

From: auburnwarren@nalcorenergy.com
To: [Bown, Charles](#)
Cc: [Ed Martin](#); [Dawn Dalley](#); [Derrick Sturge](#); [Dave Jones](#); [Dave Jones](#)
Subject: Re: Rate Smoothing
Date: Friday, September 11, 2015 11:34:50 PM
Attachments: [.png](#)
[LCP_Rate_Smoothing_\(copy_to_DNR\)_15.09.11.2330.pdf](#)

Good evening all,

Here is latest draft based on feedback received from our session yesterday afternoon.



LCP Rate Smoothing (copy to DNR) 15.09.11.2330.pdf

Highlights include:

1. Analysis to walk through changes to DG3 rates - updated first for HST change but then layered a change for change in NLH opex (this was most significant change - and difficult to identify other significant changes to non-LCP since DG3)
2. Developed an approach to lay out how to communicate rate smoothing - first, max LIL equity converted to Class C and then up to 50% of excess energy sales if needed to ensure max 5% year over year change to retail rates (prior to NF Power increases) up to 2025

Please review and feel free to ask any questions.

Cheers!

Auburn



Auburn Warren, CPA, CA
General Manager (Commercial, Treasury, Risk & Technology)
Nalcor Energy
t. 709-737-1256 c. 709-725-1141
e. AuburnWarren@nalcorenergy.com
w. nalcorenergy.com

Auburn Warren---09/10/2015 01:32:09 PM---Folks, Here is preliminary draft for your review. As I noted earlier, would be good to walk you thr

From: Auburn Warren/NLHydro

To: "Bown, Charles W." <cbown@gov.nl.ca>, Ed Martin/NLHydro@NLHydro

Cc: [Dawn Dalley <DawnDalley@nalcorenergy.com>](mailto:Dawn Dalley@nalcorenergy.com), Derrick Sturge/NLHydro@NLHydro, Dave Jones/NLHydro@NLHYDRO

Date: 09/10/2015 01:32 PM

Subject: Re: Rate Smoothing

Folks,

Here is preliminary draft for your review. As I noted earlier, would be good to walk you through this as it requires some discussion.

[attachment "LCP Rate Smoothing (copy to DNR) 15.09.10.pdf" deleted by Auburn Warren/NLHydro]

Thanks!

Auburn



Auburn Warren, CPA, CA
General Manager (Commercial, Treasury, Risk &
Technology)
Nalcor Energy
t. 709-737-1256 c. 709-725-1141
e. AuburnWarren@nalcorenergy.com
w. nalcorenergy.com

"Bown, Charles W." ---09/10/2015 09:45:36 AM---Auburn Do you have anything for me on rate smoothing approaches, options and impacts?

From: "Bown, Charles W." <cbown@gov.nl.ca>
To: "'AuburnWarren@nalcorenergy.com'" <AuburnWarren@nalcorenergy.com>
Cc: Dawn Dalley <DawnDalley@nalcorenergy.com>
Date: 09/10/2015 09:45 AM
Subject: Rate Smoothing

Auburn

Do you have anything for me on rate smoothing approaches, options and impacts?

Charles

“This email and any attached files are intended for the sole use of the primary and copied addressee(s) and may contain privileged and/or confidential information. Any distribution, use or copying by any means of this information is strictly prohibited. If you received this email in error, please delete it immediately and notify the sender.”

