

BEFORE THE ISLAND REGULATORY  
AND APPEALS COMMISSION

**IN THE MATTER** of Section 2.1(2) of the  
*Electric Power Act*, R.S.P.E.I. 1988, Cap.  
E-4, and

**IN THE MATTER** of an Application by the  
City of Summerside Electric Utility for a  
Permit to provide service in the form of  
transmission from the Ottawa Street  
Substation to the Bedeque Substation.

**Commission Docket UE30402**

**Final Comments of the City of Summerside/Summerside Electric (“SE” or  
“COS”)**

---

**1 Brief Overview**

*Issues before the Commission in this Application*

- 1.01 This document constitutes the final comments of SE to the Commission prior to public hearings of SE’s application.
- 1.02 Late in 2007, Maritime Electric (“MECL”) filed with the Commission its proposal for an Open Access Transmission Tariff (“OATT”). Unlike other Island loads, which purchase generated electricity and “wires” services as a bundle from MECL, SE purchases power by direct arrangement with the owners of generation facilities, as well as generating power at its own facilities.
- 1.03 In 2007, almost all of SE’s supply was purchased from mainland sources, and transmitted by MECL from New Brunswick via the submarine cables to Bedeque Substation, and from there to Sherbrooke Substation, and onto SE’s distribution system to serve SE’s customers. In reviewing MECL’s proposals for the OATT, it became clear that SE would have no reasonable choice but to purchase Network Integration Service, an option that would increase SE’s 2007 and onward costs of transmission very significantly.

- 1.04 SE therefore reviewed its alternatives, and commissioned an update of a previous engineering study (the “Coles Report”) which indicated that a transmission line could be constructed to link SE’s system with the submarine cables at very attractive cost relative to what SE would henceforth have to pay MECL for transmission services. The updated study by Coles Associates indicated that constructing such a line would enable SE to avoid the cost of transmission at MECL’s proposed Network Integration Service rate and the investment would be repaid in a few short years.
- 1.05 As a distributor serving 6,950 electricity consumers, SE seeks to manage cost pressures while continuing to provide its customers with reliable service. Therefore in November, 2008, SE applied to the Commission for approval to construct its own 20 km transmission line. In July, 2009, SE filed its detailed evidence in support of the application, including updates to the Coles Report and a financial analysis showing that the investment would result in a net benefit to SE’s customers over the life of the asset, based on SE’s expectation of the costs involved (the “Application”).
- 1.06 In October, 2009, the Commission identified an issue relating to its jurisdiction in applying the “public convenience and necessity” test in section 2.1(2) of the Act and asked the parties to make submissions. After lengthy submissions on the issues, the Commission made a ruling which was appealed by MECL to the Appeal Court. SE cross-appealed. The Appeal Court ruled that SE required a permit pursuant to s.2.1(2) of the Act to provide the transmission services contemplated and that in applying the “public convenience and necessity” test under s.2.1(2) of the Act, the Commission could consider the interests of SE’s customers and the interest of only those MECL customers who reside in the City of Summerside. The Appeal Court ruled that the remainder of MECL’s customers (i.e. those that do not reside within the City of Summerside) could not be considered in determining the public necessity and convenience. The Commission therefore has a mandate to hear the merits of SE’s application *based upon the Appeal Court’s ruling*.
- 1.07 The question therefore becomes whether it is in the interests of the public, being SE’s customers and the 800 +/- City residents who receive electricity from MECL, that SE’s application be approved. Since, in SE’s view, it is in the interests of its customers to benefit from a lower cost alternative to service by MECL, the sole substantive issue now before the Commission is whether SE’s proposed transmission line in fact presents such a lower cost alternative.
- 1.08 In short, the sole issue now before the Commission is:

Whether or not there is a “business case” for construction of SE’s proposed new transmission line, bearing in mind the Appeal Court’s ruling as to the application of the public interest test prescribed by section 2.1(2) of the *Electric Power Act*?

- 1.09 SE contends that given the Appeal Court's ruling that only the interests of electricity customers residing in the City of Summerside are to be considered in applying the public interest test under section 2.1(2), the Commission ought therefore bear in mind a fundamental question:

What remaining legitimate interest, if any, does MECL now have in opposing SE's Application?

- 1.10 MECL is an intervener in the hearing of the application by SE. The court in *FortisBC v. Shaw Cablesystems Limited*, 2010 BCCA 606 considered the role of the intervener, BCHydro, in the application by Shaw to continue using the electricity transmission facilities of FortisBC. The court held that the intervener could not expand the focus of the appeal, but could only make submissions regarding the scope of the appeal as defined by the parties. In limiting the interveners submissions to a particular section of the Act in question, the court quoted the following from another decision:

“Intervenors should not be permitted to take the litigation away from those directly affected by it. Parties to litigation should be allowed to define the issues and seek resolution of matters they determine appropriate to place in issue. They should not be compelled to deal with issues raised by others.”

- 1.11 Since this is an application by SE pursuant to section 2.1(2) of the Act, and the Appeal Court has ruled on the considerations for the public convenience and necessity test as applied to that section, SE submits that this Commission is restricted to assessing the application on that basis, despite attempts by MECL to expand the scope of the review.
- 1.12 This is also not a case where MECL is a legitimate public interest intervener as for example might some SE customer citizen's group seeking to question SE's "business case" for the proposed new transmission line.
- 1.13 MECL is a privately owned, but regulated, "for profit" corporation. SE is a publicly owned electric utility serving the City of Summerside. SE urges the Commission not to lose sight of these fundamental underlying considerations. SE contends that in light of the Appeal Court's ruling, MECL's only remaining interest whatsoever in appearing before the Commission is to advocate for its shareholders. MECL's primary interest in opposing SE's Application appears to be protecting what it perceives as a right to a monopoly over transmission on PEI. However, the *Electric Power Act* clearly contemplates otherwise.
- 1.14 SE urges the Commission to keep these overarching considerations uppermost in mind in its adjudication of the issue now being brought forward by MECL.

- 1.15 It is SE's position that the proposed new transmission line will reduce the long term costs of service for SE; and, therefore that there is a good "business case" for SE that should be approved by the Commission bearing in mind the Appeal Court's ruling as to the application of the public interest test prescribed by section 2.2(1) of the *Electric Power Act*.
- 1.16 SE concluded that it was not prudent to incur the costs of an environmental assessment process prior to first obtaining a favourable decision of the Commission. SE is therefore requesting that the Commission approve the Application, - conditional upon SE's receiving all necessary environmental approvals before construction is commenced. MECL have previously asked the Commission to order otherwise, but SE understands the Commission is not going to require SE to obtain environmental approvals prior to its disposition of the Application.

