HYDRO-QUÉBEC DISTRIBUTION'S ANSWERS TO THE REQUEST FOR INFORMATION no. 2 FROM THE RÉGIE

1. Reference: Part B-006, HQD-1, Document 1, page 24.

Preamble:

"The first pilot project began in June 2010, and will continue until May 2012. It aims to test the integration of the consumption data in the Hydro-Québec systems and the accuracy of the bills which obtained using the new technology. This pilot project is taking place in St-Jean-Richelieu, Val-d'Or, Sept-Îles and Trois-Rivières with 2,600 meters from the Heure Juste [Right Time] rate project. In addition to these meters, 800 additional meters for residential clients have been installed in order to allow for a sufficient and representative density of new generation meters for an AMI network, and a further 17,500 meters have already been installed for remote measurement of the CII clients."

Although the pilot project description cited here indicates that its immediate objective is not to verify the technical performance of the meters, the Distributor now has one winter's worth of experience in cities with a rigorous climate.

Question:

1.1 Please indicate whether the distributor has noted any operational problems with the tested AMI network equipment (meter reading or recording errors, data transmission problems or others) that could be caused by use during periods of intense cold.

Answer:

The Distributor has not noted any operating problems related to winter climate conditions or intense cold with the meters recovered from the Heure Juste [Right Time] rate project at the end of the first pilot project. The 800 meters installed at residential clients are the not new generation models. Their only purpose was to gather information for this type of client in order to complete the billing tests for all client types.

The technical specifications for all meter models are -40°C to +85°C. The Distributor does not anticipate any problem related to winter climate conditions with the new generation meters. The distributor is currently performing certification tests in cold rooms in order to confirm, among other things, the performance of the AMI network equipment under conditions of intense cold. In connection with these certification tests, verifying the operation of the meters at -40°C and +70°C is planned. These tests have not been completed.

2. References: (i) Part B-0006, HQD-1, Document 1, page 33
(ii) Part B-0006, HQD-1, Document 1, page 32
(iii) Part B-0029, HQD-3, Document 2, pages 7 and 8

Preamble:

(i) "The daily readings will be performed six times per day."

(ii) "Additionally, unlike the measurement samples currently available to the Distributor, the AMI will have the benefit of a census rather than a survey. This will specifically provide for the absolute accuracy of the results and it will gather very detailed information. This will provide a better understanding of the consumption profiles and will provide an opportunity to develop solutions that better reflect its clients' reality.*" [Emphasis added]*

(iii) The Distributor explains that it is required to comply with the *Loi sur l'accès aux documents des organismes publics* [Law on Access to the Public Bodies' Documents and on the Protection of Personal Information], a law which comprises provisions that protect confidential, personal information from collection to destruction. The Distributor has stated that the arrival of new technology does not change its way of doing things. It states that it may only collect personal information about clients that is actually necessary for the performance its assignments or for the implementation of a program it manages.

Question:

2.1 The consumption data by shorter time intervals constitutes a new type of information made possible by the LAD technology. The Régie understands the advantages and the services which can be offered to clients of the Distributor according to their behaviour and consumption profile.

2.1.1. Please indicate whether the Distributor considers the very detailed information that it will hold on its clients' consumption will be considered as personal information in the meaning of the Law on Access.

Answer:

The Distributor considers the very detailed information that it will hold on its clients' consumption to be personal information in the meaning of the Law on Access to documents of public bodies and on the protection of personal information, if this detailed information is associated with the clients name or any other information allowing it to be identified.

2.1.2 If necessary, please indicate the Distributor's policy on the nature or type of information on the clients' consumption rate which could be disclosed outside the company.

Answer:

The Distributor will apply the same practices and access restrictions to the detailed information about consumption as it does with the personal confidential information that it holds on its clients.

