Q. Please describe the company's reliability enhancement programs and practices. Describe reliability work completed over the last 5 years and what is planned for the future.

A. Newfoundland Power's approach to reliability enhancement and maintenance is substantially focused on the condition of the Company's electrical system assets.[1] The programs and practices which comprise this overall approach, when taken together, are rational, comprehensive and robust.

This overall approach is reflected in the Company's transmission systems' capital and operating programs and practices as described in the response to Request for Information PUB-NP-061; distribution substation equipment capital and operating programs and practices as described in the response to Request for Information PUB-NP-065; and distribution feeder capital and operating programs and practices as described in the response to Request for Information PUB-NP-068.

Each year Newfoundland Power provides a 5-year capital plan to the Board as part of its annual Capital Budget Application. The majority of Newfoundland Power's annual capital expenditures are typically directed at replacement of damaged or deteriorated electrical system assets. This continuing plant replacement activity is a cornerstone of Newfoundland Power's maintenance of overall system reliability.

Attachment A to this Request for Information PUB-NP-080 is Newfoundland Power's *2014 Capital Plan* which was filed with the Board as part of Newfoundland Power's *2014 Capital Budget Application*.

The *2014 Capital Plan* provides an overview of capital expenditures for a forecast 5-year period together with a comparison to 5-year historical capital expenditures.[2] Furthermore, the capital plan provides service reliability analysis for a 10-year historical period.[3] The *2014 Capital Plan* indicates stable and consistent levels of plant replacement over the next 5 years.

[1] System reliability is also a reflection of Newfoundland Power's operational deployment and, in particular, its ability to respond to trouble on the electrical system in an organized and efficient manner. Since the Company's 2005 early retirement program, field operations staff and equipment deployment throughout the Company's service territory has not changed materially. This aspect of Newfoundland Power's approach to maintaining ongoing system reliability is not expected to change materially in the next 5 years.

[2] See Chart 3, page 7 of Attachment A to this response to Request for Information.

[3] See Chart 7, page 16 of Attachment A to this response to Request for Information.

Newfoundland Power's overall approach to maintaining the condition of its electrical system assets and service reliability is robust. So, changes to operating and capital maintenance programs and practices to reflect changes from the current outlook can be reasonably accommodated. Changes in maintenance requirements for Newfoundland Power's electrical system to ensure reliability are both routine and transparent.[4]

Newfoundland Power's overall approach to maintaining the condition of its electrical system assets and service reliability is comprehensive and reviewed on a periodic basis by the Company. It is consistent with the maintenance of reasonable levels of service reliability on Newfoundland Power's electrical system. It has achieved material improvements in overall service reliability for Newfoundland Power's customers.

[4] For example, in the period 2003 to 2013, Newfoundland Power's annual vegetation management costs doubled from $997,000 to $1,993,000 (see *Newfoundland Power 2007 General Rate Application, Company Evidence*, *Exhibit 2* for 2003 vegetation management costs). This increase occurred despite the fact that in 2003 Newfoundland Power owned *all* distribution poles in its service territory but by 2013 had sold 40% of jointly used distribution poles to Bell Aliant. This increased expenditure was required to, amongst other things, maintain the reliability of system assets which were subjected to an increasing number of tropical storms and hurricanes (see responses to Requests for Information PUB-NP-045 and PUB-NP-046 where this matter was justified in *Newfoundland Power 2013/2014 General Rate Application*). Similarly, increased capital maintenance expenditures described in the Company's *2011 PCB Removal Strategy*, June 2010 (Attachment G to the response to Request for Information PUB-NP-065) which were required to respond to changes in federal PCB regulations were considered and approved by the Board in Order No. P.U. 28 (2010).

2014 Capital Plan
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NEWFOUNDLAND POWER
A FORTIS COMPANY

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1.0 Introduction

Newfoundland Power's 2014 Capital Plan provides an overview of the Company's 2014 Capital Budget together with an outlook for capital expenditure through 2018.

Newfoundland Power's 2014 Capital Budget totals $84,462,000.

The Company's 2014 Capital Budget is part of a series of stable and predictable annual capital budgets which the Board has recognized assists in fostering stable and predictable rates for consumers.[1] Newfoundland Power's annual capital expenditure for the next 5 years is forecast to average approximately $91 million. This level of annual expenditure is broadly consistent on an inflation adjusted basis with that in the period 2009 through 2013.[2]

The Company's annual capital budgets continue to focus on (i) plant replacement and (ii) meeting customer and sales growth. Together, expenditures on plant replacement and growth combine to account for 84% of expenditures over the next 5 years. This composition is broadly consistent with Newfoundland Power's capital budgets over the previous 5 years.

In 2013, Newfoundland Power commenced the examination of some longer term aspects of Capital Budget composition, particularly for Distribution assets.[3] In 2014, the Company will also make a comprehensive assessment in relation to its Customer Service System which has been a critical component of the Company's interface with its customers since 1992.[4] The potential impact of these assessments is not fully reflected in the 2014 Capital Plan.[5] The results of the assessments may increase certain future capital expenditures from those indicated in the 2014 Capital Plan. Whether or not any such increased future capital expenditures serve to increase overall annual capital expenditure requirements is currently uncertain.[6]

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1 See Order No. P.U. 36 (2002-2003).

2 See Chart 3 on page 7 of this Capital Plan.

3 In the 2013 Capital Plan which was filed with the Company's 2013 Capital Budget Application, the Company indicated it was assessing its distribution pole replacement practices. Current relatively low levels of pole replacement may be inconsistent with maintaining current levels of system reliability and long-term capital budget stability. This assessment has commenced, and it is expected it will take a year or two to complete. See 2013 Capital Plan, page 1.

4 The Customer Service System cost in excess of $10 million by the time its phased implementation was complete in 1993. The cost to replace this system can be expected to be material.

5 The 2014 Capital Plan does not include all capital expenditures the Company will be required to make through 2018. For example, material capital expenditures may be required following major weather events such as ice storms. To the extent they can be reasonably estimated, capital expenditures related to asset failures are included in the Company's capital plans. See, for example, the *Distribution: Reconstruction* and *Substations: Replacements Due to In-Service Failures* projects. However, this is not always possible. For example, the Bell Island submarine cable system, which is a critical component required to serve customers on Bell Island, experienced two faults in January and April 2012. Ongoing engineering studies and assessment of this system may lead to a Supplemental Capital Budget Application to replace and/or reinforce it.

6 One aspect of this uncertainty stems from forecast demographic trends in Newfoundland Power's service territory. Forecast population decline and accelerated aging in the Company's service territory could result in reduced capital expenditure requirements related to serving increased numbers of customers and electricity load. This could, for example, serve to offset increased capital expenditure requirements related to Distribution asset replacements.

2.0 2014 Capital Budget

Newfoundland Power's 2014 capital budget is $84,462,000.

