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**2012/13 and 2013/14 Manitoba Hydro GRA**  
**As of January 14, 2013**

12	<ul style="list-style-type: none"> <li>A) MIPUG/MH II-9(c) – Depreciation methods in Other Canadian Jurisdictions</li> <li>B) Excerpt from GRA Hearing Transcript – Bob Peters cross-exam of Larry Kennedy</li> <li>C) MH Exhibit #52 excerpts</li> <li>D) Excerpts from the OEB Accounting Procedures Handbook for Electricity Distributors</li> <li>E) Excerpt on SaskPower from MH Exhibit #57</li> <li>F) Excerpts from Appendix 16: Dams, Dykes and Weirs and Spillways.</li> <li>G) MH Exhibit #54</li> <li>H) CEF12 Capital Expenditure Tables</li> <li>I) MIPUG/MH I-16(b) from the 2006 COSS Review – Cost of Power per Generating Station</li> </ul>	<ul style="list-style-type: none"> <li>A) MIPUG/MH II-9(c) from 2012/14 GRA</li> <li>B) Transcript page 1725 from December 18, 2012</li> <li>C) MH Exhibit #52 from 2012/14 GRA, slides 7, 45 and 46</li> <li>D) Article 100, pages 2-6; Article 210, pages 1-9; Article 315 pages 5-6. Available at: <a href="http://www.ontarioenergyboard.ca/OEB/_Documents/Regulatory/Accounting_Procedures_Handbook_Elec_Distributors.pdf">http://www.ontarioenergyboard.ca/OEB/_Documents/Regulatory/Accounting_Procedures_Handbook_Elec_Distributors.pdf</a></li> <li>E) MH Exhibit #57 from 2012/14 GRA, pages 26-28</li> <li>F) Appendix 16: Service Life Statistics from 2012/14 GRA; Attachment 1 pages on Dams, Dykes and Weirs (Account 000A) and pages on Spillway (Account 4000L)</li> <li>G) MH Exhibit #54 from 2012/14 GRA</li> <li>H) Additional Materials from Manitoba Hydro 2012/13 &amp; 2013/14 GRA: Capital Expenditure Forecast (CEF12) pages 3 – 10.</li> <li>I) MIPUG/MH I-16(b) from the 2006 COSS Review</li> </ul>
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**MIPUG/MH II-9**

**Subject: MIPUG/MH I-15(a), Gannett Fleming**

**c) For each study in part (b) above, please indicate if the study is:**

- i. intended to be compliant with IFRS;
- ii. makes use of the ASL procedure, the ELG procedure, or some other procedure (please specify);
- iii. includes net salvage in the depreciation rates or some other form of amortization over the useful life of the asset in question.

**ANSWER:**

The following response was prepared by Gannett Fleming.

Northwest Territories Power Corporation (NWTPC) – 2012 Study

- i. Study was prepared giving consideration to IFRS implementation issues
- ii. Study was prepared using the ASL procedure
- iii. Study includes net salvage within the depreciation calculations

Manitoba Hydro – 2010 Study

- i. Study was prepared giving consideration to IFRS implementation issues
- ii. Study was prepared using the ELG procedure
- iii. Study does not include net salvage within the depreciation calculations.

Yukon Energy Corporation – 2004 Study

- i. Study was prepared prior to IFRS
- ii. Study was prepared using the ASL procedure
- iii. Study includes net salvage within the depreciation calculations

The City of Red Deer Electric system – 2011 Study

- i. Study was not prepared giving consideration to IFRS
- ii. Study was prepared using the ELG procedure
- iii. Study includes net salvage within the depreciation calculations

**British Columbia Transmission Corporation – 2005 Study**

- i. Study was prepared prior to IFRS
- ii. Study was prepared using the ASL procedure
- iii. Study does not include net salvage within the depreciation calculations

**BC Hydro – 2006 Study**

- i. Study was prepared prior to IFRS
- ii. Study was prepared using the ASL procedure
- iii. Study does not include net salvage within the depreciation calculations

**City of Lethbridge Electric System – 2008 Study**

- i. Study was not prepared giving consideration to IFRS
- ii. Study was prepared using the ELG procedure
- iii. Study includes net salvage within the depreciation calculations

**SaskPower – 2011 Study**

- i. Current study was prepared giving consideration to IFRS implementation issues
- ii. Study was prepared using the ASL procedure
- iii. Study does not include net salvage within the depreciation calculations.

**Quilliq Energy Corporation – 2011 Study**

- i. Study was not prepared giving consideration to IFRS
- ii. Study was prepared using the ASL procedure
- iii. Study does not include net salvage within the depreciation calculations

1725

1 municipal utilities in Ontario?

2 MR. LARRY KENNEDY: Not that I'm aware  
3 of.

4 MR. BOB PETERS: Is it your  
5 understanding, Mr. Kennedy, that the Ontario Energy  
6 Board has prescribed ASL methodology over equal life  
7 groups?

8 MR. LARRY KENNEDY: I'm not aware --  
9 I'm not sure if they've prescribed it, but I'm not  
10 aware of any Ontario utility using equal life group.  
11 And that -- it's probably not by accident, sir. The --  
12 that's the case, but all the Ontario utilities that I'm  
13 aware of use equal life -- or use average service life.

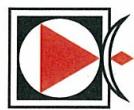
14 MR. BOB PETERS: And if we turn  
15 backwards to page 298 in the book of documents...

16 MR. LARRY KENNEDY: Just before we  
17 leave page 310, sir, I -- I would point out that the  
18 majority of these utilities are not only using average  
19 service life, but the majority are applying that rate  
20 on a unit basis rather than on a group basis, and are  
21 also taking the gains and losses to the income  
22 statement rather than to the accumulated depreciation  
23 account.

24 MR. BOB PETERS: And which ones are not  
25 using the unit basis as -- rather -- and are sticking



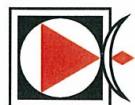
# Accounting for PPE Group Accounting in the World of IFRS



CANADIAN ELECTRICITY  
ASSOCIATION

Finance & Accounting Committee  
Fredericton, New Brunswick  
December 1, 2008

Presented by Larry Kennedy  
Gannett Fleming, Inc.

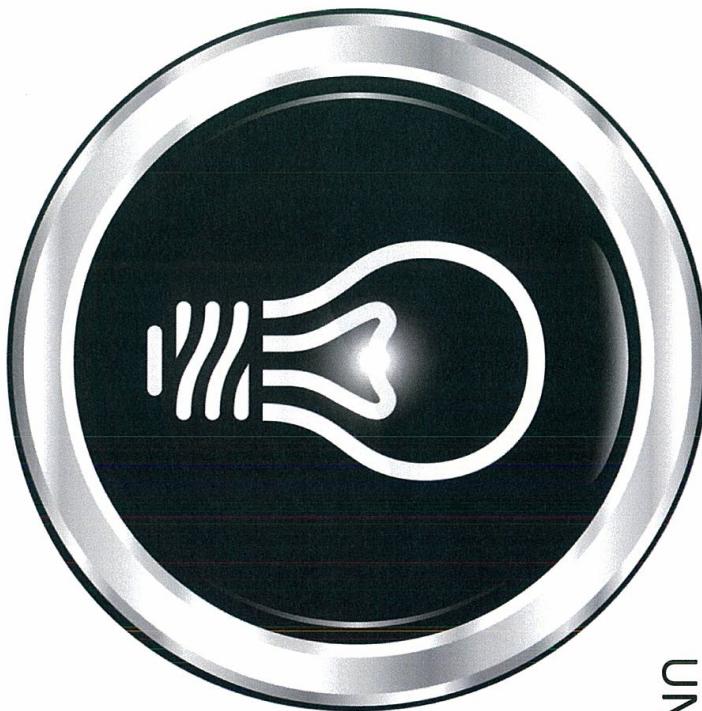


# GROUP ACCOUNTING CONCEPTS

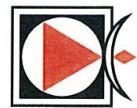
## UNIFORM SYSTEM OF ACCOUNTS

### PERHAPS COMPONENTIZATION ALREADY EXISTS

- System of Accounts are reviewed by regulatory authorities
- Represent homogenous groups of assets with similar average life characteristics
- System of accounts such as the Alberta Utilities Commission, the NEB, the Ontario Energy Board, etc. seem to generally meet the componentization rules
- Some small amount of refinement may be required



# Does this mean that ELG complies with IAS 16



## In my view

YES.....

Provided that actual retirements match the retirement anticipated within the IOWA curve used for the depreciation rate calculation

Needs to be tested periodically

Depreciation rates will need to be updated periodically through a annual technical update

# Anybody else believe you?

We are starting to see some understanding from most of the Large Four Audit firms

The Fortis group has received confirmation from their auditors that ....

- With minor amounts of modifications the charts of accounts are compliant with the componentization requirements
- With the ELG procedure assets can be considered fully depreciated at time of retirement provided that documented evidence of the compliance of actual retirements to the IOWA curve estimated retirement pattern can be developed.



**Ontario  
Energy  
Board**

**Commission  
de l'énergie  
de l'Ontario**



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## **Accounting Procedures Handbook**

**For**

## **Electricity Distributors**

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**Introduction  
to the  
Accounting Procedures Handbook**

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The Ontario Energy Board (the “Board”) is the regulator for rate-regulated electricity and gas utilities in the province of Ontario. The *Ontario Energy Board Act, 1998 S.O. 1998, c. 15, Schedule B* (the “OEB Act”) in section 57 sets out the requirement for any person owning or operating a distribution system to obtain a licence. The electricity distribution licences issued by the Board include conditions requiring the maintenance of records, the provision of information, and the separation of financial records between regulated and non-regulated activities in accordance with this Accounting Procedures Handbook for Electricity Distributors (the “APH”).

In 1999, the Board developed and approved the APH, which includes guidance on financial and regulatory accounting procedures and requirements and the Uniform System of Accounts (“USoA”). This 2012 revision of the APH recognizes the requirement for most Ontario electricity distributors to adopt International Financial Reporting Standards (“IFRS”) as of January 1, 2012. This updated APH supersedes the previous version.

### **Purpose of this APH**

This APH establishes the accounting records that electricity distributors must use for regulatory purposes. Such records assist in providing an adequate information base for establishing rates and monitoring distributor performance. The financial accounting and reporting system set out in this APH provides the structure to be used for financial forecasting including test period information, revenue requirement, financial performance bench-marking, cost allocation and rate design. The Board conducts selected audits and reviews to assess distributor compliance with the APH.

The APH has also been prepared in order to:

- a) Summarize regulatory accounting procedures and requirements and provide a USoA for the use of all electricity distributors, including those distributors concurrently possessing qualifying renewable generation assets and/or transmission capabilities. The APH is designed for use by:
  - each distributor’s accounting, financial and regulatory personnel;
  - the distributor’s external auditors, where applicable;
  - stakeholders, including intervenors in distributors’ regulatory proceedings; and
  - the Board and the Board’s regulatory staff.
- b) Summarize the requirements and the Board’s interpretation, for regulatory purposes, of Canadian Generally Accepted Accounting Principles (“GAAP”)

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based on *Part 1 – International Financial Reporting Standards* of the Canadian Institute of Chartered Accountants Handbook - *Accounting* (“CICA Handbook”);

- c) Address financial accounting issues where further guidance specific to Ontario distributors is required to ensure consistent and accurate information is reported;
- d) Recognize that the regulatory process introduces certain specific cause-and-effect relationships in the matching of a distributor’s revenues and expenses, which may require special treatment for regulatory accounting; and
- e) Encourage consistency in the application of regulatory accounting requirements and, to the extent possible, GAAP, where choices exist.

The APH reflects current accounting and regulatory practices and terminology. The accounting procedures and requirements and USoA have been refined in certain areas to accommodate the deregulated electricity environment, as well as regulated and non rate-regulated activities of distributors.

Inclusion of any item or account in the prescribed USoA does not necessarily imply the Board’s acceptance for rate-making purposes of any expenditure, revenue or procedure suggested by the use of such an account.

### **Application of the APH**

The accounting procedures and requirements set out in this APH apply to a distributor that prepares its financial accounting records and reporting on the basis of CICA Handbook *Part I – International Financial Reporting Standards*. The Board generally requires regulatory filing and reporting under IFRS, as modified for regulatory purposes by the Board (modified IFRS or “MIFRS”). Where a distributor prepares its financial accounting records using an alternative accounting framework (e.g. US GAAP or CICA Handbook *Part II - Accounting Standards for Private Enterprises*), the Board has stated that it will generally not require regulatory reporting and filing in MIFRS from those distributors. However, the Board does require distributors not using MIFRS to demonstrate their eligibility to use an alternative standard to IFRS for financial reporting, and set out the advantages and disadvantages of their choice of accounting framework. A discussion on alternative accounting frameworks is provided in Article 315 *Applying Regulatory Accounting in a Rate-Regulated Environment*.

