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October 9, 2014

via RESS e-filing – signed original to follow by courier

Ms. Kirsten Walli
Board Secretary
Ontario Energy Board
PO Box 2319
2300 Yonge Street, 27th floor
Toronto, ON M4P 1E4

Dear Ms. Walli:

Re: Toronto Hydro-Electric System Limited ("THESL")
Draft Report of the Board: Electricity and Natural Gas Distributors' Residential Customer Billing Practices and Performance
OEB File No. EB-2014-0198

THESL writes to the Ontario Energy Board ("OEB") in respect of the above-noted matter.

On September 18, 2014 the Ontario Energy Board ("OEB") released a Draft Report of the Board entitled *Electricity and Natural Gas Distributors' Residential Customer Billing Practices and Performance (*"The Draft Report"). In the Draft Report, among other issues, the OEB conveys its intent to mandate the issuance of monthly electricity bills for all residential customers in Ontario starting January 1, 2016. The key considerations cited as driving the contemplated transition are enabling customers to better manage their consumption, control costs and budget for the expenditures associated with their electricity bills. While the Draft Report acknowledges that a mandatory transition to monthly billing would likely result in incremental costs, it expresses its expectation that such costs should be largely offset by the benefits of monthly billing and related activities, including improved cash flow / working capital reductions, reduced arrears and bad debt expenditures and enhanced customer communications. Further cost efficiencies are also expected from the assumed increases in the uptake of e-billing services that provide opportunities for cost reductions in the areas of printing and delivery.

In the Report, the OEB poses two specific questions to the utilities, namely to:
(1) List the potential barriers and anticipated benefits of the mandatory monthly billing transition as contemplated and;
(2) Discuss the merits of a similar transition for seasonal customers.

THESL is pleased to provide its response to question (1) only, along with some general comments. The utility does not currently serve any seasonal customers, and as such takes no position on the issue of billing frequency for these consumers. THESL also notes that it is a signatory to the submission of the Coalition of Large Distributors ("CLD"), and provides this submission to supplement the CLD submission with considerations and analysis based on THESL's specific circumstances.

<u>General Comments</u>

As a matter of general comment, THESL supports the OEB's intention to enable consumer control of their energy usage and the resulting expenses, which is consistent with the OEB's increased Focus on Consumers, as articulated in the *Renewed Regulatory Framework for Electricity* (RRFE) Board Report and the subsequent policy statements. However, in addition to answering the OEB's specific request for commentary, THESL has several comments on general nature in response to the discussion provided in the Draft Report.

On the issue of customer consumption management as enabled by billing frequency, THESL customers (and presumably most, if not all, residential customers in Ontario) currently have online tools at their disposal that provide them with consumption information at intervals far shorter than any billing frequency could reasonably accomplish. These tools are an important by-product of Smart Meter and Advanced Metering Infrastructure investments that the distributors already have in place. While THESL acknowledges that not all customers have access to and/or awareness of these online tools, the utility respectfully submits that the value proposition of monthly billing from the conservation perspective should consider the existence of consumption management tools that are already in place.

In a similar manner, the OEB already mandates equal payment plans that enable customers to better predict and budget for their electricity costs. In THESL's view, this offering substantially addresses the OEB's objective of allowing consumers to manage regular expenses by budgeting for payments on a monthly basis. This is the case for all distributors, including those with bi-monthly billing cycles, since equal payment plan customers are charged every month. As with the consumption management objectives, THESL submits that the value of a mandatory monthly billing transition as a tool to reduce the cost management/budgeting burden be assessed in the context of existing service offerings that may already accomplish the underlying objectives and require no incremental costs.

THESL also notes its concern regarding the contemplated implementation timeline of January 1, 2016, should the mandatory transition be ultimately required. Based on experience of implementing the projects of similar complexity and magnitude, and as further elaborated below, THESL believes that the contemplated timeline may introduce significant implementation risks, mandate higher implementation costs than under longer-term transition scenarios (see the alternatives discussion below), and result in utilities being required to postpone the implementation of other important planned customer care activities in the area of customer care. It is THESL's respectful submission that these risks could be substantially mitigated if the OEB were to adopt a more gradual transition timeline, such as the 5-10 year transition window proposed by the CLD.

