

**APPUI EXTERNE RELATIF À L'APPEL D'OFFRES A/O 2015-01
POUR LES ACHATS D'ÉLECTRICITÉ**

**RAPPORT DU CONSULTANT
MERRIMACK ENERGY GROUP INC.**

Final Report

*Assessment of Hydro-Quebec Distribution's Call for
Tenders for 500 MW of Firm Capacity and Associated
Energy*

A/O 2015-01

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Assessment of Hydro-Quebec Distribution’s Call for Tenders for 500 MW of Firm Capacity and Associated Energy A/O 2015-01

I. Introduction

Merrimack Energy Group, Inc. (Merrimack Energy) has served as Independent Consultant to Hydro-Quebec Distribution (“HQD” or “Company”) to assist Hydro-Quebec Distribution with the bid evaluation and selection process associated with the Call for Tenders for 500 MW of Firm Capacity and Associated Energy (A/O 2015-01). The Call for Tenders is for the purchase of 500 MW of firm capacity and associated energy by Hydro-Quebec Distribution. The associated energy must be available for at least 300 hours per year and will be required mainly in the winter period, from December 1 to March 31st. Deliveries will begin on the guaranteed commencement date of deliveries. For the purpose of this Call for Tenders, deliveries under the contract start on December 1, 2018. Bidders, however, may submit a bid with deliveries beginning after that date but no later than December 1, 2019. The contracts will have a term of 20 years. The electricity can come from new or existing facilities. As Independent Consultant, Merrimack Energy’s role in the process has included the following: ¹

- Provide independent input and advice on issues requested by Hydro-Quebec Distribution based on our experience in other competitive solicitation processes throughout North America for conventional and renewable resources. ²
- Review the detailed evaluation criteria, evaluation of bids received at each Step in the process, and resulting documentation developed and utilized by Hydro-Quebec Distribution’s evaluation team to complete the evaluation and selection to ensure that there is consistency in how the scoring of bids was undertaken.
- Conduct an independent assessment of the price and non-price evaluations of all or a sample of the bids received to ensure that Hydro-Quebec Distribution’s bid evaluation process is fair, equitable, consistent and unbiased.
- Serve as a member of the Call for Tenders Committee.
- Conduct research, as required, on key issues based on industry practices from other jurisdictions.

¹ The scope of the mandate for services for Merrimack Energy ends at the conclusion of the Step 3 evaluation and does not include contract award.

² The Principal of Merrimack Energy and Project Manager for this assignment has served as Independent Evaluator or Monitor on over seventy competitive procurement assignments and has assisted utilities and other power buyers in nearly one hundred major procurement processes, conducting independent evaluation and review of thousands of power supply proposals for renewable and conventional resources.

This report addresses the activities associated primarily with the bid evaluation and selection stages of Hydro-Quebec Distribution's Call for Tenders (A/O 2015-01) for the purchase of 500 MW of Firm Capacity and Associated Energy. The objective of this assessment is to comment on the fairness and consistency of the bid evaluation and selection process. The assessment will focus on the Call for Tenders procedures and evaluation processes and their consistency with the requirements of Hydro-Quebec Distribution's Call for Tenders for firm capacity and associated energy and with general industry standards for similar competitive solicitation processes. The report primarily addresses the three steps of the evaluation and selection process, including (1) evaluation of bids as per the minimum requirements, (2) ranking of bids based on the cost of electricity and qualitative or non-price criteria, and (3) simulation of bid combinations to determine the lowest total cost in \$/MWh.

This report also focuses largely on the role and activities performed by Hydro-Quebec Distribution's Evaluation Team during the bid evaluation and selection process, leading to the selection of the projects.

For purposes of undertaking this assessment of the Firm Capacity and Associated Energy Call for Tenders process and procedures associated with the evaluation and selection of bids, the following issues will be addressed in this report:

1. A brief summary and overview of the major aspects of the Call for Tenders Process for Firm Capacity and Associated Energy for a Total of 500 MW.
2. A brief discussion of the various steps or activities in the bid evaluation process as defined in the Call for Tenders documents and related documents, including a discussion of the requirements of the Firm Capacity and Associated Energy Call for Tenders.
3. A general description of how the bid evaluation process and procedures were carried out by Hydro-Quebec Distribution. Included in this assessment will be a description of the key tasks, the roles of Hydro-Quebec Distribution's Evaluation Team and the role of Merrimack Energy in the process, procedures undertaken to complete the evaluation, documentation prepared by Hydro-Quebec Distribution to support the bid evaluation process, and issues raised during the bid evaluation and selection process.
4. An overall evaluation of the performance of Hydro-Quebec Distribution in completing these stages of the process.

The overall bid evaluation and selection process and procedures required are identified in the Call for Tenders document. The Call for Tenders document (including Addendum) explains the process and procedures as implemented, as well as the evaluation criteria. This document effectively establishes the "rules of the game" and the requirements of bidders for competing in this process. In general, the evaluation and selection process and

procedures followed by Hydro-Quebec Distribution are generally similar to the process followed in other Calls for Tenders processes.

It is important to note that the Call for Tenders process used by Hydro-Quebec Distribution must follow guidelines approved in 2001 by the Quebec's Energy Board (aka: "Procédure d'appel d'offres et d'octroi pour les achats d'électricité" – <http://www.regie-energie.qc.ca/> D-2001-191 – R3462 - 2001).

II. Summary and Overview of the Call for Tenders

Through this Call for Tenders (A/O 2015-01), Hydro-Quebec Distribution seeks to purchase 500 MW of firm capacity and associated energy. The associated energy must be available for at least 300 hours and will be required mainly in the winter period, from December 1 in a given year to March 31 of the following year. The minimum allowable amount of capacity bid is 25 MW. Hydro-Quebec Distribution may, at its sole discretion, schedule for less than 300 hours the delivery of energy associated with the firm capacity being offered. However, a bidder who gives Hydro-Quebec Distribution the option of scheduling deliveries above 300 hours will be awarded additional points during the bid evaluation process.

