

# FEI Annual Review of 2017 Rates

Workshop

October 12, 2016



# Agenda

PBR Overview and Initiatives	<i>Diane Roy Dawn Mehrer</i>	<i>Vice President, Regulatory Affairs Director, Customer Contact Centres</i>
Revenue Requirements & Rates	<i>Jeff May</i>	<i>Controller, Financial Accounting</i>
Demand Forecast Methodology Review	<i>David Bailey</i>	<i>Customer Energy and Forecasting Manager</i>
LNG Update	<i>Mike Bains Darren Julyan</i>	<i>Business Development Manager Director, Gas Plant Operations &amp; PMO</i>
Service Quality Indicators (SQIs)	<i>James Wong John Himmel Dean Stevenson</i>	<i>Director, Strategic Initiatives &amp; Budgeting Manager, Business Performance Director, OH&amp;S and Technical Training</i>
Open Question Period	<i>All</i>	

# PBR Overview and Initiatives

Diane Roy, Vice President, Regulatory Affairs

Dawn Mehrer, Director, Customer Contact Centres



# FEI Annual Review

PBR Term from 2014 to 2019  
(Vancouver Island and Whistler starting in 2015)

2017 Delivery Rates Held at  
2016 Levels

Service  
Quality  
Indicators

Formula-Driven  
Items (Earnings  
Sharing)

Forecast Items  
(Flow-through  
Deferral)

Responsiveness to  
Customers Needs  
Reliability and  
Safety

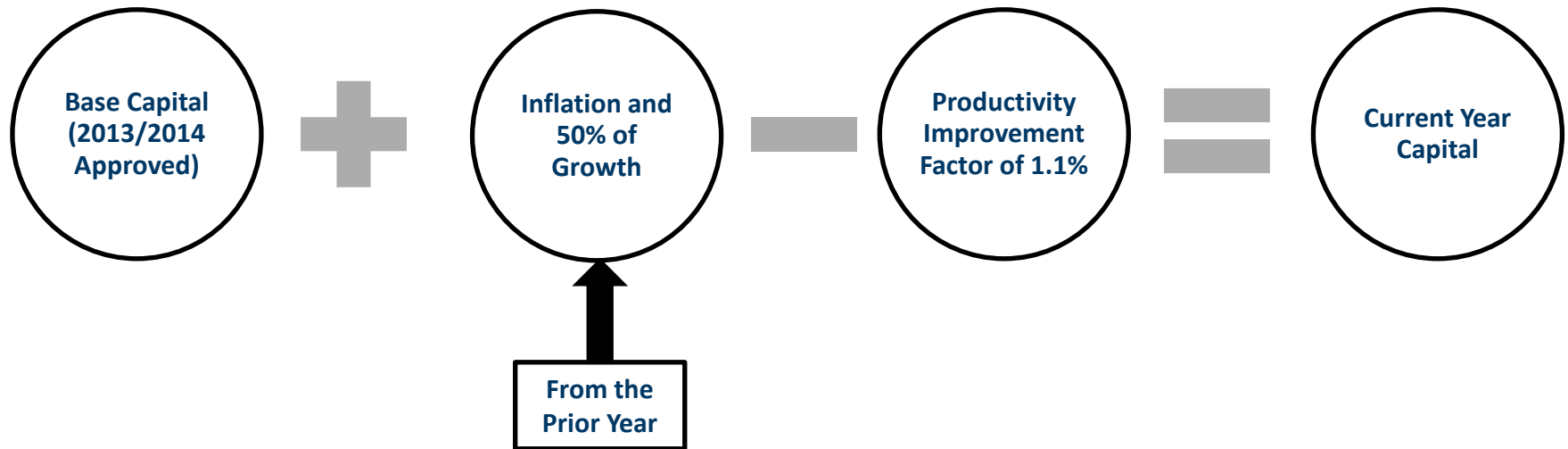
# Approvals Sought

- Delivery rate freeze for 2017, with revenue surplus applied to 2018
- Five deferral account requests:
  - ❑ 2017 Rate Smoothing - new
  - ❑ All-Inclusive Code of Conduct/Transfer Pricing Policy regulatory proceeding - new
  - ❑ Cost of Capital Application - three year amortization period
  - ❑ Emissions Regulations - five year amortization period
  - ❑ Kingsvale-Oliver Reinforcement Project Feasibility Costs - discontinuation
- Rate Stabilization Deferral Account (RSDA) riders for 2017
- Phase-In Rate riders for 2017 for Mainland, Vancouver Island and Whistler customers
- Revenue Stabilization Adjustment Mechanism (RSAM) riders for 2017