### ***The Updated Pre Filed Evidence***

- 1.17 On or about December 2, 2011 upon direction from the Commission, SE filed updated evidence to reflect conditions changed since 2009. In terms of the "business case" analysis, the key changes included:
- Increases in the cost of equipment and labour to construct the line;
  - Changes in some of the expected on-going operating, maintenance and administrative costs associated with the line;
  - Reductions in the cost of capital (interest rate) to fund the investment; and
  - Changes in the amount of savings in transmission costs that SE will realize, as a result of:
    - Changes in transmission rates; and,
    - The remaining 15 years of SE's 20 year contract for wind energy supply from West Cape, which would entail continued use of MECL's system for part of SE's load during the remaining contract period, even if the proposed line is constructed.
- 1.18 Pursuant to the updating process as directed by the Commission, MECL then submitted and SE responded to MECL's interrogatories which focused on the engineering design of SE's proposed transmission line (even though the detailed engineering design would logically come later in the approval process) and the basis/ rationale for the figures comprising SE's "business case".
- 1.19 In February, 2012 MECL then filed its own updated evidence to the effect that:
- SE has underestimated the capital costs of the project; and
  - SE has underestimated ongoing costs; and therefore
  - The "business case" for the proposed line has no merit; and therefore

- The line will create no benefit for SE's customers, and as well, will have an (albeit minor) negative financial impact on the customers of MECL.
- 1.20 MECL's evidence put forward its own cost estimates in support of its position as noted above.
- 1.21 SE then filed interrogatories on MECL and has reviewed MECL's responses. These interrogatories also focused on issues of engineering design of the proposed transmission line and related facilities and the estimates of the construction costs.
- 1.22 MECL's evidence, specifically Exhibits E and F to the Affidavit of John Gaudet deposited February 10, 2012, contains a financial analysis substantially similar in methodology and structure to SE's financial analysis, with the key difference being the data inputted. SE has therefore concluded there is no dispute about the appropriateness of using a discounted cash flow approach for its "business case", nor about the computational formulas involved in its analysis.
- 1.23 The questions arising from the issue identified in paragraph 1.08 before the Commission to be answered from the pre-filed evidence and the evidence to be presented at the hearing are therefore as follows:
1. What are the appropriate estimated values for costs and savings to include in computing the "business case" for SE's proposed transmission line?
  2. On the basis of the appropriate estimated values, does the proposed transmission line provide value for the customers of SE – is it in their best interest?
  3. If the Commission, given the decision of the Appeal Court, finds it appropriate to give any weight whatever to the financial impact on MECL's customers and/or its shareholders, is the impact significant enough for SE's application to be denied on that basis?
- 1.23 In these Final Comments, SE will provide:
1. Further support for efficacy of its estimates of the costs and savings, as well as certain changes to figures previously filed which are being made based on updated information;
  2. An updated "business case" analysis based upon the updated evidence showing that the proposed transmission line does provide value for the customers of SE and serves their interest; and
  3. Analysis showing that the financial impact of the proposed transmission line on customers of MECL is *de minimis*. It is SE's position that, in any case, the Court has ruled that the public convenience and necessity of SE's customers should be the sole basis for the Commission's decision in this matter.

## **2 Financial Data**

### ***Capital Costs of the Project***

#### **Summary of SE's Evidence and Position**

- 2.01 In this proceeding, SE has filed the evidence of two senior engineers, expert in the design and costing of transmission systems. Gardiner MacNeill of Coles Associates has been involved in SE's assessment of transmission options since the original Coles Report dated January, 2003, and has therefore had opportunity to thoroughly consider the project concept and to gather information in support of the Class D estimates submitted in evidence. To complement Mr. MacNeill's work, SE also consulted Blaine Irving, a transmission engineer with decades of experience to conduct a peer review. Mr. Irving has had no prior involvement in SE's consideration of its transmission options, and is therefore well positioned to provide an independent second opinion as to project costs. Mr. MacNeill has estimated the project capital cost at \$4.3 million, and Mr. Irving has estimated it at \$5.1 million. SE's response to MECL's Interrogatory #3 compares these estimates. The most significant difference is the approach taken to engineering costs: Mr. MacNeill, having consulted with SE on its approach to the project, assumed that the engineering would be done in a large part by SE's engineering staff or contractors hired for the duration of the project, while Mr. Irving assumed consultants' rates for the engineering work. The costs for labour and materials, estimated independently by these two experts, differ by only \$216,000, or between 6% and 7%.
- 2.02 Both Mr. MacNeill and Mr. Irving have taken the same approach that SE will take at the time of the detailed engineers and the construction. This approach is to design and build the needed asset, to a level of reliability consistent with good utility practice and good service to customers, at the lowest cost. SE has a commitment to serve its customers at rates that are no more than MECL's rates. Its rate levels are not currently set on a rate base/rate of return methodology; as a result, additions to its asset base do not lead to increases in income. SE has every incentive to control costs in constructing the proposed transmission line.
- 2.03 Attached as Appendix "A" to these Final Comments is a table setting out for easy comparison by the Commission, each of the capital cost estimates that have been filed by the parties in this proceeding. The key differences between SE's estimates and MECL's estimates are discussed in Section 2.1.2 below.

