

# DECISION

QUÉBEC

RÉGIE DE L'ÉNERGIE

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D-2003-214

R-3512-2003

November 17, 2003

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**PRESENT:**

François Tanguay  
Commissioner

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**Hydro-Québec**  
Applicant

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Decision concerning an application by the Electric Power Carrier and the Electric Power Distributor to connect the Cree village of Waskaganish to the electricity transmission system, pursuant to section 73 of the *Act respecting the Régie de l'énergie*

**LIST OF INTERVENORS:**

- Canadian Federation of Independent Business
- Grand Council of the Cree, Cree Regional Administration and Waskaganish Band (GCC/CRA/Waskaganish Band)
- Option consommateurs (OC)

## 1. THE APPLICATION

On March 31, 2003, Hydro-Québec in its capacity as an electric power carrier (“the Carrier”), and Hydro-Québec in its capacity as an electric power distributor (“the Distributor”) submitted to the Régie de l’énergie (“the Régie”) an application, pursuant to section 73 of the *Act respecting the Régie de l’énergie*<sup>1</sup> (“the Act”), to obtain the required authorizations for the acquisition and construction of immovables or assets for transmission and distribution purposes, in order to connect the Cree village of Waskaganish to the electricity transmission system. On April 10, 2003, Hydro-Québec amended its application.

The main conclusions sought by the amended application are as follows:

*“GRANT the Distributor the required authorization, pursuant to section 73 of the Act, to make a financial contribution, which is to constitute an asset for the purpose of electric power distribution, to the project to connect the Cree village of Waskaganish to the Carrier’s electricity transmission system, in accordance with the evidence filed in support of the amended application; the Distributor may not make any change to the project that would have the effect of significantly altering its contribution without the prior authorization of the Régie; GRANT the Carrier the required authorization, pursuant to section 73 of the Act, to carry out the project to connect the Cree village of Waskaganish to its transmission system, in accordance with the evidence filed in support of the amended application; the Carrier may not make any change to the project that would have the effect of significantly altering the route, the cost, or the financial viability of the project without the prior authorization of the Régie.”*

In its Decision D-2003-120, the Régie granted three interested groups intervenor status and decided to examine the matter on the basis of the file. In April 2003, the Applicant filed additional evidence, at the Régie’s request. An initial interrogatory was sent to Hydro-Québec in June 2003 and was followed one month later by a request for clarification of the answers.

The intervenors submitted their final observations to the Régie in September. Following the filing of additional evidence by one of the intervenors, the Régie sent Hydro-Québec a third interrogatory at the end of September.

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<sup>1</sup> RSQ, c. R-6.01.

## 2. APPLICABLE PROVISIONS

### Section 73 of the Act:

*73. The electric power carrier, the electric power distributor and natural gas distributors must obtain the authorization of the Régie, subject to the conditions and in the cases determined by regulation by the Régie, to*

- (1) acquire, construct or dispose of immovables or assets for transmission or distribution purposes;*
- (2) extend, modify or change the use of their transmission or distribution system;*
- (3) cease or suspend operations; or*
- (4) restructure their operations with the result that part thereof would be excluded from the application of this Act.*

*When examining an application for authorization, the Régie shall consider such economic, social and environmental concerns as have been identified by order by the Government and, in the case of an application for the purposes of subparagraph 1 of the first paragraph, the Régie shall consider, where applicable,*

*(1) the sales forecasts of the electric power distributor or natural gas distributors and their obligation to distribute electric power or natural gas;*  
*and*

*(2) the contractual commitments of the consumers served by the electric power transmission service and, where applicable, their financial contributions to the acquisition or construction of transmission assets, and the economic feasibility of the project.*

*An authorization under this section does not constitute a dispensation from seeking any other authorization required by law.*

Sections 1, 2 and 3 of the *Regulation respecting the conditions and cases where authorization is required from the Régie de l'énergie*<sup>2</sup> (“the Regulation”):

*1. Authorization from the Régie de l'énergie is required:*

*(1) to acquire, construct or dispose of immovables or assets for energy transmission or distribution purposes as well as to extend, modify or change the use of the transmission or distribution system as part of a project involving:*

- (a) the transmission of electric power worth \$25 million or more;*
- (b) the distribution of electric power worth \$10 million or more...*

*2. An application for authorization under the first paragraph of section 1 shall contain the following:*

- (1) the project objectives;*

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<sup>2</sup> OC 970-2001, 2001 GO 2, 6165.

- (2) the project description;*
- (3) the justification of the project with regard to the objectives;*
- (4) the project costs;*
- (5) the project feasibility study;*
- (6) the list of authorizations required under other laws;*
- (7) the impact on the rates including a sensitivity analysis;*
- (8) the impact on the reliability of the electric power transmission system and on the quality of the electric power transmission service or electric power or natural gas distribution service;*  
*and*
- (9) any other solutions contemplated, which must include the information referred to in the preceding paragraphs.*

3. An application for authorization to acquire, construct or dispose of immovables or assets for energy transmission or distribution shall contain the following:

- (1) according to the nature of the project, the list of the principal technical standards applicable to the project;*
- (2) the sales forecasts for the electric power or natural gas distributors' project where applicable; and*
- (3) the contractual commitments of the consumers of the service and their financial contributions, where applicable.*

### **3. PRELIMINARY ISSUES**

Before analyzing the substance of the application, the Régie must attend to two preliminary issues. First, the Régie will dispose of the arguments raised by intervenors concerning its jurisdiction in this case. Secondly, the Régie will consider the merits of the Distributor's application.