For ratemaking under an alternative accounting framework, the Board may require or prescribe accounting procedures and requirements in such items as depreciation methodology, capitalization policy, employee benefit recovery, and specified deferral and variance accounts. Consequently, in reporting to the Board in the USoA (trial

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balance), and other specified reporting or filings, the distributor is required to report using the alternative accounting standard, including the accounting procedures or requirements that the Board has stipulated.

The terms “regulated” and “rate-regulated” as used in this APH do not imply a specific methodology for approval or fixing of rates. Such methodologies are normally referred to as cost of service, rate base, price cap, social contract, or incentive based regulation, etc. Instead, these terms refer to the fact that rates, however determined, are subject to approval by the Board.

The APH applies to distributors and does not apply directly to the affiliate(s) of distributors. The APH, however, does have implications for distributors that exchange goods or services with affiliates.

In October 2002, the Board amended the distribution licence of distributors to include a condition of licence to implement the requirements of the electricity Reporting and Record-keeping Requirements (“RRR”). As part of the RRR, the reporting requirements for a distributor include the annual USoA trial balance established under the APH and annual audited financial statements. Quarterly reporting requirements include deferral and variance account balances.

### **Accounting Standards Applicable to Distributors**

As a result of incorporating under the *Ontario Business Corporations Act*, distributors will be subject to financial reporting requirements as contained in Part XII of that Act — Auditors and Financial Statements. Specifically, section 155 of the *Ontario Business Corporations Act* requires that financial statements be prepared as prescribed by regulation and in accordance with GAAP.

The basis for GAAP is provided in *Regulation 62, R.R.O. 1990*, made under the *Ontario Business Corporations Act*. Section 40 requires that the financial statements referred to in section 155 of the *Ontario Business Corporations Act* be prepared in accordance with the standards set forth in the CICA Handbook.

Consequently, pursuant to the *Ontario Business Corporations Act*, GAAP is the prescribed medium for communication of financial information to the public, and Ontario electricity distributors will be required to prepare financial statements based on GAAP as presented in the CICA Handbook.

The Board does not prescribe the general purpose financial reporting for regulated utilities. The accounting principles required for general purpose financial reporting are prescribed by the Canadian Accounting Standards Board and other accounting

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standard-setting bodies. Accordingly, distributors should follow the guidance set out in CICA Handbook in preparing their general purpose financial statements. The Board establishes the requirements for regulatory accounting, reporting and filing. The policies that are set out in this APH apply to regulatory accounting, reporting and rate application filings.

In addition, this APH provides guidance in those specific areas where distributors are required to use MIFRS accounting treatments prescribed by the Board due to special circumstances resulting from the regulatory process. A full discussion of MIFRS issues are provided in Article 315 *Applying Regulatory Accounting in a Rate-Regulated Environment*.

### **Summary of Specified Accounting Records**

It is the responsibility of management of each distributor to keep records in accordance with proper accounting methods for the purpose of accurate, complete, timely and proper recording of the distributor's transactions. Specifically:

- a) Each distributor shall keep its books of account, and all other books, records, and memoranda that support the entries in such books of account so as to be able to readily furnish full information about any item included in any account. Each entry shall be supported by such detailed information as will permit ready identification, examination, analysis, and verification of all relevant facts. The records shall be filed in such a manner as to be readily accessible for examination by authorized representatives of the Board;
- b) The books and records referred to herein include not only accounting records in a limited technical sense, but all other records, such as minute books, inventory books, reports, correspondence, memoranda, etc., that may be useful in developing the history of or facts regarding any transaction;
- c) No distributor shall destroy any such books or records unless the destruction thereof is permitted by the Board;
- d) Pursuant to section 72 of the OEB Act and distribution licences, each distributor shall keep its financial records associated with distributing electricity separate from its financial records associated with other activities;

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- e) Unless otherwise provided for in the accounts prescribed in the USoA, distributors shall subdivide any and all applicable accounts to record non rate-regulated distributor transactions or items that are not normally permitted in Ontario electricity distributor assets, liabilities, revenues or expenses for the purposes of establishing the revenue requirements;
- f) Distributors may further subdivide any account prescribed in the USoA. Clearing accounts, temporary or experimental accounts, and subdivisions of any accounts, may be kept, provided the integrity of the prescribed accounts is not impaired;
- g) For new electricity-related lines of business and for non rate-regulated distributor activities, distributors shall record all transactions in sufficient detail to segregate such activities;
- h) A distributor may use a different system of account numbers for its own purposes provided that it shall keep a readily available list of such account numbers and a reconciliation of such account numbers with the account numbers provided in the USoA. It is intended that the distributor's records shall be kept so as to permit ready analysis by prescribed accounts (by direct reference to sources of original entry to the extent practicable) and to permit preparation of financial and operating statements directly from such records at the end of each accounting period according to the prescribed accounts;
- i) Each distributor shall keep its accounts and records so as to be able to furnish accurately and expeditiously statements of all transactions with affiliate companies. The statements may be required to show the general nature of the transactions, the amounts involved and the amounts included in each account prescribed in the USoA with respect to such transactions. Unless otherwise provided, transactions with affiliate companies shall be recorded in the appropriate accounts for transactions of the same nature. The distributor is permitted to subdivide accounts for the purpose of separately recording transactions with affiliate companies. See also Article 340 *Allocation of Costs and Transfer Pricing*; and
- j) Each distributor shall keep records and reconciliations relating to the transition to IFRS (and/or MIFRS) as prescribed by the Board in Article 510 *Transitional Issues for the Adoption of IFRS*.

**Summary of Specified Financial Reporting Requirements**

In summary, a distributor is required to report to the Board (among other reporting requirements) an annual USoA trial balance established under the APH, annual audited financial statements and quarterly deferral and variance account balances.

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1407	Finance Lease Receivable
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**Application of Accounting Concepts**  
**Applying Regulatory Accounting**  
**in a Rate-Regulated Environment**

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for entities subject to rate regulation. The accounting standards for rate-regulated activities under previous Canadian GAAP are included in Article 525 *Applying Generally Accepted Accounting Principles in a Rate Regulated Environment* (Former Article 310). This former Article 310 in effect until December 31, 2011 has been retained in this APH for general information and reference purposes only and does not apply to distributors reporting under IFRS. It should also be noted that the specific guidance relating to rate-regulated activities that was included under previous Canadian GAAP was retained in the various sections of the CICA Handbook Part II – ASPE.

### **The Board's Requirements for Regulatory Accounting**

#### **Accounting Standards Applicable to Electricity Distributors – Regulatory Accounting**

During 2009, the Board conducted a consultation on the effect of the transition to IFRS, and issued a *Report of the Board, Transition to International Financial Reporting Standards*, EB-2008-0408 ("the Board Report"). Further consultation was held during 2010 and the Board issued an *Addendum to the Report of the Board: Implementing International Financial Reporting Standards in an Incentive Rate Mechanism Environment* ("the Addendum"). As part of this consultation process, the Board confirmed the following five regulatory principles that are set out in the Board Report:

- 1) The methodologies used by the Board to establish just and reasonable rates have not always been the same as those used for external financial reporting purposes. The Board has and will retain the authority to establish regulatory accounting and regulatory reporting requirements. While IFRS accounting requirements are an important consideration in determining regulatory requirements, the objective of just and reasonable rates will continue to be the primary driver of such requirements.
- 2) Future regulatory accounting and regulatory reporting requirements established by the Board will continue to be based on sound regulatory principles. These principles include fairness, minimizing intergenerational inequity and minimizing rate volatility.
- 3) Future regulatory accounting and regulatory reporting requirements established by the Board will, in taking into account IFRS requirements, balance the effects on both customers and shareholders.

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**Application of Accounting Concepts**  
**Applying Regulatory Accounting**  
**in a Rate-Regulated Environment**

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- 4) Future regulatory accounting and regulatory reporting requirements established by the Board will be aligned with IFRS requirements as long as that alignment is not inconsistent with sound regulatory rate making principles.
- 5) Future regulatory accounting and regulatory reporting requirements established by the Board will be universal and standardized for all utilities, while recognizing that utility-specific issues can be addressed through a utility's applications. The Board will not require modified IFRS filing and reporting requirements for utilities that are not otherwise required to adopt IFRS for financial reporting purposes.

In applying the above principles, the Board resolved that it will require all distributors that are required to adopt IFRS by accounting standard setting bodies to report information to the Board using MIFRS for regulatory accounting values beginning January 1, 2012. For those few distributors not required to adopt IFRS for financial reporting, the Board has stated that it will not require regulatory filing and reporting in MIFRS from those distributors. However, the Board does require distributors not using MIFRS to demonstrate their eligibility to use an alternative standard to IFRS for financial reporting, and set out the advantages and disadvantages of their choice of accounting framework.

### **Regulatory Accounting under MIFRS**

For regulated distributors that are required to adopt IFRS by accounting standard setting bodies, the Board also requires these entities to apply IFRS for regulatory purposes. However, the Board has also confirmed that it will continue to use deferral and variance accounts for rate making in appropriate circumstances, whether or not these accounts are recognized under IFRS. Further, the Board retains the authority to require specific accounting standards and practices for regulatory purposes in any case where the Board finds that the public interest requires uniformity in those standards and practices among distributors. The Board may also provide a distributor specific regulatory accounting direction in a decision or order in relation to the distributor's rate application. Consequently, the IFRS accounting policies that are applied by a distributor are "modified" by regulatory requirements or the ratemaking actions of the Board and are thus called "modified IFRS" or "MIFRS" for regulatory accounting and reporting purposes.

Currently, the Board has specifically modified the requirements of IFRS for the items set out in the table below. Note, however, that if the Board has issued specific guidance to a distributor (for example, as part of a rate application), the distributor should follow that specific guidance. Also, if specific regulatory guidance for a particular issue has not been issued by the Board, and that issue is not addressed in the Articles of this APH, generally, a distributor should follow the requirements of IFRS.



## MH Exhibit #57

Undertaking #32  
Attachment 1  
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## SaskPower

SCHEDULE 1. SUMMARY OF AVERAGE SERVICE LIFE ESTIMATES AND  
NET BOOK VALUE RELATED TO UTILITY PLANT AT DECEMBER 31, 2009

Depreciable Property Groups	AVERAGE SERVICE LIFE			ORIGINAL COST AT DECEMBER 31, 2009	BOOK DEPRECIATION RESERVE AT DECEMBER 31, 2009	NET BOOK VALUE AT DECEMBER 31, 2009
	RECOMMENDED	CURRENT	RECOMMENDED			
<b>Generation</b>						
G001	Turbine - Thermal	25	25	0	0	93,165,003
G002	Turbine - Hydro	50	50	0	0	59,736,482
G003	Turbine - Gas	25	25	0	0	115,826,432
G004	Turbine - Wind	20	20	0	0	23,126,102
G005	Generator - Thermal	25	25	0	0	144,076,445
G006	Generator - Hydro	40	40	0	0	35,920,569
G007	Generator - Gas	25	25	0	0	69,193,619
G008	Generator and Generators Wind	15	15	0	0	52,806,198
G009	Boiler - Conventional	25	25	0	0	101,253,102
G010	Boiler-HRS/IGOTSG	25	25	0	0	112,120,571
G011	High Energy Piping	50	50	0	0	60,000,671
G012	High Pressure Feedwater Heaters	20	20	0	0	48,023,044
G013	Low Pressure Feedwater Heaters	35	35	0	0	252,376,376
G014	Condenser	30	20	0	0	255,965,865
G015	Pulverizer, Feeders, Stabilizing Fuel Equipment	35	35	0	0	449,522
G016	High Voltage > 1kV	35	35	0	0	77,449,556
G017	Low Voltage < 1kV	25	25	0	0	50,611,887
G018	Underground Ducts and Cable Trays	50	50	0	0	19,709,298
G019	Controls and Protection	25	25	0	0	20,380,471
G020	Flue Gas and Ash System	25	25	0	0	1,286,695
G021	Large Motors, Pumps and Fans	35	35	0	0	8,610,753
G022	Dams, Waterways, Reservoirs	100	100	0	0	10,039,161
G023	Skipways	60	50	0	0	37,229,029
G024	Penstock and Intake Structures	75	75	0	0	21,462,040
G025	Water Treatment Plant Equipment	25	25	0	0	15,079,261
G026	Miscellaneous Air/Water/Sewer/Pump/Fire Systems	40	50	0	0	26,172,995
G027	Coal and Auxiliary Fuel Handling Equipment	35	35	0	0	16,134,916
G028	Gas and Auxiliary Fuel Handling Equipment	50	50	0	0	68,609,597
G029	Lagoon (Ash)	20	20	0	0	86,472,605
G030	Cooling Water Equipment and Lines	40	40	0	0	82,581,952
G031	Bailler House	50	50	0	0	14,436,570
G032	Turbine House	50	50	0	0	12,135,306
G033	Administration/Shop and Auxiliary Buildings	50	50	0	0	21,976,421
G034	Water Treatment Plant and Pond Building	50	50	0	0	89,813,927
G035	Coal Handling Facilities	50	50	0	0	23,989,722
G036	Pad/Bonds Recirculation House	50	50	0	0	100,416,884
G037	Cooling Water Pump House	50	50	0	0	56,371,624
G038	Land Rights	25	25	0	0	28,294,097
G039	Roads, Railroads, and Airfields	30	35	0	0	11,321,455
G041	Experimental Emissions Control Equipment	5	5	0	0	35,944,026
G043	Generator - Diesel	15	15	0	0	124,906
<i>Generation - Turbine - Gas H25 Units (Queen Elizabeth Units #4 - 12)*</i>						
<i>AMF*</i>						
G031	15	15	0	0	53,168,860	6,936,680
G032	15	15	0	0	0	0
G033	15	15	0	0	0	0
G034	5	5	0	0	0	0
G035	5	5	0	0	0	0
G036	15	15	0	0	0	0
G037	15	15	0	0	0	0
G038	15	15	0	0	0	0
G039	15	15	0	0	0	0
G041	5	5	0	0	0	0
G043	15	15	0	0	0	0
<i>Total Generation</i>						
				3,660,694,425	1,721,788,228	1,931,788,228