## **Comments on MECL's Evidence and Position**

### **Materials and Construction**

- 2.04 MECL maintains that its estimate for the project of about \$7 million (Gaudet Affidavit, paragraph 7) is more accurate because it is based on "actual values". As showing in Appendix A, the subtotal for Transmission Line component is \$2,842,000. This total excludes environmental, easements and engineering/contingency. This does not reconcile with MECL's response to IR-22, which indicates that their typical costs for 138 kV armless construction excluding environmental, easements and engineering/contingency are \$70,000 per km. At a \$70,000 per km, a 20 kilometer line would cost \$1,400,000. When the joint use and other items in MECL estimates, except communication, are added for another \$342,000, the total would be \$1,742,000 for 20 km of 138 kV construction, a figure that is reasonably close to the estimate made by Mr. Irving.
- 2.05 In reviewing the detail of MECL's consultant's report in response to the interrogatories, the material prices appear inflated as compared with material cost quotes supplied to SE. As an example, Strum has apparently allowed \$3250/pole for insulators, accounting for a difference of \$893,000 from SE's figure when applied to 380 poles. The quotes that SE received costed insulators at about \$900 per pole. Pricing of the poles themselves presents a further example. There is a difference of approximately \$225 per pole, adding approximately \$85,000 in material costs. Changing these two items would reduce Strum's estimations by approximately \$1,000,000.
- 2.06 In MECL's responses to IR 29 (a) it is clear that a 5% contingency was used in the consultant's report rather than a 15% contingency as the consultant felt that the level of effort was better than a Class D engineering estimate and a lower contingency factor can be used. The Commission should understand that a contingency is not a particular cost, but rather a budgeting provision for estimation errors and unforeseen factors that may cause cost overruns. When the transmission line is actually constructed, costs might be different than the estimate, but there would be no "contingency" item in the actual costs. If the specific items are as estimated, the total costs of the project would therefore be below the estimated total (which includes the contingency).
- 2.07 MECL's 2012 estimates and Strum's estimates add 14% for engineering and project management costs. Mr. Irving's estimate incorporates 10% for this cost. Coles has not included a line item for these costs. While up to 14% can represent a good estimate for a project designed and managed at consulting engineers' hourly rates, typically SE always project manages its own projects and coordinates all engineering and contractors as necessary. SE therefore anticipates very minimal additional costs for project management. For

example, on SE's recent wind farm project the outside engineering costs on a \$30 Million project were approximately \$900,000 i.e. 3%.

### **Environmental Assessment Costs and Related Risks**

- 2.08 SE has used an estimate of \$250,000 for environmental assessment costs, based on a figure provided by MECL previously in this proceeding. Since MECL has experience with environmental approvals, SE considers this the best available basis for a cost estimate.
- 2.09 While it is usual for an incumbent transmission company to pursue environmental approvals before applying to its economic regulator for a permit to construct, SE is requesting that the Commission approve its application contingent on environmental approvals being obtained at a later date. In view of the legal challenges brought by MECL and the resulting two-year delay in moving forward with the substance of this proceeding, SE believes that it has proven to have been prudent in proceeding on this basis.
- 2.10 SE is proposing a route for this transmission line along an existing roadway. One advantage of such a route is that the roadway provides easy access for crews and vehicles in the construction phase and for maintenance and repair during the decades when the line will be in service. This choice of route therefore minimizes both capital cost and on-going maintenance costs, and would contribute to a higher level of reliability for customers. SE anticipates that the route will be acceptable to the community, because it is already the site of an existing pole line. A further advantage of this route is that it is an existing corridor for services, and therefore could be expected to be used with fewer environmental impacts than some other potential routes.
- 2.11 In paragraph 11 of MECL's Affidavit of February 10, 2012, it is suggested that SE has underestimated the risk that community or environmental considerations will require re-routing of the line, and increase costs to an unknown but significant degree. The experience that MECL uses as the basis for this concern is the re-routing of the Y-115 line. However, in response to SE's IR-4, MECL says that there was no specifically identified environmental concern, and that no government agency ordered that the line be re-routed. The third parties for whom the line was built took the decision in order to increase public acceptance of the project.
- 2.12 MECL did not disclose, or perhaps is not itself aware, how the trade-off between cost and community acceptance was made. A different decision might have been made, or in fact the community might have regarded the decision differently, if the owner of the line had been a municipality and if the costs of re-routing were therefore going to be borne by the community, as they would in SE's case. In any case, given that the re-routing was discretionary, it



is SE's position that it is not appropriate to use this example to add a major risk factor to the construction of SE's proposed line.

### **Communications Costs**

- 2.13 It is apparently MECL's position that a capital cost of \$500,000 would be necessary to meet the communications requirements of the line. Neither of SE's experienced consultants accepts the necessity to incur a cost of \$500,000 for communications. MECL acknowledges that lower cost options exist (see IR-3(h)).
- 2.14 SE has taken the approach in all aspects of the cost of the line, to find the most economical solutions and approaches. MECL does not appear to have adopted the same approach in its estimates of the cost of the proposed line. SE is aware of several possible alternatives, including the option of leasing fibre from a third party. SE has obtained a price of \$11,940 annually from Eastlink for this service. While this option, if in place for a 40-50 year life of the line, would not offer significant, or perhaps any, savings, a lease for a shorter term would allow SE to take advantage of changes in technology or the market for such services as they arise. At the time of detailed planning, options would be more thoroughly investigated and the lowest cost satisfactory option would be adopted.

### **Critical Spares**

- 2.15 "Critical spares" are an inventory of key pieces of equipment to use as replacements to restore service if the installed equipment fails. The premise is that maintaining spare parts on hand means service can be quickly restored without waiting for delivery of a part. MECL has suggested that it would be essential for SE to maintain an inventory of high-cost pieces of equipment in order to be sure of avoiding prolonged outages for its customers. If it were true that SE required duplicates for all the key pieces of equipment, the capital cost of the line would be greatly increased.
- 2.16 SE's advisors, who have many years of experience in utility practice, typically look for and find less costly strategies to maintain service while obtaining permanent replacements for failed system components. Such strategies may involve arrangements to share a back-up or spare part with neighboring systems.
- 2.17 SE has responsibly considered its needs for back-up, and its options, and is mindful of both reliability and reasonable cost.
- 2.18 SE's immediate strategy to restore service would be the use of MECL's T-11 line as an alternate path for the load. The T-11 line is presently SE's connection with MECL's transmission system, and because of SE's existing

15-year contract to take wind generation from West Cape, SE would continue to have a reservation, and to use and pay for service on this line for more than a decade after completion of the new line. MECL has included the costs to SE for this use, in the amount of \$137,830 as a line item in its version of the business case at Exhibits E and F of the February 10, 2012 Affidavit, and SE has netted the cost in computing its transmission cost savings in the business case as shown in SE-1Rev. Therefore, for at least this period, SE would have back-up to its own line through MECL's system, which could be used until a replacement could be obtained for failed equipment.