LCP Rate Implementation Plan

September 11, 2015

Boundless Energy



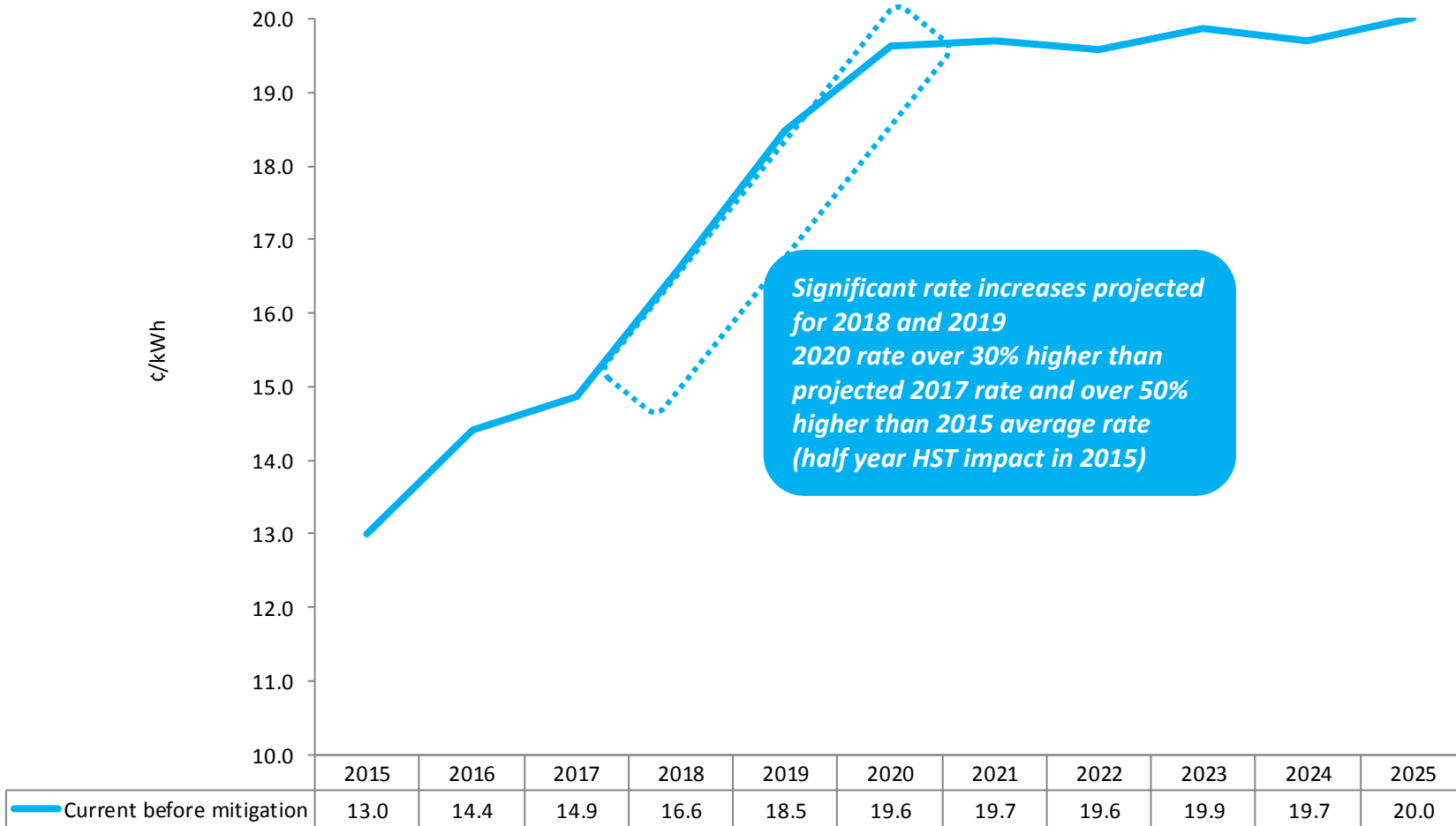
Background

- Based on current projections, significant rate increases are forecast in 2018 and 2019
- In response to large capital build requirements it is common in other jurisdictions that rates are not based purely on cost of service and rates are smoothed in
- There are a number of options available to accomplish rate smoothing with varying degrees of balance between ratepayer and taxpayer

