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IRAC Document UE20938
Before The Island Regulatory and Appeals Commission of Prince Edward Island in the matter of a Filing by Maritime Electric Company, Limited of an Energy Purchase Agreement between Maritime Electric and New Brunswick Power Generation Corporation (NB Power).

January 2009 Summary of and Addenda to
Report to
The Island Regulatory and Appeals Commission
On
The Review of the MECL Energy Purchase Agreement with New Brunswick Power
Prepared by
KnAP Energy Consultants
October 2008

1.0 INTRODUCTION

The Island Regulatory and Appeals Commission (IRAC) retained KnAP Energy Consultants (KnAP) as an independent staff witness for the purpose of providing comments and advice on an Energy Purchase Agreement (EPA) entered into by Maritime Electric (MECL) as purchaser and New Brunswick Power Generation (NBP) as supplier.

KnAP's mandate is as follows.

1. To analyze and comment on material submitted to the Island Regulatory and Appeals Commission by Maritime Electric Company Limited (MECL) regarding their Power Purchase Agreement with NB Power.
2. To identify alternative(s), if any exist, to the purchase options contained in the MECL proposal;
3. To review and comment on the RFP and process;
4. To assess and comment on the reasonableness of the assumptions used in the evaluation of the responses to the RFP;
5. To prepare a written report of the analysis, comments and conclusions.
6. To draw to the attention of the Commission any other issues and make recommendations on related matters, as the consultant considers advisable.
7. In addition, possibly to appear as a witness at a public hearing if the Commission determines that one is necessary.

The foregoing is to be undertaken so as to contribute to the assurance that the MECL proposal is based on the principle that the revenue requirement and resulting rates are as low as possible consistent with the public utility's duty to provide reasonable and adequate service.

In carrying out the above analysis the consultant will confer with and issue written information requests directly to Maritime Electric provided that the written questions and written answers are filed with the Commission.

For clarity, any issues regarding MECL's capital structure, other financial issues and assumptions (eg return on equity, interest rates and taxes) are not a part of this report nor are any issues regarding On-Island power purchases, transmission access and tariffs. These issues are explicitly excluded from the work contemplated in this assignment.

2.0 BACKGROUND

2.1 MECL ON-ISLAND GENERATION

The electricity supply in PEI is largely dependent on fossil fuels and the installed generating capacity is relatively expensive to operate. This situation has arisen because the Island load is relatively small and for reasons of affordability and reliability relatively small units were developed. For thermal generation, all else being equal, larger units enjoy some benefits of economy of scale and efficiency.

The efficiencies of the various Island fossil generation units are relatively low as compared to relatively larger units. For example, the “Heat Rates” (HR) of the Charlottetown steam units are about 50% higher (ie less efficient) than those of larger units on the New Brunswick system (eg Coleson Cove 330MW units 9,400Btu/kWh).

Table 1 summarizes the On-Island generating resources owned by MECL.

Table 1 MECL Generation Capacity and Heat Rates

Unit	Capacity MW	HR Btu/kWh
CTGS 6	7.5	23479
CTGS 7	7.5	15593
CTGS 8	10	13678
CTGS 9	20	12370
CTGS 10	20	11700
BGS 1	15	15078
BGS 2	25	15270
CT3	50	8900

[Reference IR-15 Spreadsheet IRs.xlsx]

The cost of electricity produced from Island generation is “all else being equal” more expensive than that produced in NB largely by the difference in “Heat Rates”. It is also more expensive because of economies of scale in other operating and maintenance costs.

In addition, all else being equal, the cost of fuel delivered to PEI generators is higher than the cost of fuel delivered to NB generators.