- 2.19 At the same time as MECL maintains that SE must incur the cost of critical spares, and incur the cost of transmission for its purchases from West Cape using the T-11 line, MECL has also included in its version of the business case (Exhibits E and F of the Affidavit), a cost to reserve backup capacity on the T-11 line. This item is further addressed in Section 2.2.
- 2.20 SE has indicated its willingness to negotiate the purchase of the T-11 line from MECL on several occasions, but MECL has not indicated a willingness to sell it.
- 2.21 To supplement its arrangements to use the T-11 line for back-up, SE would attempt to enter into arrangements with neighbouring larger utilities that maintain spares, to obtain them on a loan or rental basis. Such arrangements exist among other utilities in Atlantic Canada.

### ***One-Time and On-going Costs***

#### **References**

- 2.22 Unless otherwise stated, these comments are in reference to Exhibit A of MECL's Affidavit filed February 10, 2012.

#### **Easement Costs**

- 2.23 MECL appears to have accepted SE's estimate of annual easement costs of \$2,000.

#### **Incremental Property Taxes**

- 2.24 MECL appears to have adopted SE's initial estimate of incremental property taxes, and states in response to IR-33 that it does not know the formula that applies to SE's property taxes.
- 2.25 Property taxes applicable to SE are calculated as 2% of gross margin (sales less cost of sales including purchases and transmission costs). Thus, the amount of property taxes would not vary as a result to additions to SE's plant,

or to operating expenses, but an increase in property taxes would result from a decrease in transmission rates paid to MECL.

- 2.26 In SE-1 filed in 2009, the amount was calculated as 2% of an estimated transmission cost reduction of \$500,000. However, in SE-1 Rev, an amount of approximately \$130,000 (or \$137,830 as estimated by MECL) would offset the reductions in SE's transmission rates paid, and there would be a corresponding reduction in incremental property tax. In computing the updated business case in Section 3.2, therefore, SE has recomputed incremental property taxes using this formula.

### **OM&A Costs**

- 2.27 Coles Associates has estimated OM&A costs for the line in the first year of operation at \$35,000 and Mr. Irving has estimated them at \$50,000. As explained in SE's response to MECL's IR-26, these estimates were based on a relationship of SE's maintenance costs to assets for 11 historic years. These estimates thus reflect SE's cost structure, and approach to maintenance of its assets. As a result of the work done to respond to this interrogatory, SE has revised the Coles Case to reflect \$38,000 in maintenance cost in the first year.
- 2.28 By contrast, MECL in estimating the costs at \$122,030, has taken the approach of applying the factor of 1.92% used in the proposed OATT to MECL's estimate of the capital cost.
- 2.29 It is SE's position that MECL's estimate has been made on a basis that bears no relationship to the costs that SE will incur, despite the fact that MECL, in response to IR-14(b), confirmed its understanding that when the line is built, it will be maintained by SE with SE's resources and at SE's cost. MECL has instead used an average level of costs that applies to MECL's regulated cost structure, in MECL's organization.
- 2.30 Furthermore, the factor of 1.92%, as explained by MECL in its response to SE's IR-14, is the average indirect OM&A incurred by MECL, divided by its asset base. This means that the average level of costs incurred by MECL (not by SE), including administrative costs, are included in the factor. While SE does not at this time wish to argue the appropriateness of the non-capital support charge proposed by MECL for the purposes of the OATT, it is SE's position that it is not correct to apply an average indirect cost for purposes of this business case. For purposes of the business case, only the costs that will be incurred incrementally are appropriately included.
- 2.31 Taking as an example, the costs of engineering and field supervision, management, and administration, these costs are appropriate part of the business case only to the degree that they will increase in order to accommodate the responsibility of operating the new line. If SE can operate

and maintain the line without adding either employees or contracted resources, then the incremental cost is zero, and a value of zero is included in the business case. This is because any cost that will not change as a result of the new transmission line does not have to be considered as part of the business decision of whether or not to proceed with the project. If the line is not constructed, the cost will be incurred anyway. In all other parts of the analysis, MECL and SE have both considered only incremental costs and savings—that is only cash flows that are subject to change as a direct result of proceeding with the transmission line project.

- 2.32 In the updated business case attached, SE has therefore used a figure of \$38,000 for maintenance in the Coles Case (adjusted from \$35,000), and \$50,000 in the Irving Case (unchanged).

#### **Costs Associated with Back-up Service on the T-11 Line**

- 2.33 MECL has included costs of \$27,086 in its version of the business case, to provide backup to SE on its T-11 line. The rationale as explained by MECL is that SE would be required to reserve 1MW of capacity on the line, and pay for Network Integration Service or Firm Point to Point Service in order to have the T-11 line continue in operation as a back-up facility. As indicated in MECL's response to SE's IR-11, this is a different charge from, and presumably in addition to, the \$5,000 that would be payable for OM&A and capital-related costs because T-11 is a direct assignment facility with respect to SE.
- 2.34 SE would point out to the Commission that the \$5,000 direct assignment charge was not included by MECL in its Exhibits E and F, presumably because this charge would be payable whether or not SE's transmission line is built, and is thus not an incremental cost for purposes of the business case.
- 2.35 SE is now using T-11 for transmission associated with a 15-year contract to take wind generation from West Cape, and for this the cost as estimated by MECL will be \$137,000 at existing rates. It is SE's position that the \$27,086 is under no circumstance applicable during the years when SE will be taking firm transmission service, using the T-11 line, for its purchases from West Cape. Whether SE opts for Network Integration Service or Firm Point to Point service, the T-11 line will be used. It would be inappropriate to require SE to make an additional reservation of transmission capacity in order to keep in use a line that will be in use.
- 2.36 It is also SE's position that, assuming no further purchases from West Cape or other on-Island generators at the end of the present contract, SE should not have to pay to maintain T-11 as a backup facility in addition to paying for it as a direct assignment facility.

- 2.37 SE has therefore deleted the amount of \$27,086 for T-11 backup in its updated business case.

#### **Transmission NB to Bedeque**

- 2.38 MECL includes costs of \$77,970 for this item. In response to SE's request for clarification submitted as IR-16, MECL referred to an exhibit in its 2009 filing. However, in their response to IR-13 part (c), they show that their estimate of this cost has been increased by more than \$30,000 annually over the amount estimated in 2009.
- 2.39 Since MECL has not provided any support for its figure, SE has not been able to make an assessment of its reasonableness, or of the validity of the estimation methodology. SE has therefore included an amount of \$50,000, which is higher than the amount estimated by MECL in 2009, and which will be conservative for purposes of the business case. As would be the case in regard to any of these charges, SE reserves its right to question, and if appropriate to oppose, an application by MECL for approval of charges by the Commission.