# Summary of PBR Results

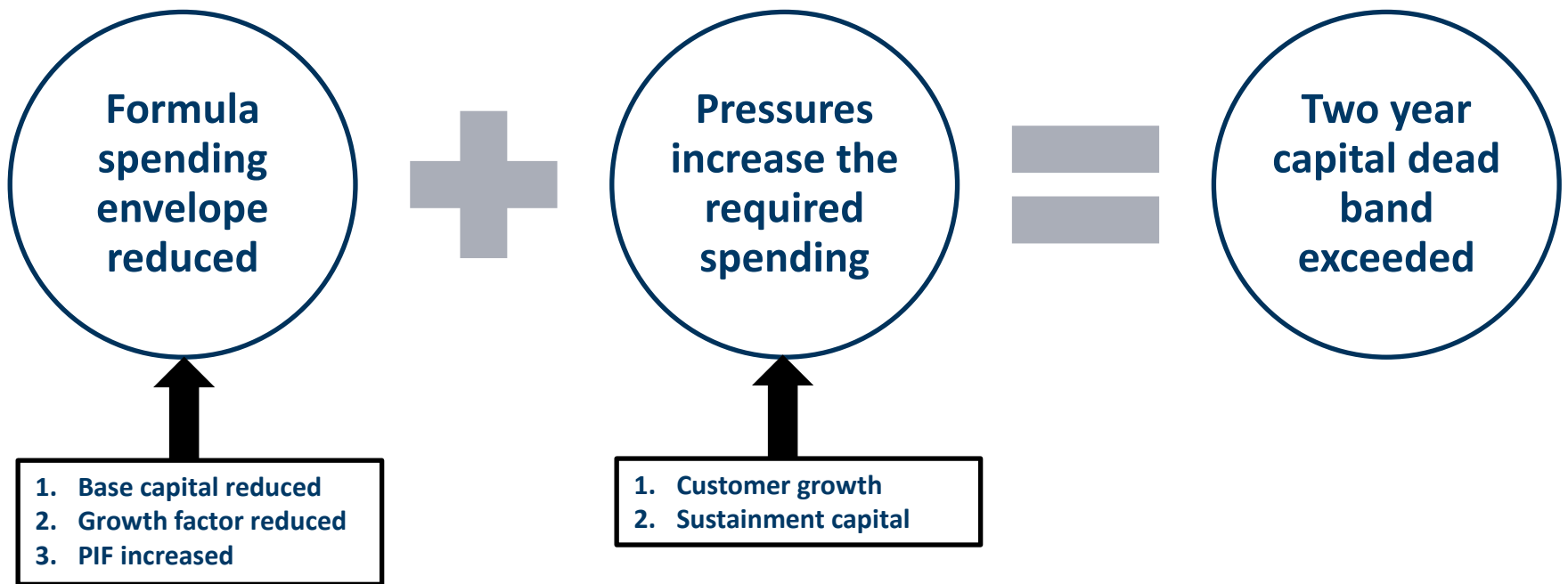
- 2016 Earnings Sharing Results Projection
  - ▣ O&M below formula by \$11.1 million
  - ▣ Capital expenditures above formula by \$13.8 million (\$32.5 million cumulative) and 2 year cumulative dead band projected to be exceeded
  - ▣ 2016 total earnings sharing of \$5.1 million
- Major Initiatives for 2016
  - ▣ Phase 2 of Regionalization
  - ▣ Training and Development (Joint with FBC)
  - ▣ Online Service Application
- Service Quality
  - ▣ All Service Quality Indicators were above threshold in 2015