2.2 MECL TRANSMISSION INTERCONNECTIONS

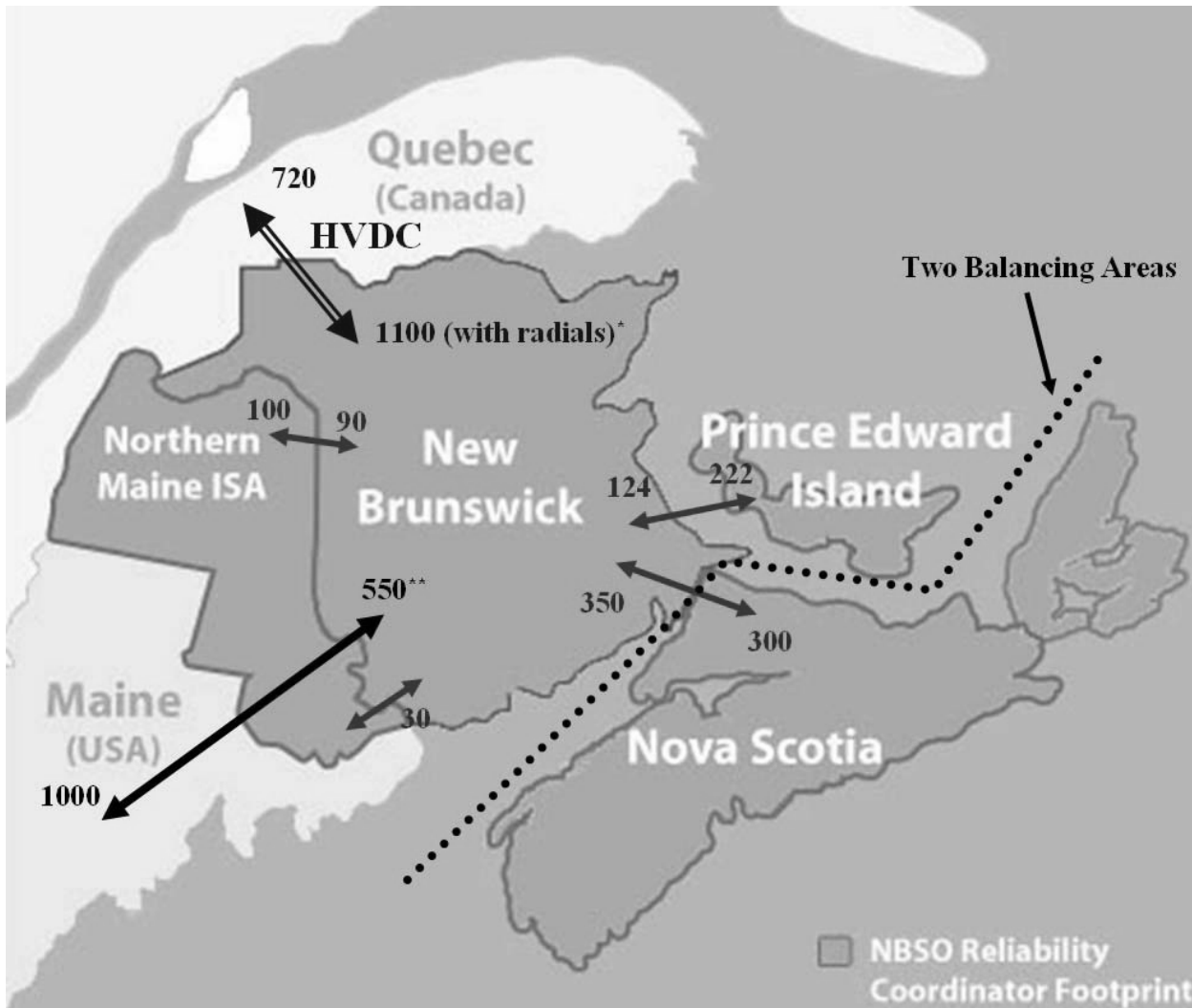
PEI is interconnected to New Brunswick by two 138kV sub-sea circuits and via New Brunswick to Nova Scotia, Quebec and New England.

It is expected that by December 2008 the second New Brunswick-New England inter-tie (Northeast Reliability Interconnect) will permit the import from New England of about 400MW. [Reference IR-4]

MECL has the right to use 30MW of that inter-tie capacity.

Figure 1 illustrates the nominal ratings of the various transmission interconnections of the Maritimes systems.

Figure 1 Maritimes Transmission Interconnections Capacities in MW



[Reference IR-02]

The nominal capacity ratings (MW) of the various interconnections are different for each transfer direction for reasons that include specific aspects of power system design and assumed available generation. For example there is insufficient generating capacity on The Island to deliver 222MW from The Island to NB after meeting on-Island minimum load requirements.

3.0 SITUATION – Load and Generation

3.1 MECL FORECASTS OF LOAD AND GENERATION

This Section presents a high level summary of MECL's Forecasts for Demand and Energy and the Resources expected to be available to meet these forecasts.

Table 2 summarizes the Demand-Capacity Balance for MECL. A major factor in maintaining system reliability is to ensure that an adequate Planning Reserve exists.

Table 2 MECL Demand-Capacity Balance in MW

		2007	2008	2009
Row No.	Load			
1	MECL Load Demand	196	201	197
2	MECL Exports to NB	0	0	0
3	Interruptible Load	11	13	14
4	Net Firm Demand (R1-R3)	186	188	184
5	Planning Reserve (15% of R4)	28	28	28
6	Capacity Required (R4+R5)	214	216	211
	Capacity			
7	Dalhousie (MECL ownership)	19	19	19
8	Lepreau (MECL ownership)	29	29	29
9	Charlottetown Steam Plant	60	60	60
10	Borden Combustion Turbines	40	40	40
11	Charlottetown Combustion Turbine	50	50	50
12	Purchases	16	50	20
13	Slemon Park	1	1	1
14	Spinning Reserve	5	1	1
15	Wind Turbine Generation	19	19	19
16	Capacity Available (Sum of R7 through R15)	239	269	239
17	Surplus (R16-R6)	25	53	28

[References IR-9 and IR-10]

It is noted that for Planning Reserves, generation units can be out of service for up to 18 months and still qualify for Planning Reserve. Lepreau can still be counted for Planning Reserve as the scheduled outage is not slated to last more than 18 months, however replacement capacity is needed for operational purposes.

MECL has capacity available to satisfy its planning Reserve requirements.

To put the MECL Demand-Capacity Balance (Table 2) in perspective Table 3 presents data on the Maritimes Planning Reserve that indicates the relatively large interruptible load component that exceeds the MECL load by a factor of two.