#### **Schedule 9 Costs – Bedeque Modifications**

- 2.40 SE accepts this methodology and the computed value of \$13,492 for purposes of this business case.

#### **Charges for Transmission Service for Electricity Purchases from West Cape**

- 2.41 MECL has estimated these at \$137,830. SE accepts this estimate as being not significantly different from its own.
- 2.42 However, SE wishes to clarify to the Commission that this item, grouped by MECL in its evidence with the operating costs of the new transmission line, is not in fact a cost related to the new line. It is a cost that SE now incurs for transmission service from MECL, and which SE will continue to incur for more than a decade, whether or not the proposed transmission line is constructed.
- 2.43 SE's contract with West Cape has an effect on the business case for SE's transmission line in this respect: it results in SE continuing to use MECL's transmission service for part of its load, and thereby reduces the savings that SE will realize as a result of its proposed new transmission line. At the end of this contract, SE's savings would be the full cost of transmission service from MECL.

- 2.44 In its Coles Case and Irving Case filed with SE-1Rev, SE did not reflect the end of the West Cape contract in year 15. In the updated business case, SE has reflected this in the same manner as MECL did in Exhibit E filed February 10, 2012.

#### **One-Time Incremental Generation Costs for Protection at Bedeque Substation**

- 2.45 MECL has included \$208,000, and acknowledges at its response to IR-15 that a no-wind situation has been assumed, such that the most expensive fuel would be consumed. SE was unpleasantly surprised to learn that the work required at the Bedeque Substation would interrupt supply from the mainland, and wonders how MECL allowed such a situation to exist. SE would assume that all reasonable measures would be taken to keep this cost low. SE has incorporated \$104,000, or half of MECL's proposed amount into its business case reflecting this assumption.

#### **Communications Cost**

- 2.46 SE has included annual telecommunication lease fees of \$11,940 as per Section 2.1.2.3, for a period of 10 years, with the amount dropping by 50% in year 11 to reflect an assumption of improvements in the technology and the market for these services.

#### ***Savings based on Transmission Rates***

- 2.47 As explained in Section 2.2.8, in its updated business case SE has incorporated the assumption of termination of the West Cape supply contract. This takes place after year 13, as the contract is already effective and an allowance should be made for the construction period.
- 2.48 SE has also continued to incorporate provision for a tariff increase of 20% in year 2. SE believes, for the reasons set out in SE-1-Rev at page 8, that it is reasonable to forecast a significant transmission rate increase even though MECL has suggested that none is planned.

### **3 Business Case Analysis**

#### ***Discount Rate***

- 3.01 In performing a discounted cash flow "(DCF)" analysis to determine net present value a key element is the discount rate that will serve to adjust future cash flows to their "present value". The effect of discounting is to make a cash flow further into the future less valuable than a cash flow in the

- present or near future. In the case of the proposed project, the initial capital expenditures will be made in the initial two-year period, and be followed by annual cash flows for four to five decades (or as long as the transmission line remains in service). The annual cash flows will be comprised of savings in transmission charges and annual operating, maintenance and administration costs, and are forecast into the future in order to create the discounted cash flow analysis.
- 3.02 The discount rate is an important input to the DCF model because, given a set of (forecast) assumptions as to capital expenditure, revenues and annual expenses, a low discount rate increases the importance of cash flows in the future, while a higher discount rate reduces their importance. Generally a low discount rate increases value and a higher discount rate reduces value.
- 3.03 While there are a number of considerations involved in selecting the discount rate or range of discount rates in DCF modeling, the basic question is: what is return that an investor will require in order to make funding available for the project. This may be determined either as the cost of borrowing (or obtaining equity funding or a mix of debt and equity), or the opportunity cost (i.e. the return that could be realized if the same funds were invested in a different project).
- 3.04 Since SE's original business case was filed with the Commission in 2009, market rates of interest have declined significantly. SE therefore reconsidered the appropriate discount rate for the business case, and estimated a value of 3.85%. MECL, in its evidence, proposed a higher rate, which would have the effect of reducing the calculated value of the transmission line project by the DCF method. Specifically, MECL in its affidavit of February 10, 2012, paragraph 26, states: "The above NPV calculations use an interest rate of 4.75% which MECL believes, based upon its recent experience, is appropriate for the long term financing of the Proposed Project."
- 3.05 MECL has not presented any evidence in support of its proposed discount rate, but has said only that the rate represents "*its* ([MECL's] recent experience". The Commission should understand that while this may be the case, the cost of borrowing for an entity like MECL, which is a subsidiary of a large shareholder-owned company with a mixed portfolio of investments across Canada and internationally, would not necessarily reflect the interest rates available to a solvent Canadian municipality for an infrastructure project.
- 3.06 Since filing its updated direct evidence in 2011 (SE-1 Rev) and responding on January 13, 2012 to MECL's interrogatory #19, SE approached commercial lenders for an indicative rate for financing of the project. The indicative rate was 3.31%, based on an interest rate swap, with the rate locked in for 30 years, and inclusive of all fees. In view of the fact that the rate for years 31

through 40 might be somewhat higher, SE has concluded that an appropriate discount rate, based on *its own* ability to obtain financing for this proposed transmission line, would be in the range of 3.31% to 3.60%.

### **Projected Load Increase**

- 3.07 In updating the business case, SE became aware that it had inadvertently neglected to consider the effects of load growth in computing the savings on transmission rates. This oversight has now been fixed in the financial model. Load growth is assumed to be 2% annually, however SE's 20 year historical growth is higher and 2% is a conservative number for this business model.

