

DECISION

QUÉBEC

RÉGIE DE L'ÉNERGIE

D-2005-178

R-3550-2004

October 5, 2005

PRESENT:

Mr. Michel Hardy, B.Sc.A., MBA

Mr. Anthony Frayne, B. Sc. (Econ.), MBA, FCA

Me Benoît Pepin, LL.M.

Commissioners

Hydro-Québec

Applicant

and

Intervenors whose names appear on the following page

Final Decision

Application for Approval of Distributor's 2005-2014 Supply Plan

List of Intervenors:

- Association de l'industrie électrique du Québec (AIEQ);
- Association québécoise des consommateurs industriels d'électricité and Conseil de l'industrie forestière du Québec (AQCIE/CIFQ);
- Canadian Federation of Independent Business (CFIB);
- Gaz Métro Limited Partnership (GMLP);
- Groupe de recherche appliquée en macroécologie (GRAME);
- Option consommateurs (OC);
- Regroupement des organismes environnementaux en énergie (ROEÉ);
- Regroupement national des conseils régionaux de l'environnement du Québec (RNCREQ);
- Stratégies énergétiques and Association québécoise de lutte contre la pollution atmosphérique (S.É./AQLPA);
- Union des consommateurs (UC);
- Union des municipalités du Québec (UMQ).

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INTRODUCTION

On November 1, 2004, Hydro-Québec (the Distributor) filed an application for the approval of its 2005-2014 Supply Plan (the Plan) by the Régie de l'énergie (the Régie) in the context of its electric power distribution activities. The application was filed pursuant to section 72 of the *Act respecting the Régie de l'énergie*¹ (the Act) and contains the information required under the *Regulation respecting the tenor of a supply plan and the intervals at which it is to be submitted*².

Eleven recognized intervenors participated in the examination of the record, and the oral public hearing was held in June 2005. An interested party³ submitted written observations.

In this decision, the Régie examines the Supply Plan in two parts. Part I addresses the integrated network⁴ and Part II concerns autonomous electrical systems⁵.

PART I: INTEGRATED NETWORK SUPPLY PLAN

1. ELECTRICITY DEMAND FORECASTS

1.1 FORECAST SCENARIOS

The Supply Plan for the integrated network is based on the August 2004 revision of the electricity demand forecast, the two main components of which are the energy forecast and the power forecast.

According to the medium scenario, the average annual rate of increase is 1.7% for the 1994-2004 period, for a total increase of 25.4 TWh (weather-normalized data). Between 2004 and 2014, sales increased from 164.0 TWh to 184.8 TWh, representing an average annual growth rate of 1.2% or an increase of 20.8 TWh.

¹ R.S.Q., c. R-6.01.

² (2001) 33 G.O. II, 4785.

³ Aluminum Association of Canada.

⁴ Supply intended to meet the electricity demand of customers served by Hydro-Québec's transmission network in its electric power transmission activities (the Transmission Provider).

⁵ Supply intended to meet the electricity demand of customers not connected to the Transmission Provider's transmission network.

TABLE 1
FORECAST OF REGULAR SALES IN QUÉBEC
BY CONSUMPTION SECTOR
MEDIUM SCENARIO (TWh)

Domestic and Agricultural	57.1	57.7	58.4	59.0	59.6	59.7	60.1	60.3	60.9	61.0	61.4	4.3
General and Institutional	32.8	32.5	32.6	32.7	32.9	32.9	33.2	33.4	33.8	34.0	34.2	1.4
Industrial -- SME	10.7	10.7	10.8	10.9	11.1	11.2	11.3	11.5	11.6	11.7	11.9	1.2
Industrial -- Large Corporations	58.4	63.3	66.0	67.3	68.7	69.5	69.9	70.3	70.8	71.0	71.4	13.0
Other uses	5.0	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	6.0	0.9
REGULAR SALES IN QUÉBEC	164.0	169.3	173.1	175.3	177.7	178.8	180.1	181.2	182.9	183.6	184.8	20.8

1 Including published sales for January to July 2004, normalized for weather conditions.

2 Excluding portion for the anticipated accounting adjustment for November 2004 relating to the last six months of 2003.

Source: Exhibit HQD-2, Document 1, page 18.

Similarly, power demand increases from 34,450 MW for the normalized peak for winter 2003-2004 to 37,365 MW for winter 2013-2014.

TABLE 2
FORECAST OF POWER DEMAND
AT WINTER PEAK BY FINAL USE
MEDIUM SCENARIO (MW)

Domestic and agricultural heating	9,198	9,271	9,360	9,425	9,474	9,517	9,552	9,574	9,632	9,678	9,723	525
General and institutional heating	3,237	3,270	3,332	3,406	3,390	3,353	3,331	3,294	3,285	3,277	3,268	31
CII dual-energy (rate BT)	480	257	258	0	0	0	0	0	0	0	0	-480
Domestic and agricultural water heating	1,645	1,668	1,688	1,708	1,726	1,744	1,761	1,778	1,794	1,808	1,822	177
Industrial -- SME	1,653	1,684	1,715	1,734	1,749	1,764	1,783	1,804	1,826	1,849	1,873	220
Industrial -- Large corporations	7,519	7,226	8,046	8,191	8,360	8,491	8,559	8,608	8,645	8,696	8,739	1,220
Other uses	10,718	10,808	11,013	11,210	11,312	11,413	11,546	11,641	11,727	11,836	11,940	1,222
DISTRIBUTOR'S REGULAR DEMAND	34,450	34,184	35,412	35,674	36,011	36,282	36,532	36,699	36,909	37,144	37,365	2,915
<i>(Demand addressed under the Plan)</i>												

Source: Exhibit HQD-2, Document 1, page 24.

The Distributor presents three demand forecast scenarios for energy and power, i.e., the low, medium and high scenarios. The following tables illustrate these scenarios.

TABLE 3
DEMAND FORECAST SCENARIOS
SALES (TWh)

Low scenario	162.3	163.6	168.5	169.2	169.8	169.5	169.9	170.3	171.4
Medium scenario	164.0	169.3	173.1	175.3	177.7	178.8	180.1	181.2	182.9
High scenario	165.9	175.1	177.9	181.3	185.6	188.5	191.3	194.2	197.6

1 Including published sales for January to July 2004, normalized for weather conditions.

2 Excluding portion for the anticipated accounting adjustment for November 2004 relating to the last six months of 2003.

Source: Exhibit HQD-2, Document 1, page 55.