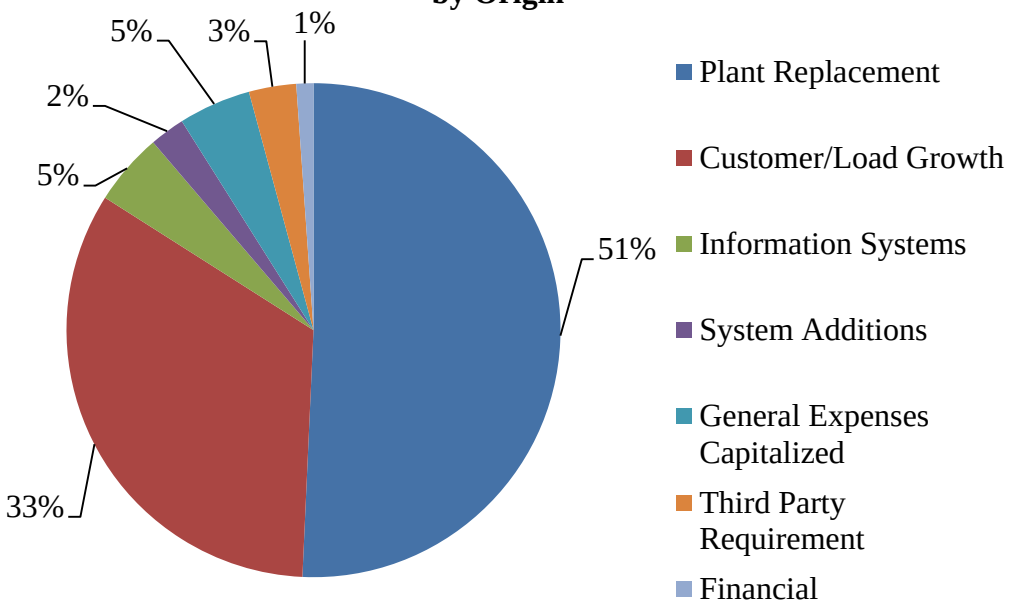
This section of the 2014 Capital Plan provides an overview of the 2014 capital budget by origin (root cause) and asset class. In addition, this section summarizes 2014 capital projects by the various categories set out in the Board's October 2007 Capital Budget Application Guidelines.

2.1 2014 Capital Budget Overview

Newfoundland Power's 2014 capital budget contains 33 projects totalling $84.5 million.

Chart 1 shows the 2014 capital budget by origin, or root cause.

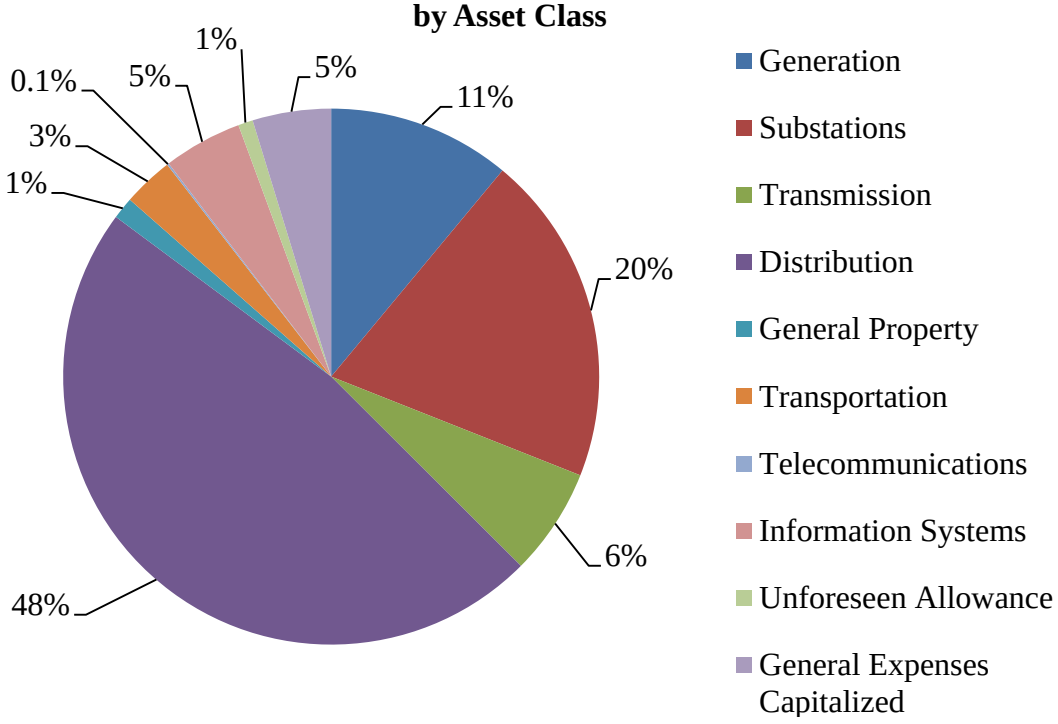
Chart 1
2014 Capital Expenditures
by Origin



Approximately 51% of proposed 2014 capital expenditure is related to the replacement of plant. A further 33% of proposed 2014 capital expenditure is required to meet the Company's obligation to serve new customers and meet the requirement for increased system capacity. The 2% of proposed 2014 capital expenditure associated with System Additions includes the projects to increase energy production at Rocky Pond and Tors Cove plants and to add a standby generator at Gander office. The remaining 14% of forecast capital expenditures for 2014 relate to information systems, general expenses capitalized, third party requirements and financial carrying costs (allowance for funds used during construction). The allocation of 2014 capital expenditures is broadly consistent with capital budgets for the past five years.

Chart 2 shows the 2014 capital budget by asset class.

Chart 2
2014 Capital Expenditures
by Asset Class



As in past years, Distribution capital expenditure accounts for the greatest percentage of overall expenditure at $40.3 million, or 48% of the 2014 capital budget. Substations capital expenditure accounts for $16.9 million, or 20% of the 2014 capital budget. Generation capital expenditure accounts for $9.3 million, or 11% of the 2014 capital budget. Transmission capital expenditure accounts for $5.5 million, or 6% of the 2014 capital budget. Together, expenditure for these four asset classes comprises 85% of the Company's 2014 capital budget.

Distribution capital expenditure is primarily driven by customer requests for new connections to the electrical system. Expenditures in 2014 are expected to be similar to recent years. Distribution capital projects that address reliability have been reduced in recent years, with no expenditures in 2014 associated with the Distribution Reliability Initiative. The reduction in capital expenditures associated with reliability is offset by inflationary increases and additional work associated with relocating distribution lines for 3rd parties.

In 2014, the Company plans to install new power transformers at Hardwoods substation in Paradise and Bay Roberts substation. Also in 2014, the Company will install a transformer from

inventory at Marble Mountain substation.[7] These projects are necessary to address growth in customer load in these communities.

Changes in the regulation of polychlorinated biphenyls ("PCBs") by the Government of Canada have effectively accelerated the removal of PCBs from bushings and instrument transformers. In February 2010, Newfoundland Power was granted an extension of the December 31, 2009 end-of-use date for equipment and liquids containing PCBs to December 31, 2014. The change in regulations has resulted in a forecast capital expenditure of $8.7 million through 2014 and an additional $4.2 million in expenditures in the forecast period.[8]

Transmission lines proposed for rebuild in 2014 include 3 lines in the City of St. John's and one line each in the Mount Pearl and Conception Bay North areas. Transmission line 12L operates between Memorial University and Kings Bridge substations. Transmission line 13L operates between St. John's Main substation on Southside Road and Stamp's Lane substations. Transmission line 35L operates between Kenmount and Oxen Pond substations. Transmission line 18L operates between Goulds substation and Glendale substation in Mount Pearl. Transmission line 68L operates between Carbonear and Harbour Grace substations in Conception Bay North.

In 2014, the Company plans to upgrade the governor, generator, switchgear, protection and control systems at the Heart's Content hydro plant. The Company will complete a project to increase hydro plant production at Rocky Pond and Tors Cove in 2014.