Capital Cost Assumptions

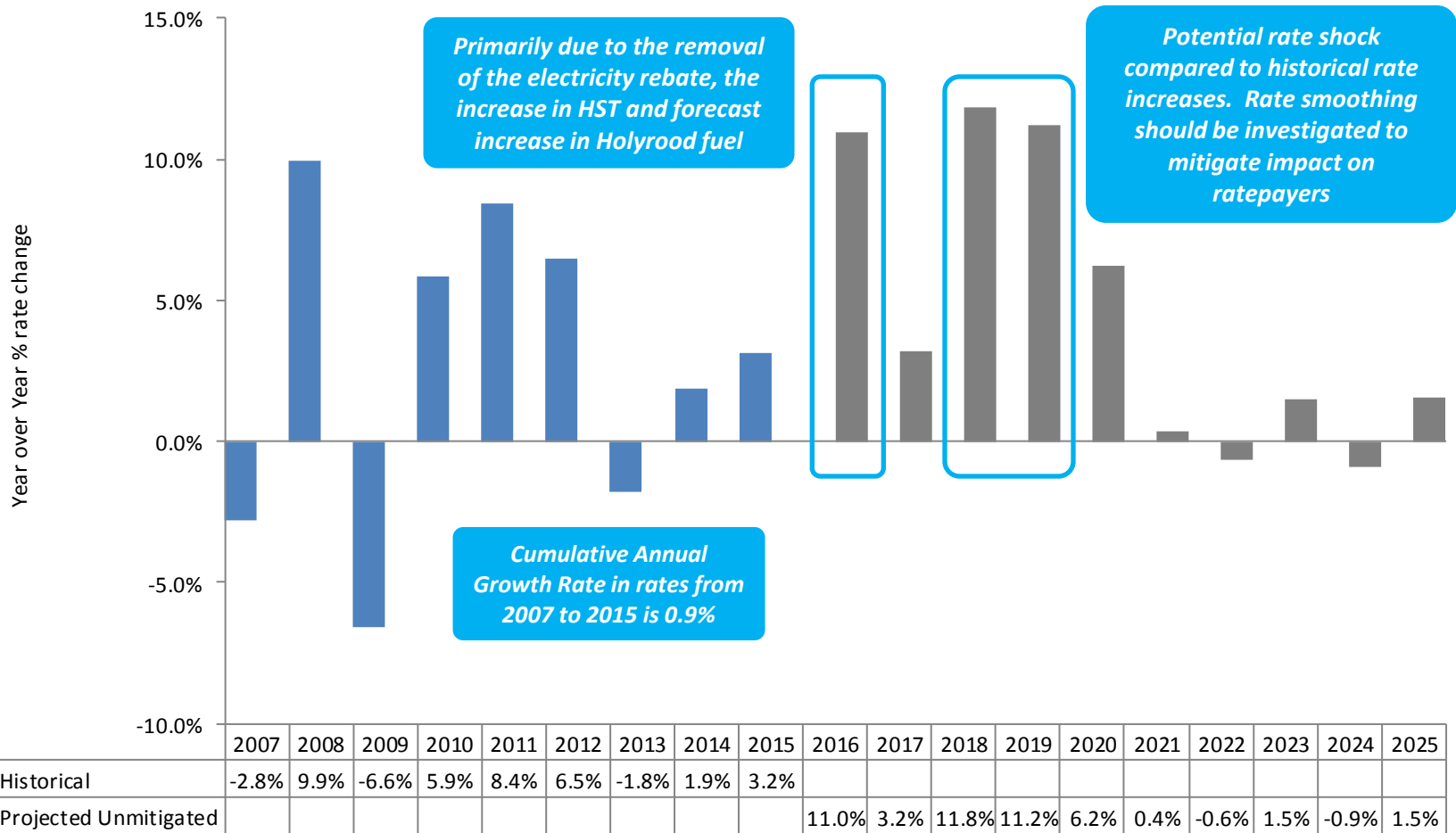
- These projections reflect capital cost estimate of \$7.6 billion with an in-service date of June 2018
- The capital cost estimate is based on a preliminary view. The monthly/yearly allocation between now and in-service is currently being refined as part of finalizing the revised Authorization for Expenditure expected to be approved by the LCP entity Boards of Directors later this month – this will result in changes to the equity requirement in a given NL fiscal year

Domestic Rates⁽¹⁾



⁽¹⁾ Domestic rate represents NF Power - average electricity bill (1,517 kWh) which is an average annual rate and includes taxes and rebates (if any)

Year over Year Domestic Rate Changes



Rate Smoothing in Other Jurisdictions

- It is common in some other jurisdictions that rates are not based purely on cost of service:
 - cost of a major asset is sometimes collected in rates prior to the asset being in service in order to smooth the known upcoming rate increase [Pre-collection of costs is not proposed in case at hand but the principle of alternative rate setting is pertinent]
 - Smoothing is normally achieved by allowing some of the construction financing costs to flow through to the revenue requirement prior to the in-service of the new facilities
 - Also decoupling rates and costs does occur in other jurisdictions under performance-based rate making, for example, rates can be tied to an escalation factor or number of customers
 - Recently Manitoba's Public Utilities Board approved a rate increase, a portion of which will be held in a deferral account to offset future rate increases from a major transmission project coming in service in 2018

Manitoba Hydro

- Manitoba Hydro is spending about \$20 billion over the next decade
- The most significant projects include:
 - Bipole III - \$4.6 billion
 - Keeyask generating station - \$6.5 billion
 - Maintenance and upgrading of existing facilities - \$5.9 billion
 - Energy efficiency programs at \$0.7 billion
- Bipole III is scheduled to come into service in 2018 and a deferral account has been approved by the PUB to account for collection of revenues prior to the project coming in service

Manitoba Hydro PUB Order

Order No. 73/15, July 24, 2015 states as follows :

The Board approves a total 3.95% increase in Manitoba Hydro consumers' billed rates effective August 1, 2015. This will increase the monthly bill of an average residential customer without electric space heat (using 1,000 kWh per month) by \$3.20 and an average customer with electric space heat (using 2,000 kWh per month) by \$6.11.

However, of the 2015/16 rate increase, only the revenues from a 1.8% rate increase will flow to Manitoba Hydro's general revenues to improve its financial position.

The revenues generated from a 2.15% rate increase are to be placed in the previously established deferral account to mitigate rate increases when the Bipole III Transmission Reliability Project (Bipole III), including the Riel Converter Station, comes into service in 2018/19. Because very significant rate increases will be needed at that time, the Board sees a compelling policy reason to gradually increase rates to avoid rate shock for consumers three years from now.