#### **3.1 THE RÉGIE'S JURISDICTION**

This application, made under section 73 of the Act, follows a formal request from the Distributor to the Carrier to begin the necessary proceedings to connect the Cree village of Waskaganish to Hydro-Québec's main grid. The Distributor's obligation to assume responsibility for electric supply to the village of Waskaganish arises, notably, from the La Grande Agreement (1986), the Agreement Concerning a New Relationship Between le Gouvernement du Québec and the Crees of Québec ("the Braves' Peace") and the Waskaganish Transmission Line Agreement ("the Agreement"), the latter two both signed in February 2002.

More specifically, the La Grande Agreement (1986) provided for a number of Cree communities, including Waskaganish, to be connected to Hydro-Québec's transmission system. Since Waskaganish had not been connected, the Braves' Peace repeated the Government of Québec's commitment to do so within five years. The terms and conditions are enshrined in the Agreement, which was approved by Order in Council 1286-2002 of November 6, 2002. The Agreement provides, among other things, for the connection to be completed by December 31, 2006, subject to the granting of all required permits and authorizations.

These specific circumstances led the intervenors to submit in their final observations certain arguments concerning the Régie's role in this case. Specifically, the intervenors GCC/CRA/Waskaganish Band asked the Régie to declare that, given the special nature of the commitments made by the Government of Québec and Hydro-Québec in the Agreement and the Braves' Peace, Hydro-Québec was not required to submit this application for authorization to the Régie pursuant to section 73 of the Act. Similarly, OC argued that implementation of the Agreement is a non-regulated generation activity and therefore the Régie's authorization is not required.

The Régie does not accept the intervenors' arguments that the connection project does not require the Régie's approval.

The purpose of the application, filed jointly by the Carrier and the Distributor, is to obtain the Régie's authorization for the Carrier to build a transmission line to connect the Cree village of Waskaganish to the main transmission system. Before beginning construction of the transmission line, the Carrier must obtain the Régie's authorization, as stipulated by section 73 of the Act. The filing of the application constitutes recognition of the Régie's jurisdiction, and refusal to consider the application would constitute a refusal by the Régie to exercise its jurisdiction.

The fact that the obligation to build the transmission line arises from an agreement between the Government of Québec and the Cree of Québec, and that the purpose of this agreement is to develop the hydroelectric potential of Cree territory, cannot affect the Régie's jurisdiction. The Régie must consider the various agreements and conventions in its decision, since the project arises from them and they are part of the evidence, but the Régie does not consider itself to be bound by them.

The Régie therefore considers that it has authority to dispose of the application.

### 3.2 DISTRIBUTOR'S APPLICATION UNDER SECTION 73 OF THE ACT

In its letter of June 3, 2003, the Régie questioned the Distributor about the reason for its application under section 73 of the Act, which stipulates that prior authorization from the Régie is required for the Distributor to acquire, construct or dispose of immovables or assets for transmission or distribution purposes.

Hydro-Québec responded to the Régie's concerns in a letter dated June 9, 2003. According to the Distributor, it expects the \$66 million contribution that it must make to the Carrier pursuant to the provisions of *Billing for Transmission Services* to constitute an intangible asset which will subsequently be included in its rate base. To comply with section 73 of the Act, the Distributor must request the Régie's authorization to acquire an asset to be used exclusively by the Distributor to fulfil its legal obligation to provide service. Prudence prevents the Distributor from making the \$66 million expenditure without the assurance that it will be recognized as an asset acquisition that can be included in its rate base under section 49 of the Act.

However, despite the clarifications made by the Distributor in its letter of June 9, 2003, the Régie considers that the payment of the contribution by the Distributor does not require prior authorization distinct from that of the Carrier under section 73 of the Act.

As noted above, the Régie's authorization is required for the Distributor to acquire, construct or dispose of immovables or assets for transmission or distribution purposes. This applies when the Distributor intends to construct facilities that will be part of its electric power distribution system. In this case, however, the Distributor is seeking authorization to pay a contribution for the construction of a transmission asset by the Carrier and recognition of the contribution as an asset for the purpose of electric power distribution.

The Régie considers that the application before it is a single project which must be authorized under the terms of the Act and the Regulation, namely a project for the construction of a transmission line by the Carrier. In examining the evidence, however, the Régie cannot ignore that its authorization will have implications for and impacts on both the Distributor and the Carrier, two regulated entities, and it must take these into account before making its decision on the authorization requested by the Carrier.

Therefore, if the Régie authorizes a transmission line project involving a contribution by the Distributor, specific authorization under section 73 is not required for this contribution, since the contribution is required under *Billing for Transmission Services*.