## MH Exhibit #57

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## SaskPower

## SCHEDULE 1. SUMMARY OF AVERAGE SERVICE LIFE ESTIMATES AND NET BOOK VALUE RELATED TO UTILITY PLANT AT DECEMBER 31, 2009

Depreciable Property Groups	AVERAGE SERVICE LIFE	ORIGINAL COST AT DECEMBER 31, 2009		BOOK DEPRECIATION RESERVE	NET BOOK VALUE
		RECOMMENDED	CURRENT	SALVAGE RECOMMENDED	CURRENT
<b>Transmission</b>					
S201	Transmission - Conductor	55	50	0	0
S202	Transmission - Devices	35	35	0	0
S203	Transmission - Land Rights	45	45	0	0
S204	Transmission - Switching Station Conductor and Devices	40	40	0	0
S205	Transmission - Power Transformers	50	40	0	0
S206	Transmission - Steel Structures	50	50	0	0
S207	Transmission - Buildings, Roads, Railroads, Airfields	50	50	0	0
S208	Transmission - Wood Structures	45	45	0	0
S211	Transmission - Controls and Auxiliaries	35	35	0	0
S212	Transmission - Line Devices	25	25	0	0
S213	Transmission - Protective Relays	20	20	0	0
S214	Transmission - Site Improvements	40	40	0	0
S215	Transmission - Superstructures	45	45	0	0
<b>Total Transmission</b>				837,623,893	369,683,490
<b>Distribution</b>					
S301	Distribution - Power Transformers	40	40	0	0
S302	Distribution - Structures and Foundations	40	40	0	0
S303	Distribution - Substation Equipment	35	35	0	0
S304	Distribution - Overhead Distribution	35	35	0	0
S305	Distribution - Underground Distribution	35	35	0	0
S306	Distribution - Overhead Services	35	35	0	0
S307	Distribution - Underground Services	35	35	0	0
S308	Distribution - Overhead Streetlights	35	35	0	0
S309	Distribution - Underground Streetlights	30	30	0	0
S310	Distribution - Apparatus	35	35	0	0
S311	Distribution - Land Rights	35	35	0	0
S312	Distribution - Buildings and Improvements	40	40	0	0
<b>Total Distribution</b>				2,419,528,681	901,456,827
<b>TOTAL</b>					
					1,429,072,154

## MH Exhibit #57

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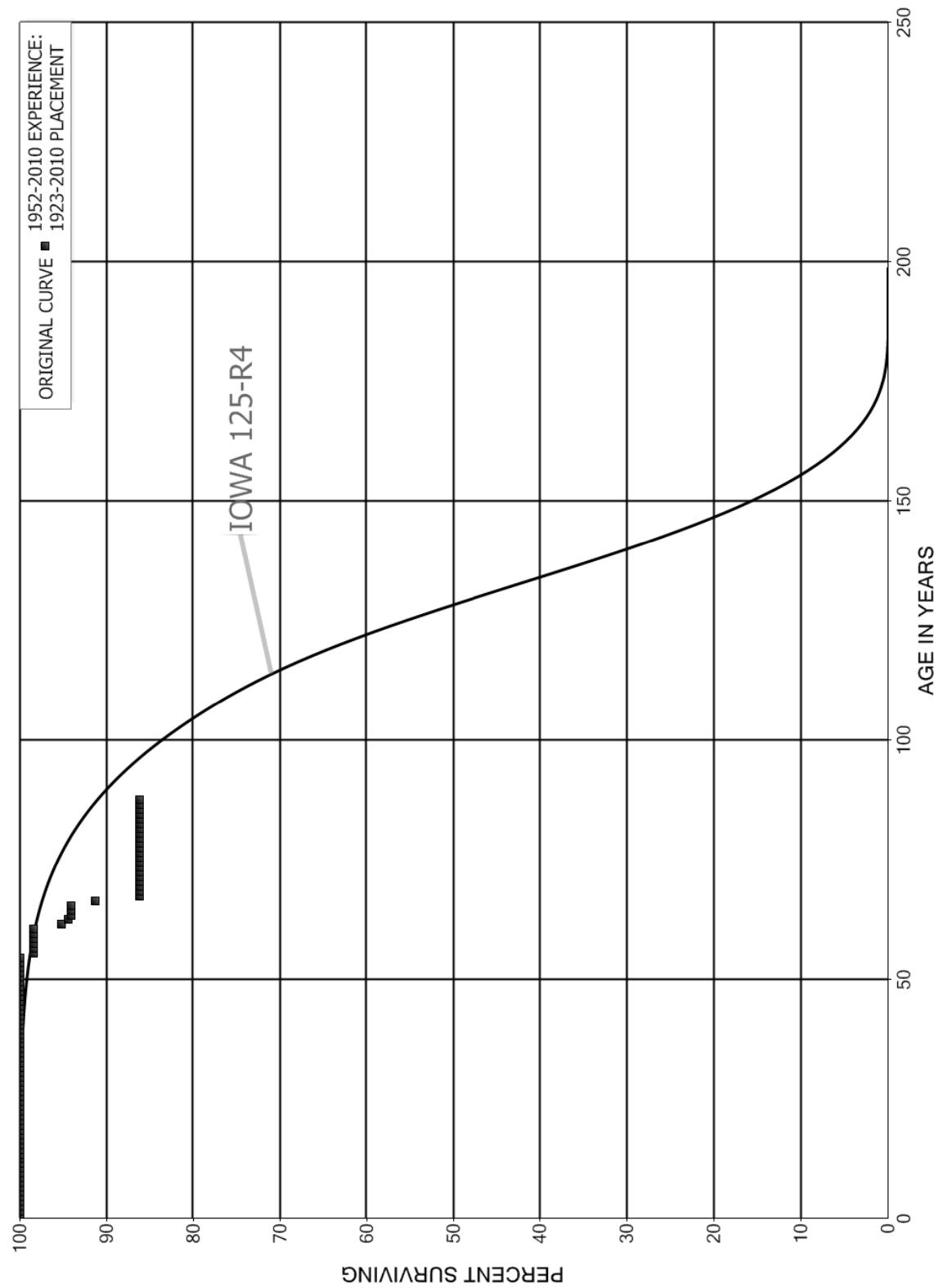
## SaskPower

SCHEDULE 1. SUMMARY OF AVERAGE SERVICE LIFE ESTIMATES AND NET BOOK VALUE RELATED TO UTILITY PLANT AT DECEMBER 31, 2009

Depreciable Property Groups	AVERAGE SERVICE LIFE	RECOMMENDED CURRENT		RECOMMENDED CURRENT		ORIGINAL COST AT DECEMBER 31, 2009	BOOK DEPRECIATION RESERVE	NET BOOK VALUE
		RECOMMENDED	CURRENT	SALVAGE	CURRENT			
Other								
S351	Mechanical Meters and Transformers	15	20	0	0	22,618,662	12,218,070	10,400,792
S352	Electronic Meters and Handheld Meter Readers	8	8	0	0	17,030,173	10,251,433	2,561,269
S405	Mining - Dragline and Equipment	20	20	0	0	3,472,900	911,638	2,561,269
S407	Mining - Transmission Facilities	40	40	0	0	7,630,883	2,351,373	5,285,510
S408	Mining - Miscellaneous Buildings	40	40	0	0	285,100	164,354	118,746
S412	Mining - Surface Rights	15	15	30	30	16,631,448	10,377,296	6,254,152
S501	Shand Greenhouse Building	40	40	0	0	2,698,229	1,063,256	1,635,973
S621	Head Office Building	60	50	50	40	16,687,074	5,571,350	11,095,723
S622	Research and Development Building	50	50	50	50	13,322,716	4,123,676	8,899,038
S623	PCB Storage Building	40	40	0	0	2,823,523	2,023,523	800,000
S624	Other Buildings	40	40	25	25	46,423,877	12,587,475	33,836,402
S631	Office Machines	10	8	0	0	786,772	786,772	786,772
S632	Furniture	15	20	0	0	7,946,200	3,226,645	4,119,556
S633	Modular Furniture	15	20	0	0	12,358,101	3,440,535	8,995,163
S841	Vehicles and Equipment - Light Weight	7	7	7	7	41,640,253	20,804,792	10,835,461
S842	Vehicles and Equipment - Medium Weight	12	12	7	7	31,634,768	13,611,232	18,023,536
S843	Vehicles and Equipment - Heavy Weight	12	12	7	7	26,037,001	12,635,775	13,401,226
S844	Vehicles and Equipment - Track Mounted	25	25	10	10	6,611,216	5,629,089	1,181,327
S845	Vehicles and Equipment - Trailers	20	20	0	0	5,340,455	3,570,947	1,769,508
S846	Vehicles and Equipment - Power Operated	20	20	10	10	7,359,274	2,696,987	4,442,307
S847	Vehicles and Equipment - Miscellaneous	20	20	10	10	3,421,280	1,921,690	1,499,390
S848	Vehicles and Equipment - Forklift Trucks	20	20	10	10	3,419,975	1,911,626	1,288,359
S851	CP&C - Scada Building	50	50	0	0	8,136,452	4,231,838	3,606,616
S852	CP&C - Equipment	10	10	0	0	48,472,723	30,667,743	15,904,980
S853	CP&C - Fibre Optic Cable & Land Rights	35	35	0	0	21,041,513	7,009,944	14,031,570
S854	CP&C - Master Control Equipment	5	5	0	0	12,156,956	8,260,497	3,696,458
S861	Tools and Equipment	5	7	0	0	11,398,088	6,678,726	4,719,362
S871	Computer Development	5	5	0	0	129,917,191	105,225,326	24,691,865
S881	Computer Hardware	4	4	0	0	40,417,303	26,196,998	12,216,905
Total Other						586,894,414	318,301,630	270,590,713
TOTAL PLANT						7,397,743,512	1,399,331,046	4,999,392,166



MANITOBA HYDRO  
ACCOUNT 000A - DAMS, DYKES AND WEIRS  
ORIGINAL AND SMOOTH SURVIVOR CURVES



## MANITOBA HYDRO

ACCOUNT 000A - DAMS, DYKES AND WEIRS

## ORIGINAL LIFE TABLE

PLACEMENT BAND 1923-2010			EXPERIENCE BAND 1952-2010		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	508,421,790		0.0000	1.0000	100.00
0.5	501,643,055		0.0000	1.0000	100.00
1.5	500,090,101		0.0000	1.0000	100.00
2.5	488,484,477		0.0000	1.0000	100.00
3.5	487,761,872		0.0000	1.0000	100.00
4.5	478,998,844		0.0000	1.0000	100.00
5.5	475,383,219		0.0000	1.0000	100.00
6.5	466,850,659		0.0000	1.0000	100.00
7.5	463,706,748		0.0000	1.0000	100.00
8.5	461,332,887		0.0000	1.0000	100.00
9.5	460,509,752		0.0000	1.0000	100.00
10.5	457,434,195		0.0000	1.0000	100.00
11.5	457,229,039		0.0000	1.0000	100.00
12.5	454,512,895		0.0000	1.0000	100.00
13.5	454,162,200		0.0000	1.0000	100.00
14.5	454,162,200		0.0000	1.0000	100.00
15.5	454,162,200		0.0000	1.0000	100.00
16.5	454,108,717		0.0000	1.0000	100.00
17.5	447,052,369		0.0000	1.0000	100.00
18.5	433,780,115		0.0000	1.0000	100.00
19.5	420,254,749		0.0000	1.0000	100.00
20.5	417,016,933	13,954	0.0000	1.0000	100.00
21.5	417,002,979		0.0000	1.0000	100.00
22.5	418,403,378		0.0000	1.0000	100.00
23.5	418,403,378		0.0000	1.0000	100.00
24.5	405,403,073		0.0000	1.0000	100.00
25.5	403,856,291		0.0000	1.0000	100.00
26.5	384,193,841		0.0000	1.0000	100.00
27.5	384,003,089		0.0000	1.0000	100.00
28.5	385,373,616		0.0000	1.0000	100.00
29.5	385,373,616		0.0000	1.0000	100.00
30.5	385,373,616		0.0000	1.0000	100.00
31.5	323,857,324		0.0000	1.0000	100.00
32.5	106,855,187		0.0000	1.0000	100.00
33.5	106,855,187		0.0000	1.0000	100.00
34.5	106,855,187		0.0000	1.0000	100.00
35.5	106,855,187		0.0000	1.0000	100.00
36.5	106,855,187		0.0000	1.0000	100.00
37.5	62,267,931		0.0000	1.0000	100.00
38.5	62,267,931		0.0000	1.0000	100.00