2.2 The Capital Budget Application Guidelines

On October 29, 2007, the Board issued Policy No. 1900.6, referred to as the Capital Budget Application Guidelines (the "CBA Guidelines"), providing for definition and categorization of capital expenditures for which a public utility requires prior approval of the Board. Newfoundland Power's 2014 Capital Budget Application complies with the CBA Guidelines.

The 2014 Capital Budget Application includes 33 projects, as detailed in *Schedule A*. Included in *Schedule B* is a summary of these projects organized by definition, classification, and costing method.

The following section provides a summary of each of these views of the 2014 Capital Budget, along with a summary of costs segmented by materiality.

[7] This substation transformer was last in service at Mobile substation. The transformer was replaced at Mobile substation by a larger unit transferred from Deer Lake substation. The project was included in the 2010 Capital Budget Application and approved on Order No. P.U. 41 (2009).

[8] Expenditures forecast for years beyond the end-of-life extension date of December 31, 2014 will be to address PCB concentrations greater than 50 ppm and less than 500 ppm. Bushings and instrument transformers with PCB concentrations in this range must be removed from the power system before 2025.

2014 Capital Projects by Definition

Table 1 summarizes Newfoundland Power's proposed 2014 capital projects by definition as set out in the CBA Guidelines.

Table 1
2014 Capital Projects
By Definition

Definition	Number of Projects	Budget (000s)
Pooled	23	$58,667
Clustered[9]	6	19,105
Other	4	6,690
Total	**33**	**$84,462**

There are a total of 29 *pooled* or *clustered* projects accounting for 92% of total expenditures.

2014 Capital Projects by Classification

Table 2 summarizes Newfoundland Power's proposed 2014 capital projects by classification as set out in the CBA Guidelines.

Table 2
2014 Capital Projects
By Classification

Classification	Number of Projects	Budget (000s)
Mandatory	1	$2,733
Normal	30	78,692
Justifiable	2	3,037
Total	**33**	**$84,462**

There are 30 *normal* projects accounting for 93% of total expenditures.

[9] Projects that have some components that are defined as clustered and some components that are either defined as pooled or other are included as clustered for the purpose of this table.

2014 Capital Projects Costing

Table 3 summarizes Newfoundland Power's proposed 2014 capital projects by costing method (i.e., identified need vs. historical pattern) as set out in the CBA Guidelines.

Table 3
2014 Capital Projects
By Costing Method

Method	Number of Projects	Budget (000s)
Identified Need	17	$37,698
Historical Pattern	16	46,764
Total	**33**	**$84,462**

Projects with costing method based on *identified need* account for 45% of total expenditures, while those based on *historical pattern* account for 55% of total expenditures.

2014 Capital Projects Materiality

Table 4 segments Newfoundland Power's proposed 2014 capital projects by materiality as set out in the CBA Guidelines.

Table 4
2014 Capital Projects
Segmentation by Materiality

Segment	Number of Projects	Budget (000s)
Under $200,000	2	$292
$200,000 - $500,000	7	2,411
Over $500,000	24	81,759
Total	**33**	**$84,462**

There are 24 projects budgeted at over $500,000 accounting for 97% of total expenditures.

3.0 5-Year Outlook

Newfoundland Power's 5-year capital outlook for 2014 through 2018 includes forecast average annual capital expenditure of $91.0 million. Over the five year period 2009 through 2013, the average annual capital expenditure is expected to be $76.8 million.

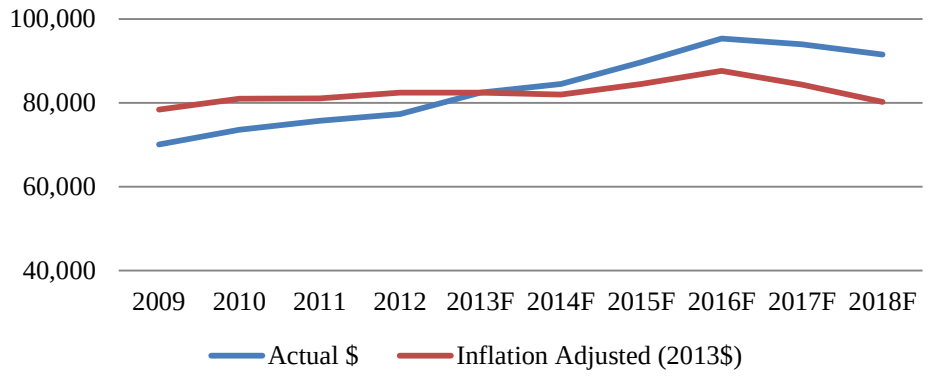
The increase in forecast annual capital expenditure reflects inflation and requirements for specific projects related to replacement of deteriorated facilities, meeting customer and load growth, maintaining compliance with federal regulations and additional portable generation. Annual expenditure through the forecast period is consistent on an inflation adjusted basis with that in the period 2009 through 2013.

3.1 Capital Expenditures: 2009-2018

The Company plans to invest $455 million in plant and equipment during the 2014 through 2018 period. On an annual basis, capital expenditures are expected to average approximately $91.0 million and range from a low of $84.5 million in 2014 to a high of $95.3 million in 2016.

Chart 3 shows actual capital expenditures for the period 2009 through 2012 and forecast capital expenditures for the period 2013 through 2018. For comparison purposes, the annual capital expenditures are also expressed in 2013 dollars to remove the effects of inflation.

Chart 3
Capital Expenditures
2009 to 2018F
($000s)



Overall planned capital expenditures for the 5-year period from 2014 through 2018 are expected to be greater than those in the 5-year period from 2009 through 2013. As shown in Chart 3 this

is principally the result of inflation.[10] Forecast requirements for the 5-year period from 2014 through 2018 include additional power transformers due to load growth; the phase-out of PCB contaminated equipment, changes in meter regulations, the replacement of Pierre's Brook penstock, mobile generation and the refurbishment of gas turbines at Greenhill and Wesleyville. These additional costs are being partially offset by reduced expenditure aimed at reliability improvement.

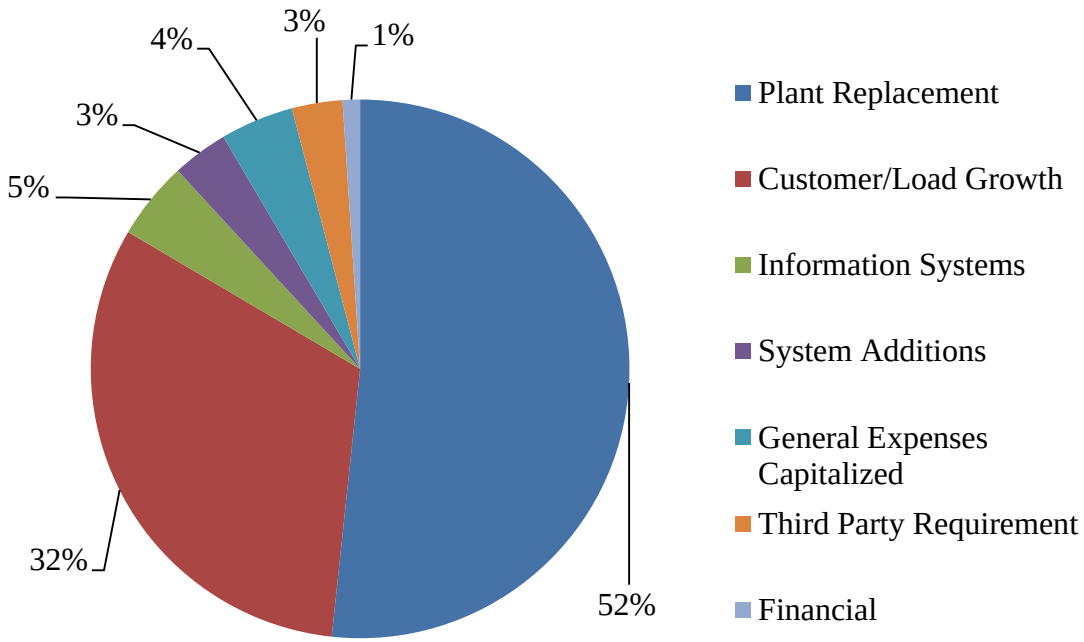
The replacement of plant has been, and will continue to be, the dominant driver of Newfoundland Power's capital budget, accounting for approximately 50% of total expenditure for the 10-year period from 2009 through 2018. Over the same 10-year period, capital expenditures to meet increased customer connections and electricity sales account for approximately 33% of total expenditures.

