agreed upon with the connection applicants for all four projects, the System Impact Assessment studies were performed as a cluster with requirements being developed for the combination of the Cedar Point II, Bornish, Adelaide and Jericho wind projects.

This Addendum addresses changes to requirements previously developed for Bornish, Adelaide and Jericho Wind Energy Centres before the incorporation of the Cedar Point II Wind Power Project, as well as changes proposed by the transmitter and the proponents to mitigate potential over-voltages at the connection station Evergreen SS.

3.1 Reactive Power Compensation

The Market Rules require generators to inject or withdraw reactive power continuously (i.e. dynamically) at a connection point equal to up to 33% of the generator's rated active power at all levels of active power output; except where a lesser continually available capability is permitted by the IESO. A generating unit with a power factor range of 0.90 lagging and 0.95 leading at rated active power connected via impedance between the generator and the connection point not greater than 13% based on rated apparent power provides the required range of dynamic reactive capability at the connection point.

Dynamic reactive compensation (e.g. D-VAR or SVC) is required for a generating facility which cannot provide a reactive power range of 0.90 lagging power factor and 0.95 leading power factor at rated active power. For a wind farm with an impedance between the generator and the connection point in excess of 13% based on rated apparent power, provided the WTGs have the capability to provide a reactive power range of 0.90 lagging power factor and 0.95 leading power factor at rated active power, the IESO accepts that the wind farm compensate for excessive reactive losses in the collector system of the project with static shunts (e.g. capacitors and reactors).

The SIA proposed a solution for the project to meet the Market Rules requirements on reactive power capability. However, the applicant can deploy any other solutions which result in its compliance with the Market Rules. The applicant shall be able to confirm this capability during the commission tests.

Dynamic Reactive Power Capability

The Siemens SWT 2.3 MW and GE 1.6 MW WTGs can deliver the IESO required dynamic reactive power at rated power and at rated terminal voltage. Thus, there is no need to install additional dynamic reactive power device.

Static Reactive Power Capability

In addition to the dynamic reactive power requirement identified above, the projects have to compensate for the reactive power losses within the projects' network to ensure that it has the capability to inject or withdraw reactive power up to 33% of its rated active power at the connection point. As mentioned above, the IESO accepts this compensation to be made with switchable shunt admittances.

Load flow studies were performed to calculate the static reactive compensation, based on the equivalent parameters provided by the connection applicant for the projects.

The reactive power capability in lagging power factor of the projects was assessed under the following assumptions:

- typical voltage of 545 kV at the connection point;
- maximum active power output from the equivalent WTG;
- maximum reactive power output (lagging power factor) from the equivalent WTG, unless limited by the maximum acceptable WTG terminal voltage;
- maximum WTG voltage of 1.05 pu;
- main and intermediate level step-up transformer ULTCs are available to adjust the LV voltage as close as possible to 1 pu voltage, while ensuring the intermediate transmission and collector bus voltages within the Nextera system do not exceed 1.05 pu. No voltage limitations for the Cedar Point facility have been specified.

The reactive power capability in leading power factor of the projects was assessed under the following assumptions:

- typical voltage of 545 kV at the connection point;
- minimum (zero) active power output from the equivalent WTG;
- reactive power consumption (leading power factor) as required to meet the Market Rules requirement from the equivalent WTG.
- minimum acceptable WTG voltage is 0.9 pu, as per WTG voltage capability;
- main and intermediate level step-up transformer ULTCs are available to adjust the LV voltage as close as possible to 1 pu voltage, while ensuring the intermediate transmission and collector bus voltages within the Nextera system do not fall below 0.95 pu. No voltage limitations for the Cedar Point facility have been specified.

The IESO's reactive power calculation used the equivalent electrical model for the WTG and collector feeders as provided by the connection applicant. It is important that the project have proper internal design to ensure that the WTGs are not limited in their capability to produce active and reactive power due to terminal voltage limits or other project internal limitations. For example, it is expected that the transformation ratio of the WTG step up transformers will be set in such a way that it will offset the voltage profile along the collector, and all the WTG would be able to contribute to the reactive power production of the project in an equal amount.

Based on the equivalent parameters for the wind farm provided for the projects, a static capacitive reactive power compensation rated 120 Mvar at 121 kV is required to be installed at the Parkhill 121 kV bus to meet the reactive power injection requirement at the connection point. No reactor is required to

meet the reactive power withdrawal requirement. A detailed summary of the results with reactive power compensation is provided in Table 1.

Table 1: Reactive Power Capability at the PCC

Operation	Intermediate Bus Voltage (kV)	Collector Bus Voltage (kV)	Max/Min Generator Terminal Voltage (pu)	PCC Reactive Power (Mvar)	PCC Voltage (kV)
Lagging PF	125.8	34.4	1.043	+134.0	545 kV
Leading PF	121	34.5	0.90	-203.3	545 kV

The required capacitive compensation will need to be arranged into at least 4 approximately equal steps to allow for flexibility in adjustment of reactive power production. It shall also be implemented as a part of wind farm control system that automatically controls the switching of capacitor banks to regulate the overall WTGs' reactive output to around zero.

Static Reactive Power Switching

The IESO requires the voltage change on a single capacitor switching to be no more than 4 % at the any point in the IESO Controlled Grid. A switching study was carried out to investigate the effect of the new shunt capacitor banks on the voltage changes. It was assumed that the largest capacitor step size is 30 Mvar. To reflect a reasonably restrictive system condition, the voltage change study was studied under light load conditions and assumed one Bruce to Longwood circuit out of service.

Table 2: Voltage Changes Due to Static Reactive Compensation Switching

Capacitor at 121 kV bus	Parkhill 121 kV voltage	Evergreen SS voltage
Pre-switching	120.2 kV	542.0 kV
Post-switching	122.2 kV	544.1 kV
ΔV	1.7%	0.4%

Table 2 shows that switching a single capacitor of 30 Mvar results in less than 4 % voltage change at the connection point, therefore meeting the Market Rules' requirement.

3.2 Over-voltage Management at Evergreen SS

Due to the long length of Bruce-by Evergreen 500 kV circuit, voltages at Evergreen SS may exceed maximum continuous levels of 550 kV specified by Appendix 4.1 of the Market Rules under certain operating scenarios.

The voltage analysis was carried out under the following assumptions:

- Voltage of 550 kV at Bruce A TS
- Evergreen-by-Longwood circuit out of service
- Cedar Point II, Jericho, Bornish and Adelaide WTGs off line with their proposed collector systems disconnected
- Parkhill CTS and Bornish TS remaining connected to Evergreen SS

Table 3: Voltage Analysis Results at Evergreen SS

Bus	Voltage with Evergreen-by-Longwood circuit out of service
Evergreen SS 500kV	561 kV

Table 3 shows the simulation results which indicate that the voltage at Evergreen SS could be as high as 561 kV.

In the previous System Impact Assessment, the SIA required that a 500 kV reactor be installed and switched automatically to ensure that voltages do not exceed 550 kV at Evergreen SS. Hydro One and the connection applicants are proposing an alternative solution to manage the high voltage concern at Evergreen SS. Rather than installing a reactor, equipment at Evergreen SS will be upgraded to ensure that a maximum continuous operating voltage of at least 570 kV can be sustained. This solution is acceptable to the IESO.

Thus, 500kV equipment at Evergreen SS and the project must be able to sustain a maximum continuous voltage of 561 kV as per the study results. The connection applicant shall also ensure that the equipment within the projects have the capability to operate when the voltage at Evergreen SS is as high as 561 kV. Fault interrupting device at Evergreen SS and the project must be able to interrupt fault currents at voltages as high as 561 kV.

Alternate solutions to manage high voltage concern may also be acceptable upon the approval of the IESO.

Equipment Data

The following are the technical specifications of the equipment at Evergreen SS provided by Hydro One:

- Circuit breakers at Evergreen SS will be of the 765 kV voltage class;
- Circuit breakers at Evergreen will have a short circuit symmetrical rating of at least 50 kA at its maximum continuous operating voltage. This rating is sufficient in meeting the short circuit levels at Evergreen SS as presented in the original SIA. Note the typical limited maximum 3 phase and single line to ground symmetrical fault levels allowed by the Transmission System Code on the 500 kV system is 63 kA ;
- Circuit breakers at Evergreen will have an interrupting time less than or equal to 2 cycles;
- All other equipment at Evergreen will have a maximum continuous operating voltage of at least 570 kV.

The connection applicants have also indicated that 500 kV equipment within projects' network will also have a maximum continuous operating voltage of at least 570 kV.

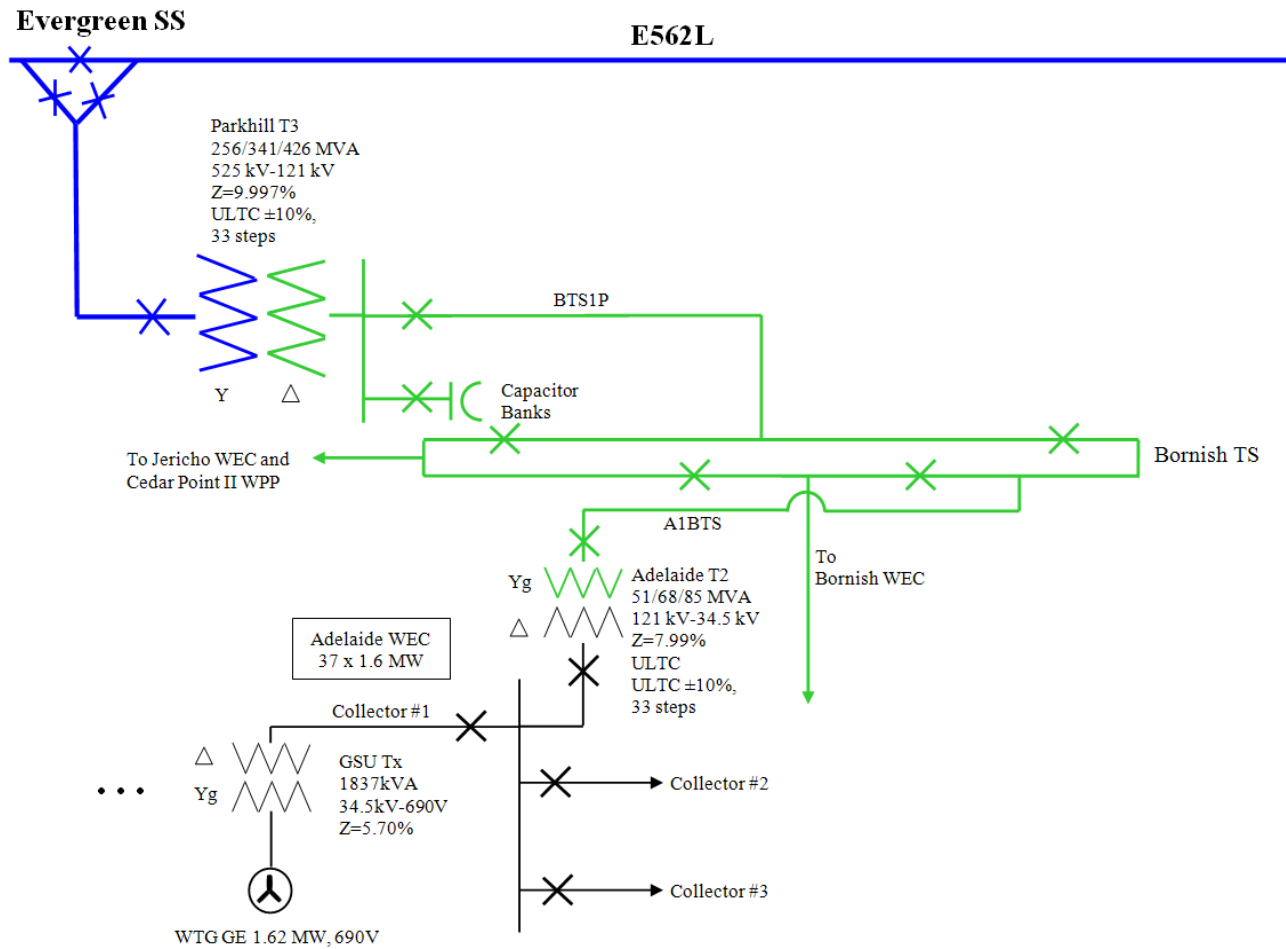
The simulation results indicate that the voltage at Evergreen SS could be as high as 561 kV, thus the IESO accepts the proposed solution to manage the high voltage concern at Evergreen SS. As the reactor is removed, the Evergreen SS arrangement will be modified from a four breaker switching station to a three breaker ring bus switching station, which is acceptable to the IESO.

Therefore, it is concluded that the proposed changes are expected to have no material adverse impact on the reliability of the integrated power system.

The connection applicant shall ensure that the equipment within the facility have the capability to operate under the condition when the connection point of the project is as high as 561 kV.

3.3 Revised Facility Single Line Diagram

Based on the incorporation of the Cedar Point II Wind Power Project into the 121 kV network behind Parkhill CTS and the configuration change at Evergreen SS, below is a revised single line diagram for the Adelaide WEC.



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APPENDIX 'D'

FINAL SYSTEM IMPACT ASSESSMENT REPORT - ADDENDUM #2

REPORT



System Impact Assessment Report

CONNECTION ASSESSMENT & APPROVAL PROCESS

2nd Addendum Report

CAA ID: 2011-446
Project: Adelaide Wind Energy Centre
Applicant: Kerwood Wind Inc

Market Facilitation Department
Independent Electricity System Operator

Date: December 12, 2012

Document Name	System Impact Assessment Report
Issue	2nd Addendum Report
Reason for Issue	Revised connection transformer
Effective Date	December 12, 2012

Proposed Changes and Notification of Conditional Approval

Transformer Change

The Bornish, Adelaide and Jericho Wind Energy Centres, as well as the Cedar Point II Wind Power Project, are wind generating projects proposing to connect to 500 kV circuit B562L via a proponent owned 121 kV network and 525 kV/121 kV autotransformer. System Impact Assessments (SIA) for the Bornish, Adelaide and Jericho Wind Energy Centres (CAA ID 2011-443, CAA ID 2011-446 and CAA ID 2011-441 respectively) were conducted and the projects were initially given Notices of Conditional Approval on December 21st 2011. The SIA for the Cedar Point II Wind Power project (CAA ID 2011-443) was conducted and the project was given a Notice of Conditional Approval on June 4th 2012. Since the Cedar Point Wind Power Project is being incorporated into the proponent owned network, SIA addendums containing Notices of Conditional Approval for the Bornish, Adelaide and Jericho Wind Energy Centres were issued on June 6th 2012.

The connection applicants (Bornish Wind LP, Kerwood Wind Inc., Jericho Wind Inc. and Suncor Energy Products Inc.) are now proposing to connect to the 500 kV system via two separate 525 kV/121 kV/27.6 kV autotransformers, rather than with the single 525 kV/121 kV autotransformer that was part of the first Addendum.

The IESO and Hydro One have examined the proposed change and concluded that it is not materially different from the first Addendum's application data, as the equivalent impedance of the proposed two parallel transformer arrangement is similar to that of the single transformer previously assessed. Hydro One will acknowledge the proposed change separately with a new CIA addendum, indicating that it is acceptable.

Bruce Special Protection Scheme Requirement Change

The initial SIA report for the Adelaide Wind Energy Centre (*the project*) included a requirement for the project to participate in the Bruce Special Protection Scheme (BSPS) requiring:

- i. Hydro One to modify the logic of the BSPS to transmit rejection signals to the project,
- ii. the procurement of duplicated and physically separated communication paths between Hydro One's central scheme and the project site, and
- iii. equipment to be installed at the project site to receive the signals and take action to trip or runback your generation.

Subsequent to releasing the SIA report, the IESO conducted detailed studies for the Bruce area and concluded that, at this time, the grid planning criteria can be met without the project participating in the BSPS.

