

ONTARIO ENERGY BOARD

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

AND IN THE MATTER OF an application by Hydro One Networks Inc. for an order or orders pursuant to section 92 of the *Ontario Energy Board Act, 1998* (as amended) granting leave to construct transmission line facilities in the Windsor-Essex Region, Ontario.

EVIDENCE OF E3 COALITION

**(E.L.K. Energy Inc. (E.L.K.),
Entegrus Powerlines Inc. (Entegrus), and
Essex Powerlines Corporation (Essex))**

Introduction/Scope of Evidence

1. Entegrus Powerlines Inc. (Entegrus), E.L.K. Energy Inc. (E.L.K.) and Essex Powerlines Corporation (Essex Powerlines) are each licenced electricity distributors serving customers in the Windsor-Essex area. Their respective service territories, along with the distribution service territory of EnWin Utilities Inc. (EnWin) and of Hydro One Distribution in the Windsor-Essex area, are illustrated on the map provided by Hydro One at Exhibit JT1.1, page 2.
2. Of the 5 distributors listed above, four are currently served off of Hydro One Transmission's Kingsville Transformer Station (Kingsville TS), which in turn is fed by Hydro One Transmission's J3E/J4E transmission subsystem (Kingsville-Leamington Subsystem). The Kingsville-Leamington Subsystem is downstream of the Keith Transformer Station and is fed by Hydro One Transmission's C21J/C22J Transmission facilities (C21J/C22J Transmission System). (See *Overview of Windsor-Essex Region* map provided at page 2 of Hydro One Transmission's June 5, 2015 technical conference presentation.)
3. EnWin is served directly off of Hydro One's C21J/C22J Transmission System and does not rely on the Kingsville-Leamington Subsystem.

4. As E3 Coalition members understand it, Hydro One's proposed Supply to Essex County Transmission Reinforcement Project (SECTR Project) for which approval is sought in this application has been advanced in order to address two needs:
 - (a) the need to restore the ability of the Kingsville-Leamington Subsystem to meet the IESO's ORTAC (Ontario Resource and Transmission Assessment Criteria) criteria for loading and restoration (see Exhibit B, Tab 1, Schedule 4, pages 3 and 4); and
 - (b) the need to provide for additional supply capacity for new load on the Kingsville-Leamington Subsystem.
5. To address these needs, Hydro One Transmission has proposed to:
 - (a) build a new 230 KV line and a new Leamington Transformer Station (Leamington TS) off of its C21J/C22J Transmission System, upstream of the Keith Transformer Station (see *Kingsville-Leamington Area Capacity Needs* diagram provided at page 3 of Hydro One Transmission's June 5, 2015 technical conference presentation); and
 - (b) transfer 95 MW of existing load from the existing Kingsville TS to the new Leamington TS (Technical Conference Transcript, page 9, lines 5 to 7, and Bing Young presentation, slide #4).
6. Hydro One Transmission's evidence is that this SECTR Project will:
 - (a) relieve the overloading of the existing Kingsville-Leamington Subsystem by transferring 95 MW of load from the existing subsystem to the new line and new Leamington TS to be served directly off of Hydro One Transmission's C21J/C22J Transmission System (upstream of Keith TS); and
 - (b) provide additional connection capacity (at the new Leamington TS) for load growth in the Windsor-Essex area.
7. Hydro One Transmission and the IESO have identified Entegrus, E.L.K. and Essex Powerlines, along with Hydro One Distribution, all of whom are served off of the existing Kingsville-Leamington Subsystem, as "beneficiaries" of the SECTR Project, and have proposed to allocate costs of the project to each of these distributors in accordance with a novel, and yet to be fully detailed or tested, "beneficiary pays" principle. The purpose of this evidence is to provide information regarding the potential rate impacts on the distribution customers of Entegrus, E.L.K. and Essex Powerlines of the Hydro One Transmission/IESO cost allocation proposal.

