

1 SUBJECT: DSM

2

3 REFERENCE: Page 41

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5 QUESTION:

6 Please confirm Mr. Dunsky is taking on issue with Manitoba Hydro's characterization of the
7 Curtailable Service Program (a form of demand response) as DSM.

8

9 RESPONSE:

10 No. In my evidence, I used the term "DSM" in my initial discussion of traditional demand-side
11 management options, primarily energy efficiency. This is common practice, but is not
12 semantically correct. In practice, DSM should encompass all opportunities to manage demand,
13 including demand response.

1 SUBJECT: DSM

2

3 REFERENCE: Page 41

4

5 QUESTION:

6 Is Mr. Dunsky aware that Manitoba Hydro has applied to "cap" participation in the Curtailable
7 Service Program at current levels, despite potential further interest from other industrial
8 customers? In Mr. Dunsky's view is this DSM limitation consistent with good utility practice?

9

10 RESPONSE:

11 I was not aware that Hydro had applied to cap participation. I cannot comment on whether this
12 is good utility practice, because its value proposition would depend on the combination of (a)
13 Hydro's need for capacity in the near-term, and (b) Hydro's cost for maintaining the call option
14 through the Curtailable Service Program. These considerations were not part of the scope of my
15 mandate.

1 REFERENCE: Dunsky report, page 33

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3 QUESTION:

4 Please confirm that Mr. Dunsky's quoted equivalent annual cost of the illustrative
5 DSM measures (2.9 cents/kW.h over 15 years) excludes any revenue impacts to the
6 utility from the reduced sales.

7

8 RESPONSE:

9 Confirmed.

1 REFERENCE: Dunsky report, page 33

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3 QUESTION:

4 Please confirm that if lost revenue impacts are included in the above calculation,
5 assuming residential prices on the order of 7 cents/kW.h, the full financial impact on
6 the utility from a 29 cents/kW.h first year DSM program over 15 years is
7 approximately 9.8 cents/kW.h. Further, if this DSM resource was pursued for the sole
8 purposes of export, the revenue received from exports would need to exceed 9.8
9 cents/kW.h in order for the DSM initiative to be profitable or cost-effective.

10

11 RESPONSE:

12 Yes, however lost revenue impacts are not a cost, but a transfer from Manitoba
13 Hydro to ratepayers. As such, the answer depends on whose perspective you are
14 taking: Manitoba Hydro's, or that of Manitoba ratepayers.

1 REFERENCE: Dunsky report, page 33

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3 QUESTION:

4 Please explain how the situation described in the above response changes if the
5 DSM response is a part of a portfolio of resources (or is a sole competing resource)
6 to other supply side options such as Keeyask.

7

8 RESPONSE:

9 For reasons explained in my response to 2b, lost revenue does not impact least cost
10 integrated resource planning.

1 REFERENCE: Dunsky report, page 33

2

3 QUESTION:

4 Please confirm that the original purpose of the RIM test was to measure equity - that
5 is, a DSM portfolio that did not affect the usage of some customers could
6 nevertheless lead to rate and cost increases to this group to pay for measures only
7 benefitting other groups. Please explain why equity is asserted to no longer be
8 relevant to DSM evaluation.

9

10 RESPONSE:

11 The RIM test measures the financial impact of DSM on non-participants. It is not a
12 measure of equity. Equity is a much larger concept that includes offering specific
13 programs to low income customers and hard-to-reach market segments, i.e.
14 programs that more often than not fail the RIM test, or even the TRC test, but are
15 necessary to ensure equity. I am a firm believer in accounting for equity in energy
16 planning and decision-making, including in DSM decision-making.

17 Because the RIM is the most restrictive of the five standard cost-effectiveness tests,
18 its use severely limits energy efficiency investment and the scope of
19 measures/programs that can be put in place to benefit ratepayers as a whole. This
20 may explain why, in a recent review of tests used and applied across the U.S., only
21 1 state out of 44 surveyed still used the RIM as its primary test. That state has since
22 ceased the practice.

