Exhibit 5

OEB’s Combined Service Area Amendment Decision with Reasons, RP-2003-0044, dated February 27, 2004

Ontario Energy Board | Commission de l'Énergie de l'Ontario

RP-2003-0044

IN THE MATTER OF APPLICATIONS BY

Centre Wellington Hydro	**EB-1999-0269**
Veridian Connections Inc. (1)	**EB-1999-0260**
Enwin Powerlines Ltd.	**EB-1999-0281**
Erie Thames Powerlines Corp.	**EB-2002-0462**
Chatham-Kent Hydro Inc.	**EB-1999-0216**
Essex Powerlines Corp.	**EB-2002-0524**
Cooperative Hydro Embrun Inc.	**EB-2002-0482**
Veridian Connections Inc. (2)	**EB-2003-0020**
Hydro One Networks Inc.	**EB-2003-0031**

FOR

AMENDMENTS TO THEIR LICENSED SERVICE AREA

DECISION WITH REASONS

2004 February 27

Ontario

RP-2003-0044

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

AND IN THE MATTER OF applications by Centre Wellington Hydro, Veridian Connections Inc., EnWin Powerlines Ltd., Erie Thames Powerlines Corp., Chatham-Kent Hydro Inc., Essex Powerlines Corp., Cooperative Hydro Embrun Inc. and Hydro One Networks Inc. pursuant to subsection 74(1) of the Ontario Energy Board Act, 1998 to amend Schedule 1 of their Distribution Licences.

BEFORE:

Paul Sommerville
Presiding Member

Arthur Birchenough
Member

Cathy Spoel
Member

DECISION WITH REASONS

February 27, 2004

TABLE OF CONTENTS

1 INTRODUCTION [12]

1.1 The Applications [13]

1.2 The Proceeding [16]

1.3 Parties [20]

1.4 Issues [29]

1.5 Critical Connection Hearings [33]

1.6 Expert Evidence and Final Submissions on Principles [37]

1.7 Access to the Record of the Proceeding [42]

2 LEGISLATIVE OBJECTIVES [45]

2.1 Facilitation of Competition and Non-Discriminatory Access [47]

2.2 Protection of the Interests of Consumers [59]

2.3 Economic Efficiency and Maintenance of a Financially Viable Industry [65]

3 TYPES OF SERVICE AREA AMENDMENTS [91]

3.1 Overlapping Service Areas [97]

3.2 Embedded Service Areas [133]

3.3 Contiguous Border Amendments [188]

4 PRINCIPLES FOR DEALING WITH SERVICE AREA AMENDMENTS [201]

4.1 Summary of Principles Already Discussed [202]

4.2 Customer Preference [210]

4.3 Economic Efficiency [234]

4.4 Impacts on Customers in the Amendment Area [250]

4.5 Impacts on Applicant and Incumbent Distributors and their Customers [274]

5 FILING AND PROCESS REQUIREMENTS [295]

Section 1: General Information Filing Requirements for all Service Area Amendment Applications [297]

Section 2: Additional Information Filing Requirements for Contested Applications [313]

12

1 INTRODUCTION

13

1.1 The Applications

14

Applications were filed with the Ontario Energy Board pursuant to subsection 74(1) of the *Ontario Energy Board Act, 1998*, S.O. 1998, c.15, Sched. B ("OEB Act"), by nine distributors for amendments to their licensed service area. The applicants and the Board's assigned file numbers are listed below:

15

•	Centre Wellington Hydro	EB-1999-0269
•	Veridian Connections Inc. (1)	EB-1999-0260
•	Enwin Powerlines Ltd.	EB-1999-0281
•	Erie Thames Powerlines Corp.	EB-2002-0462
•	Chatham-Kent Hydro Inc.	EB-1999-0216
•	Essex Powerlines Corp.	EB-2002-0524
•	Cooperative Hydro Embrun Inc.	EB-2002-0482
•	Veridian Connections Inc. (2)	EB-2003-0020
•	Hydro One Networks Inc.	EB-2003-0031

16

1.2 The Proceeding

17

Notices of Application were published for all nine individual applications. Procedural Orders requesting submissions from intervenors and responding submissions from the applicants were issued with respect to Centre Wellington Hydro Ltd., Veridian Connections Inc.(1), and Chatham-Kent Hydro Inc. The Board received submissions and requests from intervenors to deal with these applications by way of oral hearings.

18

On March 28, 2003, the Board issued Procedural Order No. 1 combining the nine individual proceedings into one proceeding. The purpose of this combination of cases was to enable the Board to consider the issues raised by service area amendment applications and to develop, to the extent possible, a series of principles to assist the Board in its consideration of current and future like applications.

19

The Board assigned file number RP-2003-0044 to this combined proceeding. All applicants and intervenors to the individual proceedings became parties to the single combined proceeding. The Board indicated that it intended to proceed in this matter by way of an oral hearing. Given the potential for the issues raised to affect other parties, particularly distributors, the Board considered it appropriate to make provision for the intervention of persons other than those already party to one of the individual proceedings. A schedule for the filing of evidence and for an interrogatory process was set out in Procedural Order No. 1, and later extended in Procedural Orders No. 5 and No. 6.

1.3 Parties

20

21

The following parties participated in the combined proceeding RP-2003-0044:

22

	Applicants	Representative(s)
1	Centre Wellington Hydro Ltd. (Centre Wellington)	Mr. Andy Chan Mr. Mike McLeod Mr. Doug Sherwood
2	Chatham-Kent Hydro Inc. (Chatham-Kent)	Mr. Tom Brett Mr. James Fisher Mr. Jim Hogan Mr. David Kenney Mr. Raymond R. Payne
3	Cooperative Hydro Embrun Inc. (Embrun)	Mr. Benoit Lamarche
4	ENWIN Powerlines Ltd. (ENWIN) one of SW Applicants	Ms. Giovanna Gesuale Ms. Carol Godby Mr. David Southam
5	Erie Thames Powerlines Corporation (Erie Thames) one of SW Applicants	Mr. Jeff Pettit Ms. Carol Godby Mr. David Southam
6	Essex Powerlines Corporation (Essex) one of SW Applicants	Mr. Mark Aliner Mr. Raymond Tracey Ms. Carol Godby Mr. David Southam

7	Hydro One Networks Inc. (Hydro One)	Ms. Mary Anne Aldred Mr. Michael Engelberg Mr. Brian Gabel Mr. Blair Macdonald Mr. Glen MacDonald Ms. Anne Powell Mr. Donald Rogers
8	Veridian Connections Inc. (Veridian)	Mr. George Armstrong Mr. Andy Chan Mr. Mike McLeod Mr. Axel Starck

	Intervenors	**Representative(s)**
9	Barrie Hydro Distribution Inc.	Ms. Barb Gray
10	Bluewater Power Distribution Corporation	Ms. Janice L. McMichael
11	Boniferro Mill Works Inc.	Mr. Jim Boniferro Mr. Robert W. Reid
12	Brantford Power Inc. a member of LDC Coalition	Mr. George Mychailenko Mr. J. Mark Rodger Mr. James C. Sidlofsky
13	Chatham & District Chamber of Commerce	Mr. Reg MacDonald
14	County of Hastings / Hastings Manor	Mr. J. Colin Rushlow

15	Electricity Distributors Association (EDA)	Ms. Kelly Friedman Mr. Charlie Macaluso Mr. Wayne Taggart
16	Enersource Hydro Mississauga Inc. a member of LDC Coalition	Mr. Chris Buckler Mr. J. Mark Rodger Mr. James C. Sidlofsky
17	FortisOntario Inc.	Mr. Tom Brett Mr. Timothy Curtis
18	Grand River Raceway / The Woolwich Agricultural Society	Dr.C. E.(Ted) Clarke
19	Great Lakes Power Limited	Mr. Jim Deluzio Mr. Charles Keizer Mr. Andrew Taylor
20	Hamilton Hydro Inc. a member of LDC Coalition	Mr. Cameron McKenzie Mr. J. Mark Rodger Mr. James C. Sidlofsky
21	Hydro Connection Inc.	Mr. Paul Jemmett

22	Hydro One Networks Inc. (Hydro One)	Ms. Mary Anne Aldred Mr. Michael Engelberg Mr. Brian Gabel Mr. Blair Macdonald Mr. Glen MacDonald Ms. Anne Powell Mr. Donald Rogers
23	Hydro Ottawa Limited a member of LDC Coalition	Ms. Lynne Anderson Mr. J. Mark Rodger Mr. James C. Sidlofsky
24	Hydro Vaughan Distribution Inc. a member of LDC Coalition	Mr. Eric Fagen Mr. James C. Sidlofsky
25	Local Union 636 of the International Brotherhood of Electrical Workers	Mr. J. R. Wacheski
26	Markham Hydro Distribution Inc. a member of LDC Coalition	Ms. Paula Conboy Mr. James C. Sidlofsky
27	Milton Hydro Distribution Inc.	Mr. Don Thorne
28	Municipality of Central Elgin	Mr. Lloyd Perrin Ms. Carol Godby Mr. David Southam
29	Municipality of Chatham-Kent	Mr. Brian Knott Mr. Jim Wickett

30	Municipality of Leamington	Mr. William J. Marck Ms. Carol Godby Mr. David Southam
31	Newmarket Hydro Ltd.	Ms. Gaye-Donna Young
32	Oshawa PUC Networks Inc.	Ms. Christine Dade
33	Power Workers' Union (PWU)	Mr. Andrew Lokan Mr. Richard P. Stephenson
34	Richmond Hill Hydro Inc.	Mr. Mike Psotka
35	St. Catharines Hydro Utility Services Inc. a member of LDC Coalition	Mr. John Kerklaan Mr. J. Mark Rodger Mr. James C. Sidlofsky
36	The Corporation of The City of Windsor	Mr. Mark Nazarewich Ms. Carol Godby Mr. David Southam
37	The Corporation of the Town of Tecumseh	Ms. Laura Moy Ms. Carol Godby Mr. David Southam
38	Toronto Hydro- Electric System Limited (Toronto Hydro)	Mr. Rick Zebrowski Ms. Colleen Walwyn Mr. J. Mark Rodger

39	Town of Amherstburg	Mr. Dave Mailloux Ms. Carol Godby Mr. David Southam
40	Township of Centre Wellington	Mr. Brett Salmon
41	Upper Grand District School Board	Mr. Tom Smith
42	Vulnerable Energy Consumers Coalition (VECC)	Mr. Michael Janigan Mr. Bill Harper Ms. Sue Lott
43	Westario Power Inc. (Westario Power)	Mr. Guy Cluff Mr. Scott Stoll
44	Wirebury Connections Inc. (Wirebury)	Mr. David Matthews Mr. Dennis O'Leary
45	Ontario Energy Board Staff	Ms. Jennifer Lea Mr. David Brown Mr. Robert Gordon Mr. Gordon Ryckman Ms. Judy Duan

Expert Witnesses

24

25

- Mr. David Southam from RDII Utility Consulting & Technologies Inc. on behalf of the Southwest Applicants

26

- Dr. John Chamberlin and Dr. Bruce Humphrey from KEMA-Quantec Incorporated on behalf of Hydro One

27 • Dr. Adonis Yatchew from University of Toronto on behalf of Toronto Hydro and the LDC Coalition

28 • Mr. John Todd from Elenchus Research Associates on behalf of Wirebury

29 ## 1.4 Issues

30 Procedural Order No.1 expressed the Board's intent to develop principles to ensure a consistent approach to service area amendment applications. To focus this process the Board prepared a draft issues list. The Board directed that an Issues Conference be held on April 29, 2003 to enhance and finalize the draft issues list and that an Issues Day proceeding take place on May 1, 2003. Procedural Order No. 2 rescheduled these events and made provision for certain filings.

31 On May 6, 2003, the Board issued Procedural Order No. 4 approving the Issues List for the Combined Proceeding. The Board panel accepted the Proposed Issues List, including a Supplemental Issues List, which was developed and accepted by all parties at the Issues Conference. As a result of this consensus, the Issues Day scheduled for May 2, 2003 was cancelled.