Therefore, the IESO does not require the project to participate in the Bruce SPS at this time. For now, Hydro One does not need to modify the BSPS to transmit signals to the project, and the telecommunication between Hydro One's BSPS and the project for that purpose does not need to be in place.

We however foresee that the incorporation of the project into the BSPS may be required in the future. To allow for future incorporation of the project into the BSPS in a timely manner, the IESO requires that you make at this time the necessary provisions in the design and construction of the project to install equipment that is able to receive SPS signals from the BSPS, can automatically take action to reject or runback the project's generation upon receiving the SPS signals, and is able to send the arming status to the IESO via telemetry or other approved means.

Should the need arise in the future, we will direct you and Hydro One to install all the equipment required for the project to participate in the BSPS, as described in the SIA report. We would expect your project to be available for participation in the BSPS in no more than 9 months from our direction.

Notification of Conditional Approval

Therefore, the IESO recommends that a *Notification of Conditional Approval for Connection* be issued for the Adelaide Wind Energy Centre subject to implementation of the requirements outlined in this SIA Addendum and the previous SIA reports.

Transformer Data

Table 1: Previous step-up transformer data

# of Units	Transformation	Rating (MVA) (ONAN/ONAF/ONAF)	Positive Sequence Impedance (pu) SB= 256 MVA	Configuration		Taps
				HV-Side	LV-Side	
1	525kV/121kV	256/341/426 MVA	0.0022+j0.1	Yg	Δ	ULTC@ LV ±10 %, 33 steps

Table 2: New step-up transformers' data

# of Units	Transformation	Rating (MVA) (ONAN/ONAF/ONAF)	Positive Sequence Impedance (pu) SB= 135 MVA	Configuration			Taps
				HV-Side	LV-Side	Tert.	
2	525kV/121kV/ 27.6 kV	135/180/225 MVA	j0.1	Y	Y	Δ	ULTC@ HV ±10 %, 33 steps

Updated Single Line Diagram

Below is an updated single line diagram of the Adelaide Wind Energy Centre, reflecting the changes identified in this Addendum.

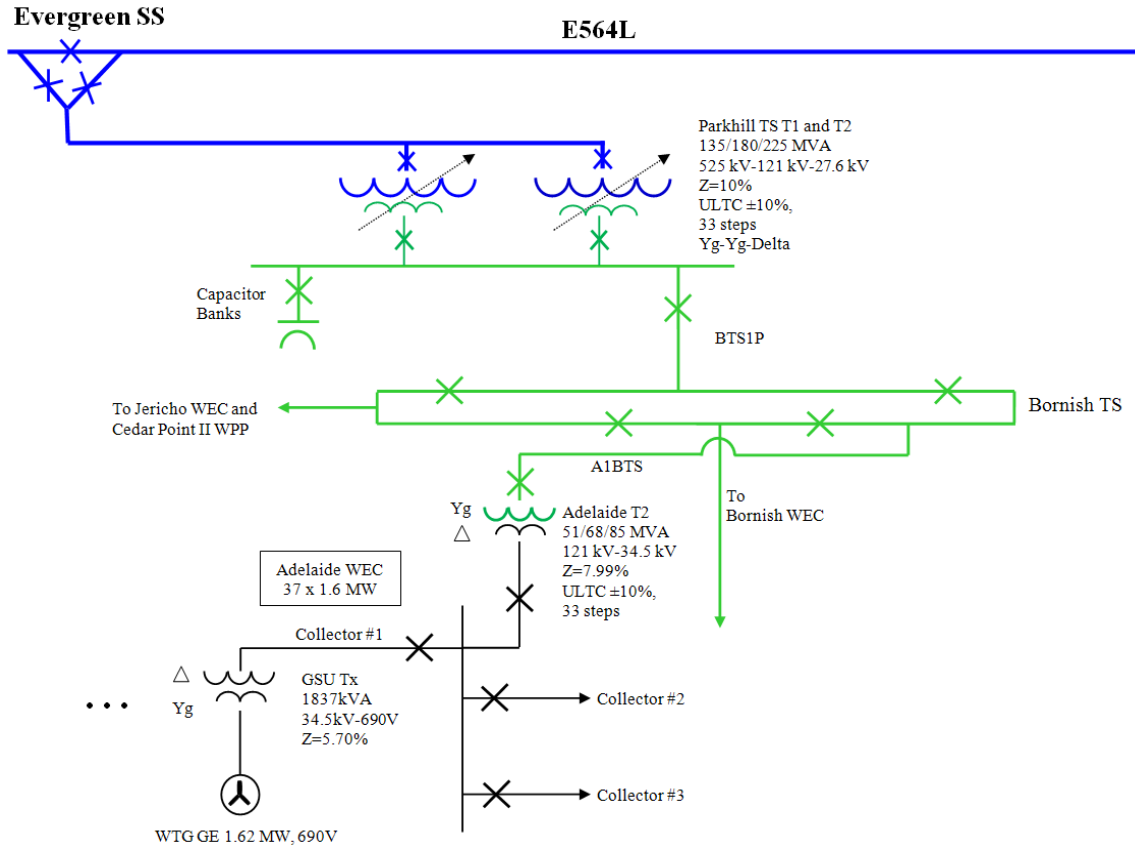


Figure 1: Updated Adelaide Wind Energy Centre Single Line Diagram

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Exhibit H, Tab 3, Schedule 1

Customer Impact Assessment

CUSTOMER IMPACT ASSESSMENT

- 1 The following is provided with this schedule:
- 2 Appendix 'A' - Final Customer Impact Assessment Report
- 3 Appendix 'B' - Final Customer Impact Assessment Report - Addendum
- 4 Appendix 'C' - Final Customer Impact Assessment Report - Addendum #2

APPENDIX 'A'

FINAL CUSTOMER IMPACT ASSESSMENT REPORT



Hydro One Networks Inc.
483 Bay Street
Toronto, Ontario
M5G 2P5

CUSTOMER IMPACT ASSESSMENT
ADELAIDE / BORNISH / JERICHO WIND ENERGY CENTRES
283.5 MW Wind Turbine Generation Connection
-FINAL-

Revision: 0

Date: December 20, 2011

Issued by: **Transmission System Development Division**
Hydro One Networks Inc.

Prepared by:

Reviewed by:

Alessia Dawes, P.Eng
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Transmission System Development
Hydro One Networks Inc.

John Sabiston, P.Eng
Manager, Transmission Planning
Transmission System Development
Hydro One Networks Inc.

Disclaimer

This Customer Impact Assessment was prepared based on information available about the connection of the proposed NEXtera ENERGY Canada ULC – Adelaide, Bornish and Jericho Wind Energy Centre's (WEC's). It is intended to highlight significant impacts, if any, to affected transmission customers early in the project development process and thus allow an opportunity for these parties to bring forward any concerns that they may have. Subsequent changes to the required modifications or the implementation plan may affect the impacts of the proposed connection identified in Customer Impact Assessment. The results of this Customer Impact Assessment are also subject to change to accommodate the requirements of the IESO and other regulatory or municipal authority requirements.

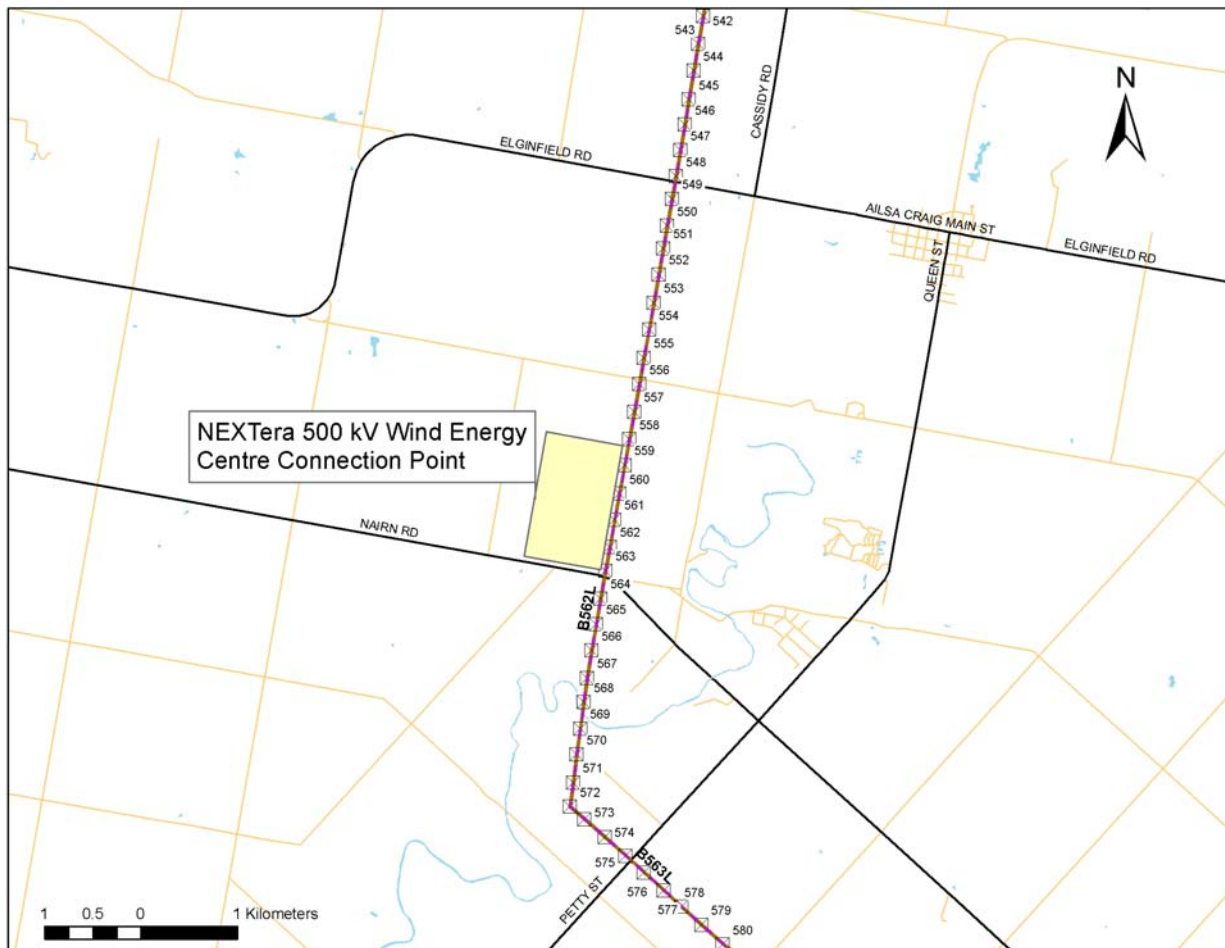
Hydro One shall not be liable to any third party which uses the results of the Customer Impact Assessment under any circumstances whatsoever for any indirect or consequential damages, loss of profit or revenues, business interruption losses, loss of contract or loss of goodwill, special damages, punitive or exemplary damages, whether any of the said liability, loss or damages arises in contract, tort or otherwise. Any liability that Hydro One may have to NEXtera ENERGY in respect of the Customer Impact Assessment is governed by the Agreement between:

1. Kerwood Wind, Inc. (Adelaide WEC) and Hydro One dated September 14, 2011.
2. Bornish Wind L.P. (Bornish WEC) and Hydro One dated September 14, 2011
3. Jericho Wind, Inc. (Jericho WEC) and Hydro One dated September 14, 2011

**CUSTOMER IMPACT ASSESSMENT
ADELAIDE / BORNISH / JERICHO WIND ENERGY CENTRES
283.5 MW WIND TURBINE GENERATION CONNECTION**

1.0 INTRODUCTION

NEXtera ENERGY is to develop a 283.5 MW wind energy generation facility. The wind energy facility, known in this document as NEXtera 500 kV Wind Energy Centre (NWECC), consists of three separate wind energy projects. The three projects are Adelaide Wind Energy Centre, Bornish Wind Energy Centre and Jericho Wind Energy Centre. The Adelaide Wind Energy and Bornish Wind Energy collection systems are located in Middlesex County, and the Jericho Wind Energy collection system is located in Lambton County. The interconnection to Hydro One will also be located in Middlesex County, in the Municipality of North Middlesex. NWECC is proposing to connect to Hydro One's transmission system through one new step-up transformer via a new 500 kV switching station that will sectionalize circuit B652L, approximately 36.5 km from Longwood TS. The switching station will be called Evergreen SS. Evergreen SS interconnection station will be located just west and adjacent to Hydro One's B562/563L Right-Of-Way (ROW) as shown in Map 1. The earliest expected in-service date of the generation facility is May 2013.



Map 1: NWECC connection to Hydro One's Network (map is not to scale)

In accordance with section 6 of the Ontario Energy Board's Transmission System Code, Hydro One Networks Inc (Hydro One) is to carry out a Customer Impact Assessment (CIA) study to assess the impact of the proposed generator connection on existing customers in the affected area.

A Draft version of this report was issued to potentially impacted customers on November 14, 2011. All applicable comments received were incorporated into this report. A new Transmitter Special Requirements section was also added since the Draft issue.

This study does not evaluate the overall impact of the NEXtera 500 kV Wind Energy Centre on the bulk electricity system. The impact of the new generator on the bulk electricity system is the subject of the System Impact Assessment issued by the Independent Electricity System Operator (IESO).

The study does not evaluate the impact of the NEXtera 500 kV Wind Energy Centre on the network Protection and Control facilities. Protection and Control aspects are reviewed during the Protection Impact Assessment, which is part of the SIA. Protection and Control aspects are again reviewed, in detail, during the preparation of the connection cost estimate and will be reflected in the Connection and Cost Recovery Agreement.

1.2 Proposed Connection: NEXtera 500 kV Wind Energy Centre

1.2.1 The Wind Farm

The NWECC project consists of 3 separate projects, Adelaide Wind Energy Centre (60 MW), Bornish Wind Energy Centre (73.5 MW) and Jericho Wind Energy Centre (150 MW). Appendix A, Figures 1, 2, 3 & 4 show an overview of each the connection arrangement.

The proposed 283.5 MW wind farm consists of 174 GE 1.62 MW Series Wind Turbine Generators (WTG).

Adelaide Wind Energy Centre consists of 3 groups of 12 or 13 x 1.62 MW GE wind turbine units totaling 60 MW. Each group of wind turbines is placed on a 34.5 kV feeder and is protected by a circuit breaker before connecting to a 34.5 kV bus at a substation located in the Municipality of Adelaide Metcalfe. This substation will be called “Adelaide Collection” substation. At this substation, the power will be transformed to 121 kV via one 121/34.5 kV, 51/68/85 MVA transformer.

Bornish Wind Energy Centre consists of 3 groups of 15 x 1.62 MW GE wind turbine units totaling 73.5 MW. Each group of wind turbines is placed on a 34.5 kV feeder and is protected by a circuit breaker before connecting to a 34.5 kV bus at a substation located in the Municipality of North Middlesex. This substation will be called “Bornish Collection” substation. At this substation, the power will be transformed to 121 kV via one 121/34.5 kV, 51/68/85 MVA transformer.

Jericho Wind Energy Centre consists of 6 groups of 15 or 16 x 1.62 MW GE wind turbine units totaling 150 MW. Each group of wind turbines is placed on a 34.5 kV feeder and is protected by a circuit breaker before connecting to one of two 34.5 kV buses at a substation located in the Municipality of Lambton Shores. This substation will be called “Jericho Collection” substation. At this substation, the power will be transformed to 121 kV via one 121/34.5 kV, 102/136/170 MVA transformer.

All three of the above substations will converge and connect into a 121 kV switching station, known as Bornish Customer Switching Station (CSS). Bornish CSS will be a 121 kV switching station owned and operated by the generator customer. The station will consist of a four breaker ring and will be located in the Municipality of North Middlesex.

