

# **Manitoba Hydro 2017/18 & 2018/19 GRA**

## **Consumers Coalition Supplemental Book of References to Closing Argument**

**Byron Williams/Katrine Dilay**

**Public Interest Law Centre  
200–393 Portage Avenue  
Winnipeg, MB R3B 3H6**

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# **Consumers Coalition Supplemental Book of References to Closing Argument**

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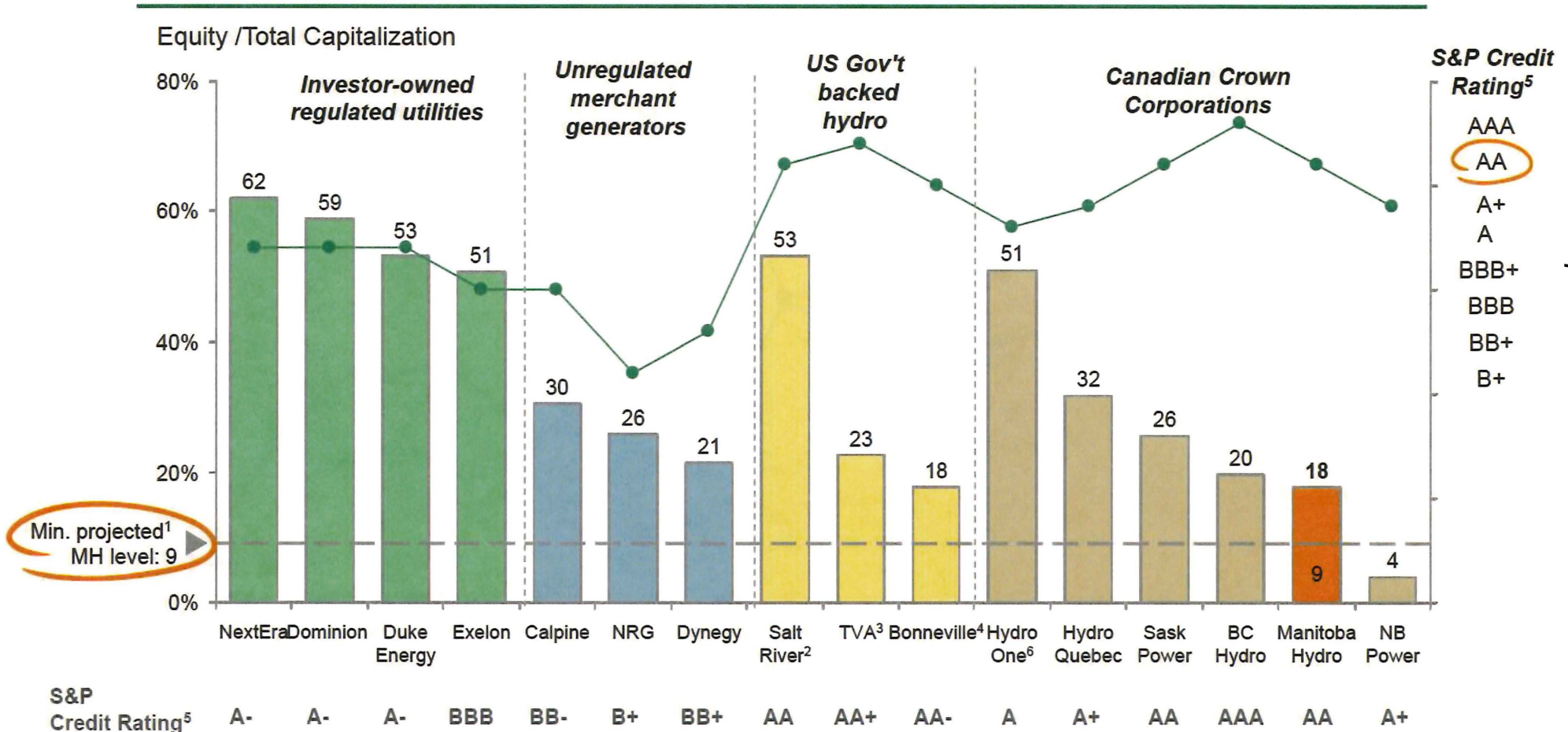


# TAB 1



# 1 Backup: Equity ratios well-below most peers

## Capital structure and credit rating for US and Canadian gov't and investor-owned regulated and merchant utilities



1. 2022 Expected Equity Ratio on NFAT Base Case 2. Salt River Project an entity of the State of Arizona 3. Federally owned corporation 4. US Federal administration within Dept. of Energy 5. Provincial issuer ratings for Saskatchewan and Manitoba; debt guaranteed by province  
Source: 2015 Audited Financial statements, SNL





# TAB 2



**PUB MFR 14****Financial Information**

**A table, which details the debt to equity ratio, capital coverage ratio and interest coverage ratio, net assets, net income, total debt and retained earnings, DBRS bond ratings, total Provincial Debt and total MH debt to total Manitoba debt in each year since 1992.**

Please see the table on the following page.

Information relating to the Province of Manitoba was provided by the Province.

Manitoba Hydro 2017/18 & 2018/19 General Rate Application  
PUB MFR 14  
Financial Information

Financial History	EBITDA				Total MH Assets	MH Net Income	Total MH Debt	Sinking Fund	Total MH Net Debt	MH Retained Earnings	DBRS Bond Rating *	Total Province of MB Debt	Sinking Fund	Total Province of MB Net Debt	Total MH Net Debt to Total MB Net Debt
	Debt/Equity Ratio	Capital Coverage Ratio	Interest Coverage Ratio	Interest Coverage Ratio											
2016	83:17	1.37	1.06	1.55	19,780	49	14,527	0	14,527	2,828	A (high)	39,874	1,227	38,647	37.6%
2015	82:18	1.20	1.19	1.73	17,567	136	12,680	114	12,566	2,779	A (high)	35,742	1,389	34,353	36.6%
2014	76:24	1.35	1.28	1.95	15,639	174	10,868	111	10,757	2,716	A (high)	32,629	1,544	31,085	34.6%
2013	75:25	1.25	1.15	1.81	14,542	92	9,985	352	9,633	2,542	A (high)	30,563	1,672	28,891	33.3%
2012	74:26	1.13	1.10	1.74	13,791	61	9,382	372	9,010	2,450	A (high)	28,698	1,859	26,839	33.6%
2011	73:27	1.25	1.27	1.96	12,882	150	8,647	282	8,365	2,389	A (high)	25,617	1,896	23,721	35.3%
2010	73:27	1.34	1.32	2.06	12,437	164	8,538	383	8,155	2,239	A (high)	24,431	2,097	22,334	36.5%
2009	77:23	1.77	1.49	2.16	11,547	266	8,187	666	7,521	2,076	A (high)	22,727	2,335	20,392	36.9%
2008	73:27	1.62	1.69	2.43	11,766	346	7,571	718	6,853	1,822	A (high)	22,056	2,757	19,299	35.5%
2007	80:20	1.10	1.23	1.83	10,922	122	7,227	630	6,597	1,407	A (high)	20,476	2,516	17,960	36.7%
2006	81:19	2.28	1.77		10,482	415	7,169	555	6,614	1,285	A (high)	19,828	2,153	17,675	37.4%
2005	85:15	1.20	1.25		9,952	136	7,204	562	6,642	870	A (high)	19,410	2,729	16,681	39.8%
2004	87:13	(0.32)	0.17		9,903	(436)	7,390	715	6,675	734	A (high)	18,206	3,070	15,136	44.1%
2003	80:20	1.10	1.14		10,234	71	7,268	948	6,320	1,170	A (high)	17,810	3,939	13,871	45.6%
2002	77:23	1.67	1.42		10,405	214	7,661	1,515	6,146	1,302	A	20,682	6,551	14,131	43.5%
2001	80:20	1.18	1.62		9,966	270	7,464	1,350	6,114	1,088	A	20,459	6,247	14,212	43.0%
2000	83:17	1.28	1.35		8,692	152	6,770	1,282	5,488	818	A	19,878	6,411	13,467	40.8%
1999	84:16	1.22	1.23		7,866	100	5,883	1,111	4,772	666	A	18,278	5,822	12,456	38.3%
1998	86:14	1.13	1.25		7,617	111	5,548	989	4,559	566	A	17,378	5,053	12,325	37.0%
1997	88:12	1.12	1.23		7,133	101	5,175	682	4,493	455	A	16,886	4,530	12,356	36.4%
1996	91:09	1.00	1.16		6,737	70	5,284	599	4,685	354	A	16,763	3,833	12,930	36.2%
1995	92:08	1.00	1.13		6,449	56	5,034	527	4,507	284	A	16,481	3,442	13,039	34.6%
1994	93:07	n/a	1.16		6,543	70	5,406	458	4,948	228	A	15,670	3,091	12,579	39.3%
1993	95:05	n/a	0.95		6,025	(24)	4,971	438	4,533	159	A	14,127	2,892	11,235	40.3%
1992	94:06	n/a	1.04		6,505	18	5,441	469	4,972	183	A	12,776	2,669	10,107	49.2%

\* The DBRS long term credit rating for the period from 1992-2016 is the same for both the Manitoba Hydro-Electric Board and the Province of Manitoba.

# TAB 3



# MPA Morrison Park Advisors



**Presentation to Manitoba PUB**

**Re: Manitoba Hydro GRA  
2017/18 & 2018/19**

15

*15 January 2018*

# Debt to Utility Assets Comparisons

- Long-term Debt to utility assets (PPE and intangibles) comparison
  - This ratio avoids issues of GAAP vs. IFRS, and other accounting adjustments
- Higher Debt usually means less Reserves (caution due to existence of significant non-debt liabilities, such as nuclear and environmental)

	Ratio
Manitoba Hydro	82%
Nalcor	52%
NB Power	102%
Hydro Quebec	72%
OPG	28%
SaskPower	58%
BC Hydro	85%

	Ratio
Manitoba Hydro	82%
Bonneville Power	93%
Tennessee Valley	65%
New York Power	23%
Long Island Power	102%
Santee Cooper	101%
Basin Electric	94%

Note: see MPA Report, pp. 24 – 25; sources are Bloomberg and Company Annual Reports

- 1
- 2
- 3
- 4
- 5
- 6
- A



# TAB 4



**NATIONAL ENERGY BOARD**

**IN THE MATTER OF:** Sections 45(1) and 58.11 of the *National Energy Board Act*, R.S.C. 1985, c.N-7

**AND IN THE MATTER OF:** Condition 13 of Permit EP-196 and Condition 8 of Certificate of Public Convenience and Necessity EC-III-16

**AND IN THE MATTER OF:** An Application by Manitoba Hydro to construct and operate an international power line, alter the Glenboro international power line and alter the Riel international power line

**AMENDED APPLICATION FOR AUTHORIZATIONS  
RELATED TO THE MANITOBA-MINNESOTA  
TRANSMISSION PROJECT**

**K. Jennifer Moroz**  
Barrister & Solicitor  
Law Division  
Manitoba Hydro  
22<sup>nd</sup> floor – 360 Portage Avenue  
WINNIPEG, Manitoba  
R3C 0G8

Telephone: 204-360-4539  
Facsimile: 204-360-6147

[kjmoroz@hydro.mb.ca](mailto:kjmoroz@hydro.mb.ca)

important part of its plans to diversify its resource portfolio and reduce carbon emissions from its existing coal fired generation.

## 7.2 Finance

### 7.2.1 Overview of Financial Strength and Ability to Attract Capital;

- a. **Financial Strength of Manitoba Hydro:** As stated, in section 3.1.3 of this Application, Manitoba Hydro is a Crown Corporation. However, Manitoba Hydro operates on a self-sustaining commercial basis independent of the Province of Manitoba, subject to its rates for domestic customers being regulated by the Public Utilities Board of Manitoba and all debt financing being raised either: (i) through debt issued by the Province of Manitoba and subsequently advanced to Manitoba Hydro, or (ii) on the credit of the Corporation, subject to Lieutenant Governor in Council approval. Manitoba Hydro maintains the financial strength to meet its corporate objectives and withstand the risks and uncertainties inherent in its operations through three key financial targets. These financial targets include a debt/equity ratio (achieving and maintaining a minimum debt/equity ratio of 75:25), an EBITDA interest coverage ratio (with a minimum target of 1.80) and a capital coverage ratio (maintaining a capital coverage ratio, excluding major new generation and related transmission, of greater than 1.20), although these financial targets need not be achieved during years of major generation and transmission system investment. For the most recent fiscal period ending March 31, 2016, Manitoba Hydro achieved an equity ratio of 17%, an EBITDA interest coverage ratio of 1.55 and a capital coverage ratio of 1.37. Manitoba Hydro's most recent annual report is provided at the link below.<sup>192</sup>
  
- b. **Ability to Attract Capital:** Manitoba Hydro is viewed by the Credit Rating Agencies as being able to meet its financial obligations without support from the tax-base of the Province of Manitoba. However, since Manitoba Hydro is a provincial Crown corporation, its financial strength is supplemented by receiving a flow through credit rating from its owner, the Province of Manitoba. The Province of Manitoba currently has a long-term credit rating of AA-2 by Standard and Poors, A (high) by DBRS, and Aa-2 by Moody's Investors Service. Manitoba Hydro's long-term debt is predominately provided through advances from the Province of Manitoba. Therefore, the Province of Manitoba's strong credit rating and capital market liquidity provide Manitoba Hydro with an exceptional ability to attract debt capital. Manitoba Hydro's financial strength and ability to attract capital is not expected to be affected by the borrowing requirements of the MMTP.

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<sup>192</sup> Manitoba Hydro, Working for You: Manitoba Hydro-Electric Board 65<sup>th</sup> Annual Report For the Year Ending March 31, 2016, July 29, 2016, online: [http://www.hydro.mb.ca/corporate/ar/pdf/annual\\_report\\_2015\\_16.pdf](http://www.hydro.mb.ca/corporate/ar/pdf/annual_report_2015_16.pdf).

# TAB 5



MANITOBA HYDRO  
2017/18 & 2018/19 GRA

EVIDENCE OF WILLIAM HARPER  
ECONALYSIS CONSULTING

PREPARED FOR THE  
“CONSUMERS COALITION”

JANUARY 17, 2018

# ECS EVIDENCE CONCLUSIONS

- KEY DRIVERS
  - DOMESTIC LOAD FORECAST – PARTICULARLY TOP CONSUMERS
  - EXPORT PRICES – PARTICULARLY AFTER KEYASK IN-SERVICE DATE
  - INTEREST RATE FORECASTS
  - OPERATING & ADMINISTRATIVE COST REDUCTIONS
  - CAPITAL SPENDING



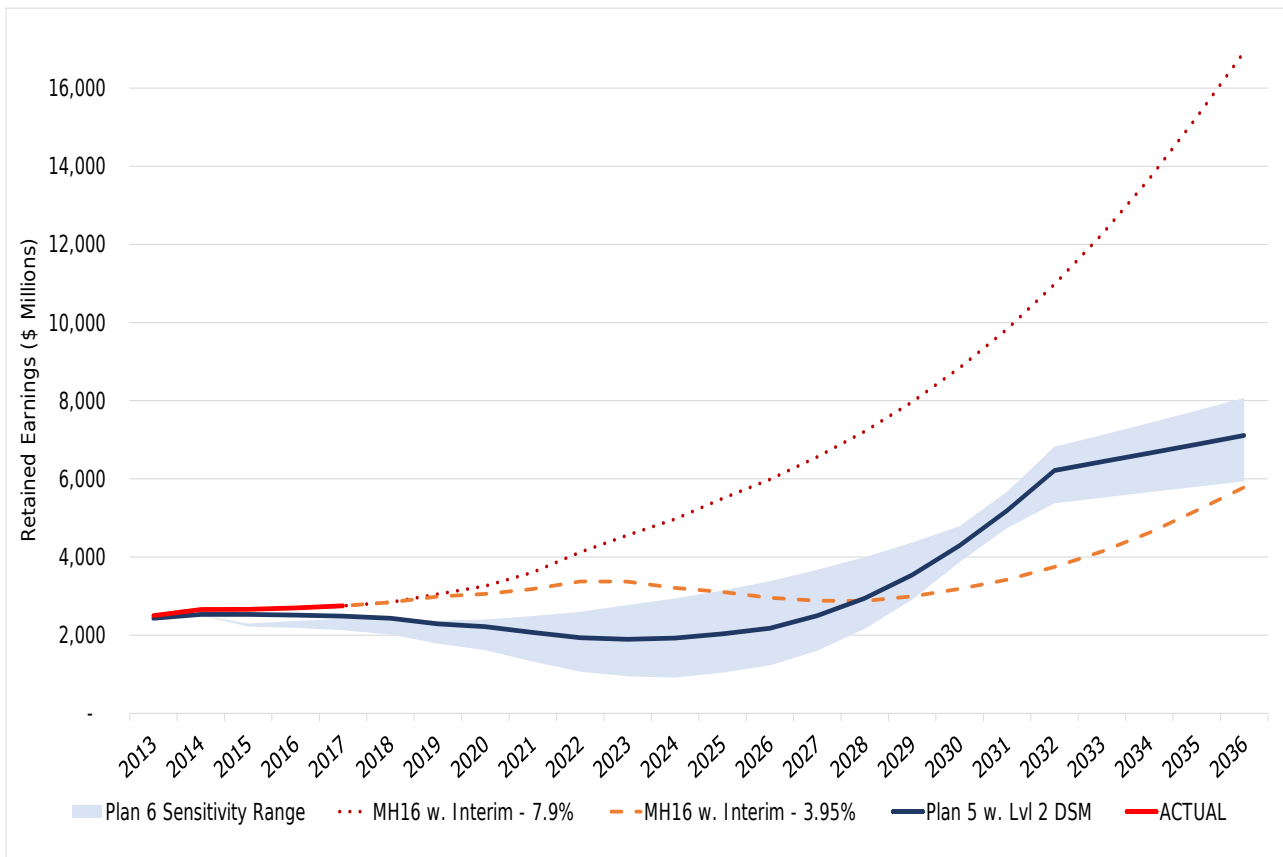
# TAB 6



# Direct Examination of Patrick Bowman, Cam Osler & Gerry Forrest

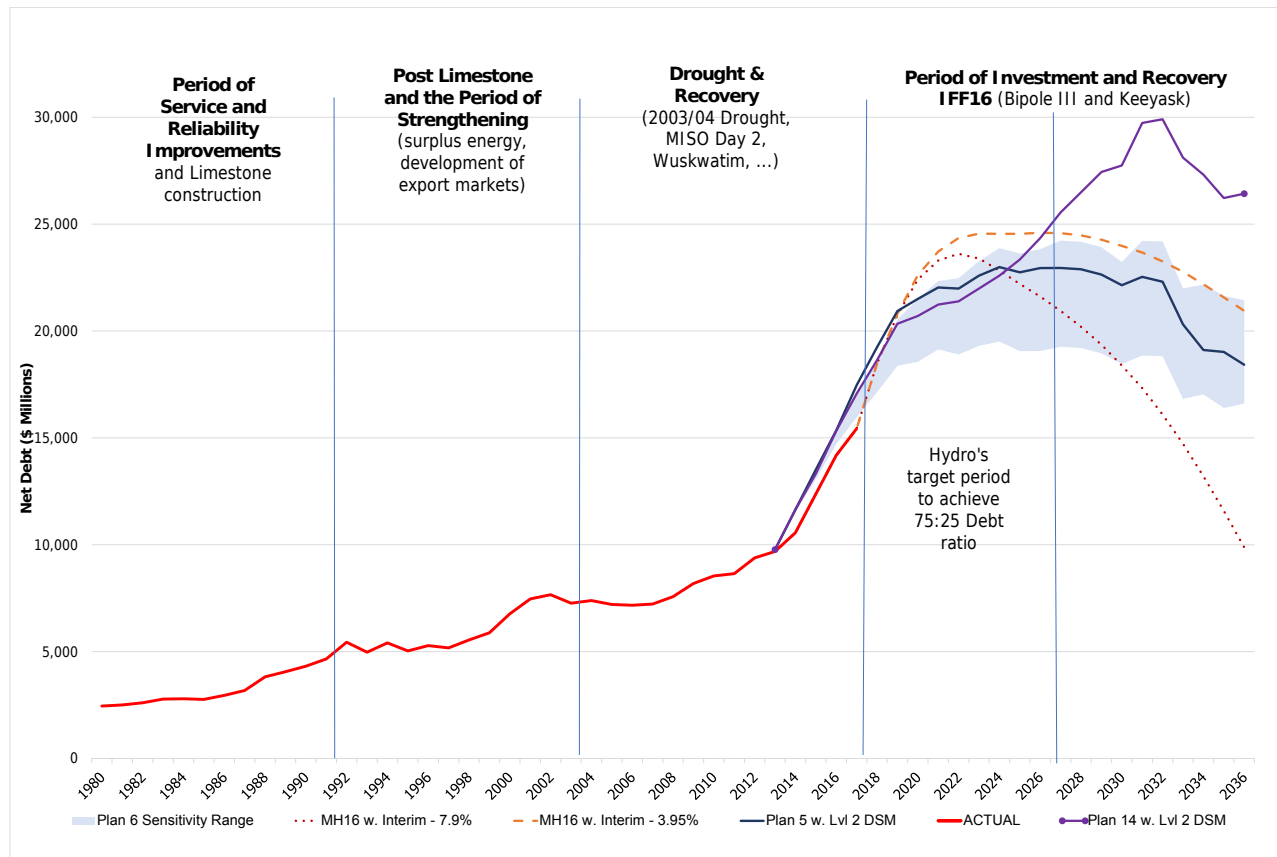
On behalf of the Manitoba Industrial Power Users Group (MIPUG)  
January 24, 2018

# Section 5.0 – the 3.95%/year scenarios as presented – how do they look (screening)? – Retained Earnings (MIPUG-13, pg. 5-6)



- ▶ Includes:
  - ▶ NFAT Plan 5/6 dark blue lines & blue shading
  - ▶ MH16 Update with Interim 3.95%/year increases - orange
  - ▶ MH16 Update with Interim 7.9%/year – red
- ▶ Retained earnings now significantly higher at minimum than NFAT scenario
- ▶ Delay of Keeyask evident in orange line versus NFAT (blue)
- ▶ Note: Hydro indicates red line may not be future path if 23% rate decreases are pursued in year 11.