TABLE 4
DEMAND FORECAST SCENARIOS
POWER DEMAND (MW)

	2003- 2004 ¹	2004- 2005	2005- 2006	2006- 2007	2007- 2008	2008- 2009	2009- 2010	2010- 2011	2011- 2012	2012- 2013	2013- 2014	Incr. 2003-13
Low scenario	34,450	33,450	34,670	34,740	34,750	34,750	34,810	34,830	34,910	35,020	35,120	670
Medium scenario	34,450	34,184	35,412	35,674	36,011	36,282	36,532	36,699	36,909	37,144	37,365	2,915
High scenario	34,450	34,960	36,230	36,680	37,280	37,850	38,340	38,800	39,280	39,770	40,640	6,190

1 Weather-normalized conditions.

Source: Exhibit HQD-2, Document 1, pages 24 and 55.

Several intervenors maintain that the Distributor's overall demand forecast is too low.

The Régie observes that the Distributor's sales for 2005 will likely exceed those forecast in the medium scenario.

First, normalized sales for 2004 and for the first quarter of 2005 surpassed the forecast sales by 0.5 TWh and 0.6 TWh, respectively. The normalized winter peak for 2004-2005 exceeded the forecast by approximately 1,000 MW.

Second, the Distributor has underestimated the competitive position of electricity in the short term. The Distributor relied on West Texas Intermediate's (WTI) crude oil price of US\$36.35/barrel for 2005, whereas the Energy Information Administration is forecasting a price of over US\$50/barrel. WTI underestimated the price by 38%. A 25% increase in fuel prices could lead to a 175 GWh demand increase in the *General and Institutional* sector in the first year.

Third, housing starts in 2004 surpassed the Distributor's forecast by 6000 units. Such a rise could result in a demand increase of 120 GWh per year in the *Domestic and Agricultural* sector.

However, although significant variations to certain economic, demographic and energy-producing parameters may occur in the short term, they do not necessarily have an impact on the long-term demand forecast. For example, an increase in fuel prices may lead to an increase in electricity consumption but may also bring about a general economic slowdown and a resulting drop in demand in the medium- and long-term. With the low and high scenarios, the majority of the parametric variations are accounted for. The Régie is of the view that for the 2006 to 2014 period, the low, medium and high demand forecast scenarios allow the range of demands of the integrated network customers to be determined. The demand is obtained by adding to the sales the transmission and distribution losses and the electricity consumption by Hydro-Québec in its buildings and sites, and by subtracting sales in the autonomous systems. The August 2005 revision, presented in the Supply Plan Progress Report for 2005, will allow the Distributor to determine whether its long-term forecast must be adjusted.

1.2 NORMALIZATION

The electricity demand forecast is based on sales history, which is normalized for weather conditions observed in various regions of Québec from 1971 to 2000 (temperature, wind speed, cloud cover, type and intensity of precipitation, etc.). The data is adjusted on the basis of a global warming scenario.

The normalization models are subject to a continuous improvement process. The Distributor has been using the *Puisclim* model since the 1970s and has been testing the CM1 model since winter 2003-2004. It is preparing to implement a normalization method combining both these models.

The Régie requests that the Distributor provide a comparison, in its 2008-2017 Supply Plan, of the normalization method that combines both models with the normalization method based solely on the *Puisclim* model. The Régie further requests that the Distributor address certain concerns raised by an intervenor, such as the claim that the average normalization over several years does not balance out and that weather appears to be consistent from one year to the next, or in other words, warmer years appear to follow each other, as do colder years.

1.3 ANNUAL HEATING DEMAND FORECAST

The Distributor apportions heating demand for premises in the *Domestic and Agricultural* sector on a monthly basis according to a heating degree day average⁶ based on a reference temperature of 18°C. In the 2003 Progress Report of the 2002-2011 Supply Plan, the demand was apportioned based on a reference temperature of 15°C.

The Distributor emphasizes that the change in hypothesis has little impact on the total power demand forecast because the reduction in power allocated to heating in the *Domestic and Agricultural* sector is compensated by an increase in that allocated to *Other Uses*. However, the impact on each of these is significant.

The Régie is concerned with the variation in load factor triggered by the change in hypothesis. Given that heating is presently a factor in the *Domestic and Agricultural* sector in the month of June, the peak in the month of January is not as high. The choice of a reference temperature of 18°C is not supported by network observations. The Distributor itself acknowledges that it is difficult to detect heating at the beginning and end of the heating period (September, May and June) because of the low load associated with it.

The Régie is not convinced that a change in hypothesis is justified. It requests that the Distributor present, in its 2008-2017 Supply Plan, the results of an analysis determining whether it is more representative to use a reference temperature of 18°C or 15°C when apportioning heating demand on a monthly basis.

⁶ Heating degree days are calculated by taking the positive difference between a reference temperature and the average daily temperature. The Distributor is currently using 18 °C as a reference temperature, that is, the temperature below which consumers are presumed to use electricity for heating. For example, based on this assumption, a day with an average temperature of 15.5 °C corresponds to 2.5 heating degree days.

1.4 CONCLUSION

The Régie accepts the electricity demand forecast for the purposes of establishing the demand of integrated network customers.

In addition to the Régie's requests concerning normalization and the reference temperature for heating requirements, the Distributor must include the following information in its presentation of the demand forecast in future supply plans:

- historical data for the last 10 years concerning the major economic, demographic and energy-producing parameters used in the forecast;
- a comparison of the major economic, demographic and energy-producing parameters employed, with the most recent forecasts issued by other bodies;
- historical, actual and normalized data for weather conditions, for the last 10 years, for:
 - sales by consumption sector
 - energy demand
 - power demand at the winter peak by use
 - energy savings;
- historical data since 2001 and the forecast on the horizon of the supply plan, for transmission loss rates and, under a separate heading, for distribution loss rates;
- an explanation of the variations observed, if applicable, and the forecast hypotheses pertaining to the transmission and distribution loss rates;
- accounting adjustments with explanations;
- an appendix presenting the methodologies employed for determining the following (for the 2008-2017 Plan only):
 - sales forecasts by consumption sector based on a medium demand scenario
 - forecasting uncertainties regarding energy demand
 - power demand forecast at the winter peak by use
 - normalization of the energy and power demands;
- any change in methodology or hypothesis having a significant impact, implemented since the presentation of the last supply plan. The Régie expects a qualitative and quantitative description of the impact of these changes on the demand forecasts.

2. RELIABILITY CRITERIA

Due to demand uncertainties, weather uncertainties and equipment failure, the Distributor adopts energy and power reliability criteria to ensure the security of the supply to its clientele.

2.1 ENERGY RELIABILITY CRITERIA

2.1.1 MAJORITY OPINION OF THE RÉGIE

Criterion for Distributor's Overall Supplies

The Distributor proposes the following reliability criterion (the one standard deviation energy reliability criterion):

[translation] Satisfy a demand scenario at one standard deviation above the medium scenario four years in advance (including demand uncertainties and weather uncertainties), without incurring a dependence on short-term markets in excess of 5 TWh per year.