The term of the contract is twenty (20) years starting from the guaranteed commencement date of delivery. Deliveries should start on December 1, 2018. Bidders may submit a bid with deliveries beginning after that date but no later than December 1, 2019.

The Call for Tenders is open to all bidders, including Hydro-Quebec Production, to all sources of energy, and to all types of commercially recognized generation technologies that provide reliability.

The electricity must originate from generating facilities located in Quebec.³ The electricity can come from new facilities or from an existing facility where the resources are available prior to December 1, 2018. Notwithstanding the preceding, generating facilities not located in Quebec are eligible for the Call for Tenders if, in order to be delivered to Hydro-Quebec Distribution, the electricity they generate does not use the existing reception capacity of the existing interconnections with the transmission networks outside of the Quebec control area. Any bid with generation that may result in the import capacity of the TransEnergie transmission network being reduced will not be eligible.

Furthermore, firm capacity offered can originate from a new facility or from an existing facility provided that the firm capacity related to this facility is not already committed to another party.

The Call for Tenders process was initiated with issuance of the Call for Tenders Document (A/O 2015-01) on March 4, 2015. The Pre-bid conference was held on March

³ The Call for Tenders document includes a map of the Hydro-Quebec system which identifies favorable zones on the system for integration of a new generating facility.

23, 2015. The Bid submission deadline was established as May 20, 2015, with the public opening one day later.

Bidders may, in any given bid, submit up to two variants in addition to their main offer. A variant may involve differences pertaining to the following:

- Contractual Firm Capacity;
- Price for Capacity;
- Price for Energy.

A variant cannot significantly alter the technical specifications of the proposed facilities. A site other than the one proposed in the main offer cannot be considered as a variant and must be presented in a separate bid.

Hydro-Quebec Distribution may select the main offer or any of the variants being offered.

With regard to pricing, the pricing formula proposed by the bidder must include a capacity component and an energy component. Each component can be indexed annually according to an applicable indexation rate. For the capacity component, the capacity price can be indexed based on either the Consumer Price Index (“CPI”) or a Fixed Index. The allowable price indices for the energy component include CPI, fixed index or a Natural gas price index. If a bidder decides to use a natural gas price index, the starting price will be indexed based on the following gas price index:

- Dawn, Ontario, daily value of the natural gas midpoint price published by Platts Gas Daily (in US\$/MMBtu)

Hydro-Quebec Distribution’s objective is to evaluate the bids received and choose the combination of projects that offer electricity at competitive prices by selecting a combination of bids that meets the requirements identified including the requested amount and starting date requirements and will result in the best solution based on the lowest average total cost in \$/MWh, while taking applicable transmission costs into account.

This Call for Tenders process, similar to others conducted by Hydro-Quebec Distribution, is effectively a targeted solicitation process, open only to a specific type of resource (i.e. firm capacity with limited energy requirements) and eligible participants. Thus, issues associated with fairness and equity in the process will be limited to treatment of individual bidders, not to different types of resources, technologies, project sizes, etc. as is common in some other jurisdictions. As a result, these issues will be addressed in this report from the perspective of the unique nature of this solicitation.

Many of the other requirements of the Call for Tenders are consistent with industry practices, including the overall evaluation process, threshold criteria, the number and type

of most of the evaluation criteria, requirements of bidders, and contract provisions. These issues will be discussed in the next section of this report.

III. Description and Implementation of the Firm Capacity and Associated Energy Call for Tenders Bid Evaluation Process

A. Description of the Bid Evaluation and Selection Process

The bid evaluation and selection process followed in this Call for Tenders was clearly identified in the Call for Tenders document and is similar to the process followed in other Calls for Tenders issued by Hydro-Quebec Distribution, including the three major steps of (1) evaluation of bids as per the minimum requirements; (2) ranking of bids based on the cost of electricity and qualitative or non-price criteria; and (3) simulation of bid combinations to determine the combination with the lowest overall cost. As will be discussed, the major steps in the process are similar to other Hydro-Quebec Distribution Calls for Tenders, although the criteria developed for this process were specific for this Call for Tenders.

This Chapter of the Report will also provide an overview of the response to the Call for Tenders and identifies decisions made at each stage of the process to arrive at a final selection of bids or bid combinations.

As a brief background, the Call for Tenders process was a moderately competitive process. A total of seven (7) bids with three additional variants were submitted by four counterparties representing 830 MW of capacity. This represented only 1.66 times the amount of generating capacity requested. All bids offered a December 1, 2018 in-service date.

Step 1 of Evaluation Process: Minimum Requirements

As noted, seven submissions (and 10 variants overall) with a total of 830 MW were received prior to or at the deadline of May 20, 2015 established in the Call for Tenders. Bid opening took place on May 21, 2015 as scheduled. Table 1 provides Merrimack Energy’s summary of the proposals received.

Table 1: Hydro-Quebec Distribution Summary of Proposals Received

		Contract		
		Capacity		
Company Name	Project Name	MW	Project	Delivery
			Technology	Date
Hydro-Quebec Production	HQP System -3	200	System	12/1/2018

York Energy Partners	Varennes Energy Center	225	LM6000	12/1/2018
Boralex	Kingsey Falls	30	Diesel Engine	12/1/2018
Hydro-Quebec Production	HQP System	100	System	12/1/2018
Boralex	Cogen Kingsey Falls	25	LM1600	12/1/2018
Brookfield Marketing	Energie La Lievre S.E.C.	50	System	12/1/2018
Hydro-Quebec Production	HQP System -2	200	System	12/1/2018

Consistent with the Call for Tenders process, upon receipt of the bids, a summary of bids is compiled and made public. The evaluation team also reviews the bids to determine if there are any breaches which would automatically result in disqualification.⁴ Hydro-Quebec Distribution shall reject any bid that it deems to be frivolous or non-conforming and bidders will have no recourse. None of the seven bids were automatically rejected at this stage.

In the Step 1 process subsequent to the initial completeness check, the evaluators conducted a more detailed review of the bids to determine if there was missing information or if any information presented by the bidders needed further clarification or raised additional questions for follow-up. Also included during Step 1 in the evaluation process was the assessment of bids to determine if it meets the minimum requirements listed in the Call for Tenders. A bid that does not meet all of these minimum requirements will not be retained for further consideration.