An 11.4 km, 121 kV transmission line will then connect Bornish CSS to the generator’s 500 kV transformer station located close to Hydro One’s ROW. This transformer station will be called Parkhill CTS (Customer Transformer Station). At this station, the power will be transformed to 500 kV via one 525/121 kV 189/252/315 MVA transformer. The 500 kV bus at Parkhill CTS will connect to the new Hydro One 500 kV switching station known as Evergreen SS. Please see Appendix A, Figure 5.

The wind farm’s dynamic Var compensation is provided via their GE 1.62 Series Wind Turbine Generators (WTG). The WTG are designed to supply or absorb reactive power to or from the transmission grid to regulate and stabilize the voltage. In addition, it was determined in the System Impact Assessment that this project will also require static Var compensation of 65-70 MVar that can be provided via shunt capacitor banks located at Parkhill CTS 121 kV bus.

1.2.2 Connection to Hydro One's 500 kV Transmission System

NWEC will connect its generated power via 500 kV Hydro One owned interconnection station called Evergreen SS. The Parkhill CTS 525/121 kV power transformer will connect directly via 1-500 kV breaker and 1 motorized disconnect switch onto a 500 kV 3-breaker ring bus at Evergreen SS, Appendix A, Figure 5. This ring bus will split Hydro One's existing 500 kV circuit B562L from Bruce A TS to Longwood TS into 2 sections: Bruce A TS x Evergreen SS and Evergreen SS x Longwood TS. This sectionalizing will occur approximately 36.5 km from Longwood TS, near tower number 563 of existing B562L. Both Evergreen SS and Parkhill CTS will be adjacent or as close as possible to Hydro One's existing ROW to limit the additional exposure to Hydro One's 500 kV system. In addition, it was determined in the System Impact Assessment that this project will require a shunt reactor rated at 120 MVar at 500 kV to be located at Evergreen SS to limit overvoltage during certain system configurations.

1.3 Customers in the Study Area

The primary focus of this study was on customers supplied from stations directly connected to existing circuit B562L and in the local electrical area. Affected customers are show in Table 1.

Table 1: Transmission Customers connected in the study area

Station	Customer
Bruce A TS	Bruce Power L.P.
Bruce B SS	Bruce Power L.P.
Bruce Heavy Water Plant B TS	Bruce Power L.P.
Douglas Point TS	Hydro One Networks Inc. (Distribution) Westario Power Inc.
Longwood TS	Hydro One Networks Inc. (Distribution) Middlesex Power Distribution Corp.

2.0 METHODOLOGY & CRITERIA

2.1 Power System Analysis

Power system analysis is an integral part of the transmission and distribution planning process. It is used by Hydro One to evaluate the capability of the existing network to deliver power and energy from generating stations to provide a reliable supply to customers. Two relevant aspects of Power System Analysis were used for this assessment, namely:

- a. Load Flow Studies: An AC load flow program was used to set up a base case with NWECC.
- b. Short-Circuit Studies: A Short Circuit Analysis program was used to determine the impact of NWECC on customers at their points of connection to Hydro One.

2.2 Study Assumptions

Summer 2014 conditions were assumed in this study, along with the following assumptions.

- Load Data – study area demand scaled to its 2014 peak & operating at historical power factors
- Transmission Data – all transmission system elements in-service; new Bruce x Milton double circuit line in-service; Nanticoke TS & Detweiler TS SVC's in-service
- Generation Data – all new committed embedded and transmission connected renewable generation as part of the Feed-In-Tariff (FIT) program including Samsung phase 1,2 and 3 projects; all 8 Bruce GS units in-service; all existing Bruce area wind at 100% rating output.

Note: Load flow base cases provided by IESO

2.3 Planning Criteria

2.3.1 Voltage Limitations

To establish the adequacy of Hydro One transmission system for the incorporation of the proposed NWECC generation facilities, the following post-fault voltage change criteria were applied. As per "IESO Transmission Assessment Criteria", Issue 5.0

http://www.ieso.ca/imoweb/pubs/marketAdmin/IMO_REQ_0041_TransmissionAssessmentCriteria.pdf

- The loss of a single power system element should not result in a voltage change greater than 10% for pre- transformer tap-changer action (including station loads) and 10% post-transformer tap-changer action (5% for station loads) ;
- The loss of a double or 2nd power system element should not result in a voltage change greater than 10% for pre- transformer tap-changer action (including station loads) and 10% post-transformer tap-changer action (5% for station loads) ;
- Voltages below 50 kV shall be maintained in accordance with Canadian Standard Association document CAN-3-C235-83.

2.3.2 Short Circuit Limitations

Appendix 2 of the Transmission System Code (TSC) specifies the maximum symmetrical three phase and single line to ground short circuit levels. These limits are summarized in Table 2. Short circuit levels were compared to the TSC limits and also to existing breaker ratings at effected stations to ensure equipment capability.

Table 2: Transmission System Code Symmetrical Short Circuit Limits

Nominal Voltage (kV)	Max. 3 Phase Fault (kA)	Max. SLG Fault (kA)
500	80 ⁽¹⁾	80 ⁽¹⁾
230	63	80 ⁽¹⁾
115	50	50
44	20 ⁽³⁾	19 ^(2,3)
27.6 (4-wire)	17 ⁽³⁾	12 ⁽³⁾
27.6 (3-wire)	17 ⁽³⁾	0.45 ⁽³⁾
13.8	21 ⁽³⁾	10 ⁽³⁾

Notes:

- (1) Usually limited to 63kA
- (2) Usually limited to 8 kA
- (3) Effective September 1, 2010, Hydro One requires a 5% margin on the acceptable TSC limits at voltage levels of <50kV to account for other sources of fault current on the distribution system such as un-modeled synchronous motors and data inaccuracies.

In order to reflect realistic operating conditions, short circuit studies are run assuming the following conditions:

- Base case assumes existing & committed generating facilities in-service.
- Pre-fault voltage of 550.00 kV at 500 kV stations
- Pre-fault voltage of 250.00 kV at 220 kV stations
- Pre-fault voltage of 127.00 kV at 115 kV stations
- Pre-fault voltage of 46.00 kV at 44 kV stations
- Pre-fault voltage of 29.00 kV at 27.6 kV stations
- Pre-fault voltage of 14.2 kV at 13.8 kV stations

2.4 Operating Conditions

Normal operating conditions are such that NWECC will solely generate onto sectionalized circuit B562L (into Evergreen SS). When NWECC's 500 kV transformer breaker at Parkhill CTS that connects to the 500 kV ring bus at Evergreen SS is taken out of service, NWECC will not generate onto Hydro One's systems, transmission nor distribution.

3.0 SHORT CIRCUIT RESULTS

Short-circuit studies were carried out to assess the fault contribution when the 283.5 MW NWECC generating facility is connected and generating into Evergreen SS.

The study results are summarized in Tables 3 and 4 below showing both symmetric and asymmetric fault currents in kA, respectively. The anticipated fault levels after the incorporation of all committed and proposed generation in the Bruce area are shown in Table 5.

Table 3: NWECC impact on symmetrical fault levels

Station	Sym. Fault Level without NWECC* (kA)		Sym. Fault Level with NWECC (kA)		% Difference	
	3-Phase	L-G	3-Phase	L-G	3-Phase	L-G
Bruce B SS 500 kV	36.96	41.58	37.11	41.72	0.41	0.34
Bruce A TS 500 kV	37.17	41.76	37.33	41.91	0.43	0.36
Bruce A TS 230 kV	42.96	54.36	43.03	54.44	0.16	0.15
BHWP B TS 13.8 kV A	19.77	1.98	19.77	1.98	0.00	0.00
BHWP B TS 13.8 kV B	19.75	1.98	19.75	1.98	0.00	0.00
Douglas Point TS 44 kV	14.37	6.89	14.38	6.89	0.07	0.00
Longwood TS 500 kV	20.05	20.96	20.37	21.56	1.60	2.86
Longwood TS 230 kV	37.36	44.74	37.78	45.40	1.12	1.48
Longwood TS 27.6 kV	15.41	10.79	15.42	10.79	0.06	0.00

* Includes existing and committed generation projects up to the award of FIT3 and Samsung Phase 2 & 3 contracts

Table 4: NWECC impact on asymmetrical fault levels

Station	Asym. Fault Level without NWECC* (kA)		Asym. Fault Level with NWECC (kA)		% Difference	
	3-Phase	L-G	3-Phase	L-G	3-Phase	L-G
Bruce B SS 500 kV	54.32	63.67	54.52	63.76	0.37	0.14
Bruce A TS 500 kV	54.46	63.20	54.68	63.41	0.40	0.33
Bruce A TS 230 kV	57.64	78.44	57.73	78.54	0.16	0.13
BHWP B TS 13.8 kV A	23.04	1.98	23.04	1.98	0.00	0.00
BHWP B TS 13.8 kV B	22.33	1.98	22.34	1.98	0.04	0.00
Douglas Point TS 44 kV	16.34	8.83	16.34	8.83	0.00	0.00
Longwood TS 500 kV	24.37	26.68	24.78	27.44	1.68	2.85
Longwood TS 230 kV	45.71	57.94	46.31	58.84	1.31	1.55
Longwood TS 27.6 kV	21.54	15.67	21.57	15.68	0.14	0.06

*Includes existing and committed generation projects up to the award of FIT3 and Samsung Phase 2 & 3 contracts

Table 5: Anticipated Fault Levels Resulting from FIT3 and Samsung Phase 2 & 3 contracts

Station	Symmetrical Fault Level (kA)		Asymmetrical Fault Level (kA)	
	3-Phase	L-G	3-Phase	L-G
Bruce B SS 500 kV	38.01	42.67	55.80	65.09
Bruce A TS 500 kV	38.27	42.82	56.01	64.68
Bruce A TS 230 kV	44.64	56.16	59.74	80.83
BHWP B TS 13.8 kV A	19.80	1.98	23.07	1.98
BHWP B TS 13.8 kV B	19.79	1.98	22.37	1.98
Douglas Point TS 44 kV	14.93	6.98	17.02	8.95
Longwood TS 500 kV	21.06	22.32	25.73	28.46
Longwood TS 230 kV	38.70	46.44	47.63	60.38
Longwood TS 27.6 kV	15.45	10.80	21.61	15.70

*Includes existing, committed and proposed generation projects in the Bruce Transmission Area as per applications received by October 2011

Observations made from the short-circuit study results in Tables 3 & 4 above may be summarized as follows:

- Table 3 shows that fault levels are below the maximum symmetrical three-phase and single line-to-ground fault values set out in Appendix 2 of the *Transmission System Code (TSC)*.
- Table 3 shows that although there is a 2.86 % increase in the symmetrical short-circuit level at Longwood TS 500 kV bus, the fault levels are well below the allowable 500 kV fault limits and are acceptable to Hydro One.
- Table 4 shows that although there is a 2.85 % increase in the asymmetrical short-circuit level at Longwood TS 500 kV bus, the fault level is within Hydro One's asymmetrical breaker ratings** and are acceptable to Hydro One.

It can be observed from Table 5 that the anticipated fault levels at the stations shown are below the maximum symmetrical three-phase and single line-to-ground fault values set out in Appendix 2 of the TSC. In addition, with the exception of Bruce A TS 230 kV bus**, the anticipated fault levels are within Hydro One's breaker ratings.

**Note: The asymmetrical fault current at Bruce A 230 kV before and after the incorporation of the projects will exceed the interrupting capability of the existing breakers. To address this issue in the long term, Hydro One has planned to replace the Bruce 230 kV breakers to improve fault current interrupting capability. Before the circuit breakers are replaced, temporary operational mitigation measures have been developed by Hydro One in collaboration with the IESO. The NVEC has no impact on this issue.

Conclusion

The short-circuit level increases at Bruce A TS, Bruce B SS, BHWP B TS, Douglas Point TS and Longwood TS are acceptable to Hydro One and are below Hydro One's 5 % TSC margin limit.

4.0 VOLTAGE ANALYSIS

Load flow studies were carried out to analyze the impact of the new facilities on the voltage performance of Hydro One customers in the affected area.

Local voltage impact was assessed using load flow contingency analysis. The incorporation of NWEC at full output was used to assess voltage change during peak summer loading conditions.

The following contingencies were used to assess the voltage impact:

- a) A single contingency loss of NWEC generation
- b) A single contingency loss of Bruce A TS x Evergreen SS 500 kV circuit
- c) A single contingency loss of Evergreen SS x Longwood TS 500 kV circuit
- d) A double contingency loss of Evergreen SS x Longwood TS circuit and NWEC generation (due to Breaker Failure B/F), with Ashfield SS x Longwood TS 500 kV circuit out of service pre-contingency
- e) A double contingency loss of Bruce A TS x Evergreen SS circuit and NWEC generation (due to Breaker Failure B/F), with Bruce B SS x Ashfield SS 500 kV circuit out of service pre-contingency

Basic Assumptions:

- New 500 kV switching station Ashfield SS will sectionalize companion circuit B563L approximately 61.5 km from Bruce B SS to incorporate another wind energy project known as K2 Wind.
- A 120 MVAR at 500 kV shunt reactor will be installed at Evergreen SS to control post-contingency voltages as per IESO System Impact Assessment requirements
- A 65 MVAR at 121 kV shunt capacitor will be installed at Parkhill CTS for generator reactive power capability as per IESO System Impact Assessment requirements.
- ULTC – Under Load Tap Changer
- For the period of time labeled “After ULTC”, the switching of reactive devices such as reactors and capacitors is implemented.

Results are shown in Appendix B, Tables 1 – 5 and summarized below:

- Table B1: For the loss of the proposed generator the maximum voltage change is 0.15% at Longwood TS 500 kV bus before ULTC operation and is -0.19% at Longwood TS 27.6 kV bus after ULTC operation.
- Table B2: For the loss the 500 kV circuit between Bruce A TS and Evergreen SS the maximum voltage change is -0.64% at Longwood TS 500 kV bus before ULTC operation and is -0.91% at Longwood TS 500 kV bus after ULTC operation.
- Table B3: For the loss of the 500 kV circuit between Evergreen SS and Longwood TS, the maximum voltage change is -0.48% at Longwood TS 500 kV bus before ULTC operation and is -0.76% at Longwood TS 500 kV bus after ULTC operation.
- Table B4: Given the 500 kV circuit from Ashfield SS to Longwood TS is out of service, for the loss of the 500 kV circuit between Evergreen SS and Longwood TS with a breaker failure at Evergreen SS which disconnects both the wind farm and the HV reactor, the maximum voltage change is -1.86% at Longwood TS 500 kV bus before ULTC operation and is -5.35% at Longwood TS 500 kV bus after ULTC operation.

- **Table B5:** Given the 500 kV circuit from Bruce B SS to Ashfield SS is out of service, for the loss of the 500 kV circuit between Bruce A TS and Evergreen SS with a breaker failure at Evergreen SS which disconnects both the wind farm and the HV reactor, the maximum voltage change is - 0.46% at Longwood TS 27.6 kV bus before ULTC operation and is 0.54 % at Longwood TS 27.6 kV bus after ULTC operation.

Conclusion

Load flow studies thus confirmed that the incorporation of 283.5 MW of wind generation between Bruce A TS and Longwood TS will not result in substantial change in the voltage profile of customers supplied from these stations and in the local electrical area. Following the worst contingency, the voltage changes are well within the voltage decline guideline for customer buses of less than 10% and 5% voltage change before- and after- transformer tap-changer operation.

5.0 TRANSMITTER REQUIREMENTS

BACKGROUND ON FERRORESONANCE

In general, ferroresonance is defined as an electrical oscillation between system capacitance (as offered by a transmission line/cable) and non-linear inductance (transformer magnetizing branch). More specifically, ferroresonance is a term to describe electrical resonance in a circuit which includes a saturating magnetic device (i.e. a transformer or magnetic potential transformer).