The Régie is unable to accept the reliability criterion as formulated by the Distributor.

The reference to one standard deviation above the medium demand scenario is appropriate. It would allow for 85% of the scenarios to be met. It also provides a better indication of possible deviations with respect to the medium scenario compared to the difference between the high scenario and the medium scenario (high scenario criterion) used in the past. Furthermore, in the context of the Plan, the difference between the impact of the one standard deviation criterion on energy demand and the impact of the high scenario criterion is low enough to allow for the conclusion that the one standard deviation criterion is an appropriate reference for the purposes of supply planning.

TABLE 5
IMPACT OF ENERGY RELIABILITY CRITERION
ON ENERGY DEMAND (TWh)

	2005	2006	2007	2008	2009
One standard deviation criterion	5.0	5.3	6.4	7.8	8.9
High scenario criterion	6.1	5.1	6.5	8.5	10.3

Source: Exhibit HQD-2, Document 1, pages 41 and 50.

However, the standard deviation reliability criterion should apply over five years rather than four years as the Distributor suggests. As the Régie stated in Decision D-2002-169, the Distributor must issue long-term calls for tenders at least five and a half years prior to commencement of delivery, given the delays observed in the past and considering the equal treatment that must be granted to the various energy sources⁷. These calls for tenders must be issued well enough in advance in order to avoid using short-term markets to fill long-term demands.

Although the level of uncertainty regarding demand forecast is generally greater over five years as opposed to four, the Distributor may, in the case of a lower demand scenario, reduce the quantities it purchases during the bid selection process, postpone the issue of other calls for tenders, use deferral options contained in contractual agreements, reduce the quantity of entirely dispatchable power and enter into agreements with suppliers to reduce deliveries.

The criterion makes reference to dependence on short-term markets while the Distributor refers to interconnection limits and, therefore, to non-Québec markets. This import capacity is 16.2 TWh with market constraints and 24.1 TWh without market constraints.

The Distributor's criterion addresses two risks: the first is security, and the second is supply costs. The first risk factor relates to the unavailability of energy or power on non-Québec markets. It can be resolved by obtaining contractual undertakings from the supplier to make the desired supply available for the required term, in accordance with the Distributor's supply planning. The second risk factor, which is of a financial nature, results from the impact of short-term market volatility on the Distributor's supply costs. While the Régie

⁷ Section 74.1 of the Act states, among other things, that the tender solicitation and contract award procedure must "allow all interested suppliers to tender by requiring the tender solicitation to be issued in due time" and "grant equal treatment to all sources of supply."

considers it prudent and in the interests of the consumer to establish a limit on the impact of such volatility, the Régie also notes that the Distributor addresses this issue in its Plan by matching supply needs and with supply means.

The Régie believes that as long as each of these risks is managed, the criterion proposed by the Distributor is too restrictive and limits market access in a context where access to competitive supplies is already problematic.

In the opinion of the Régie, the Distributor is in a position to rely on short-term markets beyond 5 TWh to the extent that these short-term supplies originate in part from Québec, whether directly or in the form of swaps⁸. The Distributor may also take into account, in its supply planning, an import capacity above 5 TWh to the extent that the products acquired outside Québec are contracted over a medium- to long-term horizon. Market constraints actually disappear for such supplies.

Consequently, the Régie reformulates the one standard deviation energy reliability criterion as follows:

Satisfy a demand scenario at one standard deviation above the medium scenario five years in advance (including demand uncertainties and weather uncertainties), without incurring a dependence in excess of 5 TWh per year on short-term markets located outside Québec.

With the criterion, the impact of weather and demand uncertainties is maintained, for subsequent years, at the level of evaluation of the fifth year.

This reformulated criterion adequately responds to the objective of consumer protection and maintains the Plan's necessary flexibility. It does not decrease the security of supply but does further the quest for the lowest cost. The short-term supply level from outside Québec will become apparent as acquisitions occur. The medium- and long-term supply level is therefore not imprecise; it can be increased or decreased as required.

Lastly, the Régie requests that the Distributor file evidence, in the form of an administrative follow-up to be made public in November of each year, demonstrating that the one standard deviation reliability criteria will be respected in the following year. At a minimum, the evidence presented must contain the information set out in Appendix A. In the event that the

⁸ The Régie is referring to transactions through which the parties agree to exchange fund flows or physical deliveries of electricity thereby avoiding the use of interconnections.

criterion is not respected, the Distributor will be required to demonstrate the methods it intends to implement to remedy the situation.

2.1.2 DISSENTING OPINION OF COMMISSIONER ANTHONY FRAYNE

Criterion for the Distributor's Overall Supplies

With all deference to the opposing view, I do not share the opinion of my colleagues with regards to certain aspects of their decision involving the energy reliability criterion that applies to the Distributor's overall supplies.

The Distributor proposes a criterion for planning purposes:

Satisfy a demand scenario at one standard deviation above the medium scenario four years in advance (including demand uncertainties and weather uncertainties), without incurring a dependence on short-term markets in excess of 5 TWh per year. (author's emphasis)

With respect to the third element, emphasized above, the Distributor supports its position by referring to the import capacity (which it estimates at approximately 15 TWh) as well as the fact that [translation] "*the adjacent markets may experience a high demand scenario*"⁹. It then proposes a supply strategy based on this element.

The intervenors do not contest this element of the criterion, and some of them expressly support it. For instance, according to the evidence presented by the CFIB:

*The strategy of Hydro-Québec Distribution to not depend on short-term contracts for more than 5 TWh seems reasonable for assuring the security of supply.*¹⁰

Like the Distributor, the intervenors also proposed supply strategies based on this element. Several emphasized that actual demand will probably surpass the medium scenario.

I concur with my colleagues that the timeframe of four years must be modified to five. However, according to my colleagues, the third element of the criterion should also be

⁹ Exhibit HQD-3, Document 1, page 14.

¹⁰ Hydro-Québec Distribution, Supply Plan, Application R-3550-2004, evidence of Mr. Ron Mikkelsen and Mr. Jean-Benoît Trahan for the CFIB, page 24.

reformulated in order to limit the 5 TWh dependence to short-term markets located outside Québec. With respect, I do not share their opinion on this last point.

The criterion proposed by the Distributor refers to short-term markets, without distinction between Québec supply sources and supply sources from import markets. This being said, its justification refers primarily to the capacity of interconnections. For this reason, my colleagues consider it appropriate to refer only to short-term markets outside Québec and reformulate the criterion in this regard. I believe that the reformulation, with the reasons justifying it, actually amounts to a fundamental modification of the criterion.