8. This evidence also clarifies the current load forecasts of each of Entegrus, E.L.K. and Essex Powerlines relative to the load forecasts used by Hydro One Transmission in deriving indicative cost allocations arising from its proposal for allocation of SECTR Project costs.
9. This evidence does not provide the Entegrus, E.L.K. or Essex Powerlines positions on the Hydro One/IESO cost allocation proposal. The understanding of these 3 LDC's of the Hydro One Transmission/IESO cost allocation proposal has continued to develop as the record herein has developed, including at the technical conference held on June 5, 2015. It was at the technical conference that the LDCs first understood that the cost allocation proposal advanced in the Application would allocate costs to each of the LDCs on the basis of the transfer of existing load from the existing Kingsville TS to the proposed new Leamington TS.
10. As the understanding of the Hydro One/IESO cost allocation proposal is still evolving, none of these LDCs have been able to brief their shareholders or Board of Directors on the precise nature and impact of the proposal. Nor have they had any opportunity to consult with their ratepayers regarding the value for money customer proposition entailed by the proposal (which consultation is an expectation of the OEB under the *Renewed Regulatory Framework for Electricity (RRFE)* in support of recovery of costs in distribution rates).
11. Rather, the purpose of this evidence is to assist the Board and the parties hereto in understanding the impacts of the Hydro One Transmission/IESO cost allocation proposal on distribution customers in the Windsor-Essex area.

Load Forecasts

12. The load forecasts for each Entegrus, E.L.K. and Essex Powerlines used by Hydro One Transmission to derive the cost allocation that would result from its SECTR Project cost allocation proposal are provided at Exhibit JT1.3.
13. Each of Entegrus, E.L.K. and Essex Powerlines defines "large customer" - i.e. customers for whom a capital contribution calculation would be made in response to a request to connect – as customers in the GS >50KW rate class, or larger.

Entegrus

14. Entegrus has reviewed the load forecast figures used by Hydro One in its revised Discounted Cash Flow (DCF) Calculation (April, 2015), and agrees that they are current and correct. Entegrus forecasts an average annual growth rate of 0.75% over the period 2014 through 2043.
15. No new “large customers” are forecast by Entegrus, and no connection inquiries from any such new (or incremental load) large customers have been received by Entegrus.

E.L.K.

16. E.L.K. has reviewed the load forecast figures used by Hydro One in its revised DCF Calculation (April, 2015), and has determined that they are not current.
17. E.L.K.’s actual 2014 peak load was 28.03 MW, and not the 31.47 MW previously reported. (E.L.K. also notes that the 2013 load forecast figures used by Hydro One in deriving the load forecast that it used in its initial DCF calculation, which are no longer current, did not include adjustments for CDM or customer self-generation.)
18. E.L.K. forecasts an average annual growth rate of 0% over the period 2014 through 2043.
19. No new “large customers” are forecast by E.L.K., and no connection inquiries from any such new (or incremental load) large customers have been received by E.L.K.

Essex Powerlines

20. Essex Powerlines has reviewed the load forecast figures used by Hydro One in its revised DCF Calculation (April, 2015), and disagrees with the forecast used.
21. Hydro One indicates (Exhibit JT1.3, page 6, part b) that it recorded an actual 2014 peak load for Essex Powerlines of upwards to 35.54 MW, based on an actual 2013 peak recorded load of 35.6 MW and Essex Powerlines’ submitted forecast average growth rate of -0.16%. Hydro One did not consult with Essex Powerlines in making this

adjustment, and Essex Powerlines has been unable to confirm where Hydro One's information regarding Essex Powerlines' 2013 peak load comes from.

22. Essex Powerlines' peak load generally occurs in August/September, given its significant vegetable growers load. According to Hydro One Distribution invoices to Essex Powerlines, the transmission charges on the July 2013, August 2013 and September 2013 invoices were based on peak loads of 31 MW, 31.1 MW and 32.5 MW, respectively. Essex recorded its July 2013, August 2013 and September 2013 peak loads as 30.4 MW, 30.8 MW and 32.0 MW, respectively.
23. Essex Powerlines further notes that its annual peak demand (including its 2013 peak demand) has historically been strongly influenced by one customer, which customer is no longer operating. As a result of the loss of this customer Essex Powerlines is forecasting a decline in 2014 to a peak demand 27.2 MW, and is forecasting 28.3 MW and 28.5 MW peak demands in 2015 and 2016 respectively.
24. Essex Powerlines does agree with the average annual growth rate of -0.16% over the period 2014 through 2043 as used by Hydro One.
25. No new "large customers" are forecast by Essex Powerlines, and no connection inquiries from any such new (or incremental load) large customers have been received by Essex Powerlines.