32 During the Issues Conference a number of parties expressed interest in receiving from the Board a ruling regarding the scope of its jurisdiction in the consideration of service area amendments with respect to existing customers. The Board agreed to expedite the hearing of this jurisdictional issue. Accordingly, the Board, in Procedural Order No. 4, invited parties to the proceeding to make submissions on the jurisdictional issue. Written submissions were received and considered by the Board, and oral submissions were provided at a hearing on May 20, 2003. The Board issued its Decision on the jurisdictional issue on June 23, 2003.

33 ## 1.5 Critical Connection Hearings

34 On April 17, 2003, the Board issued Procedural Order No. 3 which indicated that applications from Embrun (EB-2002-0482), Chatham-Kent (EB-1999- 0216), Centre Wellington (EB-1999-0269) (only with respect to supply of Grand River Raceway), and Veridian (2) (EB-2003-0020) might have to be dealt with on an urgent basis in response to information filed by these parties regarding critical in-service requirements. The Board stated that it would hear these requests for expedited amendment orders in oral hearings. The Board further indicated that decisions regarding these specific applications would not set precedents for future decisions, might be interim in nature, and might contain certain conditions or restrictions deferring to the final decision of the Board in the combined proceeding.

35 The expedited applications were heard and decided as follows: Centre Wellington on May 12, 2003, Veridian on May 13, 2003, Chatham-Kent on May 14, 2003, and Embrun on May 15, 2003.

36 The remaining individual applications are outstanding, awaiting this decision of the Board on the principles to be considered in service area amendment applications.

1.6 Expert Evidence and Final Submissions on Principles

37

38 On October 27, 2003, the Board issued Procedural Order No. 7 providing for the delivery of final oral submissions to the Board on the principles that should guide the Board in determining service area amendment applications and setting hearing dates for the remaining applications.

39 The Board subsequently received motions from Hydro One, Toronto Hydro and the LDC Coalition seeking a variance or cancellation of Procedural Order No. 7. The motions sought an opportunity to call evidence from certain expert witnesses. On November 7, 2003, the Board issued Procedural Order No. 8 suspending the dates for argument set out in Procedural Order No. 7, and made provision for the hearing of the motions.

40 On November 13, 2003, the Board heard and decided the motions. The motion of Hydro One was granted, and those of Toronto Hydro and the LDC Coalition were granted in part. The provisions made in Procedural Order No. 7 were varied so as to provide for an opportunity for the oral testimony of the following experts: Dr. John Chamberlin and Dr. Bruce Humphrey (Kema-Quantec), Dr. Adonis Yatchew, Mr. John Todd, and Mr. David Southam. The Board set dates for the filing of, and interrogatory process on, Dr. Yatchew's evidence.

41 The experts testified on December 15 to18, 2003. Final oral submissions by parties on the principles to be applied to service area amendments were made on December 18 and 19, 2003.

1.7 Access to the Record of the Proceeding

42

43 Copies of the evidence, exhibits, arguments, interrogatory responses, and transcripts of the proceeding are available for review at the Board's offices. The Board, with industry participation, has developed standards and processes for the electronic regulatory filing ("ERF") of evidence, submissions of parties, Board orders and decisions. This Decision with Reasons will be available in ERF form shortly after initial copies are issued in hard copy. The ERF version will have the same text and numbered headings as the initial hard copy, but may be formatted differently.

44 The Board has considered all of the evidence, submissions and arguments in this proceeding, but has summarized the evidence and the positions of the parties only to the extent necessary to provide context for its findings.

2 LEGISLATIVE OBJECTIVES

Section 70(11) of the OEB Act requires that a licence specify the area in which a distributor is authorized to distribute electricity. Section 74(1) of the OEB Act allows the Board to amend electricity licences where the amendment is in the public interest. In exercising its power under section 74(1), the Board must have regard to the objectives of the Board as set out in section 1 of the OEB Act and the purposes of the *Electricity Act, 1998*, S.O. 1998, c. 15, Sched. A ("Electricity Act"). The objectives of the OEB Act relevant to this proceeding and the corresponding purposes of the Electricity Act are identical. In making determinations in the public interest respecting licensing matters, the Board will consider the objectives together with all other relevant considerations.

2.1 Facilitation of Competition and Non-Discriminatory Access

The first two objectives in the OEB Act in relation to electricity read as follows:

1 To facilitate competition in the generation and sale of electricity and to facilitate a smooth transition to competition.

2 To provide generators, retailers and consumers with non-discriminatory access to transmission and distribution systems in Ontario.

The SW Applicants and Wirebury argued that the word "sale" in the first objective includes the distribution of the commodity, not merely the retailing of electricity, and that it is therefore an important objective of the Board to facilitate competition in distribution. Wirebury further argued that the phrase "non-discriminatory access to ... distribution systems" implies competition in distribution. It argued that this interpretation of the Board's objectives is consistent with section 28 of the Electricity Act, which promotes customer choice by allowing customers to make a request for connection.

Hydro One and Toronto Hydro, among others, argued that the word "sale" in the first objective does not include distribution, and that where the legislature intended to govern "distribution" in section 1 of the OEB Act, it explicitly used that word. In their view, the absence of the word "distribution" in the first objective is a clear indication that the facilitation of competition in distribution was not intended. With regard to the second objective, Hydro One argued that non-discriminatory access does not mean the facilitation of customer choice for connections among common wires infrastructures in licensed service territories. Rather, the second objective refers to the ability of customers to purchase electricity from their choice of generator or retailer and the obligation of the monopoly wires transmitter and distributor to wheel this commodity to the customer.

VECC argued that the existence of the second objective demonstrated that the legislature did not intend that distribution services should be subject to competition. In its view, the only reason that

any reference to non-discriminatory access was needed was because distribution was intended and understood to be a monopoly business.

54

Board Findings

55

The Board is of the view that the phrase "sale of electricity" in objective 1 is intended to govern the sale of the commodity per se, and does not include distribution. The fact that the legislation does not refer explicitly to distribution in this objective, while doing so elsewhere in the OEB Act, is an important indication that the legislature did not intend to require the Board to facilitate competition in electricity distribution. This interpretation is reinforced by the following quotation from the Ministry of Energy's White Paper, Direction for Change:

56

> "However, transmission and local distribution remain natural monopolies, and are not amenable to direct competition"

57

This Paper, which was referenced by a number of Intervenors, was an important contributor to the policy development leading up to the creation of the new electricity market.

58

The Board agrees with VECC and others that objective 2 is a further indication that the legislators viewed distribution as a natural monopoly service. The Board finds that "non-discriminatory access" does not equate to competition, and that, in fact, the use of this language by the legislature reinforces our conclusion that the legislature regarded distribution to be a monopoly business. The ability of a customer to request a connection under section 28 of the Electricity Act does not imply that competition must exist in distribution.

59

2.2 Protection of the Interests of Consumers

60

The third objective reads as follows:

61

3 To protect the interests of consumers with respect to prices and the reliability and quality of electricity service.

62

Board Findings

63

It was argued by some that the third objective reinforces the importance of customer preference in service area amendments. However, in the Board's view, the protection of consumer interests encompasses broader considerations than the immediate and narrow interest of a given consumer at a given point in time. In our view the term requires the Board to consider the protection of the interests of other consumers in the proposed amendment area, the remaining customers of each utility, and the interests of electricity consumers throughout the province, over a time period that includes more than the short-term implications of any given action. Individual customer preference must be balanced with the interests of all consumers with respect to prices and the reliability and

quality of electricity service. The preference of a particular customer or group of customers cannot be relied upon to yield results that are necessarily in the overall public interest.

64 The Board finds that the protection of the interests of the larger group of consumers affected by any service area amendment application must take precedence over the preference of any individual consumer. The more general interest of consumers will be protected through the rational optimization of existing distribution systems.

2.3 Economic Efficiency and Maintenance of a Financially Viable Industry

65

66 Objectives 4 and 5 read as follows:

67 4 To promote economic efficiency in the generation, transmission and distribution of electricity.

68 5 To facilitate the maintenance of a financially viable electricity industry.

69 The Board heard a considerable body of expert evidence touching on the implications of these objectives for the Board's consideration of service area amendments. Each expert witness provided evidence on the question of what constitutes an economically efficient outcome in the distribution sector. Dr. Yatchew, on behalf of Toronto Hydro and the LDC Coalition, indicated that the preservation of economic efficiency in Board decisions on service area amendments would require:

70 • the maintenance of exclusive service areas

71 • preservation of economies of contiguity, density, and scale for the distribution system

72 • consistency with existing electricity networks

73 • smooth and contiguous service area boundaries

74 • favouring a connection at the lowest economic incremental cost.

75 Dr. Yatchew stated that electricity distribution is a spatial natural monopoly where the justification for exclusive service areas arises from the economies of contiguity and customer density that exclusivity achieves. Overlapping service areas or fragmentation of service areas through embedding would reduce overall economies of contiguity, density and scale. System planning would become less efficient and may be characterized by redundancies, competitive rushing to low cost, high density areas and avoidance of less dense areas with high service costs. This phenomenon is sometimes referred to as "cream skimming" or "cherry picking".

76 In the case of so-called “border competition” for connections that lie close to the boundary of two contiguous utilities Dr. Yatchew indicated that efficient service area amendment decisions could be made on the basis of least incremental cost of providing services. He argued that this approach should be tempered by a regard for the integrity of future system planning. The distributor with the least incremental cost of providing the connection should not always be the one chosen to make the connection. In addition, if choosing the lower incremental cost utility were to introduce a problematic lack of smoothness in utility boundaries, or would unreasonably complicate future planning processes then the decision should go the other way.

77 Mr. Todd, on behalf of Wirebury, drew a distinction between existing customers on the one hand and new customers in “unserved” and “underserved” locations on the other. With respect to existing customers, Mr. Todd accepted the standard view of the natural monopoly model that competition would likely not bring efficiency benefits and would also be unsustainable due to duplication of capital. However, with regard to new customers in unserved and underserved locations, Mr. Todd indicated that it was at least possible that efficiency benefits could be found, and losses avoided, if decisions on service area amendments focused directly on avoiding duplication of facilities rather than prohibiting competition per se.

78 Some parties criticized Mr. Todd’s distinction between existing customers, and unserved and underserved customers, as a weak or false distinction in practice. In their view, many distribution customers could at one time or another be considered unserved or underserved, leading to a situation where service area amendments involving those customers would bring about the harms to efficiency envisioned in Dr. Yatchew’s evidence.

79 Mr. Todd further testified that economic theory provides three broad categories of efficiencies: technical (producing a given output at minimum cost); allocational (making correct choices over varying quantities of alternative goods – for example how much electricity distribution versus natural gas distribution should be produced– as guided by appropriate price signals); and dynamic (correct timing of cost minimizing investments). In cases where no duplication of investment or other effort is anticipated, Mr. Todd expressed the view that competition between distributors could generate efficiency benefits in the technical and dynamic areas, but is unlikely to have a significant effect on allocational efficiency.

80 The SW Applicants argued that economic efficiency is promoted when an electricity distribution service area corresponds to municipal planning areas, as this correspondence promotes a more unified, timely and cost-effective municipal infrastructure servicing response. In their view, their proposal for overlapping service areas would also increase the contiguity, density, and economies of scale of the SW Utilities. Local economic development would be promoted by a match between municipal and electric distribution service areas.

81 Chatham-Kent suggested service area expansion to the municipal borders by the municipally owned distributor would improve rationalization of distribution assets. Distribution costs, including capital costs, operating and maintenance costs, and settlement costs with the IMO, would decrease as a result of fewer wholesale metering points, fewer substations and the reduction of non-distribution assets.

82 Hydro One argued that the introduction of competition into the distribution business and the potential for greater uncertainty for future load growth could have adverse impacts on credit ratings of incumbent distributors. In Hydro One's view, competition would result in a deterioration in utilities' earnings and financial profile and increased business risk. Hydro One noted that its credit rating and that of other distributors is based on their respective service territories being considered to be monopoly common carrier wires franchises, not subject to competition and boundary changes. Any downgrade would increase the cost of capital and place upward pressure on distribution rates. This would reduce economic efficiency in the sector as a whole.