In my opinion, the capacity of the interconnections is not a determining factor in the choice of the planning criterion; the issue is rather the condition of short-term markets, whether or not they involve imports.

The energy reliability criterion is one of the cornerstones of the Plan, and modifying it could impact the validity and coherence of the resulting supply strategies. In order to plan the supplies required in the medium and long term, the limit must, in my opinion, integrate both the short-term purchases originating from outside Québec as well as short-term purchases originating from Québec. The Distributor's formulation of the criterion defines a limit (5 TWh), without distinction. However, with the modification made to the criterion by my colleagues, the supply strategy becomes imprecise. My colleagues' formulation does not define the limits to be considered for short-term purchases derived from Québec, a limit which is necessary for establishing supplies required in the medium and long term. I therefore do not subscribe to this modification.

In contrast, for the purposes of the present Plan, I accept the third element of the criterion as formulated by the Distributor because it clearly and expressly limits consumers' exposure to risks inherent in the short-term markets, such as the scarcity of available products and, as a result, higher prices on the short-term markets. My colleagues recognize the security risks and supply costs, but their analysis has not convinced me that the Distributor's proposal should be rejected.

In my opinion, a likely probability exists, on the basis of the factors described in section 1.1, that the Québec demand will exceed the medium scenario. It is quite possible at the same time that a high demand scenario will occur in the adjacent regions. Prices on the adjacent markets and prices in Québec are interdependent because Québec producers participate in these markets. Although I share my colleagues' opinion to the effect that it is possible for the Distributor to acquire products without soliciting interconnections, there is no guarantee as to their availability or price in the absence of prior contractual agreements. With the

premises incorporated in the current Plan, I believe it necessary, out of a concern for caution, to limit the impact of short-term market risks on Québec consumers, and I accept this element of the criterion as formulated by the Distributor.

End of Dissenting Opinion

Criterion for Supplies Furnished by the Producer

With regards to heritage pool electricity, the Distributor applies an energy reliability criterion that involves maintaining a sufficient energy reserve to deal with potential water shortages, based on a 2% probability of occurrence, of 64 TWh over two consecutive years and of 98 TWh over four consecutive years (energy reliability criterion of 2%).

This criterion must apply to all supplies furnished by Hydro-Québec in its electricity production activities (the Producer) and not solely to heritage pool electricity. The Distributor has entered into post-heritage supply contracts with the Producer regarding which it must ensure that the criterion is applied.

Demonstration of the validity of this criterion is incomplete as regards the methodology and underlying data. The Régie nevertheless takes note of this criterion for the purposes of the present Plan but requests that the Distributor provide the following as evidence of validity in the framework of its 2008-2017 Supply Plan:

- methodology and results for the conversion of natural water yield on various rivers into annual energy yield by generating station¹¹;
- methodology used to establish the difference in energy yields since 1943¹²;
- maximum capacity of energy reserves divided among the major reservoirs¹³;
- methodology and data used to determine annual and cumulative deficits over one, two and four years, for an overall energy yield corresponding to a 2% probability of occurrence;
- mechanisms contemplated for protecting against such deficits;
- reasons underlying choice of a 2% probability of occurrence.

¹¹ See, for example, File R-3526-2004, Exhibit HQP-1, Document 1, page 18, Table 2.1 presenting results in terms of annual energy production by generating station.

¹² See differences in annual energy yields from 1943 to 2003, File R-3526-2004, Exhibit HQP-1, Document 1, page 16.

¹³ See maximum capacity for all reservoirs for 1992 to 1996, Opinion A-2004-01, June 30, 2004, page 83.

In addition, Hydro-Québec has undertaken to perform studies to validate the method used for establishing the historical average of natural water yield and to validate the difference between the annual energy yield and the average value, associated with a 2% probability over two- and four-year periods (deficits of 64 TWh over two years and 98 TWh over four years). In this regard, the Régie notes that Hydro-Québec has asked lead persons to complete the studies by October 2005¹⁴. The Régie therefore requests that the Distributor file these studies as soon as they are available, in the form of an administrative follow-up to the present decision.

Lastly, the Distributor must be in position to assess whether its supplier is respecting this criterion so that it may take the measures required to satisfy the needs of its clientele or to act on the demand for electricity. The Régie requests that the Distributor file evidence of compliance with the 2% energy reliability criterion in the form of an administrative follow-up to this decision and make it public in November, May and August of each year. At a minimum, such evidence must contain the information presented in Appendix B as well as a statement by the President and Chief Executive Officer of Hydro-Québec regarding the energy reliability of the generating stations. In addition, the Régie takes note of Hydro-Québec's undertaking to file *ad hoc* reports at the Régie's request, such as in the event of an emergency¹⁵.

2.2 POWER RELIABILITY CRITERION

The Distributor's power reliability criterion consists of not exceeding 2.4 hours of load shedding per year. The criterion is defined as follows in a report approved by the Northeast Power Coordinating Council (NPCC):

*After due allowance for maintenance, forced outages, hydraulic constraints and generating unit restrictions, forecast uncertainty, spinning reserve requirements and interruptible loads, the probability of disconnecting firm customers due to generation deficiencies, on the average, will be no more than 2.4 hours per year.*¹⁶

The Régie accepts the Distributor's criterion. However, commencing in the 2006 Progress Report, the resources available for satisfying this criterion must include an amount of power corresponding to the sharing of reserves with neighbouring networks.

¹⁴ Distributor's arguments, June 23, 2005, page 14.

¹⁵ Exhibit HQD-7, Document 1.25.

¹⁶ Exhibit RÉGIE-3, page 5.

Future supply plans must reconcile the differences between the power reserve rate considered in the plan, determined based on the Distributor's demand, and the reserve rates presented in the reports submitted to the NERC (North American Electric Reliability Council) and to the NPCC, established on the basis of demand in the Québec Control Area.

The Régie requests that the Distributor file evidence in November of each year, in the form of an administrative follow-up to this decision, that the power reliability criterion corresponding to a load shedding probability of 2.4 hours per year will be respected for the next winter peak. This evidence must, at a minimum, contain the following information:

- the power balance for all of the Producer's commitments and availabilities on the basis of demand in the Québec Control Area, as set out in Appendix C;
- the power balance as a function of the Distributor's supply demands and means, as set out in Appendix D;
- pertinent extracts of the most recent reports submitted to the NERC (*Winter Assessment - Reliability of the Bulk Electric Supply in North America*) and to the NPCC (*Hydro-Québec Triennial Review of Resource Adequacy*, or interim reviews depending on the year, *Québec Control Area Interim Review of Resource Adequacy*), regardless of whether these reports have been approved by these bodies;
- a table reconciling the data from the power balances and the data contained in the reports listed above, in the form set out in Appendix E.