Additionally, the Distributor will continue to make annual consumption data for residents available along with the corresponding costs. Recall that the Commission's jurisprudence on access to information concluded that the following personal information is of a public nature:

- **account type and applicable rate**
- **estimated electricity consumption and corresponding costs**
- **frequency of meter reading**
- **meter number**
- **billing type**
- **subscription start date**
- **heating method**
- **multiplier used**

PROJECT COSTS AND TRACKING

3. References: (i) Part B-0006, HQD-1, Document 1, page 17
(ii) Part B-0006, HQD-1, Document 1, page 13
(iii) Part B-0006, HQD-1, Document 1, page 18
(iv) Part B-0006, HQD-1, Document 1, page 13

Preamble:

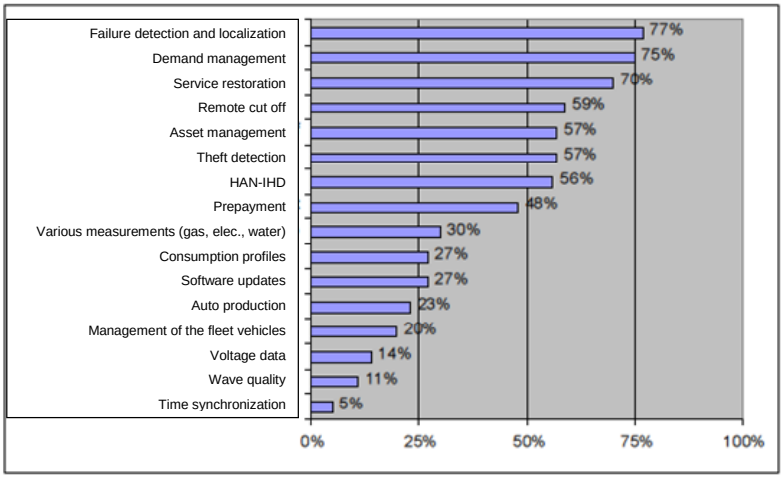
(i) "At first, the Distributor will only implement the AMI IT for the automation of the meter reading process and for the cut off and restoration of service."

(ii) "It is now economically attractive for the Distributor to implement an AMI solution."

(iii) "Although recent, AMI technology corresponds to a major trend in the North American market; according to a survey of 128 public service companies conducted by Chartwell, nearly half have already started the installation of an AMI network. A further 20% were either at the planning stage or are conducting pilot projects."

(iv) "Figure 4 shows the main functions of the AMI network, other than remote meter reading, used by electricity distribution companies."

Figure 1: Main Functionalities Used beyond Remote Meter Reading



Source: Accenture 2009

Questions:

3.1 Please indicate, with supporting references, whether the companies who use the AMI solution for detecting and locating failures and for demand management in more than 75% of the cases, have used the economic advantages of these functions for justifying the development of their AMI project.

Answer:

Most electricity distribution companies that were planning on implementing an AMI justified their project using the benefits offered by the functions that they have targeted.

For example, PG&E (United States) included the benefits such as trouble detection and localization and demand management functions in the business plan filed in 2005 with the California state Public Utilities Commission.

BC Hydro (Canada) included the benefits such as trouble detection and localization and demand management functions in the business plan made public the beginning of 2011.

Victorian (Australia) included the benefits such as trouble detection and localization and demand management functions in the business plan prepared in 2010 for the Victorian Department of Primary Industries.

3.2 Please explain how the Distributor can make the AMI solution economically attractive solely with remote meter reading and whether other companies are in the same situation.

Answer:

The change from a meter reading performed by meter readers to an automated meter reading makes the AMI solution profitable for the Distributor based on the savings achieved principally by the meter reading function.

Most electricity distribution companies who plan to implement AMI had previously implemented AMR technology. These companies justified their project through the benefits offered by other functions because the benefits associated with the meter reading function were smaller.

4. Reference: Part B-0016, pages 16 and 17

Preamble:

"Table R-6.2 shows the savings from the LAD project from table (reference iv) in parallel with the initial cost for purchase and installation of new generation meters which appears in Table 4 from item HQD-1, document 1 (page 34). The savings and costs have been actualized over 2012-2027, which is 15 years – corresponding to the depreciated lifespan of meters.

The LAD project therefore generates a net savings of $172 million including initial costs.

It should be noted that in Table R-6.2, the savings are evaluated by comparing scenarios (AMI scenario - reference scenario) whereas the cost of purchasing and installing the meters corresponds to the cost of the AMI scenario alone.

Table R-6.2 gives all of the savings and costs for the purchase and installation of meters (actualized to 2011) over 15 years."

