DEMANDE DE RENSEIGNEMENTS N^{O} 1 D'OPTION CONSOMMATEURS (OC) À HQD-ÉNERGIR
DEMANDE RELATIVE AUX MESURES DE SOUTIEN À LA DÉCARBONATION DU CHAUFFAGE DES BÂTIMENTS
R-4169-2021

Questions prepared by Dr. Roger Higgin

1. Référence : i) B-0005 ***HQD-Énergir-1, Document 1 Section 1.1 lines 6-13***

Préambule : Energir and HQD cite the Government Objectives from the Green Economy Implementation Plan, page 29.

- **increased power requirements of the electricity distributor;**
- **the impact on natural gas rates for other customers, including industries ;**
- **additional costs associated with conversion on the customer side ;**
- **the complementarity of the various energy efficiency and energy management measures**
- **peak demand that will occur/be put in place;**
- **the need to maintain alternative energy solutions in the event of electrical outages**

Demandes :

1.1 Please provide a table that indicates *for each objective* whether the Bi-Energie plan meets the objective fully, partially, or not met.

1.2 Please indicate if the Bi-Energie Program meets those Objectives at lowest possible cost.

1.3 Please provide an estimate of the Program cost 2022-2030 ($2020) and who pays these costs – Government (taxpayers), Energir Customers (rates), HQT customers (ratepayers) and building owners.

1.4 Please provide an estimate of the cost per metric tonne of GHG reduced (2020 C&T price) for each year of the program and the 9 year total.

1.5 Have the Distributors searched for similar programs in other jurisdictions? If so please provide a list indicating type(s) of programs with references.

1.6 Are the Distributors aware of integrated resource planning programs in New York State[1]? If so comment on the similarities and differences, e.g. reducing gas system peak vs electricity peak

[1] OEB EB-2020-0091 Enbridge Gas IRP-OEB Staff_Expert Evidence_EGI IRP (Guidehouse)

2. Référence : i) B-0005: ***HQD-Énergir-1, Document 1 Section 2 and Section 3***

Préambule : Reference/Footnote 8 indicates " In this document, the term conversion refers to Energir's existing customers and to new buildings" (translation) .

Demandes :

2.1 Please confirm Offer is not available to
(i) Customers using other fossil fuels, e.g. propane, oil , etc….
(ii) Customers of HQD that have electric hot water and space heating

2.2 Confirm small gas users will convert hot water heating to electricity first, then
(i) either to electric/gas space heat when boiler or furnace replacement is needed
(II) or to electric space heat at same time as water heater conversion

3. Référence : i) B-0005: ***HQD-Énergir-1, Document 1 Section 3.1.1***

Préambule : Reference Footnote 11 indicates " The water heating conversion does not contribute to peak management, but does contribute to GHG emission reductions. Note that only customers with a space heating load will receive a dual energy rate" (translation).

Demandes :

3.1 Please explain the dual energy rate relative to gas customers with gas space heating and gas customers with hot water heating.

3.2 For new residential gas customers, does the dual energy rate apply? Please explain.

3.3 Confirm consumption of peripheral appliances, fireplaces, BBQ and cooking stoves gas use is/is not eligible for the dual rate. How does Energir/HQD determine the impact of these uses?

3.4 Confirm gas consumption by peripheral uses is not considered in the gas conversion for savings or rates.

3.5 For new customers, is there a requirement to install high efficiency equipment such as furnaces, water heaters and heat pumps?

3.6 Please provide minimum efficiency required for each appliance type and confirm if the Program will provide the extra cost of higher efficiency equipment. Who pays for these subsidies?

4. Référence : i) B-0005: ***HQD-Énergir-1, Document 1,Section 3.1.1 Table 1 and 3.1.2***

Préambule : "For example, customers will be encouraged to replace their natural gas water heater with an electric water heater or install an electric system to complement the gas system for space heating. The choice of electrical system will differ depending on the technology used prior to the conversion. In addition, the efficiency of the electrical system will have an impact on the customer's energy consumption following the conversion" (translation).

Demandes :

4.1 Confirm this statement applies to existing gas customers.

4.2 For new residential customers, is the choice of appliance the customer's choice, or do the distributors specify which equipment? Please explain.

5. Référence : i) B-0005: ***HQD-Énergir-1, Document 1 Section 3.2 Table 3***

Préambule : "According to the data in Table 3, almost all institutional clients (98%) and residential clients (96%) are targeted by the Offer. In terms of number of customers, the residential sector is the most with over 136,000 targeted customers. In terms of volume, these two sectors also have the greatest potential for conversion.
The commercial sector, while representing a smaller convertible volume, contributes significantly to GHG emission reduction efforts, the clients targeted for this market consuming a total of 165 Mm^3, or 23% of the total volume of targeted customers (729 Mm^3), all sectors combined." (translation)

Demandes :

5.1 Please provide the Working Papers for Table 3, preferably in Excel Format. **NOTE OC will be asking for working papers in several of its questions, so one or more workbooks with tabs would be most efficient.**

5.2 Ensure this information includes appliance efficiency and degree days for normalization of consumption.

6. Référence : i) B-0005: ***HQD-Énergir-1, Document 1 Section 3.3 Table 6***

Préambule : "As part of the overall customer analysis, the total natural gas requirements for each client were determined from the normalized monthly data. Again, the data from 2017, 2018 and 2019 were used to recreate an annual average profile for each of the targeted clients.

