

# Manitoba Hydro Annual Business Plan 2018-19

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## **MANITOBA HYDRO ANNUAL BUSINESS PLAN 2018-2019**

### **Crown Corporations Governance and Accountability Act**

Manitoba Hydro hereby submits its Annual Business Plan as required by the *Crown Corporations Governance and Accountability Act*, consistent with the provided guidelines for a standard format among Crown corporations' plans.

## MANITOBA HYDRO ANNUAL BUSINESS PLAN 2018-2019

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## MANITOBA HYDRO ANNUAL BUSINESS PLAN 2018-2019

### 1. Mandate

#### 1.1 Manitoba Hydro's Mandate as set out in *The Manitoba Hydro Act*

The purposes and objects of this Act are to provide for the continuance of a supply of power adequate for the needs of the province, and to engage in and to promote economy and efficiency in the development, generation, transmission, distribution, supply and end-use of power and, in addition, are:

- *to provide and market products, services and expertise related to the development, generation, transmission, distribution, supply and end-use of power, within and outside the province; and*
- *to market and supply power to persons outside the province on terms and conditions acceptable to the board.*

#### 1.2 Key Directives from Province

On March 26, 2018 the Minister of Crown Services provided the Chair of the Manitoba Hydro-Electric Board with a Ministerial mandate letter outlining the priorities of Government to improve the province and general expectations for Crown Corporations. Manitoba Hydro identifies the following key directives and priorities of Government in guiding its activities for the 2018/19 year:

##### **A Directive to Manitoba Hydro Electric Board Respecting Agreements with Indigenous Groups and Communities**

On March 21, 2018 the Minister of Crown Services issued the following directive to the Manitoba Hydro Electric Board:

*Manitoba Hydro is directed to not proceed with the agreement with the Manitoba Metis Federation at this time.*

*Going forward, all relationship agreements, community benefit agreements or other similar agreements to which this directive applies between Manitoba Hydro and Indigenous communities and groups require review by the Minister of Crown Services before being executed.*

*Further, to ensure alignment between the policies and procedures of Manitoba Hydro and the priorities and policies of the government, Manitoba Hydro is directed to collaborate with Manitoba Crown Services to develop a strategy to advance reconciliation with Indigenous communities and groups.*

As directed, Manitoba Hydro is working with Crown Services to implement the above directive.

##### **Transition of Demand Side Management to Efficiency Manitoba**

The Efficiency Manitoba Act was proclaimed on January 17, 2018 setting the stage for the transition of Demand Side Management responsibilities from Manitoba Hydro to a newly established Crown corporation. Efficiency Manitoba is intended to deliver a range of efficiency programs beginning with

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gas and electric energy, with possible long-term expansions into areas such as water and transportation programs. Efficiency Manitoba's first board of directors was appointed on May 17, 2018. An acting Chief Executive Officer is also in place.

A cross-government/Crown transition team will be working closely over the next year to facilitate the transition of the responsibility for Demand Side Management to Efficiency Manitoba. A comprehensive program inventory and performance analysis has been completed and work has begun on the development of administrative services arrangements to facilitate the transition of staff and programs. Rebranding work is also underway to transition to Efficiency Manitoba from Power Smart due to the end of Manitoba Hydro's trademark license in the fall of 2018.

### **Made-in-Manitoba Climate and Green Plan**

Manitoba Hydro will accelerate the cessation of coal burning at Manitoba Hydro's last remaining coal-fired generating unit. This will be complete by December 31, 2018.

### **Red Tape Reduction**

As set out in *The Regulatory Accountability Act*, Manitoba Hydro will continue to work towards reduced red tape for customers and all other stakeholders. Key activities for the 2018/19 fiscal year include:

- Reporting of regulatory requirement count to the Regulatory Accountability Secretariat submitted on April 13, 2018 as required.
- Annual reporting of Regulatory Accountability and Red Tape Reduction will be submitted to Crown Services by June 15, as required.

## 2.0 Operating Environment

### 2.1 Internal Environment

The Corporation's internal operating environment is in transition. In 2017, Manitoba Hydro streamlined its corporate organizational structure through the consolidation of executive portfolios resulting in a 30% reduction to its executive team. Subsequent to this, in May 2017 a Voluntary Departure Program (VDP) was extended to employees resulting in a reduction of approximately 15% of the total permanent workforce.

Emerging from the VDP, a strong, skilled, diverse and experienced workforce remains. The 2018-19 year will see an emphasis on further optimization of work, reallocation of resources, and change management.

In collaboration with the reconstituted Manitoba Hydro-Electric Board, Manitoba Hydro's management is moving forward with the development of a new Corporate Strategic Plan.