## MANITOBA HYDRO

## ACCOUNT 000A - DAMS, DYKES AND WEIRS

## ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1923-2010			EXPERIENCE BAND 1952-2010		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5	62,265,107		0.0000	1.0000	100.00
40.5	62,265,107		0.0000	1.0000	100.00
41.5	61,796,000		0.0000	1.0000	100.00
42.5	61,796,000		0.0000	1.0000	100.00
43.5	61,796,000		0.0000	1.0000	100.00
44.5	20,881,841		0.0000	1.0000	100.00
45.5	20,881,841		0.0000	1.0000	100.00
46.5	20,881,841		0.0000	1.0000	100.00
47.5	20,881,841		0.0000	1.0000	100.00
48.5	20,881,841		0.0000	1.0000	100.00
49.5	17,244,716		0.0000	1.0000	100.00
50.5	17,244,716		0.0000	1.0000	100.00
51.5	17,235,876		0.0000	1.0000	100.00
52.5	11,635,572		0.0000	1.0000	100.00
53.5	11,635,572		0.0000	1.0000	100.00
54.5	11,635,572	192,434	0.0165	0.9835	100.00
55.5	8,809,810		0.0000	1.0000	98.34
56.5	8,809,810		0.0000	1.0000	98.34
57.5	8,807,519		0.0000	1.0000	98.34
58.5	5,973,735		0.0000	1.0000	98.34
59.5	5,962,152		0.0000	1.0000	98.34
60.5	5,513,012	175,771	0.0319	0.9681	98.34
61.5	5,337,241	44,894	0.0084	0.9916	95.21
62.5	5,292,347	19,841	0.0037	0.9963	94.41
63.5	5,272,506		0.0000	1.0000	94.05
64.5	5,272,506		0.0000	1.0000	94.05
65.5	5,272,506	155,106	0.0294	0.9706	94.05
66.5	5,117,399	283,771	0.0555	0.9445	91.29
67.5	4,833,629		0.0000	1.0000	86.22
68.5	4,833,629		0.0000	1.0000	86.22
69.5	4,833,629		0.0000	1.0000	86.22
70.5	4,833,629		0.0000	1.0000	86.22
71.5	4,833,629		0.0000	1.0000	86.22
72.5	4,833,629		0.0000	1.0000	86.22
73.5	4,833,629		0.0000	1.0000	86.22
74.5	4,833,629		0.0000	1.0000	86.22
75.5	4,833,629		0.0000	1.0000	86.22
76.5	4,833,629		0.0000	1.0000	86.22
77.5	4,833,629		0.0000	1.0000	86.22
78.5	2,211,109		0.0000	1.0000	86.22

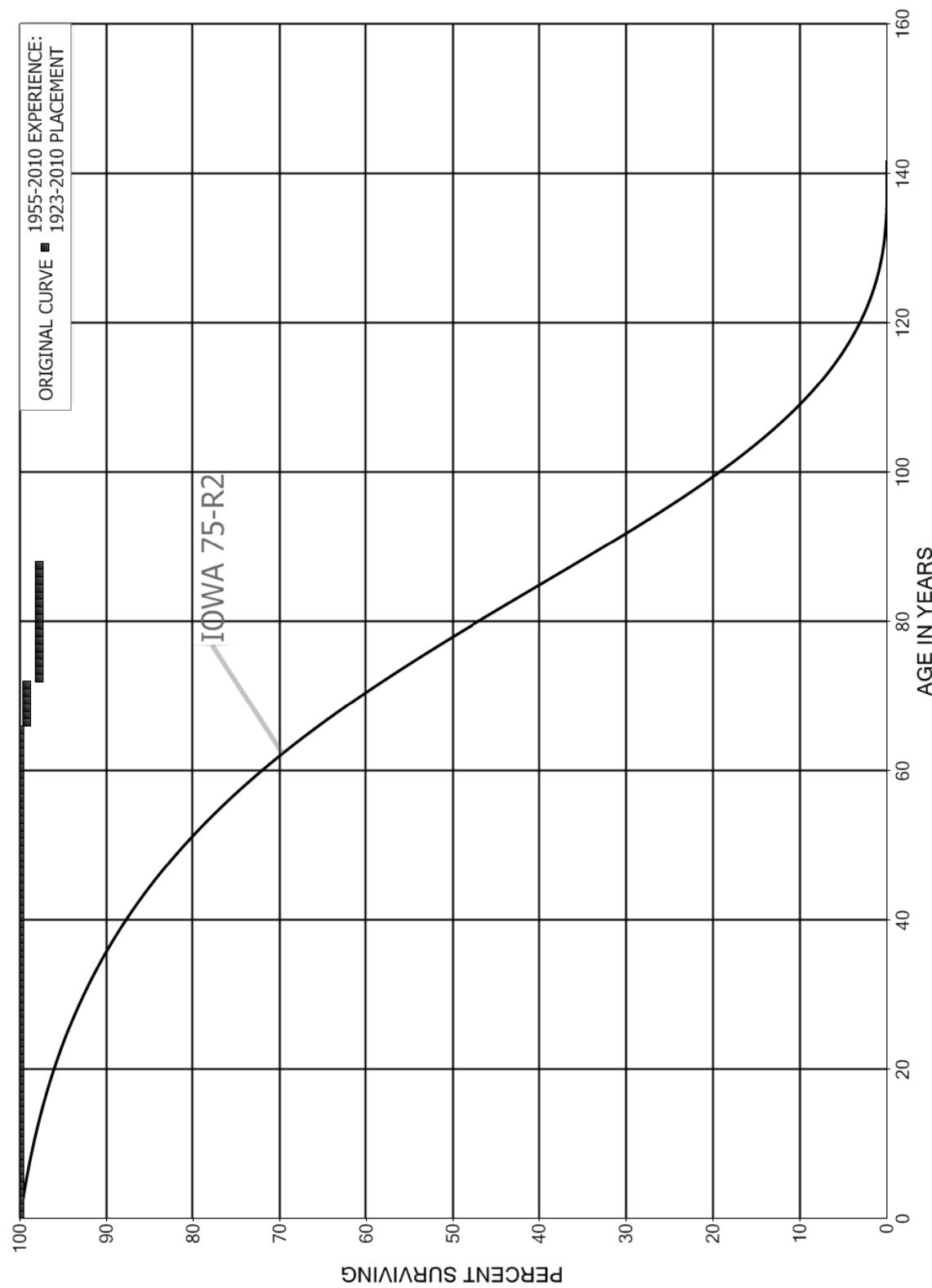
## MANITOBA HYDRO

ACCOUNT 000A - DAMS, DYKES AND WEIRS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1923-2010		EXPERIENCE BAND 1952-2010			
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
79.5	2,211,109		0.0000	1.0000	86.22
80.5	2,211,109		0.0000	1.0000	86.22
81.5	986,481		0.0000	1.0000	86.22
82.5	986,481		0.0000	1.0000	86.22
83.5	967,520		0.0000	1.0000	86.22
84.5	967,520		0.0000	1.0000	86.22
85.5	967,520		0.0000	1.0000	86.22
86.5	931,651		0.0000	1.0000	86.22
87.5					86.22

MANITOBA HYDRO  
ACCOUNT 000D - SPILLWAY  
ORIGINAL AND SMOOTH SURVIVOR CURVES



## MANITOBA HYDRO

## ACCOUNT 000D - SPILLWAY

## ORIGINAL LIFE TABLE

PLACEMENT BAND 1923-2010			EXPERIENCE BAND 1955-2010		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	369,552,576		0.0000	1.0000	100.00
0.5	369,506,280		0.0000	1.0000	100.00
1.5	366,978,483		0.0000	1.0000	100.00
2.5	366,762,400		0.0000	1.0000	100.00
3.5	366,644,866		0.0000	1.0000	100.00
4.5	365,995,189		0.0000	1.0000	100.00
5.5	365,386,540		0.0000	1.0000	100.00
6.5	365,386,540		0.0000	1.0000	100.00
7.5	365,386,540		0.0000	1.0000	100.00
8.5	365,386,540	1,838	0.0000	1.0000	100.00
9.5	365,384,702		0.0000	1.0000	100.00
10.5	365,384,702		0.0000	1.0000	100.00
11.5	365,384,702		0.0000	1.0000	100.00
12.5	365,355,774		0.0000	1.0000	100.00
13.5	364,377,188		0.0000	1.0000	100.00
14.5	364,377,188		0.0000	1.0000	100.00
15.5	363,467,145		0.0000	1.0000	100.00
16.5	363,207,008		0.0000	1.0000	100.00
17.5	322,517,032		0.0000	1.0000	100.00
18.5	242,086,562		0.0000	1.0000	100.00
19.5	161,656,093		0.0000	1.0000	100.00
20.5	161,656,093		0.0000	1.0000	100.00
21.5	161,656,093		0.0000	1.0000	100.00
22.5	162,728,053		0.0000	1.0000	100.00
23.5	162,728,053		0.0000	1.0000	100.00
24.5	153,113,204		0.0000	1.0000	100.00
25.5	153,130,509		0.0000	1.0000	100.00
26.5	152,492,998		0.0000	1.0000	100.00
27.5	152,492,998		0.0000	1.0000	100.00
28.5	152,492,998		0.0000	1.0000	100.00
29.5	152,492,998		0.0000	1.0000	100.00
30.5	152,492,998		0.0000	1.0000	100.00
31.5	110,724,015		0.0000	1.0000	100.00
32.5	39,517,819		0.0000	1.0000	100.00
33.5	39,517,819		0.0000	1.0000	100.00
34.5	39,517,819		0.0000	1.0000	100.00
35.5	39,517,819		0.0000	1.0000	100.00
36.5	39,517,819		0.0000	1.0000	100.00
37.5	14,110,860		0.0000	1.0000	100.00
38.5	14,110,860		0.0000	1.0000	100.00

## MANITOBA HYDRO

## ACCOUNT 000D - SPILLWAY

## ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1923-2010			EXPERIENCE BAND 1955-2010		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5	14,110,860		0.0000	1.0000	100.00
40.5	14,110,860		0.0000	1.0000	100.00
41.5	12,809,593		0.0000	1.0000	100.00
42.5	12,809,593		0.0000	1.0000	100.00
43.5	12,809,593		0.0000	1.0000	100.00
44.5	8,802,525		0.0000	1.0000	100.00
45.5	8,802,525		0.0000	1.0000	100.00
46.5	8,802,525		0.0000	1.0000	100.00
47.5	8,802,525		0.0000	1.0000	100.00
48.5	8,802,525		0.0000	1.0000	100.00
49.5	3,470,596		0.0000	1.0000	100.00
50.5	3,470,596		0.0000	1.0000	100.00
51.5	3,470,596		0.0000	1.0000	100.00
52.5	3,470,596		0.0000	1.0000	100.00
53.5	3,470,596		0.0000	1.0000	100.00
54.5	3,470,596		0.0000	1.0000	100.00
55.5	1,119,158		0.0000	1.0000	100.00
56.5	1,119,158		0.0000	1.0000	100.00
57.5	1,119,158		0.0000	1.0000	100.00
58.5	1,119,158		0.0000	1.0000	100.00
59.5	1,119,158		0.0000	1.0000	100.00
60.5	1,119,158		0.0000	1.0000	100.00
61.5	1,119,158		0.0000	1.0000	100.00
62.5	1,119,158		0.0000	1.0000	100.00
63.5	1,119,158		0.0000	1.0000	100.00
64.5	1,119,158		0.0000	1.0000	100.00
65.5	1,119,158	9,446	0.0084	0.9916	100.00
66.5	1,109,711		0.0000	1.0000	99.16
67.5	1,109,711		0.0000	1.0000	99.16
68.5	1,109,711		0.0000	1.0000	99.16
69.5	1,109,711		0.0000	1.0000	99.16
70.5	1,109,711		0.0000	1.0000	99.16
71.5	1,109,711	16,317	0.0147	0.9853	99.16
72.5	1,093,394		0.0000	1.0000	97.70
73.5	1,093,394		0.0000	1.0000	97.70
74.5	1,093,394		0.0000	1.0000	97.70
75.5	1,093,394		0.0000	1.0000	97.70
76.5	1,093,394		0.0000	1.0000	97.70
77.5	1,093,394		0.0000	1.0000	97.70
78.5	21,434		0.0000	1.0000	97.70

## MANITOBA HYDRO

ACCOUNT 000D - SPILLWAY

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1923-2010		EXPERIENCE BAND 1955-2010			
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
79.5	21,434	0.0000	1.0000	97.70	
80.5	21,434	0.0000	1.0000	97.70	
81.5	13,575	0.0000	1.0000	97.70	
82.5	13,575	0.0000	1.0000	97.70	
83.5	13,575	0.0000	1.0000	97.70	
84.5	13,575	0.0000	1.0000	97.70	
85.5	13,575	0.0000	1.0000	97.70	
86.5	13,575	0.0000	1.0000	97.70	
87.5				97.70	

Undertaking at Transcript Page # 1583-1585  
Page 1 of 1

## MANITOBA HYDRO

### 2012/13 & 2013/14 ELECTRIC GENERAL RATE APPLICATION

#### **UNDERTAKING PROVIDED BY: L. KENNEDY**

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#### **Manitoba Hydro Undertaking Page # 1583-1585**

Provide the specific facilities that gave rise to the retirements during the age intervals at pg. 22 of CAC Exhibit #5.