Subsequently, natural gas consumption was separated according to the projected uses in 2030 in order to identify the volumes related to peripheral equipment, water heating and space heating. Initially, the volumes for the months of July and August adjusted volumes were used to estimate baseline consumption volumes, i.e. volumes without space heating, i.e. related to peripheral equipment and water heating.
The residual volumes therefore correspond to the volumes related to the heating of the spaces. Secondly, to separate the volumes related to water heating from the basic volumes related to peripheral equipment, proportions of volumes related to the heating of the water per stage and by market were applied." (translation)

Demandes :

6.1 Confirm the targeted customers include BOTH existing and new gas customers.

6.2 Confirm, for existing customers, that the rate of replacement of HW and heating equipment will determine the rates of conversion to electricity.Is the 15/year assumption valid? Please discuss by type of equipment.

6.3 Why is the 2030 volume the same as in Table 5? Does this assume 100% conversion of target market by 2030? See Table 7

7. Référence : i) B-0005: ***HQD-Énergir-1, Document 1 Section 3.4.2 Tables 7&8***

Préambule : "Table 7 shows the total potential for conversion from natural gas to electricity in 2030 under the Offer. The water heating volumes would be fully converted to electricity while only a portion of the space heating would be, which is the volume of consumption recorded at a temperature lower than the permutation temperature effective with electricity." (translation)
"Table 8 shows the new electricity Consumption (GWh) resulting from the conversion potential" (in Table 7) (translation)

Demandes :

7.1 Please provide the working papers used to generate Table 8, preferably in Excel . Ensure these include conversion parameters for each type of technology and the assumptions about baseline gas equipment.

7.2 Are new gas customers included or does Table 8 only include existing cutomers?

7.3 If it includes new customers, please provide:

(i) Annual rates of customer additions, by sector, and

(ii) reduced unit electricity consumption per customer relative to the baseline of existing customers due to higher efficiency equipment.

7.4 If the potental does not include new customers, please provide a scenario for 2030 including new customers.

8. Référence : i) B-0005: ***HQD-Énergir-1, Document 1 Section 4 Tables 9 & 11***

Préambule : "In a context of decarbonization of building heating, the TAE scenario constitutes the dual energy alternative. In this scenario, natural gas would be replaced by all electric for space heating.
To determine the natural gas volumes converted in the TAE scenario, the methodology presented in Section 3 was applied assuming, however, that the entire volume corresponding to the space and water heating shown in Table 7 is converted to electricity." (translation)

Demandes :

8.1 Confirm that Tables 9-11 correspond to the TAE Scenario. If not, please clarify

8.2 Why are the conversion volumes in Table 9 lower than those in Table 8? Please compare and explain for each sector.

8.3 Please indicate if the TAE Scenario results an increase in HQD peak load. If not, explain how peak demand would be met.

9. Référence : i) B-0005: ***HQD-Énergir-1, Document 1 Section 4.2 Table 12***

Préambule : "In the dual-energy scenario, all of the volumes corresponding to water heating are converted to electricity, while the share of space heating converted is estimated depending on the effective switching temperature, which is either -9 °C or -12 °C, depending on the technology used (see section 3.4.1).

The conversion potential identified in 2030 reflects 9/15ths of the total potential estimated for 2030 presented in Section 3." (translation)

Demandes :

9.1 Please provide the working papers for Table 12, preferably in Excel.

9.2 Confirm that Table 12 corresponds to the Bi- Energie Scenario. If not, please clarify.

9.3 Why are the conversion volumes in Table 12 lower than those in Table 7?. Please compare and explain for each sector.

10. Référence : i) B-0005: ***HQD-Énergir-1, Document 1 Section 4 Table 13***

Préambule : "Table 13 and Table 14 show the impact on energy demand and peak demand of HQD of converting these volumes (Table 12) to electricity." (translation)

Demandes :

Please provide the working papers for Tables 13 and 14, preferably in Excel.

11. Référence : i) B-0005: ***HQD-Énergir-1, Document 1 Section 5 Table 15***

Préambule : Avoided costs are derived from two broad categories:

(i) costs related to the amount of energy consumed ;

(ii) the incremental costs of serving customers.

Demandes :

11.1 Please indicate if Energir will continue to build any new infrastructure (transmission/distribution) beyond 2022?

11.2 How will Energir justify system expansion beyond 2022 and meet the required economic feasibility tests for customer additions given the dramatically reduced volumes for Bi-energie dual fuel customers? Please explain.

11.3 Please provide an example of the DCF Economic Feasibiity Tests for addition of 100 residential customers to a new main:

(i) all gas and

(ii) gas/electric dual fuel option.

12. Référence : i) B-0005: ***HQD-Énergir-1, Document 1 Section 5 Table 15***

Préambule : Avoided costs are derived from two broad categories:

(i) costs related to the amount of energy consumed ;

(ii) the incremental costs of serving customers.

Demandes :

12.1 Please confirm that the costs in Table 15 are marginal avoided costs.

12.2 Please explain why there are lower distribution, transportation and load balancing costs for the dual energy scenario.