The Régie has therefore examined the Carrier's application in light of the Act, the Regulation and the above-noted considerations.

## **4. PROJECT OBJECTIVES, DESCRIPTION AND RATIONALE**

### **4.1 HYDRO-QUÉBEC'S POSITION**

The objectives of the project are, from the Carrier's point of view, to connect the Cree community of Waskaganish to Hydro-Québec's interconnected network, and from the Distributor's point of view, to take over the operation and maintenance of the Waskaganish distribution system and the supply of electrical power to the community, in accordance with the provisions of *Billing for Transmission Services* generally applicable to Québec south of the 53<sup>rd</sup> parallel.<sup>3</sup>

For the Carrier, this project, which arises from a request made by the Distributor, consists in building a 69 kV line on steel poles, insulated to 120 kV, of approximately 208 km in length, between the Nemiscau transmission substation and the future Waskaganish satellite substation, which is part of the project. Engineering is to begin in January 2003 and construction in 2005, for commissioning by October 2006.<sup>4</sup>

In the opinion of the Carrier, this solution is cost-effective and will enable it to deliver service of quality comparable to what is found elsewhere in the province in the case of substations supplying remote regions. Specifically, this solution will supply a reliable residential electrical load of up to 12 MVA.

The Carrier stated that the project stems from the Waskaganish Transmission Line Agreement, which stipulates that Hydro-Québec must meet "the electricity needs of this community (including electrical heating)." According to the Carrier's assumptions, the village's peak consumption will increase from the current 3 MW to approximately 12.7 MW by 2021, including transmission and distribution losses.<sup>5</sup>

The Distributor's investment in the transmission line and the related substations will total \$57.4 million. The Distributor also plans to upgrade the existing distribution system and install meters. It intends to convert the distribution system to a standard voltage of 25 kV in order to facilitate maintenance and realize transmission savings. The Distributor also intends

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<sup>3</sup> Exhibit HQD-2, document 1, pages 3 and 4.

<sup>4</sup> Exhibit HQT-5, document 1.

<sup>5</sup> Exhibit HQT-2, document 1, pages 5 and 6.



to acquire the Indian and Northern Affairs Canada (INAC) distribution system for the nominal sum of \$1.<sup>6</sup>

According to the Distributor, the expenditures needed to connect Waskaganish to the main grid are necessary because of growing demand from Québec customers, whom it has an obligation to serve, and its contractual obligations to the Cree population of Waskaganish.

The Distributor stated that under the Act, it has the exclusive right to distribute electrical power throughout Québec, except for the territories served by municipal and private electrical systems. In consideration of this right, it is under an obligation to distribute electricity to any person who requests it, within the territory on which its exclusive right applies. In view of the Braves' Peace and the Agreement, the Distributor submits that it is under an obligation to meet the electric power needs of the Waskaganish community.<sup>7</sup> According to the Distributor, connecting Waskaganish to the transmission system is the best solution for supplying the community, from the social, economic and environmental points of view.<sup>8</sup>

At the same time, while the Distributor has an obligation under the Act to take responsibility for electricity distribution in Waskaganish, the means by which it honours this obligation are subject to authorization by the Régie.<sup>9</sup> The Distributor indicated, however, that the tariff treatment and allocation of the cost of serving these new accounts will be addressed at a later date, pursuant to Chapter IV of the Act.

## 4.2 THE RÉGIE'S OPINION

The evidence shows that the decision to supply the village of Waskaganish by connecting it to Hydro-Québec's transmission system arises from undertakings made by the Government of Québec and Hydro-Québec to the Cree, which are enshrined in the Braves' Peace and the Agreement. More specifically, article 1 of the Agreement stipulates:

*A transmission line and all related transformers and substations (hereinfter referred to as the "transmission line") required in order to connect the community of Waskaganish to the Hydro-Québec electricity transmission network and to allow Hydro-Québec to adequately supply the electricity needs of this community (including electrical heating), shall be*

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<sup>6</sup> Exhibit HQD-2, document 1, page 9 and exhibit HQD-4, document 1, page 4.

<sup>7</sup> Exhibit HQD-2, document 1, pages 7 and 8.

<sup>8</sup> Hydro-Québec's observations, page 3.

<sup>9</sup> Hydro-Québec's final observations, pages 9 and 10.

*constructed, operated and maintained by Hydro-Québec or SEBJ in accordance with Hydro-Québec standards and all other applicable government standards.*

The only technically feasible alternative would have been to supply the community of Waskaganish from a thermal power station. The Régie understands that this solution was not contemplated, given Hydro-Québec's above-mentioned obligations.<sup>10</sup>

Connecting the village of Waskaganish by means of a transmission line is therefore warranted insofar as the purpose is to honour the commitments made to the Cree community and it is deemed to be in the public interest in view of the circumstances.