Ontario Energy Board

- In a report on the regulatory treatment of infrastructure investment the OEB states the including Construction Work in Progress (CWIP) in rate base provides two principal benefits:
 - First, it provides a smoothing, or phased-in, effect on rates and thereby mitigates the rate impact that might otherwise take place when large new plant is placed into service
 - Second, it can reduce borrowing costs. Permitting a utility to recover CWIP funding can also reduce a project's total net present value cost, although it can raise intergenerational inequity issues

Ontario Energy Board Ruling

- The Board will allow utilities to apply to include up to 100 percent of prudently incurred CWIP costs in rate base
 - This approach allows utilities to recover the interest costs on debt and a return on equity (i.e., the weighted cost of capital) during the construction period
 - The depreciation or return of the investment will continue to be recovered once the project goes into service
 - The Board may also consider: a) applying a cap on the CWIP amount allowed or b) allowing the CWIP amount into rate base on a staged basis as construction proceeds

US Jurisdictions Treatment of CWIP

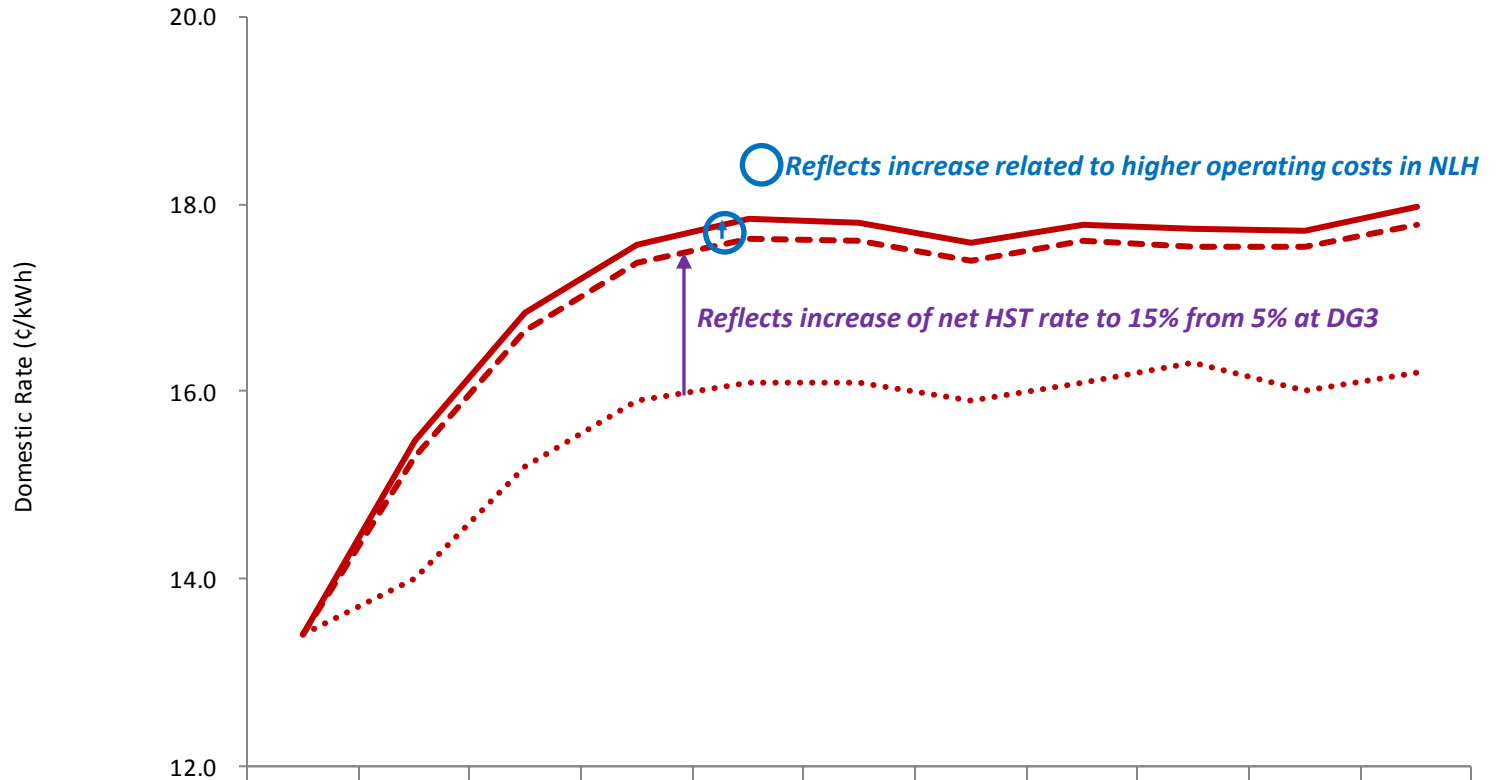
State	Project Specific or Blanket?	Supporting Legislation and Regulations?	CWIP Recovered in Rates	Notes
Florida	Nuclear	Both	CWIP financing costs Pre-construction costs Plant-related transmission	June 2006 and June 2008 legislation, Feb. 2007 regulations
Georgia	Nuclear	Legislation	CWIP financing costs	April 2009 legislation
Kansas	Nuclear	Legislation	CWIP financing costs Pre-construction costs Construction costs	May 2008 legislation
Louisiana	Nuclear	Regulations	CWIP financing costs	Adopted May 2007
Mississippi	Nuclear	Legislation	CWIP financing costs Pre-construction costs	May 2008 legislation
Michigan	Large Capital Investments	Legislation	CWIP financing costs	October 2008 legislation
North Carolina	Coal and Nuclear	Legislation	CWIP financing costs Pre-construction costs	August 2007 legislation
South Carolina	Coal and Nuclear	Legislation	CWIP financing costs	May 2007 legislation
Virginia	Nuclear	Legislation	CWIP financing with ROE	April 2007 legislation