1 **Table 3 Maritime Area Planned and Required Reserve - Base Load Forecast**
2

Winter Peak (Feb)	Installed Capacity MW	Forecast Peak MW	Interruptible Load MW	Planned Reserve		Required Reserve	
				MW	%	MW	%
2008	6662	5524	521	1659	33%	1001	20%
2009	6171	5585	523	1109	22%	1012	20%
2010	6924	5685	556	1795	35%	1026	20%
2011	7013	5709	561	1865	36%	1030	20%
2012	7245	5722	565	2088	40%	1031	20%

3 [Reference IR-06 NPCC 2007 Maritimes Area Comprehensive Review of Resource Adequacy December 2007]
4

5 Table 4 summarizes MECL's Load-Resource Balance. It shows the sources of energy required
6 to meet the annual energy requirements.

7 **Table 4 MECL Load-Resource Balance in GWh**

		2007	2008	2009
	Load (MECL Energy Requirement)	1120	1128	1133
Row No	Resources			
1	Dalhousie (MECL ownership)	144	144	144
2	Lepreau (MECL ownership)	194	55	58
3	Firm (MECL purchases)	138	369	371
4	Secure (MECL purchases)	352	334	313
5	Assure/Spot (MECL purchases)	102	71	47
6	Interruptible (MECL Interruptible Load)	0	0	0
7	Wind (MECL purchases from On-Island)	136	147	178
8	Imbalance (inadvertent energy purchases)	26	1	0
9	Other	16	2	0
10	Curtailed	15	2	6
11	Charlottetown Combustion Turbine	0	4	12
12	Charlottetown Steam Plant	1	1	3
13	Borden Combustion Turbines	0	0	1
14	Export (Off-Island sales)	-3	0	0
15	Resource Summary			
16	MECL owned Off-Island Generation (R1+R2)	338	199	202
17	NB EPA (R3+R4+R5+R6)	592	774	731
18	Wind Turbine Generation (R7)	136	147	178
19	MECL Net (R8+R9+R10+R11+R12+R13+R14)	55	10	22
20	Total Supply (R16+R17+R18+R19)	1121	1130	1133

8 References IR-07 and IR-08

1 **3.2 OBSERVATIONS**

2 An inspection of Tables 2 and 4 reveals that MECL has plans in place to meet their obligations
3 for reliability and energy supply for the term of the EPA and beyond. [References IRs-06 to13].
4

5 It is noted that MECL allows for a WTG capacity credit for Planning Reserve purposes based on
6 the expected capacity factor and availability. WTG is not a firm source of operating reserve.
7

8 The Maritimes rely heavily on “interruptible” loads to meet the Northeast Power Coordinating
9 Council (NPCC) Planning Reserve reliability criteria and in addition to this “demand
10 management tool” there is substantial transmission interconnection capacity as indicated in
11 Figure 1.
12

13 Over the term of the EPA there should be no concerns with respect to reliability of supply.
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1 **4.0 MECL OPTIONS**

2 **4.1 ELECTRICAL ENERGY SOURCES IN THE NORTHEAST**

3 The nature of the interconnected electricity systems in northeastern North America is such that
4 fossil fuels are on the margin virtually all of the time. This means that the next kWh of energy
5 will come from a fossil fuel because all less costly energy sources are fully utilized.

6
7 This is true for New England, New Brunswick and Nova Scotia as well as PEI.

8
9 Quebec may have hydro available from time to time but Hydro Quebec sells into the market at
10 the highest price it can achieve (as do all sellers).

11
12 The marginal price of energy is usually based on either oil or natural gas as coal or other energy
13 sources are rarely on the margin.

14
15 Accordingly, any energy available to Maritime Electric will be priced at oil and/or gas based
16 prices.

17
18 It is to be noted that as the transmission grid is reinforced from the Maritimes to the New
19 England “Mass Hub” the cost of power purchases in the Maritimes increasingly approach the
20 Mass Hub pricing.

21 22 **4.2 SHORT TERM ENERGY SUPPLY OPTIONS**

23 Theoretically, MECL has three short-term energy supply options: self-generation, “playing” the
24 spot market and contracting for its requirements. These are summarized below at a very high
25 level.
26

27 **4.2.1 Self Generation**

28 MECL *could* generate most of its energy requirements from On-Island resources and via its
29 participation agreements in Dalhousie and Pt. Lepreau but were it to do so the costs would be
30 very high as briefly discussed in Section 2.1.
31

32 **4.2.2 Play Spot Market**

33 MECL *could* buy sufficient capacity to meet its Planning Reserve obligations and buy at-will
34 energy from the grid, essentially taking a risk that capacity and energy will be available at an
35 attractive and affordable price.
36

37
38 All utilities are required to have an adequate and secure source of supply as part of their
39 responsibility to provide reliable service in the franchise area.
40

41 Vertically integrated, regulated utilities are risk averse. They enter into fuel supply contracts for
42 forecasted requirements usually with some fixed and/or indexed pricing. The MECL RFP
43 specified fixed pricing for all of the energy products except spot market purchases
44

45 In opting for a floating or spot price MECL would be responsible for securing capacity, for
46 securing energy during any curtailments, for securing transmission access, for providing for
47 losses and ancillary services. Depending on where the energy was sourced transmission fees
48 might be payable to for example, Nova Scotia and/or New England in addition to New
49 Brunswick. Furthermore intraday scheduling changes would come at a cost.
50

1 The risk of relying on the spot market is whether there will be generation and transmission
2 capacity available to deliver hourly energy requirements.