# Capital Expenditures under the PBR Decision



*Annual 10% capital dead band*  
*Two year cumulative 15% capital dead band*

# Capital will Exceed the Dead Band in 2016

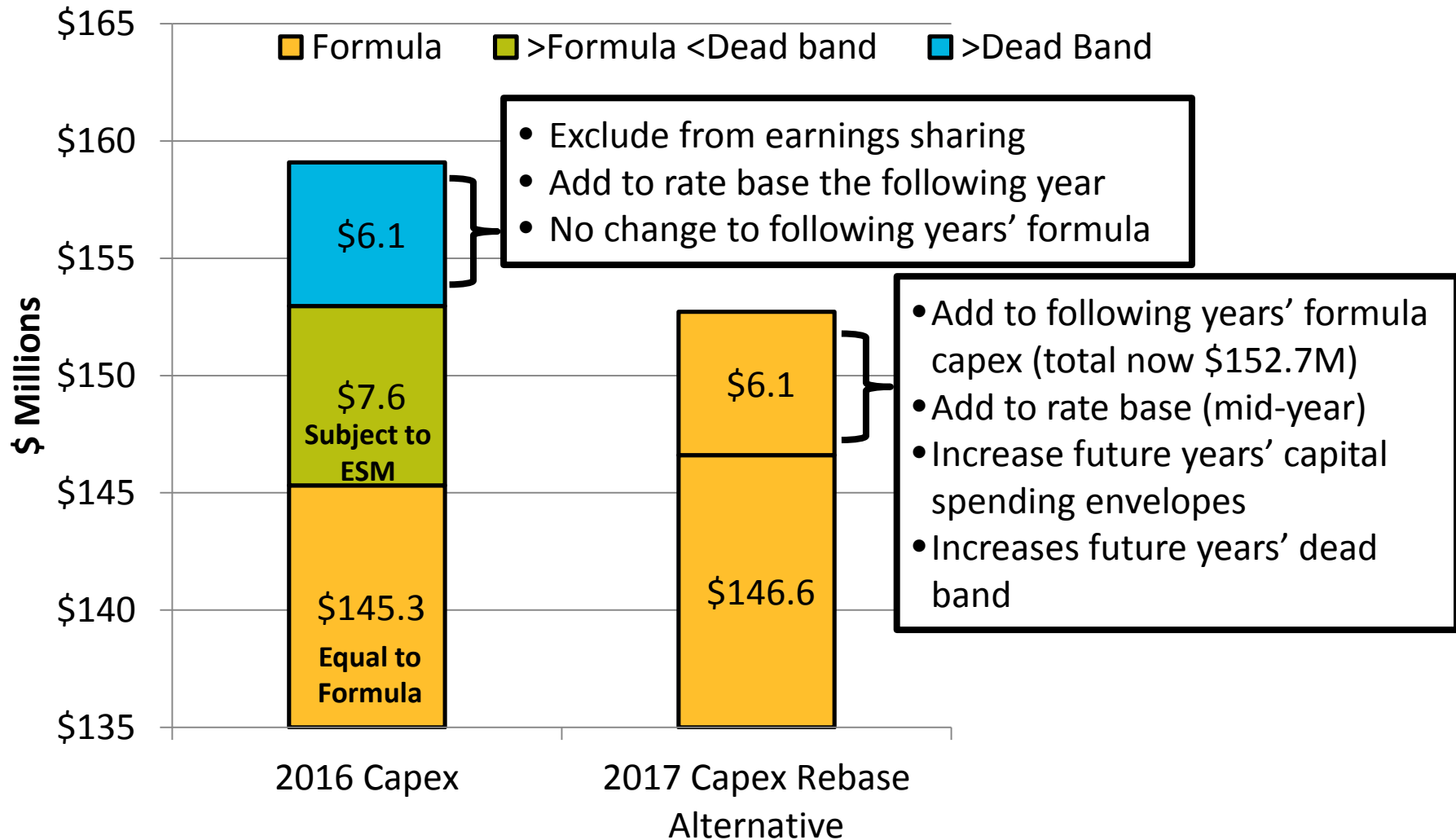




# How the Capital Dead Band Works

- Spending within the capital dead band is subject to earnings sharing
- Spending outside of the capital dead band:
  - ❑ Excluded from earnings sharing
  - ❑ Opening plant in service in the following year is adjusted up or down by the amount outside of the dead band
- Alternative to adjust (or “rebase”) the following years’ capital formula
  - ❑ FEI’s recommendation is to not rebase the formula

# Option to Re-Base the Capital Formula



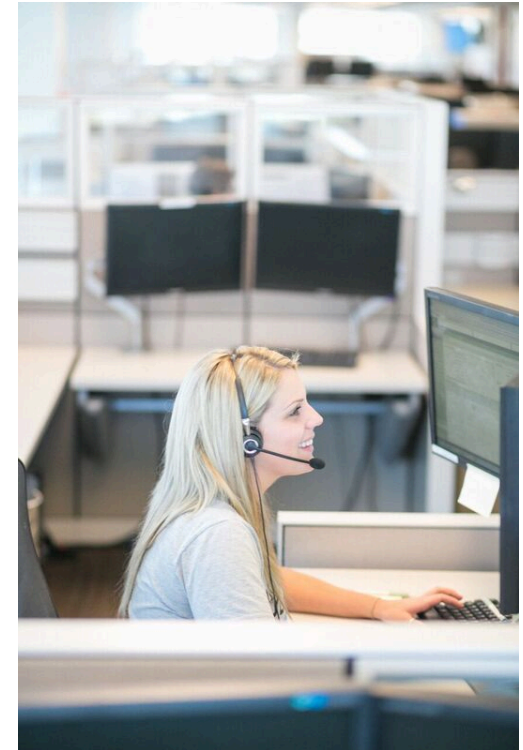
# Major Initiatives

Name	Implementation			Anticipated O&M Savings		
	Year	Capital	O&M	2014	2015	2016+
Regionalization (Phase 1)	14/15	\$1.3	\$0.9	\$1.0	\$1.0	\$1.0
Regionalization (Phase 2)	16	\$0.3	\$0.8			\$1.1
Project Blue Pencil	14/15	< \$0.3		< \$0.1	\$1.0	\$1.0
Review of Technical and Infrastructure Provider	14/15	\$1.5			\$1.8	\$2.0
Training and Development Initiative (FEI and FBC cost sharing)	15		\$0.2			
Online Service Application	16			Full year savings starting 2018; \$0.2 m O&M, \$0.2 m Capital		