Finally, and consistent with the CLD response, THESL respectfully submits that should the OEB mandate a transition to monthly billing, consideration should be given to the cost consequences for distributors and the resultant impact on their financial performance. The OEB's Draft Report lists 12 distributors that are not currently planning a transition to monthly billing, with another seven in various stages of planning for such an event. It is therefore reasonable to assume that at least the utilities that are not currently planning a move to monthly billing do not have access to the incremental rates funding that would enable them to undertake such a transition, short of postponing other planned (and OEB-approved) activities, which is often impractical or contrary to good utility practice. While some of these costs could be offset by the benefits noted by the OEB, in some cases (such as with arrears and bad debt provisions) these benefits would take several years to materialize, if at all. Given these considerations, it is THESL's submission that in the event of a mandatory monthly billing transition as contemplated in the Draft Report, distributors should be permitted to seek recovery of such incremental costs in a timely manner. The OEB could consider reviewing the cost recovery claims through some form of a hybrid generic proceeding that would permit concurrent consideration of individual distributors' expenditures.

In responding to the OEB's specific question posed in the Draft Report, THESL endeavoured to quantify the anticipated costs and benefits of a transition to monthly billing based on its understanding of the areas of anticipated benefits, its current cost structures, experience in implementing customer-oriented projects of similar scale and scope, and the utility's near- and longer-term plans, as most recently articulated in its 2015-2019 Custom Incentive Regulation (CIR) application currently before the OEB (EB-2014-0116). Estimates for some of the cost categories (particularly those related to later stages in what is a complex multi-step undertaking) may be subject to material changes on the basis of the results of prior steps and/or unanticipated findings that commonly emerge in large-scale undertakings. Accordingly, THESL notes that variances between estimates and actual costs, and the utility's projections may occur.

The remainder of this submission details the major steps comprising the project of this scope, quantifies the impact of anticipated benefits, and discusses potential alternative approaches along with their cost implications. The utility acknowledges that experiences and considerations may vary materially across the sector, but nevertheless hopes that this information will be helpful to the OEB in making further determinations on the matter in question.

THESL's Response to the OEB's Question

For the electricity distributors that do not offer monthly billing, what are the barriers faced in meeting the Board's goal of having all residential customers moved to monthly billing by January 1, 2016? What are the offsetting benefits such as reduced costs?

Based on THESL's analysis and as substantiated in further detail in the remainder of this document, THESL respectfully submits that a mandated transition to mandatory monthly billing for residential customers as contemplated in the Draft Report, would result in material cost increases, only partially offset by the anticipated quantifiable benefits. The degree of benefit quantification is based on he information currently available to THESL, and could, in the utility's assessment, benefit fro, further consultation with other sector participants and the ratepayers. Along with potential benefits, further efforts would be required to fully assess the impact of indirect costs to the utility and direct costs to customers that are not readily quantifiable based on the insights currently available to THESL.

Furthermore, THESL submits that potential implementation efficiencies could be gained by undertaking the transition work in parallel with other planned customer care-related activities, consistent with existing utility plans. The viability of this option, however, is limited by the January 1, 2016 implementation timeline provided in the Draft Report. THESL would therefore encourage the OEB to consider a phased transition approach with a 5-10 year implementation window as advanced in the CLD submission on this matter.

Finally, given the RRFE commitment to balancing the considerations of Customer Focus, Operational Effectiveness, Public Policy Responsiveness, and LDC Financial Performance, THESL would like to re-emphasize its position that utilities should be granted the opportunity to seek timely recovery of their prudently incurred costs outside of the normal re-basing proceedings, through such potential avenues as the Z-Factor hearings, Incremental/Advanced Capital Modules and/or some form of a generic proceeding, as may be deemed appropriate by the OEB.

The following information details THESL's commentary and quantification of estimated benefits and costs associated with a transition to mandatory monthly billing on a timeline contemplated in the Draft Report.