3
4 This can arise because of changing electricity market conditions and/or availability and pricing
5 of fuels. The number of potential players interested in the Maritimes market could also be a
6 factor.

7
8 This is further addressed in Section 5.2 “High Level Assessment of the Responses”.

9
10 It is noted for completeness that the electricity market in New England sets the price for
11 Canadian exporters. Electricity prices in that market are closely correlated with the price of
12 natural gas (greater than 90%) and less well correlated with the price of oil (about 50%)

13 14 **4.2.3 Contract for Specific Supply “Products”**

15 As discussed in Sections 4.2.1 and 4.2.2 (and Section 5.2) this is the only one of the three
16 theoretical options that seems reasonable.

17
18 Given MECL’s relative transmission isolation and the high cost of self-generation MECL has
19 relatively weak bargaining power in one-on-one negotiations and accordingly their Request for
20 Proposals approach would seem a good choice.

21 22 **4.3 POTENTIAL LONGER TERM ENERGY SUPPLY ALTERNATIVES**

23 Although outside the scope of this report, the following Table 5 contains an excerpt from KnAP’s
24 report regarding Docket UE20711 in June 2004 that lists the longer term options potentially
25 open to MECL. This is presented in the interest of completeness.

26
27
28 Table 5 presents a high level summary of generation options by fuel source. Within each
29 generic option there exist various technologies and unit sizes. These are the options available in
30 most jurisdictions. DSM is included in the table for completeness.

31
32 Since that table was prepared there are a few “more specific” new options being discussed at
33 varying levels of detail (eg Lower Churchill and Lepreau 2 and indeed Lepreau 3). Although
34 various permutations and combinations of the alternatives discussed in the UE20711 report
35 might emerge, there is no option other than a short term purchase to satisfy MECL’s immediate
36 requirements for an affordable reliable supply.

1 **Table 5 Generic Generation List and Assessment in Regard to Construction in PEI**

Option	Lead Time	Size	Affordability ¹	Fuel Cost	Other	Conclusion ²
Nuclear	Long	Large	Expensive	Low	Acceptance	Not Viable - Size
Coal	Long	Large	Expensive	Medium	Environment	Not Viable - Size
Orimulsion	Long	Large	Expensive	Medium	Supply Risk	Not Viable - Size
Heavy Oil	Long	Large	Expensive	High	Base Load	Not Viable - Size
Gas	Medium	Varies	Moderate	High	Availability?	Not Viable - Fuel
Light Oil	Short	Varies	Moderate	Very High	Doable	Viable
Biomass	Medium	Varies	Moderate	High	Supply	Viability?
WTG	Short	Small	Moderate	~ nil	Capacity?	Viable
Solar	Short	Small	Expensive	~ nil	Capacity?	Not Viable - Cost
DSM	Short	Small	Moderate	~ nil	x	OK but not Answer
Hydro	x	x	x	x	Availability	Not Viable

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¹ "Affordability" relates to the size of the investment in \$/kW and the size of the plant.

² "Conclusion" relates to the ability to proceed with the option on the Island.

The point to be taken from Table 5 is that potential On-Island options are limited to WTG, Biomass, Light Oil and DSM and hence purchases from Off-Island sources are a likely on-going requirement.

5.0 ASSESSMENT of the ENERGY PURCHASE AGREEMENT

5.1 HIGH LEVEL SUMMARY OF THE RFP

In December 2007 MECL issued a RFP to twelve potential suppliers for certain capacity and energy, for the period 08-04-01 to 09-09-30, delivered to the interconnection between the NBP and MECL systems at Murray Corner NB. The September date is intended to cover the period when Pt Lepreau is out for refurbishment.

MECL sought offers for five options and several “products” in its RFP as summarized in the following table.

Table 6 Summary of RFP Options (Energy shown is for the duration of the EPA)

Option	Firm-1 ^a			Firm-2 ^a			Secure ^b		Assured ^c		Spot ^d	Marketing ^e
	MW	MWh	CF ^h	MW	MWh	CF	MWh	CF	MWh	CF	MWh	MWh
1 ^e	60	789,120	100	0	0	na	344,070	65.4	0	na	116,257	28,691
2 ^e	30	394,560	100	30	356,233	90.3	351,325	66.8	0	na	119,171	523
3 ^f	30	394,560	100	20	227,108	86.3	411,084	78.1	88,196	23.8	na	Na
4 ^e	40	526,080	100	30	360,122	91.3	419,340	79.7	0	na	140,614	226,190
5 ^g	Hourly Energy Less WTG - Packaging to be determined by Supplier with backstop from all MECL generation											

Table Notes:

a) - Firm-1 and Firm-2 are capacity and energy that is the same as capacity owned by MECL.

b) - Secure is energy that is backstopped by MECL’s 50MW Combustion Turbine.

c) - Assured is energy that is backstopped by MECL’s thermal plant (60MW).

d) - Spot is energy that is backstopped by MECL’s 60MW thermal plant and Borden CTs (40MW).

e) - Marketing is service to sell excess quantities of off-peak wind energy and associated environmental attributes and to purchase spot market energy as required.

f) - No marketing services required.

g) - The RFP offered potential bidders the option of providing the requested estimated quantities of certain products as defined in the RFP or determining themselves what variations they might offer. Although MECL expressed certain preferences the RFP allowed the potential bidders to offer pricing mechanisms. Acceptance of any proposals was at the sole discretion of MECL.

h) CF is Capacity Factor.