The Distributor proposes that the evidence filed in November be made public at the end of January. For the purposes of the present Supply Plan, the Régie will allow the evidence to be made public in January of the year following which it is filed. In the subsequent supply plan, however, the Distributor will be required to prove the damage it is likely to sustain if the data were to be made public in November.

3. EXISTING SUPPLIES

The major input in the development of the Plan is the heritage pool electricity supply. In order to have a clear understanding of the volume of heritage pool electricity consumed by the clientele and to follow its development, the Régie requests that the Distributor provide, in the framework of its annual reports, its supply plan progress reports and the next supply plan, historical data for the following since 2001 (actual and weather-normalized data):

- volume of heritage consumption;
- volume of heritage pool electricity supplied by the Producer;
- transmission and distribution loss rates.

At the hearing, the Distributor filed the agreement entered into with the Producer on February 15, 2005 concerning services that are necessary and generally recognized for ensuring the security and reliability of the heritage pool electricity supply¹⁷. The Régie will examine the agreement upon presentation of the 2008-2017 Supply Plan.

4. ADDITIONAL SUPPLIES AND SUPPLY STRATEGY

4.1 PRODUCTS REQUIRED TO MEET THE DEMAND

Distributor's Present Situation

The current legislative framework of post-heritage supply is based on the assumption of a fully competitive market. In its *Opinion on Québec's energy security and the need for the Le Suroît project*, the Régie states:

[translation] ... *the implementation [of the legislative framework] currently and inexorably leads to thermal energy sources or large-scale hydroelectric sources, over which the Producer enjoys a monopoly. The Régie observes that the market desired by the lawmaker has not materialized, nor will it materialize under the present conditions.*¹⁸

In response to the Québec demand, the current Plan provides for the issue of calls for tenders for long-term products, open to all energy sources. However, the Distributor is awaiting completion of the proceedings of the parliamentary committee on energy and for government policy to be determined before establishing its future strategies.

Despite this context, the Régie deems it essential that the Distributor readjust its long-term product deployment strategy in the Supply Plan Progress Report for 2005.

¹⁷ Exhibit HQD-3, Document 2.2.

¹⁸ Opinion A-2004-01, June 30, 2004, page 134.

Long-term Products

In order to fill the demand over and above the heritage electricity volume, the Plan takes into account existing supplies or pending acquisitions, including those resulting from the first call for tenders for 990 MW of wind energy. It also provides for the acquisition of a second block consisting of 1000 MW of wind energy, 400 MW of entirely dispatchable power and other long-term products for demand appearing only in 2012.

Since the filing of the Plan, the second block of wind energy established by the Québec government was increased from 1000 to 2000 MW of installed capacity. Given the announcement of this increase on June 29, 2005, the call for tenders will not be issued until the end of 2005. If we consider the delays experienced with the first call for tenders for wind energy, delivery of the second block is not likely to commence until 2009.

On June 20, 2005, the Distributor announced that it would accept only one bid of 8.1 MW of electricity from cogeneration, while the Plan provides for the acquisition of 350 MW. The result of this call for tenders implies that the Distributor must reassess its means for covering the deficit of 342 MW and of 2.7 TWh. The Régie does not consider it necessary to suspend examination of the Plan for such a reason, which is likely to recur upon each examination.

The Régie presents the following table to demonstrate the impact of these modifications on the long-term deployment of the Plan.

TABLE 6
IMPACT OF LONG-TERM DEPLOYMENT
BASED ON MEDIUM DEMAND SCENARIO (TWh)

DISTRIBUTOR'S ASSESSMENT	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
= Additional supplies required in excess of heritage electricity volume	3.8	7.9	10.1	12.7	13.7	15.1	16.1	18.0	18.7	20.0
- Call for tenders for cogeneration provided in Plan				0.1	1.7	2.8	2.8	2.8	2.8	2.8
- Call for tenders for wind energy provided in Plan (1000 MW with delivery commencing in 2007)			0.1	0.7	1.3	1.9	2.5	3.1	3.1	3.1
- Other supplies (existing or pending acquisition)	3.0	1.6	8.6	9.8	10.1	10.5	10.7	11.0	11.8	11.8
= Additional supplies required under Plan	0.8	6.4	1.5	2.2	0.8	0.0	0.2	1.2	1.2	2.5
RÉGIE'S ASSESSMENT	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
= Additional supplies required in excess of heritage electricity volume	3.8	7.9	10.1	12.7	13.7	15.1	16.1	18.0	18.7	20.0
- Call for tenders for cogeneration					0.1	0.1	0.1	0.1	0.1	0.1
- Call for tenders for wind energy (2000 MW with delivery commencing in 2009)					0.2	1.4	2.6	3.8	5.0	6.2
- Other supplies (existing or pending acquisition)	3.0	1.6	8.6	9.8	10.1	10.5	10.7	11.0	11.8	11.8
= Additional supplies required	0.8	6.4	1.6	3.0	3.5	3.2	2.8	3.2	2.0	2.1

A Régie's data

Note: The results may be calculated based on unrounded values and therefore differ slightly from the results the reader may obtain from calculations based on the rounded values contained in the table.

Source: Exhibit HQD-3, Document 3, page 25.

The Distributor initially forecast significant demands from 1.2 to 2.5 TWh from 2012 to 2014 according to the medium-demand scenario and a call for tenders for long-term products in order to meet them. The Régie observes that significant demand appears well before 2012 and that the Distributor must readjust its deployment strategy for long-term products.

As stated above, the Distributor must issue long-term calls for tenders at least five and a half years prior to commencement of delivery. A four-year period would increase the risk of delays or the non-realization of the projects, and these risks may be reflected in the prices offered.

400 MW of Entirely Dispatchable Power

The Distributor requests the Régie's authorization to acquire 400 MW of entirely dispatchable power. This product would be fully programmable. It could supply

approximately 3 TWh for a high utilization factor or not be programmed in a year with a very low utilization factor. The acquisition of such a service would allow the Distributor to meet its one standard deviation energy reliability criterion. This product would also contribute power during peak periods.

The Distributor maintains that the best strategy is to define the demand and submit it to the market. The Distributor expressed its confidence in the depth and efficiency of the markets, citing the example of entirely dispatchable power, with a reduction in quantities, that it has successfully developed since its 2002-2011 plan and acquired on non-Québec markets.

The Régie approves the principle of entirely dispatchable power, open to all supply sources and to non-Québec markets. It believes that all means should be employed in order to maximize the probability of good offers for the benefit of its clientele and that the Distributor's requirements may be adjusted for a better response by the markets.