Source: Charles River Associates Report for Ontario Power Generation, March 19, 2010

Other North American Rate Smoothing

- Illinois Commerce Commission phase in of Louisa Generating Station - 1983
 - Phase in of 29% rate increase by use of a rate rider
- Baltimore Gas and Electric Co. securitization of deferred generation supply costs
- AFUDC vs. CWIP
 - Allowance of CWIP in rate base prior to commissioning of the related asset

Update of DG3 Rates



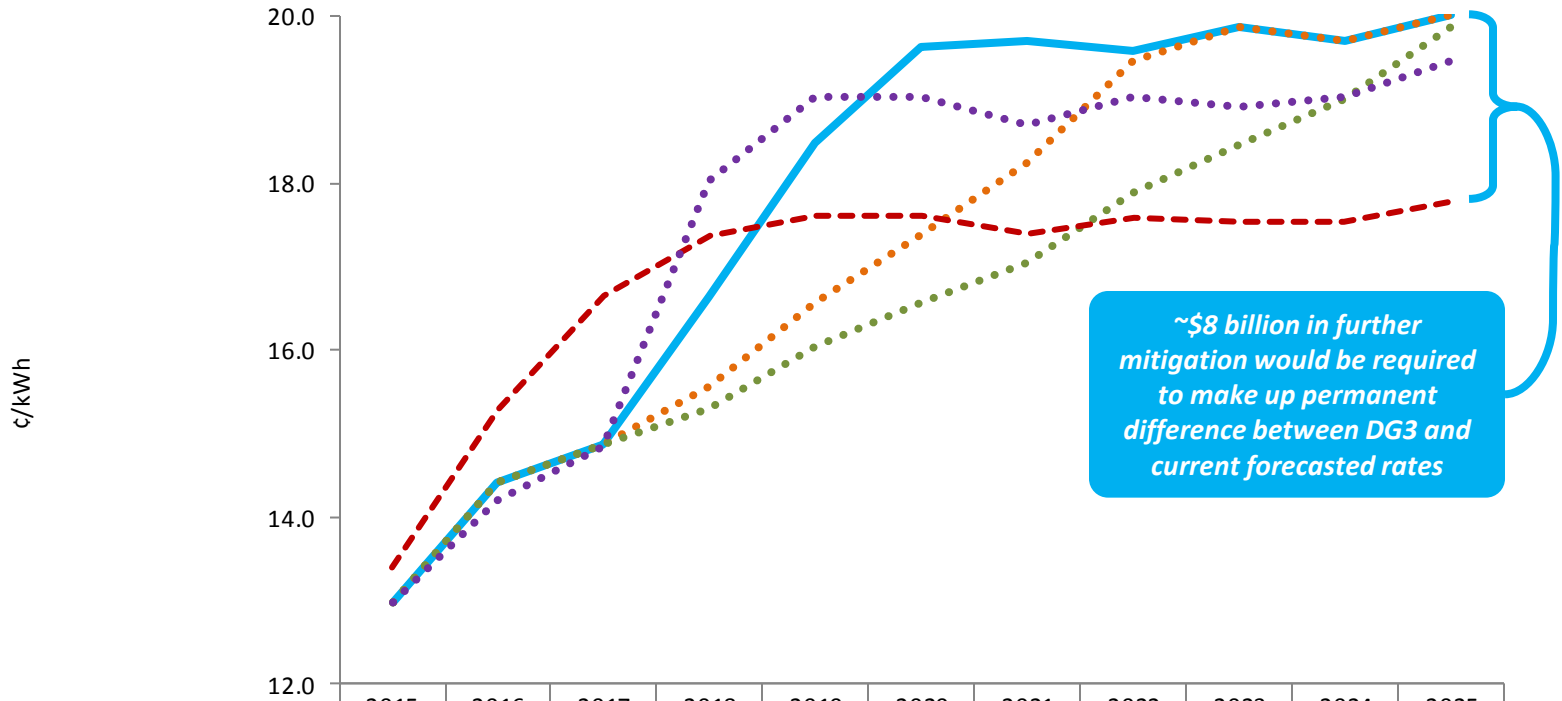
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
..... DG3 (HST @ 5% net)	13.4	14.0	15.2	15.9	16.1	16.1	15.9	16.1	16.3	16.0	16.2
- - - DG3 (HST @ 15% net)	13.4	15.3	16.7	17.4	17.6	17.6	17.4	17.6	17.6	17.5	17.8
———— DG3 Adjusted for NLH Opex	13.4	15.5	16.8	17.6	17.8	17.8	17.6	17.8	17.7	17.7	18.0