Rate Impacts

26. The E3 Coalition members retained Elenchus Research Associates (Elenchus) to calculate cost impacts on Entegrus, E.L.K. and Essex Powerlines customers of the SECTR Project cost allocation proposal advanced in this application by Hydro One Transmission and the IESO.
27. Elenchus has considered the following cost components in conducting its customer impact analysis:
 - (a) the customer allocation of \$55.3 million of SECTR Project transmission costs as indicated by Hydro One Transmission (Exhibit I-P2, Tab 2, Schedule 7, page 2, Approach B);

- (b) the allocation of \$19.3 million of Hydro One Distribution capital costs associated with the SECTR Project as indicated by Hydro One (Exhibit I-P2, Tab 2, Schedule 19, page 3, Table 1);
 - (c) the impact on Uniform Transmission Rates (UTR) resulting from allocation of SECTR Project costs to the transmission pool, as indicated by Hydro One (Exhibit B, Tab 4, Schedule 3, page 5, lines 16-17 and page 6, lines 1-3)¹; and
 - (d) the forecast increase in Hydro One Distribution rates to the embedded distributors resulting from Hydro One Distribution costs (allocated and distribution related), as indicated by Hydro One in year 2 if no costs are allocated to new ST customers (Exhibit JT1.2).
28. The Elenchus analysis has not considered the rate impact on the E3 Coalition member LDCs of financing costs associated with the capital contributions by each of these LDCs beyond the current cost of debt. However, additional distribution level costs associated with such financing are anticipated. Significant SECTR contribution financing requirements would move, potentially significantly, actual debt to equity ratios further away from the deemed capital structure adopted by the OEB, and generally preferred by financial lenders. Such shifts in the ratio from debt to equity could elevate financing rates beyond historical levels. In addition, significant SECTR contribution financing requirements would be expected to constrain the ability of each of the E3 Coalition members to balance other capital investment priorities.
29. The E3 Coalition members also note their understanding that the cost allocations presented by Hydro One/IESO relate only to costs associated with the transfer of existing load from the existing Kingsville TS to the new Leamington TS. There is no information on the record regarding additional costs that would be incurred should a new large customer (in addition to those large customer additions forecast by Hydro One Distribution) seek connection, or should an existing customer seek significant incremental capacity.

¹ To determine the UTR increase Elenchus added the Line connection rate of \$0.86/kW to the transformation connection rate of \$2/kW to get a total rate of \$2.86/kW. On page 6 of the referenced evidence, Hydro One indicates that the rate would increase by \$0.01/kW for a few years. Elenchus took the ratio of \$0.01/\$2.86 to get an increase of 0.35% on the Line and Transformation rate. The distributors charge these two rates combined as Retail Transmission Service Rate Line and Transformation Connection.

30. Further, Elenchus work proceeded from Hydro One's illustrative cost allocations, and no corrections were made for the more accurate/current load forecasts discussed above.
31. Table 1, below, illustrates the average Entegrus, E.L.K. and Essex Powerlines residential customer impacts of the Hydro One Transmission/IESO cost allocation proposal.
32. The derivation of these customer impacts starts from the transmission and distribution capital contributions calculated by Hydro One, and is detailed in Attachment 1 to this evidence.
33. Attachment 3 to this evidence includes a schedule which adds the uniform transmission rate and Hydro One distribution rate impacts to the E3 member capital contribution requirement rate impacts.
34. Using the Hydro One/IESO proposed allocation methodology, the impact on a typical residential customer served by each of the 3 E3 Coalition member LDCs would be as follows:

Table 1

LDC	Annual Bill Impact (\$)¹	Annual Total Bill Impact (%)	Annual Distribution Bill Impact (%)	Cumulative (50 year) Impact (\$)²
Entegrus	1.32	0.08	0.35	66
E.L.K.	12.96	0.83	5.88	648
Essex Powerlines	8.04	0.47	2.61	402

1. All current bill components, including rate riders and the clean energy benefit, have been included in the calculation of annual total bill impact. Annual distribution bill impact excludes rate riders.
2. No time value adjustments were made.