12.3 Please provide the references and calculations for

(i) transmission and load balancing and

(ii) the lost revenue stream.

12.4 Please indicate if Energir will continue to build new infrastructure (transmission/distribution) beyond 2022?

12.5 How will Energir justify system expansion beyond 2022 and meet the required economic feasibility tests for customer additions, given the dramatically reduced volumes for Bi-Energie dual fuel customers? Please explain. For example, is the HQT payment and other subsidies included in the analysis?

12.6 Please provide an example of the DCF Economic Feasibiity Tests for the addition of 100 residential customers to a new main:

(i) all gas and

(ii) gas/electric dual fuel option.

13. Référence : i) B-0005: ***HQD-Énergir-1, Document 1 Section 5.3,5.4 Tables 18,19 &20***

Préambule : "Once the avoided costs and lost revenues are estimated, the financial impacts for each of the scenarios can be evaluated. Table 17 presents the impact of the TAE scenario whereasTable 18 presents the impact of the dual energy scenario on Energir's revenues." (translation)

Demandes :

13.1 Please provide the working papers for Table 18, preferably in Excel.

13.2 Please provide the working papers for Table 20, preferably in Excel.

13.3 Please provide the references and calculations for Table 21, preferably in Excel.

14. Référence : i) B-0005: ***HQD-Énergir-1, Document 1 Section 6.2 Tables 31,32***

Préambule : "Marginal income. Revenues for HQD are associated with additional sales, for an existing customer, resulting from a conversion of space heating to dual energy and water heating to electricity.
For residential customers, for space heating, the marginal revenue corresponds to the off-peak portion of HQD's DT rate, which is 52¢/kWh(2022). The same applies to water heating, with the difference that 5.6% of the hot water consumption occurs during peak periods and will therefore be billed at the price of 40¢/kWh (2022). As a result, the average marginal revenue for this usage is 75¢/kWh (2022)." (translation)

Demandes :

14.1 Please provide the working papers for Table 31, preferably in Excel.

14.2 Please provide the working papers for Table 32, preferably in Excel.

14.3 Please provide the residential electricity base rates for:

(i) water heating, off-peak and on- peak.

(ii) space heating rates, off-peak and on-peak

14.4 Please provide a typical residential bill based on water heating only and all electric space and water heating.

14.5 Please provide the assumptions HQT uses for the other electricity loads – lighting, cooking etc. (GWH and MW).

14.6 What is HQD doing to encourage customers to reduce these loads? Please explain.

15. Référence : i) B-0005: ***HQD-Énergir-1, Document 1 Section 6.2 Tables 35, 36***

Préambule : "Marginal costs in transmission and distribution. Transportation and distribution costs are the same for all customers. In order to determine these costs, HQD first estimated the impact of the conversion of a large volume of heating load on the transmission and distribution networks. (Although dual-energy allows customers to be cut off at the time of peak).
The concentration of natural gas customers in certain areas can lead to a higher level of demand, for these sectors, the shift of the peak from the coldest period of the year to the periods when the temperature is higher than the effective permutation temperature, thus when converted customers use their electric heating equipment. This phenomenon particularly affects some satellite stations located in the central-western part of the Province- Montreal and Laval.
The results of a (postal code) analysis indicates that the use of dual energy reduces the impact of the overall cost of the satellite stations is approximately 88% compared to the TAE scenario. As a result, the marginal unit transportation costs applied to the space heating load are the same as in the TAE scenario, but applied to 88% less volume." (translation)

Demandes :

15.1 Please provide the working papers for Table 35, preferably in Excel.

15.2 Please provide the working papers for Table 36, preferably in Excel.

15.3 Please provide the residential electricity base rates for:

(i) water heating, off-peak and on-peak.

(ii) space heating rates, off-peak and on-peak

16. Référence : i) B-0005: ***HQD-Énergir-1, Document 1 Section 6 Tables 35, & 37***

Préambule **:** "Table 35 presents the revenue requirement impact resulting from transmission and distribution cost calculations, of the dual-energy scenario." (translation)

Demandes :

16.1 Please provide the working papers for Table 35, preferably in Excel.

16.2 Please provide the working papers for Table 37, preferably in Excel.

17. Référence : i) B-0005: ***HQD-Énergir-1, Document 1 Section 6.4 Table 39***

***Préambule* :** " (…)the TAE and dual-energy scenarios result in an increase of $463 million and $134 million in HQD revenue requirements by 2030.Expressing these increases, as well as those for 2025, in $ $_{2019}$, and using as a base the last revenue requirement approved by the Régie , the rate impact of the TAE and Bi-energy, would be on the order of those presented in Table 39." (translation)

Demandes :

Please provide the working papers for Table 39, preferably in Excel.