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Manitoba Hydro has deep and solid overall operating infrastructure, processes and technology to build on, and maintains a track record of excellent customer service and project delivery.

With the exception of the transition of Demand Side Management activities (and potentially associated staff) to Efficiency Manitoba, Manitoba Hydro does not anticipate any material reorganization or divestment in the 2018/19 year.

### 2.2 External Environment

Manitoba Hydro works within a dynamic and complex business environment with many diverse stakeholders. While many factors are outside of its direct control, the Corporation monitors and plans to mitigate the impacts of potential changes.

In the short-term, key uncertainties that may have a significant impact on our business include:

- Macro-economic variables including GDP growth impacting Manitoba (domestic) electricity load and export power prices. Interest rates and the potential for a significant increase in borrowing costs are among our Highest Priority Risks (as listed in Section 2.3).
- In Order 59/18, the Public Utilities Board (PUB) signaled its potential direction of setting a new financial target policy for rate setting. Further clarity on financial target and long term rate policy is required for financial planning, and may be established through a pending Technical Conference ordered by the PUB.
- The outcome of a National Energy Board hearing on the Manitoba Minnesota Transmission Project (MMTP) together with the timing for the Federal and Provincial Licenses creates potential for negative impacts to schedule and costs.
- The pace and timeline of the transition of Demand Side Management activities to Efficiency Manitoba.
- Water flow conditions which materially impact hydraulic generation and financial results.
- Large numbers of requests for service from cryptocurrency (e.g. bit-coin) mining which could significantly and quickly increase demand for electricity in the province.

In the longer term, Manitoba Hydro will need to monitor potential impacts from:

- Climate change and shifting weather patterns
- Technology advancements
  - Falling battery costs and the increasing model availability of electric vehicles are setting the stage for the electrification of transportation.
  - The falling cost of wind and solar combined with the drive toward de-carbonization will continue to reshape both export and domestic markets and potentially challenge the traditional centralized grid operating and pricing model.

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- Societal dependency on digital infrastructure and changing needs and expectations of customers.

### 2.3 Risks

Manitoba Hydro has a relatively low tolerance for risk due to its monopoly responsibility to ensure the provision of reliable energy services to Manitobans. However, Manitoba Hydro must balance the costs of risk management and mitigation with impacts on rates.

Manitoba Hydro has identified the following Highest Priority Risks as needing the most critical attention and focus over the next 12 months or longer. Each reflect i) elevated levels of likelihood; ii) high consequences even after any mitigation initiatives; and iii) a current status that is outside of the Corporation's assessed risk tolerance. They are:

- Completion of major capital projects (Bipole III Reliability Project, Keeyask Generating Station and Manitoba-Minnesota Transmission Project and Great Northern Transmission Line) on time and on budget;
- Increasing interest rates with a potential cumulative impact greater than \$1 billion for a 1% change (above forecast) over 10 years
- Implementing electricity rate increases in order to achieve an adequate income and cash flow level during a period of significant capital investment;
- Customer exposure to volatile or significantly higher future rate increases in the event of a significant increase in borrowing costs, prolonged drought, deterioration in export revenues, catastrophic outage, or sharp increases in capital or operating costs;
- Asset management and our ability to address system capacity constraints in distribution assets to maintain reliability and customer service at adequate and target levels.

The growth of electronic communication and automation, while delivering significant benefits, has also increased risk to the Corporation. Countermeasures, management controls and processes are in place to mitigate the emerging Cyber Security risk.

The table that follows on the next page identifies the Corporation's Highest Consequence Risks. Management's assessment is that each remains a low probability event and that sufficient steps have been taken to mitigate to the extent possible the likelihood and consequence of each.

Risk	Potential Financial Impact
Infrastructure – prolonged loss of supply	> \$2 billion
Drought – water supply variation/drought	> \$1.4 billion for a 5 year drought
Loss of export market access	> 25% of electricity revenue

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### 3.0 Strategic Direction

#### 3.1 Mission, Strategic Priorities and Foundational Principles

The Mission, Strategic Priorities and Foundational Principles in the diagram below are a framework developed as the basis for our future strategic planning.



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### 3.2 Strategic Priorities & Performance Metrics - 2018/19

*Meeting customer expectations is at the heart of our Mission.*

At the highest level, Manitoba Hydro’s mandate as set out in the Manitoba Hydro Act is not changing. However, the mission to create value for Manitobans, meet customer’s expectations, and deliver safe, reliable energy services at a fair price requires that the Corporation adapt to changes in society and business environment, and continually improve the effectiveness and efficiency of operations.

In 2018/19, the Corporation commenced the development of a new Corporate Strategic Plan. Planning processes will include a deeper look at the changing needs of customers as well as core business delivery. Anticipated changes to the industry will also be considered to ensure the Corporation is well positioned for the future.