*\* Costs and Savings are expressed in \$ millions.*

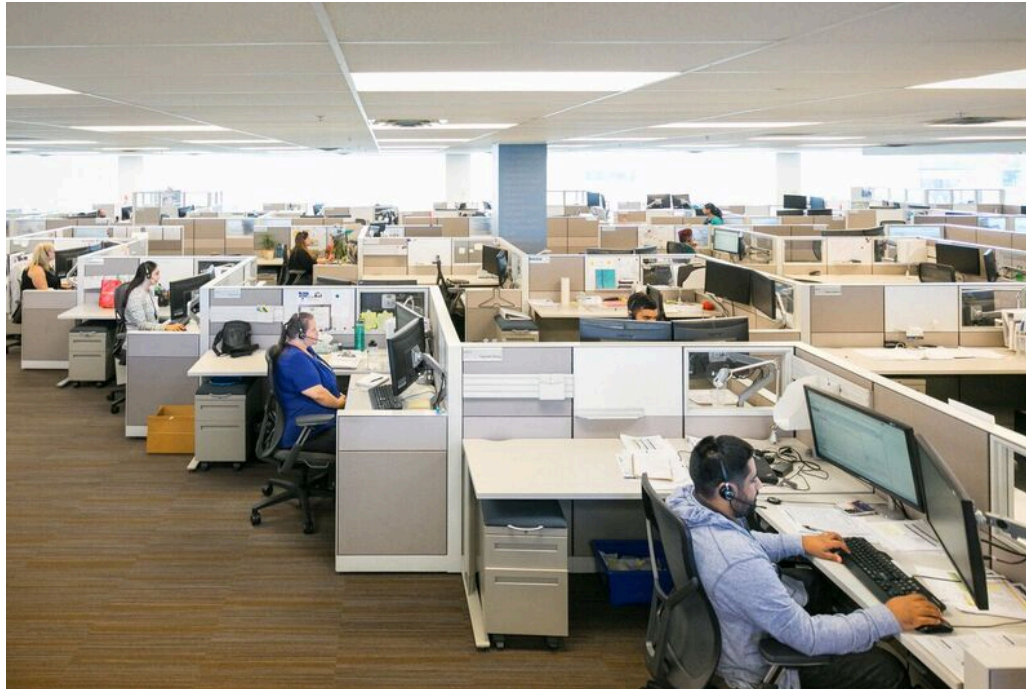
# Commission Directive – Contact Centre Staff

- FEI contact centre agents in Prince George answering overflow electric calls
- Approximately 18 trained resources
  - Answering electric calls
  - Doing gas work between calls
- Benefits of cross-utilization include:
  - Cost-effective way to address variable work volumes
  - Provides development opportunities for staff
  - Customers experience lower wait times and lower costs



# Commission Directive – Contact Centre Staff

- Costs currently being charged on a “per-transaction” basis
- Directive to re-visit alternate cost allocation methods if actual charges exceed \$100 thousand in one year
- 2016 projected actuals are approximately \$50 thousand



# Revenue Requirements & Rates

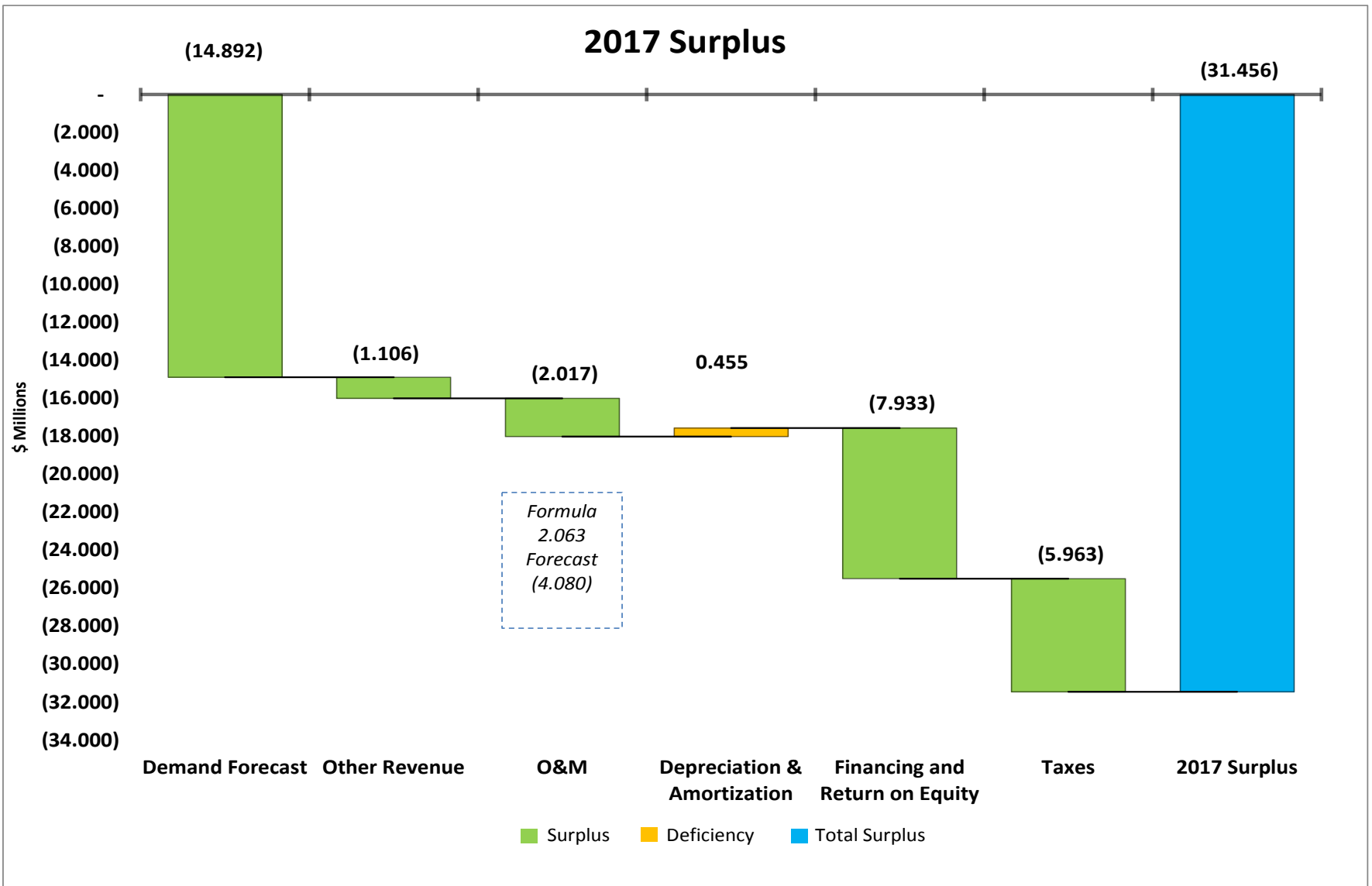
Jeff May, Controller, Financial Accounting