35. Elenchus was also asked to produce an analyses of Entegrus, E.L.K. and Essex Power customer impacts under scenario "A" addressed by Hydro One Transmission in Exhibit I-P2, Tab 2, Schedule 7: i.e. allocation to the transmission pool of the full costs of the

alternative project to address ORTAC requirements avoided by the pool as a result of the SECTR project, and allocation of the balance of the SECTR transmission level costs to load.

36. Table 2, below, illustrates the average Entegrus, E.L.K. and Essex Powerlines residential customer impacts of this alternative scenario “A” cost allocation approach.
37. The derivation of the customer impacts of the Entegrus, E.L.K. and Essex Powerlines capital contribution requirements under scenario “A” is detailed in Attachment 2 to this evidence. The customer impacts of changes in uniform transmission and Hydro One Distribution rates detailed in Attachment 3 apply to this scenario as well.
38. Using this alternative scenario “A” allocation methodology, the impact on a typical residential customer served by each of the 3 LDCs is as follows:

Table 2

LDC	Annual Bill Impact (\$)¹	Annual Total Bill Impact (%)	Annual Distribution Bill Impact (%)	Cumulative (50 year) Impact (\$)²
Entegrus	1.20	0.07	0.31	60
E.L.K.	11.88	0.75	5.30	594
Essex Powerlines	7.08	0.41	2.28	354

1. All current bill components, including rate riders and the clean energy benefit, have been included in the calculation of annual total bill impact. Annual distribution bill impact excludes rate riders.
2. No time value adjustments were made.

39. Each of the foregoing analysis assumes no new “large customer” attachments in any of the 3 LDC service territories, which is in accord with the current forecast of each of the 3 LDCs.
40. Elenchus also prepared two representative capital cost allocation customer impact sensitivity models, which are reflected in Attachments 1 and 2. The two sensitivities modeled are: i) using the initial (2013) load forecast used by Hydro One Transmission

(see Exhibit JT1.3); and ii) assuming one new 600 KW customer connection in each of the E3 Coalition members' service territories.

41. Of course, there are many other potential scenarios, including fewer Hydro One Distribution new "sub-transmission" customer connections than forecast by Hydro One Distribution, and variations between actual and forecast load for one or more of the other LDCs. The resulting uncertainty of the cost allocations being proposed by Hydro One/IESO is of significant concern to the E3 Coalition members.
42. The E3 Coalition members also note that the customer impact results presented contemplate a "socialization" of the SECTR costs across all distribution customers in their respective distribution territories. Should a "beneficiary pays" principle such as that proposed by Hydro One Transmission and the IESO be applied at the distribution level as well, the customer impact results would be quite different.
43. Elenchus' derivation of the impact on the subset of E3 Coalition members' residential customers whose load would be transferred to the new proposed Leamington TS is detailed in Attachment 4 to this evidence, and the results, with addition of the impacts of changes in uniform transmission and Hydro One distribution rates (as detailed in Attachment 3), are summarized in Table 3 below.

Table 3

LDC	Annual Bill Impact (\$)¹	Annual Total Bill Impact (%)	Annual Distribution Bill Impact (%)	Cumulative (50 year) Impact (\$)²
Entegrus	79.80	4.83	25.48	3,990.00
E.L.K.	35.52	2.25	16.41	1,776.00
Essex Powerlines	51.12	2.96	16.93	2,556.00

1. All current bill components, including rate riders and the clean energy benefit, have been included in the calculation of annual total bill impact. Annual distribution bill impact excludes rate riders.
2. No time value adjustments were made.