Illustrative Mitigation Options

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2018-25 Total	2026-67 Total
Current Unmitigated Case												
Revenue Requirement [\$ millions]	559.3	556.8	769.4	861.7	911.6	917.0	892.1	911.0	911.7	927.0		
YoY % Δ change	NM	(0.5%)	38.2%	12.0%	5.8%	0.6%	(2.7%)	2.1%	0.1%	1.7%		
Hydrology - Reservoir drawdown (reduced in above) [\$ millions]			\$ 13.5	\$ 10.1	\$ 7.6	\$ 5.7	\$ 4.3	\$ 3.2	\$ 2.4	\$ 1.8	\$ 48.7	
Pre-comm energy at contract vs oil (reduced in above) [\$ millions]			\$121.7								\$121.7	
Wholesale rate [c / kWh]	8.5¢	8.9¢	10.4¢	11.8¢	12.8¢	12.9¢	12.5¢	12.8¢	12.7¢	12.8¢		
YoY % Δ change	NM	4.8%	17.3%	13.3%	8.3%	0.7%	(2.6%)	2.1%	(0.8%)	0.5%		
Domestic rate [c / kWh]	14.4¢	14.9¢	16.6¢	18.5¢	19.6¢	19.7¢	19.6¢	19.9¢	19.7¢	20.0¢		
YoY % Δ change	NM	3.2%	11.8%	11.2%	6.2%	0.4%	(0.6%)	1.5%	(0.9%)	1.5%		
Total Mitigation Required [\$ millions]												
Option 1 - Cap retail rate change per year to ~5%			\$ 68.0	\$123.0	\$142.9	\$ 92.9	\$ 7.0	\$ 0.0	\$ 0.0	\$ 0.0	\$433.9	
Option 2 - Cap retail rate change to 2005-15 NL average (~3%)			\$ 84.0	\$156.9	\$196.8	\$169.9	\$110.1	\$ 93.1	\$ 47.2	\$ 10.2	\$868.2	
Option 3 - Set retail rate to that presented at DG3 with HST@15%			\$ 60.0	\$ 45.0	\$115.0	\$135.0	\$111.0	\$133.0	\$119.0	\$125.0	\$843.0	~\$8B
Option 4 - Set retail rate to that presented at June 2014 (\$6.99B)					\$ 26.1	\$ 30.7	\$ 25.1	\$ 31.3	\$ 22.2	\$ 23.1	\$158.5	~\$2B
Taxpayer Mitigation Measures [\$ millions]												
LIL - Convert max NL equity to Class C			\$ 41.3	\$ 70.2	\$ 69.4	\$ 68.1	\$ 66.9	\$ 65.8	\$ 64.8	\$ 63.4	\$509.7	~\$2B
MF - Export sales			\$ 9.2	\$ 59.2	\$ 61.7	\$ 71.6	\$ 63.6	\$ 70.7	\$ 77.9	\$ 69.1	\$483.1	
EM - Recall sales			\$ 51.0	\$ 60.2	\$ 62.4	\$ 68.8	\$ 70.3	\$ 74.4	\$ 80.0	\$ 76.2	\$543.3	
MF - Water power rental paid to NL			\$ 8.5	\$ 14.9	\$ 15.2	\$ 15.5	\$ 15.9	\$ 16.2	\$ 16.5	\$ 16.8	\$119.6	
NLH - Regulated dividends						\$ 23.5	\$ 44.1	\$ 62.2	\$ 45.1	\$ 49.8	\$224.7	
CF - Water rental and net income royalty paid to NL			\$ 6.0	\$ 5.5	\$ 5.4	\$ 5.2	\$ 5.0	\$ 4.9	\$ 4.8	\$ 4.6	\$ 41.4	
CF - Preferred dividends			\$ 5.6	\$ 4.7	\$ 3.8	\$ 3.0	\$ 2.3	\$ 1.8	\$ 1.5	\$ 1.2	\$ 24.0	

An implementation approach to Option 1 follows as this option provides a balance between ratepayer impact (rate increases) and taxpayer impact (mitigation required)