## **5. SOLUTIONS CONSIDERED**

### **5.1 DEMAND FORECASTS**

In the case at hand, demand has been forecast specifically for the residential/farm and commercial/institutional/industrial (CII) segments.<sup>11</sup>

The forecast is based on the assumption that heating systems will be converted from oil to electricity in the medium term. For the purpose of load forecasting, it was also assumed that future buildings (in both the residential/farm and CII segments) would be heated with electricity rather than oil. The Distributor noted that since Waskaganish is located south of the 53<sup>rd</sup> parallel, no restrictions apply to conversion to electrical power for space heating and water heating.<sup>12</sup>

Based on the village's current standard maximum load (1.75 MW), the load per residence is estimated at 5 kW. The Waskaganish community projects it will need 15 new homes per year for the next 10 years. These homes will be heated electrically. A load of 12 kW has been estimated for each of these homes, based on simulations conducted during planning for the village of Wemindji. It is also expected that current residential customers will convert from oil to electricity after the village is connected to the main grid in 2006, and that conversion will be completed by 2011. An additional load of 7 kW per home is estimated in these cases.<sup>13</sup>

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<sup>10</sup> HQD-2, document 1, page 9.

<sup>11</sup> Exhibit HQD-3 (amended version, May 12, 2003), page 3.

<sup>12</sup> Exhibit HQD-7, document 1, page 9 (response to Régie's question 5.2).

<sup>13</sup> Exhibit HQD-3 (amended version, May 12, 2003), pages 3 to 5.

The forecast for the CII segment is based on the current load and the projected load for future projects. Future buildings will be electrically heated. For current customers, an additional load is estimated on account of conversion to electricity after connection to the main grid.

A natural increase of nearly 3% is estimated for all segments for the 2012-2021 period, which is equal to the rate of increase forecast for Nunavik, a region where consumption habits are similar to those of the Waskaganish community.

The Distributor also indicated that no energy efficiency programs or initiatives related to its Global Energy Efficiency Plan (GEEP) are planned specifically for the Waskaganish community. The GEEP applies generally on the entire territory served by the interconnected grid and also to Waskaganish. The demand forecast does not reflect any energy efficiency or peak management initiatives.

However, the demand forecast does assume that new construction will meet the latest insulation and thermal efficiency standards. According to the Distributor, the application of energy efficiency measures depends on whether or not users pay for their electricity themselves.

No budget for energy efficiency promotion or any portion of the GEEP budget has been specifically allocated to Waskaganish. In view of the objectives of the GEEP, the potential savings that could be realized in Waskaganish amount to 0.11 GWh. Energy efficiency measures would therefore have little impact on the design and cost of the transmission line or on the required investment in distribution. According to the Distributor, such measures could, at most, delay the need to increase the capacity of the transmission line.<sup>14</sup>

The technical solutions the Carrier proposes in order to meet the Distributor's needs and expectations are based primarily on the load forecast.

## **5.2 CONNECTION OPTIONS**

The least viable connection options, technically and economically, were rejected on the basis of the Carrier's preliminary analyses. The options that involved linking Waskaganish to Eastmain were rejected because they would not have provided service to Waskaganish in keeping with the Carrier's usual voltage reliability and quality standards. While it would be

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<sup>14</sup> HQD-8, document 1, pages 13 to 15.

possible to add equipment to improve voltage quality, the high cost led to the rejection of these solutions.

The other options considered and analyzed by the Carrier involved connecting Waskaganish to the Nemiscau substation, by either a 60 Hz, 16 Hz or direct current line.

For a 60 Hz connection between the 69 kV section of the Nemiscau substation and a new 69/25 kV substation at Waskaganish, the Carrier considered an overhead 69 kV line on steel poles, insulated to 120 kV, and an overhead 69 kV line on wood poles, insulated to 120 kV. Steel poles were chosen because they allow a greater distance between poles, reducing the number of poles required and making it possible to clear a number of obstacles, thereby reducing the total length of the line.<sup>15</sup>

The new Waskaganish substation will consist essentially of a 69 kV section, two 25 kV line feeders and two 69/25 kV transformers with a capacity of 22.5 MVA<sup>16</sup> The Carrier stated that two power transformers are needed because the Waskaganish substation will be the only source of power and will therefore be required to supply firm capacity. It added that the 22.5 MVA 66/26.4 kV transformers are standard and could be used for other projects in the event of a conversion to 120 kV, which would not be the case with 10 MVA transformers.<sup>17</sup>

The Carrier also considered a 120 kV line. In this case, a 120 kV transformer would have to be added at the Nemiscau substation and the Waskaganish transformer substation would be 120/25 kV. This solution would supply a load of up to 30 MVA to Waskaganish.

For a 16 Hz line from Nemiscau to Waskaganish, one option would involve running two underground cables over a distance of approximately 260 km using the right-of-way along the existing road. In this case, sufficient diesel generation capacity would have to be maintained at Waskaganish to ensure an acceptable level of reliability. Another variant would involve construction of an overhead line with two conductors over a distance of approximately 208 km. In the event that a converter becomes unavailable, there would be back-up converters at the Waskaganish substation and the Nemiscau substation.<sup>18</sup>

A direct current line would require construction of an overhead line with two conductors over a distance of approximately 208 km. As in the previous case, a back-up converter

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<sup>15</sup> HQT-4, document 1, pages 7, 8 and 14.