The minimum requirements for this Call for Tenders are consistent with industry practices for this type of solicitation. The identified minimum requirements include:

Rights to the Site – The bidder must have identified a site in Quebec for the project being proposed. The bidder must have taken steps to purchase the land associated with the site or obtain the rights of such land. In this respect, the bidder must at least have a letter of intent with the landowners involved on the acquisition of such rights;

Access to Transmission – The generation from a facility located outside Quebec is also eligible provided it does not use the current reception capacity of the existing interconnections with the transmission network outside the Quebec control area and that the bidder shows its capability to meet the obligations for the term of the contract;

Firmness of Energy Delivery – The bidder must show the capability of its facility to deliver to Hydro-Quebec Distribution on a continuous basis a quantity of energy equal to

⁴ Some of the breaches identified in the Call for Tenders document which automatically disqualify a bid include: (1) late submission; (2) the bidder is not registered; (3) the bid does not state the bidder's name; (4) The bid was not signed by an authorized person or the constituents; (5), the price for firm capacity is missing; (6) the price for energy is missing; (7) the bid is for more than 500 MW of contracted firm capacity; (8) payment for the bid assessment fee and credit evaluation, if applicable, has not been included; and (9) the bid is less than 25 MW.

the maximum firm capacity offered for at least fifty (50) hours with prior notice of four (4) hours. The bidder must also agree to deliver the energy for at least three hundred (300) hours per year for the term of the contract. In the event that the firm capacity resources offered are located outside the Quebec control area, the bidder must show that the associated energy is non-recallable by the control area where the resource is located;

Bidder Experience – The bidder or its affiliates must have experience in the development and operation of at least one project similar to the one they are proposing for the delivery of electricity to Hydro-Quebec Distribution in relation to this Call for Tender;

Technological Maturity – The electricity generation process proposed by the bidder must have attained proven technological maturity and the strategic generating equipment must be commercially available. The electricity generation processes used in at least three facilities that deliver electricity on a commercial basis to public utilities for at least three years with satisfactory performance are considered as having adequate technological maturity;

Time Required for the Connection of the Generating Facilities – If applicable, all the integration work required to ensure a firm connection of the firm capacity resources to the Hydro-Quebec transmission network being offered by the bidder, must be completed on time to comply with the time period requested by the bidder for the initial energizing of its switchyard. Hydro-Quebec Distribution will use an evaluation, prepared at its request by TransEnergie, to determine whether the integration work related to said resource can be completed on time to comply with the lead times requested by the bidder.

In addition, the Call for Tenders document requires bidders who are selected to sign contracts to provide security to cover their contractual obligations for the period preceding the commencement of deliveries (Commencement of Deliveries Security) and for the period following the commencement of deliveries (Operating Security). As listed in the Call for Tenders document and Standard Electricity Supply Contract, delivery term security reaches a cumulative amount of \$80/kW, while operating security reaches a cumulative amount of \$60/kW.⁵

All the information necessary to evaluate the bids from the perspective of meeting minimum requirements was requested in the Bid Form included as Appendix 10 (Bid Form) in the Call for Tenders document. TransEnergie was responsible for making the determination whether the proposal could meet the required commercial in-service date. TransEnergie, therefore, reviewed and evaluated sections of the bids pertaining to this information. At this stage, TransEnergie conducted assessments of the bids submitted to determine whether the integration work related to the resources bid can be completed on time to comply with the lead times requested by the bidder.

⁵ Commencement of Delivery security is \$40,000/MW upon execution of the contract and another \$40,000 twelve months after the contract is signed. Operating security is \$25,000/MW due on the commencement date of deliveries and an additional \$35,000/MW on the 10th anniversary of the commencement date of deliveries.

All bids were classified as conforming for Step 1 by Hydro-Quebec Distribution and were eligible for Step 2.

Step 2: Ranking of Bids

The bids that met the minimum requirements criteria were subject to evaluation based on the six criteria listed in Table 2 below, which are included in the Call for Tenders document. Once all eligible bids are evaluated in Step 2, the bids shall be ranked according to the number of points obtained for each project. Only the bids with the top points in Step 2 will be retained for Step 3 of the process.

**Table 2
Evaluation Criteria**

Criteria	Weighting
Price of electricity	60
Sustainable Development	15
Financial strength	10
Relevant experience	5
Project feasibility	5
Flexibility	5
Total	100

The price evaluation (i.e. Price of Electricity) in this stage of the process was designed to compare each bid based on the price of energy offered by the bidder including the chosen indexation formula and the transmission costs estimated by Hydro-Quebec TransEnergie. Bidders must use one of the price index options for the Capacity component and Energy component for their pricing formulas identified in Appendix 5 of the Call for Tenders document. These include:

- Price Indices for the capacity component – The Capacity price can be indexed either to the Consumer price index or be based on a fixed index;
- Pricing indices for the Energy Component – The energy price can be indexed to a natural gas price with a starting price based on the Dawn, Ontario daily value of the natural midpoint price published by Platts Gas Daily (in \$/MMBtu), to the Consumer Price Index, or to a fixed index.

The pricing formulas in Appendix 5 are subject to a starting price and index, with the date for the starting price identified in Appendix 5.

For purposes of Step 2, the cost of electricity takes into account (1) the price of capacity offered by the bidder, subject to an allowable index; (2) the price of energy offered by the bidder, subject to an allowable index; and (3) transmission costs estimated by Hydro-Quebec TransEnergie. Hydro-Quebec Distribution used its forecasts of inflation indices, discount rate, and other inputs to estimate the long-term cost of power for each proposal.