Data for impact sensitivity analysis

	Entegrus	E.L.K.	Essex Powerlines	
Capital Contribution		(\$1,000)		Reference
Base Case				
Rate Base	600	2,700	3,500	IP229c)+IP2219
Revenue Requirement (note 1)				
Depreciation year 2	12	54	70	assumed 50 years
Interest	19.816	42.357	115.591	
ROE	23.167	96.526	135.142	
PILs	<u>-2.518</u>	<u>-13.112</u>	<u>-14.686</u>	
Total	52.465	179.771	306.047	
Res. rev. at current rates	8,346	2,153	8,147	
Impact on Res. Bill \$	0.09	1.05	0.66	
Impact on Rev Req.	0.35%	5.88%	2.61%	
Impact on Total bill	0.08%	0.83%	0.47%	

Sensitivity Case 1 - 2013 Forecast				
Rate Base	1,200	14,700	5,300	IP229c)+IP2219
Revenue Requirement (note 1)				
Depreciation	24	294	106	
Interest	39.63	230.61	175.0378	
ROE	46.33	526	204.6	
PILs -	<u>5.04</u>	<u>-71.4</u>	<u>-22.24</u>	
Total	104.930	978.753	463.443	
Res. rev. at current rates	8,346	2,153	8,147	
Impact on Res. Bill \$	0.18	5.72	1.00	
Impact on Rev Req.	0.70%	32.01%	3.95%	
Impact on Total bill	0.16%	4.52%	0.71%	

Sensitivity Case 2 - One new Customer				
New 600 kW customer contribution	0	0	36.5	
Remaining customers	600	2,700	3,464	
Revenue Requirement (note 1)				
Depreciation year 2	12	54	69.3	
Interest	20	42.357	114.4	
ROE	23	96.526	133.7	
PILs	<u>-2.518</u>	<u>-13.112</u>	<u>-14.5</u>	
Total	52.465	179.771	302.855	
Res. rev. at current rates	8,346	2,153	8,147	
Impact on Res. Bill \$	0.09	1.05	0.65	
Impact on Rev Req.	0.35%	5.88%	2.58%	
Impact on Total bill	0.08%	0.83%	0.47%	

LDC revenue requirements were calculated using the OEB cost of capital (debt and equity) parameters in effect at the time of each LDC's last re-basing. For illustrative purposes, the Year 2 impact has been used because capital contributions in Year 1 are subject to the half year rule. Further, for illustrative purposes a PILs rate of 23.07% has been used, which is reflective of recent OEB guidance provided to Essex Powerlines and not the actual PIL's rate of each utility at the time of each last re-basing which would therefore produce different results.

Data for impact sensitivity analysis

	Entegrus	E.L.K.	Essex Powerlines	
Capital Contribution		(\$1,000)		Reference
Approach A				
Approach A	526	2,433	3,062	Details Cap. Contr. Approach A
Revenue Requirement (note 1)				
Depreciation	10.53	48.67	61.24	assumed 50 years
Interest	17.38	38.17	101.12	
ROE	20.32	86.99	118.23	
PILs	<u>-2.209</u>	<u>-11.82</u>	<u>-12.85</u>	
Total	46.020	162.017	267.738	
Res. rev. at current rates	8,346	2,153	8,147	
Impact on Res. Bill \$	0.08	0.95	0.57	
Impact on Rev Req.	0.31%	5.30%	2.28%	
Impact on Total bill	0.07%	0.75%	0.41%	

Sensitivity Case 1 - 2013 Forecast

Rate Base	1,200	14,700	5,300	IP229c)+IP2219
Revenue Requirement (note 1)				
Depreciation	24	294	106	
Interest	39.63	230.61	175.0378	
ROE	46.33	526	204.6	
PILs -	<u>5.04</u>	<u>-71.4</u>	<u>-22.24</u>	
Total	105	979	463	
Res. rev. at current rates	8,346	2,153	8,147	
Impact on Res. Bill \$	0.18	5.74	0.99	
Impact on Rev Req.	0.71%	32.02%	3.95%	
Impact on Total bill	0.16%	4.53%	0.71%	

Sensitivity Case 2 - One new Customer

New 600 kW customer contribution	0	0	36.5	
Remaining customers	526	2,433	3,025	
Revenue Requirement (note 1)				
Depreciation	11	48.67	60.5	
Interest	17	38.17	99.9	
ROE	20	86.99	116.8	
PILs	<u>-2.209</u>	<u>-11.82</u>	<u>-12.7</u>	
Total	46.020	162.017	264.547	
Res. rev. at current rates	8,346	2,153	8,147	
Impact on Res. Bill \$	0.08	0.95	0.56	
Impact on Rev Req.	0.31%	5.30%	2.25%	
Impact on Total bill	0.07%	0.75%	0.41%	