Analysis of Impact on Domestic Rates

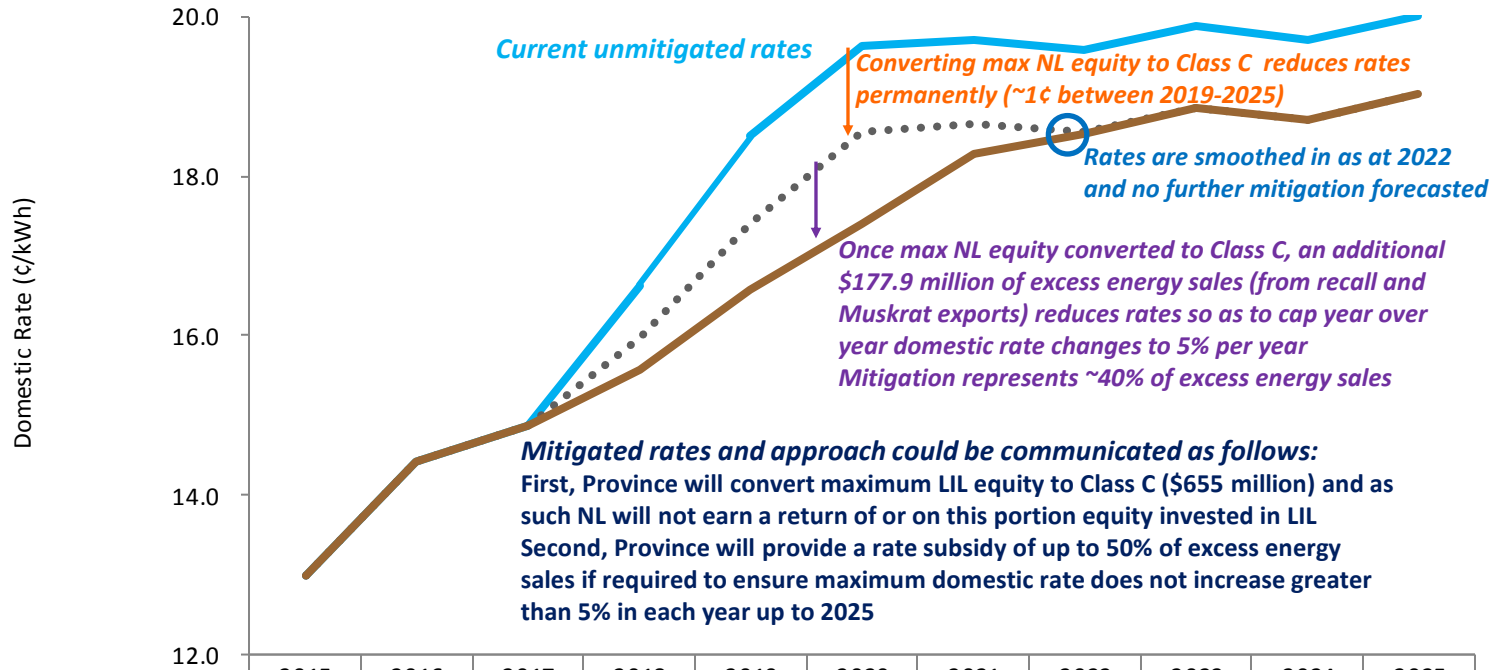


	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
— Current before mitigation	13.0	14.4	14.9	16.6	18.5	19.6	19.7	19.6	19.9	19.7	20.0
••• Option 1 (5% YoY cap)	13.0	14.4	14.9	15.6	16.6	17.4	18.3	19.5	19.9	19.7	20.0
••• Option 2 (NL 2005-15 Avg ~3%)	13.0	14.4	14.9	15.3	16.0	16.6	17.1	17.9	18.5	19.0	19.9
- - - Option 3 (@ DG3 rates w HST@15%)	13.4	15.3	16.7	17.4	17.6	17.6	17.4	17.6	17.6	17.5	17.8
••• Option 4 (@ June 2014 rates)	13.0	14.2	14.9	18.0	19.0	19.0	18.7	19.0	18.9	19.0	19.5