#### **Response:**

The table below identifies the facility and nature of work that gave rise to the retirements for each age interval shown at page 22 of CAC Exhibit #5.

#### **ACCOUNT 000A - DAMS, DYKES & WEIRS SPECIFIC RETIREMENT TRANSACTION DETAILS**

As shown on Page 22 of CAC Exhibit 5

Original source Document: Appendix 16: [2010 Depreciation Study] Part IV: Service Life Statistics

AGE AT BEGIN OF INTERVAL	RETIREMENTS DURING AGE INTERVAL (\$)	HYDRAULIC GENERATING FACILITY	YEAR RETIRED	YEAR INSTALLED	NATURE OF WORK TRIGGERING ASSET RETIREMENT
54.5	192,434	Seven Sisters	1987	1932	Rehabilitation of Concrete for Overflow and Non-Overflow Dams
60.5	175,771	Great Falls	1990	1929	Rehabilitation of Concrete & Structural Steel for Non-Overflow Dams
61.5	44,894	Great Falls	1989	1927	Bridge removal
62.5	19,841	Great Falls	1990	1927	Rehabilitation of Concrete & Structural Steel for Non-Overflow Dams
65.5	155,106	Great Falls	1989	1923	Bridge removal
66.5	283,771	Great Falls	1990	1923	Rehabilitation of Concrete & Structural Steel for Non-Overflow Dams



Manitoba Hydro

## Consolidated Capital Expenditure Forecast (CEF12)

For the Years 2012/13 – 2031/32

3

**CAPITAL EXPENDITURE FORECAST (CEF12)**  
(in millions of dollars)

	Total Project Cost	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
<b>ELECTRIC</b>											
<b>Major New Generation &amp; Transmission</b>											
Wuskwatim - Generation	1 448.6	123.9	12.3	16.2	-	-	-	-	-	-	-
Wuskwatim - Transmission	322.9	13.4	-	-	-	-	-	-	-	-	-
Herlet Lake - The Pas 230 kV Transmission	76.6	0.6	-	-	-	-	-	-	-	-	-
Kewask - Generation	6 220.1	201.8	339.0	405.1	636.5	883.9	1 132.1	985.4	804.1	288.2	71.9
Conawapa - Generation	10 192.4	56.0	72.0	66.3	118.9	245.3	305.1	381.4	420.5	1 046.8	1 685.4
Kelsey Improvements & Upgrades	301.7	28.5	8.9	9.5	-	-	-	-	-	-	-
Kettle Improvements & Upgrades	185.7	2.4	4.0	19.4	16.0	19.8	16.4	7.7	7.9	8.0	8.2
Pointe du Bois Spillway Replacement	559.6	150.0	248.5	81.0	2.3	-	-	-	-	-	-
Pointe du Bois - Transmission	85.9	10.2	14.2	20.0	0.0	-	-	-	-	-	-
Pointe du Bois Pumphouse Rebuild	1 538.3	-	-	-	-	-	-	-	-	-	-
Gillam Redevelopment and Expansion Program	386.5	-	-	27.0	30.2	30.5	29.5	27.9	26.3	29.1	28.7
Bipole III - Transmission Line	1 289.9	46.6	251.3	325.4	320.5	176.2	77.9	-	-	-	-
Bipole III - Converter Stations	1 828.5	143.0	231.1	408.9	379.2	394.3	177.3	-	-	-	-
Bipole III - Collector Lines	191.4	18.3	84.0	43.6	30.0	11.1	2.0	-	-	-	-
Riel 230/500 kV Station	267.6	84.5	47.3	3.5	2.0	-	-	-	-	-	-
Firm Import Upgrades	19.9	-	11.7	8.2	-	-	-	-	-	-	-
Dorsey - US Border New 500 kV Transmission Line	204.8	0.3	0.4	2.0	3.7	25.2	61.8	64.7	41.0	4.7	0.1
St. Joseph Wind Transmission	11.2	1.3	-	-	-	-	-	-	-	-	-
Demand Side Management	NA	28.5	-	-	-	-	-	-	-	-	-
Generating Station Improvements & Upgrades	649.0	-	-	-	-	-	-	-	-	-	45.0
Additional North South Transmission	395.6	-	-	-	-	-	-	-	-	-	-
G911 Fall Update MNG&T Capitalized Interest Revision	NA	0.0	1 351.6	1 434.6	1 535.3	1 781.0	1 797.2	1 436.8	(0.3)	(0.4)	1 376.6
	909.3										1 839.7

**Manitoba Hydro**  
**Consolidated Capital Expenditure Forecast (CEF12)**  
For the Years 2012/13 – 2031/32

**CAPITAL EXPENDITURE FORECAST (CEF12)**  
(in millions of dollars)

	Total Project Cost	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
<b>Power Supply</b>											
HVDC Auxiliary Power Supply Upgrades	5.3	0.3	0.4	-	-	-	-	-	-	-	-
Dorey Synchronous Condenser Rehabilitation	73.3	4.0	5.8	8.7	11.0	7.6	5.4	4.8	-	-	-
HVDC System Transformer & Reactor Fire Protection & Prevention	10.3	0.2	0.3	0.0	23.3	16.9	13.8	-	-	-	-
HVDC Transformer Replacement Program Extended	171.2	9.5	10.1	-	-	-	-	-	-	-	0.5
HVDC Transformer Replacement Program Extended	449.7	-	-	-	-	-	-	-	-	-	3.8
Dorey 230 kV Relay Building Upgrade	80.9	0.4	0.0	2.1	2.5	0.4	16.5	33.1	9.6	-	-
HVDC Stations Ground Grid Rehabilitation	4.1	0.4	0.4	0.3	0.3	0.3	-	-	-	-	-
HVDC Bipole 1 230 kV Hi-L Circuit Breaker Replacement	13.9	0.7	0.6	0.3	0.2	0.1	0.0	0.1	-	-	-
HVDC Bipole 1 Pole Differential Protection	3.3	-	0.4	0.9	2.1	-	-	-	-	-	-
HVDC Bipole 1 By-Pass Vacuum Switch Removal	19.2	0.2	4.5	8.7	5.0	-	-	-	-	-	-
HVDC Bipole 2 Refrigent Condenser Replacement	129	-	0.3	3.0	2.6	7.1	-	-	-	-	-
HVDC Smoothing Reactor Replacements	46.2	4.5	4.0	-	-	-	-	-	-	-	-
HVDC -BP1 Converter Station P1 & P2 Battery Bank Separation	3.0	0.2	1.2	1.5	-	-	-	-	-	-	-
HVDC Bipole 1 DCCT Transducer Replacement	11.4	0.1	1.2	1.0	2.8	3.5	2.7	-	-	-	-
HVDC Bipole 1 & 2 DC Converter Transformer Bushing Replacements	8.7	0.0	0.8	2.0	4.8	1.1	-	-	-	-	-
HVDC Bipole 2 Valve Wall Bushing Replacements	19.1	0.1	-	3.3	4.8	4.1	2.3	-	-	-	-
HVDC Bipole 2 Upgrades & Replacements	210.5	-	-	-	-	-	-	-	-	-	12.3
HVDC Bipole 1 CO Disconnect Replacement	4.9	0.5	1.3	-	-	-	-	-	-	-	-
HVDC Bipole 2 Thyristor Module Cooling Retrofitment	7.8	1.1	0.4	0.4	0.3	0.3	0.1	-	-	-	-
HVDC Bipole 2 Transformer Marshalling Kiosks Replacement	6.6	0.8	1.0	1.0	2.2	-	-	-	-	-	-
Bipole 2 Thyristor Valve Replacement	233.7	-	-	-	-	-	2.1	13.3	23.1	57.4	56.3
HVDC Gapped Arrestor Replacement	15.9	0.4	3.6	3.2	6.7	1.3	-	-	-	-	-
Winnipeg River Rivelbank Protection Program	19.7	1.3	1.2	1.3	1.2	1.0	-	-	-	-	-
Power Supply Hydraulic Controls	26.8	0.6	3.0	3.4	1.9	-	1.6	2.2	0.9	-	-
Slave Falls GS Creek Sillway Rehab	10.7	1.0	1.7	8.0	9.0	9.2	9.5	-	-	-	-
Slave Falls Rehabilitation	229.9	0.7	0.3	9.0	-	-	-	-	-	-	-
Great Falls Unit 1 Major Overhaul	43.2	7.2	19.9	0.2	-	-	-	-	-	-	-
Great Falls Unit 2 Discharge Ring Replacement and Major Overhaul	24.8	-	-	-	2.3	-	-	-	-	-	-
Generation South Overhauls & Improvements	384.8	-	-	-	-	-	-	-	-	-	-
Pine Falls Rehabilitation	158.5	5.3	7.1	9.2	27.8	27.6	24.9	28.8	7.9	2.2	-
Generation South Transformer Relubish & Spares	25.9	0.1	2.3	10.4	9.3	2.5	-	-	-	-	-
Water Licenses & Renewals	53.5	6.5	8.2	5.6	5.9	6.2	1.6	-	-	-	-
Generation South PCB Regulation Compliance	4.5	0.7	0.2	0.2	0.2	2.7	-	-	-	-	-
Kettle Transformer Overhaul Program	45.2	10.3	10.0	4.0	0.0	-	-	-	-	-	-
Generation South Breaker Replacements	10.7	3.8	0.9	0.7	0.7	0.1	0.8	-	-	-	-
Seven Sisters Upgrades	14.1	0.7	1.1	-	-	-	-	-	-	-	-
Generation South Excitation Upgrades	16.3	1.3	0.6	1.8	3.8	1.5	0.6	5.1	-	-	-
Generation South Excitation Program Extended	14.0	-	-	-	-	-	-	-	-	-	4.4
Laurel River/Curthill River Diversions (CRD) Comm and Annunciation Upgrad	6.7	3.1	1.0	-	-	-	-	-	-	-	-
Notigi Marine Vessel Replacement and Infrastructure Improvements	4.6	1.3	2.9	-	-	-	-	-	-	-	-
Limestone Stilling Basin Rehabilitation	1.9	0.2	1.7	-	-	-	-	-	-	-	-
Ponte Du Bois GS Rehabilitation	182.9	7.1	7.1	9.0	18.8	23.0	21.3	18.8	24.6	23.1	10.6
Kettle Wicket Gates Lever Rebuildishments	2.2	0.4	0.9	0.8	-	-	-	-	-	-	-
Limestone Governor Control Replacement	2.3	0.1	0.4	1.6	0.3	0.3	-	-	-	-	-
Limestone GS/DA Replacement	4.7	0.3	1.1	0.7	0.8	0.3	1.6	-	-	-	-
Jumper Unit Overhauls	128.1	-	-	0.7	2.3	2.5	18.2	24.0	24.6	24.9	19.5
Power Supply Dam Safety Upgrades	64.5	3.6	5.0	10.4	-	-	-	-	-	-	-
Brandon Unit 5 License Review	10.3	0.2	0.2	1.7	1.9	1.0	-	-	-	-	-
Seklik Enhancements	14.2	0.5	0.4	-	-	-	-	-	-	-	-
Brandon Units 6 & 7°C Overhaul Program	50.4	-	-	-	-	-	5.9	0.4	23.3	2.0	18.9
Fire Protection Projects - HVDC	6.9	5.4	1.2	2.6	2.3	2.8	1.7	-	-	-	-
Halon Replacement Project	36.0	2.3	2.6	2.3	2.8	2.8	-	-	-	-	-
Grand Rapids Townsite House Renovations	12.2	0.9	0.8	0.8	0.8	0.9	0.9	0.9	0.9	0.9	1.0
Grand Rapids Fish Hatchery	2.2	1.7	-	-	-	-	-	-	-	-	-
Generation Townsite Infrastructure	74.1	11.5	16.2	-	-	-	-	-	-	-	-
Site Remediation of Contaminated Corporate Facilities	33.4	1.1	1.1	-	-	-	-	-	-	-	-
High Voltage Test Facility	40.6	2.3	-	-	-	-	-	-	-	-	-
Power Supply Security Installations / Upgrades	42.9	5.4	8.6	8.8	2.0	-	-	-	-	-	-
Power Supply Sewer & Domestic Water System Install and Upgrade	45.2	4.8	6.1	3.7	2.1	2.2	2.5	-	-	-	-
Target Adjustment	NA	20.1	20.5	21.0	21.4	21.8	22.2	22.7	23.1	23.6	24.1
	7.5	(20.5)	-	-	-	-	-	-	-	-	-
	137.6	150.4	-	178.4	180.5	166.1	143.0	191.1	127.0	181.3	161.0