LDC revenue requirements were calculated using the OEB cost of capital (debt and equity) parameters in effect at the time of each LDC's last re-basing. For illustrative purposes, the Year 2 impact has been used because capital contributions in Year 1 are subject to the half year rule. Further, for illustrative purposes a PILs rate of 23.07% has been used, which is reflective of recent OEB guidance provided to Essex Powerlines and not the actual PIL's rate of each utility at the time of each last re-basing which would therefore produce different results.

Base Case	Entegrus	E.L.K.	Essex Powerlines
Impact on Res. Bill \$	0.09	1.05	0.66
UTR 0.35% impact on RTSR \$/month	0.02	0.02	0.01
HONI DX 0.24% impact on LV rates \$/month	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>
Total \$/month	0.11	1.08	0.67
Total \$/Year	1.32	12.96	8.04

Approach A	Entegrus	E.L.K.	Essex Powerlines
Impact on Res. Bill \$	0.08	0.95	0.57
UTR 0.35% impact on RTSR \$/month	0.02	0.02	0.01
HONI DX 0.24% impact on LV rates \$/month	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>
Total \$/month	0.10	0.99	0.59
Total \$/Year	1.20	11.88	7.08

Beneficiary Principle	Entegrus	E.L.K.	Essex Powerlines
Impact on Res. Bill \$	6.63	2.94	4.25
UTR 0.35% impact on RTSR \$/month	0.02	0.02	0.01
HONI DX 0.24% impact on LV rates \$/month	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>
Total \$/month	6.65	2.96	4.26
Total \$/Year	79.80	35.52	51.12

	Entegrus	E.L.K.	Essex Powerlines
Beneficiary Principle Base Case	(\$1,000)		
Revenue Requirement (note 1)			
Depreciation year 2	12	54	70
Interest	19.816	42.357	115.591
ROE	23.167	96.526	135.142
PILs	-2.518	-13.112	-14.686
Total	52.465	179.771	306.047
Number of Residential customers benefiting from SECTR Project (Note 2)	659	5,104	6,000
Change in Monthly bill \$	6.63	2.94	4.25

Note 1

LDC revenue requirements were calculated using the OEB cost of capital (debt and equity) parameters in effect at the time of each LDC's last re-basing. For illustrative purposes, the Year 2 impact has been used because capital contributions in Year 1 are subject to the half year rule. Further, for illustrative purposes a PILs rate of 23.07% has been used, which is reflective of recent OEB guidance provided to Essex Powerlines and not the actual PIL's rate of each utility at the time of each last re-basing which would therefore produce different results.

Note 2

Assumes that only Residential customers benefit from SECTR project. The majority of customers benefiting are Residential customers in the E3 Coalition LDCs

	Entegrus	E.L.K.	Essex Powerlines
Beneficiary Principle Sensitivity Case 1 2013 Load Forecast	(\$1,000)		
Revenue Requirement (note 1)			
Depreciation year 2	24	294	106
Interest	39.63	230.61	175.04
ROE	46.33	525.53	204.64
PILs	- 5.04	- 71.39	- 22.24
Total	104.930	978.753	463.443
Number of Residential customers benefiting from SECTR Project (Note 2)	659	5,104	6,000
Change in Monthly bill \$	13.27	15.98	6.44

	Entegrus	E.L.K.	Essex Powerlines
Beneficiary Principle Sensitivity Case 2 One New Customer	(\$1,000)		
Revenue Requirement (note 1)			
Depreciation year 2	12	54	69
Interest	19.82	42.36	114.39
ROE	23.17	96.53	133.73
PILs	- 2.52	- 13.11	- 14.53
Total	52.465	179.771	302.855
Number of Residential customers benefiting from SECTR Project (Note 2)	659	5,104	6,000
Change in Monthly bill \$	6.63	2.94	4.21