# Evidentiary Update October 5, 2016

Evidentiary Update - 2017 Rates			
Line Item	Reference	Revenue Surplus Impact (\$ millions)	Delivery Rate Impact
<b>August 2, 2016 Filing</b>		<b>\$ 9.319</b>	<b>1.19%</b>
Tilbury Completion Date		(44.116)	-5.69%
LNG Volumes	BCUC IR 1.23.1, CEC IR 1.19.1 & 1.19.3	4.619	0.60%
LT Debt Reduction		(1.358)	-0.18%
Revelstoke Demand	BCUC IR 1.14.1	(0.167)	-0.02%
LNG Asset Transfer	Order G-138-16 and Appendix B, Page 13	0.122	0.02%
LNG Station O&M		0.054	0.01%
Update May/June AWE-BC	Application, Page 18	0.044	0.01%
System Extension Fund	Order G-147-16	0.027	0.00%
<b>October 5, 2016 Evidentiary Update (before Revenue Surplus deferral)</b>		<b>\$ (31.456)</b>	<b>-4.06%</b>
Deferred Revenue Surplus		31.456	4.06%
<b>October 5, 2016 Evidentiary Update</b>		<b>\$ -</b>	<b>0.00%</b>

# Summary of Revenue Surplus





# Emissions Regulations Deferral Account

- ❑ Approved in 2012/2013 FEI Revenue Requirement Application proceeding
- ❑ Requesting 5 year amortization period in this Application
- ❑ Captures revenue collected from credits earned under the Renewable Low Carbon Fuel Requirements Regulation (RLCFRR)
  - First sale of credits earned under the RLCFRR was \$2.4 million received in 2016
  - 100% of revenue flows to ratepayers
- ❑ Captures external costs (i.e. consulting costs) related to RLCFRR sales
  - Does not include internal costs, such as labour, which would already be embedded in formula O&M
  - To date, no costs incurred during the PBR period