Question:

4.1 Please present in detail, the calculation of the $623 million savings and indicate their origin.

Answer:

The following table reproduces the calculation of the $623 million savings actualized to 2011. A distinction is made between the savings calculated by the difference between scenarios and those generated by the AMI scenario.

Table R-4.1: AMI Scenario – 2012-2027
in M$ actualized to 2011

Differential benefits	- Meter Reading Automation	-464
	- Various charges	-9
	- Telecommunications	-46
	Total	**-519**
Direct AMI benefits	- Remote service interruption and restoration	-78
	- Client activities	-14
	- Compliance	-11
	Total	**-104**
Total savings		**-623**

5. Reference: Part B-0016, pages 20 and 21.

Preamble:

"The Distributor's monitoring plan was prepared to include a follow up at the end of manual meter reading activities. Once new generation of meters are installed in a given territory, the meter reading positions will be abolished and accounted for. When meter reading activities are eliminated, each manager will proceed with the removal of dedicated equipment resources (including equipment, workspaces, cellular telephones, etc.), and the withdrawals will be accounted for.

The project office is responsible for ensuring that the benefits are concrete and that all the required efforts are made. It will be given all the information required to ensure that all the expected benefits are achieved and that this happens in tandem with the deployment of the AMI. They will also issue tracking reports through which the process can be observed. These reports will be used as input for the follow up filed with the Régie in connection with the Distributor's annual report.

Additionally, because the LAD project is imminent, the acquisition of some assets (rolling equipment for example) by the Distributor is restricted or delayed because material resources used for meter reading activities could be re-purposed to meet the needs of other activities."

Questions:

5.1 Should it turn out the anticipated savings are not realized, please indicate whether the Distributor agrees to take on all the losses associated with this eventuality.

Answer:

The Distributor is confident of meeting the budgets and delivering all the benefits expected by the business plan. To do this, the Distributor has taken steps which go well beyond what is normally conducted for this type of project. Thus, a very large proportion of the parts, nearly 80%, are covered by firm contracts having clauses - which in certain cases will allow the Distributor to benefit from potential market price reductions and receive a guaranteed performance level. Furthermore, the technology has already been proven in connection with pilot projects. As for the benefits, they principally come from the retirement of specific activities and consequently, their evaluation is based on facts. By following up on the progress of the proposed project by the Distributor, the Régie will be able to specifically track the actual project costs and the accounting benefits.

The Distributor has made every effort required in order to reduce the project's risks and is confident of completing it within the planned budget and generating the planned efficiency savings.

5.2 Please indicate the guarantees that the Distributor will provide to its clients, in terms of rates, related to not achieving the expected savings.

Answer:

Please see the answer to question 5.1.

6. Reference: Part B-0016, pages 22 and 23.

Preamble:

"The Distributor's experience with the implementation of Phase 1 of the LAD project will make it possible to re-evaluate and refine the assumptions for the costs not fixed to the contract and to proceed with adaptations of the technology should if necessary. The solution considered could then be adapted to the knowledge acquired by the Distributor, and the contingencies re-evaluated as a function of this knowledge. Further, the development of more cost-effective technical solutions, especially those related to telecommunications, could allow the Distributor to recommend a different but still compatible solution to setting up the AMI network in rural or isolated regions."

Questions:

6.1 Please indicate what costs are not set by the contract and provide their associated amounts.

Answer:

The following costs are not tied to the contract:

Table R-6.1: Costs Not Set by Contract
(in current k$)

Costs Not Set by Contract (in current k$)	
Technology	63,036
Various charges	44,373
Relocation	30,936
Telecommunications	19,093
Master electricians	10,000
Quality assurance	2,685
	170,123

6.2 Please quantify the re-evaluation and refinement of the anticipated costs and contingencies.

Answer:

In its assumptions, the Distributor has already considered all the contracts concluded or being concluded and all of the observations coming out of the pilot project to date. Is only during the coming months and after beginning bulk deployment that it will be able to re-evaluate and refine the other assumptions. The Distributor reminds the Régie that only 18% of the LAD project budgets are costs not set by contract. In particular these costs include IT and telecommunications labour costs, relocation costs and various additional charges.