<sup>16</sup> HQT-5, document 1, page 5.

<sup>17</sup> HQT-13, document 1, pages 18 and 19.

<sup>18</sup> HQT-4, document 1, pages 10 to 12.

would be installed so the second converter could ensure continuous supply to the village of Waskaganish in the event of a failure.<sup>19</sup>

The Carrier reported that analysis of the options shows they would all provide basically equivalent service in terms of electric power supply.

However, it noted that conventional 60 Hz technology is advantageous because it is widely used by the Carrier. It added that in view of the small load on the line, electricity losses are not a decisive factor in the choice of a solution. It specified, however, that electricity losses are slightly larger with converter technology (16 Hz or direct current) than with conventional 60 Hz technology.

With respect to the financial analysis, the Carrier stated that construction of a 60 Hz overhead line on steel poles between the Nemiscau substation and the Waskaganish substation would entail the lowest discounted cost.

The Carrier stated that the reason for insulating the line to 120 kV was that this would make it possible to carry a total load of 30 MVA if future needs should so require, and it would cost only \$120,000 more than insulating the line to 69 kV.<sup>20</sup>

The Carrier noted that it will be possible to convert the system to 120 kV when demand warrants. At that point, the maximum load supplied from the Waskaganish substation would be increased to 30 MVA. The cost of the conversion is estimated at \$10.8 million.<sup>21</sup>

In view of all the technical and financial considerations, the Carrier concluded that the optimal solution would be to construct a 69/25 kV substation at Waskaganish, make the changes needed at the Nemiscau substation in order to use an existing 69 kV line feeder, and connect the two substations by a 69 kV line insulated to 120 kV, on steel poles, with a 547 MCM aluminium alloy conductor steel-reinforced (AACSR).<sup>22</sup>

### **5.3 IMPACT OF SELECTED OPTION ON RELIABILITY**

The Carrier stated that under its design standards, facilities are so designed that if one piece of equipment fails or cuts out, this will not result in permanent load loss. In the case of rural

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<sup>19</sup> HQT-4, document 1, pages 10 to 13.

<sup>20</sup> HQT-13, document 1, page 11.

<sup>21</sup> HQT-13, document 1, page 13.

<sup>22</sup> HQT-5, document 1, page 8.

substations however, and of Waskaganish in particular, back-up is not warranted in view of the low peak load (12 MVA) and the length of the line (208 km).

The Carrier added that to keep prolonged outages caused by equipment failure to a minimum, it has decided to use steel poles. Using statistical projections based on simulations, it estimates that very brief outages caused by lightning will occur 4.8 times per year.

The Carrier stated that the transformer substation is designed to ensure that an equipment failure would have no impact on customers. Aside from a brief interruption in service in the event of a failure at the substation, there will be no effect on service quality.

Finally, the Carrier stated that the short-circuit level will be sufficient to allow for serving small industries in the future, while meeting voltage quality standards.<sup>23</sup>

The Distributor stated that the rebuilding and modernization of the distribution system, and its standardization to 25 kV, should improve the quality of electric power distribution in the village of Waskaganish. However, the improvement cannot be quantified (in terms of IC, outage rate, etc.) because there is no baseline data.<sup>24</sup>

The Distributor contended that even taking transmission into account, service quality will improve and the proposed solution will meet the community's future needs in an appropriate manner.<sup>25</sup>

The Distributor added that some homes have wood stoves. Also, in the event of a prolonged outage, it would be possible to quickly start up generators which would be connected to the Waskaganish substation. Therefore, the Distributor does not consider it necessary to maintain the thermal power station as a backup facility.

The final report of the working group on electric power supply in the community of Waskaganish, dated April 1995, concluded that a diesel power station is the most reliable option since there is always at least one backup unit and the technology is proven and well known. The same report concluded that a transmission line would be less reliable because it would involve a long radial line and any flashover, failure or power-off maintenance would

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<sup>23</sup> HQT-9, document 1, pages 3 and 4.

<sup>24</sup> HQD-5, document 1, page 3.

<sup>25</sup> HQD-8, document 1, page 22.

result in the village's power supply being cut off for a period ranging from a few seconds to several hours.<sup>26</sup>

#### **5.4 THE RÉGIE'S OPINION**

In view of the nature of the Carrier's application and the contemplated solution, the demand forecast and the assumptions on which it is based appear reasonable. However, the Régie notes, as it did in its Decision D-2003-110,<sup>27</sup> the importance of achieving energy efficiency objectives by adjusting GEEP programs to the needs of the target clientele, appropriate, and by developing more personalized approach strategies. Finally, in view of the specificity of the client group addressed by this application, the Régie notes the importance of an adapted approach based on partnerships with existing agencies.

At the same time, the Régie considers that the information provided in support of the Carrier's decision to opt for a 69 kV line on steel poles with a 547 MCM AACSR conductor, insulated to 120 kV, is satisfactory. This solution uses conventional 60 Hz technology and entails the lowest total discounted cost.