83 **Board Findings**

84 The promotion of economic efficiency in the distribution sector is one of the Board's guiding objectives in the regulation of the electricity sector. The Board is persuaded that economic efficiency should be a primary principle in assessing the merits of a service area amendment application. Economic efficiency would include ensuring the maintenance or enhancement of economies of contiguity, density and scale in the distribution network; the development of smooth, contiguous, well-defined boundaries between distributors; the lowest incremental cost connection of a specific customer or group of customers; optimization of use of the existing system configuration; and ensuring that the amendment does not result in any unnecessary duplication or investment in distribution lines and other distribution assets and facilities. The Board recognizes that there may be applications where all these components of economic efficiency do not apply.

85 In addressing economic efficiency, applicants should demonstrate that the proposed amendment does not reduce economies of contiguity, density and scale, and preferably that the amendment enhances these economies. Generally, the applicant should be able to demonstrate that it can provide the lowest cost connection, and that the proposed connection is consistent with existing networks, avoiding duplication. An increase, or at least no decrease in the smoothness of the boundaries between the utilities is also desirable.

86 The Board does not believe that significant weight should be put on differences in current distribution rates even though current rates may be a significant factor in determining customer preference. In fact current rates, insofar as they are not a predictor of future rates, may misinform customer preference. As Dr. Yatchew indicated, an applicant demonstrating that its rates are lower than the rate of the incumbent utility would not be a satisfactory demonstration that its costs to serve the amendment area will be lower on a sustainable basis.

87 In its consideration of the economic efficiency of any given amendment proposal, an important factor will be the extent to which a proposal builds upon existing, well-developed electricity distribution assets from high or medium density systems. In many instances this will favour proposals that represent the extension of an existing local distribution system into a contiguous area. Proposals that are attempts to stretch distribution assets to create outposts of service will not be favoured.

88 The marked emphasis on economic efficiency which will characterize the Board's consideration of service area amendments related to connection proposals will also serve to give effect to the fifth objective, which concerns the maintenance of a financially viable industry.

89 A consistent application of the Board's emphasis on economic efficiency should result in connection decisions which optimize the existing infrastructure. This enhances the local distribution company's return on its investments, and should result in rewards for shareholders, and ratepayers. Ensuring that connection decisions are made on the basis of an effective use of existing infrastructure will create a system-wide, indeed a province-wide avoidance of unnecessary expenditures, and the attendant implications for electricity rates. Inefficient connection activities work to the prejudice of local distribution utilities, and their customers.

90 Further findings with respect to economic efficiency, and the implications of those findings on service area amendment applications, are found in section 4.3 of this Decision.

3 TYPES OF SERVICE AREA AMENDMENTS

91

92 This proceeding examined three generic categories of service area amendments.

93 The first, overlap, would permit more than one distributor to serve a particular customer, group of customers or geographic area.

94 The second, embedding, would entail allowing an existing or newly licensed distributor to establish a distribution system nested within a host distributor's service area. Typically, the party seeking to embed would seek to establish a retail or distributor point of supply from the host utility. The embedded service area could be exclusive or overlapping.

95 The third, contiguous border amendments, would allow an existing distributor to seek to serve a customer, group of customers or geographic area that is contiguous to its service area but within the existing service area of the neighbouring distributor. Under this category, the licensed service area could be transferred from the incumbent to the applicant, or it could become an overlapping service area for both the applicant and incumbent distributor.

96 The individual applications in this proceeding are driven by two types of customer involvement. The first situation pertains to a specific customer or group of customers who have requested service from the applicant. The second type of amendment is not related to specific customers but to a request made as a result of municipal planning considerations. In these cases, an applicant seeks to expand its service territory out to a municipal boundary or to an area where there is expected to be future development and the need for either new or significantly expanded distribution facilities. The second situation often involves both new and existing customers.

97

3.1 Overlapping Service Areas

98 It has been proposed that in some circumstances overlapping service areas should be approved to allow more than one distributor to supply a service area. Within the area of overlap, two or more distributors would directly compete for new, and possibly existing, customers. The area of overlap could include the higher growth urban development area of municipalities or, as some parties have proposed, it could extend to the full municipal boundaries.

99

Experts' Evidence

100 Mr. Southam and Mr. Todd were the main proponents of overlap. Mr. Southam testified that overlap would be beneficial because it would allow both new and existing customers choice in their electrical distributor. Customers seeking electricity service within municipal boundaries often do not understand why they cannot be served by the local municipal distributor. He also indicated it would provide municipalities with greater input and control of the electrical infrastructure as it pertains to the implementation of economic development initiatives in the municipality.

101 Mr. Todd indicated the main benefit of overlap is the fact that it would introduce an element of competition to the distribution function that would create incentives for innovation, cost reduction and improved customer service. In his model there is no proposed switching of existing customers. Competition would only be for "unserved or underserved" customers. The winning distributor would then provide monopoly service. Mr. Todd did agree, however, that the use of an overlapping concept would result in a greater incentive for existing customers in the overlapping area to want to switch from a higher rate distributor to a lower rate distributor. Mr. Todd also indicated that if overlap were permitted, the amendment process would likely be less cumbersome since it would not require the processing and approval of many individual amendments. It would thus reduce regulatory burden on the Board and for distributors by reducing the number of individual amendment applications requiring Board approval of specific boundary changes.

102 Dr. Yatchew, Dr. Chamberlin and Dr. Humphrey argued against the overlapping concept.

103 Dr. Yatchew indicated that the introduction of overlapping service areas would result in higher costs overall. Customer density would tend to be diluted, resulting in higher average costs. There would also be increased potential for suboptimal capital planning or redundancies with more than one firm competing for customers in the area. There would be a tendency for distributors to rush to construct facilities to serve the most profitable customers and a tendency to avoid investment for supply of the less profitable customers in the overlapping area. This would increase the potential for inefficiencies and the need for additional regulatory scrutiny. Dr. Yatchew also indicated that establishing a reasonable benchmark for a PBR regime could be difficult because system evolution and customer growth would be less predictable.

104 Dr. Chamberlin and Dr. Humphrey from KEMA-Quantec indicated that with overlapping service areas, stranded cost and duplication of facilities would likely occur. They also indicated that with overlap there may be greater confusion about a distributor's obligation to serve and customer confusion about connection choices. Basic tasks such as operation, maintenance and storm recovery would also become more complex and costly, resulting in longer restoration times, reduced reliability and increased risk of electrical safety problems because of the duplication of lines, increased technical complexity and the need for additional safety protocols to permit more than one workforce to operate in the same area. Planning and load forecasting would become more complex and uncertain, resulting in greater business risk and associated increased cost of capital.

105 **Positions of the Parties**

106 Hydro One was of the view that there is no unserved area in Ontario's electricity distribution system. The Hydro One licence extends to those parts of the province not already included in the service area of any other distribution company, and where Hydro One has a distribution line. In its view, the incumbent distributor has already planned and built upstream assets in service areas. Overlapping or new embedded service areas will, in its view, lead to higher cost to the industry as a whole due to inefficiency evidenced by duplication of facilities, stranding of the incumbents' assets and financial uncertainty.

107 Westario supported permitting service area amendments which would result in overlapping service areas, arguing that it would allow for competition among distributors and benefit consumers. By providing a larger service area, the distributor is able to plan for the possibility of servicing other customers in that vicinity. Westario argued that overlap is administratively more efficient as it removes the necessity for many service area amendment applications.

108 In Westario's view, customers in the overlapping area should be allowed to choose their distributor. To prevent existing customers being adversely affected by a service area amendment, the customer switching cost should include the costs of reimbursing the incumbent for any stranding. The issue of stranding assets could be taken into account in any offer to connect.

109 Westario did not fully support the use of municipal boundaries for the licensed service areas. Electrical system and municipal boundaries may not be in concert with each other, and the physical infrastructure developed over time may provide the more efficient and practical solution. Westario supported more emphasis being placed upon the economics, service quality indicators and system reliability, rather than customer preference at the early stages of establishing a service area. However, once the service area is established, the ability of the customer to chose the distributor would assume increasing importance.

110 Wirebury supported overlapping service areas, arguing this would appear to be the most cost effective and efficient way to manage future competition for distribution services as per section 70 (6) of the OEB Act. In its view such an approach would augment an existing distributor's obligations to the customer, as any overlapped distributor would have the same obligations. Hydro One should continue to be the default electricity distributor. In Wirebury's view, service area amendments should not be limited to contiguous expansion as this would restrict the benefits of competition to new customers on the fringes of existing service areas.

111 The SW Applicants proposed overlapping distribution licences out to their municipal boundaries to incorporate new customers and increase their contiguity, density, and economies of scale. The SW Applicants assert that due to the progressive urbanization of rural areas, customers are demanding the service and rates associated with urban utilities. In their view, overlapping service areas would provide discernible benefits to customers in response to these demands. A distribution service area corresponding to municipal planning would ensure local economic development and an easier and more unified, standardized, timely and cost effective municipal servicing response. The SW Applicants are also of the view that permitting overlapping distribution service areas is the only lawful way to proceed.

112 The SW Applicants believe that all licensed distributors in an overlapping service area would have an obligation to serve any customer requesting connection. Customers should have non-discriminatory access to the distribution system, in exchange for just and reasonable charges. Moreover, there should not be any difference in the treatment of either new or existing customers. Factors that affect customers include current rates, serving advantages such as timeliness, cost and ease of connection and emergency response time and reliability. The distribution service to customers should be analysed on a case-by- case basis according to customer needs and the capacity and characteristics of distribution facilities in the vicinity. An overall cost-benefit analysis of service area amendments should not be used.

113 Veridian proposed that service area amendments should only be permitted which result from a rational expansion of a distributor's existing system or "managed competition". Its proposal would be limited to new customers in the overlapping service areas at the periphery of existing contiguous licensed distribution service areas, where new customers can connect to the distributor of their choice. A rational and efficient expansion of distribution infrastructure would be represented by the least cost connection, based on the discounted cash flow methodology in the Distribution System Code.

114 Veridian argued that the degree to which service areas should overlap would be based on the degree to which there are unserved or underserved areas with the potential for new customer growth. Veridian emphasized that decisions regarding which distributor will serve a customer in an unserved or underserved area must be made within very short time frames, well before the connection is required. Rates should not be considered when deciding on service area amendments.

115 Chatham-Kent believes that overlapping service territories are permitted under subsection 70(6) of the OEB Act and that in some circumstances overlapping will reduce the potential for the duplication of assets, and will help meet the Board's objectives to promote efficiency in the distribution system. Consideration should be given to the elimination or reduction of the duplication of distribution assets, minimization of load transfers and economic impacts on customers.

116 The PWU argues that overlapping service areas should not be permitted due to inefficiency. They will result in dilution of customer density, suboptimal planning and the potential for gaming. They will also lead to customer confusion and increased risks to worker safety.

117 VECC took the position that overlapping service areas should not be approved by the Board. First, overlapping service areas would increase costs for all utilities. Secondly, they would significantly increase the likely occurrence of underutilized and stranded assets. Thirdly, too much reliance would be placed on customer preference.

118 FortisOntario recommended that distributors be allowed to apply for overlapping service areas before specific developments create the need for more rushed decision making. The basis for decision making on the applications would be based on broad service territories in anticipation of future customers or potential development rather than actual development.

119 FortisOntario argued that customers in overlapping service areas should be allowed to choose their distributor. This would allow customers to select providers based on their own priorities, such as rates, connections charges, reliability and the quality of customer service. Making the choice available to customers would not constitute cherry picking, but rather, would reflect the underlying economic reality. Choice will ultimately provide benefits to all distribution customers while providing a degree of market discipline. Competition for customers provides a management incentive and forces a distributor to improve, such as offering new and innovative services.

120 In Toronto Hydro's view, overlapping service areas are not in the public interest, as they contribute to inefficiencies in electricity distribution. This includes the duplication of distribution infrastructure and confusion with respect to distributors' obligations to connect and serve customers. Potential

adverse impacts on incumbent distributors include the inability to recover stranded costs, cherry picking of high profit customers, higher borrowing costs resulting from lower growth potential, and a disincentive for long term planning. Current rates should have no bearing on service area amendments.

121 Toronto Hydro suggested that the "cherry picking" of high-value customers would have adverse impacts on system planning and the rates of remaining customers in the incumbent's service area. Where an incumbent has planned and expanded its distribution system to accommodate customers moving into the incumbent's service area, there is no merit in permitting the transfer of customers to the neighbouring distributor.