# Section 5.0 – the 3.95%/year scenarios as presented – how do they look (screening)? – Maximum Debt (MIPUG-13, pg. 5-8)



- ▶ Note start of graph in 1980
- ▶ Includes:
  - ▶ NFAT Plan 5/6 dark blue lines plus shading
  - ▶ MH16 Update with 3.95%/year increases - orange
  - ▶ MH16 Update with Interim 7.9%/year – red
  - ▶ NFAT Plan 14 (Preferred Plan (purple))
- ▶ Net debt peaks higher than NFAT Plan 5/6, as expected
- ▶ Delay of Keeyask evident in orange line versus NFAT (blue)
- ▶ Note: Hydro indicates red line may not be future path if 23% rate decreases are pursued in year 11.



# TAB 7

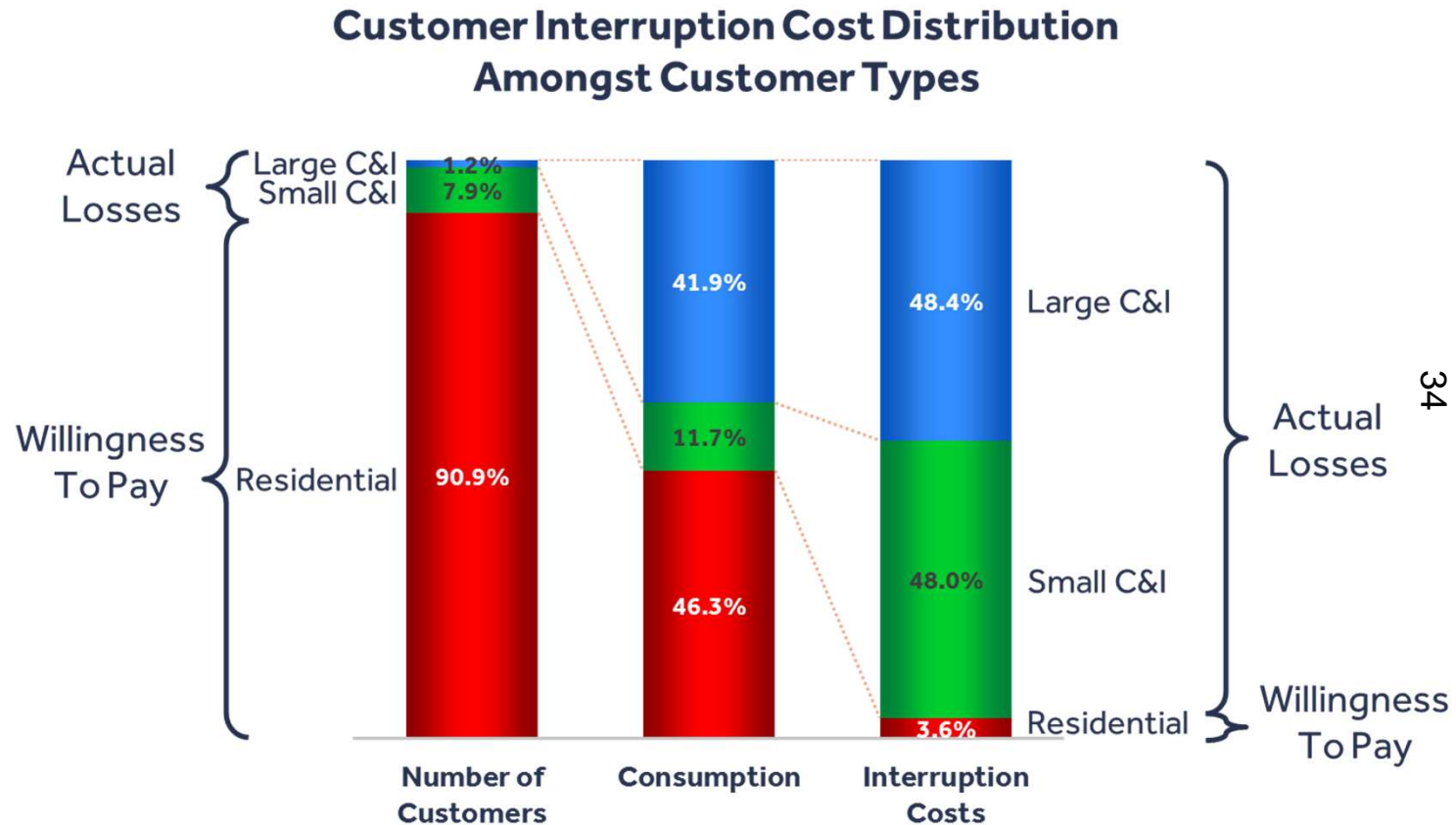






**.15** Measured at a system level, customer interruption costs are mostly driven by actual losses experienced by Small & Large C&I customers.

- Although residential customer interruption costs are typically derived using a “willingness to pay” approach, these costs represent a much smaller proportion of total interruption costs across the system.
- Costs for Small & Large C&I are derived from actual revenue losses, and account for a much larger proportion of total interruption costs measured across the entire system.



***C&I customers make up relatively small customer segments but bear a disproportionately large portion of economic consequences of outages.***

# TAB 8



162 FERC ¶ 61,012  
 UNITED STATES OF AMERICA  
 FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Kevin J. McIntyre, Chairman;  
 Cheryl A. LaFleur, Neil Chatterjee,  
 Robert F. Powelson, and Richard Glick.

Grid Reliability and Resilience Pricing

Docket Nos. RM18-1-000

Grid Resilience in Regional Transmission Organizations  
 and Independent System Operators

AD18-7-000

ORDER TERMINATING RULEMAKING PROCEEDING,  
 INITIATING NEW PROCEEDING,  
 AND ESTABLISHING ADDITIONAL PROCEDURES

(Issued January 8, 2018)

1. The Commission previously has taken steps with regard to reliability and other matters that have helped to address the resilience of the bulk power system. The Commission recognizes that we must remain vigilant with respect to resilience challenges, because affordable and reliable electricity is vital to the country's economic and national security. As explained below, we are terminating the proceeding we initiated in Docket No. RM18-1-000 to address the Proposed Rule on Grid Reliability and Resilience Pricing (Proposed Rule) submitted to the Commission by the Secretary of Energy.<sup>1</sup> Nonetheless, we appreciate the Secretary reinforcing the resilience of the bulk power system as an important issue that warrants further attention. To that end, we are initiating a new proceeding in Docket No. AD18-7-000 to specifically evaluate the resilience of the bulk power system in the regions operated by regional transmission organizations (RTO) and independent system operators (ISO). In this order, we direct each RTO and ISO to submit information to the Commission on certain resilience issues and concerns identified herein to enable us to examine holistically the resilience of the bulk power system. The resilience of the bulk power system will remain a priority of this Commission. We expect to review the additional material and promptly decide whether additional Commission action is warranted to address grid resilience.

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<sup>1</sup> *Grid Resiliency Pricing Rule*, 82 Fed. Reg. 46,940 (Oct. 10, 2017).

## I. Proposed Rule

2. On September 29, 2017, the Secretary submitted the Proposed Rule pursuant to section 403 of the Department of Energy (DOE) Organization Act. The Proposed Rule directed the Commission to consider requiring certain RTOs and ISOs to establish a tariff mechanism providing for: (1) the purchase of energy from an eligible “reliability and resilience resource;” and (2) the recovery of costs and a return on equity for such resources (i.e., a “resilience rate”). The Proposed Rule stated that eligible reliability and resilience resources must be: (1) located in an RTO/ISO with an energy and capacity market; (2) be able to provide essential reliability services;<sup>2</sup> and (3) have a 90-day fuel supply on-site.

3. As the basis for these requirements, the Proposed Rule cited: (1) significant retirements of baseload generation, particularly coal and nuclear resources; (2) the 2014 Polar Vortex, which the Proposed Rule states exposed problems with the resilience of the grid; and (3) a growing recognition that organized markets do not compensate resources for all of the attributes they contribute to the grid, including resilience.

4. The Secretary directed the Commission to consider and take final action on the Proposed Rule within 60 days of the date of publication in the Federal Register, or, alternatively, to issue the DOE’s proposed rule as an interim final rule immediately, with provision for later modification after consideration of public comments.

5. The Commission initiated Docket No. RM18-1-000 to consider the Proposed Rule. The Commission issued a Notice Inviting Comments on the Proposed Rule on October 2, 2017, with initial comments due on October 23, 2017, and reply comments due on November 7, 2017.<sup>3</sup> In addition, on October 4, 2017, the Director of the Commission’s Office of Energy Policy and Innovation issued a request for information seeking responses and comment on a number of specific questions raised by the Proposed Rule.<sup>4</sup> The Commission received extensive comments and reply comments in response to the Proposed Rule and the Staff Request for Information from a wide variety of interested stakeholders, including utilities, generators, federal and state legislators, state regulatory

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<sup>2</sup> The essential reliability services were to include, but not be limited to: voltage support, frequency services, operating reserves, and reactive power. Proposed Rule at 18.

<sup>3</sup> *Grid Reliability and Resilience Pricing*, Notice Inviting Comments (Oct. 2, 2017).

<sup>4</sup> *Grid Reliability and Resilience Pricing*, Staff Request for Information (Oct. 4, 2017).

agencies and state attorneys general, industrial customers, environmental organizations, mining companies, other industries, and individuals.

6. On December 7, 2017, the Chairman of the Commission proposed to the Secretary of Energy that a 30-day extension be granted to address the Proposed Rule. On December 8, 2017, the Secretary of Energy responded, granting the extension and thereby giving the Commission until January 10, 2018, to address the Proposed Rule.

## II. Discussion

### A. Background

#### 1. Evolution of the Electric Power Industry

7. To more fully understand the context in which the Proposed Rule was issued and the actions we are taking here, it is important to recount briefly the structural and operational origins and evolution of the electric power industry. Historically, vertically integrated utilities generally built and owned the generation, transmission, and distribution facilities needed to serve load within their respective defined service territories. Utilities constructed generation facilities that they determined were best suited to meet that load. Utility rates were historically regulated by federal and state regulators on a cost-of-service basis; the utilities charged for electric generation at rates calculated to compensate them for their actual costs plus a fair rate of return. In other words, during this early period, there was no market structure as we understand it in today's electric power industry.<sup>5</sup>

8. Beginning in the 1970s, statutory and regulatory developments at the federal and state level encouraged the development of competitive electricity markets, including encouraging the growth of non-utility generators.<sup>6</sup> In 1996, this Commission issued its

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<sup>5</sup> The Commission's Order No. 888, discussed below, recounts the historical landscape following enactment of the Federal Power Act (FPA) in 1935. *See Promoting Wholesale Competition Through Open Access Non-Discriminatory Transmission Services by Public Utilities; Recovery of Stranded Costs by Public Utilities and Transmitting Utilities*, Order No. 888, FERC Stats. & Regs. ¶ 31,036, at 31,639-31,645 (1996).

<sup>6</sup> For instance, the Public Utility Regulatory Policies Act of 1978 and the Energy Policy Act of 1992 helped spur competition in the electric power industry. Additionally, the Commission began authorizing entities to make electric power sales at market-based rates starting in the late 1980s. The market-based rate program continues to be a critical part of the Commission's electric regulatory responsibilities.

landmark Order No. 888,<sup>7</sup> which required public utility transmission providers to provide open access transmission service and developed principles for the concept of ISOs and RTOs, and in 1999 the Commission issued Order No. 2000,<sup>8</sup> which expressly encouraged the development of such regional entities with the intent of using such entities to foster competitive power markets. Meanwhile, starting in the 1990s, a number of states restructured their retail electricity markets to allow for more competition in the generation sector, which further contributed to development of bulk power markets and increased reliance on independent regional bodies for operation of the grid.

9. The traditional vertically integrated model was significantly affected by these developments, particularly in regions of the country where RTOs and ISOs manage the transmission grid. Notably, subject to Commission approval, RTOs/ISOs have developed organized markets for electric energy and ancillary services, and a number of them have also established centralized capacity markets. Thus, for more than two decades now, support for markets and market-based solutions has been a core tenet of Commission policy. A result of this approach has been that in regions with organized markets, the Commission has largely adopted a pro-market regulatory model, wherein the Commission relies on competition in approving market rules and procedures that, in turn, determine the prices for the energy, ancillary services, and capacity products (where applicable). Under this pro-competition, market-driven system, owners of generating facilities that are unable to remain economic in the market may take steps to retire or mothball their facilities.

10. A continually evolving phenomenon that has affected the development and evolution of electric markets is innovation in the energy sector and the change in the energy resource mix. As part of its ongoing oversight of wholesale electric markets, the Commission continues to evaluate its current rules and has issued several orders to ensure that our rates in our markets remain just and reasonable and not unduly discriminatory or

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<sup>7</sup> *Promoting Wholesale Competition Through Open Access Non-Discriminatory Transmission Services by Public Utilities; Recovery of Stranded Costs by Public Utilities and Transmitting Utilities*, Order No. 888, FERC Stats. & Regs. ¶ 31,036 (1996), *order on reh'g*, Order No. 888-A, FERC Stats. & Regs. ¶ 31,048, *order on reh'g*, Order No. 888-B, 81 FERC ¶ 61,248 (1997), *order on reh'g*, Order No. 888-C, 82 FERC ¶ 61,046 (1998), *aff'd in relevant part sub nom. Transmission Access Policy Study Group v. FERC*, 225 F.3d 667 (D.C. Cir. 2000), *aff'd sub nom. New York v. FERC*, 535 U.S. 1 (2002).

<sup>8</sup> *Regional Transmission Organizations*, Order No. 2000, FERC Stats. & Regs. ¶ 31,089 (1999), *order on reh'g*, Order No. 2000-A, FERC Stats. & Regs. ¶ 31,092 (2000), *aff'd sub nom. Pub. Util. Dist. No. 1 v. FERC*, 272 F.3d 607 (D.C. Cir. 2001).



preferential. For example, the Commission has acted to remove barriers to the integration and participation of variable energy<sup>9</sup> and demand response resources,<sup>10</sup> as well as revising or expanding compensation opportunities for various grid services, such as frequency regulation.<sup>11</sup>

11. The Commission's support of competitive wholesale electricity markets has been grounded in the substantial and well-documented economic benefits that these markets provide to consumers. In Order No. 890, for example, the Commission cited a DOE study that found that competition had reduced consumers' bills by billions of dollars a year, even as it found that additional savings could be achieved by removing congestion bottlenecks.<sup>12</sup> In Order No. 719, the Commission explained that effective wholesale competition protects consumers by "providing more supply options, encouraging new entry and innovation, spurring deployment of new technologies, promoting demand response and energy efficiency, improving operating performance, exerting downward pressure on costs, and shifting risk away from consumers."<sup>13</sup> At the same time, however, the Commission has continued to ensure that reliability is at the forefront of its responsibilities. The Commission's endorsement of markets does not conflict with its oversight of reliability, and the Commission has been able to focus on both without compromising its commitment to either.<sup>14</sup>

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<sup>9</sup> *Integration of Variable Energy Resources*, Order No. 764, FERC Stats. & Regs. ¶ 31,331 (cross-referenced at 139 FERC ¶ 61,246) (2012).

<sup>10</sup> *Demand Response Compensation in Organized Wholesale Energy Markets*, Order No. 745, FERC Stats. & Regs. 31,322 (cross-referenced at 134 FERC ¶ 61,187) (2011).

<sup>11</sup> *Frequency Regulation Compensation in the Organized Wholesale Power Markets*, Order No. 755, FERC Stats. & Regs. 31,324 (cross-referenced at 137 FERC ¶ 61,064) (2011).

<sup>12</sup> *Preventing Undue Discrimination and Preference in Transmission Service*, Order No. 890, FERC Stats. & Regs. ¶ 31,241, at P 60 (2007) (citing DOE, National Transmission Grid Study (May 2002)).

<sup>13</sup> *Wholesale Competition in Regions with Organized Electric Markets*, Order No. 719, FERC Stats. & Regs. ¶ 31,281, at P 1 (2008).

<sup>14</sup> For example, the Commission has held that out-of-market actions may be warranted in certain instances to address demonstrated reliability concerns. The Commission has approved these actions, however, on a limited basis, only as a last resort, and only after there has been a specific showing of an immediate reliability need. *See*,

2. **The Commission's Efforts to Help Ensure Bulk Power System Resilience**

12. The Commission has taken action to address reliability and other issues with regard to the bulk power system that have helped with the bulk power system's resilience, even though we may not have used that particular term. For example, in response to the increasing use of natural gas for electric generation, the Commission conducted a multi-year effort to evaluate the coordination of wholesale natural gas and electricity market scheduling, resulting in significant improvements to those scheduling and coordination processes.<sup>15</sup> The Commission has also specifically examined the grid's response to the events of the 2014 Polar Vortex,<sup>16</sup> and how each RTO/ISO addresses fuel assurance.<sup>17</sup> Critically, the Commission has also approved significant capacity market reforms in ISO New England, Inc. (ISO-NE) and PJM Interconnection, L.L.C. (PJM) that are designed to bolster performance from capacity resources and to help address fuel supply issues during periods of system stress.<sup>18</sup> Those market reforms created financial

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*e.g.*, *New York Independent System Operator, Inc.*, 150 FERC ¶ 61,116, at P 11 (2015) (“This last requirement reflects our belief that RMR filings should be made only to temporarily address the need to retain certain generation until more permanent solutions are in place and that all alternatives should be considered to ensure that designating a generator for RMR service is a last resort option for meeting immediate reliability needs”). *See also Cal Indep. Sys. Operator Corp.*, 87 FERC ¶ 61,250, at 61,968 (1999) (approving partial settlement concerning RMR agreements and stating that the Commission “in its promotion of efficient competitive markets, wishes to ensure that RMR operations under the settlement do not result in any unforeseen market distortions.”).