18. Référence : i) B-0005: ***HQD-Énergir-1, Document 1 Section 8.1 Tables 41 & 42***

***Préambule* :** " By including the GHG Contribution, the impact of the dual-energy scenario on rates is as shown in Table 41 for Energir and Table 42 for HQD.
The GHG Contribution for the year 2025 was evaluated on the basis of a linear conversion rate of 1/15th of the potential per year over the period." (translation)

Demandes :

18.1 Please provide the working papers for Table 41, preferably in Excel.

18.2 Please provide the working papers for Table 42, preferably in Excel.

19. Référence : i) B-0005: ***HQD-Énergir-1, Document 1 Section 8.2 Tables 43 & 44***

Préambule : "General principles. Once the base amount was determined, the Distributors agreed on a schedule for calculation of the compensation that would result in the agreed-upon $85 million in 2030 if the conversion volumes are in line with those expected.
As mentioned earlier, the GHG Contribution is intended to balance the rate impact for customers of the Distributors. This contribution is directly related to the volume of natural gas converted to electricity. For this reason, the annual GHG Contribution paid by HQD will be dependent on this volume. Thus, if no conversion occurs, the amount paid by HQD to Energir will be zero. If, on the other hand, the conversion is higher than expected, the amount paid may be higher than estimated.
Furthermore, Energir's customers under the Offer are subject to Rate D $_1$This rate is degressive. For this reason, the reduction in revenue resulting from the conversion depends on the consumption volume of customers before conversion. In order for the GHG Contribution adequately reflects Energir's loss of revenue, it has a declining balance structure based on the volume consumed by each customer." (translation)

Demandes :

19.1 Please provide the working papers for Table 43, preferably in Excel.

19.2 Please provide one or more sensitivity scenarios based on different conversion volumes.

19.3 Please provide the price of carbon assumed.

20. Référence : i) B-0005: ***HQD-Énergir-1, Document 1 Section 9.1.1 Table 45***

Préambule : "Energir's residential customers can be divided into two sub-segments: the single-family homes, duplexes and triplexes (the UDTs) and multi-dwellings. In order to properly capture the impact of dual-energy consumption on the energy bill of all customers,
Three test cases were selected for the UDT sub-segment. The selection of three typical cases with different consumption volumes allows us to see the impact of the dual energy on the bill of customers of different sizes. The three typical UDT cases identified are representive of 79% of Energir's UDT customers covered by the Offer.

For the multi-dwelling sub-segment, clients are evenly distributed at through the different consumption levels. For this reason, two typical cases were selected as an illustration: a multi-housing of 6 units and another of 13 units." (translation)

Demandes :

20.1 Please provide the working papers (WP) for Table 45, preferably in Excel.

20.2 Please ensure the WP's provide/list all assumpltions, type of equipment, efficiency and provide the ranges.

20.3 Please ensure the WP's provide the consumption differences between boilers, forced air furnaces and combination (HW and heat) units and, if included, gas cold climate heat pumps.

20.4 Please provide a profile of residental heating equipment in Energir's franchise area.

21. Référence : i) B-0005: ***HQD-Énergir-1, Document 1 Section 9 Tables 46, 47 & 48***

Préambule :

"For the multi-dwelling sub-segment, clients are evenly distributed through the different consumption levels. For this reason, two typical cases were selected as an illustration: a multi-housing of 6 units and another of 13 units." (translation)

"In this subsection, the energy bills for the typical all-gas cases are compared to those obtained in the cases of conversion to dual energy or to a TAE solution. For For each scenario, the following pricing assumptions were made:

- All gas: Space and water heating with natural gas at rate D $_1$and the other uses of electricity at Rate D ;
- TAE: All uses of electricity are at Rate D, except for those of 13-unit multi-dwelling units that are at the DP rate;
- Bi-Energie: Space heating during peak periods is by natural gas at rate D and the other uses are at rate DT." (translation)

Demandes :

21.1 Please provide the WP for Tables 46, 47 and 48 preferably in Excel.

21.2 Please ensure the WP provide/list all assumptions,type of equipment, efficiency and provide the ranges

21.3 Please ensure the WP provide the consumption differences between boilers, forced air furnaces and combination (HW and heat) units and, if included, gas

cold climate heat pumps.

22. Référence : i) B-0005: ***HQD-Énergir-1, Document 1 Section 9.4***

Préambule "The acquisition of dual-energy equipment can represent significant sums for some customers depending on the technologies in place, which could compromise their adherence to the Offer. To reduce the additional cost of the equipment required to participate in this Offer, HQD offers some financial support to eligible customers, as well as Energir, through its commercial programs. The current offer available for residential customers is described in Section 2.2.1 of Exhibit HQD-Energir-1, Document 2.
Other financial assistance, described in section 2.3 of this exhibit, will be provided by the SITÉ by the time this Offer is deployed." (translation)

Demandes :

22.1 Please provide a table that shows for each type of equipment (hot water heater, boiler, forced furnace, combo unit, etc.) the financial support from HQD and Energir.

22.2 Please provide a schedule that shows, for each type of equipment, the conversion costs, gross before subsidy and net after subsidy.

22.3 For the forecast conversions, please calculate the annual 2022-2030 gross and net costs and a breakdown and totals of the subsidy costs between HQD, Energir and SITÉ.