3.2 2014-2018 Capital Expenditures

3.2.1 Overview

Chart 4 shows aggregate forecast capital expenditures by origin for the period 2014 through 2018.

Chart 4
Capital Expenditures
by Origin
2014 to 2018



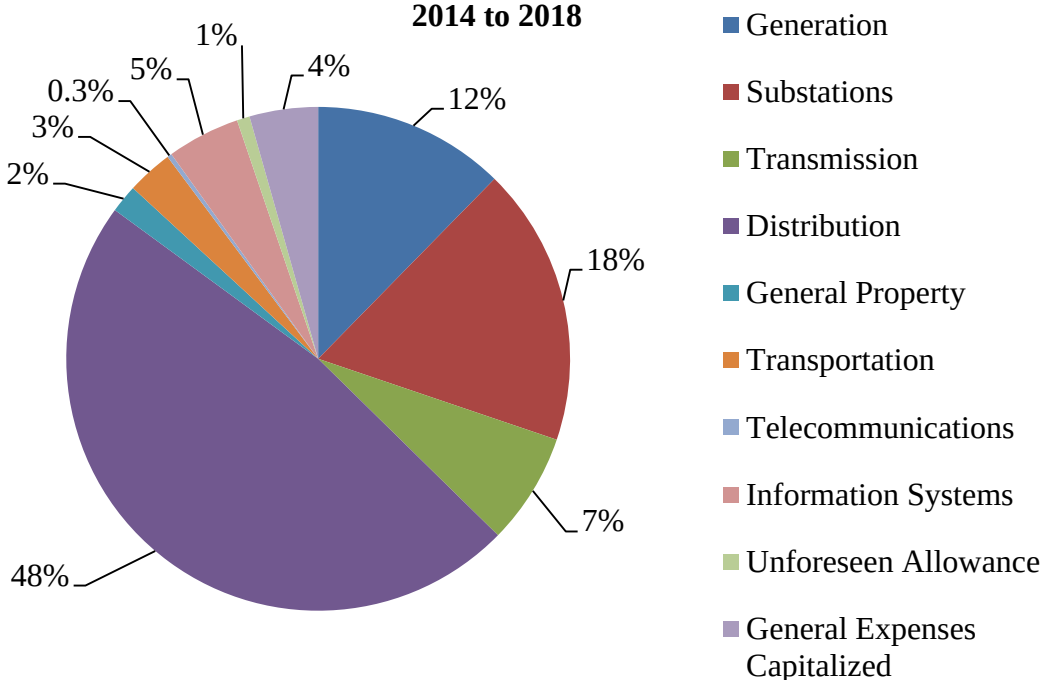
[10] With the exception of 2016, the inflation adjusted curve is relatively flat. The increase in forecast capital expenditure in 2016 is attributable to the $12 million project to replace the Pierre's Brook penstock and refurbish the surge tank and plant controls.

Plant replacement accounts for 52% of all planned expenditures over the 5-year period from 2014 through 2018. This is greater than the average of 49% in the previous 5-year period from 2009 through 2013. Capital expenditure related to customer and load growth accounts for 32% of planned expenditures for this period. This is less than the average of 35% in the previous 5-year period from 2009 through 2013.

The remaining 16% of total capital expenditures for the 2014 through 2018 period relate to a variety of origins including information systems, system additions, general expenses capitalized, third party requirements and financial costs.

Chart 5 shows aggregate forecast capital expenditures for the period 2014 through 2018 by asset class.

Chart 5
Capital Expenditures
by Asset Class
2014 to 2018



The Distribution asset class accounts for 48% of all planned expenditures over the next five years, followed by Substations (18%), Generation (12%) and Transmission (7%). The remaining six asset classes account for 15% of total capital expenditures for the 2014 through 2018 period.

Overall, planned expenditures for the period 2014 through 2018 are expected to remain relatively stable in all asset classes with the exception of generation and substations which vary annually due to refurbishment and system load growth requirements, and the addition of portable generation over the forecast period.

A summary of planned capital expenditures by asset class and by project for 2014 to 2018 is provided in Appendix A.

3.2.2 Generation

Generation capital expenditures will average approximately $11.2 million per year from 2014 through 2018, which is greater than the annual average of $7.1 million from 2009 through 2013.

Generation capital expenditures on the Company's 23 hydroelectric plants, 3 gas turbines and 2 diesel plants are primarily driven by:

- breakdown capital maintenance;
- generation preventive capital maintenance; and
- capital project initiatives.

The Company has a preventive maintenance program in place for generation assets. The level of expenditure for capital maintenance, both breakdown and preventive, is expected to be relatively stable over the forecast period and generally consistent with the historical average.

Due to the age of the Company's fleet of generating plants, significant refurbishment will continue to be required over the planning period. Over the next five years, the Company plans to continue the practice adopted in recent years of undertaking major plant refurbishment while also identifying opportunities to increase energy production and reduce losses at existing facilities. Specifically, the following major capital projects are planned:

- In 2013 and 2014, the Company plans to refurbish the Heart's Content hydroelectric plant which includes replacing the penstock at an estimated cost of $3.7 million.[11] Also in 2014 the Company plans to refurbish the generator, governor, protection and control systems at the Heart's Content hydroelectric plant for an additional $2.2 million as described in the 2014 report ***1.2*** *Heart's Content Hydro Plant Refurbishment.*

- In 2014, the Company plans to increase the capacity of La Manche Canal at an estimated cost of $1.7 million to increase the combined production at Rocky Pond and Tors Cove plants by 5.54 GWh. Details on the project are found in the 2014 report ***1.3*** *Hydro Production Increase – La Manche Canal.*

- In 2015, the Company plans to replace the final section of woodstave penstock at the 108 year old Petty Harbour hydroelectric plant at an estimated cost of $1.4 million. The remaining section of woodstave penstock was replaced with a steel penstock in 1999.

- In 2015 and 2016, the Company plans to replace the Pierre's Brook woodstave penstock, refurbish the existing surge tank and upgrade the plant controls at an estimated cost of $12.6 million. Work in 2015 will involve upfront engineering as well as necessary work required for the plant access road. The penstock replacement, surge tank refurbishment and plant controls upgrade are planned for 2016.

[11] The multi-year project to replace the Heart's Content penstock was approved in Order No. P.U. 31 (2012).

- In 2016 and 2017, the Company plans to purchase a 5 MW mobile generator at an estimated cost of $9.0 million. The mobile generator will be used for both emergency generation and to minimize customer outages during planned work.[12]

- In 2016, 2017 and 2018, the Company plans to refurbish the turbines and wicket gates on all 3 generators at the 76 year old Tors Cove hydroelectric plant at an estimated total cost of $1.7 million.