With respect to the project's impact on the reliability of supply to Waskaganish, the Régie observes that the situation seems to have changed since the 1995 study. It notes, however, that the selected solution is consistent with Hydro-Québec's policy on supplying small loads to isolated locations that require the construction of a transmission line, which is that a back-up is not warranted in this case.

### **6. PROJECT COSTS**

The Carrier indicated that the total cost of the various works involved in connecting the village of Waskaganish to the transmission system would be \$64 million. The following table shows a general breakdown of costs by project, i.e. for the Waskaganish substation, the Nemiscau substation and the Nemiscau-Waskaganish line.<sup>28</sup>

#### **Cost of connecting the village of Waskaganish to Hydro-Québec's transmission system (in thousands of dollars, real cost)**

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<sup>26</sup> HQD-8, document 5, Appendix 1, pages 8 and 9.

<sup>27</sup> Decision D-2003-110 (R-3473-2001), pages 36 and 38.

<sup>28</sup> HQT-6, document 1, page 5

Substations		Line	
Waskaganish	Nemiscau	Nemiscau- Waskaganish	Total

**Preparatory phase**

studies	644.4	12.0	837.6	1 494.0
overhead	8.7	0.0	16.7	25.4
financial expenses	19.2	0.0	35.3	54.5
<b>subtotal</b>	<b>672.3</b>	<b>12.0</b>	<b>889.6</b>	<b>1 573.9</b>

**Project phase**

engineering	1 113.9	240.8	6 804.1	8 158.8
supplies	2 561.0	194.6	8 383.5	11 139.1
forest clearing	0.0	0.0	4 440.6	4 440.6
construction	2 698.1	368.1	18 288.7	21 354.9
management	687.4	242.0	3 001.0	3 930.4
value evaluation	0.0	0.0	0.0	0.0
contingencies	1 692.6	108.2	5 596.9	7 397.7
overhead	162.6	23.1	907.3	1 093.0
financial expenses	700.5	84.5	4 147.5	4 932.5
<b>subtotal</b>	<b>9 616.1</b>	<b>1 261.3</b>	<b>51 569.6</b>	<b>62 447.0</b>

<b>total</b>	<b>10 288.4</b>	<b>1 273.3</b>	<b>52 459.2</b>	<b>64 020.9</b>
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The cost of each item includes inflation, estimated on the basis of the Industrial Product Price Index (IPPI) published by the WEFA Group. The rates applied are 2.2% for 2002, 2.1% for 2003, 2.2% for 2004, 0.7% for 2005 and 1.9% for 2006.

Two considerations induced the Carrier to add an additional \$2.4 million for contingencies, which is included in the \$7.4 million for contingencies shown in the table above. First, the Carrier may have to build a camp to house workers during construction. Secondly, it foresees that contractors for major projects will have a high volume of business in 2005-2006.<sup>29</sup>

Engineering expenses, including design costs, and management expenses total \$13.6 million, or 21.2% of the total cost of the project.<sup>30</sup> This amount includes the labour costs of Hydro-

<sup>29</sup> HQT-13, document 1, pages 21 and 22.

<sup>30</sup> HQT-6, document 1, page 9.



Québec Équipement (HQE), travel and accommodation expenses, costs incurred directly by the Carrier and expenses of outside firms.

HQE's absorbed labour costs include payroll plus 30% to cover fringe benefits and insurance, as well as some overhead items, such as indirect labour, floor space, computers, corporate services and the division's overhead expenses. HQE does not add any profit mark-up to its bills to the Carrier. A 5% rate has been applied to account for inflation.<sup>31</sup> This absorbed cost has translated into a mark-up on wages of approximately 2.25 for the past few years, compared with an industry average of 2.35.<sup>32</sup>

The Carrier stated that the factors in favour of entrusting project management to HQE include its extensive knowledge of the company's organizational structure, of Hydro-Québec's facilities, of the numerous applicable technical standards, of the interrelations among previous and current transmission, generation and distribution projects, and its employees' advanced expertise. The Carrier added that all segments of Hydro-Québec benefit from the expertise that HQE employees have acquired over the years. It believes that the current approach is generating optimal synergies and is beneficial for customers from both the technical and financial points of view.<sup>33</sup>

The Carrier also considers that, in the specific case of the Waskaganish connection, it is important to keep the project inside the company because of the social and political context and because the Carrier is a party to the agreements with the Cree community.<sup>34</sup>

Finally, the Carrier stated that in order to publish calls for tenders for engineering work and the management of specific projects, it would have to hire and train competent staff at considerable expense.<sup>35</sup>

The Carrier stated that total costs must not exceed the amount authorized by the Board of Directors by more than 15% or \$25 million. The Carrier would need to seek new authorization from the Board of Directors for any expenditure in excess of those limits. In such an event, the Carrier undertakes to inform the Régie in a timely manner.<sup>36</sup>

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<sup>31</sup> HQT-13, document 1, pages 26 to 28.

<sup>32</sup> HQT-6, document 1, pages 9 and 10.

<sup>33</sup> HQT-13, document 1, page 33.

<sup>34</sup> Hydro-Québec's observations, page 11

<sup>35</sup> HQT-13, document 1, page 31

<sup>36</sup> HQT-6, document 1, page 6.