22.4 Will financial support be available from the Federal Greener Homes Program? If so what measures are eligible?

22.5 Please file the business plans for the Bi-Energie Program underlying the agreement between HQD and Energir.

23. Référence : i) B-0005: ***HQD-Énergir-1, Document 1 Section 9.5 : Agreement Sections 6 and 7***

Préambule "The marketing of the Offer will be coordinated by the Distributors. The Distributors plan to highlight the environmental and economic benefits of the Offer by using multiple marketing strategies to build both awareness and understanding of the encourage take-up of the Offer. Marketing will be targeted in accordance with the sequential approach described above.
It may also be modulated geographically to minimize the potential impacts on the grid of a

massive conversion of residential buildings or several larger buildings concentrated in certain areas of the island of Montreal and to manage them properly. The Agreement provided in Appendix A sets out, in Section 6, the actions planned by the Distributors for the promotion of the Offer." (translation)

Demandes :

23.1 Please provide a summary of the HQD and Energir marketing plans.

23.2 Please provide the annual and total marketing budgets for each of HQD and Energir.

23.3 Please provide details of the Energir GHG Lost Revenue Deferral Account, e.g. how will entries be calculated, how/ when will balances be disposed of?

23.4 How will balances be allocated to Energir rate classes? Please provide an illustrative schedule.

24. Référence : i) B-0016: ***HQD-Énergir-2, Document 1 Response to Regie Question 1***

Préambule "As evidenced by the Government's decree of economic, social and environmental concerns No. 874-2021 (the Decree), one of these measures aims to reduce GHG emissions from building heating by 50% by 2030 by relying on the collaboration of Quebec's two main energy distributors, Energir, s.e.c. (Energir) and Hydro-Québec in its electricity distribution activities (Hydro-Québec Distribution or HQD) (the Distributors) to create a concerted offer of dual energy electricity - natural gas (the Offer). (Energir) and Hydro-Québec in its electricity distribution activities (Hydro-Québec Distribution or HQD) (the Distributors) to create a concerted dual energy offer of electricity and natural gas (the Offer). In order to meet the Government's objectives as set out in its energy policies and in accordance with the Order, the Distributors hereby submit an application to the Régie de l'énergie (the Régie) to allow the implementation of the Offering and ensure its success." (translation)

Demandes :

24.1 Please provide the baseline (without proposed program) GHG emissions from building heating by sector and total. Provide the same for the proposed offer. Provide years 2021 (base) 2022, 2025 and 2030.

24.2 Please Indicate the costs of carbon used for calculating the GHG reductions.

24.3 Provide two high level scenarios showing for each of TAE and Bi-Energy the total GHG reductions (MT) and associated costs to the distributors and customers based

on a range of carbon costs from the QC Cap and Trade outlook.

24.4 Please provide the total cost of the TAE and Bi-energie program 2022-2030 to customers of HQD and Energir. Express this as a cost/M tonne of GHG and per tonne of carbon based on a projection based on the outlook for $C under the QC Cap and Trade price outlook. List all assumptions, for each of the scenarios.

25. Référence : i) B-0016: *HQD-Énergir-2, Document 1 Response to Regie Question 2.3 Tables R-2.3-A and B*

Préambule: "For the purposes of the analysis, the GHG Contribution was not calculated specifically for each customer. The annual amount was estimated on the basis of the overall converted m³ volume. In practice, the unit GHG Contribution (expressed in $/m³) will differ between customers since the unit rate depends on the consumption strata and these differ from one customer to another. For example, since residential customers are generally smaller, the unit GHG Contribution associated with them will be higher than for commercial or institutional customers." (translation)

Demandes :

25.1 Please provide an Excel workbook that provides tabs for Residential, Commercial and Institutional clients showing the annual consumption data, the options TAE/and dual fuel/bi-energie, shares used to generate the rate impacts.

25.2 Please provide charts showing the results and the cumulative rate impact over 2022-2030.

25.3 Provide the total cost to customers of HQD and Energir.

25.4 Provide a cost/Mtonne of carbon reduced.

26. Référence : i) B-0016: *HQD-Énergir-2, Document 1 Response to Regie Question 3.1*

Préambule: "Preamble: To encourage customers to participate in the Offer, HQD proposes instead that the customer will not incur any costs associated with the work

required to meet the customer's supply request, including system intervention costs, if the request is for the implementation of dual energy.
The financial impact of this modification to the SC is estimated at approximately $9 million per year. This amount is based on a potential of approximately 4,000 customers per year, over a 10-year period, who will have to modify their electrical installation. These customers would be expected to incur the $360 system intervention charge and, if necessary, the cost of work on the electric distribution system to accommodate the additional load associated with the dual energy conversion[emphasis added] " (translation)

Demandes :

26.1 Confirm that for either TAE or the Offer, the customer may need to upgrade the electrical service entry panel.

26.2 What is the typical cost for residential UDT and multi units?

26.3 Who will pay for this cost?

27. Référence : i) B-0016: *HQD-Énergir-2, Document 1 Response to Regie Question 4.1*

Préambule: " Preamble: Table B1 shows a summary of the methodology for calculating the GHG Contribution (…)"

Demandes :

27.1 Confirm this calculation is the base case for each of 3 sectors (residential, commercial and institutional)

27.2 Using the assumptions and steps in Table B1, please provide an illustrative GHG calculation for each sector. List all assumption. Please provide the answer as live Excel spreadsheet.

27.3 Please provide the degree day and volume normalization assumptions

28. Référence : **i) B-0016: *HQD-Énergir-2, Document 1 Response to Regie Question 5.2 and Tables R-5.2 and R-5.3 A/B***

Préambule: "To obtain the rate applicable to the Reference Consumption (Table 43), the rate of 27.043¢/m³ is multiplied by the adjustment factor 0.53 to obtain 14.213¢/m³.