5.2 HIGH LEVEL SUMMARY OF THE RESPONSES

Only three (3) parties replied to the RFP with offerings: NB Power Generation (NBP), Emera Energy Inc (Emera) and Powerex.

Only NBP offered what the RFP requested.

1 Emera and Powerex made offers that had certain significant shortcomings.

2
3 The Emera and Powerex proposals were transmission contingent with a supply and/or price risk
4 to MECL as Emera and Powerex would not take responsibility for finding alternative capacity
5 and energy supply.

6
7 The Powerex offering had significant shortcomings and was eliminated.

8
9 Although the Emera offerings were less reliable than those of NBP the Emera offers were not as
10 economically attractive as was NBP.

11
12 Here it is noted that as generically discussed in Section 4.2.2 "Play the Spot Market", the
13 offerings of Powerex and Emera reflect the risk aspects of providing a reliable energy supply.

14
15 It is also noted that the following RFP recipients declined to submit offers: Nova Scotia Power
16 Inc., Hydro Quebec Energy Services, PPL EnergyPlus LLC, WPS Energy Services Inc., Calpine
17 – Houston, J.D. Irving, Boralex, Inc., Boralex-Sherman Energy LLC and Duke Energy. This
18 might suggest that they either have little to offer or suspect that they may not be able to be
19 competitive.

20 21 22 **5.3 ASSESSMENT OF THE PROPOSALS**

23 Only The NBP proposal offered what was requested in the RFP and all of the NBP alternatives
24 ranked ahead of those of Emera.

25
26 In addition NBP offered an attractive "hierarchy of supply".

27 28 **5.3.1 Assessment of Hierarchy (Quality) of Supply** 29 **Firm Energy**

30 The EPA Clause 3 states "Firm Energy deliveries may be interrupted or curtailed on a pro rata
31 basis concurrent with shedding of firm Load in New Brunswick and Northern Maine, after all the
32 parties (including the party or parties receiving Firm Energy in Northern Maine) have Interrupted
33 their interruptible Loads." And that "Delivery of Firm Capacity and Firm Energy shall not be
34 Interrupted or Curtailed by Seller for economic reasons."

35
36 This means that Firm quantities will have supply status equivalent to that of NB firm load.

37 38 **Secure and Assured Energy**

39 For Secure and Assured or Spot Energy the following hierarchy of supply applies for the
40 purpose of determining Seller's dispatch and Interruption or Curtailment with respect to Buyer:

- 41 1. Seller's in-province firm Load (including full maintenance of Seller's operating
42 reserve), Buyer's firm Load as provided for in Part 3 of the EPA and Northern Maine firm
43 Load,
- 44 2. Firm external sales by Seller entered into before March 18, 2008,
- 45 3. Seller's in-province Interruptible Load,
- 46 4. Secure Energy as provided for in Part 4 of the EPA,
- 47 5. Assured or Spot Market Energy's provided for in Part 4,
- 48 6. Firm external sales by Seller entered into after March 18, 2008,

1 This means that the Secure and Assured EPA quantities will have priority over all customers
2 other than NB internal load (firm and interruptible) and firm sales entered into by NBP prior to
3 March 18, 2008. This is reasonable in the circumstances.

4
5 Overall, this is a relatively high quality of dependability.

6 7 **5.3.2 Summary of the Proposals**

8 Table 7 from the July Filing presents the various Supply Scenarios that were evaluated.

9
10 **Table 7 Summary of Supply Scenarios (There were no offerings for Option 5)**

Scenario	Option	Firm	Capacity	Secure	Spot	Wind
NB1	1	Fixed Price	Extra	Fixed Price	Market Price	Fixed
NB2	1	Fixed Price	Extra	Fixed Price	Oil Rider	Fixed
NB3	2	Fixed Price	Extra	Fixed Price	Market Price	Fixed
NB4	2	Fixed Price	Extra	Fixed Price	Oil Rider	Fixed
NBS	3	Fixed Price	Extra	Fixed Price	Market Price	Fixed
NB6	3	Fixed Price	Extra	Fixed Price	Oil Rider	Fixed
NB7	4	Fixed Price	Extra	Fixed Price	Market Price	Fixed
NB8	4	Fixed Price	Extra	Fixed Price	Oil Rider	Fixed
Emera1	1	Fixed Price	Included	Alternate	Market Price	Market Price
Emera2	1	Fixed Price	Included	Fixed Price	Market Price	Market Price

11
12 It is noted that in the economic assessment all eight NBP offerings were more economic than
13 the Emera offerings.

14
15 In addition, the following excerpt from the July Filing is important:

16 "It is important to note that all fixed prices in both the Emera and NB Genco submissions were
17 indicative based on fuel prices as of the date of submission, January 7, 2008. The prices were
18 subject to change based on the price of fuel when a final agreement was reached.