### 3.3 Core Business Delivery

With a mission-centric perspective, Manitoba Hydro will deliver the energy services that customers expect.

- Safe: as energy is an essential service
- Reliable: for comfort, convenience and business continuity; at a
- Fair price: by striving for cost efficiency

To achieve these operational outcomes, the following operational targets are identified:

Measure	Target
Reliability: SAIDI	<116 minutes per year
Reliability: SAIFI	< 1.4 outages per year
Customer Satisfaction	> 8.2/10 (CSTS survey results)
Net Income	\$71M forecast
Primary Costs <sup>(1)</sup>	at or below budget of \$897M (electric & gas)
Supply Chain Management Initiatives	\$35.8M annual recurring cost savings target over next 3 years

(1) Primary costs include wages & salaries, overtime and benefit costs charged to the Electric and Natural Gas segments prior to capitalization of any such costs as well as any external expenditures (e.g. material, contracted services) directly charged to Operating and Administrative expense. It does not include external expenditures charged directly to capital projects/programs.

Safety is always Manitoba Hydro’s number one priority for our employees and is monitored and reported on using standard industry metrics.

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Measure	Target
Accident severity rate	<12 days per 200 000 hours worked
Accident frequency rate	< 0.6 accidents per 200 000 hours worked
Serious incidents	0
Safety Improvement	20% reduction in serious incidents, lost time injuries, and calendar days lost over 2017/18 results

Respect & support for Indigenous peoples is a shared journey. Manitoba Hydro engages in respectful dialogue with Indigenous communities and organizations to support operations and projects. The Corporation monitors past and current efforts to attract and retain Indigenous employees and continually monitors success as seen in the table below.

Measure	Target	Indigenous staff at Feb 2018
Indigenous employment	18% province-wide	19.4%
	47% northern workforce	48.5%

### 3.4 Strategic Initiatives

Through the initial stages of our strategic planning, we have identified several strategic initiatives necessary to strengthen and align the corporation.

The following outcomes specific to 2018/19 are expected:

- Extend existing and sign new export power contracts
- Competitively tender for and execute new multi-year Gas Supply contract

Many of our priorities are on-going and are multi-year initiatives. Milestones for the current year have been identified and include:

- Continue to enhance Customer Experience
  - Establishment of Strategic Transformation Office
  - Execute on 13 Strategic Transformation Initiatives
  - Complete customer attitudinal and values assessment
- Execute on key capital maintenance and improvement priorities
  - Maintain existing system in an efficient, cost-effective manner
  - Meet customer demands for growth of the system
- Clarify PUB directive with respect to financial target settings and develop new financial plan for electric segment
- Drive aligned Corporate view of Asset Management

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- Respect existing agreements with Indigenous communities and organizations
- Support and advance corporate-wide Indigenous initiatives such as cultural awareness training, and employment initiatives
- Maintain positive relationship with key stakeholders, including our Keeyask partners, other important indigenous communities and organizations, major suppliers/contractors, private landowners affected by Hydro transmission line developments, and employees
- Engage employees in the development of the Corporate Strategic Plan
- Continued reduction in supply chain costs

Additional measures and targets will be identified through the planning processes as they become operationalized.

### 3.5 Major Project Delivery

The completion of the major capital projects is a critical focus and one of our Highest Priority Risks as identified in Section 2.3. Significant resources are dedicated to monitoring and enhancing the progress of these projects to ensure they are completed on time, on budget, and on scope. The following milestones have been identified for the 2018/19 fiscal year:

- Bipole III Reliability Project
  - In-service July 2018, under control budget \$5.04B
- Keeyask: multi-year project with target first power date of August 2021
  - Completion of the earthworks progress required to support river diversion through the spillway by September 2018
  - Achieve construction progress sufficient to remain on or ahead of plan based on the current control budget of \$8.7B and first unit in-service date of August 2021
  - Enclosure of Powerhouse Units 4 & 5 by January 2019
  - Placement of 105,000 cubic metres of concrete
- Manitoba Minnesota Transmission Project (MMTP): preparing to start construction
  - Complete NEB hearings and obtain Federal and Provincial licenses
  - Start construction December 2018 (timeline dependent on licensing)
  - Maintain progress towards June 2020 in-service schedule for both GNTL and MMTP

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### 4.0 Financial Budgets & Forecasts