- In 2017 and 2018, the Company plans to refurbish its gas turbines located at Greenhill and Wesleyville at an estimated total cost of $4.7 million.

- In 2018, the Company plans to refurbish the 67 year old Mobile hydroelectric plant at an estimated cost of $2.9 million.[13]

The Company will bring forward, as part of its annual Capital Budget Applications to the Board, engineering reports regarding each of these initiatives as well as economic analyses of their feasibility.

3.2.3 Transmission

Transmission capital expenditures are expected to average $6.5 million annually from 2014 through 2018 compared with $4.7 million annually from 2009 through 2013.

The Company operates approximately 2,000 km of transmission lines. Transmission capital expenditures are primarily driven by:

- breakdown capital maintenance;
- transmission preventive capital maintenance; and
- third party requests.

The Company has a maintenance program in place for its transmission assets. The level of expenditure for capital maintenance, both breakdown and preventive, is expected to be relatively stable over the forecast period.

In its 2006 Capital Budget Application, the Company submitted its 10-year transmission strategy in the report titled ***3.1** Transmission Line Rebuild Strategy*. The report outlined the need to completely rebuild certain sections of aging transmission lines that are deteriorated. This proactive approach to managing transmission assets is expected to reduce failures over the long term. An update of the strategic plan is included in the report ***3.1** Transmission Line Rebuild Strategy* included with the 2014 Capital Budget Application.

[12] The existing mobile gas turbine will be 43 years old in 2016.

[13] The Mobile hydroelectric plant refurbishment will be subject to a resolution of matters related to the termination of the Company's rights to use the waters of the Mobile river system. These matters are currently subject to litigation.

3.2.4 Substations

Substations capital expenditures are expected to average $16.3 million annually from 2014 through 2018, a material increase from the average of $11.8 million annually from 2009 through 2013. The increase in expenditure is largely attributable to the requirement for additional system capacity to serve increased customer load and compliance with revised PCBs regulations.

The Company operates 130 substations containing approximately 4,000 pieces of critical electrical equipment. Substation capital expenditures are primarily driven by:

- breakdown capital maintenance;
- substation preventive capital maintenance;
- Government regulations regarding the elimination of PCBs; and
- system load growth.

The Company has a preventive capital maintenance program in place for its substation assets. Preventive maintenance is expected to counter the continuous aging of substation assets such that the overall reliability of substation assets remains stable.

In its 2007 Capital Budget Application, the Company submitted its 10-year substation strategy in a report titled *Substation Strategic Plan*. The 2007 plan addressed substation refurbishment and modernization work in 80% of the Company's substations in an orderly way over a multi-year planning horizon. This is consistent with the maintenance of reasonable year to year stability in the Company's annual capital budgets. Since 2007, work performed as part of the Substation Refurbishment and Modernization capital project has broadly reflected this approach. An update of the strategic plan is included in the report ***2.1*** *2014 Substation Refurbishment and Modernization* filed with the 2014 Capital Budget Application.

The Company forecasts a number of significant substations projects will be required due to system load growth over the planning period. Capital expenditures will be required to increase system capacity, particularly power transformation capacity.

Over the 2014 to 2018 forecast period there is a requirement to install 12 substation transformers to accommodate load growth.[14] In 2014, as a result of customer and load growth experienced over the past decade new power transformers will be required at Hardwoods and Bay Roberts substations. Also in 2014 an existing substation transformer will be relocated to Marble Mountain substation.[15] Commencing in 2015 and continuing through 2018, 6 new substation transformers will be required for the Northeast Avalon Peninsula, Grand Falls and Clarenville areas.[16] The Company will also relocate 3 transformers to substations on the Northeast Avalon

[14] By comparison, in the period 2010 through 2013, Newfoundland Power has purchased 5 new power transformers and relocated 1 power transformer to serve increased customer load. The purchase of new transformers and the relocation of other transformers to serve customer load growth are in addition to the requirement to replace aged or deteriorated equipment.

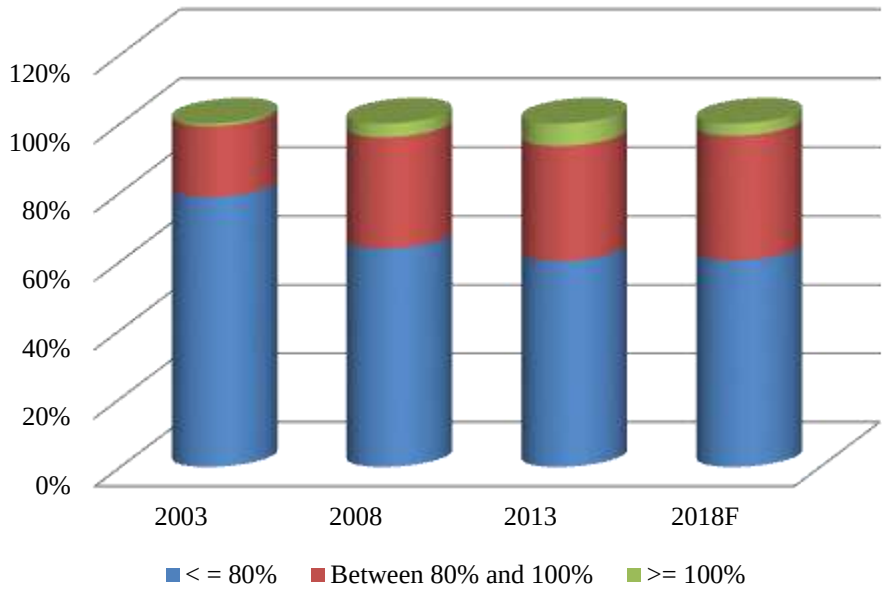
[15] Planning studies for the Bay Roberts and Marble Mountain areas are included in the 2014 Capital Budget Application report ***2.2*** *2014 Additions Due To Load Growth*. The requirement for the Hardwoods transformer was studied in the 2011 Capital Budget Application report ***2.2*** *2011 Additions Due To Load Growth.*

[16] The Company's annual Capital Budget Applications will include engineering studies detailing the requirements for additional power transformers in the years in which they are required.

Peninsula and the Codroy Valley that will become available as a result of the 6 new transformer purchases.

Chart 6 shows substation transformer capacity utilization on peak for substations located across the Company's service territory.

Chart 6
Substation Transformer Capacity Utilization on Peak
2003, 2008, 2013 and 2018F



In 2003, approximately 21% of substation transformers had capacity utilization on peak of 80% or greater. By 2013, the proportion of substation transformers with capacity utilization on peak of 80% or greater had almost doubled to 40%. This reflects the impact of customer load growth on substation transformer capacity utilization. With load growth forecast to be in the 1% to 2% range through the planning period, the capacity utilization on peak of substation transformers will continue to increase. The addition of 8 new substation transformers and relocation of 4 other substation transformers forecast in this 5-year capital plan will not materially change the proportion of substation transformers with capacity utilization on peak of 80% or greater.

The Company's annual capital budget applications will include engineering studies detailing the requirements for additional substation transformers in the years in which they are required.

Regulatory changes by the Government of Canada with respect to the phase-out of bushings and instrument transformers containing PCBs have increased capital expenditures by approximately

$6.9 million over the next 5 years.[17] Detailed reports on the impact of the change in PCBs regulations were included in the 2011 and 2012 Capital Budget Applications.[18]

3.2.5 Distribution

Distribution capital expenditures from 2014 through 2018 are expected to increase to an average of approximately $43.4 million annually, compared to an average of $39.7 million annually from 2009 through 2013.