1 REFERENCE: Dunsky report, page 27

2

3 QUESTION:

4 Please confirm that a DSM initiative that reduces the "total cost to customers (rate x
5 consumption)" can benefit all customers collectively or a group of customers
6 specifically, but at the same time may serve to be harmful to the costs charged to
7 other individual groups of customers (sometimes called "non-participants").

8

9 RESPONSE:

10 See my answer to MIPUG/CAC_GAC-003a.

1 SUBJECT:

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3 REFERENCE: Page 25

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5 QUESTION:

6 **Please provide Mr. Dunskey's view of the appropriate compensation**
7 **levels for customer generated power from waste products - is it best**
8 **based on retail rates, on avoided costs, on export pricing, on long-**
9 **run marginal costs, or some other level? Is it Mr. Dunskey's view that**
10 **customers developing generation using waste products, who**
11 **arrange for the sale of 100% of this generation to the utility,**
12 **continue to be properly classified as DSM?**

13
14 RESPONSE:

15 **Appropriate compensation levels of customer-generated power from**
16 **waste products is outside the scope of my mandate.**

17 **Whether customer-sited generation that is sold entirely to the grid**
18 **should be properly classified as demand-side management is a**
19 **matter of semantics for which I am unaware of - nor qualified to**
20 **provide - any 'correct' response.**

- 1 SUBJECT: DSM Comparison
- 2
- 3 REFERENCE: Page 19
- 4
- 5 QUESTION:
- 6 **Please provide the full comparative "scope" (bullet 4) for each of**
- 7 **the plans presented in Figure 7.**
- 8
- 9 RESPONSE:
- 10 See response to MH/CAC_GAC-002

1 SUBJECT:

2

3 REFERENCE: Page 15

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5 QUESTION:

6 **Is it Mr. Dunsky's view that proceeding with Keeyask will serve to**
7 **"crowd out" DSM? Please provide all quantitative analysis and**
8 **economic calculations performed by Mr. Dunsky to support this**
9 **view.**

10

11 RESPONSE:

12 **We have not conducted the type of grid analysis needed to conclude**
13 **that Keeyask would crowd out DSM. The answer to this question**
14 **would normally be produced through a proper IRP planning process.**

SUBJECT:

REFERENCE: Page 15

QUESTION:

Please confirm that it is Mr. Dunsky's understanding that over a specified period (for example, 2003-2023, or other period that Mr. Dunsky may choose to select - please specify) neither Nova Scotia nor Ontario are engaged in any efforts to secure added sources of power (beyond internal replacements). Please provide references to the planning literature from each province to support this view.

RESPONSE:

Yes, for all intents and purposes, planning in both Nova Scotia and Ontario is currently based upon projections of flat demand, in large part due to DSM. As a result of these flat demand forecasts, the new generation to be brought on line will be dedicated primarily to replacing existing generation that is to be retired or left dormant. Below are more specific numbers from each jurisdiction:

ONTARIO: The province recently released its Long-Term Energy Plan (LTEP) 2013 update. We note the following passage:

"The province expects to offset almost all of the growth in electricity demand to 2032 by using [DSM] programs and improved codes and standards." [our underline]

Ref.: http://www.energy.gov.on.ca/docs/LTEP_2013_English_WEB.pdf

NOVA SCOTIA: Nova Scotia Power released its latest 10-Year System Outlook in July of 2013. The report's Table 1, reproduced below, shows the plan's assumptions of net (after DSM) load growth for the coming 10 years. As we can see, after DSM, net energy needs are projected to decline by 4% cumulatively over the coming 10 years

(2013-2023).¹ The report's Table 12, meanwhile, provides the utility's 10-year load forecast and resource outlook from a capacity standpoint. As we can see, net capacity needs are projected to remain flat (0.7% cumulative decline) over the same period. The reader will also note that most new planned generation is designed to offset planned retirements of existing facilities.