#### 4.1 Statement of Net Income

Statement of Net Income				
	Actual	Estimate	Budget A	NOTES
	2016/17	2017/18	2018/19	
<b>For the year ended March 31</b>				
<b>REVENUES</b>				
Domestic Revenue				
Electric	1,515	1,625	1,676	A.
Gas	342	341	308	
BPIII Reserve Account	(96)	(152)	(51)	A.
Extraprovincial				
Dependable	248	260	256	
Opportunity	202	166	149	
Other Export	9	9	4	
Other Revenue	106	85	142	A.
	2,327	2,334	2,484	
<b>EXPENSES</b>				
Cost of Gas Sold	183	195	167	
Operating and Administrative	608	591	574	
Depreciation and Amortization	402	424	497	
Water Rentals and Assessments	131	126	120	
Fuel and Power Purchased	132	128	130	
Demand Side Management	61	74	72	
Other Expenses	40	428	46	B.
	1,558	1,966	1,606	
<b>Operating Income</b>	771	367	878	
% of Revenue	33%	16%	35%	
Restructuring Charge	3	49	7	
Net Finance Expense	628	611	727	
Capital and Other Taxes	135	147	160	
	766	807	894	
Net Income before Net Movement in Reg. Deferral	4	(440)	(15)	B.
Net Movement in Regulatory Deferral	55	470	72	B.
<b>Net Income</b>	<b>59</b>	<b>30</b>	<b>65</b>	
<b>Net Income Attributable to:</b>				
<b>Manitoba Hydro</b>	<b>71</b>	<b>39</b>	<b>71</b>	
Non-controlling Interest	(12)	(9)	(6)	
<b>Additional Domestic Revenue</b>				
General electricity rate increases	3.36%	3.36%	3.60%	
General gas rate increases	0.00%	0.00%	0.00%	
<b>Financial Ratios</b>				
Equity (Target >25%)	16%	15%	14%	
EBITDA Interest Coverage (Target >1.80)	1.54	1.50	1.58	
Capital Coverage (Target >1.20)	1.48	0.50	1.18	

**NOTES:**

A. In 8059-18, the PUB approved an average revenue increase of 3.6% effective June 1, 2018. The budget figures above reflect the actual rate award as well as the impact of regulatory accounting changes directed by the PUB.

B. Other Expenses for 2017/18 includes the transfer of the construction in progress balance related to the Conawapa Generating Station of \$379 million as a result of the corporation's decision to discontinue further development of the station. Manitoba Hydro received approval by the PUB for recognition of the costs of Conawapa in a regulatory deferral balance (reflected in Net Movement in Regulatory Deferral) and subsequent amortization over a 30 year period.

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### 4.2 Key Planning Assumptions

- The impacts of PUB Order 59/18, which includes an average revenue increase of 3.6% effective June 1, 2018 and the amortization of the Ineligible Overhead deferral over 34 years;
- Forecasts based on actual data up to December 31, 2017;
- The Winter 2017 interest rate forecast;
- Electricity load forecast based on the 2017 Fall Update (P50);
- Electricity export price forecast based on the 2017 Fall Update;
- 20 year weighted average term to maturity on new debt; and
- Capital expenditures forecast for 2018 (CEF18).

### 4.3 Sensitivity Analysis

2018/19 forecast Net Income of \$71 million could be impacted by variances in planning assumptions. Critical risks to budget and associated impact are as follows:

#### Water Conditions

- Experiencing lowest flow conditions on record (1940/41 drought) would result in a net loss of \$304 million (\$375 million reduction)
- Flows at the 20<sup>th</sup> percentile would impair net income by \$45 million
- Highest flow conditions on record (2005/06) would increase net income by \$100 million

#### Weather:

- +/- 10% variation on normal heating degree days may have a +/- \$36 million annual impact to revenue and net income.
- Unusually volatile weather (storms) could negatively impact net income by approximately \$5 million due to higher service restoration costs (particularly overtime).

#### Export Revenues:

- Lower water flow conditions impact opportunity export revenue and are quantified above.
- 2018/19 forecast assumes an appreciation in market prices over 2017/18 levels for opportunity sales based on third-party forecasts. If such appreciation does not materialize, net income would be reduced by \$15 million.

## 5.0 Human Resources

The Voluntary Departure Program (VDP) undertaken in 2017 and early 2018 was the most ambitious such program in the Corporation's history. The VDP had a significant impact on the organizational structure of Manitoba Hydro and the corporation will continue to work toward achieving 100% of the target reduction of 900 positions by 2019/20 as it has committed to. Focus will be placed on finding

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additional efficiencies, optimizing work and work processes, reallocation of resources, and effective change management.