Mitigation Approach Summary

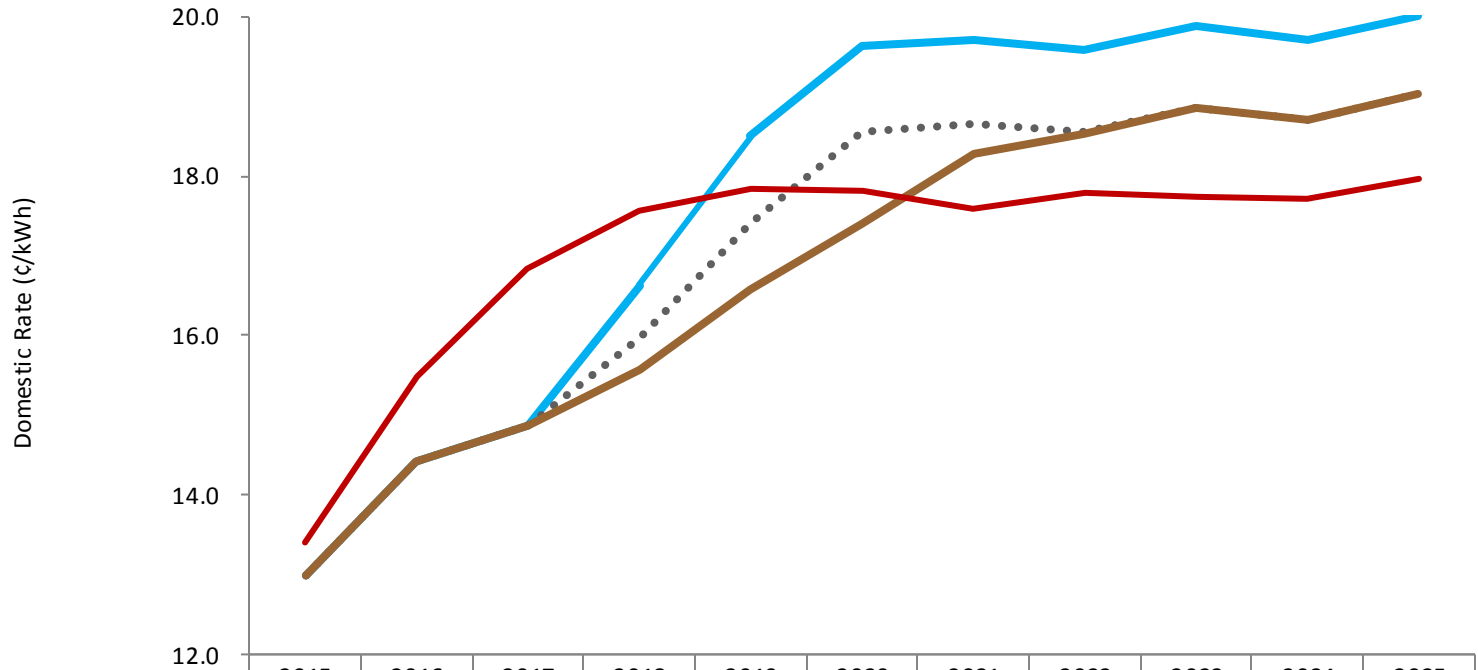
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
Current with max NL equity converted to Class C											
Revenue Requirement [\$ millions]	559.3	556.8	728.1	791.6	842.2	849.0	825.2	845.3	847.0	863.6	
Domestic rate (¢ / kWh)	14.4¢	14.9¢	16.0¢	17.4¢	18.5¢	18.6¢	18.5¢	18.9¢	18.7¢	19.0¢	
YoY % Δ change		3.2%	7.4%	8.8%	6.7%	0.5%	(0.5%)	1.7%	(0.9%)	1.8%	
Total Mitigation Required [\$ millions]											
Cap retail rate change per year to ~5%			\$ 26.7	\$ 52.8	\$ 73.5	\$ 24.9					\$ 177.9
Taxpayer Mitigation Measures [\$ millions]											
MF - Export sales			\$ 9.2	\$ 59.2	\$ 61.7	\$ 71.6					\$ 201.8
EM - Recall sales			51.0	60.2	62.4	68.8					\$ 242.3
Total Excess Energy Sales			\$ 60.2	\$ 119.4	\$ 124.1	\$ 140.4					\$ 444.2
Mitigation Required as % of Total Excess Energy Sales			44%	44%	59%	18%					40%
Mitigated Approach - max NL equity converted to Class C + Cap retail rate change per year to ~5%											
Revenue Requirement [\$ millions]	559.3	556.8	701.3	738.8	768.7	824.1	825.2	845.3	847.0	863.6	
Domestic rate (¢ / kWh)	13.0¢	14.4¢	14.9¢	15.6¢	16.6¢	17.4¢	18.3¢	18.5¢	18.9¢	18.7¢	
YoY % Δ change		11.0%	3.2%	4.6%	6.5%	5.0%	5.0%	1.4%	1.8%	(0.9%)	

Mitigation Approach Impact on Rates



	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
— Current before mitigation	13.0	14.4	14.9	16.6	18.5	19.6	19.7	19.6	19.9	19.7	20.0
••••• Current with LIL write-off	13.0	14.4	14.9	16.0	17.4	18.5	18.6	18.5	18.9	18.7	19.0
— Current with LIL write-off + 5% cap	13.0	14.4	14.9	15.6	16.6	17.4	18.3	18.5	18.9	18.7	19.0

Mitigation Approach Relative to DG3



	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
— Current before mitigation	13.0	14.4	14.9	16.6	18.5	19.6	19.7	19.6	19.9	19.7	20.0
••••• Current with LIL write-off	13.0	14.4	14.9	16.0	17.4	18.5	18.6	18.5	18.9	18.7	19.0
— Current with LIL write-off + 5% cap	13.0	14.4	14.9	15.6	16.6	17.4	18.3	18.5	18.9	18.7	19.0
— DG3 Adjusted for NLH Opex	13.4	15.5	16.8	17.6	17.8	17.8	17.6	17.8	17.7	17.7	18.0

Analysis of Impact on Domestic Bills