1.0 Anticipated Benefits

1.1 Working Capital Allowance Reductions

As a part of its 2015-2019 CIR application pre-filed evidence (EB-2014-0116), THESL filed a Lead-Lag study performed by Navigant. The study uses a methodology of deriving a utility's working capital requirements that should be familiar to the OEB from multiple previous proceedings. Using its methodology, Navigant calculates THESL's total Average Revenue Lag (that is, revenue-weighted number of days between the time the utility has to make payments/transfers to its payees and the time it receives the funds from its customers) to be 55.04 days. Applying this number to the calculation of expense leads and the aggregate amounts of eligible 2015 expenditures, results in the Working Capital Requirement of $241.7 million (including HST), which represents 8% of THESL's OM&A and Cost of Power Expenditures – a significant improvement from prior years, owing in large part to the successful introduction of a new Customer Care and Billing (CC&B) system in 2011.

To estimate the impact of a transition to monthly billing THESL made the appropriate adjustments to its Revenue Lag and HST Lead components consistent with the expected impact of monthly billing frequency. The impact of these changes to the Lead-Lag components results in an estimated reduction of THESL's Working Capital Allowance by approximately $1.9 million, or 0.28% of the applied-for 2015 Revenue Requirement.

1.2 Bad Debt/Arrears

THESL echoes the CLD's submission that absent any empirical data as to the customer propensity to pay their bills, or to pay their bills on time under the monthly vs. bi-monthly regime, there is no reliable means of estimating the value of potential benefits of increased billing frequency on the distributors' arrears and default write-offs. THESL understands the OEB's assumption that it is likely the case that some customers struggle to pay their electricity bills on time due to the aggregate amounts of their bi-monthly charges, and would likely prefer to receive a smaller bill each month. However, THESL submits that an equally plausible assumption is that at least a certain portion of customers do not pay their bills within the prescribed timelines for reasons that have little to do with power affordability and budgeting issues. For these customers, a transition to monthly billing could conceivably result in doubling of the amount of late bills per year, thereby creating incremental expenditures for the distributors beyond those driven by the increased frequency of bill issuance. Given a variety of potential scenarios, THESL respectfully requests that prior to concluding this change in policy, the OEB work with utilities that have transitioned to monthly billing in recent years to evaluate the effect of changes to billing frequency on bad debt or arrears.

1.3 Customer Communication and Customer Convenience

THESL has grouped these potential benefits together due to the fact that in both cases the benefits are difficult to reliably quantify in financial terms, as they involve inherently individual preferences (i.e., what is seen convenient or informative to one person is not necessarily so to another). On the other hand, the associated costs of such activities are relatively straightforward to quantify, by estimating the total costs based on an increased volume of bill inserts, newsletters etc (assuming a utility would choose to include communications materials into bills every month following a transition). As with Bad

Debt/Arrears, THESL respectfully submits that the optimal means of estimating the net value of these benefits would be through a customer engagement exercise.

1.4 E-Billing Savings

With regard to E-billing, while THESL fully supports the increased adoption of this service for a number of reasons, it notes that E-billing is an activity that involves its own cost-benefit considerations that exist outside of the billing frequency realm. Encouraging higher uptake involves marketing and IT expenditures in the near term, with significant uncertainty surrounding the ultimate uptake levels and the resulting benefits.

Moreover, in THESL's experience, E-billing adoption by customers is a gradual process, which may significantly delay the realization of the any potential benefits that could offset the costs. THESL has been offering the E-billing service since 2002, and its current subscription rate is around 10% of the customer base, which results in efficiencies that fall significantly short of offsetting the costs of mandatory transition to monthly billing as currently contemplated by the OEB. At this point, THESL possesses no information to suggest that near-term E-billing uptake can increase at the pace significantly higher than historical trends. Accordingly, THESL would encourage the caution in anticipating incremental cost offsets in the magnitude of the forecasted monthly billing costs in the near term.

2.0 Estimated Costs

For the purposes of this analysis, THESL divided the estimated implementation costs into two separate categories, namely One-Time Costs (which include the operating and capital project planning, execution and completion costs), and Ongoing Costs (the incremental costs expected to be incurred for the duration of the project). To provide additional context for its estimates, THESL also outlines the specific circumstances and drivers that in its assessment necessitate these expenditures. The cost estimates themselves were derived on the basis of the utility's experience in implementing large customer care-related projects (e.g. the recently completed Customer Care and Billing system (CC&B) transition), the state of its existing hardware and software, and other ongoing or planned projects in the area of customer are.