### 5.1 Equivalent Full-Time (EFT) Employees

Equivalent Full-Time (EFT) Employees			
	<u>at March 31</u>		
	<b>2017</b>	<b>2018</b>	<b>2019</b>
Senior Management	41	36	36
Management	149	130	115
Employees	6,016	5,612	5,295
Subsidiary Employees*	205	220	220
	6,411	5,998	5,661
Less: Estimated VDP impact on EFTs in 2017/18	-	400	
<b>Total EFT count</b>	<b>6,411</b>	<b>5,598</b>	<b>5,661</b>

*\*Manitoba Hydro International and Manitoba Hydro Utility Services*

The table above reflects Equivalent Full Time Employees which measures all hours worked in a period divided by 1,916 hours per year. EFT calculations include seasonal, part-time and temporary staff.

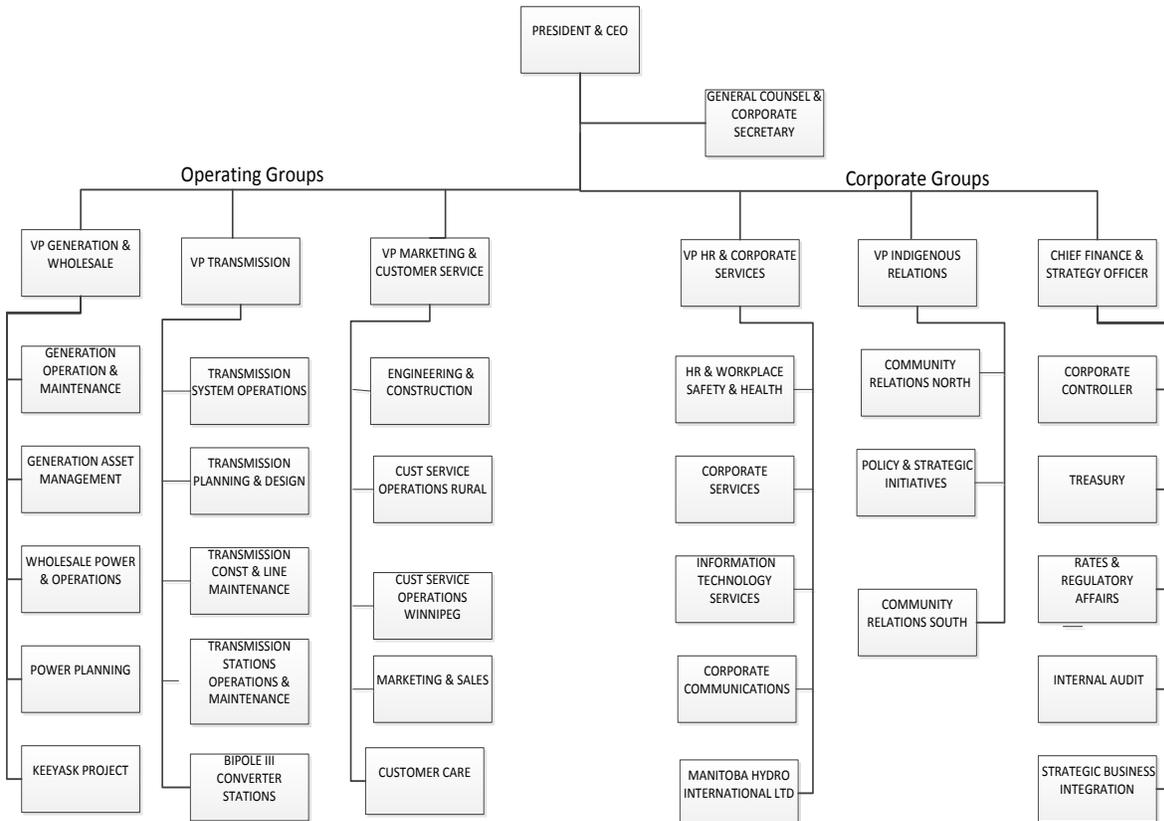
In addition, the EFT calculation would include an amount on account of employees that departed the Corporation during a given period. Manitoba Hydro has been in the midst of a significant management reorganization and downsizing since February of 2017. As a result, the figures in the table above, particularly for 2017/18, understate the effective headcount reductions undertaken. Key points:

- In early 2017, Manitoba Hydro reduced its complement of Vice Presidents by 30% (10 to 7)
- During 2017/18, Director positions were reduced from 32 to 27 as at June 2018 resulting in a senior management team of 35 (including the President & Chief Executive Officer and Vice Presidents)
- The Management level has been reduced from 149 prior to the restructuring to 106 as of June 2018, a 29% reduction.
- The figures in the table above also include in the Management category a small number of specialists who are compensated at pay grades comparable to managers but who do not act as managers.
- Manitoba Hydro's VDP yielded 821 employees almost all of whom departed the Corporation between May 31, 2017 and January 31, 2018. Included in the 2017/18 EFT calculation shown in the table is an amount on account of the portion of the year a participating employee worked prior to his or her departure date. For example, a full time employee who departed on January 31, 2018 would count as 0.83 of an EFT (i.e. 10 of 12 months) in 2017/18. As noted in the table above, Manitoba Hydro approximates 400 EFTs (including Management) in 2017/18 on account of employees who left the company between May 31, 2017 and January 31, 2018.