### **Financial Analysis Updated**

- 3.08 Based on the updates to the model described above, SE has conducted certain sensitivity analysis to determine the effects of key variables on the results of the business case. As a starting point, to be conservative SE has used the "Irving Case" because Mr. Irving's estimates of capital and maintenance costs are higher than the "Coles Case". SE has computed that with a discount rate of 3.31% the capital cost for the project could be as high as \$20.1 million, before a negative business case would be produced. SE believes, for the reasons stated previously, that the highest appropriate discount rate for sensitivity purposes is 4.25%; however, in order to "stress-test" the computations, a rate of 4.75% as proposed by MECL was tested. This discount rate produces a positive business case for capital cost levels up to \$14.6 million. For clarity, all discounts rates less than 4.75% produce a positive business case for capital cost levels higher than \$14.6 million.
- 3.09 As explained previously, SE has assumed that MECL will soon apply for a significant transmission rate increase, to reflect changes in the transmission revenue requirement, and has therefore included a rate increase of 20% in Year 2. If it is assumed that annual increases of 2% will be sufficient for MECL, and assume a 4.75% discount rate, the project would have a positive business case even if capital costs were as high as \$12.3 million. For clarity, all discount rates lower than 4.75% produce a positive business case at capital cost levels higher than \$12.3 million.
- 3.10 Furthermore, based on SE's modeling, if load growth is assumed, then the transmission line has a positive business case even assuming a capital cost of \$7 million as estimated by MECL, and including all of the annual and one-time non-capital costs in the amounts estimated by MECL. For clarity, in testing such a scenario, SE does not endorse the assumptions made by MECL; the exercise was conducted purely to demonstrate the robustness of SE's business case for construction of the proposed line.
- 3.11 A revised model is attached as Appendix B.



## 4 Impact on MECL Customers

### *Estimation of Impact*

- 4.01 In MECL's affidavit of February 10, 2012, paragraph 34, page 8, MECL stated: "MECL's electricity consumers would be responsible for recovery of the current year OATT revenue loss of \$290,000 that COS would avoid paying annually to MECL for transmission service." Although SE's position is that the Court has ruled that the impact on MECL's customers is not to be considered by the Commission in this proceeding, SE, in its Interrogatory # 8 on that evidence, asked MECL to quantify the impact in terms of the bill to a small residential customer, the percentage of MECL's revenues and dividends to its shareholders.
- 4.02 To this, MECL responded, "Financial information in relation to MECL's operations and business affairs is publicly available and COS is therefore in a position to calculate the answer to this question."
- 4.03 After taking a position that the impacts on its own customers should be a reason for the Commission to reject an application from SE that would benefit SE and its customers, when given a request to ensure that this Commission has before it a correct computation relating entirely to information about MECL, MECL has again chosen to be uncooperative in this response.
- 4.04 Since SE considers it important that the Commission be able to evaluate MECL's expressed concerns about such impacts, SE has undertaken its own computations, based on information easily available to it. SE acknowledges that this information may not be the most current or best suited to making this computation at this time; that was the reason the question was posed to MECL. However, in the absence of a response from MECL, SE believes that these results will be indicative for purposes of the Commission's considerations.
- 4.05 The following Table A, extracted from Chymko Consulting's Electric Utility Cost of Service Analysis (COSA) dated December 30, 2009, sets out MECL's net revenue requirement for a 2008 year as \$179,967,000. SE is aware that since 2008, MECL has experienced a reduction in its cost of purchased power, but would also have experienced some increases in other costs between 2008 and 2012. Assuming that these changes would net out, SE has assumed that MECL's overall net revenue requirement for 2012 would not be significantly different than \$179,967,000; however, be conservative, SE has used a revenue requirement of \$175,000,000 in its computation.
- 4.06 The reduction in revenue of \$290,000 computed by MECL represents 0.17% of MECL's estimated 2012 total net revenue requirement, an amount that is clearly insignificant.

- 4.07 Assuming a typical residential customer of MECL with a monthly bill of \$120 per month, the increases necessary for MECL to recover this customer's pro rata share of the estimate revenue shortfall would be 21 cents per month.
- 4.08 SE was not able to estimate what impact there might be on dividends to the shareholders of MECL's parent company, Fortis Inc., but in view of the scope of Fortis Inc., Canadian and international business, SE believes there would be effectively none in the short term. In the long term, SE has no doubt that MECL would incorporate the amount into its revenue forecast at its cost of service application to the Commission, thereby recovering the amount from customers, resulting in no further impacts to shareholders.

<b>Table A</b>	
<b>MECL 2008 Revenue Requirement (\$,000)</b>	
Revenue Requirement	2008
Operating Expenses	
Energy Supply	127,877
Transmission	491
Distribution	2,125
General & Administrative	10,659
Total Operating Expenses	141,152
Amortization	11,834
Cost of Capital	
Debt Financing	12,488
Equity Return	11,010
Total Cost of Capital	23,498
Income Tax	6,200
Gross Revenue Requirement	182,684
Less:	
Misc. Revenue	1,824
Transmission Revenue	893
Net Revenue Requirement	179,967
Rate Revenue	
Base	129,374
ECAM (Deferred Future Revenue)	50,593
Total Rate Revenue	179,967
Total Net	0

### ***Impact on MECL Customers Should Not Be Considered***

- 4.09 For the reasons set out in Section 1.1. above, it is SE's position that the impact on MECL's customers whether located inside the City or outside the City, is shown to be *de minimus* in Section 4.1 above. Furthermore, in any event, MECL's approximately 70,000 customers outside the City should not be considered in light of the Appeal Court's decision.

## **5 SE's Record of Responsible, Professional and Cost-Effective System Construction and Operation**

- 5.01 The City of Summerside has a proven record of responsible, professional and cost effective project management throughout the years of owning and operating its electric utility as far back as 1983 when it installed a new 4MW, 5MVA dual fuel generator, rebuilding its substation in 1991, fully automating its generating plant in 1996, new wind farm in 2009, and in 2010 installing a new 1MW, 1.2MVA diesel generator.
- 5.02 We refer to TGM-1, Pages 5 to 8, dated April 15, 2008 and filed herein July 15, 2009. A review of Terry Murphy's earlier submission outlines over forty years of good economic values and decision making by City of Summerside in regards to their overview of electrical generation, transmission and distribution. Throughout this time period the Utility bought and sold assets as a response to market conditions and requirements of service. As recent as the new wind generation facility the utility shows economically driven thinking and ability to deliver on required infrastructure.
- 5.03 In short, Summerside has repeatedly exercised sound financial decisions always under the caveat of not creating a burden the rate payer.
- 5.04 In 2005 the City of Summerside embarked on a mission to investigate, evaluate, and estimate a wind farm project. After three years of careful study and planning the project took root with budget estimation (30 million for 12 MW's of wind energy capacity), project construction planning, environmental studies, and equipment procurement negotiations. After one additional year of planning, managing and procuring agreements for equipments, construction started in June of 2009 and was completed in December 2009. With a crunched construction timeline and a set budget the project was brought in at 28.5 million dollars of cost, a reduction from estimated of 5%. This project entailed a new section to our substation, upgrades to our protection systems, a communication system for controls, and 8 kilometers of 35KV collector line through the core of the City which included 50, 55 and 60 foot poles.
- 5.05 The construction of this 138KV single pole line complete with controls, protection, and substation upgrades is quite similar in complexity and SE has a proven track record of accurate estimating and designing with cost effectiveness in mind but not at the unreasonable sacrifice of reliability. SE is of the opinion that its estimations and understanding of such projects and their operations are proven with its past projects and operational statistics throughout the electric utility's operational history.