19
20 Even with a change in fuel prices, the relevant rankings would remain constant as pricing from
21 both Emera and NB Genco would have changed equally. In addition to better pricing, the NB
22 Genco bid provided backstopping of energy with their own resources should transmission
23 curtailments outside of New Brunswick prevent delivery of energy to MECL. The Emera proposal
24 did not provide this service."

25 26 **5.3.3 Maine PUC Standard Offer Rates**

27 Standard Offer Rates (SOR) are the rates that customers pay for capacity and energy. The
28 Public Utility Commission approves the rates that are the result of a call for proposals from the
29 market.

30
31 The PUC reviews the offerings from the various generation suppliers and selects the winning
32 tenders. The SOR are set for six month periods.

33
34 The regulated utilities (eg Central Maine Power and Bangor Hydro Electric) do not supply
35 capacity and energy per se but rather they deliver it to customers over their regulated "wires"
36 systems.

1 It is interesting to examine the Maine SOR for the period from March 2008 through to February
 2 2009. The rates for the period from September through February are higher than those of the
 3 preceding six month period. This reflects the expectations of continuing higher fuel prices and
 4 the impact on the costs of electricity in the competitive New England electricity market.

5
 6 **Table 8 Maine Public Service Commission Standard Offer Rates (U\$/MWh)**
 7

Month	BHE-M	BHE-L	BHE-Avg	CMP-M	CMP-L	CMP-Avg	ME-Avg
Mar-08	99.00	109.80	104.40	na	na	na	Na
Apr-08	96.60	116.70	106.69	na	na	na	Na
May-08	93.00	113.70	103.35	na	na	na	Na
Jun-08	99.10	106.00	102.58	na	na	na	Na
Jul-08	106.80	113.20	110.08	na	na	na	Na
Aug-08	105.10	110.90	108.01	na	na	na	Na
Sept-08	109.80	118.71	114.26	111.30	117.85	114.58	114.42
Oct-08	115.85	117.67	116.76	114.61	120.67	117.64	117.20
Nov-08	112.30	127.36	119.83	114.03	119.20	116.62	118.22
Dec-08	123.15	138.07	130.61	124.30	130.61	127.46	129.03
Jan-09	133.20	148.98	141.09	135.99	141.34	138.66	139.88
Feb-09	134.05	150.79	142.42	137.61	143.83	140.72	141.57
Avg	121.39	133.60	127.49	122.97	128.92	125.95	126.72

8 [Reference Maine PUC Web Site: <http://www.state.me.us/mpuc>]

9 All numbers are in US dollars.

10 "BHE" is Bangor Hydro Electric, "CMP" is Central Maine Power, "M" is Medium Load and "L" is Large Load

11
 12 The SOR for BHE and CMP are virtually identical.

13
 14 Comparisons of the EPA prices that could have been fixed in the July Filing, the finally agreed
 15 EPA pricing of the October Decision and the ME PUC SOR concluded that the EPA October
 16 Decision pricing is lower than both the EPA July Filing and the ME PUC SOR Rates

17
 18 In that comparison, all assumptions contained in the July Filing have been retained with the
 19 exception of the fixed energy pricing agreed in the October Decision.

20
 21 The comparison is between the Prices for the Firm Energy of the EPA and SOR because the
 22 SOR represents a firm supply.

23
 24 It is noted that MECL does not hedge future fuel prices or foreign exchange. These are financial
 25 judgments outside the scope of this report.

1 **6.0 ASSESSMENT of the OVERALL APPROACH**

2 **6.1 Approach to Short Term Planning**

3 The approach to short term planning is not dissimilar to the System Planning approach
4 discussed in the 2004 KnAP report to IRAC regarding Docket UE20711.

5
6 In summary, System Planning requires the following:

- 7 • Defining objectives and establishing criteria
- 8 • Making reasonable and defensible assumptions
- 9 • Estimating future customer demand and energy requirements (Load Forecast)
- 10 • Assessing the existing system and its performance against the criteria
- 11 • Identifying and screening potential resource options (demand and supply)
- 12 • Integrating reasonable alternatives into long-term plans
- 13 • Assessing the alternative plans in accordance with the criteria
- 14 • Obtaining approval for and Implementing the most attractive alternative

15
16 As previously discussed (Sections 2.1, 4.2.1 and 4.2.2 and 5.2), little analysis is required to
17 reject a “go-it-alone” (self-generation) or a “spot market” approach. MECL must purchase
18 capacity to satisfy its reliability criteria and its own generation is too expensive to operate in
19 base or intermediate mode. Furthermore, opting to “play the spot market” is risky

20
21 Accordingly, MECL defined its short term needs, issued a RFP, made preliminary evaluations,
22 negotiated for clarification, finalized the assessment and reached conclusions.

23
24 MECL followed the above approach as appropriate.

25 **6.2 Assessment of the EPA Decision-Making Process**

26 One of the significant differences between long term system planning and short term supply
27 planning is that the former requires approval by IRAC *before* investment decisions and financial
28 commitments are made whereas the latter permits MECL to make commitments that *can be*
29 *reviewed after the fact* by IRAC.