## 6.1 THE RÉGIE'S OPINION

The Régie considers the costs shown in the table on page 5 of exhibit HQT-6, document 1 to be reasonable and is satisfied with the particulars. The Carrier will report the actual costs, in detail, and the calculation of the Distributor's contribution, which guarantees rate neutrality, in its first annual report after the commissioning of the project.

However, the Régie has concerns about the decision to use a subsidiary, HQE, for all preliminary work, engineering and management of regulated projects. It has expressed this concern in a past decision<sup>37</sup> and the explanations provided in this case do not demonstrate to the Régie's satisfaction that this approach is optimal for customers of the regulated service. HQE adds no profit mark-up to its bills to the Carrier, but its absorbed cost includes a set of indirect costs that translate into a mark-up on wages of approximately 2.25.

With respect to HQD's contention that it would have to hire and train staff to analyze tenders, the Régie notes that HQE already outsources some work and that the Carrier has personnel who negotiate HQE's service offerings.<sup>38</sup>

The Carrier noted the socio-political background to this case. The Régie is of the view that, as a rule, a regulated public utility must demonstrate that it has minimized its costs and must create structures so it can use competitive processes when it needs outside goods and services. The Régie asks the Carrier to file details of the actual absorbed cost billed by HQE, calculation of the mark-up on wages, the number of hours and the average hourly rate per category, when it files the actual project costs for inclusion in its rate base.

The Régie takes note that if it foresees a cost overrun of more than 15%, the Carrier will have to obtain new authorization from its Board of Directors and that the Régie will be informed in this event. The Régie observes that it will be incumbent upon the Carrier to demonstrate that it exercised due prudence in incurring those costs when it applies for their inclusion in its rate base.

## 7. ECONOMIC FEASIBILITY, IMPACT ON RATES

### 7.1 THE CARRIER'S POSITION

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<sup>37</sup> Decision D2003-68, file R-3497-2002.

<sup>38</sup> HQT-12, document 1, pages 14 and 15.

### **7.1.1 COMPLIANCE WITH DECISION D-2002-95**

The Carrier has received a request from the Distributor dated April 15, 2002, in accordance with sections 39.2 and 39.3 of Hydro-Québec's *Billing for Transmission Services*, to connect the village of Waskaganish to the transmission system. On July 2, 2002, the Carrier informed the Distributor of the results of an impact study of the selected connection option, the costs, the planned timetable and the required authorizations, including authorization from the Régie de l'énergie pursuant to section 73 of the Act.

Subsequently, the Distributor provided its demand forecasts for the village of Waskaganish, which project power demand of 12.69 MW in the village by 2021, including transmission losses. According to the Distributor, that forecast indicates the maximum load that the system will need to carry up to 2021.

In accordance with Decision D-2002-95, rendered by the Régie on April 30, 2002, the Carrier proposes to cover the cost of connecting the village of Waskaganish to the transmission system, up to the maximum of \$522/kW approved by the Régie. The Distributor will make a contribution to cover the additional cost of the project.

### **7.1.2 DISTRIBUTOR'S UNDERTAKING TO CONTRIBUTE**

Therefore, in view of the Distributor's stated load requirement of 12.69 MW to supply this client, the Carrier will absorb a maximum amount of \$6.6 million, i.e. up to the maximum of \$522/kW stipulated in Appendix J of the Carrier's *Billing for Transmission Services*. The Distributor will therefore make an estimated contribution of \$57.4 million to the Carrier, which constitutes the additional actual cost incurred by the Carrier to connect the village of Waskaganish to the grid, plus a lump sum of 15% to account for the discounted value of projected maintenance and operating expenses, over a 20-year period, related to the costs assumed by the Distributor.

### **7.1.3 TRANSMISSION RATE NEUTRALITY**

The impact on the Carrier's cost of service will be in the order of \$0.75 million per year, including the cost of capital and capital tax assumed by the Carrier, as well as the maintenance and operating expenses assumed by the Carrier. Connecting the village of Waskaganish to the transmission system will therefore have a neutral impact on the Carrier's rates, since the discounted value over 20 years of the transmission rate, factoring in the marginal impact of the connection, is \$72.91/kW.

#### **7.1.4 ACCOUNTING TREATMENT OF COST OF CONNECTION**

The accounting treatment of the cost of connecting the village of Waskaganish to the grid will comply with the accounting policies and conditions submitted to the Régie in rate case R-3401-98, as described in exhibit HQT-5, document 1, filed on August 15, 2000, and exhibit HQT-11, document 2.4, filed on November 12, 2002, and approved in decisions D-2002-95 and D-2003-12 respectively. The two regulated electric power transmission and distribution companies will therefore include their fair share of project costs in their costs of service.