For the entirely dispatchable power, the Distributor expects to solicit bids for the 50 to 100 MW segment, introduce longer programming periods and obtain flexibility with regards to programming on a monthly and annual basis. This approach should generate increased interest in calls for tenders.

The Distributor must consider bids with terms of 3 to 5 years, and not solely of 15 to 25 years, in an attempt to reach more bidders. Lastly, it must consider bids based on management of the demand.

Short-term Products

For 2005, the Distributor secured 3 TWh of its short-term demand by contracting baseload power, in peak periods and non-peak periods, and a firm energy product with programming flexibility (quantity reduction option). The Distributor forecasts that it will require an additional 0.8 TWh for the remainder of the year.

The following table presents short-term purchases contemplated by the Distributor for 2006 to 2008:

TABLE 7
SHORT-TERM PURCHASES

Annual energy	6.4 TWh	1.5 TWh	2.2 TWh
	2005-2006	2006-2007	2007-2008
Peak power	670 MW	420 MW	260 MW

Source: Exhibit HQD-3, Document 3, page 35.

As indicated in Table 6, this demand may reach 3 TWh by 2008.

The Distributor contracted various products, some of which include guaranteed power for winter 2005-2006, following calls for tenders A/O-2005-01 and A/O-2005-02. These contracts total 2630 GWh and 652 GWh respectively and are intended for maximum monthly power quantities of 600 MW to 800 MW, depending on the month.

The Régie recognizes the Distributor's initiatives on the short-term markets and notes that the response to its calls for tenders currently indicates a certain depth. The Régie is satisfied with the development of flexible power. However, its 5 TWh level of dependence on short-term markets has been surpassed for 2006, which increases the Distributor's exposure to price volatility on short-term markets.

Conclusion Regarding Additional Supply Required

The Distributor is responsible for ensuring the supply of its clientele while seeking the lowest possible cost. The Régie approves the Distributor's strategy of covering its short-term demand with short-term products and its long-term demand with long-term products.

The Régie observes a delay in the application of the strategy, in particular due to the call for tenders for cogeneration and the delay resulting from the announcement of the second block of wind energy. The Distributor did not intend to issue a call for tenders except for significant demand appearing as of 2012, whereas the demand appears well in advance of this date.

The Régie is satisfied with the modification of the strategy with regards to the entirely dispatchable power, and in particular concerning contracts for the 50 to 100 MW segments.

The Régie expects that this product will be submitted to the assessment of the markets, including non-Québec markets.

The non-Québec markets continue to be volatile, due in part to their dependence on hydrocarbons. They definitely have a certain depth, but the situation needs to be monitored in the upcoming years. In cases where the medium scenario is exceeded, the Distributor may call upon these markets to meet a higher demand scenario. In order to meet this demand, the Distributor must continue to develop flexible, entirely dispatchable power.

For the purposes of the 2005 Progress Report, the Régie requests that the Distributor update its power and energy balances and revise its deployment strategy for long-term products while taking into account the following elements:

- August 2005 revision of the demand forecasts;
- application of the one standard deviation energy reliability criteria over five years;
- recognition of the sharing of the reserve to meet the power reliability criterion;
- results of the cogeneration call for tenders;
- second block of wind energy;
- a procurement time of five and a half years for its long-term calls for tenders.

4.2 FRAMEWORK AGREEMENT WITH PRODUCER

The Régie recognizes the need for a framework agreement between the Producer and the Distributor because it would allow for a real-time response to unforeseeable demand in excess of the heritage electricity profile, such as those created by weather variations, the unforeseeable unavailability of supplier's production equipment and situations in which the heritage electricity profile does not meet the demand profile. The features of this agreement are not presented in the Plan and will be examined in File R-3568-2005.

4.3 BALANCING SERVICE FOR WIND ENERGY PRODUCTION

As provided in Decision D-2005-76, the Régie is examining concepts underlying this service, such as potential suppliers, quantities, the nature of the service, its various forms and the basis for the cost estimate.

The Need for a Balancing Service

The eight wind energy plants scheduled for construction in the Gaspé region further to Call for Tenders A/O-2003-02 will produce up to 990 MW. The Distributor maintains that it requires a balancing service to:

- ensure a wind energy component in its power balance;
- forecast the hourly contribution of wind energy to its supply;
- avoid major supply fluctuation that cannot be handled adequately under the heritage contract.

With regards to planning, only a portion of the installed wind energy can be guaranteed in the Distributor's power balance. Several studies addressing the contribution of wind energy in terms of the power supplied to Hydro-Québec's network were entered into evidence. The study by Lambert and Marcotte (1995)¹⁹ finds a positive correlation between the presence of wind and the network's winter peak, which is largely dependent upon the electrical heating demand. The power expected at the peak period exceeds the average power produced in winter. The study is based on wind measurements taken over a span of 32 years in Mont-Joli and is also based on simulated demand.

The Helimax study (2005)²⁰ considers the dispersion of the wind energy plants in the Gaspé region. It is based on wind measurements at each of the eight sites, at the windmill hub heights provided by the promoters. The study takes into account the effect of temperature on air density and also considers loss factors. In addition, it confirms that the average power in winter months is higher than the average annual power.

A study by the Helios Centre (2005)²¹ examines the advantage of wind energy production coupled with the heritage contract and also considers its power contribution at peak periods. The wind energy contribution is sustained during the network's peak 300 hours, with the exception of about a dozen hours²² caused by breakdowns due to strong winds. This study looked only at the wind data measured at Cap-Chat in 2004.

Each of the studies sheds an interesting perspective, allowing for the conclusion that wind energy production during the network's peak hours will be higher than the average annual

¹⁹ Exhibit RÉGIE-7.

²⁰ Exhibit HQD-5, Document 8.1, Appendix 1.

²¹ Exhibit RNCREQ-8.

²² Exhibit RNCREQ-15, page 14.

production in the wind energy plants. Additional studies have been undertaken by the Distributor to better ascertain the level of firm power that can be associated with these wind energy plants during peak periods. The Régie believes that studies of this nature should be pursued in order to provide, among other things, a better indication as to the quantity of power that may be included in the Distributor's balance in the absence of a balancing service. Until such studies have been conducted, the Régie must conclude that a balancing service is necessary for the moment and for the 990 MW from the first call for tenders in order for the power reliability criterion to be met. Examination of the requirement of a balancing service should therefore not be postponed. The Régie will reassess the need for such a service in the Distributor's next supply plan.

Nature of the Service

The Distributor presents a balancing service for converting wind production into a stable baseload supply. In the opinion of the Régie, uniform delivery throughout the year is not necessarily the best manner in which to integrate wind energy production with the energy and power balances. In the Régie's view, it may be appropriate to adapt the balancing service so that it can also respond to cyclical needs. The Régie requests that the Distributor explore this alternative and provide the results of its analysis in its next supply plan.