The criteria for ferroresonance to be possible on an isolated section of the transmission system includes:

- a) An iron core device (i.e. power transformer, autotransformer, potential transformer) not shunted by a low impedance such as a load or a ground source
- b) Circuit capacitance, as required to establish electric resonance in an otherwise inductive circuit. The capacitance may be in series, or in parallel with the non-linear inductance representing an iron-cored device. An un-energized transmission circuit on a double circuit transmission line that is in close proximity to a live circuit can provide this capacitance.
- c) An adequate energy source, in order for ferroresonance to be sustained, capable of supplying sufficient power to overcome losses. The amount of energy is dependent on the distance of the coupling. Ferroresonance has been observed on double circuit transmission lines as short as 13.5 km.

Ferroresonance cannot be established as long as the (iron) core of the magnetic device does not saturate. Ferroresonance is frequently associated with one or more open conductors. Typically, a disturbance involving a switching operation on a device is required to saturate the core, possibly initiating ferroresonance, providing the criteria listed above are satisfied.

Initially, the onset of ferroresonance may be associated with large transient voltages. Consequences include an increased personnel safety hazard and possible apparatus failure (e.g. circuit breaker) due to extreme dielectric stress.

If a sustained ferroresonant condition is established, the core of the magnetic device saturates repeatedly, causing core overheating. Permanent thermal damage may result to the core laminations and to winding insulation. Another consequence of ferroresonance could be damage to the transmitter's circuit breakers and other equipment at either terminal station (e.g. Bruce A TS and Longwood TS)

requiring an extended outage to replace equipment which could then result in congestion. For this reason, ferroresonance must be mitigated.

Helpful online references include:

http://www.ece.mtu.edu/faculty/bamork/FR_WG/Panel/paper03gm0984.pdf
http://www.studiecd.dk/cahiers_techniques/Ferroresonance.pdf

MITIGATION PLAN

It is expected that the NVEC 500 kV interconnection transformer could be subjected to a ferroresonance configuration. The most prominent configuration is shown in Figure 6 of Appendix A. Referring to the scenario shown in Figure 6, if a 500 kV interconnection breaker is not provided for the NVEC 500 kV transformer, a breaker failure at the Hydro One interconnection point would result in the generator's transformer "dangling" in series with a capacitive circuit.

To mitigate the occurrence of a ferroresonant condition, a 500 kV breaker is required between the generator's interconnection transformer, specifically the 525/121 kV 189/252/315 MVA transformer at Parkhill CTS, and the connection to Hydro One, specially, Evergreen SS. The NVEC proposed connection arrangement shown in Figures 1 to 4 of Appendix A includes this additional breaker. Figure 5 of Appendix A highlights this additional breaker.

6.0 CONNECTION RELIABILITY

The incorporation of the new generator facilities will add a new 500 kV switching station named Evergreen SS that will sectionalize existing 500 kV circuit B562L from Bruce A TS to Longwood TS into two new circuits, Bruce A TS by Evergreen SS and Evergreen SS by Longwood TS. The sectionalizing of the existing circuit reduces the impact on connection reliability for the existing transmission customers and provides optimal connection reliability for the new generator customer.

The switching station will contain a 3-breaker ring bus thus providing the new generator customer with their own switching position. This will optimize the reliability for the generator by enabling it to generate while one of the line sections is out of service. With respect to power system protection, the use of a sectionalizing station to connect the generator will have no impact to the reliability and speed of the protection systems.

The new generator customer will add one very short 500 kV line tap from their motorized disconnect switch inside Parkhill CTS to the new Evergreen SS. The additional circuit exposure is very small and is not expected to materially reduce the performance of Hydro One's system.

7.0 PRELIMINARY OUTAGE IMPACT ASSESSMENT

The work required to connect NVEC to circuit B562L will involve outages to this circuit and possibly the companion circuit, B563L. These outages will be coordinated with existing transmission customers. These outages will be identified when a detailed construction schedule is established in consultation with NEXTERa ENERGY during the detailed engineering phases of the project development.

It is expected that the construction of the new 500 kV Bruce by Milton circuits will be completed before the new generator is connected, and therefore outages of circuits from the Bruce by Longwood stations will be less impactful.

In addition, there is no expected transmission system outages associated with the construction/installation of the new wind turbine units.

8.0 CONCLUSIONS AND RECOMMENDATIONS

This Customer Impact Assessment (CIA) presents results of short-circuit and voltage performance study analyses. The report has confirmed that NWECC can be incorporated without adverse impact on customers supplied from Bruce A TS and Longwood TS and in the local electrical area provided that the required facilities are installed. In addition to the facilities required by the IESO by issue of the SIA, NWECC is required to install the following facilities as part of their connection:

- A Transfer Trip (T/T) scheme to ensure fault clearance if NWECC exhibits breaker failure of their 500 kV transformer breaker.
- Fully duplicated protection and telecommunication systems must be installed as outlined in the Transmission System Code.
- SCADA facilities to allow transmission of generation facility components: i.e. status, measurement quantities & alarms, as outlined in the IESO's SIA and Hydro One's planning specification for the connection of NWECC.
- The proposed connection arrangement is acceptable to Hydro One however; space must be allocated within the new Evergreen SS such that the 3-breaker ring bus can be expanded to a 6-breaker ring bus to sectionalized companion circuit B563L if required.
- The installation of a 500 kV interconnection breaker between the high voltage terminal of NWECC 525/121 kV interconnection transformer and its connection to Evergreen SS.

Facilities to permit the above work must be provided.

All customers are required to check to ensure that the equipment and grounding system at their stations/facilities meet the expected increase in fault level.

APPENDIX A: DIAGRAMS

Figure 1: NEXTera 500 kV Wind Energy Centre, Overall Project
(Drawing from generator)

*Parkhill TS 500 kV Switching Station renamed to Evergreen SS.
Parkhill TS 115 kV/500kV station renamed to Parkhill CTS*

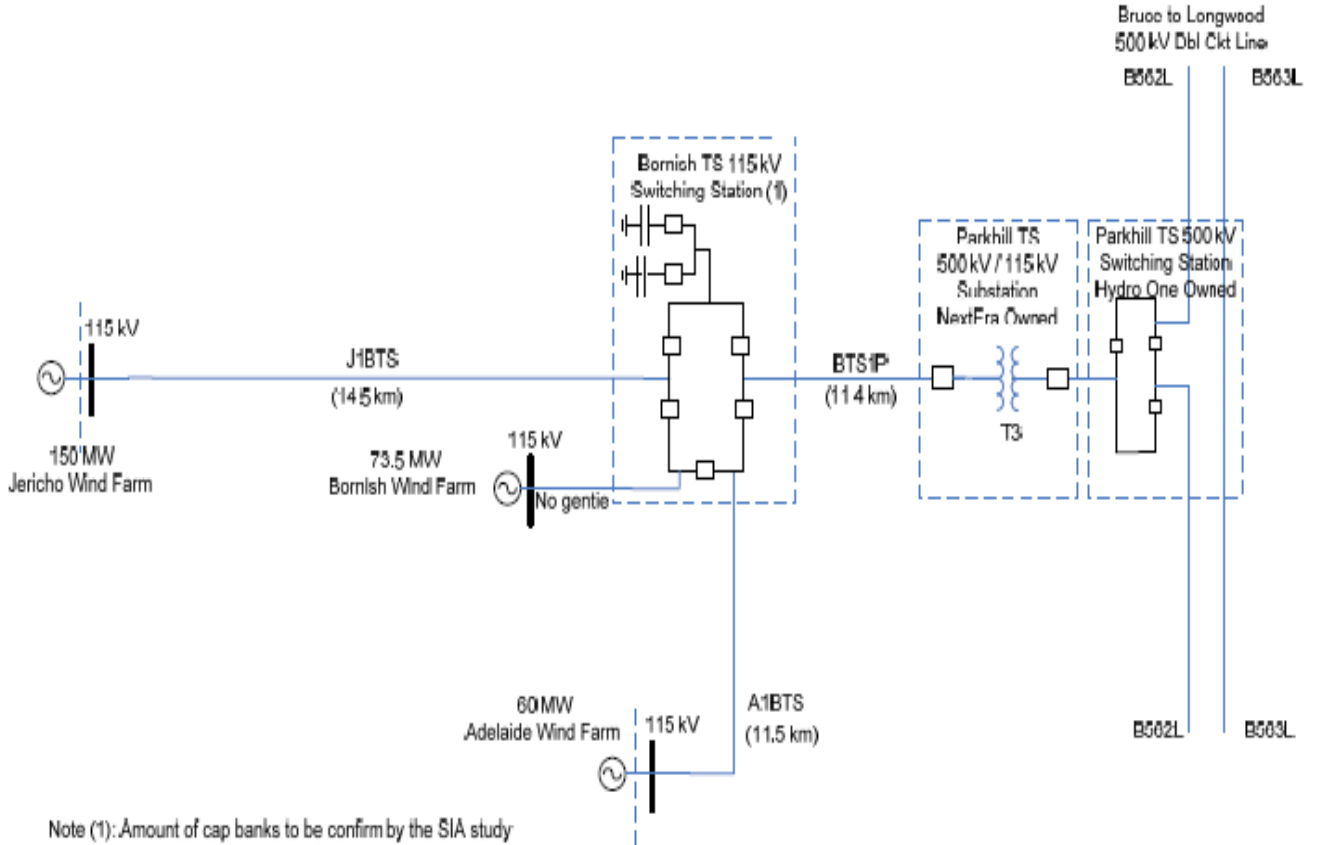
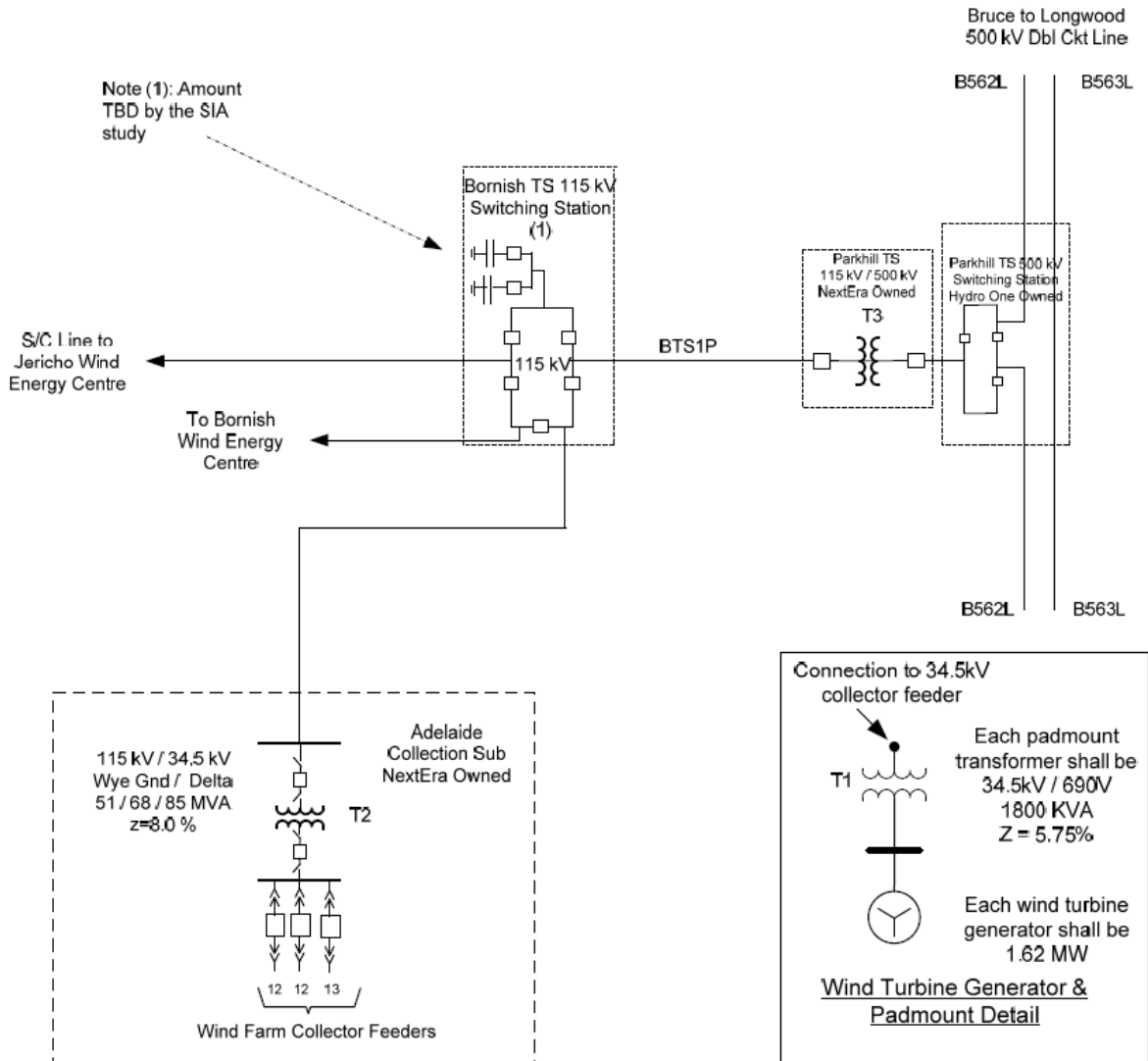


Figure 2: Adelaide Wind Energy Centre
(Drawing from generator)

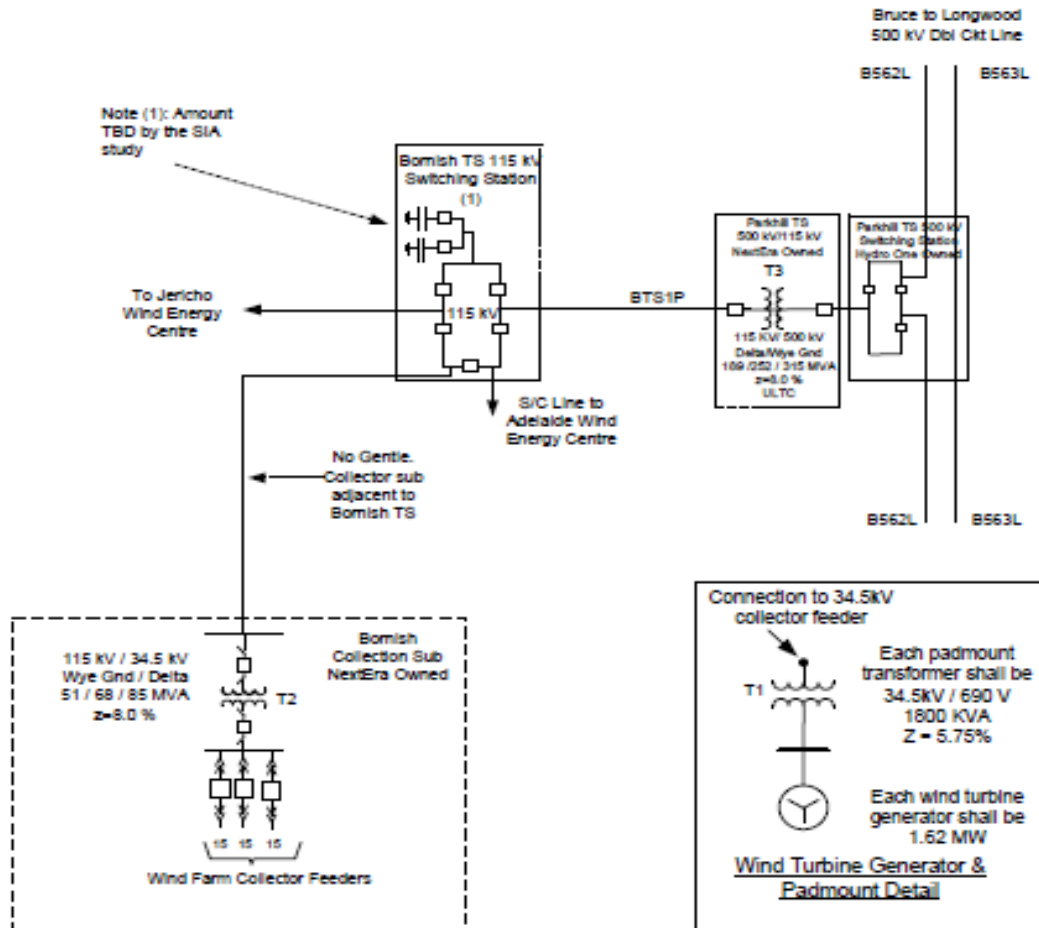
*Parkhill TS 500 kV Switching Station renamed to Evergreen SS.
Parkhill TS 115 kV/500kV station renamed to Parkhill CTS*