122 **Board Findings**

123 The main benefits of overlap were argued to be the provision of greater customer choice at the time of connection, and the ability to provide this choice in a timely and efficient manner with minimal regulatory requirements on the part of distributors and the Board. However, the Board has heard evidence that there are considerable risks that result from the creation of overlapping service areas. These include the loss of customer density and the economies resulting from it, inefficient capital planning processes and costly redundancies, and competitive rushing to attractive areas, or avoidance of unattractive areas. The Board finds that these risks are real, and will create economic inefficiencies and therefore additional costs to electricity ratepayers.

124 There are few, if any, examples of successful overlapping service area models elsewhere in the world. Almost all other jurisdictions employ exclusive service territories for electricity distribution. This seems to confirm the cautionary note sounded by Drs. Yatchew, Humphrey, and Chamberlin. Indeed, the electricity distribution business did not begin using an exclusive service areas model. The business was originally organized as an overlapping service area environment. The organization of the business evolved to its present state as a result of the recognition that a service area competitive model created inefficiencies in what is a natural monopoly. While there have been suggestions that technological change could create circumstances which would make overlapping service areas less inefficient, such changes have yet to materialize.

125 The existence of overlapping service areas complicates some of the most basic service requirements for a distributor, such as operation, maintenance and storm recovery. This has the potential to increase costs to the distributor and reduce customer confidence in reliability in the affected service area. Overlap has implications for safety, arising from duplication of lines and other assets, and increased technical complexity resulting in confusion in emergency situations. Additional safety protocols are required to permit two (or more) workforces to work in the same area.

126 In addition, overlap creates more complexity, uncertainty and risk with respect to load forecasting and planning of the distribution system. It is obvious that in a service area where two distribution entities have equal access to customers, and duplicative obligations to serve, that each will experience virtually unresolvable difficulties in developing reliable load forecasts, revenue projections, and capital spending plans. This kind of uncertainty must ultimately be reflected in the availability and cost of capital. At the end of the day, it is the customers who carry the burden for these fundamental problems in design.

127 Overlap is not necessary to allow customers some choice of distributor. Given the nonexclusive nature of service areas, some customers have the ability to request connection to an alternate distributor. It is hoped that the regulatory process associated with service area amendment applications will be minimal, once distribution system operators appreciate that only optimizing proposals will succeed. In the Board's view, the risks involved in the creation of overlapping service areas far outweigh the benefits.

128 The Board has considerable flexibility in establishing service areas, and in dealing with amendment applications. Section 70(6) of the OEB Act provides:

> 129 70(6) Unless it provides otherwise, a licence under this Part shall not hinder or restrict the grant of a licence to another person within the same area and the licensee shall not claim any right of exclusivity.

130 This section gives the Board a range of options, from creating overlapping service areas to prohibiting any incursion into service areas by making the licence explicitly exclusive. The Board has chosen a middle course; to issue licences with non-overlapping service areas, but to receive and consider applications for service area amendments that promote optimal use of distribution resources, and overall economic efficiency. Subject to the proposed connection being in the public interest, customers will be able to exercise a choice of distributor.

131 In summary, the Board finds that creating overlapping service areas is not an appropriate model for distribution in Ontario and should not be considered except in the most compelling circumstances. Except in special cases, when a service area amendment is granted, the service areas of both the applicant and incumbent distributor generally will be adjusted to ensure that the customer becomes part of the clearly defined territory of one or the other distributor, but not both.

132 The Board recognizes there are historic situations in Ontario where overlapping service areas exist, for example in the Cornwall area. In these situations, the Board would prefer not to impose a specific solution on the parties. Rather, the Board would look favourably upon consensual service area amendment applications, by the parties involved, which would either reduce or eliminate the service area overlap and allow for clearly defined, non-overlapping, smooth and contiguous service areas. The Board does not generally encourage the expansion of existing historic overlap areas or creation of new overlapping service areas to accommodate expansion of distribution systems.

3.2 Embedded Service Areas

133

134 The business model of discontiguous embedded distribution proposed by Wirebury received considerable attention in the hearing. An integral part of Wirebury's proposal involved the provision of service to "unserved" and "underserved" distribution customers. Wirebury proposed to operate as a licensed, rate-regulated distributor serving customers such as multi-unit condominiums, rental buildings and new sub-divisions.

135 Underpinning Wirebury's argument was the view that customer preference and competition for distribution services provide value to electricity customers in Ontario. Wirebury argued that its model would help improve service quality, reduce customer confusion and create new economies of scale. Wirebury suggested that its model would provide new entrants and established distributors the opportunity to offer customers lower cost services and improved access to market innovations like energy controls and time-of-use rates. In Wirebury's view, limiting competition for distribution services to boundary disputes would limit the benefits of competition, restrict customer choice and create preferential access to distribution systems.

136 Wirebury indicated that its embedded distribution model would best be implemented administratively if the Board were to establish an overlapping service area for the host and embedded distributor.

137 **Experts' Evidence**

138 The experts noted that Ontario's distribution system currently has a number of embedded distributors, which exist as a result of historic and legislative circumstances. Previous to the passage of the *Energy Competition Act* in 1998, legislative arrangements had allowed for the development of embedded distributors in newly municipalised areas and the concurrent expansion of municipal distribution systems to enlarged municipal boundaries. The experts cited examples of several utilities currently operating in Ontario which serve multiple discontiguous areas. Notwithstanding their individual views on the merits of new embedding, the experts supported further rationalization of Ontario's distribution system.

139 Mr. Todd supported the introduction of qualified competition in the distribution sector and took the view that the market should be allowed to determine whether potential options for facilitating competition in the distribution sector, such as new embedding, succeed or fail. In his view, market outcomes would be the test of the economic efficiency of new embedding. Should a particular embedding model fail, the risk would be borne by the shareholders, but there would be no harm to the overall public interest.

140 Mr. Todd was supportive of customer choice as an overriding principle, arguing that the customer should be able to opt for the competitor that provides the lowest incremental cost of connection or can provide a better quality of service. Mr. Todd noted that an incumbent distributor may not be able, in all situations, to supply or connect a customer at the lowest incremental cost, while a competitor might offer lower costs or better service. The threat of competition would push incumbents to reduce their costs, improve service and become more efficient. Mr. Todd was of the view that allowing new embedding, such as proposed by Wirebury, would not lead to a proliferation of distribution companies in Ontario. Rather, existing distributors would look to improve their financial performance and have an increased incentive to rationalize.

141 Mr. Todd noted that Ontario currently has many embedded distributors and also gave examples of other jurisdictions where embedding exists, such as in New Zealand, Australia and the U.K. Mr. Todd indicated that the U.K. regulator, OFGEM, has a process for licensing embedded distributors.

142 Mr. Todd indicated that some forms of distribution competition will increase forecasting uncertainty but will not significantly impact on cost or economic efficiency. In the case of new embedded distribution, Mr. Todd argued there would be no impact on the load forecast for the incumbent's facilities if the non-incumbent distributor utilizes the incumbent's upstream assets. In addition, there would be no duplication and stranding of the physical delivery assets as the infrastructure built to deliver the load would be as fully utilized as if the incumbent distributor were directly serving the customer.

143 Mr. Todd disagreed that allowing new embedding would result in discontiguities, except possibly in plant maintenance and making maintenance calls. However, this type of discontiguity applies to all distributors in Ontario and is not specific to a new embedded distributor. Mr. Todd indicated that mechanisms can be developed to handle this type of discontiguity efficiently, such as remote reading of meters.

144 Mr. Todd did not favour competition in distribution for existing customers, supporting instead a natural monopoly model:

145 > "The distribution function is naturally monopolistic in that it would be both economically inefficient and unsustainable to allow more than one distributor to offer service to a customer or group of customers using duplicative facilities. As a consequence, allowing customers to choose an alternate distributor, where doing so would strand some portion of the distribution network of the incumbent distributor without compensation, would not be efficient."

146 Key to Mr. Todd's point of view was his definition of the terms "unserved" and "underserved". Mr. Todd favoured allowing distribution competition for new customers in unserved and underserved areas. Mr. Todd defined "unserved" as any customer, lot, or location that does not have service. This could include new residential, commercial or industrial developments (often referred to as "greenfield development") or a redeveloped industrial or commercial site (often referred to as "brownfield development"). "Underserved" refers to standards of service, established by a regulator, that should be available to every customer. This would be a situation where a customer prefers a form of service that is not available from its existing distributor, such as interval meters. This could also include residents in a high-rise development, where the building is bulk metered but the building manager or the residents prefer to be individually metered.

147 During cross-examination, Mr. Todd agreed that underserved customers are potentially existing customers. For instance, residents of an apartment building who are not individually metered are not technically customers at the present time, but service from a new embedded distributor would entail switching customers over from the building owner or management. He further agreed that a new embedded distributor would be as vulnerable to having unserved and underserved customers within their service areas as other distributors.

148 Dr. Yatchew opposed the Wirebury model from an economic efficiency perspective. He argued that the Wirebury model would allow discontiguous utilities to serve dispersed pockets of customers in

urban areas which would not be in the interests of the distribution system as a whole. The creation and proliferation of discontiguous utilities would result in a loss of economies of contiguity and result in diseconomies of scale and density for the incumbent distributor. Discontiguities should not be created except in exceptional circumstances and system wide scale and density economies should not be compromised.

149 Dr. Yatchew noted that contiguity is a fundamental feature of distribution systems worldwide. The creation and proliferation of unnecessary discontiguities, particularly in urban or suburban areas, would be economically inefficient. In comparing a situation where a utility has many scattered pockets of customers, and one where those same customers are transplanted to a single contiguous area, Dr. Yatchew indicated that the utility with customers concentrated in one contiguous area would have lower operating and maintenance costs and likely lower capital costs. The costs of achieving a given level of service and targeted response times would be lower.

150 Dr. Yatchew examined a situation where a discontiguous embedded distributor were to grow and gain some economies of scale. In this situation, it would dilute the density of the host utility, thereby losing economies of density. Dr. Yatchew's analysis concluded that if the embedded utility has few customers and is highly fragmented, it suffers from diseconomies of scale and density and from discontiguity, but has relatively less impact on the host utility. On the other hand, if the embedded distributor has few pockets, and those pockets are large, then there is greater adverse impact on the host utility. Dr. Yatchew contended that in addition to this adverse density effect, there will be adverse effects on capital planning and potentially adverse affects on borrowing and financing costs.

151 Dr. Yatchew noted that the Wirebury concept is not common in other jurisdictions, and that the contiguous model continues to be the dominant form of distribution. In his view, the reason is that contiguity matters a great deal. If it did not, one would observe checkerboard service areas. Dr. Yatchew also indicated that adoption of the Wirebury model would result in all utilities being in a position to "play the same game". Under such a scenario, it would not be inconceivable that Hydro One, Toronto Hydro or other large utilities could be successful at carving out embedded areas in territories of other, perhaps smaller distributors.

152 With regard to embedding in rural areas of Ontario, Dr. Yatchew argued that a distributor serving multiple discontiguous service areas may not always be an inappropriate model. While opposing the proliferation of discontiguities within an urban area, Dr. Yatchew indicated that the development of a discontiguous service system, whereby a single utility provides service to several smaller, reasonably densely populated areas, themselves surrounded by a relatively low density rural population, may very well be an improvement in the status quo which entails very small distributors individually serving each of those locations. There would be some gains in economies of scale and contiguity.

153 Dr. Yatchew did not advocate abolishing multiple discontiguous utilities. He alluded to the rationalization process, which has occurred over the last few years, where a number of smaller distributors have been absorbed by Hydro One. In his view, rationalization resulted in a more efficient provision of service because the individual small utilities lacked sufficient population density around them to achieve minimum efficient scale. Dr. Yatchew noted that some mergers have resulted in a multiple discontiguous embedded distribution system. He cited the example of

Veridian, which acquired several small discontiguous pockets at various locations, but noted these discontiguities were surrounded by a largely low density population base.