# Demand Forecast Methodology Review

David Bailey, Customer Energy and Forecasting Manager

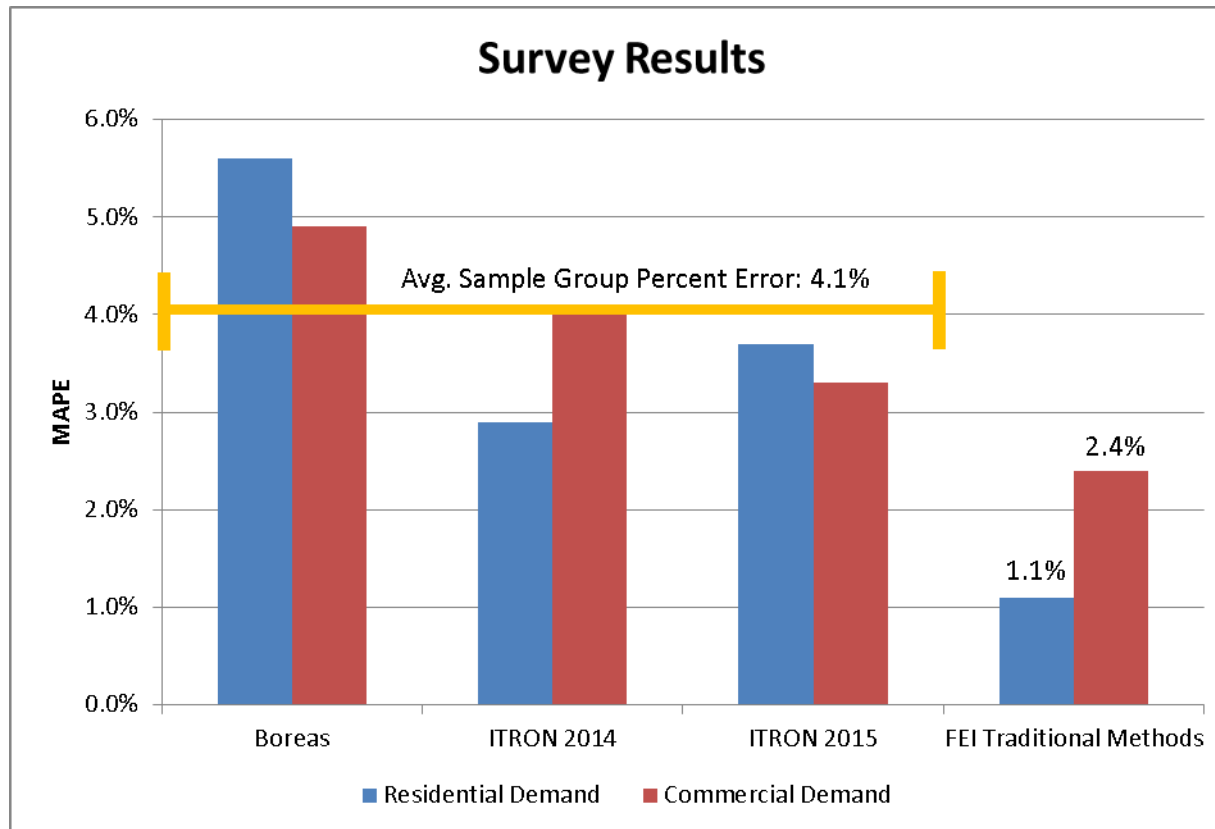


# Forecast Methods

- FEI was directed by the Commission to review residential and commercial forecasting methods
  1. Through our analysis we determined that the existing forecasting methods performed better than comparison utilities
  2. We determined that one other method (Exponential Smoothing or “ETS”) shows promise
  3. FEI recommends further testing of the ETS method for the remainder of the PBR term

# Sample Group Survey

- Two new surveys, plus the 2014 ITRON Survey
- Results demonstrate that FEI's forecasting accuracy is better than the Sample Group