The regulated phase approach allows the Distributor to present the Régie with a re-evaluation and refinement of the costs and contingencies at an opportune time during subsequent phases.

7. References: (i) Item B-0006, page 39
(ii) Item B-0007

Preamble:

(i) Table 7: Results the LAD Project Economic Analysis

(ii) Excel file: Analysis of the AMI Scenario

Question:

7.1 For the AMI scenario, please fill in the following table (in M$ actualized to 2011) over the 2011-2031 analysis period. Please state the assumptions used.

AMI Scenario: 2011-2031		
		M$ actualized to 2011
Costs	Investments	
	Operating charges	
	Taxes	
	Residual values	
Benefits	Meter Reading Automation	
	Remote service interruption and restoration	
	Billing	
	Collection	
	Client activities	
	Compliance	
	Other (specify)	
TOTAL		

Answer:

The table requested by the Régie does not allow for a proper representation of all the benefits offered by the LAD project. In fact, the economic analysis filed as proof, shows that most of the savings have been obtained by comparing the AMI solution to the reference scenario. The other portion of the savings is directly associated with cost reductions and revenues linked to the LAD project deployment.

The following table reproduces the Distributors economic analysis by expanding the "operating charges" line with which a specific line that identifies the cost reductions and revenues coming from the AMI scenario.

Table R-7.1-A: Results the LAD Project Economic Analysis

2012-2031 Economic Analysis

M$ actualized	AMI	Reference	Difference
Investments	720.1	500.4	219.7
Operating charges	489.7	871.8	(382.1)
Cost reduction and revenue	(124.4)	0	(124.4)
Tax on public services	1.5	0	1.5
Residual values	(85.6)	(81.2)	(4.4)
Total	**1,001.3**	**1,291.0**	**(289.7)**

Table R-7.1-B breaks down the difference appearing on the line "Cost Reduction and Revenue" as requested by the Régie.

R-7.1-B: Cost Reduction and Revenue

2012-2031 Cost Reduction and Revenue

M$ actualized	
Remote service interruption and restoration	(96.1)
Client activities	(17.4)
Compliance	(11.0)
Total	**(124.4)**

Furthermore, other savings will result from the difference of scenarios. The Distributor compiles all the costs for each of the scenarios (AMI and Reference) and finds the net savings by the difference between the net actualized values of the two scenarios.

Table are-7.1-C details the other savings according to the headings requested by the Régie.

Table R-7.1-C: Detail of Other Differential Savings

Difference of the Scenarios for 2012-2031 M$ actualized	
Meter Reading Automation	(585.5)
Gasoline and registration	(11.0)
Telecommunications	(56.7)
Total	**(653.3)**

However, the savings do not consider other costs included in each of the scenarios totalling $271 billion actualized.

8. References: (i) Part B-0006, HQD-1, document 1, page 42, table 8
(ii) Part B-00006, HQD-1, Document 1, page 36, note 4
(iii) Case R-3776-2011, part B-0020, HQD-3, document 4, page 7

Preamble:
(i) In its request for authorization of the LAD project, Phase 1, the Distributor chose a Table 8 the impacts the LAD project on the 2012-2031 required revenue. It indicates a $51.8 million impact on the 2012 required revenue.

Table 8: Financial Analysis and Impacts of the LAD Project on the Required Revenues (k$ current)

	k$ (current)									
	AMI Scenario	2012	2013	2014	2015	2016	2017	2021	2025	2031
	Charges	73,895	77,137	70,176	55,213	35,975	26,855	10,002	10,586	11,905
	Depreciation	4,626	20,456	35,564	47,459	55,184	57,183	52,613	52,491	22,477
	Tax on public services	0	16	77	136	182	196	175	154	123
	Financing costs	2,473	13,820	25,967	34,241	37,827	38,045	27,097	14,881	13,876
A	Required revenue (excluding write-off charges)	**80,994**	**111,429**	**131,784**	**137,049**	**129,168**	**122,279**	**89,887**	**78,112**	**48,381**
B	Required revenue – Reference scenario	**65,974**	**76,797**	**87,145**	**95,856**	**104,455**	**111,485**	**127,292**	**143,307**	**149,238**
C=A-B	Required revenue (difference of scenarios)	**15,020**	**34,632**	**44,639**	**41,193**	**24,713**	**10,794**	**-37,405**	**-65,195**	**-100,857**
D	Depreciation and Write-Off of In-Service Devices	**36,800**	**61,179**	**41,039**	**16,232**	**3,785**	**1,093**	**0**	**0**	**0**
E=C+D	Required Revenue (differential)	**51,820**	**95,811**	**85,678**	**57,425**	**28,498**	**11,887**	**-37,405**	**-65,195**	**-100,857**