Adelaide WEC

Figure 3: Bornish Wind Energy Centre
(Drawing from generator)

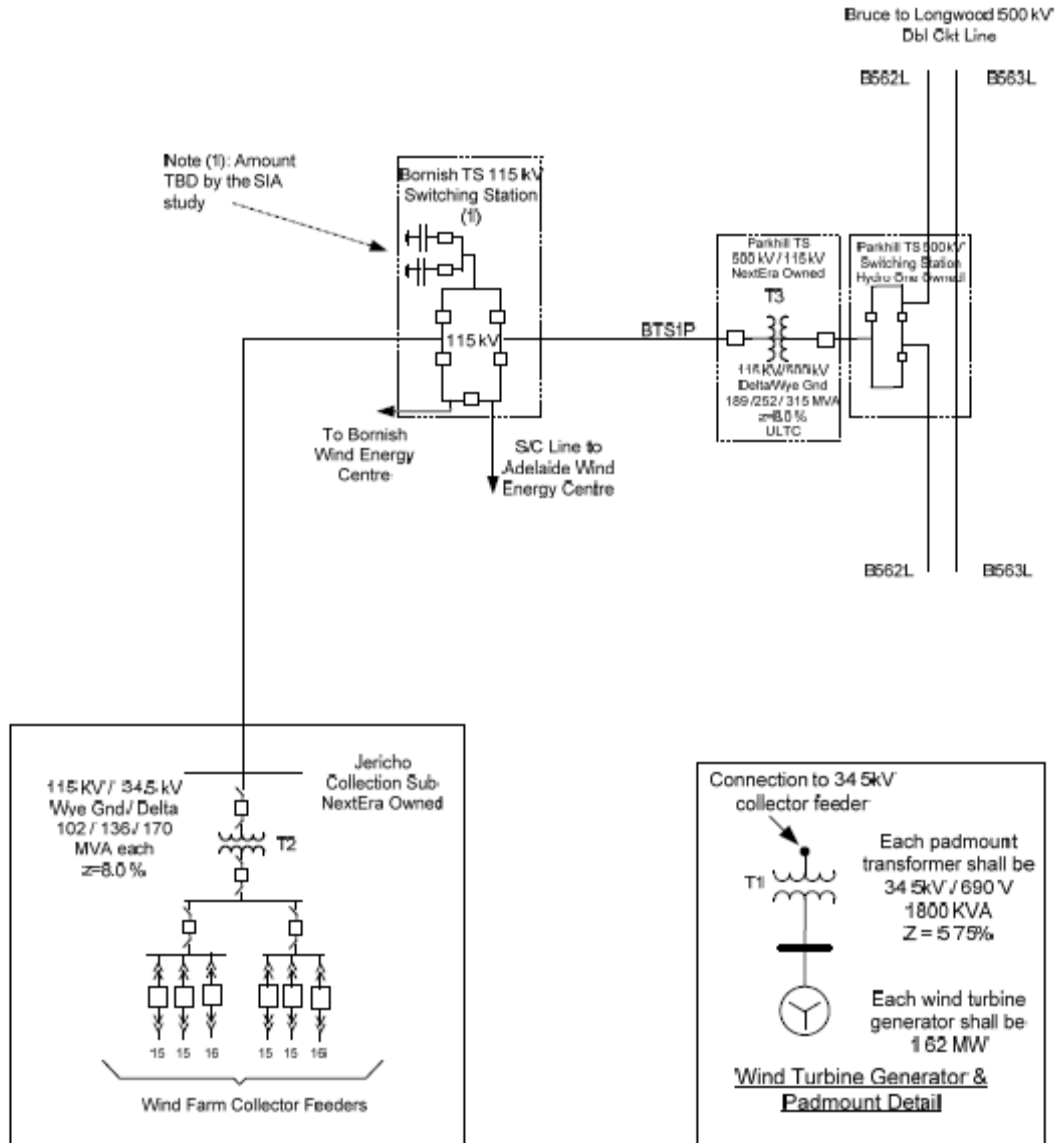
*Parkhill TS 500 kV Switching Station renamed to Evergreen SS.
Parkhill TS 115 kV/500kV station renamed to Parkhill CTS*



Bornish WEC

Figure 4: Jericho Wind Energy Centre
(Drawing from generator)

Parkhill TS 500 kV Switching Station renamed to Evergreen SS.
Parkhill TS 115 kV/500kV station renamed to Parkhill CTS



Jericho WEC

Figure 5: Evergreen Switching Station

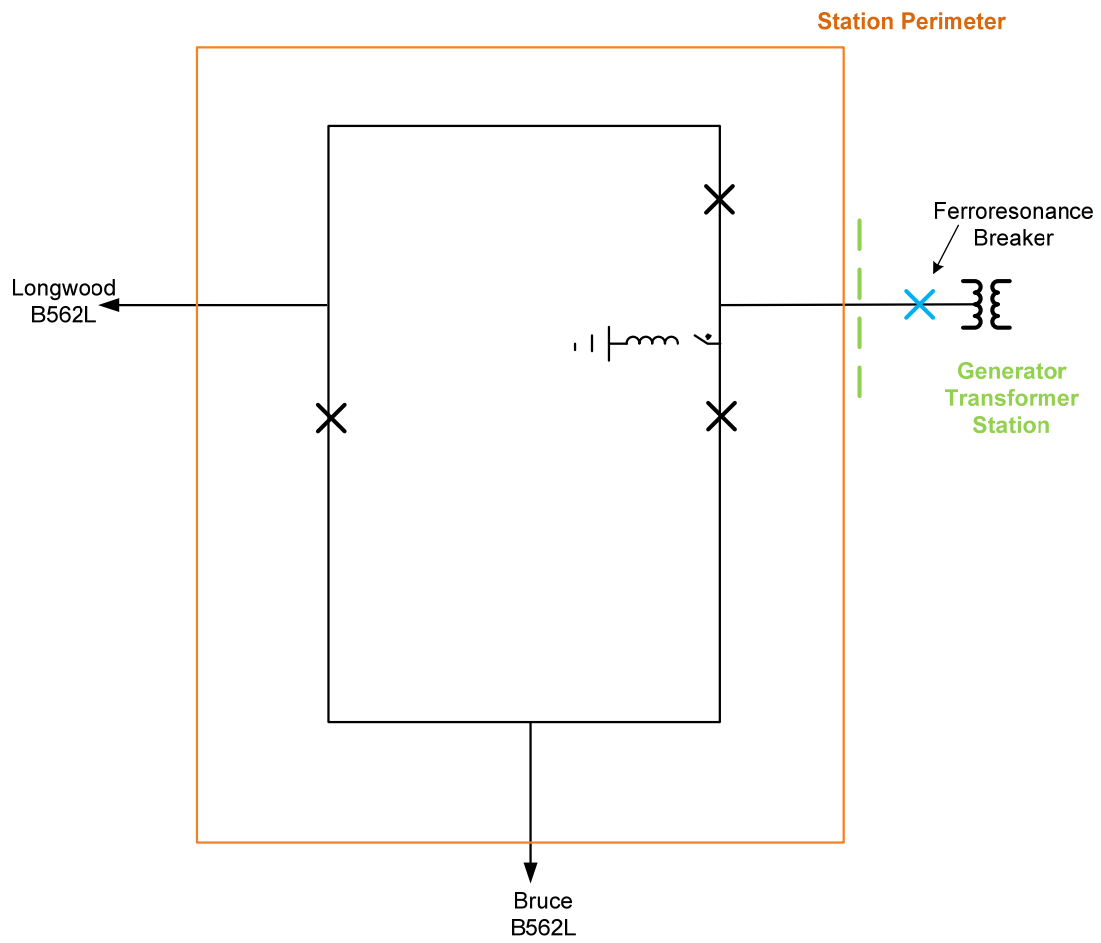
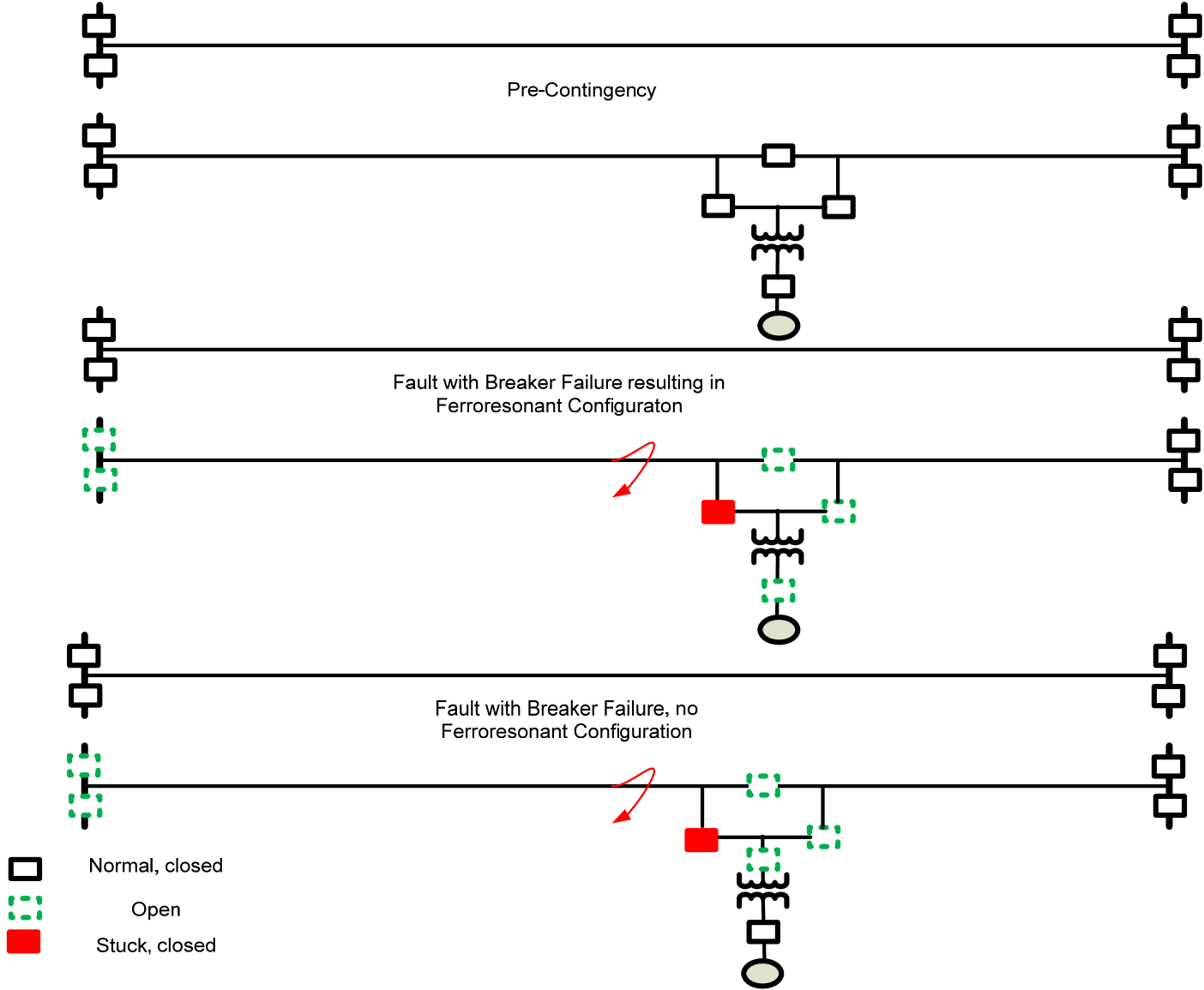


Figure 6: Ferroresonant Configuration



APPENDIX B: VOLTAGE PERFORMANCE RESULTS

Table 1: Loss of NWEC

Bus	Initial Voltage (kV)	Before ULTC (kV)	% Change	After ULTC (kV)	% Change
Bruce A TS 500 kV	548.28	548.31	0.01	548.25	0.00
Bruce A TS 230 kV	247.14	246.99	-0.06	247.09	-0.02
Bruce B SS 500 kV	549.00	549.00	0.00	549.00	0.00
BHWP B TS 13.8 kV A bus	14.52	14.51	-0.06	14.51	-0.02
BHWP B TS 13.8 kV B bus	14.53	14.52	-0.06	14.53	-0.02
Douglas Point TS 44 kV	46.13	46.10	-0.06	46.12	-0.02
Longwood TS 500 kV	546.14	546.98	0.15	545.14	-0.18
Longwood TS 230 kV	245.01	244.91	-0.04	244.56	-0.18
Longwood TS 27.6 kV	29.06	29.05	-0.04	29.00	-0.19

Table 2: Loss of Bruce A TS x Evergreen SS

Bus	Initial Voltage (kV)	Before ULTC (kV)	% Change	After ULTC (kV)	% Change
Bruce A TS 500 kV	548.28	548.12	-0.03	548.12	-0.03
Bruce A TS 230 kV	247.14	247.47	0.13	247.47	0.13
Bruce B SS 500 kV	549.00	549.00	0.00	549.00	0.00
BHWP B TS 13.8 kV A bus	14.52	14.54	0.13	14.54	0.14
BHWP B TS 13.8 kV B bus	14.53	14.55	0.13	14.55	0.14
Douglas Point TS 44 kV	46.13	46.20	0.14	46.20	0.14
Longwood TS 500 kV	546.14	542.65	-0.64	541.16	-0.91
Longwood TS 230 kV	245.01	243.71	-0.53	245.07	0.03
Longwood TS 27.6 kV	29.06	28.90	-0.55	29.07	0.03

Table 3: Loss of Evergreen SS x Longwood TS

Bus	Initial Voltage (kV)	Before ULTC (kV)	% Change	After ULTC (kV)	% Change
Bruce A TS 500 kV	548.28	548.28	0.00	548.13	-0.03
Bruce A TS 230 kV	247.14	247.28	0.06	247.54	0.16
Bruce B SS 500 kV	549.00	549.00	0.00	549.00	0.00
BHWP B TS 13.8 kV A bus	14.52	14.53	0.06	14.54	0.16
BHWP B TS 13.8 kV B bus	14.53	14.54	0.06	14.56	0.16
Douglas Point TS 44 kV	46.13	46.16	0.06	46.21	0.17
Longwood TS 500 kV	546.14	543.52	-0.48	541.98	-0.76
Longwood TS 230 kV	245.01	244.03	-0.40	245.40	0.16
Longwood TS 27.6 kV	29.06	28.94	-0.41	29.11	0.16

Table 4: Loss of Evergreen SS x Longwood TS & 283.5 MW of NVEC while Ashfield SS x Longwood TS Out-of-Service

Bus	Initial Voltage (kV)	Before ULTC (kV)	% Change	After ULTC (kV)	% Change
Bruce A TS 500 kV	548.21	548.45	0.04	548.26	0.01
Bruce A TS 230 kV	247.48	247.35	-0.05	247.79	0.13
Bruce B SS 500 kV	549.00	549.00	0.00	549.00	0.00
BHWP B TS 13.8 kV A bus	14.54	14.53	-0.05	14.56	0.13
BHWP B TS 13.8 kV B bus	14.55	14.54	-0.05	14.57	0.13
Douglas Point TS 44 kV	46.20	46.17	-0.05	46.26	0.13
Longwood TS 500 kV	539.17	529.12	-1.86	510.34	-5.35
Longwood TS 230 kV	244.27	239.99	-1.75	246.98	1.11
Longwood TS 27.6 kV	28.97	28.44	-1.82	28.98	0.05