2.1 One-Time Costs

To assess the cost impact of one-time transition to monthly billing in the timeline approaching that contemplated by the OEB, THESL developed a preliminary project scope that for the purposes of this analysis is referred to as Base Case. The Base Case is premised on balancing objectives of respecting the OEB's timelines, and observing good utility practice and sound project management. The Base Case project scenario consists of five main steps, ranging in completion timelines between four and 16 months. The steps are:

1. Rectifying known billing system challenges
2. Update configuration, schedules and move customers to monthly cycles
3. Volume test to identify bottlenecks in system performance and operational processes
4. Rectify issues found through volume testing
5. Validate that bill accuracy and timeliness remained unaffected past the transition.

Each step plays a distinct role in facilitating the transition by undertaking the necessary modifications and/or testing of software, hardware and business processes that support monthly billing. Of critical importance are the volume testing activities (Steps 4-5), the associated rectification and subsequent re-testing to ensure that the amended processes and infrastructure do not result in errors that can have a major impact on the utility's service quality, customer satisfaction performance and costs of rectifying any unanticipated issues post-transition.

The one-time costs incurred during the project consist of capital (Capitalized IT Labour, IT Hardware) and OM&A expenditures (general labour). The table below provides a summary of the range of potential costs, based on a "Favourable" and a "Conservative" scenario:

Estimated One-Time Costs

Scenario	Business Labour	IT Labour	Hardware	Total ($M)*
Favourable	$2.2	$1.6	$1.4	**$5.2**
Conservative	$4.0	$3.0	$1.4	**$8.3**

** numbers may not add up due to rounding*

THESL has also evaluated three alternative implementation approaches to the Base Case that vary according to their respective scopes, underlying drivers and associated risks:

Alternative 1:
Merge implementation with suitable major customer care projects planned for in the medium-term.

Pro: Lower costs (40%-50% of the Base Case) and work effort due to shared analysis and testing effort.

Con: Project timing/scheduling significantly outside of the OEB timeline (CC&B upgrade planned for 2018).

Alternative 2:
Full redesign of THESL's customer care business processes related to billing accuracy to optimize the system performance, enhance accuracy and efficiency, and manage the recurring costs.

Pro: Greatest customer and operational productivity and accuracy benefits, potential reductions to the ongoing costs.

Con: Greatest upfront cost (200%-225% of the Base Case) and time to deliver.

Alternative 3:
Make the transition as quickly as possible and address the system/process issues as they arise. Only critical known challenges would be addressed prior to the transition, with other enhancements being made based on production results, as issues occur.

Pro: Potential ability to meet proposed Jan 1, 2016 date in the shortest timeline and potentially lowest up-front cost.

Con: Unacceptably high risk, inability to understand impact to bill accuracy or timeliness, unknown operational impact and effort to resolve once problems occur. Significant potential for occurrence of high-impact events that affect billing accuracy, customer satisfaction, regulatory compliance and costs.

While THESL believes that there are alternatives to the Base Case that could result in lower one-time costs, higher quality of the resultant system configuration and processes and potential efficiencies for the ongoing costs. However, in THESL assessment these options have significant deficiencies in light of the OEB-contemplated implementation timing, compatibility with the utility's plans regarding the timing of other customer care projects, or unacceptably high implementation risks under a streamlined scenario.

For additional information on the scope, costing and discussion of the Base Case and alternative scenarios of one-time implementation, please see Appendix A to this submission.

2.2 Recurring Costs

Beyond the one-time implementation costs, the introduction of mandatory monthly billing for all residential customers would bring about a number of incremental costs, associated with doubling of the volume of expenditures normally associated with bill issuance, delivery, payment processing, collection and related activities.

The following table details these incremental expenditures, using the data based on current costs, THESL's experience in implementing similar initiatives and estimates based on THESL's understanding of the nature and magnitude of the incremental process changes.