154 Dr. Yatchew discussed the potential for regulatory imperfections to create opportunities for arbitrage by an entrant who can selectively choose those locations which work to his advantage. He described a potential scenario where a single low wheeling rate is established for discontiguous embedded utilities. Homeowners could declare their houses redeveloped by putting in an apartment and apply for service from such utilities and thus bypass standard distribution charges. As a result, conventional distributors in Ontario would have an incentive to behave similarly, to develop locational rates, and possibly create subsidiaries to engage in regulatory arbitrage.

155 Dr. Yatchew indicated that it was conceivable that many Wirebury-type companies could be created if there are regulatory arbitrage opportunities. Moreover, once it is recognized that a single wheeling rate may be inappropriate, there could be a proliferation of wheeling rates. In response to cross-examination regarding the potential for developing zonal wheeling rates to resolve the problem of having many individual wheeling rates for every customer, Dr. Yatchew testified that it is not obvious that zonal wheeling rates would resolve the problem of regulatory arbitrage. He noted the complexity in determining zonal rates in Toronto, where there may need to be many zones and posed the question as to whether there would need to be the same wheeling rate to an apartment, as to a house, or to a commercial building.

156 Dr. Yatchew testified that multiple discontiguous embedded utilities could increase regulatory burden. First, there could be many applications for distributor status and rates. Second, there may be many more utilities to regulate. Third, complex locational tariffs and multiple wheeling rates could emerge. Fourth, capital expenditures may require increased regulatory scrutiny. Fifth, there are likely to be disputes over predatory behaviour, which would need to be adjudicated.

157 Dr. Yatchew concluded that any change in a distributor's service area should serve the public interest, clearly demonstrating there are net benefits to the distribution system as a whole. He supported service area amendments in bordering regions between contiguous utilities where they are economically efficient.

158 Mr. Southam noted that his clients are composed of multiple discontiguous or non-contiguous embedded distribution systems as opposed to contiguous distribution systems. He did not see the need for new distribution systems to be contiguous with existing embedded systems. Mr. Southam was of the view that contiguity is a possible, but not necessary, feature of an efficient distribution system. He cited examples of efficient distribution systems in Ontario that have multiple non-contiguous embedded distribution systems, such as Erie Thames, which is comprised of 10 embedded systems.

159 Mr. Southam did not believe further embedding would adversely affect system planning in Ontario. He noted that constant conversation occurs between host utilities and embedded distributors with respect to load forecast. The introduction of competition would not necessarily provide a potential incentive for reduced cooperation between embedded and host utilities. However, if competition did result, down the line, in a reduction in cooperation, then the licensees would have recourse to the Board.

160 In reference to avoiding duplication of assets, Mr. Southam anticipated that many new connections in overlapping service areas would be embedded connections because it would be a more cost-effective and efficient way of serving these new customers.

161 Dr. Chamberlin testified that the widespread use of embedding would leave society as a whole worse off as overall costs would be higher. Embedding contributes to uncertain service area boundaries and the associated undesirable consequences. Dr. Chamberlin also indicated that the use of embedding would provide opportunities for distributors to take advantage of temporary rate differentials and situations where wheeling rates are not fully compensatory to avoid costs associated with upstream functions.

162 Further, Dr. Chamberlin argued that the concept of unserved and underserved customers lacked clarity. In his view, there is not an "unserved" customer. While there may be physical areas that do not yet have service, there is an entire network upstream of that location which has been built to supply network distribution services to those areas. In his view, this is an integral part of a utility's planning process.

163 Dr. Chamberlin found it difficult to distinguish between underserved customers and the entire body of existing customers. In his view, the examples of underserved customers cited in Wirebury's evidence "appear to be nothing more than existing customers which are those customers taking service from the incumbent utility who desire additional electric distribution services such as different metering technology." The issue for Dr. Chamberlin is that if underserved customers are nothing more than existing customers, then "Mr. Todd seems to be recommending that all existing customers should have the right to switch distribution providers."

164 **Positions of the Parties**

165 Several parties, including Hydro One and PWU, expressed concern that the increased complexity involved in embedding would jeopardize safety. The LDC Coalition noted that new embedding can contribute to safety hazards for host distributor field staff and increase customer costs due to additional equipment required at every interface between two different systems. This equipment is only required as a result of the insertion of an embedded distributor in the host distributor's system.

166 The LDC Coalition opposed allowing service area amendments requiring new embedded distribution supply points. The LDC Coalition argued that the embedding concept should be rejected on grounds that it is economically inefficient and contrary to provincial policy which encourages the rationalization and consolidation of the Ontario distribution sector. Embedding would dilute scale economies, create unnecessary discontiguities, increase risks of structural instability and adversely impact capital planning and financing. The host distributor rate would be bypassed with a potential windfall profit to the embedded applicant.

167 The LDC Coalition also argued that the embedding concept would increase regulatory burden. There could be many more applications for distributor licences and rates, more utilities to regulate, complex locational tariffs and multiple wheeling rates, more disputes over predatory behavior and increased need for regulatory scrutiny.

168 Wirebury addressed the issue of whether embedded distribution would create an unspecified further degree of planning uncertainty. Wirebury indicated that planning is always uncertain and requires regular review and revision based upon what actually transpires. By contrast, the construction of facilities occurs on a more just-in-time basis which may only be a matter of months. Wirebury indicated that it would be uneconomic to overbuild the distribution system before demand is imminent.

169 The SW Applicants were not opposed to embedding. They were of the view that rational customers would generally choose the lowest cost connection option which would often be the embedded system, thereby eliminating uneconomic duplication of facilities

170 Veridian opposed wide open competition in electricity distribution, new embedding, additional load transfers or metering points. Veridian believed that embedded distribution networks create inefficiencies, contribute to complexity in system operations and regulatory burden and impair accountability to customers.

171 The PWU indicated that the embedding model should be approached with extreme caution. It appears to give free reign to cream skimming which would result in higher average costs and lower revenues for host distributors and higher rates for ratepayers across Ontario.

172 **Board Findings**

173 The Board is mindful of the objectives set out in section 1 of the OEB Act. It is the view of the Board that the creation of new embedded distribution areas would be inconsistent with the Board's objectives to promote economic efficiency in distribution, to facilitate the maintenance of a financially viable industry, and to protect the interests of consumers.

174 With respect to the objective of promoting economic efficiency in the generation, transmission, and distribution of electricity, the Board finds persuasive the arguments that the establishment of new embedded distribution sites and points of supply would be economically inefficient for Ontario's distribution system. The establishment of new embedded areas, particularly in urban and high customer density areas, would result in diseconomies of contiguity for Ontario's electricity distribution system and loss of economies of scale and density for incumbent distributors. The proliferation of embedded areas would result in a more complex, and checkerboard spatial pattern for Ontario's distribution system. It is not clear that new embedded distributors would be able to achieve minimum scale efficiencies, which is currently the case for most incumbent distributors, particularly those situated in high density urban areas. Additional embedded supply points would contribute to undue complexity in system planning and operations, leading to diminished service quality and lack of transparency with regard to accountability for system reliability.

175 The Board notes that as a result of the historical development of the electrical distribution system in Ontario, there already exist embedded distribution systems, some of which consist of multiple discontiguous areas. These exist because prior to 1998, Ontario Hydro was required to serve rural areas of the province, but most incorporated villages, towns and cities had their own electrical distribution utilities. These were regulated by Ontario Hydro and embedded within Ontario Hydro's

distribution system. As municipal boundaries were adjusted from time to time to include built up areas, the service area of the municipal electric utility was adjusted to match. By 1998, many municipalities were amalgamated and reorganized and electric utility service boundaries no longer necessarily followed municipal boundaries. Some of these distribution systems were acquired by Hydro One, and some were acquired by or amalgamated into other distribution systems. In some cases, embedded systems disappeared into a larger system which swallowed up their service areas. In others the system now consists of several discontiguous areas under common ownership and management. Still others continue to consist of one contiguous system which may or may not be embedded within another. These developments occurred for reasons unrelated to the optimization of the distribution system as a whole. This decision is not intended to address the appropriateness of any of these situations, which are likely to continue to evolve.

176 However, the Board recognizes that these configurations can result in unnecessary duplication of distribution assets, such as substations. The Board encourages parties in these situations to consider a more optimal utilization of their assets through a pooling of interests, an asset sale from one party to the other, merger and acquisition, or some other form of business rationalization. The Board would give serious consideration to service area amendments resulting from this type of rationalization.

177 The Board is concerned that any proliferation of new embedded distribution areas and points of supply will increase the potential for uncertainty in coordinating the long-term planning of upstream transmission and distribution assets. There would be additional pressures to ensure effective network system coordination between the host and any embedded distributor. Efficient upstream and downstream distribution system planning may be more complex with the addition of new parties. There may also be additional risks for system safety and reliability, particularly when coordinating a response to local system outages or a major catastrophic failure.

178 The Board is not persuaded by the argument by the proponents of embedding that the market should be allowed to determine whether the concept succeeds or fails, based on the overriding principle of customer choice. In the view of the Board, as discussed elsewhere in this decision, customer choice is but one of a number of factors which should be considered in determining whether new embedded distribution is in the public interest.

179 With respect to the protection of the interests of consumers with respect to prices, the Board recognizes that the individual customer, in many cases a developer, would potentially derive some benefit by connecting to an alternate distributor. The issue remains as to how the interests of the individual customer are balanced with the interests of the remaining customers of the incumbent distributor. Wheeling rates in Ontario may not be fully compensatory, leaving opportunities for regulatory arbitrage by licence embedded distributors. In addition, if a new embedded distributor targets service to lower cost customers (usually small dense areas), the remaining customers served by the host distributor may well face higher rates than if the embedded distributor did not exist. Loss of such loads will necessarily have implications for the customers of the host distributor. Is it equitable and fair to all customers that an embedded distributor can take advantage of this regulatory arbitrage to create a two-tiered rate structure, one for customers of the embedded distributor, and one for the remaining customers of the incumbent distributor? In the view of the Board, this would not be in the public interest.

180 Moreover, the Board is not convinced by evidence that suggests that the rate arbitrage problem can be alleviated through an appropriate wheeling or LV rate which reflects the true wheeling cost to the host distributor. Given the complexity of the network system in Ontario, the wheeling rate might have to be dependent on upstream transmission and distribution lines, upstream distribution stations, and different classifications of distribution lines. Hence, each embedded area may require its own LV or wheeling rate, and a large urban area, such as Toronto or the GTA, may require zonal or specific customer-type wheeling rates. This would entail considerable regulatory processes above and beyond what is required to establish existing distribution rates.

181 The Board was also concerned by the imprecision in the evidence presented by the proponents of the embedded model regarding which type of customers would be potential candidates for embedding: new or existing customers. The Board found persuasive the arguments that the term "underserved customer" lacked precision and could potentially refer to both new and existing customers. The Board was not persuaded by the argument that an existing customer load, for example a bulk load apartment building, would somehow become redefined as a new customer when the metering arrangements are changed and each individual in the apartment building is separately metered. As Mr. Todd agreed, the issue is about switching the building. The load doesn't change, and the same individuals living in the apartment are still there. Given the criticality of the definition of "underserved customer" for Mr. Todd's analysis, the Board is concerned about its elusive nature. It is not even remotely clear as to what criteria would be required to establish whether a customer was existing, or underserved and therefore eligible to be switched, according to his construction.

182 The proponents of discontiguous embedded distribution argue that the benefit to customers from individual interval metering is an important rationale for creating an embedded distribution system. They have suggested that customers who do not have such meters are, by definition "underserved". In the Board's view, the desire to compete for the provision of interval metering is not a strong enough justification to permit service area amendments which would facilitate the creation of new embedded distribution systems. As most of the experts noted in the oral hearings, the distribution sector is a natural monopoly. Rates are set by regulation and distributors are licensed by the Board, which acts as regulator. It may be that the advent of individual meters will become a key element in the province's effort to conserve energy, and to avoid peak demand shortages. This development is dependent on a number of factors, some of which fall outside the control or scope of the distribution sector of the industry. The proliferation of individual interval meters is not in any event dependent upon, or even best served by, the creation of new embedded distribution operators. The sale and installation of such meters can occur completely independent of the advent of new embedded distributors. Further, it is to be noted that sections 5.1.3 and 5.1.5 of the Distribution System Code currently require that all licensed distributors install interval meters for new customers with demand in excess of 500 kW, and provide an interval meter for any customer that requests one.