30
31 The Energy Cost Adjustment Mechanism (ECAM) permits MECL to recover in its rates
32 reasonably incurred costs that are passed through (with a time delay) to electricity customers.
33 Increases and decreases in energy costs are adjusted through the ECAM mechanism.

34
35 The RFP described what it was that MECL would prefer but also permitted flexibility in offerings
36 thereby “testing the waters” for potentially more favourable offerings.

37
38 Although only three of twelve recipients of the RFP responded, the fact that the offerings were
39 priced within a reasonable bandwidth suggests that the RFP solicitation approach is working.

40
41 MECL’s analyses of the various offerings concluded the following:

- 42 - Powerex did not meet the minimum criteria required in the RFP.
- 43 - Emera’s offerings were less attractive than those of NBP.
- 44 - NBP offered several alternatives all of which were preferable to those of others.
- 45 Emera.

46 MECL concluded that NBP was the preferred supplier. A significant factor during MECL’s
47 analysis and the negotiations of the offerings was the high and escalating price of fossil fuels.

1 MECL was able to negotiate an option to permit a locking in of the pricing on either “monthly” or
2 “remaining term of contract” bases.

3 The reference price for oil in the NBP proposal in January was U\$74.55/bbl whereas in July the
4 price peaked at about U\$147/bbl. Initially, MECL had opted not to lock in pricing for the duration
5 of the term of the EPA since at the time of final negotiations oil prices were near all time highs.
6 The price of crude oil peaked at \$147/bbl in July of 2008.
7

8 During the course of writing the KnAP report (October 2008), MECL made the decision to opt for
9 locking into Fixed Price offerings from November through the remaining duration of the contract.

10
11 At that time, the extent of the now well known economic crisis was not foreseen nor was the
12 drop in crude oil and gas prices.

13
14 This is discussed in Section 6.3 “Subsequent Events”.

15
16 As noted in Section 5 the October Decision pricing is lower in US dollars than that of the July
17 Filing.

18
19 For completeness, the Canadian dollar has lost considerable ground to the US dollar. MECL
20 used C\$1.00=U\$0.95 in its evaluation of the cost of fuel over the term of the EPA.

21
22 It is MECL policy to not hedge its foreign exchange exposure.
23
24

25 **6.3 Subsequent Events**

26 Since the July Filing certain events over the past few months have caused major upsets in the
27 economies of many nations and have included unforeseen drops in the price of oil and natural
28 gas and fluctuations in the value of currencies.

29
30 It is difficult to predict fuel prices in times of relative stability but in the present economic
31 situation it is more complicated.
32

33 The following Addenda from the October Outlook demonstrate that the US DOE EIA did not
34 foresee a continuing decline in the prices of oil and gas.

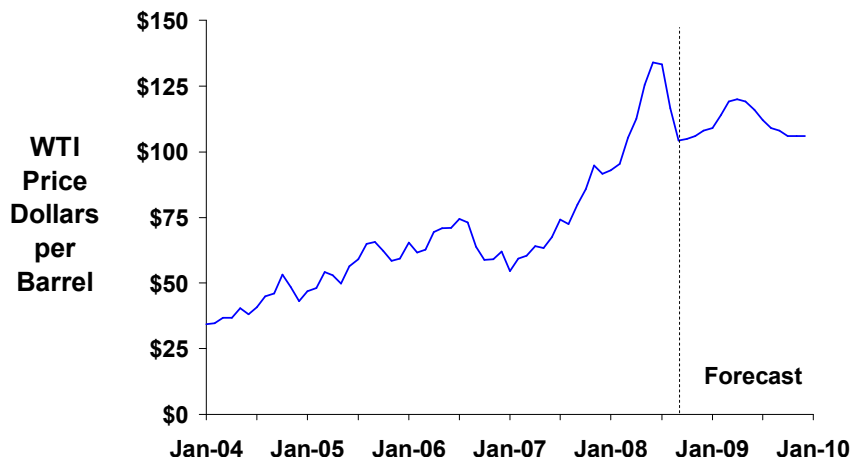
35
36 Also, the players in the oil and gas futures market were apparently taken by surprise as well as
37 may be seen by an inspection of the futures information for Brent Crude from the
38 Intercontinental Commodity Exchange.

39
40 From the ICE data it can be seen that forward prices declined from September to October by
41 about 10% whereas the decline from October to November was about 30%.

42
43 Hind sight might be 20:20 but it is not particularly helpful in living with yesterday’s decisions but
44 can perhaps provide some learning.

- 1 **Addenda 1 and 2 USA DOE EIA Excerpts for WTI Crude and Natural Gas**
- 2 In regard to fuel prices it may be interesting to look at the US Energy Information Administration
- 3 Short Term Energy Outlook of October 2008
- 4
- 5 The following two figures are extracted from that EIA Outlook. The first is for crude oil whereas
- 6 the second is for Natural Gas.

Crude oil prices are expected to remain high.