<sup>15</sup> *See Coordination of the Scheduling Processes of Interstate Natural Gas Pipelines and Public Utilities*, Order No. 809, FERC Stats. & Regs. ¶31,368 (cross-referenced at 151 FERC ¶ 61,049) (2015).

<sup>16</sup> *Centralized Capacity Markets in Regional Transmission Organizations and Independent System Operators*, 149 FERC ¶ 61,145 (2014) (order addressing technical conferences on, among other things, the 2014 Polar Vortex).

<sup>17</sup> *Id.*

<sup>18</sup> *See ISO New England Inc. and New England Power Pool*, 147 FERC ¶ 61,172 (2014), *reh'g denied*, 153 FERC ¶ 61,223 (2015), *appeal pending sub nom. New England Power Generators Ass'n v. FERC*, No. 16-1023 (D.C. Cir. filed Jan. 19, 2016). *See also*

incentives to enhance reliability during extreme operating conditions. While none of the Commission's efforts described above were specifically targeted at "resilience" by name, they were directed at elements of resilience, in that they sought to ensure the uninterrupted supply of electricity in the face of fuel disruptions or extreme weather threats. Further, the Commission has conducted significant work to address bulk power system reliability through the North American Electric Reliability Corporation (NERC) reliability standards, including its continued work on Critical Infrastructure Protection standards to protect the system against cybersecurity and physical security threats,<sup>19</sup> as well as geomagnetic disturbances.<sup>20</sup>

13. Notwithstanding these and other Commission efforts to address the resilience of the bulk power system, we conclude that resilience remains an important issue that warrants the Commission's continued attention, including through the development of a clear understanding of what each RTO/ISO currently does with respect to the assurance or strengthening of resilience and what more the RTOs/ISOs and the Commission could be doing on this issue. Accordingly, although we terminate the Proposed Rule proceeding as discussed below, we are not ending our work on the issue of resilience. To the contrary, we are initiating a new proceeding to address resilience in a broader context and are directing the RTOs/ISOs to provide information – followed by an opportunity for comment by any other interested entity – that will inform us as to whether additional actions by the Commission and the ISOs/RTOs are warranted with regard to resilience issues.

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*PJM Interconnection, L.L.C.*, 151 FERC ¶ 61,208 (2015), *reh'g denied*, 155 FERC ¶ 61,157 (2016), *aff'd sub nom. Advanced Energy Mgmt. All. v. FERC*, 860 F.3d 656 (D.C. Cir. 2017).

<sup>19</sup> See *Physical Security Reliability Standard*, Order No. 802, 149 FERC ¶ 61,140 (2014); *Revised Critical Infrastructure Protection Reliability Standards*, Order No. 822, 154 FERC ¶ 61,037 (2016), *reh'g denied*, Order No. 822-A, 156 FERC ¶ 61,052 (2016); *Revised Critical Infrastructure Protection Reliability Standards*, Order No. 829, 156 FERC ¶ 61,050 (2016); *Cyber Systems in Control Centers*, Notice of Inquiry, FERC Stats. & Regs. ¶ 35,557 (2016); *Revised Critical Infrastructure Protection Reliability Standards CIP-003-7 – Cyber Security – Security Management Controls*, Notice of Proposed Rulemaking, 161 FERC ¶ 61,047 (2017).

<sup>20</sup> See *Reliability Standard for Transmission System Planned Performance for Geomagnetic Disturbance Events*, Order No. 830, 156 FERC ¶ 61,215 (2016).

**B. Termination of Docket No. RM18-1-000**

14. Having considered the Proposed Rule and the comments received in Docket No. RM18-1-000, we terminate the proceeding in Docket No. RM18-1-000. The FPA is clear: in order to require RTOs/ISOs to implement tariff changes as contemplated by the Proposed Rule, there must be a demonstration that the specific statutory standards of section 206 of the FPA are satisfied. Thus, there must first be a showing that the existing RTO/ISO tariffs are unjust, unreasonable, unduly discriminatory or preferential.<sup>21</sup> Then, any remedy proposed under FPA section 206 must be shown to be just, reasonable, and not unduly discriminatory or preferential.<sup>22</sup> For the reasons discussed below, the Proposed Rule did not satisfy those clear and fundamental legal requirements under section 206 of the FPA. Given those legal requirements, we have no choice but to terminate Docket No. RM18-1-000.

15. Neither the Proposed Rule nor the record in this proceeding has satisfied the threshold statutory requirement of demonstrating that the RTO/ISO tariffs are unjust and unreasonable. While some commenters allege grid resilience or reliability issues due to potential retirements of particular resources,<sup>23</sup> we find that these assertions do not demonstrate the unjustness or unreasonableness of the existing RTO/ISO tariffs. In addition, the extensive comments submitted by the RTOs/ISOs do not point to any past or planned generator retirements that may be a threat to grid resilience.<sup>24</sup> We also disagree

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<sup>21</sup> 16 U.S.C. § 824e(a) (2012). *See also, e.g., Emera Maine v. FERC*, 854 F.3d 9, 25 (D.C. Cir. 2017) (“Without a showing that the existing rate is unlawful, FERC has no authority to impose a new rate.”); *FirstEnergy Serv. Co. v. FERC*, 758 F.3d 346, 353 (D.C. Cir. 2014) (“Regardless of whether it is charged with completing step two, proposing new just and reasonable rates, [petitioner] still must complete step one, demonstrating that PJM’s existing rates are unjust and unreasonable.”).

<sup>22</sup> 16 U.S.C. § 824e(a) (2012).

<sup>23</sup> *See, e.g.,* PSEG Companies Initial Comments at 5-6; Exelon Corporation Initial Comments at 1, 25-26; FirstEnergy Service Company and its named affiliates (FirstEnergy) Initial Comments at 32-34.

<sup>24</sup> *See* New York Independent System Operator, Inc. Initial Comments at 4-5; PJM Initial Comments at 15; ISO-NE Initial Comments at 1-3; Midcontinent Independent System Operator, Inc. (MISO) Initial Comments at 5-11.

with assertions that an adequate record exists through the Commission's price formation efforts to support the Proposed Rule's action regarding bulk power system resilience.<sup>25</sup>

16. Turning to the second prong of the section 206 analysis, we note that the Proposed Rule would allow all eligible resources to receive a cost-of-service rate regardless of need or cost to the system.<sup>26</sup> The record, however, does not demonstrate that such an outcome would be just and reasonable.<sup>27</sup> It also has not been shown that the remedy in the Proposed Rule would not be unduly discriminatory or preferential.<sup>28</sup> For example, the Proposed Rule's on-site 90-day fuel supply requirement would appear to permit only

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<sup>25</sup> The goals of the price formation proceeding center largely on facilitating competition and ensuring that market prices reflect the marginal cost of production so that prices accurately reflect system conditions and operational constraints. *See Price Formation in Energy and Ancillary Services Markets Operated by Regional Transmission Organizations and Independent System Operators*, Notice Inviting Post-Technical Workshop Comments, Docket No. AD14-14-000, at 1 (Jan. 16, 2015) (Notice Inviting Comments); *Price Formation in Energy and Ancillary Services Markets Operated by Regional Transmission Organizations and Independent System Operators*, Notice, Docket No. AD14-14-000 (June 19, 2014) (Price Formation Notice). Thus, that proceeding does not include even an attempted nexus to bulk power system resilience, whereas in the Proposed Rule and in the proceeding we are newly establishing here, the resilience of the bulk power system is the principal focus. In addition, there is no evidence in other Commission proceedings indicating that any RTO/ISO tariffs are unjust and unreasonable because they do not adequately account for resilience.

<sup>26</sup> As noted above, the Commission typically has approved as just and reasonable cost-of-service rates through out-of-market arrangements in very limited circumstances and when there is a demonstrated reliability need. *See* note 14, *supra*.

<sup>27</sup> For example, the Proposed Rule proposes that RTOs/ISOs pay a cost-of-service rate to a resource that has a 90-day fuel supply on site to enable it to operate during an emergency, extreme weather conditions, or a natural or man-made disaster. However, neither the Proposed Rule nor the record demonstrate why the existence of an on-site 90-day fuel supply is a reasonable basis to find that rate to be just and reasonable and not unduly discriminatory or preferential. In addition, the Proposed Rule does not address the concern that an eligible resource located in a constrained area may not assist with the resilience of the bulk power system to warrant that rate.

<sup>28</sup> To be clear, notwithstanding our ruling under section 206 with regard to the Proposed Rule, if an RTO/ISO were to identify a specific threat to the resilience of its system, we would promptly consider an appropriate proposal from the RTO/ISO to address the issue.

certain resources to be eligible for the rate, thereby excluding other resources that may have resilience attributes.

**C. Initiating a New Proceeding and Establishing Additional Procedures on Resilience**

17. Even though we are terminating Docket No. RM18-1-000, the Commission concluded that it must remain vigilant with respect to resilience challenges. Although the Proposed Rule failed to satisfy the fundamental legal requirements of section 206 of the FPA, the Proposed Rule and the record developed to date have shed additional light on resilience more generally and on the need for further examination by the Commission and market participants of the risks that the bulk power system faces and possible ways to address those risks in the changing electric markets. As the DOE Grid Study documented, we have seen a variety of economic, environmental, and policy drivers that are changing the way electricity is procured and used.<sup>29</sup> These changes present new opportunities and challenges regarding the reliability, affordability, and environmental profile of each region's electric system. These changes may impact the resilience of the bulk power system. As we navigate these changes, the Commission's markets, transmission planning rules, and reliability standards should evolve as needed to address the bulk power system's continued reliability and resilience.<sup>30</sup>

18. Therefore, we are initiating a new proceeding, Docket No. AD18-7-000, to take additional steps to explore resilience issues in the RTOs/ISOs. The goal of this proceeding is: (1) to develop a common understanding among the Commission, industry, and others of what resilience of the bulk power system means and requires; (2) to understand how each RTO and ISO assesses resilience in its geographic footprint; and (3) to use this information to evaluate whether additional Commission action regarding resilience is appropriate at this time. This examination of the resilience of the bulk power system will be a priority of the Commission. Therefore, as described below, we direct each RTO and ISO to submit specific information regarding the resilience of its respective region within 60 days.

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<sup>29</sup> *Staff Report to the Secretary on Electricity Markets and Reliability*, United States Department of Energy (Aug. 2017), available at [https://energy.gov/sites/prod/files/2017/08/f36/Staff%20Report%20on%20Electricity%20Markets%20and%20Reliability\\_0.pdf](https://energy.gov/sites/prod/files/2017/08/f36/Staff%20Report%20on%20Electricity%20Markets%20and%20Reliability_0.pdf).

<sup>30</sup> On December 14, 2017, NERC issued its 2017 Long-term Reliability Assessment. That assessment reinforces the continuing need for the Commission to be vigilant and to make the resilience of the bulk power system a priority of the Commission.

19. We recognize that the RTOs/ISOs are well-suited to understand the needs of their respective regions and initially assess how to address resilience given their individual geographic needs. Although the Proposed Rule focuses on one possible aspect of grid resilience – secure onsite fuel – we conclude that a proper evaluation of grid resilience should not be limited to that single issue, and should instead encompass a broader consideration of resilience issues, including wholesale electric market rules, planning and coordination, and NERC standards. Indeed, the efforts of RTOs and ISOs on grid resilience encompass a range of activities, including wholesale electric market design, transmission planning, mandatory reliability standards, emergency action plan development, inventory management, and routine system maintenance. However, many of these activities are not unique to RTOs/ISOs and are performed by transmission providers in areas that do not have centralized wholesale electricity markets. Similarly, NERC and the regional entities tasked with implementation of mandatory reliability standards have a critical role to play in this area. Although hearing from the RTOs/ISOs on this topic is an appropriate place to begin, we will provide interested entities an opportunity to submit reply comments on the RTO/ISO submissions within 30 days of the due date of those submissions.<sup>31</sup>

20. We anticipate that the RTO/ISO submissions will explain how they currently address resilience of the bulk power system within their footprints, and will highlight any specific or unique resilience challenges faced by the regions. The submissions also will give the RTOs/ISOs the opportunity to discuss potential paths forward for addressing any identified gaps or exposure on the resilience of the bulk power system.

### 1. A Common Understanding of Resilience

21. In order to appropriately study the resilience of the bulk power system in the RTO/ISO regions, we think it is appropriate to first achieve a common understanding of what resilience is in the context of the bulk power system.

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<sup>31</sup> Our focus on the RTOs/ISOs should not be understood to mean that we believe that those systems are less resilient than non-RTO/ISO regions. Rather, we conclude that a targeted proceeding focused on those regions is a prudent next step in our consideration of resilience of the bulk power system. We also note that the concept of resilience necessarily involves issues, topics, and questions that extend beyond the Commission's jurisdiction, such as distribution system reliability and modernization. The Commission encourages RTOs/ISOs and other interested entities to engage with state regulators and other stakeholders through Regional State Committees or other venues to address resilience at the distribution level.

22. According to comments on the Proposed Rule, there seems to be a general consensus that grid reliability and grid resilience are related but separate concepts, with the elements of grid reliability being better understood and defined. It also is evident that there is currently no uniform definition of resilience used across the electric industry. For example, the Proposed Rule states that certain natural and man-made disasters threaten the resilience of the grid, but does not set forth a clear definition for resilience. Commenters have cited various definitions of resilience, including from the National Infrastructure Advisory Council,<sup>32</sup> the National Academy of Sciences,<sup>33</sup> Argonne National Laboratory,<sup>34</sup> PJM,<sup>35</sup> and Presidential Policy Directive 21.<sup>36</sup> The Commission notes that commenters generally defined resilience similarly (i.e., as the ability of the bulk power system to withstand or recover from disruptive events).<sup>37</sup>

23. To help guide consideration of issues related to resilience of the bulk power system, the Commission understands resilience to mean:

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<sup>32</sup> National Infrastructure Advisory Council, *A Framework for Establishing Critical Infrastructure Resilience Goals: Final Report and Recommendations by the Council* at 15 (Oct. 2010).

<sup>33</sup> National Academy of Sciences, *Enhancing the Resilience of the Nation's Electricity System*, Washington, DC: National Academies Press (Sept. 2017), available at <https://www.nap.edu/catalog/24836/enhancing-the-resilience-of-the-nations-electricity-system>.

<sup>34</sup> Department of Energy, Argonne National Laboratory, *Front-Line Resilience Perspectives: The Electric Grid*, Executive Summary at xiii (Nov. 2016), available at <https://energy.gov/sites/prod/files/2017/01/f34/Front-Line%20Resilience%20Perspectives%20The%20Electric%20Grid.pdf>.

<sup>35</sup> PJM Interconnection, L.L.C., *PJM's Evolving Resource Mix and System Reliability* n.16 (March 30, 2017), available at <http://www.pjm.com/~media/library/reports-notice/special-reports/20170330-pjms-evolving-resource-mix-and-system-reliability.ashx>.

<sup>36</sup> Michael Moore, Independent Consultant, Comments at 2; Nuclear Energy Institute Comments at 19 (citing Nat'l Archives, Archived Obama White House Website, Presidential Policy Directive 21: Critical Infrastructure Security and Resilience (PPD-21) (Feb. 12, 2013)).

<sup>37</sup> See, e.g., Comments of Utility Workers Union of America, AFL-CIO (UWUA) at 5-6 (citing *PJM's Evolving Resource Mix and System Reliability*); FirstEnergy Initial Comments at 17.



The ability to withstand and reduce the magnitude and/or duration of disruptive events, which includes the capability to anticipate, absorb, adapt to, and/or rapidly recover from such an event.<sup>38</sup>

We seek comment from the RTOs and ISOs on our understanding of resilience as described above. We also ask for comments on whether any of the terms used above require further elaboration to ensure a common understanding (e.g., identification of the particular types of disruptive events).

24. Resilience could encompass a range of attributes, characteristics, and services that allow the grid to withstand, adapt to, and recover from both naturally occurring and man-made disruptive events. At the most basic level, ensuring resilience requires that we both (1) determine which risks to the grid we are going to protect against, and (2) identify the steps, if any, needed to ensure those risks are addressed.

## 2. How RTOs/ISOs Assess Threats to Resilience

25. Next, the Commission seeks comment on how each RTO/ISO currently evaluates the resilience of its system. The Commission recognizes regional differences among the RTOs/ISOs, and appreciates that those differences likely impact how each RTO/ISO approaches resilience in its region. The Commission directs the RTOs/ISOs to address the following questions on this issue and, as needed, to highlight any unique resilience challenges that exist in their respective regions.<sup>39</sup>

- (a) What are the primary risks to resilience in your region from both naturally occurring and man-made threats? How do you identify them? Are they short-, mid-, or long-term challenges?
- (b) How do you assess the impact and likelihood of resilience risks?
- (c) Please explain how you identify and plan for risks associated with high-impact, low-frequency events (e.g., physical and cyber attacks, accidents, extended fuel supply disruptions, or extreme weather events). Please discuss the challenges you face in trying to assess the impact and likelihood of high-impact, low-frequency risks. In addition, please describe what additional information, if any, would be helpful in assessing the impact and likelihood of such risks.

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<sup>38</sup> Generally based on the National Infrastructure Advisory Council's *Critical Infrastructure Resilience Final Report and Recommendations* at 8 (Sept. 8, 2009).

<sup>39</sup> The RTOs/ISOs should not include Critical Energy/Electric Infrastructure Information (CEII) in their submissions.

(d) Should each RTO/ISO be required to identify resilience needs by assessing its portfolio of resources against contingencies that could result in the loss or unavailability of key infrastructure and systems? For example, should RTOs/ISOs identify as a resilience threat the potential for multiple outages that are correlated with each other, such as if a group of generators share a common mode of failure (e.g., a correlated generator outage event, such as a wide-scale disruption to fuel supply that could result in outages of a greater number of generating facilities)? The RTOs/ISOs should also discuss resilience threats other than through a correlated outage approach. Do RTOs/ISOs currently consider these types of possibilities, and if so, how is this information used?

(e) Identify any studies that have been conducted, are currently in progress, or are planned to be performed in the future to identify the ability of the bulk power system to withstand a high-impact, low-frequency event (e.g., physical and cyber-attacks, accidents, extended fuel supply disruptions, or extreme weather events). Please describe whether any such studies are conducted as part of a periodic review process or conducted on an as-needed basis.<sup>40</sup>

(f) In these studies, what specific events and contingencies are selected, modeled, and assessed? How are these events and contingencies selected?

(g) What criteria (e.g., load loss (MW)), duration of load loss, vulnerability of generator outages, duration of generator outages, etc.) are used in these studies to determine if the bulk power system will reasonably be able to withstand a high-impact, low-frequency event? Are the studies based on probabilistic analyses or deterministic analyses?

(h) Do any studies that you have conducted indicate whether the bulk power system is able to reasonably withstand a high-impact, low frequency event? If so, please describe any actions you have taken or are planning as mitigation, and whether additional actions are needed.

(i) How do you determine whether the threats from severe disturbances, such as those from low probability, high impact events require mitigation? Please describe any approaches or criteria you currently use or otherwise believe are useful in determining whether certain threats require mitigation.

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<sup>40</sup> The Commission is not directing that these studies be included in the RTO/ISO submissions filed in response to this order. Instead, the RTOs/ISOs are required to identify and describe such studies in their submissions.

- (j) How do you evaluate whether further steps are needed to ensure that the system is capable of withstanding or reducing the magnitude of these high-impact, low frequency events?
- (k) What attributes of the bulk power system contribute to resilience? How do you evaluate whether specific components of the bulk power system contribute to system resilience? What component-level characteristic, such as useful life or emergency ratings, support resilience at the system level?
- (l) If applicable, how do you determine the quantity and type of bulk power system physical asset attributes needed to support resilience? Please include, if applicable, what engineering and design requirements, and equipment standards you currently have in place to support resilience? Are those engineering and design requirements designed to address high-impact, low-frequency events? Do these requirements change by location or other factors?
- (m) To what extent do you consider whether specific challenges to resilience, such as extreme weather, drought, and physical or cyber threats, affect various generation technologies differently? If applicable, please explain how the different generation technologies used in your system perform in the face of these challenges.
- (n) To what extent are the challenges to the resilience of the bulk power system associated with the transmission system or distribution systems, rather than electric generation, and what could be done to further protect the transmission system from these challenges?
- (o) Over what time horizon should the resilience assessments discussed above be conducted, and how frequently should RTOs/ISOs conduct such an analysis? How could these studies inform planning or operations?
- (p) How do you coordinate with other RTOs/ISOs, Planning Coordinators, and other relevant stakeholders to identify potential resilience threats and mitigation needs?
- (q) Are there obstacles to obtaining the information necessary to assess threats to resilience? Is there a role for the Commission in addressing those obstacles?
- (r) Have you performed after-the-fact analyses of any high-impact, low-frequency events experienced in the past on your system? If so, please describe any recommendations in your analyses and whether they have or have not been implemented.