**Manitoba Hydro**  
**Consolidated Capital Expenditure Forecast (CEF12)**  
For the Years 2012/13 – 2031/32

**CAPITAL EXPENDITURE FORECAST (CEF12)**

(in millions of dollars)

	Total Project Cost	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
<b>Transmission</b>											
Winnipeg - Brandon Transmission System Improvements	43.1	0.9	2.0	27.7	5.3	-	-	-	-	-	-
Transcona - East 230 - 66 kV Station	37.6	13.4	0.1	-	-	-	-	-	-	-	-
Brandon Area Transmission Improvements	11.5	6.4	2.7	-	0.4	-	-	-	-	-	-
V36R 230kV Transmission Line ROW in RMNP	2.6	0.5	0.6	1.0	0.0	-	-	-	-	-	-
Transmission Line Re-Rating	28.1	8.0	11.0	1.2	0.0	-	-	-	-	-	-
St. Vital-Stainbach 230 kV Breaker Replacement	31.7	6.9	-	-	0.8	0.9	2.5	6.0	9.4	12.7	-
Transcona Station 66 kV Breaker Replacement	32.2	-	-	0.8	2.5	-	-	-	-	-	-
13.2kV Shunt Reactor Replacement	5.6	-	-	0.6	2.1	2.1	2.2	1.3	-	-	-
Rockwood East 130-15kV Station	15.9	2.1	2.0	1.9	2.1	-	-	-	-	-	-
Lake Winnipeg East System Improvements	53.3	2.4	15.1	27.1	7.9	-	-	-	-	-	-
Canexus Load Addition	64.6	2.6	22.4	23.8	13.0	2.3	-	-	-	-	-
Lettler - St. Vital 230kV Transmission	58.0	0.5	(0.3)	-	-	-	-	-	-	-	-
Breaker Failure Protection Implementation	4.4	0.8	1.6	1.4	0.6	-	-	-	-	-	-
D602C 500kV TIR Footing Repacements	4.4	1.8	-	-	-	-	-	-	-	-	-
Stanley Station 230+66 kV Transformer Addition	19.4	-	0.6	5.2	9.3	4.5	-	-	-	-	-
Entbridge Pipelines Clipper Project Load Addition Phase 2	7.4	1.8	-	-	-	-	-	-	-	-	-
Ashin Station Tank Addition	10.0	0.2	0.5	6.7	2.5	-	-	-	-	-	-
Ashin Station 230 kV Shunt Reactor Replacement	1.2	0.3	-	-	-	-	-	-	-	-	-
Tadoule Lake DGS Diesel Tank Farm Upgrade	0.9	0.5	0.0	0.0	-	-	-	-	-	-	-
Energy Management System (EMS) Upgrade	6.5	1.2	-	-	-	-	-	-	-	-	-
Transmission Line Protection & Teleprotection Replacement	20.5	5.1	6.2	1.4	2.1	-	-	-	-	-	-
Mobile Radio System Modernization	30.6	1.5	13.0	6.3	9.2	-	-	-	-	-	-
Site Remediation - Diesel Generating Stations	13.3	1.8	-	-	-	-	-	-	-	-	-
Oil Containment - Transmission	7.4	0.1	-	-	-	-	-	-	-	-	-
Station Battery Tank Capacity & System Reliability Increase	46.4	4.2	4.1	4.3	4.4	3.7	-	-	-	-	-
Waverley Service Centre Oil Tank Farm Replacement	2.9	0.4	0.1	-	-	-	-	-	-	-	-
115 kV Transmission Lines	298.9	-	-	-	-	-	-	-	-	-	-
230 kV Transmission Lines	171.1	-	-	-	-	-	-	-	-	-	-
Sub-Transmission	124.8	-	-	-	-	-	-	-	-	-	-
Communications	425.8	-	-	-	-	-	-	-	-	-	-
Transmission Domestic	NA	31.2	31.8	32.5	33.1	33.8	34.5	35.1	35.9	36.6	37.3
Target Adjustment	NA	(14.6)	(9.4)	-	-	-	-	-	-	-	-
	78.7	106.5	149.0	124.0	67.5	39.1	42.4	45.3	49.2	72.4	-
<b>Customer Services &amp; Distribution</b>											
Winnipeg Distribution Infrastructure Requirements	24.5	1.5	1.8	2.4	-	-	-	-	-	-	-
Rover Substation Replace 4 kV Switchgear	12.7	0.0	0.0	0.0	6.9	0.6	-	-	-	-	-
Martin New Outdoor Station	27.3	1.0	10.8	9.9	-	-	-	-	-	-	-
Burrows New 66 kV / 12 kV Station	42.6	15.2	4.2	2.2	-	-	-	-	-	-	-
Winnipeg Central 128.4kV Manitoba Oil Switches	9.8	0.5	-	-	-	-	-	-	-	-	-
William New 66kV / 12 kV Station	10.3	0.1	2.7	4.2	3.0	-	-	-	-	-	-
Waverley West Sub Station Supply - Stage 1	6.5	0.1	-	-	-	-	-	-	-	-	-
St. James New Station & 24 kV Conversion	65.9	0.4	18.4	20.8	22.3	0.4	-	-	-	-	-
Distribution	887.5	-	-	-	-	-	-	-	-	-	30.5
Health Sciences Centre Service Consolidation & Distribution Upgrade	13.9	-	9.4	3.3	-	-	-	-	-	-	-
Waverley South DSC Installation	3.9	1.3	-	-	-	-	-	-	-	-	-
Southdale DK732 Cable Replacement	2.6	1.1	-	-	-	-	-	-	-	-	-
Royal Canadian Mint Expansion	2.3	1.2	-	-	-	-	-	-	-	-	-
KEA/Seasons of Luxedo DSC Installation	4.6	3.3	1.2	-	-	-	-	-	-	-	-
Line 27 66 kV Extension and Arborg North Distribution Supply Centre	6.0	2.6	-	-	-	-	-	-	-	-	-
Melrose DSC	3.5	1.6	-	-	-	-	-	-	-	-	-
Starbuck DSC	3.0	1.5	-	-	-	-	-	-	-	-	-
Blumenthor Distribution Supply Centre	2.8	-	-	-	-	-	-	-	-	-	-
Taillon East 66/12kV Station	4.6	1.2	-	-	-	-	-	-	-	-	-
Kitefield Distribution Supply Centre	2.8	0.2	2.6	-	-	-	-	-	-	-	-
Cromer North Station & Reston REI 2+4 25kV Conversion	4.2	0.3	-	-	-	-	-	-	-	-	-
Brandon Cross Plains 115-25 kV Bank Addition	5.8	0.0	5.7	-	-	-	-	-	-	-	-
Brandon Highfield Park Station Capacity Increase	3.2	1.5	1.7	-	-	-	-	-	-	-	-
Birtle South - Rossburn 66kV Line	4.9	0.0	1.0	-	3.9	-	-	-	-	-	-
TCPL Keystone Project	3.0	2.8	-	-	-	-	-	-	-	-	-
Line 98 Rebuild Melita to Maskwacis	8.0	1.8	2.3	-	-	-	-	-	-	-	-
Waskada North-Line 36 280kV Cap Bank	3.8	0.0	-	-	-	-	-	-	-	-	-
Steinbach Area 66kV Capacity Upgrade	3.9	0.9	-	-	-	-	-	-	-	-	-
Entbridge Pipelines Clipper-66kV Supply I	6.3	3.0	1.5	-	-	-	-	-	-	-	-
Waverley West 66 kV Supply Upgrade	0.9	1.9	-	-	-	-	-	-	-	-	-
Winipac 7 MVA Expansion	3.2	0.3	2.9	-	-	-	-	-	-	-	-
Busset 48-DSC + Cap Bank Installation	9.4	3.1	3.0	-	-	-	-	-	-	-	-
Customer Service & Distribution Domestic Target Adjustment	130.5	133.2	136.3	139.0	141.8	144.7	147.5	150.5	153.5	156.6	153.5
	166.6	199.0	185.8	175.1	142.8	144.7	147.5	150.5	153.5	156.6	187.1

Manitoba Hydro

**Consolidated Capital Expenditure Forecast (CEF12)**

For the Years 2012/13 – 2031/32

**CAPITAL EXPENDITURE FORECAST (CEF12)**

(in millions of dollars)

	Total Project Cost	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
<b>Customer Care &amp; Marketing</b>											
Advanced Metering Infrastructure	30.9	-	3.1	4.0	5.4	5.5	5.6	4.4	3.9	-	-
Customer Care & Marketing Domestic	NA	3.0	-	3.8	3.9	4.0	4.1	4.1	4.2	4.3	4.4
Target Adjustment	NA	-	-	-	-	-	-	-	-	-	-
<b>Finance &amp; Administration</b>											
Corporate Buildings	NA	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
1840 Chevre Apparatus Maintenance Shop Ancillary Processing Facility	4.0	-	1.3	1.8	0.9	-	-	-	-	-	-
EAM Phase 2	18.6	5.0	5.1	2.6	-	-	-	-	-	-	-
Workforce Management (Phase 1 to 4)	17.7	1.4	-	-	-	-	-	-	-	-	-
Fleet	NA	13.0	14.3	14.6	14.9	15.2	15.5	15.8	16.2	16.5	16.8
Finance & Administration Domestic	NA	22.0	25.9	26.5	27.0	27.5	28.1	28.7	29.2	29.8	30.4
Target Adjustment	NA	(11.9)	(6.5)	-	-	-	-	-	-	-	-
<b>ELECTRIC CAPITAL SUBTOTAL</b>	<b>1,342.9</b>	<b>1,656.8</b>	<b>2,009.2</b>	<b>2,075.0</b>	<b>2,217.6</b>	<b>2,185.3</b>	<b>1,878.8</b>	<b>1,683.7</b>	<b>1,819.3</b>	<b>2,319.9</b>	<b>2,319.9</b>
<b>GAS</b>											
<b>Customer Service &amp; Distribution</b>											
Alle Des Chenes NG Transmission Network Upgrade	1.2	1.1	-	-	-	-	-	-	-	-	-
Gas SCADA Replacement	4.6	2.6	-	-	-	-	-	-	-	-	-
Customer Service & Distribution Domestic	NA	22.1	26.2	26.7	27.3	27.8	28.4	28.9	29.5	30.1	30.7
Target Adjustment	NA	(3.8)	(3.7)	-	-	-	-	-	-	-	-
<b>Customer Care &amp; Marketing</b>	<b>15.0</b>	<b>-</b>	<b>8.8</b>	<b>1.0</b>	<b>5.4</b>	<b>8.3</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
Advanced Metering Infrastructure	NA	9.3	-	-	-	-	-	-	-	-	-
Demand Side Management	NA	4.8	4.9	5.0	5.1	5.2	5.3	5.4	5.5	5.7	5.8
Customer Care & Marketing Domestic	NA	-	-	-	-	-	-	-	-	-	-
Target Adjustment	NA	14.2	13.7	6.0	10.6	13.5	5.3	5.4	5.5	5.7	5.8
<b>GAS CAPITAL SUBTOTAL</b>	<b>36.3</b>	<b>36.2</b>	<b>32.8</b>	<b>37.8</b>	<b>41.3</b>	<b>33.7</b>	<b>34.4</b>	<b>35.1</b>	<b>35.8</b>	<b>36.5</b>	<b>36.5</b>
<b>CONSOLIDATED CAPITAL</b>											
GS11 Fall Update Base Capitalized Interest Revision	NA	1,379.1	1,695.0	2,041.9	2,112.8	2,256.9	2,219.0	1,913.2	1,716.8	1,855.1	2,356.4
CEF12 TOTAL		1,379.1	(0.3)	(0.4)	(0.6)	(0.4)	(0.1)	(0.5)	(0.5)	(0.5)	(0.6)
		1,379.1	1,694.7	2,041.5	2,112.2	2,256.5	2,218.6	1,912.7	1,713.3	1,854.4	2,355.8