The Company operates approximately 9,300 km of distribution lines serving approximately 253,000 customers. Distribution capital expenditures are primarily driven by:

- new customers;
- third party requests;
- breakdown capital maintenance;
- distribution preventive capital maintenance;
- system load growth; and
- capital project initiatives.

Capital expenditures associated with new customer connections are forecast to decrease towards the end of the planning period. This is primarily due to a forecast decrease in new customer connections. The costs to connect new customers to the electricity system are included in several distribution projects including *Extensions, Transformers, Services, Meters* and *Street Lighting*.

Table 5 shows the forecast number of new customer connections and the total capital expenditures associated with those connections over the next five years.

Table 5
New Customer Connections

	2014	**2015**	**2016**	**2017**	**2018**
New Customer Connections	4,685	4,585	4,621	4,502	4,207
Average Cost/Connection	$4,647	$4,812	$4,923	$5,071	$5,271
Capital Expenditure (000s)	$21,770	$22,063	$22,749	$22,828	$22,177

Over the period 2014 to 2018, the expenditure associated with new customer connections is forecast to be within the range of $22 million to $23 million, or approximately 25% of the annual capital expenditures.

[17] Newfoundland Power has been granted a permit extending the deadline to remove from service equipment containing oil at or above 500 mg/kg to December 31, 2014. Expenditures forecast for years beyond the end-of-life extension date of December 31, 2014 will be to address PCB concentrations greater than 50 ppm and less than 500 ppm. Bushings and instrument transformers with PCB concentrations in this range must be removed from service by 2025.

[18] See Order Nos. P.U. 28 (2010) and P.U 26 (2011).

Distribution capital expenditures are required to relocate or replace distribution lines to meet third party requests from governments, telecommunications companies and individual customers. In 2014, the expenditures associated with third party requests is estimated at $2.6 million. Over the remainder of the five year period, these expenditures are forecast to remain stable and approximate an average of $2.8 million.

Capital expenditures associated with the replacement of meters are typically based upon historical expenditures. This forecast has increased over the planning period as the result of changes to Government of Canada compliance sampling regulations for electricity meters. The new regulations came into effect for digital meters in 2011 and will come into effect for electromechanical meters in 2014. In 2014 and beyond it is anticipated that an increase in electromechanical meter replacements will occur under the new regulations. A detailed description of the Company's strategy to deal with the new regulations and improved efficiency in the metering function can be found in the report ***4.3*** *2013 Meter Strategy* filed with the 2013 Capital Budget Application.

The Company has a preventive capital maintenance program in place for its Distribution assets. However, in-service failures of distribution plant and equipment are unavoidable. The Company expects its efforts in preventive maintenance will counter the continuous aging of its distribution assets such that the capital expenditure due to distribution plant and equipment failures will approximate the historical average cost and while there will be fluctuations, costs are forecast to remain relatively stable over the next 5 years.

In the 2013 Capital Budget Application, the Company outlined its preventive capital maintenance program for Distribution assets in the report ***4.4*** *Rebuild Distribution Lines Update*. The expenditures associated with the preventive capital maintenance program are budgeted in the annual *Rebuild Distribution Lines* project. The Company plans to perform preventive capital maintenance on approximately 43 distribution feeders per year over the planning period.

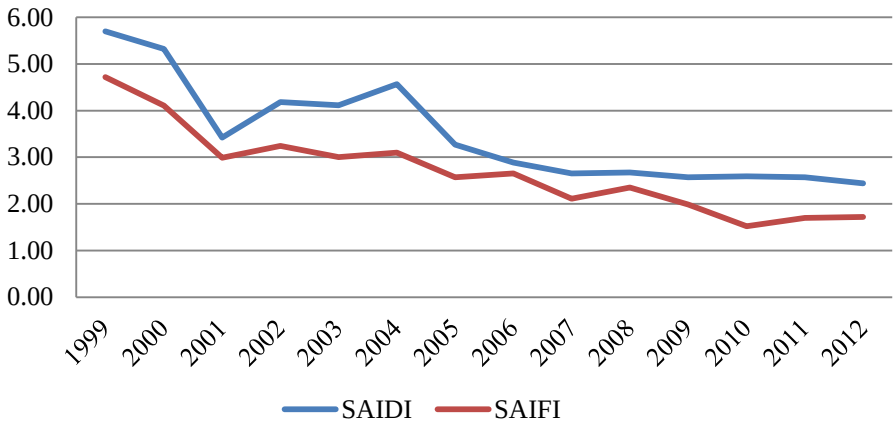
The Distribution *Reconstruction* project involves the replacement of deteriorated or damaged distribution structures and electrical equipment. The project is comprised of small unplanned projects and is estimated using the historical average of the most recent five-year period.

Distribution capital expenditure related to system load growth primarily reflects growth in customer electricity requirements. The majority of this growth continues to be located in the St. John's metropolitan area. This requires the transfer of customer load or the upgrade of feeders to increase capacity. Expenditure for feeder modifications and additions due to system load growth from 2014 through 2018 is expected to remain relatively constant though increased in comparison to the previous five years.

The Company ranks its distribution feeders based on reliability performance and completes in-field assessments of those with the poorest performance statistics. Capital upgrades are performed on the worst performing feeders under a project titled *Distribution Reliability Initiative*. There is no project planned for 2014. This is based upon the information provided in the report ***4.1*** *Distribution Reliability Initiative* filed with the 2014 Capital Budget Application.

Chart 7 shows SAIDI, or system average interruption duration index, and SAIFI, or system average interruption frequency index, for the years 1999 through 2012. Chart 7 has been adjusted to remove the effects of severe weather events.[19]

Chart 7
SAIDI and SAIFI
1999 - 2012



Newfoundland Power considers current levels of service reliability to be satisfactory. This primarily reflects the current condition of Newfoundland Power's distribution system assets. As a result, capital expenditures in the *Distribution Reliability Initiative* project are reduced compared to previous years.[20]

Newfoundland Power has a number of older Distribution assets in service that are critical to the safe and reliable delivery of electricity to customers. These assets would include old distribution poles, the electrical vaults on customer premises in the downtown St. John's underground distribution system, aerial power cables, and the underground primary distribution systems in Mount Pearl, Paradise and Virginia Park. The Company is assessing whether the replacement rate of these assets is sufficient to ensure both (i) continued safe and reliable service and (ii) long-term stability and predictability in capital expenditures.

Newfoundland Power has equipment located in electrical vaults in the St. John's downtown area that were constructed as part of the Water Street underground electrical distribution system in the late 1960's. These vaults are typically located in the basement of a building and contain high voltage electrical equipment that converts primary voltages from the existing underground

[19] Adjustments exclude the 2007 and 2010 Bonavista ice storms, Hurricane Igor in 2010, the December 2011 high wind event and Tropical Storm Leslie in September 2012. If these severe weather events were included, 2007 SAIDI and SAIFI would be 5.94 and 2.46, respectively, 2010 SAIDI and SAIFI would be 13.82 and 2.69 respectively, 2011 SAIDI and SAIFI would be 4.03 and 1.95, respectively and 2012 SAIDI and SAIFI would be 5.85 and 2.12 respectively.

[20] Over the 10 year period from 2000 to 2009, expenditures for the Distribution Reliability Initiative project totalled approximately $15 million.

distribution system to secondary voltages. The majority of the vaults in the St. John's downtown area contain exposed high voltage electrical conductor and equipment. In 2014, the Company will refurbish and modernize 3 of the 19 vaults in the St. John's downtown area. The work completed here will assist in the development of a multi-year plan for refurbishing and modernizing the remaining vaults. Details on the refurbishment and modernization of the vaults are found in report ***4.3*** *Vault Refurbishment and Modernization* filed with the 2014 Capital Budget Application.