- (s) Please provide any other information that you believe the Commission would find helpful in its evaluation of the resilience of the RTO/ISO systems.

### 3. How RTOs/ISOs Mitigate Threats to Resilience

26. Once an RTO/ISO identifies a particular need or threat to resilience, there could be various ways to mitigate such risk. For example, RTO and ISO resource adequacy programs require reserve margins necessary to ensure adequate generation capacity to meet peak load conditions throughout the year. Further, RTO and ISO day-ahead and real-time markets generally secure and operate the transmission system assuming the loss of the largest vulnerable element at any given time. RTOs/ISOs may take additional actions to address concerns beyond the largest vulnerable element, such as procuring additional operating reserves. In 2014, for example, PJM implemented shortage pricing for operating reserves procured to respond to risks that could reasonably materialize and for which PJM's normal reserve procurement processes would not otherwise account.<sup>41</sup> Further, all RTOs/ISOs have a residual unit commitment process to address regionally identified reliability considerations.<sup>42</sup> Finally, resources that provide ancillary services, such as those with black-start capability, help ensure recovery from power-loss events without the need for auxiliary power from the grid.

27. In the submissions, we seek comment on how RTOs/ISOs evaluate options to mitigate any risks to grid resilience. We direct the RTOs/ISOs to answer the following questions on this topic:

- (a) Describe any existing operational policies or procedures you have in place to address specific identified threats to bulk power system resilience within your region. Identify each resilience threat (e.g., the potential for correlated generator outage events) and any operational policies and procedures to address the threat. Describe how these policies or procedures were developed in order to ensure their effectiveness in mitigating the identified risks and also describe any historical circumstances where you implemented these policies or procedures.
- (b) How do existing market-based mechanisms (e.g., capacity markets, scarcity pricing, or ancillary services) currently address these risks and support resilience?

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<sup>41</sup> *PJM Interconnection, L.L.C.*, 151 FERC ¶ 61,017 (2014).

<sup>42</sup> *Staff Analysis of Operator-Initiated Commitments in RTO and ISO Markets*, Docket No. AD14-14-000 at 10-14 (Dec. 2014), available at <https://www.ferc.gov/legal/staff-reports/2014/AD14-14-operator-actions.pdf>.

- (c) Are there other generation or transmission services that support resilience? If yes, please describe the service, how it supports resilience, and how it is procured.
- (d) How do existing operating procedures, reliability standards (e.g., N-1 NERC TPL contingencies), and RTO/ISO planning processes (e.g., resource adequacy programs or regional transmission planning) currently consider and address resilience?
- (e) Are there any market-based constructs, operating procedures, NERC reliability standards, or planning processes that should be modified to better address resilience? If so, please describe the potential modifications.

#### **D. Conclusion**

28. Promoting the resilience of the bulk power system is an important issue for the Commission. Each RTO/ISO should take a proactive stance on addressing and ensuring resilience. We are encouraged by efforts underway in PJM<sup>43</sup> and ISO-NE<sup>44</sup> to better understand vulnerabilities in their systems, and support similar efforts in other regions where analyses of potential resilience issues could be helpful. We also are encouraged by the ongoing work in MISO<sup>45</sup> to develop a long-term plan to address changing system needs in light of an evolving resource mix. At the heart of each of these initiatives is collaboration between RTOs/ISOs and their stakeholders, and we look forward to receiving stakeholder input on the submissions. As noted above, the topic of the new proceeding - resilience of the bulk power system - will remain a priority of the Commission and we expect to review the additional material and promptly decide whether additional Commission action on this issue is warranted.

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<sup>43</sup> See *PJM's Evolving Resource Mix and System Reliability* *supra* note 35.

<sup>44</sup> See ISO-NE Initial Comments at 7 (“[T]he ISO has an upcoming process planned to quantify risks related to fuel security.”).

<sup>45</sup> See MISO Initial Comments at 8 (“MISO values discrete reliability attributes for generation resources through proven market-based mechanisms and continues to work with stakeholders on further market-based reliability improvements. Through its Market Roadmap, MISO is exploring several such initiatives...”).

The Commission orders:

(A) The RTOs/ISOs are hereby directed to provide responses to the Commission, as discussed in the body of this order, within 60 days of the date of this order. Interested entities may submit reply comments within 30 days of the due date of the RTO/ISO submissions.

(B) The proceeding in Docket No. RM18-1-000 is hereby terminated, as discussed in the body of this order.

By the Commission. Commissioners LaFleur, Chatterjee, and Glick are concurring with separate statements attached.

( S E A L )

Kimberly D. Bose,  
Secretary.



change and progress. We have moved from reliance on wood and local waterworks in the 19<sup>th</sup> century to the development of coal-fired steam generators and large-scale hydro in the first half of the 20<sup>th</sup> century. The mid-20<sup>th</sup> century saw the commercialization of nuclear generation, followed later in the century by the large-scale introduction of combined cycle gas generation and early-stage non-hydro renewables.

None of these changes in where the nation gets its energy were driven by this Commission or its predecessors. However, the Commission has played a role in adapting to technological change, ensuring that rates remained just and reasonable and customers were served reliably through successive generations and technological changes. Thus, in the late 20<sup>th</sup> century, responding to customer demands for access to new technologies and new generation choices, FERC oversaw the introduction of competitive wholesale power markets, which have continued to spread over the past 20 years to cover more than two-thirds of the nation's population. I am a strong supporter of competitive markets, which benefit customers by reducing costs, improving efficiency and innovation, and strengthening reliability by deploying resources over a broader footprint.

In the 21<sup>st</sup> century, against the backdrop of wholesale markets, the pace of technological change in energy has accelerated, resulting in a rapid transformation of the nation's resource mix. This has been driven by (1) the growth in the availability and affordability of domestic natural gas and its increased use for electric generation, (2) the rapid development and deployment of wind, solar, storage, and demand-side technologies, both central and distributed, and (3) a changing understanding of the environmental consequences of energy use, especially climate change, driving state and federal policy and customer choices.

With these new technologies have come changes in the location and operation of energy resources, their cost patterns, and the way grid operators plan their systems and deploy resources to keep the lights on. As with all transitions, there have been market winners and losers as new technologies have brought competitive pressures to bear on existing resources. Resource turnover is a natural consequence of markets, and the reduced prices that result from greater competition are a benefit to customers, not a problem to solve, unless reliability is compromised. Keeping up with these changes by ensuring that market tariffs and reliability standards sustain both reliability and just and reasonable rates in a time of changing resources has been a major focus of the Commission, and must continue to be.

As the recent Department of Energy grid study<sup>3</sup> and numerous analyses by

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<sup>3</sup> *Staff Report to the Secretary on Electricity Markets and Reliability*, United States Department of Energy (August 2017), available at <https://energy.gov/sites/prod/files/2017/08/f36/Staff%20Report%20on%20Electricity%2>



NERC<sup>4</sup> have noted, the transformation of the resource mix to date has been accomplished without compromising reliability.<sup>5</sup> However, ensuring that this continues to be the case requires continued diligence, and the inquiry we begin in this docket will support that ongoing effort.

Where the Commission has seen evidence of the need for greater system resilience in a changing resource mix, it has acted to ensure that such resilience was provided. It has generally done so by overseeing changes to market design (defining needed resource performance, and using competition to obtain it),<sup>6</sup> interconnection agreements or other tariffs (requiring that certain essential reliability services be provided),<sup>7</sup> or mandatory reliability standards.<sup>8</sup> In each case, the Commission has recognized a customer need,

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<sup>4</sup> *E.g.*, *2017 Long-term Reliability Assessment*, North American Electric Reliability Corporation (December 2017), available at [http://www.nerc.com/pa/RAPA/ra/Reliability%20Assessments%20DL/NERC\\_LTRA\\_12132017\\_Final.pdf](http://www.nerc.com/pa/RAPA/ra/Reliability%20Assessments%20DL/NERC_LTRA_12132017_Final.pdf).

<sup>5</sup> Indeed, as Commissioner Glick correctly notes in his concurrence, new resource additions have in some ways strengthened the resilience of the power system. For example, notwithstanding alleged concerns by some about the loss of fuel diversity, the resource mix in many regions of the country (such as that served by PJM Interconnection, L.L.C.) is more diverse than ever before as new technologies and resources are introduced.

<sup>6</sup> *E.g.*, *PJM Interconnection, L.L.C.*, 151 FERC ¶ 61,208 (2015), *reh'g denied*, 155 FERC ¶ 61,157 (2016), *aff'd sub nom. Advanced Energy Mgmt. All. v. FERC*, 860 F.3d 656 (D.C. Cir. 2017) (approving market changes to compensate performance at times of system stress); *ISO New England Inc. and New England Pwr. Pool*, 147 FERC ¶ 61,172 (2014), *reh'g denied*, 153 FERC ¶ 61,223 (2015), *appeal pending sub nom. New England Power Generators Ass'n v. FERC*, No. 16-1023 (D.C. Cir. filed Jan. 19, 2016) (same); *Cal. Indep. Sys. Operator Corp.*, 156 FERC ¶ 61,226 (2016) (approving ramping products to complement increased variability and uncertainty); *Midcontinent Indep. Sys. Operator, Inc.*, 149 FERC ¶ 61,095 (2014) (same).

<sup>7</sup> *E.g.*, *Reactive Power Requirements for Non-Synchronous Generation*, Order No. 827, 81 Fed. Reg. 40,793 (June 23, 2016), FERC Stats. & Regs. ¶ 31,385 (2016); *Requirements for Frequency and Voltage Ride Through Capability of Small Generating Facilities*, Order No. 828, 81 Fed. Reg. 50,290 (Aug. 1, 2016), 156 FERC ¶ 61,062 (2016).

<sup>8</sup> *E.g.*, *Frequency Response and Frequency Bias Setting Reliability Standard*,

relied upon evidence to define it in a fuel-neutral way, and either allowed the market to transparently price it or established broad requirements to ensure that a needed service is provided. If the record that develops in this docket similarly demonstrates unmet resilience needs, I believe that the Commission should take a comparable approach.

Indeed, this preferred approach highlights one of my key objections to the Proposed Rule, which did not make a factual showing of a defined resilience need or allow a market or standards-based solution to solve that need. Rather, it presumed a resilience need and proposed a far-reaching out-of-market approach to “solve” it. This proposed remedy, which simply designated resources for support rather than determining what services needed to be provided, would be highly damaging to the ability of the market to meet customer needs—including any demonstrated resilience needs—fairly, efficiently, and transparently. In effect, it sought to freeze yesterday’s resources in place indefinitely, rather than adapting resilience to the resources that the market is selecting today or toward which it is trending in the future.

I believe the Commission should continue to focus its efforts not on slowing the transition from the past but on easing the transition to the future. We must continue to guide grid operators in sustaining reliability and resilience within a system that is likely to be cleaner, more dynamic, in some instances more distributed, and deployed by an efficient market for the benefit of customers. In this way, we can help the grid adapt to the transformations of the present, and best position the grid for the unknown future transformations that the history of our industry suggests are inevitable. For these reasons, I respectfully concur.

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Cheryl A. LaFleur  
Commissioner

UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

Grid Reliability and Resilience Pricing

Docket Nos. RM18-1-000

Grid Resilience in Regional Transmission  
Organizations and Independent System Operators

AD18-7-000

(Issued January 8, 2018)

CHATTERJEE, Commissioner, *concurring*:

I concur in this order with the expectation that it is only the first step in a more systematic effort by the Commission, over both the near and long term, to ensure the resilience of the nation's bulk power system. The success of this effort will require the Commission's continued vigilance and willingness to take, within the bounds of its statutory authority, prompt, proactive, and decisive measures to safeguard resilience.

I applaud Secretary Perry's bold leadership in jump-starting a national conversation on this urgent challenge. Given the importance of the bulk power system to our nation's security, economic stability, and public health and safety, we must ensure its resilience amidst tremendous changes in our generation resource mix. My goal throughout this proceeding has been to ensure that we do not later come to regret failing to ask the difficult questions. I believe that the order we are issuing today is a positive step toward that goal. I look forward to receiving responses to the questions posed to the RTOs/ISOs, and comments from interested entities.

Nevertheless, I must voice my concerns regarding bulk power system resilience in the interim period prior to the conclusion of the proceeding we initiate today. Major regulatory reform efforts often can take several years to complete. But I believe that the record compiled in this proceeding speaks to the prudence of considering, as soon as practicable, whether interim measures may be needed to avoid near-term bulk power system resilience challenges that could result from the rapid, unprecedented changes in our generation resource mix.

The scale and pace of those changes are staggering. Between 2014 and 2015 alone, the U.S. added approximately 15,800 megawatts (MW) of natural gas, 13,000 MW of wind, 6,200 MW of utility scale solar photovoltaic, and 3,600 MW of distributed solar photovoltaic generating capacity.<sup>1</sup> Meanwhile, nearly 42,000 MW of synchronous

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<sup>1</sup> U.S. Energy Information Administration, *Electricity, available at*

generating capacity (e.g., coal, nuclear, and natural gas) retired between 2011 and 2014, with an additional seven nuclear units (representing 10,500 MW of nameplate capacity) planning retirement by 2025.<sup>2</sup> Commenters express an expectation that those trends will continue in the years ahead, with many nuclear and coal units particularly at risk of economic retirement despite their significant contribution to bulk power system resilience.<sup>3</sup>

The changing generation resource mix underscores the need to consider whether near-term measures are warranted notwithstanding the actions the Commission has taken in recent years that are outlined in today's order. Specifically, current RTO/ISO market design mechanisms are intended to incent generation resource owners to manage the fuel supply risks they can control -- not the spectrum of fuel supply risks beyond their control.<sup>4</sup> The record clearly suggests that the latter class of risks are increasingly significant due to shifts in the generation mix and the fast-evolving national security threat environment.<sup>5</sup> Neither current RTO/ISO tariffs nor the NERC Reliability

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<https://www.eia.gov/electricity/annual/backissues.html>.

<sup>2</sup> *Id.*; NERC Comments, Docket No. RM18-1-000, at 4-5 (filed Oct. 23, 2017).

<sup>3</sup> *See, e.g.*, Reply Comments of Peabody Energy Corporation, Docket No. RM18-1-000, at 10 (filed Nov. 7, 2017); Reply Comments of the Nuclear Energy Institute, Docket No. RM18-1-000, at 6-11 (filed Nov. 7, 2017); *see also* NERC Comments at 4-6 (noting the resilience contributions of coal and nuclear generation's dependable capacity, inertia and voltage control services, and fuel security).

<sup>4</sup> The Commission has approved market constructs providing financial incentives for resource owners to procure firm fuel arrangements either through firm pipeline capacity or dual fuel capability. *See, e.g.*, *ISO New England Inc.*, 147 FERC ¶ 61,172, at P 36 (2014) (endorsing pay-for-performance program); *PJM Interconnection, L.L.C.*, 151 FERC ¶ 61,208, at P 22 (2015) (approving PJM's capacity performance construct). *See also Wholesale Competition in Regions with Organized Electric Markets*, Order No. 719, FERC Stats. & Regs. ¶ 31,281 (2008), *order on reh'g*, Order No. 719-A, FERC Stats. & Regs. ¶ 31,292 (2009), *order on reh'g*, Order No. 719-B, 129 FERC ¶ 61,252 (2009) (requiring RTO/ISO scarcity pricing that incents firm fuel arrangements). But generation resource owners relying on fuels delivered "just-in-time" from offsite supplies are not capable of managing risks to (1) the infrastructure that transports these fuels (e.g., pipelines); and (2) the infrastructure that supplies these fuels (e.g., natural gas wellheads).

<sup>5</sup> *See, e.g.*, Exelon Corporation Comments, Docket No. RM18-1-000, Stockton Test. at 5-6, 13 (filed Oct. 23, 2017); *see also* Congressional Research Service, Pipeline Cybersecurity: Federal Policy (Apr. 19, 2016).

Standards require RTOs/ISOs to assess these fuel supply risks or other significant resilience risks and mitigate their potentially significant impact on the bulk-power system. This suggests that existing RTO/ISO tariffs may be unjust and unreasonable insofar as they may not adequately compensate resources for their contributions to bulk power system resilience.

Consequently, I believe it would have been prudent, in addition to establishing the proceeding in Docket No. AD18-7-000, for the Commission to issue an order to show cause pursuant to section 206 of the Federal Power Act directing each RTO/ISO to either (1) submit tariff revisions to provide interim compensation for existing generation resources that may provide necessary resilience attributes and are at risk of retirement before the conclusion of the proceeding established today or (2) show cause why it should not be required to do so.

Given the nascence of the Commission's effort to more systematically examine resilience, I believe that it would have been appropriate to provide the RTOs/ISOs with latitude in determining the implementation of any interim measures needed. In particular, I would have allowed RTOs/ISOs to define which resources provide necessary resilience attributes and are at risk of retirement before the conclusion of the proceeding initiated in Docket No. AD18-7-000. Because of their detailed knowledge of their own systems, the RTOs/ISOs are well-positioned to understand the specific resilience risks in their footprints, to identify the resilience attributes that would most effectively mitigate those risks, and to tailor appropriate tariff mechanisms to meet their needs. Such an approach would have struck an appropriate balance to remedy any potentially unjust and unreasonable compensation practices while minimizing the impact on consumers and markets as the Commission considered longer-term reforms. In addition, such an approach also would have reduced the probability of retirement of resources which subsequently were determined to be the most cost-effective means of providing necessary resilience attributes.

The Commission previously has stressed its preference for market-based mechanisms as a means to ensure just and reasonable rates in jurisdictional organized markets. I share this preference for market-based solutions and would have urged RTOs/ISOs to identify market mechanisms to address these concerns. However, the Commission also has recognized that interim, out-of-market solutions might be appropriate in certain circumstances.<sup>6</sup> Accordingly, I would have required that tariff

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<sup>6</sup> See *ISO New England Inc.*, 144 FERC ¶ 61,204 at P 21 (accepting ISO-NE tariff provisions to provide for short-term out-of-market payments to resources to ensure reliability in the 2013-2014 winter period); see also *N.Y. Indep. Sys. Operator, Inc.*, 150 FERC ¶ 61,116 at P 2 ("While the Commission has repeatedly stated that our jurisdictional markets should utilize market mechanisms to ensure that the resulting rates are just and reasonable, the Commission has also recognized that short-term remedies,

revisions proposed by the RTOs/ISOs endeavor to minimize the effect on the wholesale markets (in particular the energy markets). To this end, I would have stated an expectation that each RTO/ISO develop any out-of-market mechanisms only as a last resort.

As I explained consistently over the past few months, it was my goal that any effort with respect to an interim step would be legally defensible, would not distort markets, and would address the issues Secretary Perry raised. I believe an order as discussed above would have met that goal. And while I would have preferred such an order, I am nevertheless encouraged by today's order, which represents a positive step forward in addressing these critical issues.

For these reasons, I respectfully concur.

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Neil Chatterjee, Commissioner

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such as RMR agreements, may be appropriate in certain circumstances to address an immediate problem at hand.”).

UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

Grid Reliability and Resilience Pricing

Docket Nos. RM18-1-000

Grid Resilience in Regional Transmission Organizations  
and Independent System Operators

AD18-7-000

(Issued January 8, 2018)

GLICK, Commissioner, *concurring*:

I fully support the Commission's action today to initiate a new proceeding examining the resilience of the bulk power system. I commend the Chairman for his leadership in guiding the Commission as it addresses this difficult, but important issue. I also support the Commission's decision to terminate Docket No. RM18-1-000, which addressed the Proposed Rule on Grid Reliability and Resilience Pricing (Proposed Rule) submitted to the Commission by the Secretary of the Department of Energy. The Proposed Rule had little, if anything, to do with resilience, and was instead aimed at subsidizing certain uncompetitive electric generation technologies. As my colleague Commissioner LaFleur explains, it is important to consider the resilience of the bulk power system in a larger context that accounts for the changing electricity industry rather than seeking to preserve the *status quo*.

I write separately to explain my rationale for concluding that the Proposed Rule is inconsistent with the Commission's statutory responsibilities. Although the Department had the authority under Section 403 of the Department of Energy Organization Act<sup>1</sup> to submit the Proposed Rule, the Commission could adopt the proposal only if it met the requirements of section 206<sup>2</sup> of the Federal Power Act. The Proposed Rule fails to meet that standard.

As today's order recognizes, the record in this proceeding—as well as the other proceedings referenced by the Department<sup>3</sup>—does not support the Department's

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<sup>1</sup> 42 U.S.C. § 7173 (2012).

<sup>2</sup> 16 U.S.C. § 824e (2012).

<sup>3</sup> *Grid Resiliency Pricing Rule*, 82 Fed. Reg. 46,940, 46,944-45 (2017).

contention that the tariffs of certain RTOs and ISOs are unjust and unreasonable or unduly discriminatory or preferential. The Department's own staff Grid Study concluded that changes in the generation mix, including the retirement of coal and nuclear generators, have not diminished the grid's reliability or otherwise posed a significant and immediate threat to the resilience of the electric grid.<sup>4</sup> To the contrary, the addition of a diverse array of generation resources, including natural gas, solar, wind, and geothermal, as well as maturing technologies, such as energy storage, distributed generation, and demand response, have in many respects contributed to the resilience of the bulk power system. The record in this proceeding does not demonstrate any need for the Commission to interfere with the continued evolution of the bulk power system.

Nor does the record support the Department's proposed remedy: A multi-billion dollar bailout targeted at coal and nuclear generating facilities.<sup>5</sup> There is no evidence in the record to suggest that temporarily delaying the retirement of uncompetitive coal and nuclear generators would meaningfully improve the resilience of the grid. Rather, the record demonstrates that, if a threat to grid resilience exists, the threat lies mostly with the transmission and distribution systems, where virtually all significant disruptions occur.<sup>6</sup> It is, after all, those systems that have faced the most significant challenges during extreme weather events.

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<sup>4</sup> *Staff Report to the Secretary on Electricity Markets and Reliability*, United States Department of Energy at 63, 100 (Aug. 2017), available at [https://energy.gov/sites/prod/files/2017/08/f36/Staff%20Report%20on%20Electricity%20Markets%20and%20Reliability\\_0.pdf](https://energy.gov/sites/prod/files/2017/08/f36/Staff%20Report%20on%20Electricity%20Markets%20and%20Reliability_0.pdf) (Department of Energy Grid Study).

<sup>5</sup> See, e.g., PJM Independent Market Monitor Comments at 5 (estimating that the Proposed Rule would have cost consumers in PJM an additional \$30 billion in 2015 and \$32 billion in 2016); Joint Industry Commenters, Attachment A at 2, 32 (Battle Group report estimating that the Proposed Rule would result in \$3.7 billion to \$11.2 billion in out-of-market payments annually in PJM, ISO-NE, and NYISO); see also Electricity Consumers Resource Council Reply Comments at 11-15 (summarizing cost estimates submitted to the record, all of which estimated that the Proposed Rule would cost consumers billions of dollars).

<sup>6</sup> See Joint Industry Commenters at 3 (citing a Rhodium Group study showing that "0.00007% of customer-hours lost to outage were caused by fuel supply emergencies between 2012-2016," a period that included the 2014 Polar Vortex); Department of Energy, Quadrennial Energy Review, Second Installment at 4-2 (2017) available at <https://energy.gov/sites/prod/files/2017/02/f34/Chapter%20IV--Ensuring%20Electricity%20System%20Reliability%2C%20Security%2C%20and%20Resilience.pdf> ("Electricity outages disproportionately stem from disruptions on the



In addition, coal and nuclear generators face resilience challenges of their own. As has been well-documented, many coal and nuclear plants with significant on-site fuel supplies have failed to function during extreme weather events because those fuel supplies froze, flooded, or were otherwise unavailable.<sup>7</sup> In fact, initial reports indicate that coal-fired facilities accounted for nearly half of all forced outages in PJM during last week's period of extreme temperatures. Similarly, during the same period, the Pilgrim Nuclear Power Station was manually removed from service complicating efforts to serve load within ISO-NE. And, even when fully operational, many coal and nuclear generators are incapable of providing all the NERC-defined essential reliability services.<sup>8</sup> It is perhaps for that reason that the Department's Grid Study recommended pursuing "wholesale market and product designs that recognize and complement resource diversity by compensating providers for the value of [essential reliability services] on a *technology-neutral* basis."<sup>9</sup>

Finally, I am sympathetic to the plight of coal miners, who have been disproportionately affected as coal's share of the generation mix has declined. These men and women went to work every day, at considerable risk to their health and safety, to supply coal when it was needed most. Many of those same considerations extend to individuals employed at recently or soon-to-be decommissioned nuclear power plants.

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distribution system (over 90 percent of electric power interruptions), both in terms of the duration and frequency of outages. . . . Damage to the transmission system, while infrequent, can result in more widespread major power outages that affect large numbers of customers with significant economic consequences.").

<sup>7</sup> For example, more than 15 gigawatts of coal and nuclear capacity were forced offline during the 2014 Polar Vortex as temperatures fell below those plants' operating thresholds. Electric Power Supply Association Comments, Attachment A at 17. Similarly, nuclear facilities lying in the path of hurricanes are routinely taken offline as a precaution and not returned to service until after the threat has passed.

<sup>8</sup> Department of Energy Grid Study at 71-72 (citing Joseph H. Eto *et al.*, Lawrence Berkeley National Laboratory, Use of Frequency Response Metrics to Assess the Planning and Operating Requirements for Reliable Integration of Variable Renewable Generation (2010), *available at* <https://www.ferc.gov/industries/electric/industryact/reliability/frequencyresponsemetrics-report.pdf>). The cited report explains that when nuclear plants and large coal plants are operated at maximum output, as they frequently are, they will be incapable of providing primary frequency response, one of the essential reliability services identified by NERC.

<sup>9</sup> Department of Energy Grid Study at 100 (emphasis added).

We have a history in this country of helping those who, through no fault of their own, have been adversely affected by technological and market change. But that is the responsibility of Congress and the state legislatures. It is not a role that the Federal Power Act provides to the Commission.

\* \* \*

I agree with the Commission's decision to initiate a comprehensive examination of the resilience of the bulk power system in the form of today's order. Utilities face diverse challenges, including the threat of cyber or physical attacks and natural disasters, such as the extreme weather events that are occurring more frequently as a result of climate change. It is not without irony that the Department's Proposed Rule would exacerbate the intensity and frequency of these extreme weather events by helping to forestall the retirement of coal-fired generators, which emit significant quantities of greenhouse gases that contribute to anthropogenic climate change.<sup>10</sup> I encourage the RTOs and ISOs to use this opportunity to undertake a serious review of these challenges along with other concerns regarding the resilience of their system.

In addition, RTOs and ISOs should consider how best to mitigate these challenges *within* their markets and *without* prejudging what technology or fuel-type provides the best solution. In particular, I urge them to consider carefully the Commission's questions regarding how different generation technologies—both traditional technologies and newer, less widespread technologies—perform when faced with extreme weather, including droughts. I also believe that it is important to consider the advantages that newer technologies, such as distributed energy resources, energy storage, and micro-grids, may offer in addressing resilience challenges to the bulk power system. Similarly, I urge the RTOs and ISOs to consider carefully the Commission's question regarding the extent to which resilience challenges are associated with the transmission system or distribution systems, rather than electric generation. As I noted, the transmission and distribution systems have historically been the principal cause of virtually all significant disruptions and are, therefore, an important element of any examination into the resilience of the bulk power system. Finally, I agree with the Commission that it is important to explore the concept of correlated outages and, in particular, the extent to

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<sup>10</sup> A research paper submitted to the record by Resources for the Future estimates that adopting the Proposed Rule would result in an additional 53 million tons of CO<sub>2</sub> emissions by 2045. Resources for the Future also estimates that the Proposed Rule would cause 27,000 premature deaths by 2045 by increasing the emissions of other air pollutants (NO<sub>x</sub> and SO<sub>x</sub>). See Daniel Shawhan and Paul Picciano, Resources for the Future, Costs and Benefits of Saving Unprofitable Generators: A Simulation Case Study for US Coal and Nuclear Power Plants at 11 (Nov. 2017).

which the cyber and physical security of natural gas pipelines threatens the resilience of the bulk power system and how the Commission should address this issue.

In conclusion, I am confident that the Commission will approach this new examination into the resilience of the bulk power system in the same manner it considers all other matters—with a non-partisan perspective and with a view solely on what the facts provide and the law requires. If the RTOs and ISOs demonstrate that the resilience of the bulk power system is threatened we should act. If not, we should move on.

For these reasons, I respectfully concur.

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Richard Glick  
Commissioner



# TAB 9





ENGINEERING SERVICES DIVISION  
GENERATION OPERATIONS

**REPORT FOR**

ENGINEERING SERVICES DIVISION  
**SUMMARY REPORT ON CURRENT  
MAINTENANCE PROGRAM**  
2015 MAY 01 - 2016 JANUARY 29



PREPARED BY: Gary Bishop  
APPROVED BY: Joel Wortley

NOTED BY: Nick Read  
NOTED BY: Don Ans  
DATE: 2016 FEB 12

DISTRIBUTION:  
Joel Wortley - ESD  
Nick Read - GME  
Don Ans - GAM  
Allan Derry - MED  
Hal Turner - PPD  
Steve Simons - EED  
Halina Zbigniewicz - CFD

**1-00100-WO-06000-0008-0001**

## EXECUTIVE SUMMARY

One of the strategies in the new Asset Management focus for Generation Operations is to develop a Strategic Maintenance Plan for the Generation Operations assets. The first step in any strategic planning exercise is “Situation Analysis”. This report therefore provides an overview summary of the current maintenance program. This overview includes some history into the development of the current program, identifies some of the key components, provides a discussion of current performance indicators, and identifies some areas for improvement. Essentially, this is the starting line for developing any further improvements and provides a basis for understanding the full impacts of any future changes.

The review identified some of the “strengths” of the current program that should be maintained:

- The maintenance program is based on reliability principals to address failure modes of the critical components that significantly affect safety and generation reliability. Maintenance of non-critical components are based on economics.
- Two continuous improvement processes are in place (Forced Outage Reporting and Reliability Analysis) that should be maintained and enhanced.
- Root Cause Analyses are being done to get to the root cause of O&M issues, although three different processes are used that could be reduced to a common process for all.
- Maintenance is planned and executed using Work Orders against the equipment. This enables analysis to be performed to identify equipment with high maintenance needs as well as those with little.

The review also identified some of the “weaknesses” of the current program to be addressed:

- Maintenance program was developed on a station basis rather than on an equipment type basis adjusted for site specific operating context and history. This results in inconsistencies between stations for similar equipment.
- The existing electrical and mechanical maintenance program includes the unit main drive train components as well as all the auxiliary systems but excludes the controls systems such as the UCMS, servers, and PLCs which need to be added.
- Civil assets and their required maintenance work is treated somewhat differently than the electrical and mechanical assets. Where possible and effective, consistent processes and tools should be used for all the assets.
- Consistent and auditable work processes are needed which will be significantly improved with the implementation of the EAM project.
- Specific roles and responsibilities of the engineering support groups were not well defined leading to ownership issues over some of the support requirements.



- An overall document management plan should be established. It does not need to be the same everywhere but should be documented, consistently followed, and properly shared to ease the searching for current and archive information.
- The current condition monitoring of the equipment is not adequate. A vision and plan should be developed to provide an appropriate level unit health monitoring and data capture for analysis, trouble-shooting, and maintenance planning. This includes maintenance measurement points, monitoring and alarming of key operating data parameters for early signs of operating issues, and the higher technology programs such as oil analysis, vibration, and air gap monitoring. The implemented plan must be financially beneficial, sustainable, and supported by GS, GN, and ESD.
- Information on the current condition of much equipment is not adequate. The condition assessment process should be documented for both major equipment and balance of plant equipment. For consistency and sustainability, the condition assessment tasks should be incorporated into the maintenance program. The tasks, measurement points, and limits should be summarized on the Maintenance Task Templates and implemented into the new EAM system.
- For better maintenance planning, all required parts for all work as well as spares that should be maintained in stores should be identified with the maintenance tasks. Critical materials need to be identified and consistent store's processes are required to ensure materials are available when needed.

The review also identified some “opportunities” where the Maintenance Strategies can support Asset Management strategies:

- The improved condition monitoring data and condition assessment information can be used in the Meridium Asset Health Indicator module to provide Asset Health scores for not only the main drive train components but also the civil dam structures and some of the plant auxiliary equipment. Asset health scores can be maintained in one location and reported consistently. These scores can be uploaded to C55 for capital planning. The extent of auxiliary equipment to score is then an asset management decision.
- The criticality analysis used for the maintenance planning can be used for identifying critical spares. The equipment health scores can then be used in the risk assessment to make the decision on critical spares to carry, which is an asset management decision.
- Equipment with the Run-to-Failure maintenance plans can be identified with restoration plans and costs identified. If health scores are available, it might be better to replace before failure to improve annual budget management.
- Other critical assets not typically included in the maintenance plan can be identified with asset health scores maintained in Meridium similar to other equipment. This will support capital planning for all important assets. The extent of assets to score is then an asset management decision.

## 7.0 SITE SURVEY ON MAINTENANCE PROGRAM

In June 2015, a survey was sent to obtain feedback from staff such as Station Managers, Site Supervisors, Planners, as well as from some support groups. These staff are considered key when it comes to the implementation of the maintenance program and all have directly experienced the good and not-so-good processes. The survey was open ended, simply asking for opinions on the maintenance program. To start the thinking process, 27 topics were listed as a starting point to consider.

Response was fairly good and resulted in 402 individual comments with many repeats. These comments provided in Appendix H were grouped into 12 Themes and for each of the Themes, the general “message” being conveyed was summarized along with a couple of the “Suggested Improvements” from the survey participants that were copied directly from the survey. Just for interest, the top 5 frequent comments on the list were:

- #1 Lack of quality maintenance procedures.
- #2 Administrative duties seem to be ever increasing.
- #3 RCA process is poor.
- #4 FOR process is inconsistent.
- #5 Predictive Programs were identified but not yet implemented.

### 7.1 THEME 1 - WORK MANAGEMENT SYSTEM & MEASURES [13.2 % OF RESPONSES]

We have Work Management Processes (Maintenance Scheduling and Planning process, Work Order process, Work Order Close-Out process, etc) and general opinion is that these need to be followed. Unfortunately, the Work Management Measures reports do not have desired effect of looking for improvements. In some areas, “work arounds” have been created to make the numbers look good but do not improve the process. Also significantly impacting the WMS is all the safety, environment, and legislative compliance duties that seem to be ever increasing.

The most frequent comment is that administrative duties seem to be greatly increasing and tool time for site maintenance staff is decreasing. Typical reasons are SMS, HR issues, environmental, job plans, planning measures, work order approval, close out, notes review, self time entry, review all staff time entry, review of job plans, e-forms, access for staff on eforms, site meetings, outage reviews, outage planning and schedule meetings, contract administration for site contractors, direct and purchase order approvals, etc. The next common concern appears to be with documentation. Every department has their own document repository that is not consistent, well controlled, or shared with each other which makes it difficult to search for archive information.

#### Suggested Improvements:

- The current Work Management System and Measures should be reviewed for effectiveness.
- We need to focus on developing a process culture and accountability for following the standard processes. The standard processes may also be due for a review for effectiveness and efficiency.

- Document repository should be reviewed so that is consistent, well controlled, and properly shared to ease to searching for archive information. Current standard procedures should be readily available.

## **7.2 THEME 2 - FOR AND RCA REPORTING [5.7 % OF RESPONSES]**

The Forced Outage Reporting (FOR) and Root Cause Analysis (RCA) processes are not consistent between stations and the quality can vary greatly. These processes need to be standardized and well defined with respect to when they are required, how they are completed, and who is required for proper input to get value from the process. These need to be a priority for continuous improvement.

### Suggested Improvements:

- Standardize and document the Forced Outage Report process.
- Standardize and document the Root Cause Analysis process.

## **7.3 THEME 3 - RCM PROGRAM AND PHILOSOPHY [8.5 % OF RESPONSES]**

The implemented SRCM program as well as today's version of RCM appear to be not well understood. The term RCM now seems to be generically used to refer to the maintenance program. Even the often quoted term "run to failure" is not understood, it does not mean "catastrophic" failure. The original run to failure policy was justified based on economics in cases of redundant equipment; i.e. if cost of preventative maintenance > cost of failure then run to failure only if the failure had no safety, environmental, regulatory, and operational (lost generation) consequences. Some feel that run to failure decisions on much equipment is not a good strategy as it creates the "fires" and pulls resources from planned work to address the reactive needs. However, these failures should not be urgent to be addressed immediately or the else the criticality analysis is not appropriate. A common understanding of the current program seems to be lacking. Currently, some specific areas of concern include:

- a) no one is reviewing the results from the current maintenance, updating failure modes, and ensuring current tasks and interval are appropriate. The current program has not been reviewed since implementation (>10 years).
- b) RCM review process is slow and we don't have the resources to do this quickly and effectively. There is also the question if RCM is required on our equipment that we have operated for decades.

### Suggested Improvements:

- A documented explanation of the maintenance program is required.
- Reliability analysis is required do determine how we are doing.
- Is full RCM the correct path forward or simply identification of failure modes and tasks to mitigate these on "critical" equipment, with remaining equipment getting only clean, inspect, functional testing, no maintenance, or simple economically justified maintenance applied where deemed necessary. What is the philosophy going forward?

- Review the opposite operating practices of either running redundant equipment equal amounts of time or running one piece of equipment until maintenance was required then use the other only for the maintenance period.

#### **7.4 THEME 4 - MAINTENANCE PROGRAM AND EAM [10.9 % OF RESPONSES]**

There appears to be three main concerns. The first is that the maintenance tasks are not all getting done due to not following the schedules, logistics of getting parts, attendance, accountability, etc. The second concern is if we even have the correct plans in the CMMS. Adequate consistent maintenance plans do not exist for some equipment/systems such as Cranes & Hoists, Controls, Fire Systems, Pressure Relief Systems, etc. More importantly, some of the civil assets are dealt with differently than mechanical and electrical. They are large assets and should be treated in the same way, regardless of organization. The third concern is the lack of Predictive Programs that was to have been implemented to move towards more condition based maintenance.

##### Suggested Improvements:

- Implement EAM and its consistent, auditable processes.
- Maintenance Task Templates are needed for all our assets for consistency.
- Need to review the maintenance we do once again, moving more towards condition monitoring, and looking at all the equipment and not just the units.
- Need to review work order man hour estimates in AMPS to ensure appropriate for actual tasks for better planning.

#### **7.5 THEME 5 - MAINTENANCE PROCEDURES [10.0 % OF RESPONSES]**

Lack of proper documented and controlled maintenance procedures is a significant issue. Currently, the quality of what we have ranges from poor to excellent but no one is reviewing the procedures for adequacy, consistency, or continuous improvement. Also, procedures are not being developed for new equipment and there is still some confusion with the Safe Work Procedures, which are often very generic in content. Better maintenance procedures would improve maintenance consistency, help to alleviate staff competency/experience concerns, and help improve the Job Planning process.

##### Suggested Improvements:

- Create standard formatted maintenance procedures for all maintenance tasks.
- Maintenance procedures need to be tied to the tasks on the Task Templates.
- Imbed the Safe Work Procedure requirements into the maintenance procedures.