The quantities of capacity and associated energy offered by the bidder are taken into account in the assessment of the price of electricity and the yearly cash flows are levelized at a reference year. For the delivery of energy, the assessment took into account a schedule corresponding to deliveries over 300 hours during the winter months (December, January, February, and March, consecutively). The applicable transmission cost is estimated based on the summary study conducted by TransEnergie as described in section 2.7 of the Call for Tenders Document. The preliminary studies for estimating the cost of system connection and reinforcement along with applicable electrical loss rate was done by TransEnergie at the request of Hydro-Quebec Distribution.⁶

In Step 2 of the selection process, TransEnergie conducted a summary study in order to determine a connection scenario for each bid. On the basis of this scenario, TransEnergie estimated the cost of the switchyard, up to the maximum contribution applicable by Hydro-Quebec to the cost of the switchyard. TransEnergie also provided an estimate of the cost of connection to the regional system, the electrical loss rate and the time required to complete the work. If the proposed project results in investments being avoided or deferred, which would otherwise have been required as part of the expansion of TransEnergie's system, these avoided costs were estimated for the project.

As noted above, as part of the evaluation and selection process, Hydro-Quebec Distribution takes into account a bid's impact on the total transmission cost applicable, first for each bid in Step 2 of the selection process, and then for each combination of bids assessed in Step 3 of the process. The applicable transmission costs are then included in arriving at the cost of energy for each proposal.

The studies and estimates conducted by Hydro-Quebec TransEnergie at Hydro-Quebec Distribution's request are aimed at establishing a basis for comparison between the various bids being assessed. Since a detailed assessment of each bid's impact on the total transmission cost is both too long and costly to perform, the procedures discussed herein are used.

The Step 2 evaluation process also encompasses five qualitative or non-price criteria listed in Table 2. In addition, there were several sub-categories within each of the major categories listed in Table 2. For example, the sub-criteria included in the **Sustainable Development** category include: (1) Minimization of greenhouse gas (GHG) emissions (5 points); (2) Renewable nature of the fuel supply (4 points); (3) Nitrogen oxide emissions (NOx) (2 points); (4) Environmental management system (1 point) and (5) Social indicator (3 points). The first two sub-categories include formulas in the Call for Tenders document that describes how the points in each sub-category are allocated.

⁶ The Call for Tenders document notes that "the studies and estimates conducted by TransEnergie at the request of Hydro-Quebec Distribution are aimed at establishing a basis for comparison between the various bids being assessed. They do not in any way constitute a comprehensive interconnection study. At no time will Hydro-Quebec Distribution commit to conducting or having TransEnergie conduct such an interconnection study to assess the impact of any of the bids on the applicable transmission system costs."

Another criterion, **Financial Capability**, includes the following sub-criteria: (1) Financial strength (4 points); and (2) Financing plan and structure (6 points).

Project feasibility is another criteria with multiple sub-criteria including (1) Connection to the transmission system (1 point); (2) Master plan for the project (1 point); (3) Fuel or backup energy supply plan (2 points); and (4) Plan for obtaining environmental authorizations (1 point).

Appendix 10 (Bid Form) in the A/O 2015-01 Call for Tenders provides a list of questions, information required to be submitted by the bidder in their proposal, and in some cases forms for completing and incorporating such information in the proposal.

The Call for Tenders document also describes each criterion and the important characteristics of each criterion for consideration by the bidder. The evaluation criteria were therefore transparent in the process and all bidders knew the criteria on which they would be evaluated and the weights afforded to each criterion.⁷ In addition, Hydro-Quebec's bid evaluation team developed more detailed evaluation worksheets and scoring criteria on which to evaluate and score the bids. As is common in most solicitation processes, these detailed evaluation sheets were used for the internal evaluation process and serve as documentation supporting the award of points in a specific category for each eligible bid. One of the unique aspects of the evaluation criteria is that for the most part the criteria are objective in nature, effectively removing most of the subjectivity generally applied in competitive procurement processes.

Within the non-price evaluation categories, individual team members were responsible for conducting the evaluation of all bids within their specific area of expertise. A second evaluator was assigned to each of the criteria to provide support and verify and validate the results. The objective of this process was to ensure that all proposals were evaluated fairly and consistently. Each bid would be evaluated based on each of the criteria using the evaluation sheets developed by the Evaluation Team member responsible for that criterion.

Hydro-Quebec TransEnergie also provides an option for bidders to request an exploratory interconnection study for the connection of the project in order to obtain an indication of the connection scenario and costs. This additional step is intended to avoid having significant costs incurred in the preparation of a bid where the electricity transmission costs would be prohibitive and make the bid potentially non-competitive. In addition to costs, the study also provides an estimate of the lead times to integrate the project.

From a cost of electricity perspective, each bid is evaluated using the same set of assumptions for each of the indices included in the proposal's pricing formula.

The result of this analysis would therefore be a single unit price of power (i.e. the real levelized cost in 2015 dollars, which is the price in year one, which, if escalated by

⁷ The weights for each major criteria and sub-criteria are listed in Appendix 8 of the Call for Tenders.

inflation, provides the same net present value price stream as the pricing formula proposed by the bidder).

For the cost of electricity criteria, the number of points attributed to a bid is established by comparing its cost with that of the other bids. The bid with the lowest cost is attributed the maximum number of points for this criterion. The bid with the highest price gets five (5) points. All other bids are attributed points based on the linear function between the two extremes.

The eligible bids will be evaluated and scored relative to the evaluation criteria and associated weights given in the Call for Tenders. The rankings of each bid at this stage of the evaluation would be determined based on the total points obtained for all the criteria, combining both price of electricity scores and qualitative factors.

The points attributed for the price and non-price criteria are summed for each bid and the scores ranked in decreasing order of results. The scores for all projects for the Step 2 evaluation contained a range of values from 26 to 96. Proposals that were evaluated in Step 2 with a score of 69 or above were selected for the Step 3 evaluation. Therefore, five (5) proposals were selected for the Step 3 evaluation.

Step 3: Simulation of Bid Combinations

The next step in the evaluation process is the simulation of bid combinations. In this stage of the evaluation, various combinations of bids are formed using the best bids identified and ranked in Step 2 to form the 500 MW requested, by using the bids that obtained the highest score in Step 2.