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- Manitoba Hydro has select critical vacancies to fill during 2018/19 but as at June 2018 is tracking ahead of its 2018/19 EFT targets

### 5.2 Organization Chart (as at June, 2018)



### 5.3 Compensation and Staffing

#### Compensation

As of March 2018 the annualized base payroll expense for Manitoba Hydro is \$434.1M with a breakdown between employee groups shown in the table on the following page. Overtime costs are traditionally equal to approximately 12% of the base payroll expense.

Approximately 45% of Manitoba Hydro's employees are represented by the IBEW labour union. Manitoba Hydro's contract with IBEW expires December 31, 2018. The terms of its renewal could impact compensation costs in Manitoba Hydro's fiscal fourth quarter and in 2019/20.

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Jurisdiction	Annual base payroll
IBEW	\$177.3M
AMHSSE	\$72.6M
CUPE	\$59.4M
UNIFOR	\$17.1M
MHPEA	\$59.4M
Exempt	\$48.3M

### Labour Relations

The Collective Bargaining Agreements for all jurisdictions other than IBEW expires on December 31, 2020. The IBEW agreement expires on December 31, 2018.

Jurisdiction	General Wage Increases			
	2017	2018	2019	2020
IBEW	2.00%	2.00%	TBD	TBD
AMHSSE	0.00%	1.00%	1.25%	1.50%
CUPE	0.00%	1.00%	1.25%	1.50%
UNIFOR	0.00%	1.00%	1.25%	1.50%

### Retirement Forecast

Following the Voluntary Departure Program (VDP), 390 employees are eligible to retire with an unreduced pension. Traditionally in any given year, Manitoba Hydro expects 20% of eligible employees to retire; but, due to the VDP, this estimate has been reduced to 10% or approximately 39 employees in the 2018 calendar year.

## 6.0 Capital Plans

### 6.1 Capital & Deferred Expenditures Summary

(\$ Millions)	2018 Approved	2018 Outlook	2019 Budget
Major New Generation & Transmission	2476	2464	2092
Business Operations Capital	557	542	547
<b>Capital Expenditures</b>	<b>3033</b>	<b>3006</b>	<b>2640</b>
Deferred Expenditures	313	292	399
<b>CEF18 and Deferred Expenditures Total</b>	<b>3346</b>	<b>3298</b>	<b>3038</b>

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The above totals include capitalized interest and, in case of certain mitigation estimates carried in deferred expenditures, the recognition of a present value asset/liability associated with assumed new settlements.

Examples of Deferred Expenditures include: Great Northern Transmission Line, Demand Side Management Programs, Regulatory Services, Mitigation Settlements and Furnace Replacement Program

### 6.2 Major New Generation & Transmission: Summary & Project Descriptions

\$ Millions	Total Project Cost	Actual Expenditures*	2018 Outlook	2019	2020	2021	2022
Keeyask - Generation	8 726.0	3 263.6	1 221.1	1 265.4	1 016.6	846.9	763.9
Bipole III Reliability	5 041.5	3 152.4	1 190.6	662.6	33.4	2.6	-
Manitoba-Minnesota Transmission Project	451.7	30.4	23.8	162.0	144.4	91.2	0.0
Birtle Transmission	56.5	1.0	1.7	2.5	20.0	18.2	13.0
<b>Major New Generation &amp; Transmission Total</b>		<b>6 447.4</b>	<b>2 437.1</b>	<b>2 092.5</b>	<b>1 214.4</b>	<b>958.9</b>	<b>777.0</b>

\* Actuals to March 31, 2017

#### Keeyask – Generation

The Keeyask project is a 695-megawatt (MW) hydroelectric generating station that is being developed in a partnership between Manitoba Hydro and four Manitoba First Nations: Tataskweyak Cree Nation, War Lake First Nation, York Factory First Nation, and Fox Lake Cree Nation. Working together, the Partners are known collectively as the Keeyask Hydropower Limited Partnership.

Located approximately 725 km north of Winnipeg on the lower Nelson River, construction of the Keeyask project includes:

- 7 unit powerhouse/service bay complex on the north side of Gull Rapids;
- 7 bay spillway on the south side of Gull Rapids;
- More than 2 km of dams across Gull Rapids; and
- 23 km of dykes built on the north and south side of the reservoir.