Table 1 - Total Energy Requirement with Future DSM Program Effects²

Year	Net System Requirement (GWh)	Annual Change (%)
2003	12,009.1	4.4
2004	12,387.7	3.2
2005	12,338.2	-0.4
2006	10,946.2	-11.3
2007	12,638.9	15.5
2008*	12,538.3	-0.8
2009*	12,073.1	-3.7
2010*	12,157.7	0.7
2011*	11,906.8	-2.1
2012*	10,475.4	-12.0
2013F	11,003.3	5.0
2014F	10,917.2	-0.8
2015F	10,919.9	0.0
2016F	10,853.2	-0.6
2017F	10,776.8	-0.7
2018F	10,707.4	-0.6
2019F	10,733.1	0.2
2020F**	10,710.1 [9,569.1]	-0.2 [-10.8]
2021F**	10,663.1 [9,522.1]	-0.4 [-0.5]
2022F**	10,595.8 [9,454.8]	-0.6 [-0.7]
2023F**	10,563.8 [9,422.8]	-0.3 [-0.3]

* Results for the years 2008 to 2012 contain the effects of past DSM programs
** Bracketed numbers represent the low load scenario without Port Hawkesbury Paper load.

NS Power also forecasts the peak hourly demand for future years. This process uses

¹ Assuming that a large pulp and paper load, the Hawkesbury plant, is maintained (loss of the load would exacerbate the decline).

Needs For and Alternatives To MIPUG/CAC_GAC-007a

		
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Table 12 – NS Power 10 Year Load and Resources Outlook

Load and Resources Outlook for NS Power – Winter 2013/2014 to 2022/2023 (All values in MW except as noted)											
		2013/2014	2014/2015	2015/2016	2016/2017	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	2022/2023
A	Firm Peak Load Forecast	1984	2020	2043	2063	2078	2110	2133	2153	2169	2192
B	DSM Firm	45	70	95	118	143	167	194	220	244	269
C	Firm Peak Less DSM (A – B)	1939	1950	1948	1944	1935	1943	1939	1934	1925	1923
D	Required Reserve (C x 20%)	388	390	390	389	387	389	388	387	385	385
E	Required Capacity (C + D)	2326	2340	2337	2333	2322	2331	2327	2320	2310	2308
F	Existing Resources	2336	2336	2336	2336	2336	2336	2336	2336	2336	2336
	Total Cumulative Additions:										
G	Thermal ¹	0	0	33	33	-120	-120	-120	-120	-120	-120
H	Contracted Wind (Firm capacity) ²	2	2	2	2	2	2	2	2	2	2
I	Biomass ³	0	0	10	10	10	10	10	10	10	10
J	Community Feed-in- Tariff ⁴	3.3	7	10	15	20	20	20	20	20	20
K	REA Wind Projects	0	23	23	23	23	23	23	23	23	23
L	Maritime Link Import ⁵	0	0	0	0	153	153	153	153	153	153
M	Total Firm Supply Resources (F + G + H + I + J + K + L)	2341	2367	2414	2419	2424	2424	2424	2424	2424	2424
	+ Surplus / - Deficit (M – E)	14	27	76	86	102	93	97	104	114	116
	Reserve Margin % (M/C – 1)	21%	21%	24%	24%	25%	25%	25%	25%	26%	26%

¹ Thermal includes Burnside #4 (winter capacity 33 MW) assumed to be returned to service in 2015. Also includes assumed retirement dates of solid fuel unit(s) for planning purposes in order to comply with federal environmental regulations, and are subject to adjustment due to equivalency with provincial regulations.

Ref.: <http://oasis.nspower.ca/site/media/oasis/20130702%20NSPI%20to%20UARB%2010%20Year%20System%20Outlook%20Report%20FILED.pdf>

I note that Nova Scotia Power is currently preparing a new Integrated Resource Plan (IRP).