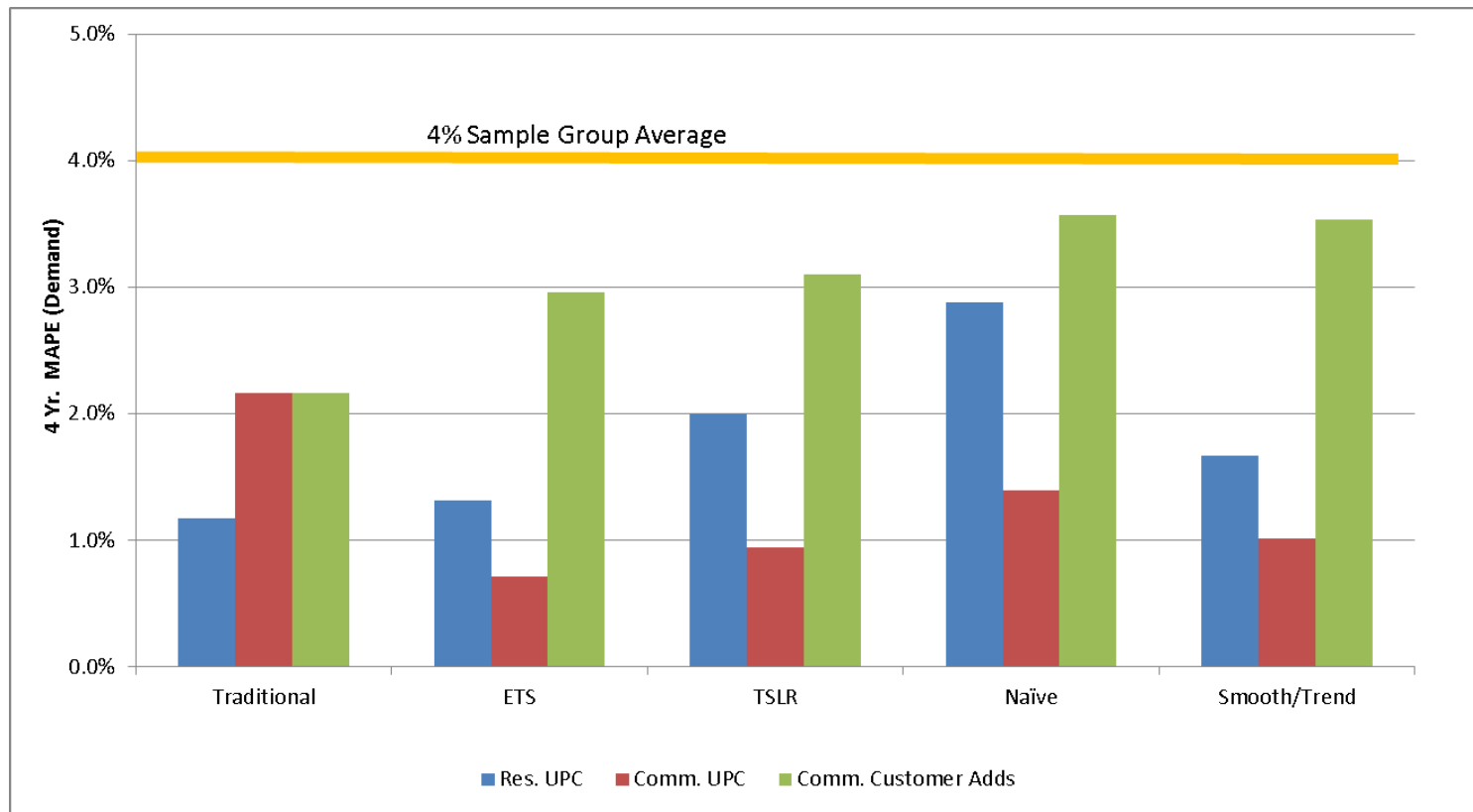


# Alternate Forecasting Methods

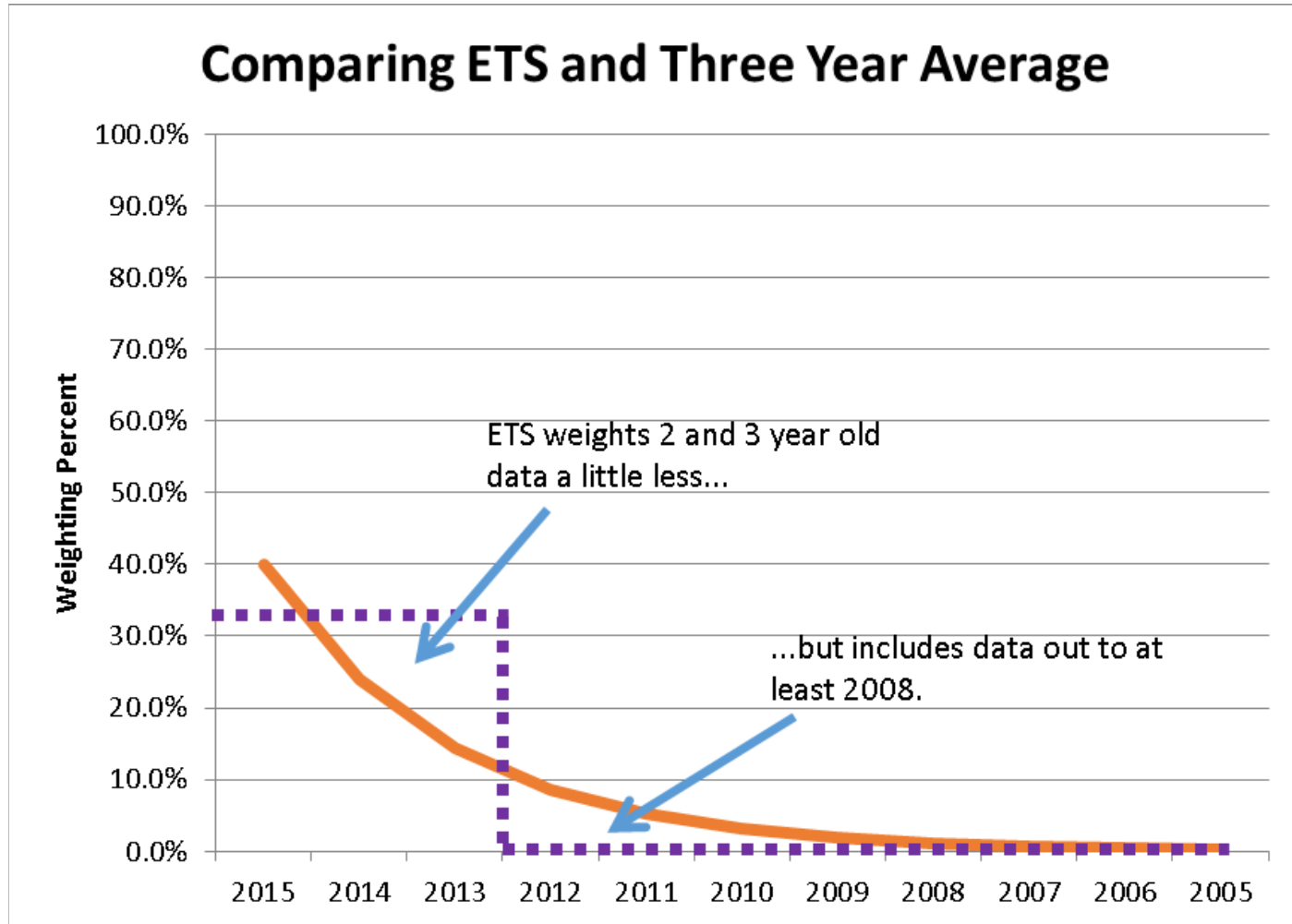
- Several methods were examined.
  - **Time Series Linear Regression (TSLR)**: A regular time series linear regression
  - **Naïve**: Next year's forecast same as last year's actuals
  - **Smooth/Trend**: Smooth the historic data first, and then apply a trend
  - **Retail Sales**: Econometric regression with Retail Sales forecast and residential UPC
  - **Exponential Smoothing (ETS)**: A dynamic smoothing method that uses the full historic data set
- Integration Testing:
  - Evaluated methods based on how well they did from 2012-2015
  - Tested only one input at a time (i.e.. Commercial UPC)
  - Used the Forecast Information System (FIS) to compute the complete demand forecast

# Alternate Method Results

Exponential Smoothing (ETS) is the best performing alternate method



# Exponential Smoothing



# Conclusion

- Through our analysis we determined that the existing forecasting methods performed better than the Sample Group utilities
- We determined that one other method (Exponential Smoothing or “ETS”) shows promise
- FEI will continue to use the existing method, but will test ETS for remainder of the PBR term



# Liquefied Natural Gas Update

Mike Bains, Business Development Manager

Darren Julyan, Director, Gas Plant Operations & Project Management Office



# NGT/LNG Demand Forecast

- Volume forecast based on customer demand contracted under Rate Schedule 46 for both Firm and Spot supply customers
  1. A forecast of Spot volumes was directed by the Commission to be included in the forecast
  2. Firm demand is under take-or-pay commitment
- Spot demand is not subject to take-or-pay commitment, therefore forecast is based on:
  1. Customer survey of future demand expectations, or
  2. Historical consumption patterns