Therefore:

- During construction, the Carrier will record the actual costs incurred – including financial expenses at the capital cost rate determined by the Régie de l'énergie in rate cases – under fixed assets in progress, which will be excluded from its rate base during this period.
- When the connection facilities are commissioned, the Carrier will record the total cost incurred during construction in its books of account and its rate base under fixed assets in service. This amount will be amortized over the operating life of the plant using the effective interest method at the rate of 3%.
- When the connection facilities are commissioned, the Distributor will assume the cost of the connection in excess of \$522 per installed kW and pay an equivalent contribution to the Carrier. This amount will be recorded in its books of account and the rate base under deferred charges and will be amortized over the operating life of the plant using the effective interest method at the rate of 3%.
- To account for the Distributor's contribution in respect of the excess cost of the connection, the Carrier will record the amount of the contribution in its books of account and its rate base under fixed assets in service and amortize it over the operating life of the plant using the effective interest method at the rate of 3%.
- The complementary contribution of 15% of the Distributor's contribution, to account for the discounted value of projected maintenance and operating expenses, , over a 20-year period, related to the costs assumed by the Distributor, will be recorded in the Distributor's books of account and its rate base under deferred charges and amortized over 20 years using the straight-line method.
- The Carrier will record the amount of the complementary contribution in its books of account and its rate base under deferred credits and amortize it over 20 years using the straight-line method, during which period maintenance and operating expenses for the connection facilities as a whole will be recorded in its books of account as operating

expenses and in its revenue requirement as expenditures necessary for the provision of transmission service.<sup>39</sup>

## 7.2 THE RÉGIE'S OPINION

The Régie is satisfied with the Carrier's evidence concerning the rate impact of the project. The scenario described demonstrates rate neutrality over a 20-year period. In view of the load of 12.69 MW stated by the Distributor, the Carrier will be able to assume a maximum of \$6.6 million, i.e. the maximum of \$522/kW stipulated in Appendix J of the Carrier's *Billing for Transmission Services*. To achieve rate neutrality, the Carrier must receive a contribution estimated at \$57.4 million, plus a lump sum of 15% to account for the discounted value of projected maintenance and operating expenses over a 20-year period.

In view of the required financial contribution, the Régie deems it necessary that a connection agreement stipulating the rights and obligations of each of the parties – i.e. the Carrier, the Distributor and any other party – for the duration of the agreement be filed with the Régie by the time the Carrier files the application for inclusion of the line in its rate base.

## 8. CONCLUSION

The Régie grants the Carrier the authorization required under section 73 of the Act to carry out the Waskaganish connection project.

In granting the Carrier authorization to proceed with construction of the line, the Régie also recognizes the need for a contribution from the Distributor in accordance with Appendix J of *Billing for Transmission Services*.

While the Régie does not consider that an authorization is required for the Distributor's contribution under section 73 and its regulation, it notes that this contribution is a direct consequence of the authorization granted to the Carrier for construction of the transmission line. If it considers it useful for its purposes, the Distributor may consider its contribution to be warranted.

With respect to the rate treatment and cost allocation of the contribution, these issues will have to be addressed during the review under Chapter IV of the Act.

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<sup>39</sup> HQT-7, document 1, pages 5, 6, and 7.

## 9. INTERVENORS' COSTS

The Régie recognizes that the participation of intervenors is generally useful to its deliberations. However, it reserves its decision on the degree of usefulness of each intervention and the amount of the costs. It allows intervenors 30 days after this decision to file their applications for payment of detailed costs related to this case.

**IN VIEW OF** the above;

**CONSIDERING** the *Act respecting the Régie de l'énergie*;

**CONSIDERING** the *Regulation respecting the conditions and cases where authorization is required from the Régie de l'énergie*;

**CONSIDERING** the *Regulation respecting the procedure of the Régie de l'énergie*;<sup>40</sup>

### The Régie de l'énergie:

**GRANTS** the Carrier the authorization required under section 73 of the Act to carry out the Waskaganish connection project;

**CONSIDERS** that payment of the Distributor's contribution to the Waskaganish connection project does not require authorization under section 73 of the Act in this case;

**CONSIDERS** that the Distributor's contribution to the Waskaganish connection project is warranted;

**ASKS** the Carrier to report the actual absorbed costs, the calculation of the Distributor's contribution, which guarantees rate neutrality, and details of HQE's costs and its mark-up on wages in its first annual report after the commissioning of the project;

**ASKS** the Carrier to justify HQE's absorbed cost at the time of the inclusion of the project's cost in its rate base;

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<sup>40</sup> (1998) 130 GO II, 1245.

**ORDERS** the Carrier to file the connection agreement by the time the Carrier applies for inclusion of the line in its rate base;

**RECOGNIZES** that the participation of intervenors is generally useful to its deliberations and reserves its decision on the degree of usefulness of each intervention and the amount of the costs;

**ALLOWS** the said intervenors 30 days after this decision to file their applications for payment of detailed costs related to this case.

François Tanguay  
Commissioner

**LIST OF REPRESENTATIVES:**

- Canadian Federation of Independent Business, represented by André Turmel, attorney;
- Grand Council of the Cree, Cree Regional Administration and Waskaganish Band (GCC/CRA/Waskaganish Band), represented by Johanne Mainville, attorney;
- Hydro-Québec, represented by F. Jean Morel, attorney;
- Option consommateurs (OC), represented by Yves Fréchette, attorney.