183 The Board notes that section 4.0.1 of Ontario Regulation 161/99, as amended, provides an exemption from licensing for owners and operators of distribution systems in a broad range of settings including condominium buildings, residential complexes, industrial, commercial, or office buildings, and shopping malls. The exemption extends to distribution systems located entirely on land owned or leased by the distributor. For the exemption to apply, the distributor must simply recover its reasonable costs associated with the distribution, and not impose upon consumers a price which includes a profit. Services provided by the distributor can include the installation of meters or any other physical enhancement.

184 The Board accepts that the complexity produced by embedded distributors, particularly if the concept proliferates, could well compromise system safety and reliability. Maintenance and service restoration after outages will be more difficult. The costs of these difficulties will be passed on to the ratepayer, including those ratepayers who have not received any benefit from embedded distribution.

185 In summary, the Board is of the view that at this stage of the development of the electricity market in Ontario the public interest would not be served by the creation of new embedded distribution systems and points of supply. The electricity market in Ontario has proven to be dynamic, and it will continue to evolve. As new organizational structures and business models emerge the Board will consider their appropriateness, guided by the principles enunciated in this decision.

186 The Board finds that applications for service area amendments to create new embedded distribution systems or points of supply, particularly within urban, suburban and other non-rural areas of high customer density in Ontario, are generally not in the public interest.

187 The Board recognizes that Ontario's distribution system is currently comprised of a number of embedded distributors, created due to historical circumstances and the legislative and regulatory regime in existence prior to the break up of Ontario Hydro and restructuring of the sector in 1998. Subsequently, a number of these embedded systems have been subject to rationalization through mergers and acquisitions. The Board encourages service area amendments which contribute to the further rationalization of embedded distribution systems and elimination of inefficient retail points of supply in Ontario's electricity distribution system.

3.3 Contiguous Border Amendments

188

Position of the Parties

189

190 All parties to the proceeding agreed that some service area amendments at the borders between contiguous distribution companies can be economically efficient and in the public interest. This can occur, for example, where an applicant utility may be able to serve a prospective customer or group of customers at a lower cost or more efficiently than the incumbent utility. Such situations could also occur when two neighbouring utilities agree that a realignment of the service area boundary could eliminate existing load transfers or be economically efficient, and that the public interest would be served if a service area amendment were initiated. Some parties have argued that through this process, existing customers should not be forced to change distributors. It was also argued that these amendments should not be so frequent as to potentially undermine the stability of the industry, that the amendments should be executed in the context of an appropriate vision of how the distribution industry should evolve with time and that the resulting amended boundaries should be smooth.

191 Hydro One argued that as contrasted with amendments for rationalization for a particular customer, distributors should not be permitted to seek amendments to extend their service territories to municipal boundaries, or to cover entire subdivisions or significant parcels of land of an incumbent's territory in order to reflect the planning objectives of a particular municipality.

192 Centre Wellington argued that there should be contestability for new customers at the boundaries of existing contiguous distribution companies, and the customer should be able to choose, based on offers of connection presented by two distributors. Centre Wellington noted that utilities that expand in a contiguous manner are likely to be economically efficient.

193 The EDA supports the development of shoulder-to-shoulder utilities with exclusive service areas while allowing the economically rational expansion of territories. Because of the capital-intensive nature of distribution infrastructure, efficiencies in the distribution sector are driven by economies of scale and density. Non-overlapping territories with rational expansion is the only way to improve efficiency and to ensure no stranding without compensation, no cherry picking and no duplication of assets. The EDA argues that service areas should be allowed to expand with the commensurate shrinking of neighbouring territories if the applicant can show that the expansion of its service territory will have positive impacts on the overall commercial viability of the distribution sector and distribution customers.

194 Toronto Hydro took the position that distribution is a natural monopoly and does not support competition or customer choice. Service areas should be aligned where possible with municipal boundaries, as electricity infrastructure provides a vital service to a local community. Where possible, distributor service areas should be contiguous across a naturally occurring area. Toronto Hydro was of the view that a service area amendment would be only advisable under limited circumstances typically relating to a new customer on the boundaries of existing service areas where the cost of connecting the customer to the neighboring distributor, which includes the compensation to the incumbent utility for all stranded distribution assets, is less than the cost of connecting the customer to the incumbent.

195 **Board Findings**

196 The Board finds that service area amendments at the borders between contiguous distribution companies should be encouraged where there is agreement between the distributors and any affected customers that a realignment of the boundary would be economically efficient, consistent with system planning needs, and in the public interest.

197 The Board finds that amendments that involve contiguous distribution companies, but that are opposed by the incumbent distributor, may be in the public interest where the amendment results in the most effective use of existing distribution infrastructure, and a lower incremental cost of connection for the customer or group of customers.

198 It is the Board's intention to process expeditiously service area amendment applications that are consented to by the contiguous distributors involved and the individual customer(s). Applications for consent amendments will need to be in conformity with the principles outlined in the next section: customer preference, economic efficiency, and impacts on distributors and their customers, but the level of detail needed to persuade the Board that the proposed amendment is in the public interest will be less than that required for contested applications.

199 In a contested application, the onus will be on the applicant to demonstrate that the amendment is in the public interest. Amendments that are consistent with the principles articulated by the Board in this decision, and supported by evidence that demonstrates their advantages, will have a greater chance of success.

200 At the same time, the Board expects incumbent distributors to give proper consideration to rational and efficient service area realignment, even where it results in the loss of some territory. Amendments should not be resisted where the proponent is clearly the most efficient service provider for the affected customer. The distributors affected by a proposed amendment should evaluate a proposal in light of the principles in this decision, and respond in a reasonable fashion. For example, the Board discourages the creation of new points of supply to facilitate the distribution of electricity to an existing or new customer by an incumbent distributor, when a bordering and contiguous distributor can provide the same distribution service more efficiently. A service area amendment could facilitate the more efficient use of existing infrastructure, and avoid passing on to the customer the metering costs associated with the new retail point of supply.

4 PRINCIPLES FOR DEALING WITH SERVICE AREA AMENDMENTS

4.1 Summary of Principles Already Discussed

The Board has articulated certain principles earlier in this decision:

1 Overlapping service areas will not generally be found to be in the public interest. Applicants for service area amendments that propose overlap should provide clear evidence that in the particular case, the advantages of overlap outweigh the disadvantages.

2 New embedded service areas will not generally be found to be in the public interest. Applicants for service area amendments that propose embedding should provide clear evidence that in the particular case, the advantages of embedding outweigh the disadvantages.

3 Amendments to service areas at the border of contiguous distributors may be in the public interest. Applicants should file evidence demonstrating that the proposed amendment is in the public interest, addressing economic efficiency, the impacts on the distributors involved and their customers, both inside and outside the amendment area, the mitigation of these impacts, and customer preference.

4 Applicants for service area amendments are encouraged to obtain the consent of all affected parties before filing the application. Consent applications will be expeditiously processed, and the evidence required will be less than for an opposed application.

5 Economic efficiency is a primary consideration in assessing a service area amendment application. All applicants should address the effects of the proposed amendment on economic efficiency.

In the remainder of this decision, the Board will address in more detail the issues of customer preference, impacts on customers in the amendment area and impacts on distributors and their customers. Filing and process requirements will be summarized in the last section of the decision.

4.2 Customer Preference

Positions of the Parties

There were differing views among the participants to the proceeding as to the importance of customer choice as a guiding principle for assessing service area amendments. The parties generally support-

ing increased competition in distribution and overlapping service areas were supportive of customer choice as an overriding or guiding principle.

213 The parties generally opposed to increased competition in distribution and overlapping service areas, including Hydro One, Toronto Hydro, the LDC Coalition, VECC, the Power Workers Union, and EDA, supported the view that customer choice should not come at the expense of the interests of other customers or the broader public interest. Centre Wellington, while supporting customer choice and overlapping service areas, also supported protecting the broader public interest.

214 The SW Applicants argued that a specific customer's preference for an applicant distributor should receive 70 per cent of the weighting in any Board decision regarding a service area amendment application. FortisOntario supported the concept of giving as many customers as possible the choice of distributors.

215 Wirebury argued that customer choice is the paramount decision factor in the Board's service area amendment process, absent a material safety or a public interest reason to deny such a request. Wirebury argued that limiting the benefits of customer choice to new customers or restricting competition to distributor boundaries would be discriminatory and contrary to the Board's objectives which, in its view, support the continued use and expansion of competition for distribution services.

216 Hydro One argued that customer preference should not come at the expense of other customers or the broader public interest. Customer choice can be a criterion in determining the service provider for new or prospective customers where the preferences expressed do not result in a detrimental impact or loss of opportunity to the incumbent distributor and its customers.

217 Toronto Hydro argued that the interests of the individual customer must not outweigh the other aspects of the public interest when the Board is considering a service area amendment. Moreover the interest of the developer as a customer cannot outweigh the interests of the end-use customer, who will ultimately be responsible for the rates resulting from the developer's preferences. The LDC Coalition supported the position of Toronto Hydro.

218 Hydro Embrun supported the view that a new customer should be able to request service from the distributor of choice as per section 28 of the Electricity Act. A distributor should be able to offer a connection to a new customer if the new customers are positioned along the lines of the its distribution system. New customers should be able to compare construction costs between electricity distributors. Hydro Embrun noted that where an amendment affects existing customers, the Board would have to consider it on a case by case basis.

219 Chatham-Kent argued that customer preference should play a significant role in the Board's consideration of service area amendments. Chatham-Kent supported the SW Applicants proposed a weighting of 70 per cent for customer preference when there is an actual customer requesting service.

220 The PWU was of the view that local distribution remains a natural monopoly that is not amenable to direct competition. Customer preference should have very limited significance in particular service area amendment applications.

221 VECC indicated that while customer preference is an important consideration, it cannot be relied upon to yield results that are necessarily in the overall public interest. In addition, customers should not be allowed to exercise choice at the expense of other customers, particularly those who do not have the same opportunities.

222 The EDA proposed that the applicant for a service area amendment must demonstrate that there are net benefits to the distribution system as a whole, rather than the benefits or costs to any one customer or group of customers.

223 **Board Findings**

224 The establishment of the appropriate weight to be afforded customer preference in the consideration of service area amendment applications is nothing short of establishing the appropriate balance between the requirements of the distribution system as a whole, including the interests of existing customers on the one hand, and the particular interests of a given customer, with a given connection proposal at a given point in time.

225 It is understandable that those who favour a competitive marketplace for the distribution activity place customer preference as the highest value in the consideration of service area amendment applications. Those who wish to secure customers through aggressive competition want to be able to rely on the customer's decision to opt for their service to be dispositive of the issue, or nearly so.

226 On the other hand, those who emphasize the ongoing interests of the existing customers and their reliance on optimization of system assets to control rates suggest that customer preference ought not to be a determinative factor in service area amendment applications. Distribution rates are intended to cover the costs associated with the provision of the system, plus an approved rate of return. The calculation of rates starts with the overall revenue requirement for providing the service to the service area, divided by the forecast commodity throughput. Whether they want to or not, all customers of the system are accordingly dependent on each other for the control of rates. Costs not paid by one customer, must be made up for by another.

227 Some parties also expressed concerns that while property owners or developers can control the destiny of end-use customers, that is, tenants or home buyers, their interest may be different from this group. The developers' prime driver in expressing a preference for one service provider over another may well be based on the contribution in aid of construction costs, rather than the ongoing rate structure, which will affect the end user. End users, it is argued, may be prejudiced by developers or property managers pursuing their immediate interest, at the risk of long term exposure to higher rates.

228 Hydro One also emphasized its view that to the extent that customer preference is based on distribution rates, such rates ought not to be a major factor in the consideration of such applications. While the immediate rate structure may be very influential in driving a customer's preference for one service provider over another, these rates should be understood to be transitional, and unreliable given the fact that a new generation of distribution rates will be implemented based on a much more acute cost and rate calculation. Hydro One has expressed the view that most local distribution rates are too low, and will rise following the completion of the Board's second generation rate design process.

229 The Board's duty to protect the interests of consumers as expressed in the objectives, means that the interest of any particular market participant must cede to the system's requirements where these interests conflict. Insofar as the Board has indicated elsewhere in this decision that it does not generally support the fostering of competition in the distribution activity, in its consideration of service area amendments, it will favour those applications which show that a given connection proposal represents the most economically efficient use of existing resources within the distribution system.