**Manitoba Hydro**  
**Consolidated Capital Expenditure Forecast (CEF12)**  
For the Years 2012/13 – 2031/32

**CAPITAL EXPENDITURE FORECAST (CEF12)**  
(in millions of dollars)

	Total Project Cost	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	20 Year Total
<b>ELECTRIC</b>												
<b>Major New Generation &amp; Transmission</b>	1 448.6	-	-	-	-	-	-	-	-	-	-	152.4
Wuskwatin - Generation	322.9	-	-	-	-	-	-	-	-	-	-	13.4
Wuskwatin - Transmission	76.6	-	-	-	-	-	-	-	-	-	-	0.6
Herbet Lake - The Pas 230 kV Transmission	6 220.1	1 663.6	1 995.3	1 192.1	803.9	369.5	60.4	-	-	-	-	5 718.0
Keeyask - Generation	10 192.4	-	-	-	-	-	-	-	-	-	-	9 962.5
Conaway - Generation	301.7	-	-	-	-	-	-	-	-	-	-	46.9
Kelley Improvements & Upgrades	165.7	7.7	-	-	-	-	-	-	-	-	-	117.5
Kelle Improvements & Upgrades	599.6	-	-	-	-	-	-	-	-	-	-	481.8
Pointe du Bois Spillway Replacement	85.9	-	-	-	-	-	-	-	-	-	-	44.5
Pointe du Bois - Transmission	1 538.3	2.2	16.0	37.8	90.7	157.8	248.0	403.9	312.7	216.2	55.6	1 538.3
Pointe du Bois Powerhouse Rebuild	366.5	26.8	32.3	32.1	34.0	11.9	-	-	-	-	-	366.5
Gillam Redevelopment and Expansion Program	1 259.9	-	-	-	-	-	-	-	-	-	-	1 197.9
Bipole III - Transmission Line	1 828.5	-	-	-	-	-	-	-	-	-	-	1 733.6
Bipole III - Converter Stations	191.4	-	-	-	-	-	-	-	-	-	-	189.0
Bipole III - Collector Lines	267.6	-	-	-	-	-	-	-	-	-	-	137.3
Riel 230/500 kV Station	19.9	-	-	-	-	-	-	-	-	-	-	19.9
Finn Import Upgrades	204.8	-	-	-	-	-	-	-	-	-	-	203.7
Dossey - US Border New 500 kV Transmission Line	11.2	-	-	-	-	-	-	-	-	-	-	1.3
St. Joseph Wind Transmission	NA	32.2	21.1	9.4	14.4	15.2	25.8	79.3	56.6	62.7	-	56.6
Demand Side Management	649.0	-	-	-	-	-	-	-	-	-	-	536.3
Generating Station Improvements & Upgrades	395.6	-	-	-	-	-	-	-	-	-	-	395.6
Additional North/South Transmission	NA	(0.1)	(0.1)	(0.2)	(0.3)	(0.7)	(1.2)	(2.2)	(3.1)	(0.8)	(0.3)	(26.7)
G911 Fall Update MNG&T Capitalized Interest Revision	1 732.5	1 464.6	1 271.3	1 032.6	939.3	328.9	481.1	366.2	278.1	223.8	22 887.0	

**Manitoba Hydro****Consolidated Capital Expenditure Forecast (CEF12)**

For the Years 2012/13 – 2031/32

**CAPITAL EXPENDITURE FORECAST (CEF12)**  
(in millions of dollars)

	Total Project Cost	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	20 Year Total
<b>Power Supply</b>												
HVDC Auxiliary Power Supply Upgrades	5.3	-	-	-	-	-	-	-	-	-	-	47.3
Dosei Synchronous Condenser Refurbishment	73.3	-	-	-	-	-	-	-	-	-	-	40.6
HVDC System Transformer & Reactor Fire Protection & Prevention	10.3	-	-	-	-	-	-	-	-	-	-	73.5
HVDC Transformer Replacement Program	171.2	-	6.4	6.4	32.9	6.7	7.0	50.3	22.5	77.8	88.1	39.3
HVDC Transformer Replacement Program Extended	448.7	4.6	-	-	-	-	-	-	-	-	-	-
HVDC 230 kV Relay Building Upgrade	80.9	-	-	-	-	-	-	-	-	-	-	68.3
HVDC Stations Ground Grid Refurbishment	4.1	-	-	-	-	-	-	-	-	-	-	1.9
HVDC Bipole 2 230 kV HLR Circuit Breaker Replacement	13.9	-	-	-	-	-	-	-	-	-	-	2.0
HVDC Bipole 1 Pole Differential Protection	3.3	-	-	-	-	-	-	-	-	-	-	3.3
HVDC Bipole 1 By-Pass Vacuum Switch Removal	19.2	-	-	-	-	-	-	-	-	-	-	18.5
HVDC Bipole 2 Refrigerant Condenser Replacement	12.9	-	-	-	-	-	-	-	-	-	-	12.9
HVDC Smoothing Reactor Replacements	46.2	-	-	-	-	-	-	-	-	-	-	8.5
HVDC - BP1 Converter Station P1 & P2 Battery Bank Separation	3.0	-	-	-	-	-	-	-	-	-	-	-
HVDC Bipole 1 DCCT Transistor Replacement	11.4	-	-	-	-	-	-	-	-	-	-	11.3
HVDC Bipole 1 & 2 DC Converter Transformer Bushing Replacements	8.7	-	-	-	-	-	-	-	-	-	-	8.7
HVDC Bipole 2 Pole Bushing Replacements	19.1	-	-	-	-	-	-	-	-	-	-	18.6
HVDC Bipole 1 Pole Differential Protection	210.5	57.4	-	64.1	24.1	-	-	-	-	-	-	210.5
HVDC Bipole 2 Refrigerant Condenser Replacement	4.9	-	-	-	-	-	-	-	-	-	-	4.9
HVDC Bipole 1 Transformer Module Cooling Refurbishment	7.8	-	-	-	-	-	-	-	-	-	-	2.5
HVDC Bipole 1 Transformer Marshalling Kiosk Replacement	6.6	-	-	-	-	-	-	-	-	-	-	5.0
Bipole 2 Thyristor Valve Replacement	233.7	59.3	-	20.2	-	-	-	-	-	-	-	233.7
HVDC Capped Arrestor Replacement	15.9	-	-	-	-	-	-	-	-	-	-	15.2
Winnipeg River Riverbank Protection Program	19.7	-	-	-	-	-	-	-	-	-	-	6.1
Power Supply Hydraulic Controls	26.8	-	-	-	-	-	-	-	-	-	-	13.6
Stine Falls GS Creek Spillway / Rehab	10.7	-	-	-	-	-	-	-	-	-	-	10.7
Stine Falls Rehabilitation	228.9	26.5	-	26.9	-	13.1	-	-	-	-	-	178.3
Great Falls Unit 4 Water Overhaul	43.2	-	-	-	-	-	-	-	-	-	-	27.4
Great Falls Unit 5 Discharge Ring Replacement and Major Overhaul	24.8	-	-	-	-	-	-	-	-	-	-	24.8
Generation South Overhauls & Improvements	384.8	10.2	-	40.3	-	29.4	-	48.6	28.5	33.3	53.3	384.8
Pine Falls Rehabilitation	188.5	-	-	-	-	-	-	-	-	-	-	140.9
Generation South Transformer Rehabilitation & Spares	25.9	-	-	-	-	-	-	-	-	-	-	24.7
Water Licenses & Renewals	53.5	-	-	-	-	-	-	-	-	-	-	33.9
Generation South PCB Regulation Compliance	4.5	-	-	-	-	-	-	-	-	-	-	3.7
Kettle Transformer Overhaul Program	45.2	-	-	-	-	-	-	-	-	-	-	24.3
Generation South Breaker Replacements	10.7	-	-	-	-	-	-	-	-	-	-	6.3
Savon Sleets Upgrade	14.1	-	-	-	-	-	-	-	-	-	-	1.8
Generation South Excitation Upgrades	16.3	-	-	-	-	-	-	-	-	-	-	-
Pine Falls Rehabilitation	14.0	5.0	-	-	-	-	-	3.4	1.2	-	-	-
Noig Marine Vessel Replacement and Annunciation Upgrades	6.7	-	-	-	-	-	-	-	-	-	-	4.1
Limestone Stilling Basin Rehabilitation	4.6	-	-	-	-	-	-	-	-	-	-	4.2
Poiteau Du Bois GS Rehabilitation	1.9	-	-	-	-	-	-	-	-	-	-	1.9
Kettle Wicket Gates Lever Refurbishments	182.9	8.6	-	6.1	-	4.4	-	-	-	-	-	182.5
Limestone Governor Control Replacement	2.2	-	-	-	-	-	-	-	-	-	-	2.1
Limestone Governor House Renovations	2.3	-	-	-	-	-	-	-	-	-	-	2.3
Ienglo Inn Overhaul	12.2	1.0	-	-	-	-	-	-	-	-	-	9.8
Grand Rapids Fish Hatchery	128.1	-	-	-	-	-	-	-	-	-	-	115.9
Generation Townsite Infrastructure	2.2	-	-	-	-	-	-	-	-	-	-	1.7
Site Remediation of Contaminated Corporate Facilities	74.1	-	-	-	-	-	-	-	-	-	-	77.8
Brandon Unit 5 License Review	10.3	-	-	-	-	-	-	-	-	-	-	5.0
Sakikik Enhancements	14.2	-	-	-	-	-	-	-	-	-	-	0.9
Brandon Units 6 & 7C Overhaul Program	50.4	-	-	-	-	-	-	-	-	-	-	50.4
Fire Protection Projects - HVDC	6.9	-	-	-	-	-	-	-	-	-	-	4.1
Halon Replacement Project	36.0	-	-	-	-	-	-	-	-	-	-	14.5
Grand Rapids Townsite House Renovations	12.2	1.0	-	-	-	-	-	-	-	-	-	-
Power Supply Dam Safety Upgrades	64.5	-	-	-	-	-	-	-	-	-	-	-
Brandon Unit 5 License Review	33.4	-	-	-	-	-	-	-	-	-	-	-
High Voltage Test Facility	40.6	-	-	-	-	-	-	-	-	-	-	-
Power Supply Security Upgrades	42.9	-	-	-	-	-	-	-	-	-	-	-
Power Supply Sewer & Domestic Water System Install and Upgrade	45.2	-	-	-	-	-	-	-	-	-	-	-
Power Supply Domestic	NA	24.6	-	25.0	-	25.5	-	26.1	26.6	27.1	27.7	-
Target Adjustment	NA	-	-	-	-	-	-	-	-	-	-	-
Grand Rapids Fish Hatchery	192.5	185.8	-	170.6	-	105.5	-	62.1	110.8	133.0	159.3	170.6
Generation Townsite Infrastructure	-	-	-	-	-	-	-	-	-	-	-	-
Site Remediation of Contaminated Corporate Facilities	-	-	-	-	-	-	-	-	-	-	-	-
High Voltage Test Facility	-	-	-	-	-	-	-	-	-	-	-	-
Power Supply Security Upgrades	-	-	-	-	-	-	-	-	-	-	-	-
Power Supply Sewer & Domestic Water System Install and Upgrade	-	-	-	-	-	-	-	-	-	-	-	-
Power Supply Domestic	-	-	-	-	-	-	-	-	-	-	-	-
Total Project Cost	192.5	185.8	-	170.6	-	105.5	-	62.1	110.8	133.0	159.3	170.6
20 Year Total	-	-	-	-	-	-	-	-	-	-	-	2 975.0