## **7.6 THEME 6 - MAINTENANCE PLANNING [9.7 % OF RESPONSES]**

Maintenance Planning is a critical role in any maintenance program and as a few of the comments concluded, too many forced extensions in the past few years suggest a planning issue. In addition, outages are sometimes dropped or cut back when there are no resources to do the work resulting in schedule compliance sometimes not being met within the planning cycles. The fact that Work Order close-out process is also not being done properly aggravates the issue. One theme appearing in the comments and likely an underlying issue is the responsibility for planning. Planners and Supervisors do not always seem to be on the same page. In simple terms, what has to be done has already been decided in the maintenance program. Planners help to schedule and coordinate the activities to fall within the pre-determined periods. Supervisors execute the work with their resources when the overall plan is established. There are many ways to get off track here and all parties need good communication and to be responsible for their designated roles.

### Suggested Improvements:

- The role and responsibility of the Planner position needs to be well defined and communicated.
- The new EAM program places even more responsibility on the Planner than before. There needs to be an appropriate number of trained Planners for the program to work efficiently.

## **7.7 THEME 7 – MATERIALS MANAGEMENT [2.5 % OF RESPONSES]**

There were not many comments but it appears that Materials Management requires a review/audit. Stores should be sourcing material and parts (with technician or engineering input as required) as opposed to the technicians who should be maintaining and installing them. The stocking of appropriate material and parts at appropriate levels also needs review.

### Suggested Improvements:

- A review/audit of Materials Management is required to help improve maintenance efficiency.

## **7.8 THEME 8 – CONDITION MONITORING [7.0 % OF RESPONSES]**

There seems to be a general desire for some time now to move more towards condition monitoring as predictive programs were even identified as part of SRCM analyses. Some basic condition monitoring tasks as well as oil analysis were put into the maintenance program but the higher technologies such as vibration or air gap monitoring have had limited progress even though they are key components for measuring and monitoring machine health. Monitoring and alarming of key operating data parameters can provide early signs of pending operating issues as well as providing notification when limits are exceeded and the equipment is operated outside of its capabilities.

Suggested Improvements:

- A condition monitoring plan should be developed to provide an appropriate level unit health monitoring as well as monitoring and alarming of key operating data parameters for early signs of operating issues. The plan must be financially beneficial and sustainable.

**7.9 THEME 9 – ROLES & RESPONSIBILITIES [4.2 % OF RESPONSES]**

Roles and responsibilities seem to be ever changing. This is likely because there always seems to be more tasks (and different types of tasks) than there is time to complete. There is a general feeling, and perhaps rightfully so, that all the support groups push the responsibility for everything to front line supervisors. This is likely because the support groups work a short time on the strategies and plans while implementation generally falls to site on a continual basis.

With regard to the support groups, there is often overlap or working on the same issues from a different role. Communication between the groups is improving, but all might benefit from better clarification of roles and responsibilities. This is especially true with regards to the maintenance plan and reliability analysis.

Suggested Improvements:

- Roles and responsibilities should be reviewed, adjusted, and communicated for all staff. Once communicated, staff have to be held accountable and focused to perform their duties as defined.

**7.10 THEME 10 – SITE STAFF LEVELS AND QUALIFICATIONS [11.2 % OF RESPONSES]**

General opinion is that site staff levels are good (and maybe high) for normal operations and maintenance but not sufficient during the maintenance outage periods. This is especially true during vacation times when backfilling is difficult. A bigger issue, however, is the declining skills due to less hands on experience and less motivation. Sometimes, the lack of qualified and experienced resources make it difficult to get work completed. A leading concern is that technicians finish the electrical or mechanical program, then go into the operating control room to learn another trade and never get to establish any experience in their base trade. This results in poorly trained and experienced technicians for a long time before they are seasoned in both roles. The training once completed does give the individuals a better understanding of the plants but not necessarily good technical skills. A final note is whether the supervisor ratios are appropriate for proper supervision, and if supervisors still know their core responsibilities with all the added duties that has been placed upon them.

Suggested Improvements:

- A review of staffing levels should be completed with focus on strategies for improving the staffing for maintenance outages.
- A review of the current technician skill levels as compared to the required skills should be completed to determine if a gap exists.

### **7.11 THEME 11 – ENGINEERING SUPPORT [14.2 % OF RESPONSES]**

Engineering Support in general appears good but there is still much room for improvement. While the Civil Dam Safety Group are providing great service and GME emergency reactionary engineering support has been very good, there is a general issue with either limitation of resources or assignment of priorities. Some example statements include:

- a) limited electrical resources for the volume needed,
- b) no reliability analyses to verify performance or what the stations need,
- c) ESD is missing follow through on projects (lack of documentation, procedures, drawings),
- d) change request approvals are not always completed in a timely manner leading to loss of information as people move or information is lost,
- e) JobTrac list is simply too long and unmanageable for GME,
- f) The project based approach does not support plant maintenance well. While capital projects are challenging and more interesting, we need engineering support of operations.

#### Suggested Improvements:

- Smaller projects now seem to be taking longer to complete. A review of some of the standard processes is probably required to help improve efficiency.
- Roles and responsibilities should be reviewed, adjusted, and communicated for all staff. Once communicated, staff have to be held accountable and focused to perform their duties as defined.

### **7.12 THEME 12 – OPERATIONS [3.0 % OF RESPONSES]**

It is important to understand that fleet and unit performance is more about how we operate the plant and not so much on how we maintain equipment. Maintenance is done to support operations, not the other way around. Years of cycling the units and operating outside normal capabilities may be costing the corporation more than anticipated. There needs to be an understanding and communication on value now verses life of asset. The priority used to be based on providing the most reliable delivery of power possible. Now it does seem as though the focus is strictly on budget and if reliability suffers a little that will be acceptable.

#### Suggested Improvements:

- System and unit operating guidelines need to be updated to ensure the units are not run outside of their capabilities.
- The operating procedures need to be updated/created in a standard electronic format for SOP's (standard operating procedures). There is some difficulty in this as there are operating work arounds for certain units because of their unique operating characteristics, which makes this documentation even more important.





# TAB 10



# Manitoba Hydro GRA 2017/18 & 2018/19

## Consumers Coalition Legal Arguments

February 7, 2018

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## Manitoba Hydro GRA 2017/18 & 2018/19

### Consumers Coalition Legal Arguments

#### Overarching Statutory Intent

In setting just and reasonable rates for electricity, the Public Utilities Board (“PUB” or the “Board”) must balance two concerns articulated by the Manitoba Court of Appeal: “the interests of the utility’s ratepayers, and the financial health of the utility. Together, and in the broadest interpretation, these interests represent the general public interest.”<sup>1</sup>

This consideration of the public interest must be informed by the themes of economy and efficiency, which are articulated as the purposes and objects of *The Manitoba Hydro Act*.<sup>2</sup>

The statutory scheme in place in Manitoba regarding the setting of just and reasonable rates for Manitoba Hydro is primarily governed by the interaction of *The Public Utilities Board Act*,<sup>3</sup> *The Manitoba Hydro Act*<sup>4</sup> and *The Crown Corporations Governance and Accountability Act*.<sup>5</sup>

While the regulation of electricity rates in Manitoba and the principles of public utility rates articulated by Dr. James C. Bonbright pre-date the passage of the *Constitution Act, 1982*,<sup>6</sup> the current statutory framework in Manitoba was enacted after its passage<sup>7</sup> and is necessarily informed by the commitments to equal benefit of the law under s. 15 of *the Charter*<sup>8</sup> and to essential public services of a reasonable quality under s. 36(1)(c) of the *Constitution Act, 1982*.<sup>9</sup>

In addition to other factors regarding the Crown corporation’s revenue requirement, *The Crown Corporations Governance and Accountability Act* states that the PUB may, in reaching a decision, take into consideration:

(viii) any compelling policy considerations that the board considers relevant to the matter, and

(ix) any other factors that the Board considers relevant to the matter.<sup>10</sup>

Given the statutory framework, and the Board’s explicitly conferred discretion to consider policy considerations and any other relevant factors, the Consumers Coalition submits that

<sup>1</sup> *Consumers’ Association of Canada (Manitoba) Inc v Manitoba Hydro Electric Board*, 2005 MBCA 55, at para 65 [CAC Manitoba].

<sup>2</sup> *The Manitoba Hydro Act*, CCSM c H190, s 2 [MH Act].

<sup>3</sup> *The Public Utilities Board Act*, CCSM c P280 [PUB Act].

<sup>4</sup> *MH Act*, *supra* note 2.

<sup>5</sup> *The Crown Corporations Governance and Accountability Act*, CCSM c C336 [CCGA Act].

<sup>6</sup> *The Constitution Act, 1982*, being Schedule B to the *Canada Act 1982 (UK)*, 1982, c 11 [Constitution Act, 1982].

<sup>7</sup> *The Public Utilities Board Act* was enacted in 1987 and came into force in 1988; *The Manitoba Hydro Act* was enacted in 1987 and came into force in 1988; *The Crown Corporations Governance and Accountability Act* was enacted in 2017 and its predecessor, *The Crown Corporations Public Review and Accountability Act*, was enacted in 1988.

<sup>8</sup> *Canadian Charter of Rights and Freedoms*, Part I of the *Constitution Act, 1982*, being Schedule B to the *Canada Act 1982 (UK)*, 1982, c 11 [Charter].

<sup>9</sup> See *Constitution Act, 1982*, *supra* note 6, s 36(1)(c).

<sup>10</sup> *CCGA Act*, *supra* note 5 at s 25(4)(a).

the PUB has an obligation to consider *Charter* and Constitutional protections, including *Charter* values, in its deliberations as they relate to the determination of just and reasonable rates<sup>11</sup> and the promotion of economy and efficiency.<sup>12</sup>

The Consumers Coalition notes at the outset that no determination of the Constitutional validity of an Act of the Legislature is sought or required in this matter. Therefore, no notice under s. 3 of *The Constitutional Questions Act*, CCSM c C180, is necessary.

### **Jurisdiction of the Public Utilities Board on Bill Assistance**

The Consumers Coalition recognizes that the PUB has previously found that it has jurisdiction to order a bill affordability program. The Consumers Coalition submits that if a decision by the PUB to order a bill affordability program was appealed to the Manitoba Court of Appeal, it is likely that the PUB's decision would be confirmed as reasonable.

The Consumers Coalition, however, does not recommend that the PUB exercise its jurisdiction to order a ratepayer-funded bill affordability program, which will be explored in the next section in this submission.

### **Public Utilities Board Decisions on Jurisdiction for Bill Assistance**

For a number of years, the PUB has raised concerns in its decisions relating to lower-income ratepayers, especially all-electric ratepayers, and the impact of higher electricity rates on those consumers. For example, in PUB Order 73/15, the Board stated:

The Board recognizes that higher electricity rates will have an impact on lower income ratepayers. This is a particular concern with respect to all-electric customers, many of whom live in areas in which natural gas is not available as an alternative heating source.<sup>13</sup>

In its discussion regarding low-income ratepayers, the PUB has addressed its jurisdiction to implement a bill assistance program. In Order 116/08, the PUB stated:

The Board believes that in light of the recent Ontario court ruling, it (the Board) would be acting within its mandate and in the public interest if it were to direct MH to implement a bill assistance program.<sup>14</sup>

In PUB Order 73/15, the Board confirmed its view expressed in Order 116/08 that it has jurisdiction to require Manitoba Hydro to implement a bill affordability program. Its conclusion that it has jurisdiction to make such an order was based on its interpretation of *The Manitoba Hydro Act*, *The Public Utilities Board Act* and *The Crown Corporations Public Review and Accountability Act*.

<sup>11</sup> *PUB Act*, *supra* note 3 at s 77(a).

<sup>12</sup> *MH Act*, *supra* note 2 at s 2.

<sup>13</sup> PUB Order 73/15 at 27. See also PUB Order 116/08 at 229-231.

<sup>14</sup> PUB Order 116/08 at 231.

In particular, the PUB noted that although Manitoba Hydro is regulated on a cost of service basis, the PUB is required to set just and reasonable rates. In addition, s. 26(4) of *The Crown Corporations Public Review and Accountability Act*<sup>15</sup> expressly authorized the PUB to consider “any compelling policy considerations that the board considers relevant to the matter.” The PUB also noted that the “postage stamp” rate requirement does not prohibit creating a low-income customer class provided it does not impose geographical limitations.

## Jurisdictional Review

In other Canadian jurisdictions, decisions regarding a regulator's jurisdiction to implement a bill assistance program has been mixed:

- The Nova Scotia Utility Review Board has been found to not have jurisdiction to order or adopt a rate assistance program for low income consumers.<sup>16</sup> The Nova Scotia Court of Appeal has also found that requiring all customers in similar circumstances to be charged the same rate is not discriminatory under the *Charter*.<sup>17</sup>
- The Ontario Energy Board has been found to have jurisdiction to take income level into account when setting rates in order to achieve its objective of protecting the interests of consumers.<sup>18</sup>
- The British Columbia Utilities Commission (“BCUC”) has found that it has jurisdiction to approve low income rates only where there is an economic or cost of service justification. In the same decision, the BCUC found there was no economic or cost of service justification to implement the low-income proposals put forward in a rate design application. Leave to appeal was denied by the British Columbia Court of Appeal.<sup>19</sup>

These decisions were made within the context of each regulator’s specific statutory scheme, which varies from province to province.

<sup>15</sup> Now 25(4) of *The Crown Corporation Governance and Accountability Act*, *supra* note 5.

<sup>16</sup> *Dalhousie Legal Aid Service v. Nova Scotia Power Incorporated*, 2006 NSCA 74.

<sup>17</sup> *Boulter v Nova Scotia Power Incorporated*, 2009 NSCA 17.

<sup>18</sup> *Advocacy Centre for Toronto Ontario v Ontario Energy Board*, 2008 CanLII 23487, Ontario Superior Court of Justice.

<sup>19</sup> British Columbia Utilities Commission Decision and Order G-5-17, in the Matter of British Columbia Hydro and Power Authority 2015 Rate Design Application, January 20, 2017. An Application for Reconsideration and Variance was denied by the BCUC in Order G-87-17 on June 2, 2017. Leave to appeal to the BC Court of Appeal was denied in *British Columbia Old Age Pensioners' Organization v British Columbia Utilities Commission*, 2017 BCCA 400 given that “[t]he Commission interpreted and applied the provisions of its home statute governing rate making. This lies at the core of its expertise and competence. In reaching its decision the Commission undertook a textual, contextual and purposive analysis of the key provisions” (para 37). Given the deferential standard of review of reasonableness, the Court found that “there is no prospect that this appeal can succeed” (para 38) [BCOAPO].

## Manitoba Public Utilities Board's Jurisdiction

It is the Consumers Coalition's submission that an appeal to the Manitoba Court of Appeal challenging the PUB's finding that it has jurisdiction to order a bill assistance program would likely be unsuccessful.<sup>20</sup>

The Manitoba Court of Appeal has jurisdiction to hear an appeal concerning any final order or decision of the PUB on a question involving the jurisdiction of the Board, any point of law or any facts expressly found by the board relating to a matter before the Board.<sup>21</sup> There is no statutory right to appeal an order of the PUB, rather a party must be granted leave to appeal.<sup>22</sup>

A decision of an administrative tribunal, such as the PUB, interpreting or applying its home statute attracts the standard of review of reasonableness. It is unlikely that a court would find that the PUB's decision is a “true questions of jurisdiction” attracting a standard of correctness.<sup>23</sup>

Indeed, in Board Order 73/15, the Public Utilities Board supported its conclusion that it had jurisdiction to order a bill affordability program by conducting an analysis of the statutory framework of *The Manitoba Hydro Act*, *The Crown Corporations Public Review and Accountability Act* and *The Public Utilities Board Act*.<sup>24</sup> Together, these three statutes form the framework in which the PUB makes decisions regarding Manitoba Hydro's rate applications.

It is likely that the Court of Appeal would consider the decision of the PUB regarding its jurisdiction to order a bill assistance program to be a “textual, contextual and purposive analysis of the key provisions” of its home statute and closely related statutes with which it has particular expertise suggesting a standard of review of reasonableness.<sup>25</sup>

A further argument in favour of the Public Utilities Board's jurisdiction to order a bill assistance program is found in the implications of *Charter* protections and Constitutional values.<sup>26</sup> As will be discussed in the following section, *Charter* values are always at play in administrative tribunal decision-making processes. *Charter* values of equality and human dignity may be considered as reinforcing the PUB's determination that it has jurisdiction to order differential

<sup>20</sup> Especially in the context of *Dunsmuir v New Brunswick*, 2008 SCC 9, where the Supreme Court found that there are only two standards of review on judicial review: correctness which allows for no deference, and reasonableness which allows considerable deference.

<sup>21</sup> *PUB Act*, *supra* note 3 at s 58(1).

<sup>22</sup> *Ibid*, at s 58(2).

<sup>23</sup> See *ATA v Alberta (Information & Privacy Commissioner)*, 2011 SCC 61, at paras 33-39. The Supreme Court confirmed this point in the context of a statutory right of appeal in *Edmonton (City) v Edmonton East (Capilano) Shopping Centres Ltd*, 2016 SCC 47, at paras 27-31. These cases confirm that true questions of jurisdiction are to be interpreted narrowly and that “unless the situation is exceptional, and we have not seen such a situation since *Dunsmuir*, the interpretation by the tribunal of “its own statute or statutes closely connected to its function, with which it will have particular familiarity” should be presumed to be a question of statutory interpretation subject to deference on judicial review.”

<sup>24</sup> Order 73/15, pages 28-30.

<sup>25</sup> This was reasoning employed by the BC Court of Appeal in *BCOAPO*, *supra* note 19 at para 37.

<sup>26</sup> See *Stadler v Director, St Boniface*, 2017 MBCA 108 for a recent Manitoba example of an administrative tribunal, the Social Services Appeal Board, having been found to be *Charter* competent.

rates based on income as the objective of such rates could be to alleviate the disproportionate impact that rate increases may have on certain segments of the population.

While the Consumers Coalition is of the view that the Public Utilities Board likely has jurisdiction to order differential rates based on income, it does not recommend that such an order be made given the impact on ratepayers who would not be eligible or who would be eligible but not participate in such a program. The following section will provide further details and arguments on the Consumers Coalition's recommendation that the PUB should not exercise its jurisdiction regarding bill assistance.

### **Charter Protections and Constitutional Values are Always at Play**

In exercising their discretion under a delegated grant of authority, all administrative decision-makers must consider *Charter* values and protections. In its decision and recommendations regarding just and reasonable rates and whether to order a bill assistance program, the PUB must consider the impact on the equality and human dignity of low-income Manitobans and those with a high consumption of electricity.

### **The Charter is Not a Holy Grail**

The Constitution of Canada, including the *Charter of Rights and Freedoms*, is the “supreme law” of this country.<sup>27</sup> The role of the *Charter* and constitutional protections in administrative decision-making has evolved since the *Charter* came into effect over 35 years ago. As Justice McLaughlin (as she then was) stated in *Cooper v Canada (Human Rights Commission)*:

The Charter is not some holy grail which only judicial initiates of the superior courts may touch. The Charter belongs to the people. All law and law-makers that touch the people must conform to it. Tribunals and commissions charged with deciding legal issues are no exception. Many more citizens have their rights determined by these tribunals than by the courts. If the Charter is to be meaningful to ordinary people, then it must find its expression in the decisions of these tribunals.<sup>28</sup>

### **The Framework of Charter Values**

In *Doré v Barreau du Québec*, the Supreme Court of Canada made it clear that *Charter* values, and not just *Charter* rights, inform the analysis of a discretionary decision made by an administrative decision-maker.

The Consumers Coalition submits that the PUB’s deliberative process, its decision and its recommendations are exercises of its discretionary grant of authority. The PUB is a creature of statute entrusted to make decisions regarding setting just and reasonable rates for

<sup>27</sup> See *Constitution Act, 1982*, *supra* note 6 at s 52(1).