#### Bipole III Reliability

This high voltage direct current (HVDC) transmission project is required to improve overall system reliability and dependability and involves the construction of:

- A 500 kV HVDC transmission line linking the northern power generating complex on the Lower Nelson River with the conversion and delivery system in southern Manitoba;

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- 2 new converter stations – Keewatinohk Station in northern Manitoba, located northeast of Gillam and Riel Station, located east of Winnipeg. In addition, there are 2 ground electrodes - 1 at each converter station; and
- Additional five 230 kV transmission collector lines in the north to tie the new Keewatinohk Converter Station into the existing northern alternating current (AC) system.

### Manitoba-Minnesota Transmission Project

The Manitoba–Minnesota Transmission Project will strengthen the overall reliability of Manitoba’s electricity supply, will allow Manitoba Hydro to fulfill current export sales agreements and increase access to markets in the United States, supporting export sales. The project includes:

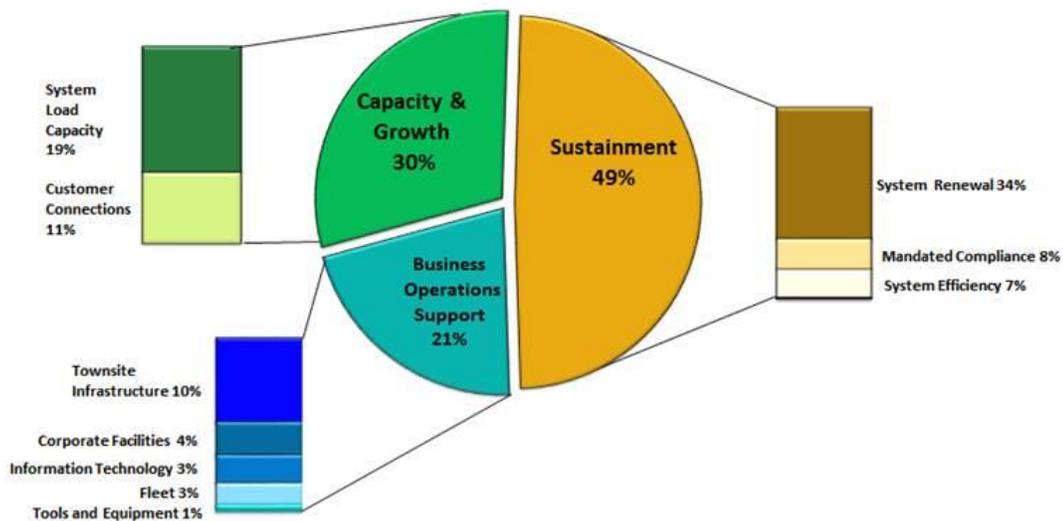
- Construction of a 500 kV AC transmission line from the Winnipeg area to the U.S. border in southeastern Manitoba where it will connect to the Great Northern Transmission Line to be constructed by Minnesota Power; and
- Upgrades to associated electrical stations at Dorsey, Riel and Glenboro.

### Birtle Transmission

The Birtle Transmission project, previously named the Manitoba-Saskatchewan Transmission Project, is a new 230 kV transmission line to be built from Birtle Station to the Manitoba–Saskatchewan border, which is required to supply the SaskPower 100 MW System Power Sale.

## 6.3 Business Operations Capital and Deferred Expenditures

### 2018/19 Business Operations Capital by Investment Category



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### Capacity & Growth

Capacity and Growth investments are required for the expansion of Manitoba Hydro's generation, transmission or HVDC systems, gas transmission main and station assets, gas distribution main and station assets as well as cathodic protection assets.

Forecasted investments under capacity and growth are categorized as follows:

- **New Energy:** Addition of new generating assets, or upgrades to existing generating assets for the purpose of increasing generation capacity or energy including the associated new or upgraded infrastructure. Also includes new or upgraded transmission assets required to deliver the new or increased energy into the grid.
- **System Load Capacity:** Addition of new or upgrades to existing transmission or distribution assets for the purpose of increasing the system's capacity to address anticipated load growth not driven by one large customer.
- **Grid Interconnections – Import / Export –** New assets to deliver energy associated with requests for transmission service (import, export and through-flow requirements).
- **Customer Connections – Residential, Commercial & Industrial –** New customer-driven connections for domestic service resulting from residential, commercial and/or industrial customer load.
- **Grid Interconnections – Independent Power Producers –** New assets to deliver energy associated with requests for transmission service for connections to independent power producers.

### Sustainment

Sustainment investments sustain the current and future performance capability of Manitoba Hydro's generation, transmission, HVDC, electric distribution assets, gas transmission main and station assets, gas distribution main and station assets as well as cathodic protection assets.