1 SUBJECT:

2
3 REFERENCE: Page 13

4
5 QUESTION:

6 **Please provide references in literature or documents produced by**
7 **Hydro Quebec or the Quebec government that support Mr. Dunsky's**
8 **assertion that Hydro Quebec was "overcommitting on new supply**
9 **and failing to pull back from those commitments when evidence**
10 **abounded that anticipated load growth would fail to materialize".**
11 **Please also confirm that the DSM programs being referred to reflect**
12 **a cost of 3 cents/kW.h excluding the impacts of lost domestic**
13 **revenues. Please confirm that in an environment of surplus energy,**
14 **pursuing DSM at 3 cents/kW.h plus an additional lost revenue, for**
15 **the purposes of exporting the surplus for 3 to 3.5 cents/kW.h would**
16 **be economically inefficient.**

17
18 RESPONSE:

19 **There are three parts to this question:**

20
21 (1) **See testimony of Thierry Vandal, CEO of Hydro-Quebec, before**
22 **a Parliamentary Commission held in February, 2013. At the**
23 **time, Mr. Vandal explained that as the economic crisis hit parts**
24 **of Quebec's industrial loads in 2008-2009 and demand dropped**
25 **significantly (by 10 TWh year-over-year), the utility, under**
26 **political pressure to create jobs, continued to commit to**
27 **additional supply resources despite clear knowledge that the**
28 **supply was not needed, and that export prices would be well**
29 **below cost. There is now debate on the extent of the cost of**
30 **these surpluses, which some peg at approximately \$1.25**
31 **billion/year over the coming 14 years.**

32 **Interestingly, a situation even more analogous to Manitoba is**
33 **currently playing out in Quebec, where despite the large**
34 **surpluses (75 TWh cumulative, according to Hydro-Quebec; up**

35 to 169 TWh according to other analysts), the utility is pursuing
36 construction of a previously-committed \$6.5B hydropower
37 project, La Romaine, and its associated \$1B transmission line,
38 while forecasting export prices of only 4¢/kWh in the coming
39 years. In the meantime, the Quebec government has
40 announced that it will offer at least 50 TWh of the surpluses to
41 new customers at considerably below cost; to date, offers have
42 been reported in the range of 3 to 3.5¢/kWh. The supply itself
43 cost approximately 10¢/kWh.

44
45 (2) The DSM programs being referred to reflect a cost to procure
46 saved energy of 3¢/kWh. This cost of course does not reflect
47 Hydro's lost revenue, i.e. customers' direct bill savings.

48
49 (3) Pursuing domestic DSM at 3¢/kWh and exporting the freed up
50 power at 3.5¢/kWh would be economically efficient for the
51 province, notwithstanding any more advantageous options.
52 Lost revenue from domestic sales, it should be noted, is an
53 economic transfer -- a cost to the utility that is fully offset by a
54 corresponding benefit to participating Manitoban ratepayers.
55 Furthermore, from a broad economic standpoint, studies have
56 typically found that savings from DSM generate more
57 employment and greater economic activity, including GDP and
58 fiscal revenue, than they offset from deferred investments in
59 generation (and related areas). If this holds true for Manitoba,
60 then the net economic efficiency of the scenario for the
61 province would only increase.

62 It may be noteworthy that the Government of Canada recently
63 commissioned a study of the macroeconomic impact of energy
64 efficiency, including on GDP, employment and tax revenue; we
65 anticipate that results for the Province of Manitoba will be
66 published shortly.

1 REFERENCE: Dunsky report, page 13

2

3 QUESTION:

4 If the analysis from Manitoba Hydro's filing is that the optimum resources to be
5 constructed remain the same regardless as to whether there is no DSM, or
6 significant DSM, or even extremely high levels of DSM, does that not confirm that
7 DSM is not determinative as to what resources should be built?

8

9 RESPONSE:

10 No. As explained in my report, because the present process only considers added
11 production, no "added DSM" plan is analysed and compared to production plans.
12 The results (supply resources are the same whatever the level of DSM) only tell us
13 that the proposed supply resources are better compared to other resources, not that
14 they are needed and/or of economic value compared with the alternatives.