3.2.6 General Property

The General Property asset class includes capital expenditures for:

- the addition or replacement of tools and equipment utilized by line and engineering staff;
- the replacement or addition of office furniture and equipment;
- additions to real property necessary to maintain buildings and facilities; and
- backup electricity generation and demand/load control equipment at Company buildings.

General Property capital expenditures are expected to average $1.6 million annually from 2014 through 2018 which is the same as the period from 2009 through 2013.

3.2.7 Transportation

The Transportation asset class includes the heavy truck fleet, passenger and off-road vehicles. The replacement of these vehicles can be influenced by a number of factors including kilometres traveled, vehicle condition, operating experience and maintenance expenditures.

Transportation capital expenditures from 2014 through 2018 are expected to increase to an average of approximately $2.7 million annually, compared to an average of $2.4 million annually from 2009 through 2013. The Company operates 72 heavy fleet vehicles which have an anticipated service life of 10 years. On average, it would be expected that approximately 7 heavy fleet vehicles and 40 passenger vehicles would be replaced annually. The increase in transportation capital expenditures from 2014 through 2018 is principally reflective of the number of heavy fleet and passenger vehicles expected to meet the replacement parameters over the period.

3.2.8 Telecommunications

Capital expenditure in the Telecommunications asset class includes the replacement or upgrading of various communications systems. These systems contribute to customer service, safety, and power system reliability by supporting communications between the Company's fleet of vehicles, substations, plants and offices.

Telecommunications capital expenditures are expected to decrease to an average of approximately $268,000 annually from 2014 through 2018 compared to the annual average of $368,000 from 2009 through 2013. The difference is attributable to the reduced cost associated with replacing new mobile equipment in the early years of operation for the new VHF mobile radio system.[21]

[21] The 2013 capital budget includes the replacement of the Company's VHF mobile radio system with a system shared with other users including Newfoundland Hydro.

3.2.9 Information Systems

The Information Systems asset class capital expenditure includes:

- the replacement of shared server and network infrastructure, personal computers, printers and associated assets;
- upgrades to current software tools, processes, and applications as well as the acquisition of new software licenses; and
- the development of new applications or enhancements to existing applications to support changing business requirements and take advantage of software product improvements.

Two of the Company's critical Information Systems, the Customer Service System ("CSS") and the SCADA system, operate on the Hewlett Packard AlphaServer hardware platform. The AlphaServer hardware became available in 1992 and was last manufactured in 2008. Hewlett Packard has continued to service the AlphaServer hardware and associated operating systems through 2012. In 2013, the Company will undertake comprehensive assessments of both the CSS and SCADA systems as a result of the technical obsolescence of the AlphaServer hardware and associated operating systems.

Information Systems capital expenditures from 2014 through 2018 are expected to increase to an average of approximately $4.3 million annually, compared to an average of $3.7 million annually from 2009 through 2013. The increase is largely driven by expected system upgrades resulting from the technical obsolescence issues associated with the CSS and SCADA systems.

3.2.10 Unforeseen Allowance

The Unforeseen Allowance covers any unforeseen capital expenditures that have not been budgeted elsewhere. The purpose of the account is to permit the Company to act expeditiously to deal with exigent circumstances in advance of seeking approval of the Board.

The Unforeseen Allowance constitutes $750,000 in each year's capital budget from 2014 through 2018.

3.2.11 General Expenses Capitalized

General Expenses Capitalized is the allocation of a portion of administrative costs to capital. In accordance with Order No. P.U. 3 (1995-96), the Company uses the incremental cost method of accounting for the purpose of capitalization of general expenses.

General Expenses Capitalized of $4.0 million is reflected in each year's capital budget from 2014 through 2018.

3.3 5-Year Plan: Risks

While the Company accepts the Board's view of the desirable effects of year to year capital expenditure stability, the nature of the utility's obligation to serve will not, in some circumstances, necessarily facilitate such stability. The Company has identified some risks to such stability in the period 2014 through 2018.

Newfoundland Power has an obligation to serve customers in its service territory. Should customer and load growth vary from forecast, so will the capital expenditures that are sensitive to growth. For example, there are a number of power transformers in the Company's 5-year forecast. Should customer and load growth vary from forecast, the capital expenditure for the required transformers (each in the order of $2-$3 million) may also vary from the current 5-year forecast.

The age of the Company's power transformers presents another potential risk to the stability of the capital forecast. In-service failures of power transformers, like the recent losses of the Kenmount, Horsechops, Pierre's Brook and Salt Pond power transformers, will necessitate capital expenditures.[22]

Change in Government of Canada regulations regarding PCBs in equipment and meter compliance sampling will impact future capital budgets. The current 5-year forecast includes significant cost to accelerate the removal of PCBs from service. The 2011 Capital Budget Application estimated expenditures over the period from 2011 to 2014 at $14.5 million. The actual and forecast expenditures included in this 2014 Capital Budget Application over the same period are $8.7 million. The reduction in cost is the result of experience gained through project execution resulting in better estimates and lower allowances for contingencies. Also, the industry continues to consult with Environment Canada to extend the timeline associated with the removal of PCBs in substations.

The current 5-year forecast for meter replacements is based upon a transition plan as outlined in the report ***4.3*** *2013 Metering Strategy* included in the 2013 Capital Budget Application. These estimates of meter replacements provided in the transition strategy may change to reflect actual test results from new compliance sampling regulations for electromechanical meters which come into effect in 2014.

In January and April 2012 the Bell Island submarine cable system experienced 2 faults that necessitated emergency repairs. Ongoing engineering studies and assessment of this system may lead to a Supplemental Capital Budget Application to replace and /or reinforce it within the 5-year plan.

Population growth on the Northeast Avalon Peninsula and new home construction continues to be strong. However, the current forecast for new customer connections indicates a decline in new customer connections in the Company's service territory. The extent of change in new customer connections required over the course of this 5-year capital plan can have a material impact on capital expenditures.

With the sanctioning of the Muskrat Falls project there will be associated impacts upon Newfoundland Power. The Company will be involved in supplying construction power to sites

[22] Replacement of the Horsechops power transformer was approved as part of the 2009 Capital Budget Application in Board Order No. P.U. 27 (2008). Replacement of the Pierre's Brook power transformer was approved in Board Order No. P.U. 3 (2008). Replacement of the Salt Pond power transformer was approved in Board Order No. P.U. 15 (2002-2003). Kenmount power transformer failed in-service in March 2009 and its refurbishment was approved in Board Order No. P.U. 29 (2009).

within its service territory and potential rerouting of existing transmission and distribution lines to accommodate the Nalcor DC transmission line. There may be other impacts associated with integrating the new DC infeed with the existing power system. This capital plan has not included any projects associated with Muskrat Falls development.

The Company has taken steps to reduce the uncertainty regarding replacement of its CSS, which has been in service since 1991.[23] These steps have included upgrades of hardware and software components and removal of technology components that posed the highest risk. Certain aspects of CSS, including the servers, have reached end of life. In 2013, the Company will begin a comprehensive assessment of upgrade and replacement strategies for CSS. The results of this assessment may materially impact the capital plan.