Estimated Recurring Cost of Monthly Billing ($M)

Cost Category	Incremental Cost
Postage	$2.6
Paper	$0.1
Envelope	$0.2
Printing	$0.2
Incremental Billing Enquiries (Call Centre)	$0.7
Meter Data Management, manual reads and Verification/Edits	$0.9
Clerical Billing tasks	$0.5
Payment Processing	$0.5
Collections Activities	$0.2
Corporate Communications	$0.2
TOTAL	**$6.1**

** numbers may not add up due to rounding*

The estimates presented above reflect reasonable assumptions, including incremental staffing using partially outsourced labour, and lower incremental call volumes per bill issued than what is currently the case, among others. As noted above, THESL prepared these estimates on the basis of its experience with implementing customer care initiatives of large magnitude, the state of its current processes associated with data collection, bill issuance and payment processing, customer contact behaviour, current cost structures and contractual arrangements, and other similar information. Given the information available to support certain assumptions, the forecasted costs, once realized, could vary by up to 20%.

In calculating the incremental costs, THESL took a conservative approach and assumed certain tasks would not simply double in volume. Should the OEB elect to conduct further stakeholdering on this issue, as suggested by THESL in this submission, the utility would welcome the opportunities to work with other distributors that have completed transitions to monthly billing in recent years to confirm these assumptions based on these distributors' experience.

THESL further notes that the above calculations include only the direct costs, specifically attributable to the transition project as proposed in the Draft Report. To obtain the full estimate of costs, further assumptions need to be made for other costs, including lost staff productivity throughout and for at least 6 months following the transition project, the impact (financial, operational and reputational), associated with postponement of other planned projects to divert resources to billing transition, incremental management oversight time, marketing resources to communicate the changes, and other potential cost drivers.

3.0 Impact to THESL Customers

Based on the benefit and cost projections discussed above, THESL's analysis results in the following conclusions:

Total Estimated Costs and Benefits of Transition to Monthly Billing ($M)

Category	OM&A*	Capital*
Benefits (Quantifiable)	$1.9	
Costs (One-Time)**	$2.2	$3.0
Costs (Sustained)	$6.1	
Net Cost *(Costs – Benefits)*	**$6.4**	**$3.0**

** Table showcases "Favourable" scenario estimates as described above.*

The resultant figures allow THESL to derive a high-level revenue requirement impact estimate of the contemplated undertaking. Assuming full eligibility of the forecasted costs, normal treatment of capital costs, THESL's applied-for 2015 WACC of 6.19%, recovery of one-time OM&A costs in a single year, and THESL's proposed 2015 CIR Service Revenue Requirement, the *net* rate impact (costs less quantifiable benefits) on THESL's 2015 proposed revenue requirement in year 1 would be 1.15%, reducing to 0.82% in the subsequent years once the one-time OM&A costs have been recovered. Given that the contemplated transition would only affect residential customers, THESL infers that the vast majority (if not the entirety) of the incremental costs would be allocated to the residential rate class only, resulting in a customer rate increases that are higher than the provided revenue requirement impact. In THESL's assessment, the business case of undertaking the transition to monthly billing as contemplated in the Draft Report timelines is negative.

Beyond the costs incurred as a result of distributor activities to enable and oversee the administration of monthly billing, THESL submits that the total cost estimate should include the direct costs to customers associated with more frequent payment of bills. These costs would include additional postage costs (which have recently increased) for customers paying their bills by mail, or transaction charges applied by banks for those using other payment options.

THESL acknowledges that its cost analysis could be further enhanced by additional information provided by other parties that may be in a better position to quantify the impact of some of the benefits listed by the OEB.

Subject to other distributors submitting such, or other potential information sources at the OEB's disposal, THESL would encourage the OEB to undertake further stakeholdering, working groups, and/or other similar activities with the aim of further quantifying the costs and benefits of the proposed transition.

All of which is respectfully submitted.

Please do not hesitate to contact me if you have any questions.

Yours truly,

[original signed by]

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APPENDIX A

Additional Information on One-Time Cost Analysis.