Table 5: Loss of Bruce A TS x Evergreen SS & 283.5 MW of NVEC while Bruce B SS x Ashfield SS Out-of-Service

Bus	Initial Voltage (kV)	Before ULTC (kV)	% Change	After ULTC (kV)	% Change
Bruce A TS 500 kV	548.37	548.21	-0.03	548.21	-0.03
Bruce A TS 230 kV	247.38	247.68	0.12	247.66	0.11
Bruce B SS 500 kV	549.00	549.00	0.00	549.00	0.00
BHWP B TS 13.8 kV A bus	14.53	14.55	0.12	14.55	0.11
BHWP B TS 13.8 kV B bus	14.55	14.56	0.12	14.56	0.11
Douglas Point TS 44 kV	46.18	46.24	0.12	46.23	0.11
Longwood TS 500 kV	546.10	544.32	-0.32	544.53	-0.29
Longwood TS 230 kV	245.00	243.91	-0.44	246.28	0.52
Longwood TS 27.6 kV	29.06	28.92	-0.46	29.21	0.54

APPENDIX 'B'

FINAL CUSTOMER IMPACT ASSESSMENT REPORT - ADDENDUM



Hydro One Networks Inc.
433 Bay Street
Toronto, Ontario
M5G 2P5

- ADDENDUM -
CUSTOMER IMPACT ASSESSMENT

CEDAR POINT II WIND POWER PROJECT
ADELAIDE / BORNISH / JERICHO WIND ENERGY CENTRES

100 MW Wind Turbine Generation Connection
283.5 MW Wind Turbine Generation Connection

- FINAL -

Revision: 0
Date: June 8, 2012

Issued by: **Transmission System Development Division**
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Disclaimer

This Customer Impact Assessment was prepared based on information available about the connection of the proposed Suncor Energy Products Inc. –Cedar Point II Wind Power Project. It is intended to highlight significant impacts, if any, to affected transmission customers early in the project development process and thus allow an opportunity for these parties to bring forward any concerns that they may have. Subsequent changes to the required modifications or the implementation plan may affect the impacts of the proposed connection identified in Customer Impact Assessment. The results of this Customer Impact Assessment are also subject to change to accommodate the requirements of the IESO and other regulatory or municipal authority requirements.

Hydro One shall not be liable to any third party which uses the results of the Customer Impact Assessment under any circumstances whatsoever for any indirect or consequential damages, loss of profit or revenues, business interruption losses, loss of contract or loss of goodwill, special damages, punitive or exemplary damages, whether any of the said liability, loss or damages arises in contract, tort or otherwise. Any liability that Hydro One may have to Suncor Energy Products Inc. in respect of the Customer Impact Assessment is governed by the Agreement between:

1. Suncor Energy Products Inc. and Hydro One dated February 14, 2012.

**ADDENDUM: CUSTOMER IMPACT ASSESSMENT
CEDAR POINT II WIND POWER PROJECT &
ADELAIDE/BORNISH/JERICHO WIND ENERGY CENTRES
383.5 MW WIND TURBINE GENERATION CONNECTION**

1.0 INTRODUCTION

Suncor Energy is to develop a 100 MW wind energy generation facility. The wind energy facility, known in this document as Cedar Point Wind Project (CPWP), will be constructed in the Township of Adelaide-Metcalf in Middlesex County. CPWP will connect into the NEXtera ENERGY 283.5 MW wind energy generation facility, known in this document as NEXtera Wind Energy Centre (NWEC). NWEC consists of the three wind energy projects: Adelaide WEC (60 MW), Bornish WEC (73.5 MW) and Jericho WEC (150 MW). The total 383.5 MW of Suncor and NEXtera generation will connect to Hydro One's transmission system through one new step-up transformer via a new 500 kV switching station that will sectionalize Hydro One's 500 kV circuit, B652L, approximately 36.5 km from Longwood TS. The switching station will be located in Middlesex County, in the Municipality of North Middlesex. The switching station will be called Evergreen SS and will be Hydro One owned and operated. Evergreen SS interconnection station will be located just west and adjacent to Hydro One's B562/563L Right-Of-Way (ROW).

In accordance with section 6 of the Ontario Energy Board's Transmission System Code, Hydro One Networks Inc (Hydro One) is to carry out a Customer Impact Assessment (CIA) study to assess the impact of the proposed generator connection on existing customers in the affected area.

This study does not evaluate the overall impact of the Cedar Point Wind Project on the bulk electricity system. The impact of the new generator on the bulk electricity system is the subject of the System Impact Assessment (SIA) issued by the Independent Electricity System Operator (IESO).

The study does not evaluate the impact of the Cedar Point Wind Project on the network Protection and Control facilities. Protection and Control aspects are reviewed during the Protection Impact Assessment, which is part of the SIA. Protection and Control aspects are again reviewed, in detail, during the preparation of the connection cost estimate and will be reflected in the Connection and Cost Recovery Agreement.

1.2 Addendum: Proposed Connection: Cedar Point II Wind Power Project

1.2.1 The Wind Farm

The proposed 100 MW wind farm consists of 45 Siemens 2.3 MW Series Wind Turbine Generators (WTG). The maximum output of the WTG will be curtailed to a total generation output capability of 100 MW. Appendix A, Figures 1 & 2 shows an overview of the proposed connection arrangement.

Cedar Point II WPP consists of 4 groups of 10-12 x 2.3 MW Siemens wind turbine units totaling 100 MW. Each group of wind turbines is placed on a 34.5 kV feeder and is protected by a circuit breaker before connecting to a 34.5 kV bus at a substation located in the Municipality of Adelaide-Metcalf. This substation will be called Cedar Point Customer Generation Station (CGS). At Cedar Point CGS, the power will be transformed to 121 kV via one 120/34.5 kV, 66/88/110 MVA transformer.

An 11.9 km, 121 kV customer-owned transmission line named CP1J will connect Cedar Point CGS to Cedar Point Customer Switching Station (CSS) which will be located next to NEXtera's Jericho CGS. At this point, Suncor's Cedar Point II WPP will join with the Jericho WEC. The combined wind farm outputs will then be transported 14.5 km on a 121 kV customer transmission line named J1BTS to NEXtera's Bornish CSS.

At Bornish CSS four wind generating facilities converge: Suncor's Cedar Point II WPP (100 MW) and NEXtera's Adelaide WEC (60 MW), Bornish WEC (73.5 MW) and Jericho WEC (150 MW). Bornish CSS will be a 121 kV switching station owned and operated by the generator customers. The station will consist of a four breaker ring and will be located in the Municipality of North Middlesex.

An 11.4 km, 121 kV customer-owned transmission line will then connect Bornish CSS to the generator's 500 kV transformer station located close to Hydro One's ROW. This transformer station will be called Parkhill CTS (Customer Transformer Station). At this station, the power will be transformed to 500 kV via one 525/121 kV 256/341/426 MVA transformer. The 500 kV bus at Parkhill CTS will connect to the new Hydro One 500 kV switching station known as Evergreen SS. Please see Appendix A, Figure 2.

The wind farm's dynamic Var compensation is provided via their Siemens 2.3 Series Wind Turbine Generators (WTG). The WTG are designed to supply or absorb reactive power to or from the transmission grid to regulate and stabilize the voltage. In addition, it was determined in the System Impact Assessment that this project, in conjunction with the three NEXtera WEC's, will also require static Var compensation of 120 MVAR that can be provided via shunt capacitor banks located at the Parkhill CTS 121 kV bus.

1.2.2 Addendum: Connection to Hydro One’s 500 kV Transmission System

The combined CPWP and NWECC will connect their generated power via 500 kV Hydro One owned interconnection station called Evergreen SS. The Parkhill CTS 525/121 kV power transformer will connect directly via 1-500 kV breaker and 1 motorized disconnect switch onto a 500 kV 3-breaker ring bus at Evergreen SS, Appendix A, Figure 3. This ring bus will split Hydro One’s existing 500 kV circuit B562L from Bruce A TS to Longwood TS into 2 sections: Bruce A TS x Evergreen SS and Evergreen SS x Longwood TS. This sectionalizing will occur approximately 36.5 km from Longwood TS, near tower number 563 of existing B562L. Both Evergreen SS and Parkhill CTS will be adjacent or as close as possible to Hydro One’s existing ROW to limit the additional exposure to Hydro One’s 500 kV system. In addition, it was determined in the System Impact Assessment that Evergreen SS will experience overvoltage during certain system configurations.

To manage the overvoltage concerns at Evergreen SS, Hydro One is proposing to construct Evergreen SS with equipment capable of withstanding the overvoltage. This additional capability will forego the previous requirement of a shunt reactor.

1.3 Customers in the Study Area

The primary focus of this study was on customers supplied from stations directly connected to existing circuit B562L and in the local electrical area. Affected customers are shown in Table 1.

Table 1: Transmission Customers connected in the study area

Station	Customer
Bruce A TS	Bruce Power L.P.
Bruce B SS	Bruce Power L.P.
Bruce Heavy Water Plant B TS	Bruce Power L.P.
Douglas Point TS	Hydro One Networks Inc. (Distribution) Westario Power Inc.
Longwood TS	Hydro One Networks Inc. (Distribution) Middlesex Power Distribution Corp.

1.4 Operating Conditions

Normal operating conditions are such that CPWP will solely generate onto NEXtera’s 121 kV circuit J1BTS. When NEXtera’s 500 kV transformer breaker at Parkhill CTS that connects to the 500 kV ring bus at Evergreen SS is taken out of service, CPWP will not generate onto Hydro One’s systems, transmission nor distribution.

2.0 ADDENDUM - SHORT CIRCUIT RESULTS

Short-circuit studies were carried out to assess the fault contribution when the CPWP is connected to the NWECC subsystem and a total of 383.5 MW is generating into Evergreen SS.

The study results are summarized in Tables 3 and 4 below showing both symmetric and asymmetric fault currents in kA, respectively. The anticipated fault levels after the incorporation of all committed and proposed generation in the Bruce area are shown in Table 5.

Table 3: CPWP & NWECC impact on symmetrical fault levels

Station	without CPWP & NWECC* (kA)		with CPWP & NWECC (kA)		% Difference	
	3-Phase	L-G	3-Phase	L-G	3-Phase	L-G
Bruce B SS 500 kV	36.92	41.55	37.13	41.74	0.57	0.46
Bruce A TS 500 kV	37.13	41.72	37.35	41.93	0.59	0.50
Bruce A TS 230 kV	42.82	54.20	42.90	54.3	0.19	0.18
BHWP B TS 13.8 kV A	19.77	1.98	19.77	1.98	0.00	0.00
BHWP B TS 13.8 kV B	19.75	1.98	19.75	1.98	0.00	0.00
Douglas Point TS 44 kV	14.37	6.89	14.37	6.89	0.00	0.00
Longwood TS 500 kV	20.05	20.95	20.50	21.75	2.24	3.82
Longwood TS 230 kV	37.36	44.74	37.86	45.53	1.34	1.77
Longwood TS 27.6 kV	15.41	10.79	15.43	10.79	0.13	0.00

* Includes existing and committed generation projects up to the award of FIT3 and Samsung Phase 2 & 3 contracts

Table 4: CPWP & NWECC impact on asymmetrical fault levels

Station	without CPWP & NWECC* (kA)		with CPWP & NWECC (kA)		% Difference	
	3-Phase	L-G	3-Phase	L-G	3-Phase	L-G
Bruce B SS 500 kV	54.27	63.52	54.56	63.79	0.53	0.43
Bruce A TS 500 kV	54.40	63.15	54.71	63.44	0.57	0.46
Bruce A TS 230 kV	57.47	78.24	57.57	78.37	0.17	0.17
BHWP B TS 13.8 kV A	23.04	1.98	23.04	1.98	0.00	0.00
BHWP B TS 13.8 kV B	22.33	1.98	22.33	1.98	0.00	0.00
Douglas Point TS 44 kV	16.34	8.82	16.34	8.83	0.00	0.11
Longwood TS 500 kV	24.36	26.68	24.95	27.67	2.42	3.71
Longwood TS 230 kV	45.70	57.93	46.44	59.03	1.62	1.90
Longwood TS 27.6 kV	21.54	15.67	21.57	15.68	0.14	0.06

*Includes existing and committed generation projects up to the award of FIT3 and Samsung Phase 2 & 3 contracts

Table 5: Anticipated Fault Levels Resulting from FIT3 and Samsung Phase 2 & 3 contracts

Station	Symmetrical Fault Level (kA)		Asymmetrical Fault Level (kA)	
	3-Phase	L-G	3-Phase	L-G
Bruce B SS 500 kV	37.85	42.53	55.57	64.89
Bruce A TS 500 kV	38.09	42.66	55.76	64.45
Bruce A TS 230 kV	44.36	55.86	59.39	80.43
BHWP B TS 13.8 kV A	19.79	1.98	23.06	1.98
BHWP B TS 13.8 kV B	19.77	1.98	22.35	1.98
Douglas Point TS 44 kV	14.92	6.97	17.00	8.95
Longwood TS 500 kV	20.77	21.99	25.27	27.97
Longwood TS 230 kV	38.35	46.04	47.03	59.68
Longwood TS 27.6 kV	15.44	10.80	21.59	15.69

*Includes existing, committed and proposed generation projects in the Bruce Transmission Area as per applications received by December 2011

Observations made from the short-circuit study results in Tables 3 & 4 above may be summarized as follows:

- Table 3 shows that fault levels are below the maximum symmetrical three-phase and single line-to-ground fault values set out in Appendix 2 of the *Transmission System Code (TSC)*.
- Table 3 shows that although there is a 3.82 % increase in the symmetrical short-circuit level at Longwood TS 500 kV bus, the fault levels are well below the allowable 500 kV fault limits and are acceptable to Hydro One.
- Table 4 shows that although there is a 3.71 % increase in the asymmetrical short-circuit level at Longwood TS 500 kV bus, the fault level is within Hydro One's asymmetrical breaker ratings** and are acceptable to Hydro One.

It can be observed from Table 5 that the anticipated fault levels at the stations shown are below the maximum symmetrical three-phase and single line-to-ground fault values set out in Appendix 2 of the TSC. In addition, with the exception of Bruce A TS 230 kV bus**, the anticipated fault levels are within Hydro One's breaker ratings.

**Note: The asymmetrical fault current at Bruce A 230 kV before and after the incorporation of the projects will exceed the interrupting capability of the existing breakers. To address this issue in the long term, Hydro One has planned to replace the Bruce 230 kV breakers to improve fault current interrupting capability. Before the circuit breakers are replaced, temporary operational mitigation measures have been developed by Hydro One in collaboration with the IESO. The CPWP has no impact on this issue.

Conclusion

The short-circuit level increases at Bruce A TS, Bruce B SS, BHWP B TS, Douglas Point TS and Longwood TS are acceptable to Hydro One and are below Hydro One's 5 % TSC margin limit.

3.0 ADDENDUM - VOLTAGE ANALYSIS

Load flow studies were carried out to analyze the impact of CPWP in conjunction with NWECC on the voltage performance of Hydro One customers in the affected area.

Local voltage impact was assessed using load flow contingency analysis. The incorporation of CPWP and NWECC at full output was used to assess voltage change during peak summer loading conditions.