(ii) In its request for authorization of the LAD project, Phase 1, the Distributor indicated in note 4 that an amount of "$17.3 million in 2012 broken down into $7.4 million additional depreciation and $9.9 million in write-off charges for in-service devices."

(iii) In its 2012 rate case, the Distributor integrated revenue charges inherent in the LAD project for a total of $40.9 million into its 2012 required which broke down as follows:

"In this rate case, the Distributor applies the general rule proposed in section 2.2 by integrating in its required revenues the charges inherent to the Remote Meter Reading ("LAD") project filed with the Régie June 30 for authorization.

Thus, the 2012 implementation and withdrawals from service were accounted for in the base rate for the 2012 projected control year. Their impact on the required revenue amounts to

$22.5 million and is composed of $9.7 million for depreciation, $9.9 million for write-offs and $2.9 million of yield from the base rate.

Additionally, $13.2 million for operating charges and ($0.7 million) of savings associated with the project have also been accounted for in the 2012 required revenue.

Additionally, relating to the preparatory work, the impact on 2012 required revenue totals $5.9 million, as presented in part HQD-8, document 7, section 14.

Should the LAD project authorization not be put into effect before the decision on the application for the present rate [is rendered], the Distributor, in accordance with the general rule stated in section 2.2, will adjust the 2012 required revenue and enter the above-mentioned amounts in a deferred expenses account". (Emphasis added)

Questions:

8.1 Please explain the difference between the $40.9 million impact on 2012 required revenue presented in the 2012 rate case (reference (ii)) and that of $51.8 million presented in the LAD project authorization request (reference (i)). Please reconcile the amounts for each of the components.

Answer:

The calculation of the impact on the required revenue as shown in Table 8 from part B-006-HQD-1, document 1 (reference (ii)) and the one presented in the rate case (reference (iii)) are established on different bases and for different purposes. Table 8 reflects the differential financial impact which would be caused by implementing the LAD project over 20 years, starting in 2012, in comparison with the reference scenario. More specifically, its purpose is to bring out the maximum financial impact offered by the solution or whichever option is the most economically viable for the Distributor. In the rate case, the impact for 2012 on the required revenues translates the impact of the LAD project Phase 1 onto the Distributor's service costs compared to 2012 without the project.

Overall, the difference of $10.9 million between the data from Table 8 (reference (i)) and that from the rate case (reference (iii)) for 2012 is explained by the following items:

- **$19.5 million corresponds to the natural depreciation of the devices already in service, as detailed in Table are-10.3 from part B-016-HQD-2, document 1. From the perspective of the rate case (reference iii), these depreciations already appear in the cost of service. Only the additional depreciation caused by the LAD project Phase 1 are therefore considered and the variation of the 2012 required revenue. In contrast, from the perspective of the financial analysis, table 8 reflects the impact of withdrawing**

all the devices from service following inauguration of the LAD project over a period of five years.

- **$5.9 million associated with a portion of the cost of the preparatory work. Unlike the rate case, the portion of the past costs (2010 and 2011) for the preparatory work is not included in the economic and financial analyses (Table 8).**
- **About $2.7 million attributable to the yield difference and the effects of the finer monthly breakdown of the operating charges and depreciation for purposes of establishing the rates. The yield rate used in the financing cost calculation for a project authorization request is the prospective capital cost rate whereas the yield rate on the base rate is used in every rate case.**

8.2 Please explain the difference between the impact on 2012 required revenue related to the $9.7 million depreciation (reference (iii)) and the additional $7.4 million depreciation (reference (ii)).