Base Case

In order to efficiently transition to monthly billing within the timelines approaching those currently contemplated by the OEB's Draft Report, THESL would approach the monthly billing transition project in five main steps:

	Key Step Objectives	**Estimated Duration**
1)	Rectify known billing system challenges	6 months
2)	Update configuration, schedules and move customers to monthly cycles	6 months
3)	Volume test to identify bottlenecks in system performance and operational processes	16 months
4)	Rectify issues found through volume testing	
5)	Validate bill accuracy and timeliness remained unaffected past the transition	4 months

For the purposes of this analysis, this approach is referred to as the Base Case. The Base case approach is optimal for the purposes of the contemplated transition, since its scope only includes the enhancements that are directly related to and required by the transition to monthly billing. While other potential approaches could result in lower implementation costs (see the "Alternatives" subsection below) they are not included in the Base Case as they would not be feasible under the timeline currently contemplated by the OEB.

Step 1: Rectify known challenges with monthly billing

In the normal course of business THESL has identified a number of system/process issues that are expected to require intervention should the utility transition to monthly billing for all of its residential customers. These challenges fall into two categories:

a) Time-Related: system/process issues efficiently resolved in time to maintain timely bi-monthly billing, but require permanent solutions to comply with a shorter 30-day billing cycle

b) Volume-Related: issues involving manual processes and workarounds, which are feasible and cost effective at current volumes (20,000 bills issued per day), but could not be sustained under a monthly billing cycle, requiring process automation.

Step 2: Update configuration, schedules and move customers to monthly billing cycles

Once the known issues arising from shorter billing cycles have been addressed, the project would focus on the customer information system changes required to implement monthly billing. Given that THESL's core CC&B system is relatively new and has functionality to bill customers every month, the switch would be relatively simple from a system configuration perspective. However, a number of supporting processes would have to be re-designed to enable the doubling of daily workflow for the utility's staff, supporting systems and external vendors.

Step 3: Volume test to identify bottlenecks in system performance and operational processes

In this step, THESL would prepare the necessary data and setup to execute a sustained full-scale volume test. The outputs of this test will be two lists of issues that require resolution. The first list would identify system performance limitations; either hardware related or where poor quality code results in inefficient use of hardware resources. The second list would highlight the operational processes that cannot be sustained with the increased volumes and shorter timelines associated with monthly billing.

Step 4: Rectify issues found during volume testing

The list of hardware and code issues identify in Step 3 are generally not expected to require long lead times to resolve. However rectifying these issues typically involves implementing expensive hardware resources, which comprise a significant portion of the capital hardware costs provided below.

While data flows are fundamentally unchanged under the monthly billing cycle, the operational processes that cannot be sustained present a more complex challenge. Each process, and the associated management controls, would require in-depth assessments and alternative solution evaluations. Solutions may include system modifications, process changes and/or the acquisition of additional resources to perform the process; each with different timelines, capital investment requirements, ongoing operational cost, training and change management trade-offs.

To ensure process efficiency and integrity, THESL would repeat Steps 3 and 4 multiple times to assess the "flow on" effects of higher volumes and test the resolution of earlier performance bottlenecks.

Step 5: Validate bill accuracy and timeliness remained unaffected by the transition

The execution of steps 1 through 4 would bring about a number of new isolated activities/process steps, each with potential to affect the accuracy of the issued bills. Given the significance of potential impact on billing accuracy, customer satisfaction and utility costs to rectify any unanticipated issues post-transition, this step is crucial from the regulatory compliance, customer relationship and operational effectiveness perspectives.

The following information quantifies the costs associated with the five-step Base Case approach presented above.