The following contingencies were used to assess the voltage impact:

- a) A single contingency loss of Parkhill CTS with all generation at full output, 383.5 MW
- b) A single contingency loss of Bruce A TS x Evergreen SS 500 kV circuit
- c) A single contingency loss of Evergreen SS x Longwood TS 500 kV circuit
- d) A double contingency loss of Evergreen SS x Longwood TS circuit and Parkhill CTS (due to Breaker Failure B/F at Evergreen SS)
- e) A double contingency loss of Evergreen SS x Longwood TS circuit and Parkhill CTS (due to Breaker Failure B/F at Evergreen SS), with Ashfield SS x Longwood TS 500 kV circuit out of service pre-contingency
- f) A double contingency loss of Bruce A TS x Evergreen SS circuit and Parkhill CTS (due to Breaker Failure B/F at Evergreen SS), with Bruce B SS x Ashfield SS 500 kV circuit out of service pre-contingency

Basic Assumptions:

- New 500 kV switching station Ashfield SS will sectionalize companion circuit B563L approximately 61.5 km from Bruce B SS to incorporate another wind energy project known as K2 Wind.
- No 500 kV shunt reactor installed at Evergreen SS (contrary to the original CIA assessment for this connection point)
- A 120 MVar at 121 kV shunt capacitor will be installed at Parkhill CTS for the combined generators reactive power capability as per IESO System Impact Assessment requirements.
- ULTC – Under Load Tap Changer
- For the period of time labeled “After ULTC”, the switching of reactive devices such as reactors and capacitors is implemented.

Results are shown in Appendix B, Tables 1 – 5 and the impact to existing customers is summarized below:

- Table B1: For the loss of Parkhill CTS (the proposed generators) the maximum voltage change is 0.18% at Longwood TS 500 kV bus before ULTC operation and is 0.16% at Longwood TS 500 kV bus after ULTC operation.
- Table B2: For the loss the 500 kV circuit between Bruce A TS and Evergreen SS the maximum voltage change is -0.67% at Longwood TS 500 kV bus before ULTC operation and is -0.67% at Longwood TS 500 kV bus after ULTC operation.
- Table B3: For the loss of the 500 kV circuit between Evergreen SS and Longwood TS, the maximum voltage change is -0.42% at Longwood TS 500 kV bus before ULTC operation and is -0.41% at Longwood TS 500 kV bus after ULTC operation.
- Table B4: For the loss of the 500 kV circuit between Evergreen SS and Longwood TS with a breaker failure at Evergreen SS which disconnects Parkhill CTS (the generators), the maximum

voltage change is -0.88% at Longwood TS 27.6 kV bus before ULTC operation and is -0.91% at Longwood TS 27.6 kV bus after ULTC operation

- **Table B5:** Given the 500 kV circuit from Ashfield SS to Longwood TS is out of service, for the loss of the 500 kV circuit between Evergreen SS and Longwood TS with a breaker failure at Evergreen SS which disconnects Parkhill CTS, the maximum voltage change is -1.98% at Longwood TS 500 kV bus before ULTC operation and is -2.01% at Longwood TS 500 kV bus after ULTC operation.
- **Table B6:** Given the 500 kV circuit from Bruce B SS to Ashfield SS is out of service, for the loss of the 500 kV circuit between Bruce A TS and Evergreen SS with a breaker failure at Evergreen SS which disconnects Parkhill CTS, the maximum voltage change is -0.53% at Longwood TS 27.6 kV bus before ULTC operation and is -0.56% at Longwood TS 27.6 kV bus after ULTC operation.

Conclusion

Load flow studies thus confirmed that the incorporation of 383.5 MW of wind generation between Bruce A TS and Longwood TS will not result in substantial change in the voltage profile of customers supplied from these stations and in the local electrical area. Following the worst contingency, the voltage changes are well within the voltage decline guideline for customer buses of less than 10% and 5% voltage change before- and after- transformer tap-changer operation.

4.0 ADDENDUM - CONCLUSIONS AND RECOMMENDATIONS

This Addendum: Customer Impact Assessment (CIA) presents results of short-circuit and voltage performance study analyses. The report has confirmed that CPWP can be incorporated into the NWECC without adverse impact on existing customers supplied from Bruce A TS and Longwood TS and in the local electrical area provided that the required facilities are installed. In addition to the facilities required by the IESO by issue of the original SIA's and their subsequent Addendums (http://www.ieso.ca/imoweb/pubs/caa/CAA_2011-446_Final_Report.pdf; http://www.ieso.ca/imoweb/pubs/caa/CAA_2011-443_Final_Report.pdf; http://www.ieso.ca/imoweb/pubs/caa/CAA_2011-441_Final_Report.pdf; http://www.ieso.ca/imoweb/pubs/caa/CAA_2011-445_Final_Report.pdf) and required by the original CIA, CPWP and NWECC are required to install the following facilities as part of their connection:

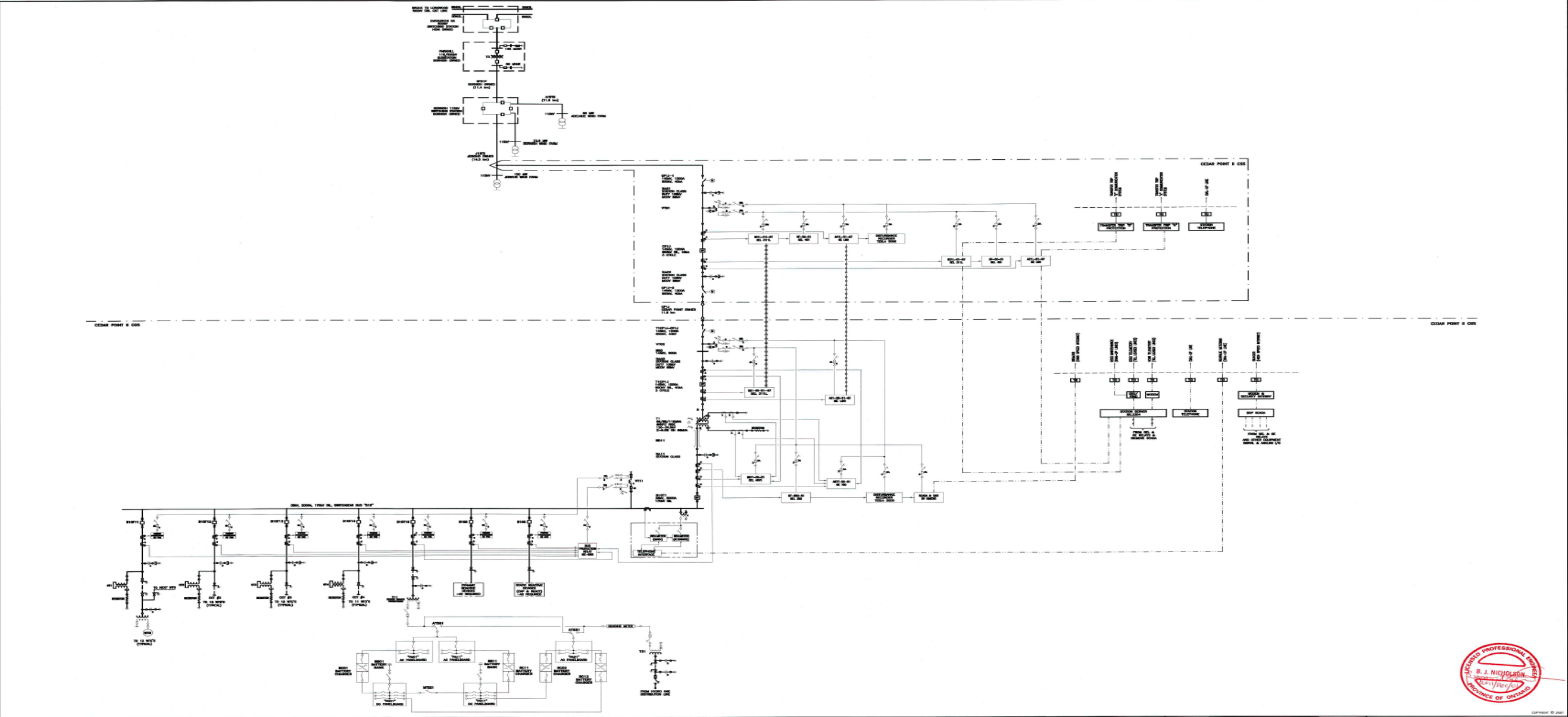
- Connection facilities at Parkhill CTS must have the capability to operate continuously at a maximum operating voltage of at least 570 kV.
- Fully duplicated protection and telecommunication systems must be installed as outlined in the Transmission System Code.
- SCADA facilities to allow transmission of generation facility components: i.e. status, measurement quantities & alarms, as outlined in the IESO's SIA and Hydro One's planning specification for the connection of CPWP.

Facilities to permit the above work must be provided.

All customers are required to check to ensure that the equipment and grounding system at their stations/facilities meet the expected increase in fault level.

APPENDIX A: DIAGRAMS

**Figure 1: Suncor Cedar Point II WPP, Overall Project
(Drawing from generator)**



REV	DATE	DESCRIPTION	DRN	CHK	APP	APP	APP	APP	APP	REF	TITLE
B	01DEC11	ISSUED FOR SA/DA APPROVAL									
A	17MAY11	ISSUED FOR REVIEW									
REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	APP	REF	TITLE

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PRELIMINARY

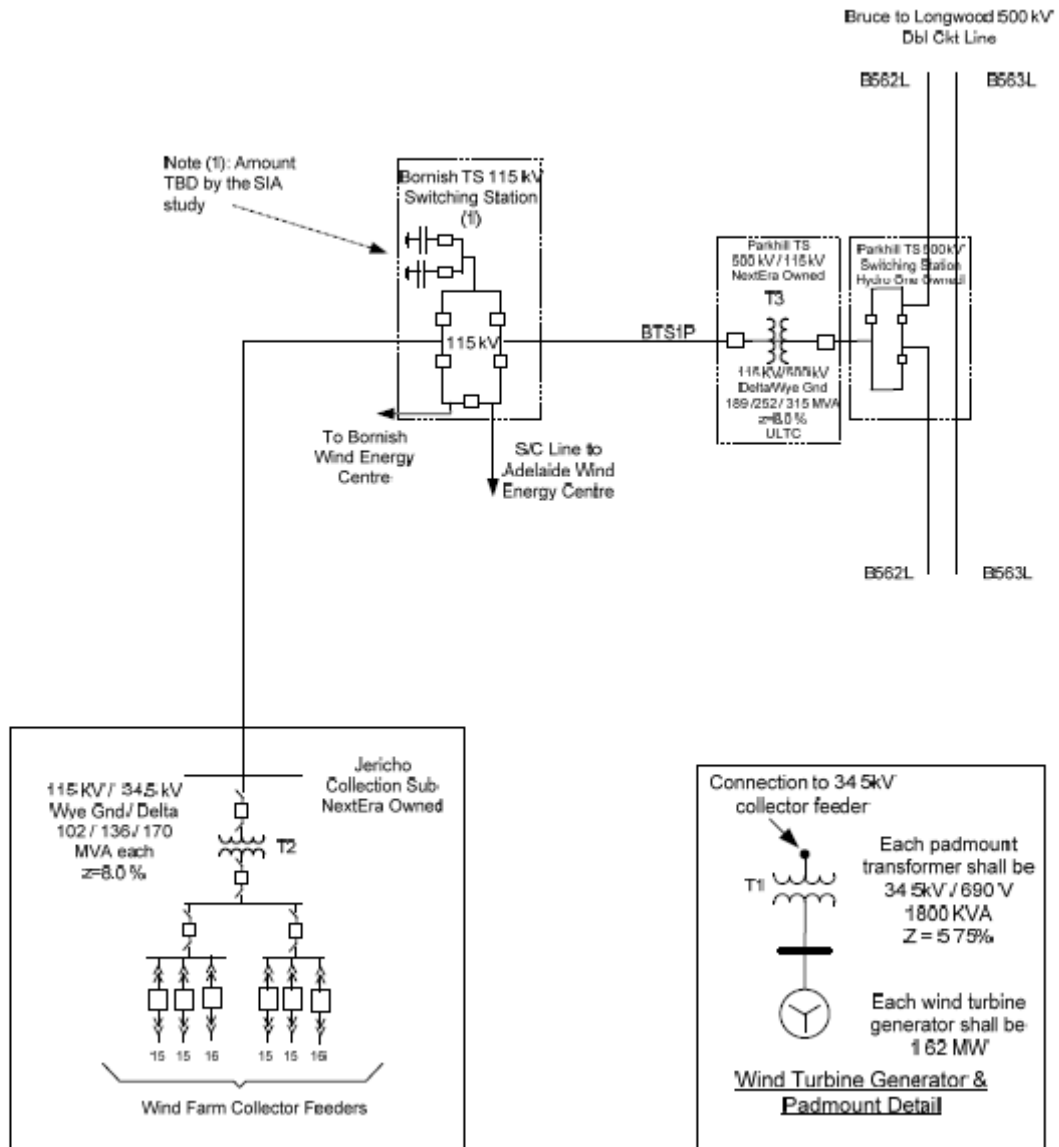
APPROVED FOR _____			
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PROJECT PHASE			
PROJECT NO.	ACTIVITY NO.	BY	DDMMYY
161973		DSN B.J.N.	NOV11
		DRN RS	NOV11
SCALE	PACKAGE CODE	CHK	NOV11
NTS		APP	NOV11

SUNCOR ENERGY	
CEDAR POINT II WIND POWER PROJECT	
115kV SUBSTATION SINGLE LINE DIAGRAM	

amec	
CLIENT DWG. NO.	REV.
169434-0000-141-SLD-0001-001	B

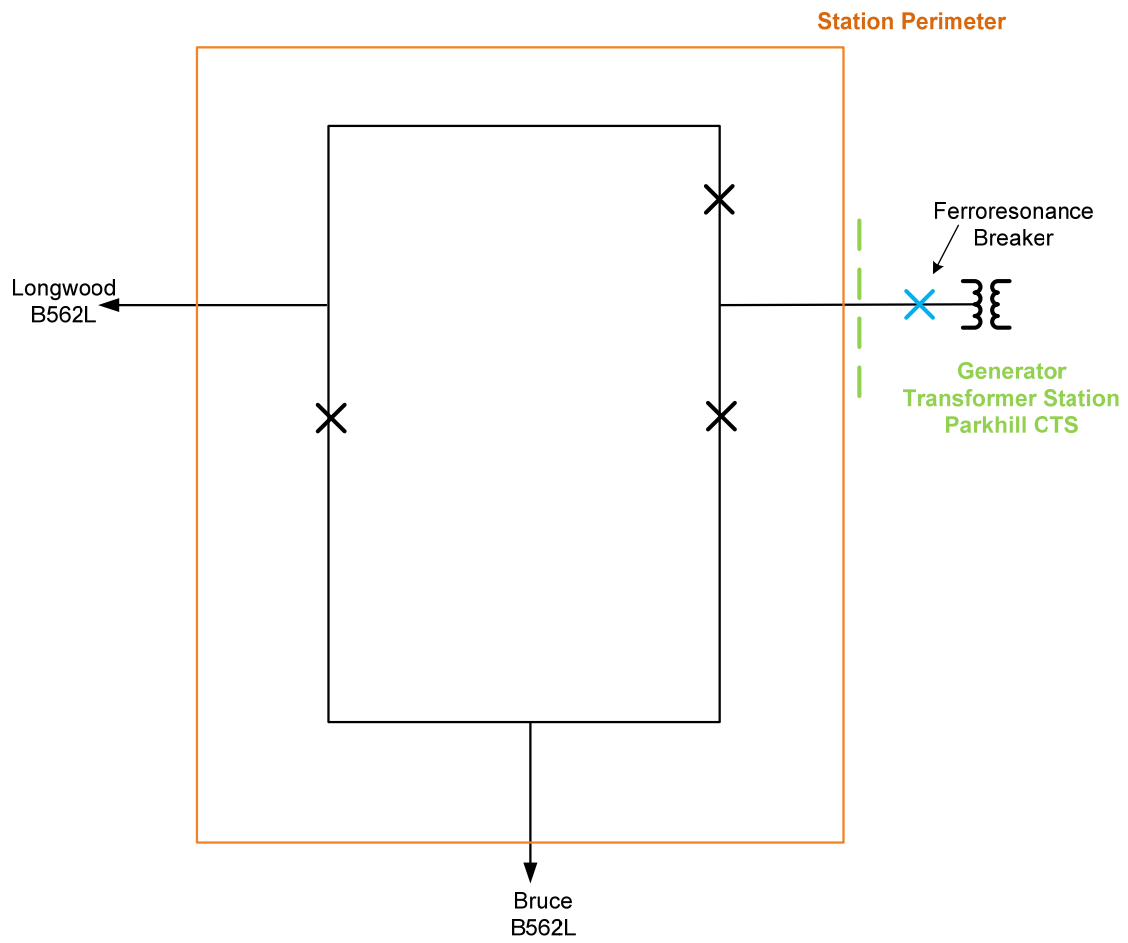
Figure 2: NEXTERa Jericho Wind Energy Centre
(Drawing from generator)