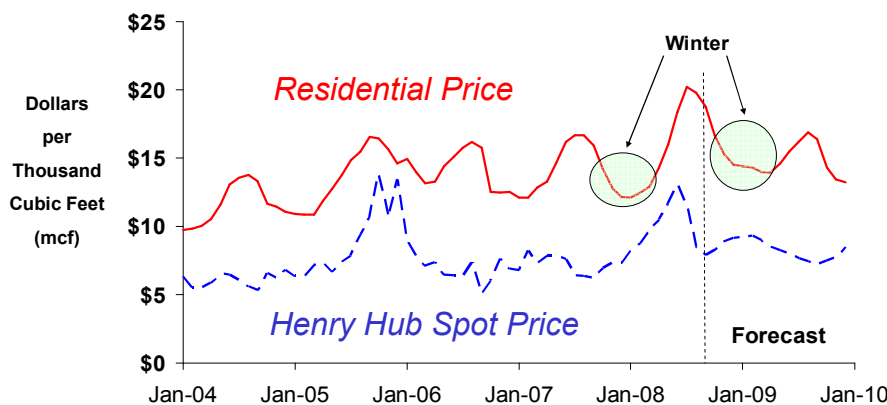


7 6 Short-Term Energy Outlook, October 2008



Natural gas prices are expected to be higher than last winter.

<p><u>Henry Hub Winter Average Spot Price</u></p> <p>10% Colder = \$10.55/ mcf</p> <p>Base Case = \$8.96/ mcf</p> <p>10% Warmer = \$7.66/ mcf</p>	<p><u>Residential Winter Average Price</u></p> <p>10% Colder = \$15.22/ mcf</p> <p>Base Case = \$14.82/ mcf</p> <p>10% Warmer = \$14.17 mcf</p>
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8 3 Short-Term Energy Outlook, October 2008



1 Addendum 3 ICE Excerpts for Brent Crude

Month Sept 1 2008	Settlement \$/bbl	Month Oct 1 2008	Settlement \$/bbl	Month Nov 3 2008	Settlement \$/bbl
Oct-08	109.41	Nov-08	95.33	Dec-08	60.48
Nov-08	110.81	Dec-08	96.75	Jan-09	62.52
Dec-08	112.03	Jan-09	97.99	Feb-09	64.24
Jan-09	113.02	Feb-09	98.98	Mar-09	65.66
Feb-09	113.76	Mar-09	99.78	Apr-09	66.85
Mar-09	114.28	Apr-09	100.43	May-09	67.93
Apr-09	114.66	May-09	100.96	Jun-09	68.94
May-09	114.87	Jun-09	101.43	Jul-09	69.93
Jun-09	114.96	Jul-09	101.87	Aug-09	70.87

7.0 CONCLUSIONS

1 The following conclusions are drawn from the July Filing, responses to the IRs (including the
2 spreadsheets) and other correspondence with MECL
3

4
5 Again, discussions on financial issues are outside the scope of this report.
6

7 7.1 MECL On-Island generation is expensive to operate.
8

9 7.2 MECL needs to purchase capacity and energy to contribute to satisfying its mandate of
10 providing its customers needs at the lowest cost.
11

12 7.3 MECL has taken a reasonable approach to calling for and evaluating the RFP.
13

14 7.4 The relatively narrow bandwidth of the prices of the various offerings suggests that the RFP
15 was reasonable in the circumstances and that the RFP approach and market seems to be
16 working.
17

18 7.5 The approach taken by MECL and the supporting documentation and analyses, including
19 spreadsheets, support its conclusions.
20

21 7.5 The EPA energy prices compare favourably with pricing approved by the Maine Public Utility
22 Commission for Standard Offer Rates for the period beginning September 2008 through
23 February 2009.
24

25 7.6 MECL's decision to delay opting into the "length of agreement" Fixed Pricing seems
26 reasonable in the circumstances.
27

28 7.7 MECL's recent decision to opt to fix prices for the duration of the Agreement is reasonable in
29 the circumstances.
30

31 7.8 KnAP has reviewed the overall approach taken by MECL, the RFP and the offerings and the
32 summary of correspondence between MECL and the tenderers, the responses to KnAP's IRs
33 (including all spreadsheets) in accordance with KnAP's mandate and finds that MECL was
34 reasonable in its approach to calling for and evaluating the RFP.
35

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8.0 RECOMMENDATIONS and OBSERVATIONS**8.1 Recommendations**

8.1.1 It is recommended that the Commission be updated by MECL at regular intervals on the actual performance of its EPA as related to the forecasts of monthly quantities and prices and MECL's expectations of the future.

8.1.2 Before the expiration of the current EPA it is recommended that the IRAC consider requiring MECL to file in confidence a discussion paper that addresses its assessment of the then expected electricity energy market, its possible approach for dealing with same and a preliminary assessment of its expectations regarding potentially available supply sources and pricing.

8.2 Observations

8.2.1 It is noted that the various spreadsheets used in the analyses are still a little "awkward" to review but it is also recognized that the effort required to make those spreadsheets more user friendly might not be warranted.

8.2.2 It is also noted that material scanned into ".pdf" formats are not as amenable for review and searching as are ".pdf" files created from original electronic formats. Scanned files are less user friendly in both hard and electronic versions. Perhaps IRAC might consider requiring that to the extent practical materials submitted be in ".pdf" files that were created from original electronic formats. Of course spreadsheet materials should continue to be available in electronic format.