Answer:

The description "additional depreciation" from reference (ii) does not refer to the additional depreciation charge caused by the LAD project Phase 1. Instead it corresponds to the accelerated depreciation of the in-service devices following the revision of the service lifespan for the meters, which was reduced following inauguration of the LAD project which calls for the replacement of a given number of meters before the end of their useful lifespan.

The depreciation charge of $9.7 million (reference (iii)) is constituted of $2.3 million for the new devices at $7.4 million of accelerated depreciation for the currently in-service devices. As for the $7.4 million depreciation charge (reference (ii)), it was established for only the devices in-service - an amount identical to the one identified in reference (iii).

9. References: (i) Part B-0006, HQD-1, document 1, page 34, table 4
(ii) Case R-3776-2011, part B-0038, HQD-8, document 2, page 9, Table 4

Preamble:

(i) In Table 4 of its LAD project authorization request, the Distributor presented the 2010-2017 project costs, investments and operating charges. The investments are $36.8 million in

2011 and $86.6 million in 2012, for a total of $123.4 million. The Régie understands that the amount put in service arises in part from these investments.

(ii) In Table 4 of its 2012 rate case, the Distributor presented the implementation of immobilizations, financing rental contract and intangible assets over the. 2010-2011-2012. It details the implementation related to the LAD project at $7.1 million in 2011 and $106 million in 2012.

Questions:

9.1 Please indicate the amounts for the planned implementation for 2010-2017 which are part of the LAD project investments (reference (i)), broken down by heading and year.

Answer:

Table R-9.1:

Plan implementation *(in current k$)*	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Information Technology Infrastructure (IT)	-	1,556	34,603	10,132	6,170	11,417	8,265	-
Purchasing and installing computers	-	3,683	49,286	192,300	155,456	97,731	43,104	42,330
Telecommunications equipment	-	1,900	10,920	33,414	33,277	28,112	11,970	-
Project office and others	-	-	9,833	14,251	12,736	10,432	6,776	6,698
Capitalized borrowing costs	-		1,388	920	599	172	190	344
Total for implementation	-	**7,139**	**106,029**	**251,017**	**208,238**	**147,864**	**70,304**	**49,373**

9.2 Please reconcile the amounts for implementation presented in the 2012 rate case (reference (ii)) and those called for in the LAD file (reference (i)), broken down by heading and year.

Answer:

The implementation presented in the 2011 and 2012 rate case match those presented in the response to question 9.1 for 2011 and 2012[1].

The differences noted over one specific year between the implementation presented in the rate case and the investments called for in the present case (reference (i)) come from the fact that the investments and their implementation can occur at different moments in time. As an example, the preparatory work, although undertaken in a specific year, is integrated with the base rate at the time of implementation or may be prorated with the deployment of meters.

[1] **See case R-3776-2011, part HQD-8, document 2, Table 4. Furthermore, as presented in part HQD-8, document 1, page 9 of the same case, the net value of the assets implemented in 2011, some $7.1 million, less an amount of $0.2 million which corresponds to depreciation, is taken from the 2011 rate base.**

10. Reference: Part B-0006, page 46.

Preamble:

(i) ""The Distributor proposes following up on the results from LAD project Phase 1 in its annual report filed with the Régie.

The following areas concerning the project's performance will be tracked:

- The number of meters installed and the percentage of installations completed relative to the planned installations
- Project cost tracking according to Table 11
- Tracking of quantified savings generated by the project
- Project implementation due dates."

Questions:

10.1 Considering the specifics of the LAD project, please indicate whether the Distributor is considering other means for following up on the results and the project's performance.

Answer:

As indicated in response to question 7.4 of the request for information number 1 from the Régie in part B-016-HQD-2, document 1, the Distributor has chosen a regulated phase approach in connection with the recommended deployment approach which will allow the Régie to be informed of the project's deployment progress and the results achieved. Beyond filing the LAD project in three distinct phases, the Distributor had not considered other tracking means beyond those already presented. These include tracking costs, savings and the meter replacement process, and also the implementation due dates which will be included in the annual report filed with the Régie.

10.2 Please indicate whether the Distributor will be able to present the LAD project progress, performance results and administrative follow up to the Régie.

Answer:

Yes.