**Manitoba Hydro**  
**Consolidated Capital Expenditure Forecast (CEF12)**  
For the Years 2012/13 – 2031/32

**CAPITAL EXPENDITURE FORECAST (CEF12)**  
(in millions of dollars)

	Total Project Cost	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	20 Year Total
<b>Transmission</b>												
Winnipeg - Brandon Transmission System Improvements	43.1	-	-	-	-	-	-	-	-	-	-	35.9
Transcona East 230 - 66 KV Station	37.6	-	-	-	-	-	-	-	-	-	-	13.5
Brandon Area Transmission Improvements	11.5	-	-	-	-	-	-	-	-	-	-	9.1
V38KV 230KV Transmission Line ROW in RMNP	2.6	-	-	-	-	-	-	-	-	-	-	2.6
Nepawa 230 - 66 KV Station	29.1	-	-	-	-	-	-	-	-	-	-	20.2
Transmission Line Re-Rating	31.7	-	-	-	-	-	-	-	-	-	-	6.9
St Vital-Stenbach 230 KV Transmission	32.2	-	-	-	-	-	-	-	-	-	-	32.2
St. Vital-Stenbach 66 KV Breaker Replacement	5.6	-	-	-	-	-	-	-	-	-	-	5.6
13.2KV Shunt Reactor or Replacements	15.9	-	-	-	-	-	-	-	-	-	-	13.7
Rockwood East 230-115KV Station	53.3	-	-	-	-	-	-	-	-	-	-	52.5
Lake Winnipeg East System Improvements	64.6	-	-	-	-	-	-	-	-	-	-	64.1
Canexus Load Addition	(0.3)	-	-	-	-	-	-	-	-	-	-	(1.3)
Leileier - St. Vital 230KV Transmission	59.0	-	-	-	-	-	-	-	-	-	-	58.9
Breaker Failure Protection Implementation	4.4	-	-	-	-	-	-	-	-	-	-	4.4
DCEC 50KV TLL Earthing Requirements	4.4	-	-	-	-	-	-	-	-	-	-	4.4
Stanley Station 230-66 KV Transformer Addition	19.4	-	-	-	-	-	-	-	-	-	-	19.4
Enbridge Pipelines: Clipper Project Load Addition Phase 2	7.4	-	-	-	-	-	-	-	-	-	-	1.8
Ashern Station Bank Addition	10.0	-	-	-	-	-	-	-	-	-	-	9.9
Ashern Station 230 KV Shunt Reactor Replacement	1.2	-	-	-	-	-	-	-	-	-	-	0.3
Tauke Lake DGS Diesel Tank Farm Upgrade	0.9	-	-	-	-	-	-	-	-	-	-	0.5
Energy Management System (EMS) Upgrade	6.5	-	-	-	-	-	-	-	-	-	-	1.2
Transmission Line Protection & Teleprotection Replacement	20.5	-	-	-	-	-	-	-	-	-	-	14.8
Mobile Radio System Modernization	30.6	-	-	-	-	-	-	-	-	-	-	30.0
Site Remediation of Diesel Generating Stations	13.3	-	-	-	-	-	-	-	-	-	-	1.8
Oil Containment - Transmission	7.4	-	-	-	-	-	-	-	-	-	-	0.1
Station Battery Bank Capacity & System Reliability Increase	46.4	-	-	-	-	-	-	-	-	-	-	20.7
Waverley East Oil Tank Farm Replacement	2.9	-	-	-	-	-	-	-	-	-	-	0.4
298.9 16.1 19.8 21.1 25.8 23.7 25.5 28.4 28.9 31.5 32.9 32.9 30.0	298.9	16.1	19.8	21.1	25.8	23.7	25.5	28.4	28.9	31.5	32.9	30.0
171.1 9.2 11.3 12.1 14.8 13.6 14.6 16.3 16.5 18.0 18.8 18.8 18.8	171.1	9.2	11.3	12.1	14.8	13.6	14.6	16.3	16.5	18.0	18.8	18.8
124.8 6.7 8.3 8.8 10.8 9.9 10.6 11.9 12.1 13.1 13.7 13.7 13.7	124.8	6.7	8.3	8.8	10.8	9.9	10.6	11.9	12.1	13.1	13.7	13.7
425.8 23.0 28.2 30.0 36.8 33.8 36.3 41.2 42.8 44.6 45.5 45.5 45.5	425.8	23.0	28.2	30.0	36.8	33.8	36.3	41.2	42.8	44.6	45.5	45.5
NA 38.0 38.8 39.6 40.4 41.2 42.0 42.8 43.7 44.6 45.5 45.5 45.5	NA	38.0	38.8	39.6	40.4	41.2	42.0	42.8	43.7	44.6	45.5	45.5
Target Adjustment	-	-	-	-	-	-	-	-	-	-	-	(24.0)
93.1 106.4 111.6 128.6 122.2 128.1 139.9 142.4 152.1 157.9 157.9 157.9 2057.3	93.1	106.4	111.6	128.6	122.2	128.1	139.9	142.4	152.1	157.9	157.9	2057.3
<b>Customer Service &amp; Distribution</b>												
Winnipeg Distribution Infrastructure Requirements	24.5	-	-	-	-	-	-	-	-	-	-	5.7
Rover Substation Replace 4 KV Switchgear	12.7	-	-	-	-	-	-	-	-	-	-	7.5
Martin New Outdoor Station	27.3	-	-	-	-	-	-	-	-	-	-	21.7
Burrows New 66 KV 12 KV Station	42.6	-	-	-	-	-	-	-	-	-	-	21.6
Winnipeg Central 1264KV Manhole Oil Switches	9.8	-	-	-	-	-	-	-	-	-	-	0.5
William New 66 KV/ 12 KV Station	10.3	-	-	-	-	-	-	-	-	-	-	9.9
Waverley West Sub Division Supply - Stage 1	6.5	-	-	-	-	-	-	-	-	-	-	0.1
St. James New Station & 24 KV Conversion	65.9	-	-	-	-	-	-	-	-	-	-	62.4
Distribution	867.5	47.9	58.8	62.6	76.7	70.5	75.7	84.4	85.8	93.5	97.8	784.1
Health Sciences Centre Service Consolidation & Distribution Upgrade	13.9	-	-	-	-	-	-	-	-	-	-	12.7
Waverley South DSC Installation	3.9	-	-	-	-	-	-	-	-	-	-	1.3
Sourisdale DK732 Cable Replacement	2.6	-	-	-	-	-	-	-	-	-	-	1.1
Royal Canadian Mint Expansion	2.3	-	-	-	-	-	-	-	-	-	-	1.2
IKEA Seasons of Tweed DSC Installation	4.6	-	-	-	-	-	-	-	-	-	-	4.6
Line 27 66 KV Extension and Arborg North Distribution Supply Centre	6.0	-	-	-	-	-	-	-	-	-	-	3.5
Starbuck DSC	3.5	-	-	-	-	-	-	-	-	-	-	1.6
Bulment Distribution Supply Centre	3.0	-	-	-	-	-	-	-	-	-	-	1.5
Talon E&I 66-12 KV Station	4.6	-	-	-	-	-	-	-	-	-	-	2.8
Kleefeld Distribution Supply Centre	2.8	-	-	-	-	-	-	-	-	-	-	2.8
Conoma North Station & Reson RE 12-4 25KV Conversion	4.2	-	-	-	-	-	-	-	-	-	-	0.3
Brandon Crocus Plains 115-25 KV Bank Addition	5.8	-	-	-	-	-	-	-	-	-	-	5.7
Brandon Highland Park Station Capacity Increase	3.2	-	-	-	-	-	-	-	-	-	-	3.1
Brill South - Rossburn 66KV Line	4.9	-	-	-	-	-	-	-	-	-	-	4.9
TCPL Keystone Project	8.0	-	-	-	-	-	-	-	-	-	-	4.0
Line 98 Rehabilitation to Waskada	3.8	-	-	-	-	-	-	-	-	-	-	0.0
Waskada North-Line 98 228MVAR Cap Bank	3.9	-	-	-	-	-	-	-	-	-	-	3.9
Steinbach Area 66KV Capacity Upgrade	6.3	-	-	-	-	-	-	-	-	-	-	4.5
Endridge Pipelines Cliper 66KV Supply I	0.9	-	-	-	-	-	-	-	-	-	-	1.9
Waverley West 66 KV Supply Upgrade	3.2	-	-	-	-	-	-	-	-	-	-	3.2
Winnac 7 MVA Expansion	9.4	-	-	-	-	-	-	-	-	-	-	6.0
Bisset L48-B Cap Bank Installation	3.9	-	-	-	-	-	-	-	-	-	-	2.8
Customer Service & Distribution Domestic Target Adjustment	NA	159.7	162.9	166.2	169.5	172.9	176.3	179.9	183.5	187.1	190.9	3 182.4
207.6 221.7 228.8 246.2 243.4 252.0 264.3 280.6 288.6 288.6 288.6 288.6 4 155.0	207.6	221.7	228.8	246.2	243.4	252.0	264.3	280.6	288.6	288.6	288.6	4 155.0

Manitoba Hydro

**Consolidated Capital Expenditure Forecast (CEF12)**

For the Years 2012/13 – 2031/32

**CAPITAL EXPENDITURE FORECAST (CEF12)**

(In millions of dollars)

	Total Project Cost	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	20 Year Total
<b>Customer Care &amp; Marketing</b>												
Advanced Metering Infrastructure	-	-	-	-	-	-	-	-	-	-	-	28.8
Customer Care & Marketing Domestic	4.5	4.6	4.7	4.7	4.8	4.9	5.0	5.1	5.2	5.3	5.4	88.2
Target Adjustment	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	117.1
<b>Finance &amp; Administration</b>												
Corporate Buildings	NA	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	160.0
1840 Creweler Apparatus Maintenance Shop Ancillary Processing Facility	4.0	-	-	-	-	-	-	-	-	-	-	4.0
EAM Phase 2	18.6	-	-	-	-	-	-	-	-	-	-	12.7
Workforce Management (Phase 1 to 4)	17.7	-	-	-	-	-	-	-	-	-	-	1.4
Fleet	NA	17.1	17.5	17.8	18.2	18.6	18.9	19.3	19.7	20.1	20.5	340.6
Finance & Administration Domestic	NA	31.0	31.6	32.3	32.9	33.6	34.2	34.9	35.6	36.3	37.1	614.7
Target Adjustment	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	18.3
<b>ELECTRIC CAPITAL SUBTOTAL</b>	<b>2 286.3</b>	<b>2 040.1</b>	<b>1 845.1</b>	<b>1 576.7</b>	<b>1 431.9</b>	<b>887.9</b>	<b>1 085.5</b>	<b>1 085.5</b>	<b>951.0</b>	<b>951.0</b>	<b>64.4</b>	<b>65.5</b>
<b>GAS</b>												
<b>Customer Service &amp; Distribution</b>												
1e Des Chenes NG Transmission Network Upgrade	1.2	-	-	-	-	-	-	-	-	-	-	1.1
Gas SCADA Replacement	4.6	-	-	-	-	-	-	-	-	-	-	2.6
Customer Service & Distribution Domestic	NA	31.3	31.9	32.6	33.2	33.9	34.6	35.3	36.0	36.7	37.4	620.6
Target Adjustment	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	17.4
<b>Customer Care &amp; Marketing</b>												
Advanced Metering Infrastructure	15.0	-	-	-	-	-	-	-	-	-	-	14.7
Demand Side Management	NA	5.9	6.0	6.1	6.2	6.4	6.5	6.6	6.8	6.9	7.0	18.1
Customer Care & Marketing Domestic	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	117.4
Target Adjustment	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	150.2
<b>GAS CAPITAL SUBTOTAL</b>	<b>37.2</b>	<b>37.9</b>	<b>38.7</b>	<b>39.5</b>	<b>40.3</b>	<b>41.1</b>	<b>41.9</b>	<b>42.7</b>	<b>43.6</b>	<b>44.5</b>	<b>767.1</b>	
<b>CONSOLIDATED CAPITAL</b>												
CE11 Fall Update Base Capitalized Interest Revision	NA	2 323.5	2 078.1	1 883.8	1 616.2	1 472.2	929.0	1 227.4	1 048.3	994.6	860.4	34 083.5
CE12 TOTAL	NA	2 327.1	2 077.0	1 882.6	1 615.3	1 471.3	928.5	1 226.7	1 047.5	993.7	859.4	34 070.4

**MIPUG/MH I-16**

**Subject:** Service to Exports and Generation Vintaging

- b) Please update TREE-MH-I-11 from the 2004 GRA. Please provide a table indicating the “all-in” cost, the numbers of kW.h forecast to be generated, and the resulting total cost, and reconcile to the costs of generation in PCOSS06.

**ANSWER:**

Manitoba Hydro considers forecast costs and output of individual generating resources confidential information, and as such cannot provide a response that reconciles to the forecast generation costs included in PCOSS06.

The following table, consistent with Manitoba Hydro’s response to TREE/MH I-11 from the 2004 GRA, provides the cost per kW.h based on data updated to fiscal year 2004/05:

Generating Resource	Cost	kW.h at Generation	¢/kW.h
Grand Rapids	35,784,532	1,581,138,300	2.3
Great Falls	15,875,059	1,014,829,000	1.6
Jenpeg	25,837,480	993,572,700	2.6
Kelsey	17,938,731	1,749,180,700	1.0
Kettle	52,198,845	7,608,356,100	0.7
Laurie River	2,596,291	36,967,200	7.0
Limestone	147,520,610	8,059,510,400	1.8
Long Spruce	61,356,867	6,473,027,300	0.9
McArthur Falls	5,355,133	463,123,000	1.2
Pine Falls	6,795,543	721,717,000	0.9
Pointe du Bois	13,069,492	581,120,770	2.2
Seven Sisters	13,881,124	1,323,797,200	1.0
Slave Falls	12,206,123	521,221,650	2.3
Brandon Coal	31,304,033	383,184,262	8.2
Brandon CT	25,157,247	26,192,801	96.0
Selkirk CT	16,768,983	5,873,200	285.5