230 In many cases, the interests of the individual customer will align with the interests of other customers, and the system as a whole. Each market participant must accept the interdependence which is fundamental to the system. Each participant has a right to expect that others engaged in the same system meet their respective costs, without subsidization or penalty. That is as true for new customers as it is for others.

231 The Board agrees that current distribution rates are not necessarily the best guide to service choices. The Board expects that over time the rate making methodologies will yield ever more accurate representations of cost. It should be noted however, that Hydro One's concern in this area may not be completely addressed by this evolution. That is because its rates in areas contiguous to well developed local distribution systems are often significantly higher than those offered by the local distribution system. This arises from the fact that Hydro One's rates are based on the low density areas it serves which lie, by definition, between the service areas of urbanized systems. While the local distribution companies' rates may rise through the application of better rate setting methodologies, the fact remains that Hydro One's rates may suffer from fundamental differences in the cost and service structures as between Hydro One and the local distribution systems. The resulting rate differential may prevent Hydro One from being the distributor of choice for a new connecting customer. The extension of low density based service to areas contiguous to local distribution systems is often not an optimization of the system resources.

232 However, while recognizing certain disadvantages faced by Hydro One in its efforts to attract customers, these circumstances cannot be permitted to compromise the optimized growth of the system as a whole in the areas where most growth actually occurs - that is in the areas within and contiguous to existing urbanized zones currently served by well developed electricity distribution systems. Support for the societal role played by Hydro One must be funded otherwise than in protection of its geographic service area at the expense of orderly growth in the system.

233 In summary, the Board finds that customer preference is an important, but not overriding consideration when assessing the merits of an application for a service area amendment. Customer choice

may become a determining factor where competing offers to the customer(s) are comparable in terms of economic efficiency, system planning and safety and reliability, demonstrably neutral in terms of price impacts on customers of the incumbent and applicant distributor, and where stranding issues are addressed.

4.3 Economic Efficiency

234

235

The Board considers that economic efficiency comprises the concept of the most effective use of existing distribution resources. It is a concept that involves an objective assessment of the efficiencies attendant upon the connection of a customer by a distribution utility. The assessment involves a consideration of the distribution assets available for the connection, their proximity to the proposed point of connection, and the other costs necessary to effect the connection. Where new assets must be developed to effect the connection, a comparison of the costs associated with such development will inform the assessment of economic efficiency.

236

In all instances, the costs associated with the connection should be the fully loaded costs, which capture all of the relevant indirect and direct costs reasonably associated with the project at issue, not merely the price of connection quoted to the prospective connection customer. Costs developed with respect to other connection projects which are not contested will serve as a guide in assessing the authenticity of costs associated with a contested project.

237

In determining the efficiency of a given connection proposal, the Board will be strongly influenced by the extent to which a proponent can demonstrate that the proposed connection is reasonably contiguous to an existing, well-developed electricity distribution system. In such cases, it is very likely that economic efficiency will be served in approving that connection.

238

Where the proposed connection is not contiguous to a well-developed distribution system, contesting proponents will have to demonstrate that their respective proposals optimize the existing infrastructure to the extent possible.

239

In circumstances where a proposed connection lies adjacent to an isolated pocket of distribution customers served by one distributor, and contiguous to a dense, highly developed electricity distribution system operated by another distributor, the Board will have regard to the efficiency of the connection of the pocket, as well as the new connection, in considering competing connection proposals. In this way it is hoped that inefficient historic connections will not serve as support for new proposals which would fail but for their proximity to the old, inefficient connections.

240

The Board regards service areas to be rooted in the ability of distribution system operators to connect and serve customers efficiently. The service area defines the area in which a distributor is obliged to make an offer to serve if requested to do so. Existing service areas have developed over time and do not necessarily represent the most efficient way of serving any particular customer. It is not geography that ought to form the basis for service areas, but rather the definition of an area which can be efficiently serviced by a given distribution operator. Applications for amendment which involve broad swathes of geography, without detailed proposals respecting specific customers, should be avoided. The issue is always rooted in the economics associated with connections.

241 Similarly, proposals to align service areas with municipal boundaries are ill-considered unless the proponent can provide concrete evidence that the extended area is needed to provide service to actual customers in the area using assets and capacity in a manner that optimizes existing distribution assets, and does not prejudice existing customers of the utility. Amendments need to be anchored by real customers, with an economic case for the extension that is convincing. Some parties argued that aligning the service areas with municipal boundaries advances distribution system planning. The Board does not regard such alignment to be inherently beneficial. It is apparent that the de-coupling of the electrical utilities from municipal government, which is one of the signal reforms in the recent development of the electricity market, will continue to evolve. It is not unlikely that the pursuit of efficiencies will lead to the continuing consolidation of the distribution industry in Ontario, and any alignment of service areas to specific municipalities will be increasingly irrelevant. In the interim, local distribution companies will profit from early knowledge respecting development in areas contiguous to their highly developed distribution systems. In such cases, applications for amendment to service areas, provided they are supported with convincing evidence respecting the fundamental economic efficiency of the proposal, will have good prospects for success.

242 The emphasis the Board places on economic efficiency may have important implications for Hydro One. It is very likely that in many instances new connections will arise in areas that are contiguous or reasonably contiguous to local distribution systems. The fact that the local utility has well developed distribution assets close to the new connection may make it difficult in many cases for Hydro One to provide the most efficient service.

243 In addition to its submissions on the effects on credit ratings referenced above, Hydro One has presented argument indicating that the distribution system it operates is dependent, in some measure, on its success in procuring distribution loads in its service area. The Hydro One service area consists of every part of the province where there is no other defined service area, and where it has installed a distribution line. This is not a proceeding in which the scope of the Hydro One licence was at issue, and the Board will not address it.

244 It is important, however, to address Hydro One's submissions respecting the impact of the loss of distribution opportunities within its service area. Simply put, Hydro One suggests that all of its distribution customers look to the exploitation of the service area for the maintenance of the lowest achievable distribution rates over the Hydro One distribution service area. Clearly, if Hydro One can procure load in relatively high density areas adjacent to urban areas, the fixed costs of its system can be disbursed over a larger rate base, creating downward pressure on rates.

245 Where Hydro One can demonstrate that its connection proposal is superior to other alternatives as evaluated in light of the principles established in this proceeding, Hydro One should provide the service. The question facing the Board is whether the interests of Hydro One and its customers ought to prevail when its connection proposals are not superior.

246 What is true for Hydro One is also true for every other distribution system operator. All seek to access connection opportunities which will improve the overall ratio of revenue to fixed cost. In every connection proposal the prime consideration must be whether the connection is being effected in a manner that optimizes the resources reasonably brought to bear on the location. The simple fact that a distribution system operator has a defined service area does not guarantee that it will be

insulated from competing systems, who can demonstrate that their proposal is more economically efficient. The efficient and optimized development of the distribution system is a higher value than the interests of any single operator within the system.

247 The Board has made it clear that this decision is prospective in its effect, and is not intended to, and should not be read so as to oblige any distributor to change its status with respect to any customer or distribution asset.

248 The Board notes that inefficiencies have arisen where isolated pockets of customers have been connected by one distributor, but lie adjacent to a well-developed electricity distribution system willing to serve them. In such cases, utilities should use their best efforts to reverse inefficiencies, and to transfer customers to the service provider best able to serve these customers, on terms which avoid the stranding of distribution assets.

249 In summary, the Board finds that significant weight should be given to economic efficiency when assessing an application for a service area amendment. Failure on the part of an applicant to adequately demonstrate the economic efficiency of a service area amendment application will generally constitute sufficient grounds for the Board to turn down the application.

4.4 Impacts on Customers in the Amendment Area

250

Positions of the Parties

251

252 Hydro One argued that customers should continue to receive a level and quality of service to which they are accustomed at the lowest possible cost in the longer term. Costs should be fairly allocated over the entire customer base, in a manner that does not create a disproportionate benefit for one customer or group of customers and harm for others.

253 Hydro One also argued that existing customers should not be transferred to an applicant distributor from an incumbent distributor, except where there is agreement or consent among both distributors and the customer. Where there is such a transfer by agreement, it should proceed by way of a MAADs application rather than a licence amendment application.

254 In its view, new customers should be served by an applicant distributor rather than an incumbent distributor only in cases, as per section 28 of the Electricity Act, where there is a customer that "lies along" distribution lines, and the applicant distributor can serve it at a lower incremental cost without devaluation, underutilisation or stranding of the incumbent's assets.

255 Chatham-Kent argued that new customers should have the right to choose their distributor. In cases where expansions are in greenfield areas, there would typically not be significant stranding of the incumbent's assets. In its view, in amendment applications for service areas where existing customers are concerned, customers should not be forced to move from one distributor to another. Distributors should continue to be obligated to accept both low and high density customers. Transfer of customers between distributors should be based on a business case between the distributors.

Customers should not have the ability to repeatedly change distributors, as the assets invested are long term.

256 The parties had differing views with respect to whether service area amendments should encompass both existing and new customers, or only new customers.

257 Hydro One argued that existing customers should only be transferred from an incumbent to an applicant distributor where there is agreement between the two distributors. New customers should be transferred only in instances where there is a "lies along" case to be made. Where there is such a transfer by agreement, it should proceed by way of a MAAD application rather than a licence amendment application. Moreover, a MAAD application should be required wherever the transfer of existing customers to the applicant distributor could harm the incumbent distributor or its customers.

258 Hydro One suggested that Section 28 of the Electricity Act should not be interpreted to mean that existing customers who lie along the lines of two distributors should be able to switch distributors. Rather, it is only in limited and specific circumstances that the transfer of existing customers advances the public interest. In Hydro One's view, neither the Electricity Act nor the OEB Act provide sufficient scope for the transfer of existing customers. If so, the " legislation would have established an appropriate mechanism as a clear and intended substitute or provided an additional process for the merger, acquisition, amalgamation or sale of distribution utilities."

259 Hydro One also argued that the provisions of the *Energy Competition Act* "do not provide and were deliberately not intended to provide, the broad latitude for non-negotiated transfers of existing customers from one licence holder to another." According to Hydro One, there are two sections in the OEB Act that support that position; section 86, which provides evidence of the process contemplated by the legislature for transfer of existing assets and customers served by those assets, and subsection 70(13) which prohibits the Board from requiring a distributor to dispose of assets.

260 Veridian argued that new customers in the amendment area should have the choice of provider. Any transfer of existing customers would be by means of a distributor-to-distributor arrangement on a commercial basis. New customers in the amendment area would be served as a result of rational expansion or addition to an existing system. Veridian indicated no interest in providing or establishing new embedded supply points. Veridian did not propose additional load transfers or metering points to accommodate service area amendments.

261 As noted in the discussion on embedding, expert evidence filed by Wirebury concurred with the expert evidence filed by Hydro One that service area amendments should generally not be allowed for existing customers. Mr. Todd favoured allowing competition and service area amendments only for new customers in "unserved" and "underserviced" areas.

262 The SW Applicants submitted that there ought not to be any difference in the treatment of amendment applications relating to either new or existing customers. They argued that the Board ought to give serious consideration to granting a service area amendment where it can be demon-

strated that such a grant would result in lower customer costs than if the amendment had not been granted.

263 Enwin argued that both new and existing customers should have choice of distributor. However, Enwin noted that it would not proactively market its distribution services to existing Hydro One customers in the proposed expansion area. Existing customers would continue to be serviced by the incumbent distributor unless they choose to be serviced by Enwin.

264 The PWU argued that existing customers should not be transferred to a different distributor without the consent of an incumbent distributor except for a compelling case of public benefit. Where it comes to new customers, there may be a broader range of situations in which amendments are justified and particularly in circumstances where the incumbent would have to develop significant new infrastructure to connect the customers.

265 Toronto Hydro argued that while service area amendments for new customers may be supportable in certain limited circumstances, the transfer of existing customers is not supportable, in the absence of agreement between the distributors on the terms of the transfer. Toronto Hydro suggested use of the MAADs process contemplated in sections 85 (since repealed) and 86 of the OEB Act in reviewing amendment applications. The LDC Coalition supported Toronto Hydro's position.