The cost of these combinations of bids is assessed in detail in order to identify those that may constitute the best solution based on the lowest total cost in \$/MWh, including the impact on applicable transmission costs.⁸ To assess the transmission costs in this step, the best combinations are submitted to Hydro-Quebec TransEnergie so that Hydro-Quebec TransEnergie can evaluate the total transmission costs for each combination.⁹

In the selection process of the bids in Step 3, combinations of bids are formed using the best bids identified at the end of Step 2. The number of bids selected for a given combination as well as the number of times a given bid is included in various combinations depends on several factors, including pricing of the bid and applicable transmission cost, the total and annual amount requested for each block, and the award conditions or limits. In the case of this Call for Tenders, two combinations were formed. Two of the three bids included in each combination were the same bids with one different bid included in each combination.

⁸ Hydro-Quebec Distribution realizes that while a project may bear significant transmission costs on an individual evaluation basis, there may be a significant reduction in transmission costs when these projects are grouped with others to take advantages of synergies with other projects.

⁹ It is possible that bids could be less competitive on a stand-alone basis from a transmission cost perspective. However, in combination with other bids, the entire portfolio may be competitive.

The annual cash flows of the aggregate of the electricity costs and total transmission costs over the entire term of the contracts related to those combinations are discounted and levelized in 2015 dollars and expressed as a unit cost of electricity (\$/MWh).¹⁰ The combination of bids that is closest to the requested amount with the lowest average cost in \$/MWh, including transmission costs, will be retained.

B. Implementation of the Bid Evaluation Process

This section of the report describes the actual implementation of the bid evaluation and selection process. This includes identifying and describing the organization of the Evaluation Teams and procedures established by Hydro-Quebec Distribution, the roles and activities of the Hydro-Quebec Distribution's Evaluation Team, the role and activities of Merrimack Energy, and an evaluation of the three steps of the evaluation and selection process.

Management Structure and Organization

The team responsible for evaluating the bids was managed by the Director, Electricity Supply ("Director"), who was in charge of implementing the bid assessment and evaluation process and of assigning qualified personnel for this purpose. He was responsible for ensuring compliance with the process and of supervising communications with consultants, bidders, and other divisions of Hydro-Quebec involved in the process. He will be assisted by the Chef Gestion et optimization des approvisionnement (the "Chef GOA") and by the Chef Planification et fiabilite (the "Chef PF").

The team is comprised of Hydro-Quebec Distribution personnel and consultants. The consultants, Raymond Chabot Grant Thornton & Cie ("RCGT") and Merrimack Energy Group, Inc. ("Merrimack Energy") shall also take part in the bidding process by reviewing the documentation used to evaluate the various criteria once the evaluation has been completed by the designated team members to ensure the results are consistent and equitable from one bid to another. They may also be called upon to advise the various team members during the evaluation process. In addition, Hydro-Quebec TransEnergie, the division responsible for the transmission network, provides on special request all the evaluations dealing with transmission costs.

As was the case with other Call for Tenders, one of the most important aspects of the solicitation process was that the methodologies and criteria underlying the bid evaluation process (Steps 1 and 2) were developed by Hydro-Quebec Distribution¹¹ prior to receipt of bids and identified to bidders either in the Call for Tenders documents or Addendum to

¹⁰ Hydro-Quebec Distribution's analysis also presented the total cost of each portfolio as well as the average cost in 2015 \$/kW.

¹¹ A few of the non-price evaluation criteria and weights were mandated by the Regie and implemented by Hydro-Quebec Distribution in its evaluation process. (See <http://www.regie-energie.qc.ca> / D-2004-212; R-3525-2004)

the Call for Tenders. The solicitation process conducted by Hydro-Quebec Distribution is a very transparent process, with a level of transparency that exceeds the levels in most other competitive procurement processes. For example, it is not typical in many Call for Tenders or Request for Proposals processes for the utility to identify how all points or scoring criteria will be applied as Hydro-Quebec has done.

Project Team members responsible for bid evaluation were also involved in designing the criteria and detailed evaluation sheets for scoring purposes for their specific categories for each Step in the process. The criteria underlying the evaluation process were developed to be consistent with the type of resource requested and the unique considerations underlying the firm capacity Call for Tenders.

A representative of Hydro-Quebec Distribution's Project Team was assigned to each specific criterion. The representative was required to evaluate each bid relative to the same criteria to ensure consistency of the evaluation. A Bid Evaluation Guide was developed prior to receipt of bids and served as an important reference and documentation guide during the evaluation process.¹²

The role of Merrimack Energy in the process was defined as reviewing and assessing the evaluation process and documentation prepared and used by members of the Evaluation Team to complete all steps of the evaluation process to ensure consistency in the evaluation and selection results. Merrimack Energy was primarily responsible for reviewing the technical assessment and pricing aspects of the evaluation associated with the application of the evaluation criteria in the evaluation process, including a review and assessment of the minimum requirements evaluation in Step 1, the price evaluation and the non-price evaluation in Step 2, and review of the combination of bids and results in Step 3. Merrimack Energy staff met with each member of Hydro-Quebec Distribution's evaluation team to review and challenge their assessment of bids in Step 1 and 2 and raise any issues, if warranted. To perform this role, Hydro-Quebec Distribution provided Merrimack Energy with a copy of each bid submitted as well as any documentation requested by Merrimack Energy underlying the evaluation of bids.

Consistent with the procedures followed in other Calls for Tenders, Hydro-Quebec Distribution organized a Call for Tenders Committee comprised of the President of Hydro-Quebec Distribution, the Director of Electricity Supply, and the Chef GOA, Hydro-Quebec Distribution legal staff and other members of the project team, and representatives from the RCGT and Merrimack Energy. Considering the numbers of bids analyzed, the Committee met once, to review all steps of the bid evaluation and selection process, to discuss the status of bids and address any issues that arose with regard to the bid evaluation and selection process.

¹² A copy of the Bid Evaluation Guide was provided to Merrimack Energy by the Energy Supply Manager prior to receipt of bids. The Bid Evaluation Guide contains a detailed description of the evaluation criteria along with the evaluation sheets for each criterion that serve as the basis for the documentation of bid results.

For this solicitation, the three proposals from Hydro-Quebec Production totaling 500 MW were chosen for contract execution. All proposals which were selected were existing resources which are part of Hydro-Quebec Production's system generation portfolio.