*Parkhill TS 500 kV Switching Station renamed to Evergreen SS.
Parkhill TS 115 kV/500kV station renamed to Parkhill CTS*



Jericho WEC

Figure 3: Evergreen Switching Station



APPENDIX B: VOLTAGE PERFORMANCE RESULTS

Table 1: Loss of Parkhill CTS

Bus	Initial Voltage (kV)	Before ULTC (kV)	% Change	After ULTC (kV)	% Change
Bruce A TS 500 kV	548.19	548.76	0.10	548.73	0.10
Bruce A TS 230 kV	247.12	247.26	0.06	247.25	0.06
Bruce B SS 500 kV	548.92	549.44	0.09	549.41	0.09
BHWP B TS 13.8 kV A bus	14.52	14.52	0.06	14.52	0.06
BHWP B TS 13.8 kV B bus	14.53	14.54	0.06	14.54	0.06
Douglas Point TS 44 kV	46.13	46.16	0.06	46.15	0.06
Evergreen SS 500 kV	547.17	549.61	0.45	549.50	0.43
Longwood TS 500 kV	545.66	546.64	0.18	546.51	0.16
Longwood TS 230 kV	244.82	244.63	-0.08	244.55	-0.11
Longwood TS 27.6 kV	29.04	29.01	-0.08	29.00	-0.12

Table 2: Loss of Bruce A TS x Evergreen SS

Bus	Initial Voltage (kV)	Before ULTC (kV)	% Change	After ULTC (kV)	% Change
Bruce A TS 500 kV	548.19	547.07	-0.20	547.07	-0.20
Bruce A TS 230 kV	247.12	246.84	-0.11	246.84	-0.11
Bruce B SS 500 kV	548.92	547.98	-0.17	547.98	-0.17
BHWP B TS 13.8 kV A bus	14.52	14.50	-0.11	14.50	-0.11
BHWP B TS 13.8 kV B bus	14.53	14.51	-0.11	14.51	-0.11
Evergreen SS 500 kV	547.17	541.12	-1.11	541.11	-1.11
Douglas Point TS 44 kV	46.13	46.07	-0.12	46.07	-0.12
Longwood TS 500 kV	545.66	542.02	-0.67	542.02	-0.67
Longwood TS 230 kV	244.82	243.47	-0.55	243.47	-0.55
Longwood TS 27.6 kV	29.04	28.87	-0.57	28.87	-0.58

Table 3: Loss of Evergreen SS x Longwood TS

Bus	Initial Voltage (kV)	Before ULTC (kV)	% Change	After ULTC (kV)	% Change
Bruce A TS 500 kV	548.19	547.69	-0.09	547.69	-0.09
Bruce A TS 230 kV	247.12	246.98	-0.06	246.98	-0.06
Bruce B SS 500 kV	548.92	548.45	-0.09	548.45	-0.09
BHWP B TS 13.8 kV A bus	14.52	14.51	-0.06	14.51	-0.06
BHWP B TS 13.8 kV B bus	14.53	14.52	-0.06	14.52	-0.06
Douglas Point TS 44 kV	46.13	46.10	-0.06	46.10	-0.06
Evergreen SS 500 kV	547.17	549.21	0.37	549.21	0.37
Longwood TS 500 kV	545.66	543.39	-0.42	543.40	-0.41
Longwood TS 230 kV	244.82	243.97	-0.35	243.98	-0.35
Longwood TS 27.6 kV	29.04	28.93	-0.36	28.93	-0.36

Table 4: Loss of Evergreen SS x Longwood TS & Parkhill CTS

Bus	Initial Voltage (kV)	Before ULTC (kV)	% Change	After ULTC (kV)	% Change
Bruce A TS 500 kV	548.19	549.31	0.21	549.29	0.20
Bruce A TS 230 kV	247.12	247.39	0.11	247.39	0.11
Bruce B SS 500 kV	548.92	549.85	0.17	549.83	0.17
BHWP B TS 13.8 kV A bus	14.52	14.53	0.11	14.53	0.11
BHWP B TS 13.8 kV B bus	14.53	14.55	0.11	14.55	0.11
Douglas Point TS 44 kV	46.13	46.18	0.11	46.18	0.11
Evergreen SS 500 kV	547.17	559.78*	2.30	559.75*	2.30
Longwood TS 500 kV	545.66	541.60	-0.74	541.45	-0.77
Longwood TS 230 kV	244.82	242.75	-0.85	242.67	-0.88
Longwood TS 27.6 kV	29.04	28.78	-0.88	28.77	-0.91

*Overvoltage at Evergreen SS will be managed by installing equipment capable of handling it.

Table 5: Loss of Evergreen SS x Longwood TS & Parkhill CTS while Ashfield SS x Longwood TS Out-of-Service

Bus	Initial Voltage (kV)	Before ULTC (kV)	% Change	After ULTC (kV)	% Change
Bruce A TS 500 kV	546.97	548.00	0.19	547.99	0.19
Bruce A TS 230 kV	246.81	247.05	0.10	247.04	0.10
Bruce B SS 500 kV	547.82	548.57	0.14	548.56	0.14
BHWP B TS 13.8 kV A bus	14.50	14.51	0.10	14.51	0.10
BHWP B TS 13.8 kV B bus	14.51	14.53	0.10	14.53	0.10
Douglas Point TS 44 kV	46.07	46.11	0.10	46.11	0.10
Evergreen SS 500 kV	539.60	558.44*	3.49	558.43*	3.49
Longwood TS 500 kV	536.13	525.52	-1.98	525.37	-2.01
Longwood TS 230 kV	245.05	240.44	-1.88	240.37	-1.91
Longwood TS 27.6 kV	29.06	28.50	-1.95	28.49	-1.98

*Overvoltage at Evergreen SS will be managed by installing equipment capable of handling it.

Table 6: Loss of Bruce A TS x Evergreen SS & Parkhill CTS while Bruce B SS x Ashfield SS Out-of-Service

Bus	Initial Voltage (kV)	Before ULTC (kV)	% Change	After ULTC (kV)	% Change
Bruce A TS 500 kV	547.55	546.28	-0.23	546.26	-0.24
Bruce A TS 230 kV	246.96	246.64	-0.13	246.64	-0.13
Bruce B SS 500 kV	548.19	547.07	-0.20	547.05	-0.21
BHWP B TS 13.8 kV A bus	14.51	14.49	-0.13	14.49	-0.13
BHWP B TS 13.8 kV B bus	14.52	14.50	-0.13	14.50	-0.13
Douglas Point TS 44 kV	46.10	46.04	-0.13	46.04	-0.13
Evergreen SS 500 kV	546.82	544.24	-0.47	544.08	-0.50
Longwood TS 500 kV	545.35	543.59	-0.32	543.44	-0.35
Longwood TS 230 kV	244.70	243.46	-0.51	243.37	-0.54
Longwood TS 27.6 kV	29.02	28.87	-0.53	28.86	-0.56

APPENDIX 'C'

FINAL CUSTOMER IMPACT ASSESSMENT REPORT - ADDENDUM #2



Hydro One Networks Inc.
483 Bay Street
Toronto, Ontario
M5G 2P5

- 2ND ADDENDUM -
CUSTOMER IMPACT ASSESSMENT

CEDAR POINT II WIND POWER PROJECT
ADELAIDE / BORNISH / JERICHO WIND ENERGY CENTRES

100 MW Wind Turbine Generation Connection
283.5 MW Wind Turbine Generation Connection

- FINAL -

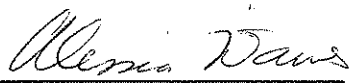
Revision: 0


Date: February 1, 2013

Issued by: **Transmission System Development Division**
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Hydro One Networks Inc.

Disclaimer

This Customer Impact Assessment was prepared based on information available about the connection of the proposed NEXtera ENERGY Canada ULC – Adelaide, Bornish and Jericho Wind Energy Centre’s (WEC’s). It is intended to highlight significant impacts, if any, to affected transmission customers early in the project development process and thus allow an opportunity for these parties to bring forward any concerns that they may have. Subsequent changes to the required modifications or the implementation plan may affect the impacts of the proposed connection identified in Customer Impact Assessment. The results of this Customer Impact Assessment are also subject to change to accommodate the requirements of the IESO and other regulatory or municipal authority requirements.

Hydro One shall not be liable to any third party which uses the results of the Customer Impact Assessment under any circumstances whatsoever for any indirect or consequential damages, loss of profit or revenues, business interruption losses, loss of contract or loss of goodwill, special damages, punitive or exemplary damages, whether any of the said liability, loss or damages arises in contract, tort or otherwise. Any liability that Hydro One may have to NEXtera ENERGY in respect of the Customer Impact Assessment is governed by the Agreement between:

1. Kerwood Wind, Inc. (Adelaide WEC) and Hydro One dated September 14, 2011.
2. Bornish Wind L.P. (Bornish WEC) and Hydro One dated September 14, 2011
3. Jericho Wind, Inc. (Jericho WEC) and Hydro One dated September 14, 2011

PURPOSE

The purpose of this second addendum is to acknowledge the modification to NEXtera's interconnection station, Parkhill CTS (Customer Transformer Station), figure 1. Hydro One determined that the proposed modifications were not sufficient enough to warrant detailed studies but rather a review for acceptance was deemed reasonable. This addendum will only comment on the proposed modifications.

REVIEW

Table 1: Technical Review for Acceptance

Modification	Description	Short Circuit Impact	Voltage Impact	Result
Replace one (1) 500 kV interconnection transformer with two (2) smaller MVA sized 500 kV interconnection transformers	The new transformers will be 525/121/27.6 kV 135/180/225 MVA. The equivalent impedance of the new transformer is 9.48% on 256 MVA as opposed to the original transformer's 9.997% on 256 MVA. This is a 5.2% decrease in impedance	The decrease in impedance will not materially impact the previous short circuit results considering those results were well within acceptable standards and safety margins.	The decrease in impedance will not materially impact the previous voltage results on customer buses considering those results were well within acceptable voltage deviation standards.	Accept
Increased number of breakers to aid in the protection of the additional transformer	Each 525/121/27.6 kV autotransformer at Parkhill CTS will be protected by a HV and LV breaker.	N/A	N/A	Accept

Operating Conditions

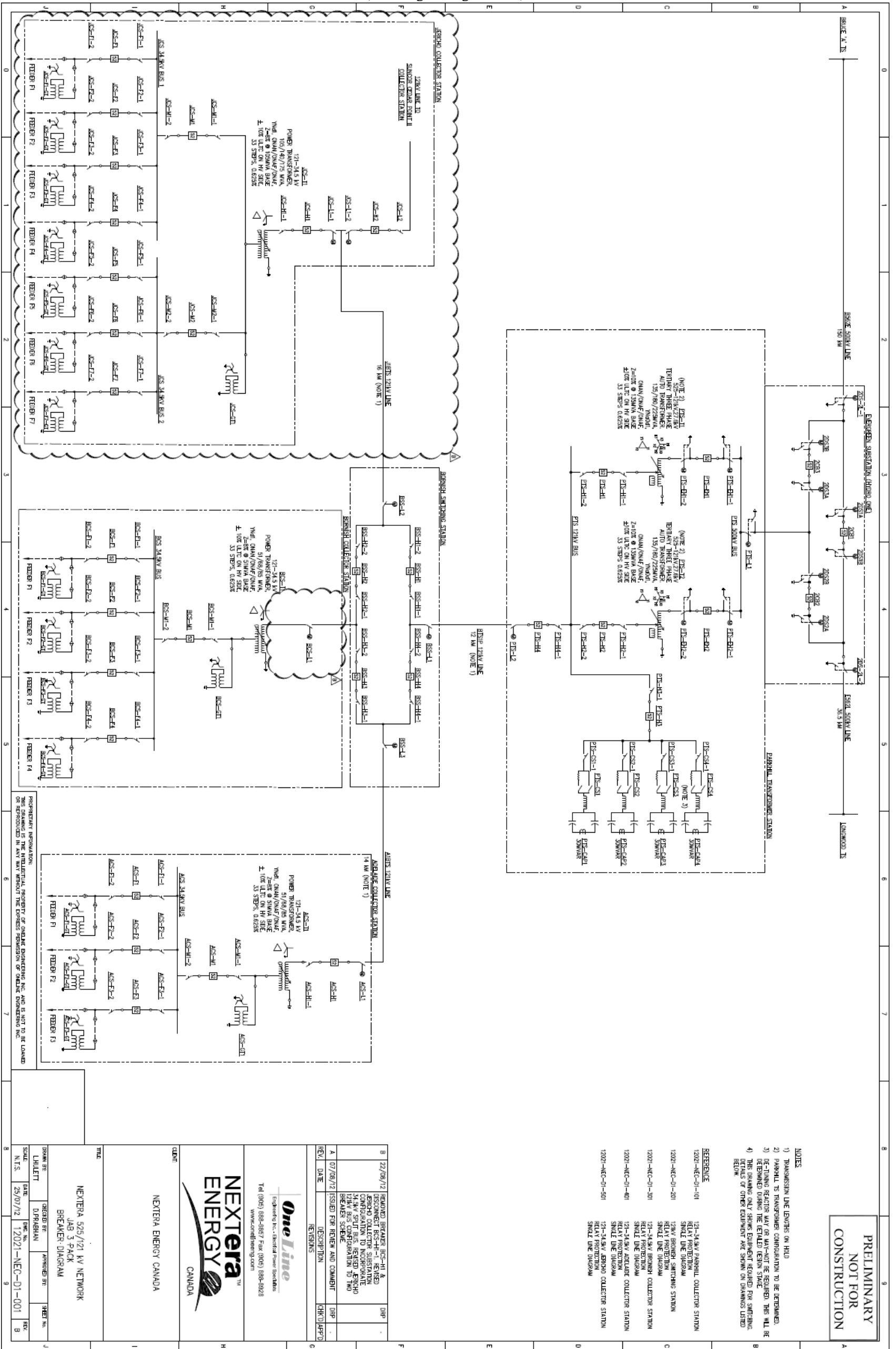
Normal operating conditions are such that the combined outputs of NEXtera 500 kV Wind Energy Centers (NWEC) and Cedar Point Wind Project (CPWP) will solely generate into Evergreen SS. When NEXtera's 500 kV transformer breakers PTS-EH1 and PTS-EH2 that connect to the 500 kV ring bus at Evergreen SS are taken out of service, NWEC and CPWP will not generate onto Hydro One's systems, transmission nor distribution.

ADDENDUM - CONCLUSIONS AND RECOMMENDATIONS

This 2nd Addendum: Customer Impact Assessment (CIA) describes the modifications to the NEXtera's interconnection station, Parkhill CTS. The report has confirmed that Hydro One can accept NEXtera's proposed modifications without adverse impact on existing customers supplied from Bruce A TS and Longwood TS and in the local electrical area. Note, all previous requirements in the original CIA and the original SIA and their subsequent addendums are still valid.

APPENDIX A: DIAGRAMS

Figure 1: NEXtera's Parkhill CTS
(Drawing from generator)



PRELIMINARY
NOT FOR
CONSTRUCTION