## Appendix A

### Comparison of Estimates for a 138kV single pole structure

	2012 MECL Feb 10 (A)	2013 MECL Feb 10 (B)	2011 STRUM Feb 10 (A)	2012 STRUM Feb 10 (B)	2009 MECL Sept 25	2011 Irving Dec 1	2011 Coles Dec 1	2009 Coles Evidence	2009 Coles Sept 4	2008 Coles Feb 22	2003 Coles
Bedeque Substation											
Land Acquisition, 2 acres	0	0	0	0	70,000	0	0	70,000	70,000	70,000	30,000
Site Preparation	10,000	10,000	0	0	99,900	67,000	57,500	55,000	55,000	45,000	45,000
Foundations	114,000	114,000	38,000	38,000	21,000	0	21,000	20,000	20,000	0	0
Circuit Switch	0	0	75,450	75,450	0	0	0	0	0	100,000	100,000
Breaker & Protective Devices	305,000	305,000	267,200	267,200	278,200	170,000	180,000	170,000	160,000	0	0
Metering Tank	107,000	107,000	78,000	78,000	102,000	0	0	0	0	0	0
SCADA	0	0	274,500	274,500	100,000	0	0	0	0	0	0
Line Relocation	0	0	0	0	0	50,000	0	0	0	0	0
Bus Infrastructure	0	0	76,000	76,000	321,850	50,000	42,000	40,000	40,000	36,000	30,000
<b>Bedeque Substation Total</b>	<b>536,000</b>	<b>536,000</b>	<b>809,150</b>	<b>809,150</b>	<b>992,950</b>	<b>337,000</b>	<b>300,500</b>	<b>355,000</b>	<b>345,000</b>	<b>251,000</b>	<b>205,000</b>
Transmission Line (60 MVA)											
Construction	2,000,000	2,000,000	2,843,710	2,843,710	880,000	1,600,000	1,105,000	980,000	825,000	675,000	640,000
5.5 km of distribution under build	192,000	192,000	0	0	0	0	0	0	0	0	0
Joint Use Line Relocation	80,000	80,000	400,000	0	368,000	0	350,000	275,000	260,000	240,000	240,000
Tree Trimming	10,000	10,000	0	0	0	0	0	0	0	0	0
Raise existing Trans Lines	60,000	60,000	0	0	0	0	0	0	0	0	0
Communication Infrastructure	500,000	500,000	313,480	313,480	192,000	25,000	0	0	0	0	0
Easement	0	0	0	0	Annually	15,000	Annually	Annually	Annually	Annually	Annually
<b>Transmission Line Subtotal</b>	<b>2,842,000</b>	<b>2,842,000</b>	<b>3,557,190</b>	<b>3,157,190</b>	<b>1,440,000</b>	<b>1,640,000</b>	<b>1,455,000</b>	<b>1,255,000</b>	<b>1,085,000</b>	<b>915,000</b>	<b>880,000</b>
Ottawa Street Substation											
Site Preparation	60,000	60,000	77,000	70,500	0	60,000	30,000	20,000	20,000	20,000	20,000
Foundations	232,000	206,000	70,500	70,500	21,000	32,000	0	0	0	15,000	15,000
Breaker & Protective Devices	385,000	265,000	470,900	323,600	502,800	0	180,000	170,000	165,000	150,000	150,000
Transformer, 30/40/50 MVA	1,000,000	1,000,000	1,226,000	1,226,000	1,495,000	1,500,000	1,500,000	1,500,000	1,500,000	1,400,000	1,200,000
Communication	79,000	79,000	306,250	306,250	0	0	50,000	0	0	0	0
Bus Infrastructure	0	0	130,300	124,200	50,000	55,000	52,500	50,000	50,000	30,000	30,000
Protection and Transformer Testing at Manufact	0	0	0	0	0	90,000	0	0	0	0	0
<b>Ottawa Street Subtotal</b>	<b>1,756,000</b>	<b>1,610,000</b>	<b>2,280,950</b>	<b>2,121,050</b>	<b>2,068,800</b>	<b>1,737,000</b>	<b>1,812,500</b>	<b>1,740,000</b>	<b>1,735,000</b>	<b>1,615,000</b>	<b>1,415,000</b>
<b>Subtotal 1</b>	<b>\$5,134,000</b>	<b>\$4,988,000</b>	<b>\$6,647,290</b>	<b>\$6,087,390</b>	<b>\$4,501,750</b>	<b>\$3,714,000</b>	<b>\$3,568,000</b>	<b>\$3,350,000</b>	<b>\$3,165,000</b>	<b>\$2,781,000</b>	<b>\$2,500,000</b>
Contingency	807,600	785,700	341,691	332,196	675,263	594,600	535,200	502,500	474,750	417,150	375,000
<b>Subtotal Construction</b>	<b>\$5,941,600</b>	<b>\$5,773,700</b>	<b>\$6,988,981</b>	<b>\$6,419,586</b>	<b>\$5,177,013</b>	<b>\$4,308,600</b>	<b>\$4,103,200</b>	<b>\$3,852,500</b>	<b>\$3,639,750</b>	<b>\$3,198,150</b>	<b>\$2,875,000</b>
Environmental Studies	250,000	250,000	0	0	250,000	250,000	262,500	250,000	250,000	200,000	200,000
<b>Subtotal 2</b>	<b>\$6,191,600</b>	<b>\$6,023,700</b>	<b>\$6,988,981</b>	<b>\$6,419,586</b>	<b>\$5,427,013</b>	<b>\$4,558,600</b>	<b>\$4,365,700</b>	<b>\$4,102,500</b>	<b>\$3,889,750</b>	<b>\$3,398,150</b>	<b>\$3,075,000</b>
Engineering and Project Management	866,824	843,318	900,000	870,000	542,701	455,860	0	0	0	0	0
<b>Total</b>	<b>\$7,058,424</b>	<b>\$6,867,018</b>	<b>\$7,888,981</b>	<b>\$7,289,586</b>	<b>\$5,969,714</b>	<b>\$5,014,460</b>	<b>\$4,365,700</b>	<b>\$4,102,500</b>	<b>\$3,889,750</b>	<b>\$3,398,150</b>	<b>\$3,075,000</b>