To obtain the rate applicable to the Converted Volume (Table 44), the rate of 27.043¢/m³ is multiplied by the adjustment factor 0.80 to obtain 21.553¢/m³.

The adjustment factors generate the agreed-upon amount of $85M2030 in 2030, considering grid growth of +2% per year, expected growth in target customer volumes, and a conversion rate of 9/15 ^{e}in 2030." (translation)

Demandes :

28.1 Please provide details of the genesis of the adjustment factors.

28.2 Please provide the tier calculations for 2022-2030 in Excel.

29. Référence : **i) B-0016: *HQD-Énergir-2, Document 1 Response to Regie Questions 7.1 and 7.2***

Préambule: Regie Questions 7.1 and 7.2 :

7.1" Please quantify the impact on rates of the GHG Contribution in the total amount of $85M included in the regulatory cash flow of Energir's rate base.

7.2 Please indicate the accounting and regulatory treatment of the GHG Contribution for HQD." (translation)

Demandes :

29.1 Please provide the answer to Q 7.1 in Excel format.

29.2 Please indicate if Energir has currently a Lost Revenue Adjustment Mechanism (LRAM) deferral account for demand side managment (DSM). Please provide details.

29.3 Please Indicate if HQD has curently an LRAM for electricity Conservation and Demand Management (CDM) program.

30. Référence : i) B-0016: *HQD-Énergir-2, Document 1 Response to Regie Question 9.1*

Préambule: Response to Regie Question 9.1 :
"In general, "cost to society" refers to the economic impact of a decarbonization measure on additional resource costs, such as additional power and energy requirements and additional equipment, and on avoided resource costs, such as avoided natural gas molecules. **A best-cost solution for society minimizes incremental resource costs and maximizes avoided resource costs." [emphasis added] (translation)**

Demandes :

30.1 Please provide for the Bi-Energie Program the following economic feasibility tests used in other jurisdictions[2] :

- Total Resource Cost (TRC) and TRC+ Test
- Societal Cost (SC) Test.

31.2 Subject to data availability , please provide:

- Program Administrator Cost (PAC) Test
- Ratepayer Impact Measure (RIM) Test
- Participant Cost (PC) Test
- Levelized Delivery Cost (LC) Metric

31. Référence : i) B-0016: *HQD-Énergir-2, Document 1 Response to Regie Question 9.4*
Docket R-4008-2017, Exhibit B-0174, p. 44, Table 1-2 - Key GHG emission reduction measures by sector, by marginal cost;

Préambule: Response to Regie Question 9.4:

[2] New York:- ConEd Benefit Cost Assessment (BCA) Manual
Vermont:- National Standard Manual for Benefit/Cost Analysis of Distributed Energy Sources
Ontario :- OEB TRC Guide (**Copy attached**)
Ontario:- IESO CDM TRC Manual (**Copy Attached**)

"9.4 Considering reference (i), for the residential, commercial and institutional sectors, please specify the GHG emission reduction measures to which the Project was compared. Please indicate their incremental cost and file relevant references where applicable.
Response:
The Project has not been compared to other alternatives. The Project stems from one of the measures targeted by the Quebec government in the 2030 EPI to reduce GHG emissions from building heating by 50% compared to 1990. The Distributors have collaborated to implement a solution *at the best possible cost*." (translation)

Demandes :

31.1 Has Energir and HQD compared the costs and GHG reductions of Bi-Energie to their Demand Demand Side Management (gas) and Conservation and Demand Management (electricity)?

31.2 If so, please provide the comparisons. If not, discuss why this comparison is/ is not relevent.

31.3 Will the distributors target participants in the Offer with these complementary programs, e.g.added insulation, windows and air sealing?

31.4 Will the distributors coordinate these measues with the Offer?

31.5 Will the Distributors coordinate these complementary measures with the SDIE and the federal Greener Homes Programs? Please Discuss.

32. Référence : i) B-0016: *HQD-Énergir-2, Document 1 Response to Regie Question 11.5*

Préambule: Response to Regie Question 11.5 :

"Customers who replace their natural gas appliances at the end of their service life with dual-energy appliances can benefit from advantageous subsidies from the Distributors and the SITÉ. Once the appliances are installed, the customer will benefit from annual savings on their energy bills. The natural gas customer already had to pay for the maintenance of his heating appliance, so there is no additional cost." (translation)

Demandes :

32.1 Please provide the average annual profile of the heating equipment units that Energir customers replace (forced air furnaces, boilers and combo units).

32.2 Please provide the age profiles and average age of the existing stock. List all assumptions.

32.3 Based on this age profile, how many forced air furnaces, boilers and combo units will be replaced from 2022-2030?

32.4 What is the total cost over 9 years?

32.5 Please provide the same information for gas water heaters (if possible, breaking down into tank, instantaneous water heaters and combo units).