In its Press Release regarding the results of the Call for Tenders for the purchase of 500 MW of Firm Capacity and Associated Energy, it was reported that the average price of firm capacity for the selected bids was \$106/kW-year and the average price of associated energy was \$60/MWh including \$5/MWh for transmission cost.

Hydro-Quebec Distribution asked Merrimack Energy to conduct a benchmark study¹³ of the costs of firm peaking capacity to assess the reasonableness of the costs of the contracts executed. Merrimack Energy conducted an initial benchmark study prior to launch of the Call for Tenders and updated the study after completion. Merrimack Energy relied primarily upon the Cost of New Entrant (CONE) studies commissioned by ISO-New England, NYISO and PJM as the basis for establishing capacity pricing in their respective regions. Merrimack Energy relied upon the cost estimates calculated for the technology most applicable to the generation requirements of Hydro-Quebec Distribution, i.e. a generation technology which is generally low capital cost with limited operating flexibility given that the number of hours of operations is very limited with an expected low capacity factor. Capital cost estimates for Frame units were the most applicable and the lowest cost options. Merrimack Energy calculated a range of benchmark capital costs of \$142 - \$185/kW-year levelized in Canadian dollars for a 20 year contract beginning in 2018 or \$114.30/kW-year to \$148.90/kW-year real levelized beginning in 2015. The results of the Call for Tenders illustrates that the three contracts executed by Hydro-Quebec Distribution with Hydro-Quebec Production were either below the range (two contracts) or were well within the range established. As a result, Merrimack Energy concludes that the contract pricing for the three contracts is lower than the alternative option of constructing new units to meet Call for Tenders requirements.

IV. Framework and Principles for Evaluating Hydro-Quebec Distribution's Performance in the Bid Evaluation and Selection Process

This Call for Tenders for 500 MW of Firm Capacity and Associated Energy (A/O 2015-01) is classified as a targeted solicitation process limited to a specific resource and product. Based on Merrimack Energy's experience with competitive bidding processes and observations regarding such processes, the key areas of inquiry and the underlying principles used by Merrimack Energy to evaluate the bid evaluation and selection process include the following:

1. Were the solicitation targets, principles and objectives clearly defined?

¹³The accompanying benchmark report is entitled: Benchmark Assessment of the Cost of Peaking Generating Capacity, Final Report, August, 2015.

2. Did the solicitation process result in competitive benefits from the process?
3. Was the solicitation process designed to encourage broad participation from potential bidders?
4. Did Hydro-Quebec Distribution implement adequate outreach initiatives to encourage a significant response from bidders?
5. Was the solicitation process consistent, fair and equitable, comprehensive and unbiased to all bidders?
6. Were the bid evaluation and selection process and criteria reasonably transparent such that bidders would have a reasonable indication as to how they would be evaluated and selected?
7. Did the evaluation methodology reasonably identify how quantitative and qualitative measures would be considered and applied?
8. Did the Call for Tenders (i.e. Call for Tenders document, the Bid Form, and Standard Contract) describe the bidding guidelines, the bidding requirements to guide bidders in preparing and submitting their proposals, and the bid evaluation and selection criteria.
9. Did the utility adequately document the results of the evaluation and selection process?
10. Did the solicitation process include thorough, consistent and accurate information on which to evaluate bids, a consistent and equitable evaluation process, documentation of decisions, and guidelines for undertaking the solicitation process.
11. Did the solicitation process ensure that the Power Purchase Agreement was designed to minimize risk to the utility customers while ensuring that projects selected can be reasonably financed.
12. Did the solicitation process incorporate the unique aspects of the utility system and the preferences and requirements of the utility and its' customers.

The implementation of the Call for Tenders for 500 MW of Firm Capacity and Associated Energy (A/O 2015-01) solicitation process relative to the characteristics identified previously is described below. Merrimack Energy has not been involved in the contract preparation process and is thus not in a position to discuss this objective.

1. Solicitation Targets

The Call for Tenders (A/O 2015-01) document, consistent with other Hydro-Quebec Distribution Call for Tenders, clearly defined the amount of capacity requested, the timing for providing the capacity, the type of products and product characteristics required, the duration of the contract, and bidder eligibility. Merrimack Energy's opinion is that the solicitation targets and product requirements are clearly defined in the Call for Tenders.

2. Competitive Benefits

The solicitation process received a modest response from the market. A total of 7 bids and a total of 10 variants were submitted by 4 project sponsors representing 830 MW. The amount of MW offered represented 1.66 times the amount requested. Although the response was limited, the average cost of the combination of the bids selected is very competitive with recent benchmarks for peaking capacity costs, illustrating the benefits to customers from the Call for Tenders process. Even though Hydro-Quebec Production was the successful bidder for all three contracts, the results do not indicate the presence of market power given that the prices proposed by Hydro-Quebec Production were clearly the low cost options.

3. Broad Participation from Potential Bidders

As noted above, the process did not result in a very competitive response from the market, particularly for new power projects. Only one of the seven proposals submitted is for a new project. The other proposals were either based on system power or on existing generating units. It is not clear why the response was so limited for new projects. However, Merrimack believes that future Call for Tenders processes for Firm Capacity and Associated Energy allow more time for bidders to prepare a proposal, particularly if it is expected that new generation will be required to meet these requirements.¹⁴

4. Outreach Initiatives

Hydro-Quebec has done an effective job of maintaining communications with bidders through their website which is bidder friendly and accessible. The availability of documents, questions and answers, addenda, and notifications about the process allow bidders to maintain accessible contact. The integration between the Quebec Government, the Company, the Regie, and trade associations in Canada has generally served to effectively "advertise" the process. In addition, Hydro-Quebec Distribution held a Pre-Bid Conference on March 23, 2015 for interested bidders. Fifty-two participants representing thirty-seven companies and organizations were present.