Forecasted investments under sustainment are categorized as follows:

- **System Renewal –** Work performed to either replace, refurbish or remove an existing asset as the asset is approaching or is at the end of its useful life, the existing technology is approaching obsolescence, spare parts are not available, and/or the technology is/will be no longer supported. Includes repairs or replacement of assets due to damage caused by the public.
- **System Efficiency –** Addition of new assets or work performed on existing assets in order to improve the operation of the system. Such enhancements are aimed at reducing costs, minimizing the frequency and duration of outages and/or preventing equipment damage.

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- Mandated Compliance – Investments required to address application of legislative, legal, regulatory or corporate policy, or to address requests from government or other agencies to relocate Manitoba Hydro assets to accommodate other infrastructure.
- Decommissioning – Expenditures associated with the permanent decommissioning of a Manitoba Hydro generation, transmission, or distribution asset as well as gas transmission or distribution assets. The removal of an asset which is preparation for the construction of an asset in its place is categorized with system renewal.

### Business Operations Support

Business Operations Support investments support business operations and are shared or common throughout the corporation including:

- Information Technology – Expenditures associated with information technology assets for the data centres, network connectivity, infrastructure, security and business systems including hardware and printers, software licenses, installation and implementation. This category does not include technology assets which operate the electric or natural gas systems.
- Fleet – Expenditures associated with corporate vehicles, mobile equipment and trailers. Primarily includes cars, vans, SUVs, trucks, aerial devices, radial boom diggers, cranes, construction equipment, boats, tracked vehicles and trailers. These assets typically transport people or goods over land (both on and off road) or water, or are pieces of mobile equipment.
- Corporate Facilities – Expenditures associated with corporate buildings and properties and the required telecommunications. Corporate buildings are facilities where the primary function is to house staff or storage of equipment/inventory, and include customer service centres, office buildings, warehouses, storage facilities and vehicle service garages. They do not include buildings which have a direct association with the generation, transmission or distribution of energy.
- Tools and Equipment – Expenditures on tools and equipment used by maintenance crews and/or field staff while working on maintenance or capital projects. Also includes specialized tools and equipment used by design staff to test apparatus and systems.
- Generation Buildings & Grounds – Expenditures associated with site buildings related to generating station assets which are primarily designed for operations, as well as property, fencing, roads, railway spurs, water & sewer, public safety, security, PCB, fire suppression and drainage.
- Townsite Infrastructure – Expenditures associated with community infrastructure including staff houses, housing and permanent camps. Costs for infrastructure associated with the first-time construction of new or incremental generation, transmission, HVDC or distribution asset would typically be included with the corresponding project and not classified as Business Operations Support.

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### Significant Capital Projects

The following schedule lists all significant projects (total project value > \$50 million) included in Business Operations Capital above and CEF18.

\$ Millions	Total Project Cost	Actual Expenditures*	2018 Outlook	2019	2020	2021	2022
<b>Generation &amp; Wholesale</b>							
Water Licenses & Renewals	99.0	62.8	11.0	10.7	9.9	4.4	0.3
Pine Falls GS Units 1-4 Major Overhauls	77.1	55.1	8.8	7.4	5.7	0.2	-
Great Falls Unit 4 Overhaul	52.9	52.7	0.2	-	-	-	-
<b>Transmission</b>							
Bipole 2 Thyristor Valve Replacement	236.0	0.2	0.1	0.1	0.1	2.5	5.6
HVDC Transformer Sustainment	177.5	115.4	15.3	19.7	8.9	4.5	2.5
St. Vital-DeSalaberry T/L & DeSalaberry Station	118.9	1.6	3.1	14.2	42.8	52.7	2.6
Lake Winnipeg East System Improvements	79.3	64.0	13.6	1.6	-	-	-
Dorsey Synchronous Condenser Refurbishment	78.0	55.6	2.5	2.7	3.1	3.9	4.4
Transmission Line Upgrades for Improvement Clearance	74.0	6.4	2.2	5.0	5.1	18.1	18.4
De Salaberry-Letellier 230 kV Transmission Line	67.9	3.1	1.4	4.6	13.7	16.8	28.4
Transmission Transformer Sustainment	64.1	-	-	-	0.2	0.3	2.2
<b>Marketing &amp; Customer Service</b>							
Adelaide Station - 66/12kV	69.6	46.9	7.3	12.8	2.7	-	-
Panet Station - 66/24kV	51.8	0.3	1.5	18.1	31.9	-	-
<b>Other Significant Projects Total</b>		<b>464.1</b>	<b>66.9</b>	<b>97.0</b>	<b>124.0</b>	<b>103.2</b>	<b>64.3</b>

\* Actuals to March 31, 2017

### Demand Side Management

Demand Side Management expenditures related to pursuit of electric energy conservation and efficiency activities designed to manage the demand for energy.