266 **Board Findings**

267 The Board has made it clear that this decision is prospective in its effect, and is not intended to, and should not be read so as to oblige any distributor to change its status with respect to any customer or distribution asset. Service Area amendments should not result in the Board-mandated transfer of customers from one distributor to another. Such transfers should be the subject of bilateral arrangements between distributors, wherein all of the issues engaged by such transfers can be addressed. Such issues involve appropriate compensation for any assets stranded as a result of the arrangement. In this way, the interests of the customers of the surrendering distributor can be reasonably protected. An applicant should file evidence to demonstrate all the effects on customers in the amendment area. Evidence on aspects such as service quality and reliability should be quantitative, not anecdotal.

268 **Load Transfers**

269 Load transfers are arrangements whereby an incumbent distributor permits an adjacent distributor to serve a load located in the incumbent's service area. The arrangement typically arises where the incumbent is not in a position to serve the customer without incurring unreasonable expenditures for system expansion. The neighbouring distributor is obviously better placed to serve the customer.

270 Section 6.5.3 of the Distribution System Code (DSC) requires that during the five year period after its inception, a physical distributor shall be obligated to continue to serve an existing load transfer customer unless otherwise negotiated between the physical distributor and geographic distributor. Section 6.5.4 requires that during the five year period after the DSC comes into effect, a geographic distributor that serves a load transfer customer shall either:

271 a) negotiate with a physical distributor that provides load transfer services so that the physical distributor will be responsible for providing distribution services to the customer directly, including application for changes to the licensed service areas of each distributor; or

272 b) expand the geographic distributor's distribution system to connect the load transfer customer and service that customer directly.

273 The Board recognizes that there are a number of load transfer arrangements in effect which are to be wound down according to these provisions of the DSC. The Board encourages parties to work together to eliminate these load transfers by determining which distributor can most rationally serve the customer(s) in question, from an economic efficiency, system planning, reliability and safety perspective. The Board will look favourably upon service area amendments where applicant and incumbent distributors consent to a rationalization or elimination of load transfer arrangements, including any financial arrangements which may be required.

4.5 Impacts on Applicant and Incumbent Distributors and their Customers

274

System Average Costs

275

Positions of the Parties

276

277 Hydro One argued that the loss of existing customers, arising from a service area amendment, increases an incumbent distributor's system average costs, since the fixed costs will need to be spread over a smaller customer base. This will lead to higher rates for the incumbent distributor's end-use customers, and potentially those served by distributors supplied by Hydro One's distribution system. The reverse scenario is the case for the applicant distributor, which is able to lower its average costs and benefit its existing customers. Even for new customers, except where the customer "lies along" and the applicant distributor can serve the customer at a lower incremental cost without devaluation, the decrease in the applicant distributor's costs occurs only by bringing harm to the incumbent distributor and its customers.

278 Mr. Todd stated that if some new customers within an existing franchise area are served by a distributor other than the incumbent, the incumbent has fewer customers over which to spread its fixed costs. However, Mr. Todd was of the opinion that if the incremental costs incurred by the non-incumbent are less than the costs that would be incurred by the incumbent, then the total distribution costs for all distribution customers will be lower if the non-incumbent provides the new connection. Average costs will be minimized if the distributor with the lowest incremental cost for connecting a location provides service. If each new customer, or newly served area, is served on a monopoly basis by the distributor that is able to do so at the lowest incremental cost, the overall distribution costs that will have to be recovered from Ontario consumers will be lower than if existing service area boundaries are considered to be sacrosanct.

279

Board Findings

280 The Board finds that impacts on system average costs can be largely mitigated through the application of the principles already articulated in this decision. The Board has indicated that overlapping and embedded service areas will generally not be found to be in the public interest, and these types of service area amendments held the greatest potential for increasing system average costs. The Board finds that when considering contiguous service area amendments, sufficient attention to the principles of economic efficiency should reduce or eliminate the potential for an adverse effect on system average costs. The avoidance of stranding of assets or the amelioration of such an impact must also be considered.

281 ## Stranding of Assets and Costs

282 ### Experts' Evidence

283 Mr. Southam, on behalf of the SW Applicants, advocated a requirement on the part of the customer seeking a connection to pay for any stranded costs that would be directly created by the connection of that customer to the applicant distributor's system. Mr. Southam defined stranded costs as unrecovered asset costs directly employed in serving existing customers that switch to an applicant utility. The types of assets that could be stranded or underutilized would include distribution lines, transformers and fixed distribution assets, but exclude billing systems. Mr. Southam indicated that embedding may lead to a stranding of assets depending on what the expectation of the host distributor was around the construction of the initial distribution line. For example, a host distributor may decide to construct a distribution line, based on projections of revenues associated with it. If a distribution wheeling rate is subsequently imposed to accommodate an embedded distributor which is materially less than the rates used for the revenue projection, the distributor will be disadvantaged and there ought to be compensation for stranded assets.

284 Mr. Southam indicated that the economic evaluation model in Appendix B of the Distribution System Code does not currently include a provision that would capture stranded asset costs. He indicated that such a provision could easily be incorporated in the same way that upstream costs are currently incorporated into these economic evaluations. In the revised economic evaluation model, the capital contribution from the customer that is proposing to switch would recapture the cost of stranded assets plus any new assets that would be required for customer connection or system expansion.

285 Dr. Chamberlin defined the value of stranded assets to be the unrecovered fixed costs contribution from the departing customer. This includes the fixed cost stream that the customer or group of customers would otherwise pay the utility that made the investments to serve those customers, not just in the direct connections but in all the upstream facilities, services and aspects of their service. Dr. Chamberlin also noted that any loss of future customers would lead to stranding of upstream assets made for future customers.

286 Dr. Chamberlin did not share the view that recovery of stranded costs should be limited to those direct expenses associated with connecting the customer. In order to keep the incumbent and their customers whole, all fixed costs paid by the customers in question would form the basis for stranded cost recovery. The recovery rate would have to be equal to the fixed cost portion of the otherwise

applicable rate charged to the incumbent distribution customers. Anything less would mean the fixed costs would not be fully recovered, and rates to remaining customers of the incumbent utility would have to rise, implying a subsidy from the customers of the incumbent utility to the customers of the new entrants.

287 Mr. Todd indicated that real stranding occurs only where an asset becomes unusable because of its location and the absence of customers. Therefore, stranding and the requisite compensation would occur only where there was switching of existing customers. It would therefore not apply to the case of embedded distribution which only affected new unserved or unserviced customers. Mr. Todd also suggested that taking a too liberal approach to stranding could provide an inappropriate incentive to distributors to invest in assets that may become stranded.

288 Dr. Yatchew indicated the analysis of stranding needs to be done on a case by case basis. The main principle the Board should adopt for assessing stranding is "what is the economic value of the asset being stranded".

289 Hydro One argued that in cases of service area amendments, where there is no agreement between the distributors, compensation must be paid to the incumbent for stranded assets and lost revenues associated with existing and future customers, less the costs that can be mitigated.

290 **Board Findings**

291 The Board has made it clear that this decision is prospective in its effect, and is not intended to, and should not be read so as to oblige any distributor to change its status with respect to any customer or distribution asset. Service Area amendments should not result in the Board-mandated transfer of customers from one distributor to another. Such transfers should be the subject of bilateral arrangements between distributors, wherein all of the issues engaged by such transfers can be addressed. Such issues involve appropriate compensation for any assets stranded as a result of the arrangement. In addition, the Board expects that the offer made to a potential connection customer will recognize the actual costs involved in completing the project, both the contribution in aid of construction, and any rate offering made. Both aspects of the connection transaction must reflect the true costs of connection and the provision of ongoing service to the connecting customer. Existing customers of the connecting utility ought not to be subsidizing any connection, nor should their interests be prejudiced in any other manner.

292 The Board expects that service area amendment applications involving new connections will typically not involve stranding issues. Where stranding issues do arise, they must be resolved in a manner that provides reasonable protection to the customers of the utility whose assets are being stranded. These customers have a reasonable expectation that they will not be unduly prejudiced by the actions or decisions of other market participants. Where parties are unable to resolve issues respecting stranding, the Board will do so. In considering whether assets are stranded, the Board will have regard to the extent to which an asset thought to be stranded is genuinely referable and connected or connectable to the project site, and part of the necessary infrastructure to serve that specific location. Where upstream customers have made significant contributions in aid of construction with a reasonable expectation that future connections will provide contributions in turn as they become connected, the Board may consider some portion of the original contribution to be stranded.

293 The Board heard some argument to the effect that all of the upstream assets of a given utility are to some extent stranded when connections are approved for other utilities within an incumbent's service area. The Board does not adopt this point of view. Stranding will only be recognized to the extent that a utility can demonstrate that the assets involved meet the characteristics outlined in this section.

294 Similarly, the Board heard argument to the effect that utilities ought to be compensated for lost opportunities for revenue where a service area amendment results in a connection within their former service area being made by another utility. The Board does not adopt this point of view. Apart from the stranding of assets demonstrated as outlined in this section, the Board will generally not recognize any other type of compensation.

5 FILING AND PROCESS REQUIREMENTS

295

296

Summarized below are the information filing requirements associated with service area amendment applications. Section 1 summarizes general filing information required for all applications. Section 2 summarizes additional information that is required for applications that are not on consent. Applicants should be aware that the Board may require information in addition to that listed below. Further, as the Board gains experience with processing service area amendment applications, these requirements may evolve.

297

Section 1:

298

General Information Filing Requirements for all Service Area Amendment Applications

299

- The identity of the applicant

300

- For each proposed project, a time line for the construction and completion of the new development, including Municipal approvals, construction schedule, energization requirements through to final occupancy of commercial, industrial or residential units.

301

- Confirmation of consent of or notice to affected parties, including confirmation of notice to the incumbent utility and any written response of the incumbent utility

302

- Description of proposed connection (individual customer; residential subdivision, commercial or industrial development; general service area expansion)

303

- A detailed description of lands in the proposed amendment service area suitable for use in describing the amended area in the distributor's electrical distribution licence – for individual customers this should include the lot and concession number(s) and municipal address including street number, municipality and/or county, and postal code; for proposed general expansion areas, this should include a clear description of the area on the basis of relevant geographic features.

304

- A map showing the proposed amendment area, the location of the proposed connection(s), and the electrical infrastructure in the amendment area and in the contiguous areas of each distributor that is adjacent to the amendment area

305

- Brief description of any other affected customer(s)

306

- Description of how the proposed amendment optimizes the use of existing infrastructure

- Description of any existing load transfers or retail points of supply that will be eliminated [307]
- Description of any additional load transfers or retail points of supply proposed [308]
- Size of load and how the capacity to serve this load will be provided [309]
- Cost, rate and service quality impacts for customers in the amendment area [310]
- Description of any safety and reliability impact of the proposed amendment. [311]
- Description of any assets that may be stranded [312]

Section 2: [313]

Additional Information Filing Requirements for Contested Applications [314]

- Evidence that the customer has been provided an opportunity to obtain an offer to connect from both the incumbent and the applicant. [315]
- Evidence that the incumbent distributor was provided an opportunity to make an offer to connect. [316]
- Copies of the offer(s) to connect, and associated financial evaluations in accordance with Appendix B of the Distribution System Code. The financial evaluations should indicate costs associated with the connection including on-site capital, capital required to extend the distribution system to the customer location, incremental up-stream capital investment required to serve the load, the present value of incremental OM&A costs and incremental taxes, as well as the expected incremental revenue, the amount of revenue shortfall and the capital contribution requested. [317]
- Detailed comparison of the new or upgraded electrical infrastructure necessary for each distributor to serve the proposed connection and load [318]
- Detailed comparison of the impact of connection by each distributor on upstream assets and capacity [319]
- Quantitative (not anecdotal) evidence of quality and reliability of service by each distributor to similar customers in comparable locations and densities. [320]

321

- If applications involve any overlap or new embedding, applicants should be able to demonstrate how economic efficiency is maintained by the amendment, and what special circumstances justify an exception to the general principles.

322

DATED at Toronto, February 27, 2004

_____
Paul Sommerville
Presiding Member

_____
Arthur Birchenough
Member

_____
Cathy Spoel
Member