¹⁴ Merrimack Energy did indicate to Hydro-Quebec Distribution that it felt the penalty provisions in the event of default to deliver provisions in Section 31 of the Electricity Supply Standard Contract were stricter than we had seen in other recent contracts. System power options and existing projects with a track record would perhaps not face the same risk as a new project which has to secure financing for construction of its project. However, outside of one Question and Answer regarding this contract provision, we did not see any indication that this provision was a constraint for submitting a proposal on the part of any potential bidder. Merrimack Energy suggests that Hydro-Quebec Distribution should reassess this provision for any future similar Call for Tenders processes.

5. The solicitation process should be consistent, fair and equitable, unbiased, and comprehensive

This principal focus of our assessment of Hydro-Quebec Distribution's Call for Tenders process and the Company's performance in carrying out the process was on the bid evaluation and selection process. The key criteria we establish as the basis for review and assessment (fair, equitable, consistent and unbiased) are applied to Hydro-Quebec Distribution's implementation of the evaluation and selection process as well as Hydro-Quebec Distribution's ability to adhere to the requirements outlined in the Call for Tenders document and associated Addendum. Therefore, the critique will focus on the implementation of the process rather than specific issues regarding the process.

In our view, as has been typical of other Call for Tenders processes, Hydro-Quebec Distribution's evaluation and selection process was consistent throughout. From a non-price perspective, the approach of requiring individual team members to evaluate specific criterion for all bids ensures that bids should be consistently evaluated since the evaluator has the opportunity to not only evaluate one specific criterion in conjunction with their expertise but to review the relative scoring of each bid within the established criterion. The presence of a back-up analyst for each criterion also provides a second level of review and serves to identify any questions or issues with the evaluation. Merrimack Energy's independent review of the evaluation confirms that the bids were consistently evaluated from a non-price or qualitative perspective.

In addition, the level of detail and comprehensiveness of the non-price evaluation continues to exceed other solicitation processes we have been associated with. The thoroughness of the evaluation process was exemplary and the supporting documentation thorough.

The price evaluation methodologies were designed to evaluate bids using the same or consistent set of input parameters and assumptions. In addition, the real levelized cost analysis applied in Step 2 is a reasonable methodology for comparing bids of this nature (i.e. similar resources) on a consistent basis.

With regard to bias, the most obvious consideration is whether the process favors one type of bidder over another. Since all bids were for a similar type resource (and technology) any presence of bias would likely be in the implementation of the process itself, rather than the criteria or other information that could affect different bidders. Based on our direct involvement in the process, we could find no examples where one bid was more favorably treated than another. In particular, for this Call for Tenders, we found no favorable treatment afforded the Hydro-Quebec Production in this process. All bidders were treated equally in our view. Also, the presence of RCGT as Official Representative and its role as link between Hydro-Quebec Distribution and the bidder ensures that all bidders have access to the same information at the same time. In addition, the process was a fairly open process with information pertinent to all bids provided on the Website for review. Hydro-Quebec Distribution responded to questions from bidders and posted

all responses on the Website in a timely manner. The Call for Tenders was also designed to explain in detail the evaluation process, the requirements of Hydro-Quebec Distribution, and the information that all bidders were required to submit.

We do not believe any bid had an inherent competitive advantage within the parameters of the Call for Tenders. The non-compliance assessment and follow-up information requirements ensured all bidders provided the same information for evaluation purposes. Also, Hydro-Quebec Distribution was focused on ensuring that all bidders competed on an equal footing and had access to the same information. No bids were eliminated during Steps 1. Five (5) proposals with fairly low scores during Step 2 of the process were not evaluated as part of a portfolio in Step 3, meaning that 5 proposals had an opportunity to be considered in the Step 3 process.

The Call for Tenders process was well structured to ensure that the information required in the Call for Tenders document was linked to the evaluation criteria. Hydro-Quebec Distribution requested a reasonable amount of information from the bidder to gain an in-depth assessment of the proposed project and utilized all the relevant information to evaluate and score the bid.

The thoroughness of the evaluation criteria also enhanced the ability of Hydro-Quebec Distribution to develop comprehensive information base and documentation to support the non-price and price related evaluation. Merrimack Energy reviewed the non-price and price evaluation documentation and recognizes the thoroughness of the documentation process.

6. Transparency of the Process

The Call for Tenders documents and responses to questions led to a process where bidders would be aware how to effectively compete. The weights of each criterion were provided as well as a description of the requirements within each criterion. The information required of bidders was clear and concise as witnessed by the very complete and consistent proposals submitted by bidders. In addition, the evaluation criteria used for the Step 2 process to score and rank bids was classified by Merrimack Energy as being very objective. As a result, bidders can effectively determine their own non-price scores and develop their projects to maximize project value. Few of the criteria are subject to a subjective evaluation. This served to minimize any subjective analysis of bids and potential bias in the evaluation.

7. Application of Quantitative and Qualitative Measures

The Call for Tenders document clearly articulated the quantitative and qualitative techniques and requirements associated with the evaluation process. The methodologies and allowable pricing parameters were described in the Call for Tenders.

8. The Call for Tenders Documents should describe the process clearly and provide adequate information on which bidders could complete their proposals

This objective deals with the quality of the documents contained in the Call for Tenders package (i.e. Call for Tenders, Standard Contract, and Bid Form) and the integration among the documents. Hydro-Quebec Distribution's Call for Tenders provided considerable detail regarding the information required of bidders, the basis for evaluation and selection, and the criteria of importance. The Call for Tenders process clearly provides a direct link between the Call for Tenders document, Bid Form and Standard Contract. The quality of the Call for Tenders documents and the clarity of such documents for the bidders can be observed by the quality and organization of the bids. For the most part, the proposals submitted were complete, thorough in terms of providing the information requested and well organized. We view this to largely be the result of the quality of the Bidding documents. As previously noted, Merrimack Energy has found Hydro-Quebec Distribution's Call for Tenders documents and processes to be among the most transparent processes in which we have participated.

9. Documentation of Results

Based on our review, it is obvious that all evaluators maintained very detailed information to support their evaluation of the bids. This included information contained in the bids, and supporting information provided by other groups within Hydro-Quebec. While Hydro-Quebec Distribution has relied upon outside third-party information and resources, when necessary, in other solicitations, since no bidders had asked for a financial evaluation, that was not the case in this solicitation.