One-Time Cost Estimates

Base Case: Favourable Scenario ($M)

Step	Business Labour Estimate	IT Labour Estimate	Hardware Estimate	Total Step Estimate
1) Rectify known challenges with monthly billing	$0.1	$0.1		$0.2
2) Update configuration, billing schedules and move customers to monthly billing cycles	$0.1	$0.1		$0.2
3-4) Identify/rectify performance issues (2 iterations)	$1.0	$0.9	$1.3*	$3.2
Resourcing	$0.1	$0.01		$0.1
5) Validate bill accuracy and timeliness	$0.1	$0.3		$0.9
Deployment	$0.1	$0.1		$0.2
Contingency (10%)	$0.2	$0.1	$0.1	$0.5
Totals	**$2.2**	**$1.6**	**$1.4**	**$5.2**

* includes hardware, operating system and Oracle database licenses, system memory and additional storage.
** numbers may not add due to rounding

Base Case: Conservative Scenario($M)

Step	Business Labour Estimate	IT Labour Estimate	Hardware Estimate	Total Step Estimate
1) Rectify known challenges with monthly billing	$0.1	$0.1		$0.2
2) Update configuration, billing schedules and move customers to monthly billing cycles	$0.1	$0.1		$0.2
3-4) Identify/rectify performance issues (2 iterations)	$2.5	$2.2	$1.3*	$6.0
Resourcing	$0.1	$0.01		$0.1
5) Validate bill accuracy and timeliness	$0.6	$0.3		$0.9
Deployment	$0.1	$0.1		$0.2
Contingency (10%)	$0.4	$0.3	$0.1	$0.8
Totals	**$4.0**	**$3.0**	**$1.4**	**$8.3**

* includes hardware, operating system and Oracle database licenses, system memory and additional storage.
** numbers may not add due to rounding

As showcased in the above tables, THESL estimates that the one-time costs associated with a transition to monthly billing under the timelines that attempt to approach those currently contemplated by the OEB would result in the incremental costs in the range of $5.2-$8.3 million, of which between $3.0-$4.4 million would be capital costs,[1] with the remainder ($2.2-$3.9 million) representing one-time OM&A expenditures. Prior to quantifying the anticipated ongoing project costs, the following section addresses other potential implementation alternatives that may have impact on the one-time costs.

Other Evaluated Alternatives

(a) Merge with Other Planned Projects

THESL's 2015-2109 CIR filing includes four major projects with significant impacts to the billing process, namely:

- The Meter Data Management/Repository (MDM/R) integration with the provincial MDMR for residential customers;
- Upgrade of the meter data collection and validation system for large and medium Commercial and Industrial customers (MV90);
- Upgrade of meter data collection/validation/editing system e for residential and small Commercial and Industrial customers (ODS) and;
- Scheduled upgrade to the Customer Care and Billing (CC&B) system (affects all customers).

Of the above-noted initiatives, the contemplated transition to monthly billing aligns with the CC&B upgrade. Based on its current plans and system needs, THESL does not anticipate commencing this upgrade until 2018 – significantly past the OEB's contemplated timeline .

Pro: Lower overall one-time costs and work effort due to shared analysis and testing effort.
Con: Scheduling of project does not align with the proposed Jan 1, 2016 date.
***Cost (vs. Base Case)*:** 40-50% of the Base Case.

[1] Assuming full capitalization of IT Labour and Hardware.

(b) Full Redesign

This potential approach would involve the ground-up redesign of THESL's customer care business processes affected by billing frequency. Unlike the Base Case Scenario which merely *modifies* the existing processes built for bi-monthly billing to fit the requirements of monthly billing, the Full Redesign option would *gradually rebuild* the business processes for optimal performance. This option would also likely have a positive impact on the ongoing costs discussed below.

Pro: Greatest customer and operational productivity and accuracy benefits, potential reductions to the ongoing costs.
Con: Greatest upfront cost and time to deliver.
Cost (vs. Base Case)**:** 200%-225% of the Base Case due to larger scope.

(c) Go-live and Address on Demand

This approach is premised on making the transition as quickly as possible and addressing the system/process issues as they arise. Only critical known challenges would be addressed prior to the transition and other enhancements would be made based on production results.

Pro: Potential ability to meet proposed Jan 1, 2016 date in the shortest timeline and lowest up-front cost
Con: Unacceptably high risk, inability to understand impact to bill accuracy or timeliness, unknown operational impact and effort to resolve once problems occur. Significant potential for occurrence of high-impact events that affect billing accuracy, customer satisfaction, regulatory compliance and utility costs.
Cost (vs. Base Case): Not estimated due to unknown scope and nature of subsequent issues.