Capital expenditures can be impacted by major storms or weather events. In 1984 and 1994, the Company was impacted by sleet storms that resulted in widespread damage and service interruption to customers. On March 5th and 6th, 2010 an ice storm in eastern Newfoundland caused widespread power outages on the Bonavista and Avalon Peninsulas. In September 2010, Hurricane Igor caused extensive damage to the Company's generation and distribution assets. In 2012, Tropical Storm Leslie caused damage to the distribution system. The occurrence and costs of severe storms are not predictable.

[23] The CSS originally cost in excess of $10 million.

Appendix A
2014-2018 Capital Plan

Newfoundland Power Inc.
2014-2018 Capital Plan
(000s)

Asset Class	**2014**	**2015**	**2016**	**2017**	**2018**
Generation	$9,322	$6,999	$15,623	$13,884	$10,308
Substations	16,865	20,856	15,631	13,778	14,145
Transmission	5,469	5,363	5,765	7,634	8,270
Distribution	40,270	42,436	44,294	45,196	44,822
General Property	1,112	1,992	1,863	1,382	1,846
Transportation	2,570	2,629	2,685	2,736	2,785
Telecommunications	99	275	304	330	332
Information Systems	4,005	4,375	4,410	4,285	4,235
Unforeseen Allowance	750	750	750	750	750
General Expenses Capitalized	4,000	4,000	4,000	4,000	4,000
Total	**$84,462**	**$89,675**	**$95,325**	**$93,975**	**$91,493**

Newfoundland Power Inc.
2014-2018 Capital Plan
(000s)

GENERATION

Project	**2014**	**2015**	**2016**	**2017**	**2018**
Facility Rehabilitation - Hydro	$1,610	$1,425	$1,470	$1,490	$1,510
Facility Rehabilitation - Thermal	312	216	220	224	228
Hydro Plant Production Increase	1,665	1,400	10	830	820
Heart's Content Plant Refurbishment	5,735	-	-	-	-
Pierre's Brook Penstock	-	750	11,850	-	-
Mobile Plant Refurbishment	-	-	-	-	2,885
Morris Plant Refurbishment	-	-	-	-	550
Seal Cove Plant Refurbishment	-	200	-	-	-
Tors Cove Plant Upgrade	-	508	573	575	565
Rose Blanche Plant Refurbishment	-	-	-	700	-
Petty Harbour Plant Refurbishment	-	2,500	-	-	-
Cape Broyle Plant Refurbishment	-	-	-	165	-
Horsechops Plant Refurbishment	-	-	-	-	675
Lookout Brook Plant Refurbishment	-	-	-	-	775
Purchase Portable Generation	-	-	1,500	7,500	-
Greenhill Gas Turbine	-	-	-	2,400	-
Wesleyville Gas Turbine	-	-	-	-	2,300
Total - Generation	**$9,322**	**$6,999**	**$15,623**	**$13,884**	**$10,308**

Newfoundland Power Inc.
2014-2018 Capital Plan
(000s)

SUBSTATIONS

Project	**2014**	**2015**	**2016**	**2017**	**2018**
Substations Refurbishment & Modernization	$6,023	$4,844	$5,042	$6,975	$7,032
Replacements Due to In-Service Failure	2,859	2,941	3,012	3,081	3,149
Additions Due to Load Growth	5,250	12,087	6,407	2,654	2,847
PCB Bushing Phase-Out	2,733	984	1,020	1,068	1,117
Plant Refurbishment	-	-	150	-	-
Total - Substations	**$16,865**	**$20,856**	**$15,631**	**$13,778**	**$14,145**

Newfoundland Power Inc.
2014-2018 Capital Plan
(000s)

TRANSMISSION

Project	**2014**	**2015**	**2016**	**2017**	**2018**
Rebuild Transmission Lines	$3,169	$3,763	$4,165	$6,034	$6,770
Transmission Line Reconstruction	2,300	1,600	1,600	1,600	1,500
Total - Transmission	**$5,469**	**$5,363**	**$5,765**	**$7,634**	**$8,270**

Newfoundland Power Inc.
2014-2018 Capital Plan
(000s)

DISTRIBUTION

Project	**2014**	**2015**	**2016**	**2017**	**2018**
Extensions	$11,689	$11,829	$12,241	$12,238	$11,731
Meters	2,755	2,745	2,588	2,640	2,165
Services	3,930	4,166	4,306	4,330	4,214
Street Lighting	2,480	2,591	2,662	2,679	2,392
Transformers	6,995	7,167	7,328	7,477	7,621
Reconstruction	3,787	3,917	4,022	4,128	4,235
Rebuild Distribution Lines	3,462	3,570	3,660	3,749	3,838
Relocate/Replace Distribution Lines For Third Parties	2,616	2,698	2,767	2,835	2,903
Distribution Reliability Initiative	-	500	512	525	537
Feeder Additions for Load Growth	1,102	545	85	625	1,462
Trunk Feeders	1,261	2,511	3,922	3,765	3,515
Allowance for Funds Used During Construction	193	197	201	205	209
Total - Distribution	**$40,270**	**$42,436**	**$44,294**	**$45,196**	**$44,822**

Newfoundland Power Inc.
2014-2018 Capital Plan
(000s)

GENERAL PROPERTY

Project	**2014**	**2015**	**2016**	**2017**	**2018**
Tools and Equipment	$458	$467	$477	$485	$494
Additions to Real Property	379	285	291	297	302
Renovations Company Buildings	-	965	920	600	1,050
Standby Generators	275	275	175	-	-
Total - General Property	**$1,112**	**$1,992**	**$1,863**	**$1,382**	**$1,846**

Newfoundland Power Inc.
2014-2018 Capital Plan
(000s)

TRANSPORTATION

Project	2014	2015	2016	2017	2018
Purchase Vehicles and Aerial Devices	$2,570	$2,629	$2,685	$2,736	$2,785
Total - Transportation	**$2,570**	**$2,629**	**$2,685**	**$2,736**	**$2,785**

Newfoundland Power Inc.
2014-2018 Capital Plan
(000s)

TELECOMMUNICATIONS

Project	**2014**	**2015**	**2016**	**2017**	**2018**
Replace/Upgrade Communications Equipment	$99	$102	$104	$106	$108
Fibre Optic Cable	-	173	200	224	224
Total - Telecommunications	**$99**	**$275**	**$304**	**$330**	**$332**

Newfoundland Power Inc.
2014-2018 Capital Plan
(000s)

INFORMATION SYSTEMS

Project	**2014**	**2015**	**2016**	**2017**	**2018**
Application Enhancements	$1,372	$1,200	$1,400	$1,450	$1,500
System Upgrades	1,059	1,725	1,685	1,485	1,485
Personal Computer Infrastructure	420	500	500	450	450
Shared Server Infrastructure	833	750	650	600	600
Network Infrastructure	321	200	175	300	200
Total - Information Systems	**$4,005**	**$4,375**	**$4,410**	**$4,285**	**$4,235**

Newfoundland Power Inc.
2014-2018 Capital Plan
(000s)

UNFORESEEN ALLOWANCE

Project	**2014**	**2015**	**2016**	**2017**	**2018**
Allowance for Unforeseen Items	$750	$750	$750	$750	$750
Total - Unforeseen Allowance	**$750**	**$750**	**$750**	**$750**	**$750**

Newfoundland Power Inc.
2014-2018 Capital Plan
(000s)

GENERAL EXPENSES CAPITALIZED

Project	2014	2015	2016	2017	2018
General Expenses Capitalized	$4,000	$4,000	$4,000	$4,000	$4,000
Total - General Expenses Capitalized	**$4,000**	**$4,000**	**$4,000**	**$4,000**	**$4,000**