Basis for Cost Estimate

The costs related to the balancing service are comprised of two elements. The first involves the quality of the wind forecast. The Distributor is confident that it will be in a position to forecast production in wind energy plants four hours in advance. The second element involves the power that will be guaranteed by the service supplier during peak hours. The price formula is based on the cost of the power, less the actual contribution from the wind energy plants.

The Régie considers the two elements of the cost estimate to be acceptable, until such time as the studies referred to above are filed. The components of these elements are not in evidence in the present file. The Régie will examine them in File R-3573-2005, which involves an application for approval of the wind energy integration agreement.

Potential Suppliers and Quantities

The Distributor is not in a position to determine the interest or capacity of suppliers such as Alcan Inc. and Brascan Energy Marketing Inc. in using their equipment for wind energy balancing purposes. According to the Distributor, these suppliers could only supply a

fraction of the necessary balancing service and that, as a result, the Producer's participation would be required to balance 990 MW. It anticipates that the agreements entered into with the Producer can be extended to other interested suppliers.

Without presuming the interest of these potential suppliers and the quantities they may be able to offer, the Régie is of the opinion that it is necessary for the Producer to contribute to the balancing service required. In fact, in order to balance 990 MW of wind energy production, the suppliers must be in a position to absorb this capacity when all of the plants are operating at full capacity and to restore the guaranteed power provided for in the contract.

4.4 MANAGEMENT OF SUPPLIES

In the Distributor's opinion, demand uncertainties coupled with the terms and conditions of certain supply contracts make full utilization of the 8760 hourly values of the heritage pool electricity impossible. It estimates the mathematical expectation²³ of annual unused heritage pool electricity at 0.5 TWh from 2005 to 2008 and 0.3 TWh from 2009 to 2014. In planning for these quantities, the Distributor is constituting a reserve for the purposes of supply management in real time.

The Régie accepts these quantities for planning purposes but also takes note of the Distributor's objective to reduce the overutilization of the heritage pool electricity profile and unused heritage pool electricity volumes²⁴ to "almost zero." From this perspective, the Régie is requesting that the Distributor file the following information in Excel format in the framework of its annual reports and supply plan progress reports, :

- actual curves²⁵ for load duration and chronological hourly demand for the previous year;
- supply methods employed (heritage pool electricity, long-term contracts, short-term contracts, etc.);
- volumes in excess of the heritage electricity profile;
- unused volumes of heritage pool electricity;

²³ Probabilistic mean value.

²⁴ Stenographic Notes, Volume 7, page 80.

²⁵ Processing the transmission and distribution loss data in such a way as to allow for comparison with the heritage pool electricity profile.

- reasons for a higher total annual unused volume of heritage pool electricity over the previous year.

In light of the costs associated with the post-heritage electricity supply, the Distributor must place greater emphasis on optimizing its acquisition and management. Indicators must be developed to allow for a performance assessment in the context of the rate case. To date, the Distributor has not established a formal list of performance indicators. However, it has stated that the utilization rate of heritage pool electricity, the unit price of global supplies and the comparison of its purchases with reference prices on short-term markets will be included. The Régie is of the opinion that these indicators must be integrated with the Distributor's list of performance indicators.

5. TERMS AND CONDITIONS OF CALLS FOR TENDERS

5.1 LOCATION OF PRODUCTION SOURCES

The Régie dismisses the Distributor's request to limit calls for tenders for long-term supplies to production sources located in Québec. The Régie reiterates, as it stated in Decision D-2002-169, that calls for tenders must benefit from the dynamics of the entire market available to the Distributor. The participation of a larger number of suppliers with existing production sources may accelerate the acquisition of the product, which will be beneficial in the event of a delay in the issue of long-term calls for tenders, and cause consumers to benefit from competitive prices. Increased participation will also allow for the acquisition of long-term power as well as medium-term power. In this regard, the Régie believes that contracts of indeterminate term may provide the Distributor with additional flexibility as regards its supplies and the use of interconnections.

The import capacity of Québec's interconnections with neighbouring networks is 24.1 TWh without market constraints and 16.2 TWh with market constraints. As regards medium- and long-term calls for tenders for production sources located outside Québec, the Régie is of the opinion that the Distributor may consider a capacity in excess of 16.2 TWh. Market constraints cease to exist for medium- and long-term supplies from outside Québec.

Furthermore, the addition of capacity to an interconnection, such as the construction of a new interconnection, should not be excluded if the investment is justified.

5.2 LENGTH OF LONG-TERM CONTRACTS

In Decision D-2002-17, the Régie ordered the Distributor to allow supply contracts with terms of 15 to 25 years, with renewal options at the discretion of the supplier.

The Régie reiterates its position whereby the Distributor is required to allow all contract terms up to 25 years. Such flexibility may lead to better prices for consumers.

The Régie accepts the Distributors request to eliminate renewals at the supplier's option. The exercise of such an option by the supplier is detrimental to consumers in that the supplier will only renew the contract if the price is above market price.

5.3 EVALUATION OF TRANSMISSION COSTS

During the bid selection process, the Distributor considers the transmission costs that apply to the various bids. These costs involve the generic transmission cost for the 735 kV network, the cost of integration with the regional network, the switchyard cost (connection cost) and electrical loss rates. They are estimated in advance by Hydro-Québec as part of its electrical power transmission activities (the Transmission Provider) and therefore are not part of the construction cost of the transmission project. In fact, the Transmission Provider undertakes studies involving the integration of the new production source with the transmission network and issues the applicable technical requirements only after acceptance of the bid.

In Decision D-2004-115, the Régie stated that it was not convinced that applying the same cost evaluation methodology regardless of the size of the production facility was appropriate. The Régie requests that the Distributor present alternative solutions at the time of the application for approval of its future supply plans.

The Distributor maintains that the issue raised by the Régie does not stem from the methodology employed to evaluate transmission costs, but rather from costs inherent in connecting a station. Costly protection equipment is required to ensure reliability of the supply, the integrity of equipment and the safety of personnel. These costs may represent a sizeable portion of the total cost of connecting lower-capacity production stations.

With regards to the alternative whereby the cost of expensive equipment for stations whose size is below a predetermined limit would not be taken into account during the bid selection process, the Distributor maintains that such an approach is contrary to the spirit of the Act, which requires the fair treatment of all production sources regardless of the size of the project.

The Régie understands the Distributor's concern regarding the treatment of energy sources and shares its opinion that excluding costs applicable to lower-capacity generating stations is contrary to the Act. The objective of the Act is to ensure that all projects receive fair treatment.

The Régie nevertheless believes that a more extensive examination would be beneficial in determining whether the application of the same evaluation methodology regarding the cost of connecting new stations, and those with a lower capacity in particular, may place bids regarding these projects at a disadvantage.