<sup>28</sup> *Cooper v Canada (Human Rights Commission)*, [1996] 3 SCR 854 at para 70. While a dissenting opinion in 1996, this passage by McLaughlin J. (as she then was) is reflective of the current state of the law: see *R v Conway*, 2010 SCC 22 at para 77.



Manitoba Hydro under *The Manitoba Hydro Act*, *The Crown Corporations Governance and Accountability Act* and *The Public Utilities Board Act*. This is a discretionary decision-making process that involves the balancing of various factors and interests.

At para 3 of *Doré*, Justice Abella, for a unanimous Supreme Court of Canada, considered “how to protect *Charter* guarantees and the values they reflect in the context of adjudicated administrative decisions”. She reaffirmed that “administrative decision-makers must act consistently with the values underlying the grant of discretion, including *Charter* values”<sup>29</sup> and that:

... administrative decisions are *always* required to consider fundamental values. ... administrative bodies are empowered, and indeed required, to consider *Charter* values within their scope of expertise.<sup>30</sup> (citations omitted)

In the aftermath of *Doré* and *Loyola High School v Quebec (AG)*,<sup>31</sup> administrative decision-makers are required to consider *Charter* values and protections when exercising discretion.

In *Doré*, the Supreme Court of Canada established a two-step test for an administrative decision-maker to allow it to balance *Charter* values with its statutory mandate. The first step is to consider the tribunal’s statutory objectives based on its governing legislation. The second is to “ask how the *Charter* value at issue will best be protected in view of the statutory objectives”.<sup>32</sup> The Supreme Court described the second step as the “core of the proportionality exercise” and said it will be met if the decision “falls within a range of possible, acceptable outcomes”.<sup>33</sup>

The *Doré* framework is intended to meet the reasonableness standard of review for discretionary administrative decisions. The Supreme Court noted that even though *Charter* values and/or rights are engaged, deference is owed because an “administrative decision-maker exercising a discretionary power under his or her home statute, has, by virtue of expertise and specialization, particular familiarity with the competing considerations at play in weighing *Charter* values”.<sup>34</sup> At para 54, the Supreme Court stated:

Even where *Charter* values are involved, the administrative decision-maker will generally be in the best position to consider the impact of the relevant *Charter* values on the specific facts of the case.<sup>35</sup>

Even where the law may appear to be settled in an area, it is necessary in light of *Doré* and subsequent cases that have applied the framework to ensure that discretionary decisions by an administrative tribunal are consistent with *Charter* rights and values.<sup>36</sup>

<sup>29</sup> *Doré v Barreau du Québec*, 2012 SCC 12 at para 24 [*Doré*].

<sup>30</sup> *Ibid* at para 35.

<sup>31</sup> *Loyola High School v Quebec (AG)*, 2015 SCC 12.

<sup>32</sup> *Doré*, *supra* note 29 at para 56.

<sup>33</sup> *Ibid* at para 56.

<sup>34</sup> *Ibid* at para 47.

<sup>35</sup> *Ibid*, at para 54.

<sup>36</sup> See e.g. *Duncan v Retail Wholesale Union Pension Plan*, 2017 BCSC 2375, at paras 105-106.

Within the broader context of the consumer interest in affordable access to reliable electricity, the Consumers Coalition submits that the implications of our Constitutional commitment to equal benefit of the law, to human dignity and to essential public services of a reasonable quality should be considered by the PUB in all aspects of the rate application including, but not limited to:

- the overall rate increase granted to Manitoba Hydro;
- the PUB's jurisdiction to implement differential rates based on income; and
- whether the PUB should exercise its jurisdiction regarding bill assistance considering the impacts and elements of such a program.

### ***Statutory Objectives of the PUB***

The first step in the *Doré* framework is to identify the tribunal's statutory objectives based on its governing legislation. As was discussed above, the PUB's statutory objective in a rate application is to set “just and reasonable” rates.<sup>37</sup>

Rates for services provided by Manitoba Hydro must be reviewed by the PUB under *The Public Utilities Board Act*. No changes in rates can be made and no new rates for services can be introduced without the PUB's approval.

In making a decision, the PUB may take into account various factors, for instance the revenue required to provide sufficient moneys for Manitoba Hydro to cover its expenses, the amount of necessary reserves and the amount of its liabilities. In addition, the PUB may take into consideration “any compelling policy considerations that the Board considers relevant to the matter” and “any other factors that the board considers relevant to the matter”.<sup>38</sup>

The Manitoba Court of Appeal has described the intent of *The Public Utilities Board Act* as being “to approve fair rates, taking into account such considerations as cost and policy or otherwise as the PUB deems appropriate”. In addition, the Court of Appeal said: “Rate approval involves balancing the interests of multiple consumer groups with those of the utility.”<sup>39</sup>

### ***Relevant Charter Values***

The second step in the *Doré* framework is to ask how the *Charter* values at issue will best be protected in view of the statutory objectives.

In order to apply this step, the *Charter* values at issue must be identified. The list of *Charter* values is “dynamic rather than static”, meaning that it is a non-exhaustive list that will change over time.<sup>40</sup> There is some overlap between *Charter* values and *Charter* rights and some authors have argued that “*Charter* values should be seen as mutually reinforcing and

<sup>37</sup> *PUB Act*, *supra* note 3 at s 77.

<sup>38</sup> *CCGA Act*, *supra* note 5 at s 26(4).

<sup>39</sup> *CAC Manitoba*, *supra* note 1 at para 63.

<sup>40</sup> Lorne Sossin & Mark Friedman, “*Charter* Values and Administrative Justice” (2014) Osgoode Legal Studies Research Paper Series, Vol 62, online: <http://digitalcommons.osgoode.yorku.ca/olsrps/62> at 22.

interlocking.”<sup>41</sup> They say this “adds both the coherence of *Charter* values in administrative justice, but also to their complexity and variability”.<sup>42</sup>

The Consumers Coalition submits that the *Charter* values that are of particular relevance in this Manitoba Hydro rate application are equality and human dignity.

## Equality

Equality is both a *Charter* right and a *Charter* value. When listing the “values and principles essential to a free and democratic society”, Justice Iacobucci in *Oakes* described it as a “commitment to social justice and equality”.<sup>43</sup>

As expressed by the Supreme Court, “[t]he promotion of equality entails the promotion of a society in which all are secure in the knowledge that they are recognized at law as human beings equally deserving of concern, respect and consideration.”<sup>44</sup>

In addition, equality under the *Charter* is “designed to remedy the imposition of unfair limitations upon opportunities, particularly for those persons or groups who have been subject to historical disadvantage, prejudice, and stereotyping.”<sup>45</sup>

The focus of equality under the *Charter* must always be substantive, as opposed to formal, equality. An impugned law or action can create an indirect distinction if it purports to treat everyone the same but has a disproportionate impact on a group or person based on factors relating to a protected ground.<sup>46</sup> As the Supreme Court noted at para 39 of *Withler*:

**Substantive equality, unlike formal equality, rejects the mere presence or absence of difference as an answer to differential treatment.** It insists on going behind the facade of similarities and differences. It asks not only what characteristics the different treatment is predicated upon, but also whether those characteristics are relevant considerations under the circumstances. **The focus of the inquiry is on the actual impact of the impugned law, taking full account of social, political, economic and historical factors concerning the group.** (emphasis added)<sup>47</sup>

Stated in another way, “the concept of equality does not necessarily mean identical treatment and that the formal ‘like treatment’ model of discrimination may in fact produce inequality.”<sup>48</sup>

<sup>41</sup> *Ibid* at 19.

<sup>42</sup> *Ibid* at 19.

<sup>43</sup> *R v Oakes*, [1986] 1 SCR 103 at para 64.

<sup>44</sup> *R v Kapp*, [2008] 2 SCR 483 at para 15 citing *Andrews v Law Society of British Columbia*, [1989] 1 SCR 143 at 171, per McIntyre J.

<sup>45</sup> *Law v Canada (Minister of Employment and Immigration)*, [1999] 1 SCR 497 at para 42 [Law].

<sup>46</sup> *Quebec v A*, 2013 SCC 5 at para 189.

<sup>47</sup> *Withler v Canada (AG)*, 2011 SCC 12 at para 39.

<sup>48</sup> *Kapp*, *supra* note 44 at para 15, citing *Andrews*, *supra* note 44 at 165.

## Human Dignity

The *Charter* value of “human dignity” has been described by the Supreme Court of Canada in the following way:

Human dignity means that an individual or group feels self-respect and self-worth. It is concerned with physical and psychological integrity and empowerment. Human dignity is harmed by unfair treatment premised upon personal traits or circumstances which do not relate to individual needs, capacities, or merits. It is enhanced by laws which are sensitive to the needs, capacities, and merits of different individuals, taking into account the context underlying their differences. Human dignity is harmed when individuals and groups are marginalized, ignored, or devalued, and is enhanced when laws recognize the full place of all individuals and groups within Canadian society.<sup>49</sup>

The *Charter* value of human dignity has most often been invoked in six specific areas, namely psychological integrity, physical security, privacy, personal autonomy, professional reputation and personal affiliation or group identity.<sup>50</sup>

Professor and Dean of Osgoode Hall Law School Lorne Sossin has expressly identified the exclusion of economic interests from protection under the *Charter* as a significant limit on the definition of human dignity. It has been proposed that interpreting the *Charter*'s preamble and its express reference to “the Supremacy of God” should be a way to interpret “human dignity” more broadly.<sup>51</sup>

Sossin argues that human dignity should be broader than individual dignity. He believes it should include a “collective dignity” that would be undermined if the state fails to fulfill “proactive obligations to care for its most vulnerable citizens”. In his article, Sossin quotes the following quotation from Oscar Schachter that advocates for a broader interpretation of “human dignity”:

... [f]ew will dispute that a person in abject condition, deprived of adequate means of subsistence, or denied the opportunity to work, suffers a profound affront to his sense of dignity and intrinsic worth. Economic and social arrangements cannot therefore be excluded from a consideration of the demands of dignity. At the least, it requires recognisiton [sic] of a minimal concept of distributive justice that would require satisfaction of the essential needs of everyone.<sup>52</sup>

<sup>49</sup> *Law*, *supra* note 45 at para 53.

<sup>50</sup> Lorne Sossin, “The ‘Supremacy of God’, Human Dignity and the Charter of Rights and Freedoms” (2003) 52 UNBLJ 227.

<sup>51</sup> *Ibid.*

<sup>52</sup> *Ibid* at 240-241.

## Essential Public Services of a Reasonable Quality

While not expressly recognized as a *Charter* value, the Consumers Coalition argues that in coming to its decision, the Public Utilities Board should consider Canada and Manitoba's obligations under section 36(1)(c) of the *Constitution Act, 1982* which states that:

**36. (1) Without altering the legislative authority of Parliament or of the provincial legislatures, or the rights of any of them with respect to the exercise of their legislative authority, Parliament and the legislatures, together with the government of Canada and the provincial governments, are committed to:**

- (a) promoting equal opportunities for the well-being of Canadians;
- (b) furthering economic development to reduce disparity in opportunities; and
- (c) providing essential public services of reasonable quality to all Canadians.** (emphasis added)<sup>53</sup>

The PUB regulates rates for electricity, which is an essential public service. While the justiciability of section 36 of the *Constitution Act, 1982* has yet to be determined, the Consumers Coalition submits that this explicit Constitutional commitment should underlie any regulatory decision regarding an essential public service.

## Human Rights Considerations

Similarly to *Charter* values, human rights considerations should also be considered by administrative decision-makers. In *Tranchemontagne v Ontario (Directory, Disability Support Program)*, the Supreme Court noted that the *Human Rights Code* is a “fundamental law” in Ontario that applies to both private citizens and public bodies.<sup>54</sup> As a “fundamental, quasi-constitutional law”, it “must not only be given expansive meaning, but also offered accessible application”.<sup>55</sup>

In that case, the Supreme Court reaffirmed that administrative tribunals “do not enjoy any inherent jurisdiction” and only have the powers set out in their enabling legislation.<sup>56</sup> However, administrative tribunals that have the power to decide questions of law “may presumptively go beyond the bounds of their enabling statutes and decide issues of common law or statutory interpretation that arise in the case properly before them”.<sup>57</sup>

Therefore an administrative tribunal with the power to decide questions of law may look to other statutes, including human rights legislation, “in order to apply the whole law to a matter properly in front of them”.<sup>58</sup> This presumption “exists because it is undesirable for a tribunal to

<sup>53</sup> See also *Manitoba Keewatinowi Okimakanak Inc v Manitoba Hydro-Electric Board*, 1992 CanLII 8479 (MB CA) where s 36(1)(c) was raised.

<sup>54</sup> *Tranchemontagne v Ontario (Directory, Disability Support Program)*, 2006 SCC 14 at para 13.

<sup>55</sup> *Ibid* at para 33.

<sup>56</sup> *Ibid* at para 16.

<sup>57</sup> *Ibid* at para 24.

<sup>58</sup> *Ibid* at para 14.

limit itself to some of the law while shutting its eyes to the rest of the law”.<sup>59</sup> At para 26, Justice Bastarache stated:

The law is not so easily compartmentalized that all relevant sources on a given issue can be found in the provisions of a tribunal’s enabling statute. Accordingly, to limit the tribunal’s ability to consider the whole law is to increase the probability that a tribunal will come to a misinformed conclusion. In turn, misinformed conclusions lead to inefficient appeals or, more unfortunately, the denial of justice.<sup>60</sup>

In Manitoba, it is important to note that *The Human Rights Code* has paramountcy over all other statutes in the province.<sup>61</sup> One of the enumerated grounds protected by *The Human Rights Code* is social disadvantage.<sup>62</sup>

### ***International Law***

In addition to *Charter* values and human rights considerations, in coming to its decisions in this proceeding, the PUB should consider international human rights treaties to which Canada is a signatory. While international treaties and conventions are not part of Canadian law unless they have been implemented by statute, “the values reflected in international human rights law may help inform the contextual approach to statutory interpretation and judicial review.”<sup>63</sup>

Economic rights have been recognized in many international legal instruments, including:

- Article 11 of the *International Covenant on Economic, Social and Cultural Rights* stipulates that States Parties recognize the right of everyone to an adequate standard of living for himself and his family, including adequate food, clothing and housing, and to the continuous improvement of living conditions.<sup>64</sup>
- Article 21 of the *United Nations Declaration on the Rights of Indigenous People* recognizes that Indigenous peoples have the right, without discrimination, to the improvement of their economic and social conditions, including, inter alia, in the areas of education, employment, vocational training and retraining, housing, sanitation, health and social security.<sup>65</sup>

<sup>59</sup> *Ibid* at para 26.

<sup>60</sup> *Ibid*.

<sup>61</sup> *The Human Rights Code*, CCSM c H175, s 58.

<sup>62</sup> *Ibid* at s 9(2)(m). Social disadvantage is defined in s 1 as: “social disadvantage” means diminished social standing or social regard due to  
 (a) homelessness or inadequate housing;  
 (b) low levels of education;  
 (c) chronic low income; or  
 (d) chronic unemployment or underemployment; (« désavantage social »)

<sup>63</sup> *Baker v Canada (Minister of Citizenship and Immigration)*, [1999] 2 SCR 817 at paras 69-70.

<sup>64</sup> *International Covenant on Economic, Social and Cultural Rights*, Article 11.

<sup>65</sup> *United Nations Declaration on the Rights of Indigenous Peoples*, Article 21.

- Section 2 of Article 4 of the *Convention on the Rights of Persons with Disabilities and Optional Protocol* provides that with regard to economic, social and cultural rights, each State Party undertakes to take measures to the maximum of its available resources and with a view to achieving progressively the full realization of these rights.<sup>66</sup>
- Under Article 22 of the *Universal Declaration of Human Rights*, everyone, as a member of society, has the right to social security and is entitled to realization of the economic, social and cultural rights indispensable for his dignity and the free development of his personality.<sup>67</sup>

The Consumers Coalition acknowledges that international treaties and conventions are not part of Canadian law unless they have been implemented by statute. The Consumers Coalition submits that these are aspirational texts that should assist the PUB in understanding *Charter* and human rights values, such as equality and human dignity, which the PUB must consider when exercising its discretion.

### ***Charter Protections in this Rate Application***

The Consumers Coalition submits that the PUB must consider *Charter* protections, and especially the *Charter* values of equality and human dignity when making its decisions regarding the setting of just and reasonable rates, its jurisdiction to implement a bill assistance program and in its consideration of whether or not to order such a program.

### ***Overall Rate Increase of 7.9% Should not be Granted***

In its decision-making process regarding a just and reasonable rate, the PUB must consider the impact of its decision on low-income individuals, who are protected by *Charter* values. Low-income customers will be the most impacted by the proposed rate increases and are disproportionately represented by historically disadvantaged groups, such as:

- First Nations peoples, living both on and off reserve;
- Persons with physical and mental disabilities;
- Newcomers to Canada;
- Women; and
- Children.

In its deliberations regarding a just and reasonable rate and bill assistance, the PUB should also consider the impact of its decisions on Manitobans with higher electricity consumption, including all-electric consumers and those living in poor quality housing.

<sup>66</sup> *Convention on the Rights of Persons with Disabilities and Optional Protocol*, Section 2 of Article 4.

<sup>67</sup> *Universal Declaration of Human Rights*, Article 22.

As the evidence has demonstrated in this proceeding, the rate increases proposed by Manitoba Hydro will impact all Manitoba ratepayers. The rate increases, however, will not be felt equally and will disproportionately impact lower-income ratepayers and ratepayers who have higher levels of electricity consumption for any reason, such as being all-electric, living in poor quality housing or having many people living in the same home.<sup>68</sup>

The evidence has also demonstrated that rate increases of the magnitude sought by Manitoba Hydro will have real significant impacts on these ratepayers. The evidence demonstrates that in order to pay for this rate increase, ratepayers will be faced with tough choices impacting them, their families and their dignity. These difficult choices include taking money from the food budget, keeping the thermostat at an uncomfortable temperature, considering going on or going back on social assistance, considering changing where they live, or living a life of confinement.<sup>69</sup>

Mr. Gordon Barton: *Well, if they got their -- the full amount of 7.9 that they're asking for, it would be a disaster. I already figured it out what would happen and there's a good possibility that I may have to consider changing where I live.*<sup>70</sup>

Ms. Lyndie Bright: *And I have cut back on Hydro sufficiently by lowering the heat. The apartment would be 65 and this room would be 74 Fahrenheit. I have not used things like cable or television or videos. The only thing that runs continuously would be refrigerator, freezer, stove for cooking and lights.*<sup>71</sup>

Ms. Lyndie Bright: *You're living on what you can afford and what you going to not have and you're living I'd say a life of confinement because you can't go out to restaurants and movies and buy clothing that you enjoy based on your income.*<sup>72</sup>

Ms. Emily Mayham: *I will be forced to further dig in deeper into my food budget, decreasing the amount of groceries I am able to buy per month. And in terms of food I will be looking at alternatives, cheaper, unhealthier alternatives in order to make my groceries last. It will reduce the amount -- it will reduce the amount that I'm able to engage in social activities with my children, social outings. It will negatively impact us.*<sup>73</sup>

The cost of electricity has been identified in this proceeding as the main driver of energy poverty.<sup>74</sup> While Manitoba Hydro's application is to confirm two interim rate increases of 3.36% for 2016/17 and 2017/18, and a rate increase of 7.9% for 2018/19, the Corporation has

<sup>68</sup> For example: see AMC/MH II-23 for the rise of energy poverty under MH's proposed rate path; Appendix 9.5 Updated of the Application for residential Bill Comparisons depending on level of consumption; see December 5, 2017 transcript pages 513, 560-563, 570-573,

<sup>69</sup> See December 20, 2017, pages 2793-2795 of the transcript for a further discussion. See also January 5, 2018 transcript pages 3374-3375, 3393-3394, 3410-3411, 3424-3425, 3438-3439.

<sup>70</sup> January 5, 2018, Transcript page 3410.

<sup>71</sup> January 5, 2018, Transcript page 3421.

<sup>72</sup> January 5, 2018, Transcript page 3430.

<sup>73</sup> January 5, 2018, Transcript page 3438.