32.6 Can electric heating elements be installed in existing gas water heaters (retrofit)? Please discuss.

33. Référence : i) B-0016: *HQD-Énergir-2, Document 1 Response to Regie Question 13.5*

Préambule: Response to Regie Question 11.5:
"As mentioned in the response to Question 13.4, the picture presented in Table R-13.4-C is the full conversion potential in the year 2030, not the estimated conversion in 2030. Assuming the start of commercialization of the Offer in 2022 and a linear conversion rate of 1/15 per year, 9/15 of the full potential for all markets would be reached by rate year 2030. **The Distributors attach the details of the estimates in the model provided by the Régie in Appendix Q-13.5 in Excel format.** Note, as mentioned in question 13.4, that information on the forecast of demand from customers not covered by the Offer has not been provided in this file." (translation)

Demandes :

33.1 OC has prepared an Excel workbook[3] based on the response to Q-13.5. Please review and correct as necessary.

33.2 Please add :

[3] Attached to OC Demande de renseignements nº 1

- estimates on conversion grants;
- calculations of the 2022-2030 GHG impacts;
- 2022-2030 GHG reduction cost/MT;
- additional calculations for commercial, institutional; and
- the multi-sector totals.

Questions préparer par M. Pascal Cormier

34. Référence : **i)** **B-0005**: *HQD-Énergir-1 Document 1, page 42, tableaux 41 et 42*

ii) **Décision D-2017-119 dans le dossier Demande d'approbation d'un programme pour la conversion à l'électricité des équipements fonctionnant au mazout ou au propane dans les marchés commercial, institutionnel et industriel.**

Préambule :

Réf i)

TABLEAU 41 :
IMPACT TARIFAIRE ESTIMÉ DU SCÉNARIO BIÉNERGIE EN INCLUANT LA CONTRIBUTION GES POUR ÉNERGIR (M$)

	2025	2030
Manque à gagner avant Contribution GES	43	106
Contribution GES	34	85
Manque à gagner après Contribution GES	**8**	**21**
Manque à gagner après Contribution GES ($_{2022}$)	**8**	**18**
Revenus requis 2022	2 020	
Impact tarifaire cumulé	**0,4 %**	**0,9 %**

TABLEAU 42 :
IMPACT TARIFAIRE ESTIMÉ DU SCÉNARIO BIÉNERGIE EN INCLUANT LA CONTRIBUTION GES POUR HYDRO-QUÉBEC (M$)

	2025	2030
Manque à gagner avant Contribution GES	10	134
Contribution GES	34	85
Manque à gagner après Contribution GES	**44**	**219**
Manque à gagner après Contribution GES ($_{2019}$)	**39**	**176**
Revenus requis 2019	12 284	
Impact tarifaire cumulé	**0,3 %**	**1,4 %**

Réf ii)

" *[171] Considérant l'ensemble des éléments décrits aux sections 6.1 à 6.6 et ce qui précède, la Régie ne peut conclure sur la rentabilité du Programme en fonction de la preuve soumise par le Distributeur.*

[172] ***Pour ces motifs,***

La Régie de l'énergie :

REJETTE *la demande d'approbation du programme de conversion du mazout pour la conversion à l'électricité des équipements fonctionnant au mazout ou au propane dans les marchés commercial, institutionnel et industriel. (nos soulignés)* ‘’

Demandes :

34.1 Veuillez confirmer la compréhension d'OC à l'effet que la demande relative aux mesures de soutien à la décarbonation du chauffage des bâtiments ne respecte pas le critère de rentabilité exprimé par la Régie à la référence ii). En effet, selon notre compréhension, la proposition des demandeurs dans le présent dossier engendrera des hausses tarifaires pour les clients des deux distributeurs.

34.1.1 Veuillez indiquer sur la base de quel(s) principe(s) réglementaire(s) la Régie pourrait approuver votre proposition malgré une absence de rentabilité ayant comme conséquence d'augmenter les tarifs.

34.2 Veuillez confirmer que les demandeurs ont procédé à un balisage afin de déterminer s'il existe des initiatives provenant d'entités réglementées ayant des caractéristiques qui se rapprochent de la proposition du présent dossier. Le cas échéant, veuillez produire le ou les documents relatant le résultat de ce balisage.

35. Référence : **i)** **B-0005**: **HQD-Énergir-1 Document 1, page 17, Tableau 8**
ii) **B-0005: HQD-Énergir-1 Document 1, page 42, Tableau 42**
iii) **B-0027, page 36**

Préambule :

Réf i)

TABLEAU 8 :
POTENTIEL DE CONSOMMATION ÉLECTRIQUE ADDITIONNELLE
(GWH) – ANNÉE 2030

	Résidentiel	Commercial	Institutionnel	Total
Chauffage de l'eau	366	137	71	575
Chauffage de l'espace	1 101	560	825	2 487
Consommation totale convertie	1 468	698	896	3 062

Réf ii)

TABLEAU 42 :
IMPACT TARIFAIRE ESTIMÉ DU SCÉNARIO BIÉNERGIE EN INCLUANT LA CONTRIBUTION GES POUR HYDRO-QUÉBEC (M$)

	2025	2030
Manque à gagner avant Contribution GES	10	134
Contribution GES	34	85
Manque à gagner après Contribution GES	**44**	**219**
Manque à gagner après Contribution GES ($2019)	39	**176**
Revenus requis 2019	12 284	
Impact tarifaire cumulé	**0,3 %**	**1,4 %**

Réf iii)

Tableau R-83.2-A

Cas type - Maison unifamiliale moyenne à Montréal	Consommation
Usages de base et chauffage de l'eau	12 449 kWh
Chauffage des locaux (périodes pointe et hors pointe)	14 036 kWh
Chauffage des locaux en période de pointe (< -12°C)	3 163 kWh
Puissance à la pointe d'un client TAE	6,7 kW
Taux d'efficacité d'un système mazout	70%
Taux d'efficacité d'un système bi-énergie	75%

Demandes :

35.1 Veuillez indiquer si la répartition des usages de l'électricité de la référence iii) est représentative des clients résidentiels visés ayant servi pour produire l'estimation du potentiel de consommation électrique additionnelle du secteur résidentiel mentionné à la référence i).