The Régie wishes to ensure that the estimate of connection costs reflects the technical requirements associated with projects having very little impact on the transmission network. Close attention must also be paid to the costs that are not within the scope of the calls for tenders, such as study and management costs. As a result, the application of the methodology for evaluating connection costs for new, lower-capacity stations must be examined as soon as possible, and by November 1, 2006 at the very latest.

6. CONCLUSION

The Régie approves the 2005-2014 Supply Plan for the integrated network, subject to certain modifications. The deployment strategy for long-term products must be reviewed immediately because the demand appears well before the five-and-a-half-year period the Distributor must allow between the issue of its calls for tenders and the commencement of delivery.

The Régie recognizes the need for a framework agreement between the Producer and the Distributor, which would allow unforeseeable demand to be met in real time. The Régie also concludes that a balancing service for the 990 MW of wind energy from the first call for tenders is necessary at the present time.

With regards to the terms and conditions of calls for tenders, the Régie dismisses the Distributor's request to limit calls for tenders for long-term supply to production sources located in Québec. It agrees that the renewal option in long-term contracts should be eliminated but maintains the requirement that the term of supply contracts may extend up to 25 years. In addition, the application of the methodology for evaluating the cost of connections to lower-capacity stations must be examined.

PART II: SUPPLY PLAN FOR AUTONOMOUS SYSTEMS

1. DEMAND FORECAST

The forecast of the electricity demand for the autonomous systems is reasonable, and the Régie accepts it for the purposes of the examination of the Plan.

The forecast is based on a hypothesis whereby the current energy efficiency programs and tariffs are maintained. The Distributor plans to present a separate file in 2005 addressing the energy efficiency programs intended for the clientele of its autonomous systems. It is important that the file be submitted in a timely manner in order for its impacts on the supply of autonomous systems to be integrated for the purposes of the Supply Plan Progress Report for 2006.

2. METHODS AIMED AT MEETING THE DEMAND

The Régie accepts the planning criterion for electricity production equipment adopted in the Plan as regards autonomous systems. The adjustments made to this criterion are desirable because they allow certain investments to be postponed while maintaining the security and reliability of the electricity supply.

The Régie accepts the following methods for meeting the electricity demand for the 2005-2007 period:

- addition of a 520 kW generator at the Wemotaci station;
- replacement of a 800 kW generator by a 1505 kW generator at the Kuujuaq station;

- development of a project involving the construction of a hydroelectric generating station in La Romaine.

Given the rise in diesel prices and sustainable development considerations, the Distributor must make a concerted effort to reduce the operating costs of its autonomous systems and accelerate the implementation of alternative solutions to diesel.

In the opinion of the Régie, it is important that a wind/diesel hybrid pilot project be completed by 2007 on Île d'Entrée in Îles-de-la-Madeleine. However, this pilot project should not delay the implementation of a wind/diesel hybrid pilot project in Nunavik given the weather and access conditions specific to northern areas. It is therefore desirable for the Distributor to implement a first wind/diesel hybrid system in Nunavik by 2008 at the latest²⁶. The Régie requests that the Distributor present, in the framework of the Supply Plan Progress Report for 2006, a development project for wind/diesel hybrid systems implemented in phases on the Îles-de-la-Madeleine territory, whose electricity network is connected to the diesel station located in Cap-aux-Meules.

Furthermore, the maintenance of a diesel station in Saint-Augustin is not justified from a technical and economic standpoint. The Distributor had planned to dismantle the station but decided to keep it open further to pressure from the area and to provide additional security to the public in the event of a major problem on the 69 kV power line. In the next rate case, the Régie will examine the costs to all users of maintaining this generating station while reflecting on the social considerations raised by the customers concerned.

3. GREENHOUSE GASES

In its evaluation of the profitability of wind/diesel hybrid systems, the Distributor did not include an analysis of the value of greenhouse gas (GHG) emissions reductions. It did, however, quantify this value at \$512,000 for Inukjuak, the most promising project in Nunavik²⁷.

The Régie includes an indicator for GHG emissions in the sustainable development criterion²⁸ as regards the issue of long-term calls for tenders for the integrated network. From the same perspective, the Régie requests that the Distributor take into account the

²⁶ The Distributor states that the first wind/diesel hybrid system in Nunavik could be operational by the end of 2008. Exhibit HQD-5, Document 1.1, page 77.

²⁷ Exhibit HQD-5, Document 1, Appendix 1, page 149.

²⁸ Decision D-2004-212, October 13, 2004.

benefits associated with GHG emission reductions in the evaluation of the profitability of projects in the autonomous systems.

Until the creation of a Canadian market for credits per tonne of carbon dioxide (CO₂) equivalent, the Distributor is justified in using the value of \$US8₁₉₉₅ per tonne of CO₂ suggested by the International Energy Agency, or \$13CAN₂₀₀₄.

4. EXCESS ENERGY

The Distributor has not referred to the use of excess energy²⁹ in its analysis of the profitability of wind/diesel hybrid systems for the autonomous systems. However, it describes it as a major factor in the economic evaluation³⁰. In the opinion of the Régie, the Distributor must consider the utilization of any energy available from a wind/diesel hybrid system in the economic analysis of its projects.

5. CONCLUSION

The Régie approves the 2005-2014 Plan for autonomous systems. It requests that the Distributor deploy its wind/diesel hybrid systems in Îles-de-la-Madeleine and that it consider in its analyses the benefits associated with GHG emission reductions and the value of excess energy. It also requests that the Distributor present a detailed report, in its Supply Plan Progress Reports and in the 2008-2017 Supply Plan, regarding the progress of the studies and the realization of projects involving the construction of hydroelectric generating stations, connections of autonomous systems to the integrated network and the implementation of wind/diesel hybrid systems.

CONSIDERING the *Act respecting the Régie de l'énergie*³¹, and sections 31 and 72 in particular;

²⁹ Energy otherwise lost that can be directed to certain sites for water heating, cooling or desalination, such as to avoid the use of additional fuel for this purpose.

³⁰ Exhibit HQD-5, Document 1, Appendix 1, page 6.

³¹ R.S.Q., c. R-6.01.

CONSIDERING the *Regulation respecting the tenor of a supply plan and the intervals at which it is to be submitted*³²;

The Régie de l'énergie:

APPROVES the Distributor's 2005-2014 Supply Plan, with the adjustments and modifications contained in the present decision;

ORDERS the Distributor to comply with all requests set forth herein.

Michel Hardy
Commissioner

Anthony Frayne
Commissioner

Benoît Pepin
Commissioner

³² (2001) 33 G.O. II, 4785.