<sup>74</sup> See AMC/MH II-23 and December 20, 2018 transcript pages 2818, 2886-2887.



forecasted an additional 5 years of 7.9% rate increases, followed by one year of 4.54%.<sup>75</sup> This forecast results in the highest and most sustained level of energy poverty as compared to other contemplated rate paths.<sup>76</sup>

In balancing the interests of the utility with those of Manitoba ratepayers, the Public Utilities Board must take into account *Charter* and human rights values. While the across-the-board rate increases proposed by Manitoba Hydro may meet the test of formal equality, the rate increases will have a disproportionate impact on vulnerable populations, especially lower income ratepayers and those with higher levels of consumption.

Within its statutory objective of setting just and reasonable rates, the Public Utilities Board must consider how the *Charter* values can best be protected. This is a proportionality exercise that will best be met if it falls within a range of possible, acceptable outcomes.

Given the significant evidence that a 7.9% rate increase is not necessary to maintain the overall financial health of the corporation and given the disproportionate impact on certain ratepayers, it would be unreasonable for the Public Utilities Board to grant Manitoba Hydro's requested rate increase of 7.9% for 2018/19.

The PUB could better meet its statutory objectives of setting just and reasonable rates and of balancing “the interests of the utility's ratepayers, and the financial health of the utility”<sup>77</sup> by granting a lower overall rate increase for 2018/19, as recommended by the Consumers Coalition, combined with regular reviews of Manitoba Hydro's rates.

A lower rate increase balancing the interests of rate payers and the financial health of the utility would also respect government's commitment to providing essential public services of reasonable quality to all Canadians.<sup>78</sup>

### ***A Ratepayer-Funded Bill Assistance Program Should Not be Ordered***

While the Consumers Coalition is of the view that the PUB likely has jurisdiction to order a ratepayer-funded bill assistance program, when taking *Charter* and human rights values into consideration, the Consumers Coalition does not recommend that the PUB exercise its jurisdiction.

The goal of affordable rate programs is to make it easier for low-income households to pay their bills on an ongoing basis.<sup>79</sup> The evidence in this proceeding, however, demonstrates that it is uncommon for bill affordability programs to reach more than half of those who might benefit from participation, including in jurisdictions that are considered leaders in such programs.<sup>80</sup>

<sup>75</sup> See Appendix 3.8, Integrated Financial Forecast MH16 Update with Interim.

<sup>76</sup> See AMC/MH II-23.

<sup>77</sup> *CAC Manitoba*, *supra* note 1 at para 65.

<sup>78</sup> *Constitution Act, 1982*, *supra* note 6, s 36(1)(c).

<sup>79</sup> December 20, 2017 transcript, page 2800.

<sup>80</sup> Appendix 10.5 to the Application, page 58. See also December 20, 2017 transcript pages 2802-2809.

One consequence of such low participation rates is that those households that are eligible but who do not participate in the program face higher electricity bills as a result of the program, which could exacerbate the challenges already faced by those households. A ratepayer-funded bill affordability program would also exacerbate consequences of higher energy costs for those who fall just outside the eligibility criteria for the program.<sup>81</sup>

Prairie Research Associates highlighted the consequences of a ratepayer-funded program on households who do not participate in its report on bill affordability:

It is critical to acknowledge that receipt of benefits is likely to require participating in a formal application process, and that customers who are unaware such assistance exists or who are unable or unwilling to participate in the process could not only fail to enjoy rate assistance for which they might otherwise be eligible, but may also be required to finance households that do take advantage of bill affordability programming.<sup>82</sup>

Bill assistance available to only a segment of the population facing energy poverty, such as a bill assistance program available only to First Nation customers, would not adequately balance *Charter* and human rights protections. Such a program would exclude a portion of the population facing energy poverty and would, in fact, increase that populations' electricity bills as they would be called upon to fund the bill assistance program through an increase in their rates.

A better balancing of the *Charter* values of equality and human dignity would be a government-funded program to address the challenge of energy poverty or its root causes, such as a basic income.<sup>83</sup> Given that a taxpayer-funded program would likely be based on income and ability to pay, rather than applied uniformly across the province, the impact on those who do not participate or those who fall just outside the eligibility criteria would be lower than through a ratepayer-funded program.

There are examples of government-funded programs to address energy poverty, through bill assistance or low-income energy efficiency programs, in Ontario,<sup>84</sup> in the United Kingdom<sup>85</sup> and in the United States.<sup>86</sup>

The Consumers Coalition submits that there is an obligation on government to implement a taxpayer-funded program to address energy poverty, which would better reflect *Charter* protections and government's commitment to providing essential public services of reasonable quality to all Canadians, as contemplated in the *Constitution Act, 1982*.<sup>87</sup>

<sup>81</sup> December 20, 2017 transcript, pages 2812-2813.

<sup>82</sup> Appendix 10.5 to the Application, page 122, footnote 74. See also December 20, 2017 transcript pages 2811-2812.

<sup>83</sup> Please note that Dr. Mason of Prairie Research Associates indicated support for a basic income on December 2, 2017 transcript, pages 2823-2824.

<sup>84</sup> See December 20, 2017 transcript, pages 2814, 2816 and Exhibit AMC-18 for a description of the Ontario Electricity Support Program.

<sup>85</sup> See December 20, 2017 transcript, page 2816 and Exhibit MH-95.

<sup>86</sup> See December 20, 2017, transcript page 2817.

<sup>87</sup> *Constitution Act, 1982*, *supra* note 6, s 36(1)(c).

### **Implications of The Efficiency Manitoba Act**

The Consumers Coalition submits that *The Efficiency Manitoba Act*<sup>88</sup> should be read in conjunction with the rest of the statutory scheme, including the promotion of economy and efficiency as enumerated in section 2 of *The Manitoba Hydro Act*.

While the savings target of 1.5% for electrical energy appears to be set in section 7(1) of *The Efficiency Manitoba Act*, the Consumers Coalition is of the view that the legislation supports an ongoing dialogue about the target itself and any efficiency plan that Efficiency Manitoba puts forward.

This ongoing dialogue is supported by the following sections of *The Efficiency Manitoba Act*:

- Under section 9, Efficiency Manitoba must prepare an efficiency plan for each three-year period, which is to be submitted to the PUB under section 10.
- Under section 11(1), the PUB is to review the efficiency plan and make a report, with recommendations, to the minister as to whether the plan should be (a) approved; (b) approved with suggested amendments; or (c) rejected.
- Pursuant to section 11(2), Manitoba Hydro is entitled to be heard or make submissions, through counsel or otherwise, on the review of an efficiency plan at the PUB.
- Section 11(4) states that in reviewing an efficiency plan and making recommendations to the minister, the PUB must consider
  - (a) the net savings required to meet the savings targets and the plans to address any existing shortfall;
  - (b) the benefits and cost-effectiveness initiatives proposed in the plan;
  - (c) whether Efficiency Manitoba is reasonably achieving the aim of providing initiatives that are accessible to all Manitobans; and
  - (d) any additional factors prescribed regulations.
- Optional recommendations by the PUB to the Minister found in section 11(5) include:
  - (a) an increase in a savings target if it is reasonably satisfied that it is in the public interest for Efficiency Manitoba to achieve additional net savings; or
  - (b) a decrease in a savings target if it is reasonably satisfied that the existing savings target is not in the public interest.
- Pursuant to section 16(1), Efficiency Manitoba must appoint an independent assessor to assess the following and prepare a report on the assessment:
  - (a) the results obtained by Efficiency Manitoba under an approved efficiency plan
  - (b) the cost-effectiveness of obtaining those results;

<sup>88</sup> *The Efficiency Manitoba Act*, SM 2017, c 18.

- (c) any other matter prescribed by regulation.
- Under sections 27(1)-27(3), a stakeholder committee must be established as an advisory body to Efficiency Manitoba.
- Pursuant to sections 39(1) and 40(1)-40(2), the Lieutenant Governor in Council may make general regulations, as well as regulations of demand-side management and savings targets of other resources, including electrical power in Manitoba.

The Consumers Coalition submits that the starting point for the dialogue contemplated between the PUB, Manitoba Hydro, Efficiency Manitoba, the stakeholder committee, the independent assessor and the regulations made by the Lieutenant Governor in Council should be the promotion of economy and efficiency, as contemplated in section 2 of *The Manitoba Hydro Act*.

There is currently significant uncertainty regarding demand-side management spending given the transition between Manitoba Hydro and Efficiency Manitoba. It is also of note that the Regulations under *The Efficiency Manitoba Act* have not yet been established.

The Consumers Coalition submits that when making recommendations relating to the efficiency plan and the savings target, consideration should be given to cost-effectiveness of programs. This is especially important in the current context where Manitoba Hydro's marginal costs are lower than they have been historically.<sup>89</sup>

It is also important to note that the Affordable Energy Fund is continued under Efficiency Manitoba and that the statutory scheme empowers to Lieutenant Governor in Council to make regulations regarding the fund.<sup>90</sup> Experts in this proceeding have recognized the importance of low-income energy efficiency measures in reducing the energy burden. Quality of housing can significantly impact electricity consumption, especially for all-electric customers. High consumption leads to higher electricity bills, which disproportionately impacts low-income and other vulnerable customers who live on a fixed income.

While not explicitly contemplated in *The Efficiency Manitoba Act*, the ongoing dialogue regarding the savings target and efficiency measures should include issues related to accessibility of demand-side management programs for all ratepayers. The Consumers Coalition submits that the PUB should recommend that funds from capital taxes, water rental fees and the debt guarantee fees paid by Manitoba Hydro to the Province should instead be used to fund more extensive demand-side management programs specifically targeted to low-income and high consumption consumers.

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<sup>89</sup> See PUB/MH II-57 (Revised).

<sup>90</sup> *The Efficiency Manitoba Act*, *supra* note 88 s 37(2), 37(3).

# TAB 11



## **MANITOBA HYDRO 2017/18 & 2018/19 GRA**

### **CONSUMERS COALITION PATH TO RECOMMENDED RATE INCREASE**

#### **1. CONTEXT – PAST ORDERS**

- As a result of Manitoba Hydro's (MH) last General Rate Application (GRA), Board Order 73/15 approved a rate increase of 3.95% effective April 1, 2015. Of the 3.95%, 2.15% was directed to be placed in the previously established deferral account to mitigate rate increases when Bipole III came into service in 2018/19. The balance of the increase (1.8%) was to follow to general revenues to offset costs and improve Manitoba Hydro's financial position (Order 73/15, page 3). In making the Order, the Board noted that the 1.8% aligns with the anticipated rate of inflation. It should also be noted that the 3.95% is equivalent to the rate increase requested by Manitoba Hydro and was the basis for the "rate plan" in IFF14 (the basis for the 2014/15 and 2015/16 GRA), which called for annual rate increases of 3.95% through to 2031, followed by increase of 2%/annum, so as to achieve a debt ratio of 75% by 2033/34.
- In Order 59/16 the Board approved an interim rate increase for Manitoba Hydro of 3.36%, effective August 1, 2016. The Board further directed that all of the additional revenue generated by the increase be directed to the Bipole III deferral account (Order 59/16, page 3). The Order noted that the financial forecast (IFF15) provided by Manitoba Hydro had not complied with its previous directives regarding the accounting treatment for overhead costs and depreciation. If it had done so, the annual rate increases to achieve a debt ratio of 75% by 2033/34 would be 3.36% (Order 59/16, page 9).

#### **2. STARTING POINT**

- Based on the premise that Manitoba Hydro has not substantiated either: i) a different financial target than the 75% debt ratio or ii) the need to achieve the target any earlier than previously planned (i.e., 2033/34), a reasonable starting point for considering the required rate increase for 2018/19 is Exhibit MH-80 where it is demonstrated that, based on IFF16 Update with Interim Increase, an average annual rate increase of

4.34% through to 2033/34 would result in a debt ratio of 75% in 2033/34. The following table compares the results from this forecast (and another at 3.95%) with those from IFF14 and IFF15 – based on Board accounting and 3.36%/annum.

	<b>2018/19</b>	<b>2023/24</b>	<b>2026/27</b>	<b>2033/34</b>
<b>Debt Ratio</b>				
- IFF14	86%	90%	90%	75%
- IFF 15 (@3.36%)	86%	88%	87%	75%
- IFF16 U/I (@4.34%)	86%	88%	89%	75%
- IFF 16 U/I (@3.95)	86%	88%	90%	81%
<b>Retained Earnings (\$M)</b>				
- IFF14	2,812	2,001	2,007	5,557
- IFF 15 (@3.36%)	2,847	2,804	2,951	6,046
- IFF16 U/I (@4.34%)	2,973	3,101	2,785	6,327
- IFF16 U/I (@3.95%)	2,967	2,933	2,371	4,651

Sources: IFF14 – Last GRA, Appendix 3.3  
 IFF15 – 2016 Interim Application, Attachment 46  
 IFF16 – Update with Interim & 20 yr. WATM (@4.34%) – Current GRA, Exhibit MH-80  
 IFF16 – Update with Interim & 20 yr. WATM (@3.95%) – Rebuttal, Appendix 1.6

In its Rebuttal Evidence (page 3) – Manitoba Hydro notes that the 2 year net income to 2018/19 is now expected to be \$78 M less than forecast. However, even with this reduction the retained earnings under the 3.95% scenario is still greater than forecast in either IFF14 or IFF15 (@3.36%).

**Immediate Issues with the 4.34% and 3.95% Scenarios**

However, there are two initial issues with the 4.34% and 3.95% scenarios:



- The Scenarios do not incorporate the Board's Order 73/15 directives regarding accounting for overheads and depreciation.
  - There are no scenarios setting out the impact on the equal rate increases needed to achieve 75% in 2033/34 of implementing the Board's accounting consistent with the IFF16 Update with Interim. However, based on the initial Application using IFF16 a comparison of Appendix 3.3 and MIPUG MFR 5 suggests the impact on the Debt ratio is negligible for 2018/19 and roughly a 1 percentage point reduction for 2023/24 and 2026/27. By 2033/34 the impact is roughly a two percentage point reduction.
- The Scenario assumes that MH reverts to the 20-year WATM. This is likely a reasonable assumption.

*Other Issues with the 4.34% Scenario*

i. Export Price Forecast

- Manitoba Hydro has changed the basis for its Export price forecast, with a key change being the assumption that there will be no extra revenue received for capacity or premium for “dependable” surplus energy, over that received from surplus opportunity energy sales. Daymark (Export Evidence, pages 60-61) suggests that while this approach may be reasonable in the near term – it is inconsistent with market trends over the longer term (i.e. after the first 5 years).
- It should also be noted that the amount of dependable surplus energy increase after 2022 when Keeyask comes into service and 2025 when some of the major existing export contracts expire (Appendix 3.1, page 18), since MH does not assume that the contracts will be renewed or replaced. As a result, any revisions to the export prices are likely to have effect primarily in the years after 2024/25. To demonstrate this point, Exhibit DEA-7, Slide #8 shows a material drop in the P50 value for export revenues (see also slide #34).

- Daymark also notes that given the current low natural gas prices and the exclusion of any capacity value – even if the export price forecast represents a P50 values – the expected export revenues are likely to be higher than forecast. (Daymark Export Price Evidence, pages 75-76).

## ii. Load Forecast

- Manitoba Hydro has changed the way it forecasts Top Consumer load over the longer term. Daymark (Load Forecast Evidence, page 5) has concluded that the forecast is conservative.
- Daymark also notes (page 5) that MH has consistently under forecasted the population and customer count, which will result in under forecasting residential and general service mass market loads. The under forecasting of population is minimal in the first year of the forecast but grows to about 2% by year 10 (Exhibit DEA-5 – Slide 27).
- Any correction for these two items is also likely to have the greatest effect in the later years of the IFF, particularly after year 5 when the new approach to Top Consumer load forecasting was implemented.

## iii. DSM

- Manitoba Hydro has not rationalized its DSM plans (i.e., savings and spending) in light of the updated (lower) marginal costs.
- Based on IFF16, PUB MFR 77 indicates that a 50% reduction in DSM spend accompanied by a 50% reduction in DSM savings would increase retained earnings as follows:
  - 2018/19 - \$4 M
  - 2023/24 - \$275 M
  - 2026/27 - \$572 M
  - 2033/34 - \$1,689 M

#### iv. Sustaining Capital Spending

- In its evidence METSCO concludes that “the Applicant’s System Renewal capital budgets for the test years and beyond, as presented in Appendix 5.42, are not adequately supported by evidence” (Exhibit CC-19, page vi).
- METSCO also noted that “between 2014/15 and 2016/17 the Applicant came short of its forecasted in-service additions by the weighted average of 18.4% in the Business Operations Capital category” (Exhibit CC-19, page 41).
- Business Operations capital spend averages about \$550 M per year for the ten year period 2018-2017 (Appendix 3.1, page 55)
- Based on IFF16 Update with Interim, PUB/MH II-33 b) indicates that a \$100 M annual reduction (roughly 18%) in Business Operations Capital spending would increase retained earnings as follows:
  - 2018/19 - \$2 M
  - 2023/24 - \$139 M
  - 2026/27 - \$324M
  - 2033/34 -\$1,227 M

### 3. **PROPOSED APPROACH**

- It is noted that there is considerably more uncertainty with respect to the overall outlook over the longer term, particularly after 2023/24, in regards to export revenues (when both Keeyask is in-service and existing export contracts expire), and when the more conservative load forecast assumptions regarding the Top Consumers come into play.
- Also, drawing on the testimony of Morrison Park Advisors, it is fair to say that there is still an outstanding question about the appropriate long run financial targets for Manitoba Hydro.
- Finally, there is a question as whether, given the almost 2 year delay in the in-service date for Keeyask since IFF15 was prepared, the date for achieving the

financial target shouldn't also be pushed back two years to 2035/36. Achieving this, with Manitoba Hydro's accounting assumptions, would require equal annual increases of 3.88%/annum (Exhibit MH-93).

- Based on these observations and Manitoba Hydro's acknowledgement that its longer term rate plan will be adjusted as circumstances change, the focus in establishing the rates for 2017/18 and 2018/19 should be the shorter term outlook through to 2023/24 (*Note – there is no magic about this particular date other than it is after Keeyask is in-service and just before the major export contracts with Northern States Power expire*) and seek to maintain a financial outlook consistent with that in IFF14 and IFF15 (@3.36%), which is the basis for the Board's most recent Orders.
- It is noted that the difference between 4.34% rates increases and 3.95% rate increases produces \$168 M more retained earnings by 2023/24, which translates into roughly \$430 M impact on retained earnings for 1% rate reduction (\$168/ (4.34-3.95)). It is further noted that a 3.95% annual increase to 2023/24 yields a debt ratio of 88% in that year, the same as IFF15 (@3.36%).
- Based on the potential impacts from: i) DSM rationalization, ii) Business Operations Capital expenditure rationalization, iii) adoption of the Board's directives / Mr. Harper's recommendations regarding deferral accounting and iv) expected export revenues being higher than the P50 values – it is reasonable to assume a revenue increases and cost reductions could be achieved by 2023/24 sufficient to improve retained earnings by \$400 M (*Note – the foregoing analysis suggested that the a 50% adjustment to DSM spending/savings and a \$100 M reduction in business operations capital expenditures alone could increase retained earnings by over \$400 M by 2023/24 – before any consideration of additional impacts from adopting revised accounting for deferral accounts or higher expectations regarding export revenues*) – if not more.
- This would imply that annual rate increases in the order of **2.95%** when coupled with : i) DSM rationalization, ii) Business Operations Capital expenditure

rationalization, iii) adoption of the Board's directives / Mr. Harper's recommendations regarding deferral accounting and iv) expected export revenues being higher than the P50 values, could yield a debt ratio for 2023/24 in the order of 88% - similar to IFF14 and IFF15 (@3.36%) (*Note: The 2.95% is a conservative reduction – one could pose a lower value but the impact of items (iii) and (iv) are not known*).<sup>1</sup>

<sup>1</sup>To the extent that there is uncertainty regarding the final capital cost of Keeyask and about future interest rates, these uncertainties could be accounted for with a rate increase for April 1, 2018 in the order of 3.5%.