10. The solicitation process should include thorough, consistent, and accurate information on which to evaluate bids

The bid form requires a reasonable amount of information that bidders must include in their proposals. Under Hydro-Quebec's evaluation process, the vast majority of this information is used in the analysis and is consistent with the evaluation criteria developed. The level of information required of bidders ensured that Hydro-Quebec Distribution could undertake a consistent and comprehensive analysis of each proposal and reflect the individual attributes of each proposal into the bid evaluation process. Our review and evaluation has continued to find that Hydro-Quebec's evaluation and selection process was thorough and comprehensive.

11. Electricity Supply Contract

Merrimack Energy has reviewed the Electricity Supply Contract to ensure the provisions were consistent with industry standards for similar resources. Based on our review of this contract along with other contracts issued by other utilities as well as executed agreements, we found that the contract was generally consistent with industry standards (with the possible exception of the Penalty Provisions in the Event of Default to Deliver provisions in Section 31 as listed in Footnote 13) and provided a fair balance between the needs of the Company and its customers, as well as the bidders.

V. Conclusions

The Call for Tenders procedures followed by Hydro-Quebec Distribution and the subsequent bid evaluation and selection processes and methodologies are, in substance, consistent with industry standards and represent a fair, consistent, and unbiased evaluation and selection process. The following summarize some of the major considerations relative to the consistency of the Call for Tenders with industry standards.

In the opinion of Merrimack Energy, the bid evaluation and selection process was undertaken by Hydro-Quebec Distribution in a fair, consistent and comprehensive manner. Both the price and non-price assessments were expertly undertaken, which should result in reasonably competitive prices, viable projects, and benefits to customers.

The bid evaluation and selection process was consistent with industry standards for similar procurement processes. Furthermore, the bid evaluation and selection process was undertaken in a consistent and comprehensive manner with all bids treated fairly and equitably. A list of important aspects of the Call for Tenders bid evaluation and selection process is provided below.

1. The Call for Tenders was a moderately competitive process, with 1.66 times the amount of Megawatts bid than the amount required. The lack of participation by the market was surprising, particularly for new projects. Despite the lack of competition, the pricing of the proposals submitted were competitive with market benchmarks. For future Call for Tenders for Firm Capacity and Associated Energy of this nature, Merrimack Energy recommends that Hydro-Quebec Distribution allow more time for bidders to develop their projects (at least four months between initiation of the Call for Tenders and the date proposals are due) and reassess the penalty provisions in the Standard Contract.
2. The Call for Tenders Document (A/O 2015-01) was a detailed and transparent document that clearly identified the nature of the solicitation process, the products requested, the information required of the bidders, bidder eligibility requirements, bid evaluation criteria and the bid evaluation and selection process.
3. The three-stage evaluation process followed by Hydro-Quebec Distribution (i.e. Minimum Requirements, Ranking of Bids based on price and non-price criteria, and Simulation of Bid Combinations to determine lowest overall cost) outlined in the Call for Tenders is, in substance, consistent with the approaches followed by other utilities for renewable resource solicitations for the same type of resource. In particular, the use of pricing analysis as the final criteria for selection of the preferred combination or portfolio of bids is common practice in the industry.

4. The price analysis undertaken in Step 2 assessed each proposal based on the pricing formulas proposed by the bidder. The analysis used the same consistent set of economic assumptions and forecasts of indices selected by bidders in their proposals, thus ensuring that all bids were fairly and consistently evaluated. All bids were assessed in the second stage of the evaluation using a typical price evaluation methodology (i.e. real levelized cost analysis) standard in the electric utility industry for evaluating similar resource options, which was a characteristic of this solicitation.
5. The economic screening methodology used in Step 2 was effective in comparing bids with different commercial operation dates and generation levels.
6. All proposals that passed the Minimum Requirements stage were thoroughly and consistently evaluated and ranked based on a detailed price and non-price assessment. All evaluation scores were thoroughly scrutinized by Hydro-Quebec Distribution's bid evaluation team and Merrimack Energy staff.
7. Merrimack Energy met with the members of the bid evaluation team responsible for each price and non-price evaluation criteria to assess the results and discuss the basis for evaluation. In all cases it was very obvious that members of the evaluation team had carefully defined the detailed criteria on which to evaluate each bid within their overall criterion, conducted a thorough and comprehensive review, and prepared detailed documentation to support the results. The result was that "every point" was scrutinized.
8. Hydro-Quebec Distribution included all direct project costs as well as system transmission and interconnection costs associated with each bid in Step 2 and evaluation combinations in Step 3 in the evaluation process, in conformance with the Call for Tenders procedures. This is consistent with the approach undertaken by most utilities in the bid evaluation process, which is designed to include all costs in the analysis.
9. The final list of bids selected for the Step 3 combinations was comprised of - the top five (5) proposals submitted. As a result, five (5) proposals were eliminated in Step 2.
10. The combination recommended, which was comprised of three proposals submitted by Hydro-Quebec Production, was the combination of bids that resulted in the lowest overall average cost for the portfolio, consistent with the requirements of the Call for Tenders.
11. Merrimack Energy did not find any instances where Hydro-Quebec Distribution treated Hydro-Quebec Production any different than any other bidder. In our view, all proposals were treated the same.

12. Our assessment is that the cost of the bids selected results in overall average cost for peaking capacity that is very competitive and lower than benchmark costs for similar types of new peaking capacity projects to support a 20 year contract that we have seen referenced in neighboring markets in the US Northeast and other similar regions. The pricing in the contracts with Hydro-Quebec Production should provide overall benefits to customers.

In conclusion, it is our view that the approach and assessment undertaken by Hydro-Quebec Distribution was fair, consistent, comprehensive and unbiased. Hydro-Quebec Distribution established procedures and rules which guided the evaluation and selection process, and consistently applied such procedures. The evaluation and selection process (both price and non-price) was again a fairly detailed and rigorous process. All bidders were evaluated under the same detailed standards and “every point” was carefully scrutinized.