35.2 Veuillez indiquer quels sont les volumes d'électricité provenant des usages de base et de chauffage de l'eau pour chacune des catégories de consommateur mentionnées à la référence i) qui seront transférés vers le tarif DT en 2030 en complétant le tableau ci-dessous :

Potentiel de consommation électrique additionnelle et volume converti au tarif DT (GWh) - Année 2030				
	Résidentiel	Commercial	Institutionnel	Total
Chauffage de l'eau	366	317	71	575
Chauffage de l'espace	1101	560	825	2487
Consommation totale convertie du gaz vers l'électricité	1468	698	896	3062
Volume de consommation de base incluant le chauffage de l'eau à l'électricité qui sera facturé au tarif DT				

35.3 Veuillez indiquer si l'impact tarifaire mentionné à la référence ii), plus précisément la valeur instituée *Manque à gagner avant contribution GES*, prend en considération la baisse de revenu lié aux transferts des charges des tarifs présentement applicables (D, M , G, LG, etc. vers le DT) pour la consommation de base (excluant le chauffage de l'espace). Le cas échéant, veuillez ventiler ces valeurs afin de déterminer la part du *Manque à gagner avant contribution GES* qui est associée à la baisse de revenu lié aux besoins de consommation de base.

35.3.1 Si l'impact tarifaire présenté à la référence ii) ne considère pas l'impact du changement tarifaire (conversion de l'application des tarifs présentement applicables au tarif DT) de la consommation de base, veuillez indiquer quel serait l'impact de la proposition des distributeurs sur les revenus d'HQD en 2025 et 2030.

35.4 Veuillez confirmer que le potentiel de consommation électrique additionnelle lié au

chauffage de l'eau totalisant 575 GWh en 2030 engendrera une demande de pointe additionnelle de 66 MW (575 GWh x 1000 = 575 000 MW / 8769 heures = 65,64 MW). Si tel n'est pas le cas, veuillez indiquer la valeur des besoins en pointe additionnels liée aux suppléments en pointe pour la conversion du chauffage de l'eau lié à la proposition des distributeurs.

36. Référence : **i)** **B-0005**: **HQD-Énergir-1 Document 1, pages 8, lignes 27 à 31**
ii) **B-0027 : HQD-Énergir-2 Document 1, pages 38 et 39**

Préambule :

Réf i)

''Le chauffage des bâtiments est le secteur qui met le plus de pression sur le réseau électrique lors des périodes de pointe de consommations hivernales. Les Distributeurs, par le biais de leur Offre, visent le déploiement de la biénergie électricité – gaz naturel, dans un premier temps, auprès d'une partie de la clientèle résidentielle d'Énergir pour le chauffage des espaces et de l'eau et pour les nouveaux bâtiments. (nos soulignés)''

Réf ii)

'' Les Distributeurs rappellent que les méthodes d'évaluation de la rentabilité pour le raccordement de clients d'Énergir ont été convenues lors du dossier R-3867-2013, phase 3B. (nos soulignés)''

Demandes :

36.1 Veuillez confirmer que la baisse de consommation associée au tarif bi-énergie fera en sorte de réduire la contribution d'Énergir, provenant du revenu requis, pour le branchement d'un nouveau bâtiment et ainsi augmenter les frais de raccordement pour les nouveaux clients désirant opter pour l'option bi-énergie.

36.2 Veuillez indiquer si les demandeurs ont considéré le désincitatif potentiel lié à une contribution plus importante de la part des nouveaux clients désirant opté pour l'option bie-énergie quand il mentionne vouloir inciter les nouveaux clients à opter pour l'option bi-énergie.

36.3 Veuillez donner un exemple détaillé du coût que devra assumer un nouveau client pour le branchement d'une maison unifamiliale type de la région de Montréal pour les deux situations suivantes :

- Un client 100% gaz pour le chauffage de l'espace.
- Un client désirant opter pour l'option bi-énergie.

36.4 Veuillez indiquer si Énergir a envisagé la possibilité qu'un client ayant reçu une contribution d'Énergir pour un nouveau branchement 100% au gaz naturel pour le chauffage des espaces décide d'opter, peu de temps après, pour l'option bi-Énergie.

36.5 Veuillez indiquer la référence exacte (# de pièce(s), page(s), ligne(s)) à laquelle les demandeurs font référence quand ils mentionnent le dossier R-3867-2013, phase 3B (référence ii)).

36.6 Veuillez définir la notion de rentabilité mentionnée en préambule (référence ii)).