**City of Summerside Electric Utility  
Transmission Line Economic Feasibility  
(Case: Irving April 2012 -- 3.85% Discount Rate)**

[illegible]

**City of Summerside Electric Utility  
Transmission Line Economic Feasibility  
(Case: Irving April 2012 -- 3.85% Discount Rate)**

[illegible]

**City of Summerside Electric Utility  
Transmission Line Economic Feasibility  
(Case: Irving April 2012 -- 3.85% Discount Rate)**

Year of Operation Year of Construction	27	28	29	30	31	32	33	34	35	36	37	38	39	40
<b>1. Project Net Present Value</b>														
Transmission (OATT) Rate Increase	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Load Growth	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Capital Expenditure														
Annual Easement Cost	(2,000)	(2,000)	(2,000)	(2,000)	(2,000)	(2,000)	(2,000)	(2,000)	(2,000)	(2,000)	(2,000)	(2,000)	(2,000)	(2,000)
Operation and Maintenance, 2% Escalation	(83,671)	(85,344)	(87,051)	(88,792)	(90,568)	(92,379)	(94,227)	(96,112)	(98,034)	(99,994)	(101,994)	(104,034)	(106,115)	(108,237)
Share of Submarine Cable Operation and Maintenance	(98,436)	(100,405)	(102,413)	(104,461)	(106,551)	(108,682)	(110,855)	(113,072)	(115,334)	(117,641)	(119,993)	(122,393)	(124,841)	(127,338)
One time fuel costs for work at Bedeque Stn														
Communication facilities lease	(5,970)	(5,970)	(5,970)	(5,970)	(5,970)	(5,970)	(5,970)	(5,970)	(5,970)	(5,970)	(5,970)	(5,970)	(5,970)	(5,970)
T-11 Backup Charges	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Schedule 9 Charges	(27,448)	(27,997)	(28,557)	(29,128)	(29,711)	(30,305)	(30,911)	(31,529)	(32,160)	(32,803)	(33,459)	(34,128)	(34,811)	(35,507)
Incremental Property Taxes	(34,077)	(35,453)	(36,886)	(38,376)	(39,926)	(41,539)	(43,217)	(44,963)	(46,780)	(48,670)	(50,636)	(52,682)	(54,810)	(57,024)
Transmission Rates, West Cape Contract														
Transmission Rates, NIS, Total Load	1,703,832	1,772,666	1,844,282	1,918,791	1,996,310	2,076,961	2,160,871	2,248,170	2,338,996	2,433,491	2,531,804	2,634,089	2,740,506	2,851,223
Total Annual Cash Flows	1,452,230	1,515,497	1,581,405	1,650,064	1,721,585	1,796,086	1,873,690	1,954,523	2,038,718	2,126,413	2,217,751	2,312,882	2,411,959	2,515,146
Assumed Discount Rate, LTD	3.85%													
Net Present Value	\$ 12,035,207													



**City of Summerside Electric Utility  
Transmission Line Economic Feasibility  
(Case: Irving April 2012 -- 3.31% Discount Rate)**

[illegible]

**City of Summerside Electric Utility  
Transmission Line Economic Feasibility  
(Case: Irving April 2012 -- 3.31% Discount Rate)**

[illegible]

**City of Summerside Electric Utility  
Transmission Line Economic Feasibility  
(Case: Irving April 2012 -- 3.31% Discount Rate)**

Year of Operation Year of Construction	27	28	29	30	31	32	33	34	35	36	37	38	39	40
<b>1. Project Net Present Value</b>														
Transmission (OATT) Rate Increase	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Load Growth	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Capital Expenditure														
Annual Easement Cost	(2,000)	(2,000)	(2,000)	(2,000)	(2,000)	(2,000)	(2,000)	(2,000)	(2,000)	(2,000)	(2,000)	(2,000)	(2,000)	(2,000)
Operation and Maintenance, 2% Escalation	(83,671)	(85,344)	(87,051)	(88,792)	(90,568)	(92,379)	(94,227)	(96,112)	(98,034)	(99,994)	(101,994)	(104,034)	(106,115)	(108,237)
Share of Submarine Cable Operation and Maintenance	(98,436)	(100,405)	(102,413)	(104,461)	(106,551)	(108,682)	(110,855)	(113,072)	(115,334)	(117,641)	(119,993)	(122,393)	(124,841)	(127,338)
One time fuel costs for work at Bedeque Stn														
Communication facilities lease	(5,970)	(5,970)	(5,970)	(5,970)	(5,970)	(5,970)	(5,970)	(5,970)	(5,970)	(5,970)	(5,970)	(5,970)	(5,970)	(5,970)
T-11 Backup Charges	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Schedule 9 Charges	(27,448)	(27,997)	(28,557)	(29,128)	(29,711)	(30,305)	(30,911)	(31,529)	(32,160)	(32,803)	(33,459)	(34,128)	(34,811)	(35,507)
Incremental Property Taxes	(34,077)	(35,453)	(36,886)	(38,376)	(39,926)	(41,539)	(43,217)	(44,963)	(46,780)	(48,670)	(50,636)	(52,682)	(54,810)	(57,024)
Transmission Rates, West Cape Contract														
Transmission Rates, NIS, Total Load	1,703,832	1,772,666	1,844,282	1,918,791	1,996,310	2,076,961	2,160,871	2,248,170	2,338,996	2,433,491	2,531,804	2,634,089	2,740,506	2,851,223
Total Annual Cash Flows	1,452,230	1,515,497	1,581,405	1,650,064	1,721,585	1,796,086	1,873,690	1,954,523	2,038,718	2,126,413	2,217,751	2,312,882	2,411,959	2,515,146
Assumed Discount Rate, LTD	3.31%													
Net Present Value	\$ 14,362,460													