# NGT/LNG Demand Forecast

	2017F - Original (GJ)	2017F - Evidentiary Update (GJ)	Variance (GJ)
CNG	769,467	769,467	-
LNG	2,136,388	932,300	(1,204,088)
<b>Total NGT Demand</b>	<b>2,905,855</b>	<b>1,701,767</b>	<b>(1,204,088)</b>
Non-NGT CNG/LNG Demand	165,866	165,866	-
<b>Total CNG &amp; LNG Demand</b>	<b>3,071,721</b>	<b>1,867,633</b>	<b>(1,204,088)</b>

- Tote Maritime was scheduled to begin LNG service under Rate Schedule 46 on May 1, 2017
- Due to operational delays, Tote is expected to enter service May 1, 2018
- Result is a reduction of 1,204,088 GJ to 2017 forecast LNG volume
- FEI was informed of this operational delay in August 2016

# LNG Rate Schedule 46 O&M Update



# Tilbury 2016 Rate Schedule 46 O&M Projection (\$ millions)

	Original Projection	Revised Projection
Labour	0.673	0.542
Materials	0.091	0.094
Contractor	0.320	0.266
Power	0.438	0.438
Fuel Gas	0.040	0.040
Fees & Admin.	0.058	0.050
Total	1.620	1.430

# Tilbury 2017 Rate Schedule 46 O&M Forecast (\$ millions)

	Original Projection	Revised Projection
Labour	2.160	1.480
Materials	0.170	0.150
Contractor	0.420	0.335
Power	4.060	2.590
Fuel Gas	0.260	0.160
Fees & Admin.	0.120	0.120
Total	7.190	4.835

# Rate Schedule 46 O&M Labour Cost Allocation

The O&M costs to support Rate 46 include all incremental costs associated with the liquefaction of natural gas, the dispensing of LNG and the handling and loading of tankers to transport LNG

## PBR Formula O&M

- Tilbury Base Plant
- Mt. Hayes Plant

## O&M Outside PBR Formula

- Tilbury Expansion
- Truck Loading at all 3 Plants

# Service Quality Indicators

James Wong, Director, Strategic Initiatives & Budgeting

John Himmel, Manager, Business Performance

Dean Stevenson, Director, OH&S and Technical Training





# Overview of Service Quality Indicators

- SQL Benchmarks
  - ❑ Approved in PBR Plan
  - ❑ Based on historical performance
- Satisfactory Performance Ranges
  - ❑ Range between approved benchmark and threshold
  - ❑ BCUC directed stakeholder consultation process
  - ❑ Factors taken into consideration include historical variances, historical trend, etc.
- Consensus Agreement
  - ❑ Agreed ranges for SQIs with benchmarks where performance is considered satisfactory
  - ❑ Outlined process for examination of SQL results at each Annual Review

# SQL Performance

Service Quality Indicator	2015 (Relative to Benchmark and Threshold)	2016 Aug YTD (Relative to Benchmark and Threshold)
<b><i>Safety SQLs</i></b>		
Emergency Response Time	Within Range	Within Range
Telephone Service Factor (Emergency)	Meets	Meets
All Injury Frequency Rate (AIFR)	Within Range	Meets
Public Contacts with Pipelines	Meets	Meets
<b><i>Responsiveness to Customer Needs SQLs</i></b>		
First Contact Resolution	Meets	Meets
Billing Index	Meets	Meets
Meter Reading Accuracy	Meets	Meets
Telephone Service Factor (Non-Emergency)	Meets	Meets
Meter Exchange Appointment	Meets	Meets
Customer Satisfaction Index - informational	n/a	n/a
Telephone Abandon Rate - informational	n/a	n/a
<b><i>Reliability SQLs</i></b>		
Transmission Reportable Incidents - informational	n/a	n/a
Leaks per KM of Distribution System Mains - informational	n/a	n/a

# Responsiveness to Customer Needs

<b>Service Quality Indicator</b>	<b>2015 Results</b>	<b>2015 Status</b> (Relative to Benchmark and Threshold)	<b>2016 Aug YTD Results</b>	<b>2016 Status</b> (Relative to Benchmark and Threshold)	<b>Benchmark</b>	<b>Threshold</b>
<b><i>Responsiveness to Customer Needs SQIs</i></b>						
First Contact Resolution	81%	Meets	81%	Meets	78%	74%
Billing Index	1.06	Meets	0.55	Meets	5.0	<=5.0
Meter Reading Accuracy	97.5%	Meets	97.3%	Meets	95%	92%
Telephone Service Factor (Non-Emergency)	71%	Meets	70%	Meets	70%	68%
Meter Exchange Appointment	96.6%	Meets	97.0%	Meets	95%	93.8%

<b>Informational Indicators</b>	<b>2015 Results</b>		<b>2016 Aug YTD Results</b>		<b>2013 Actuals</b>	<b>2014 Actuals</b>
Customer Satisfaction Index	8.6	n/a	8.7	n/a	8.3	8.5
Telephone Abandon Rate	2.0%	n/a	2.3%	n/a	2.1%	1.8%

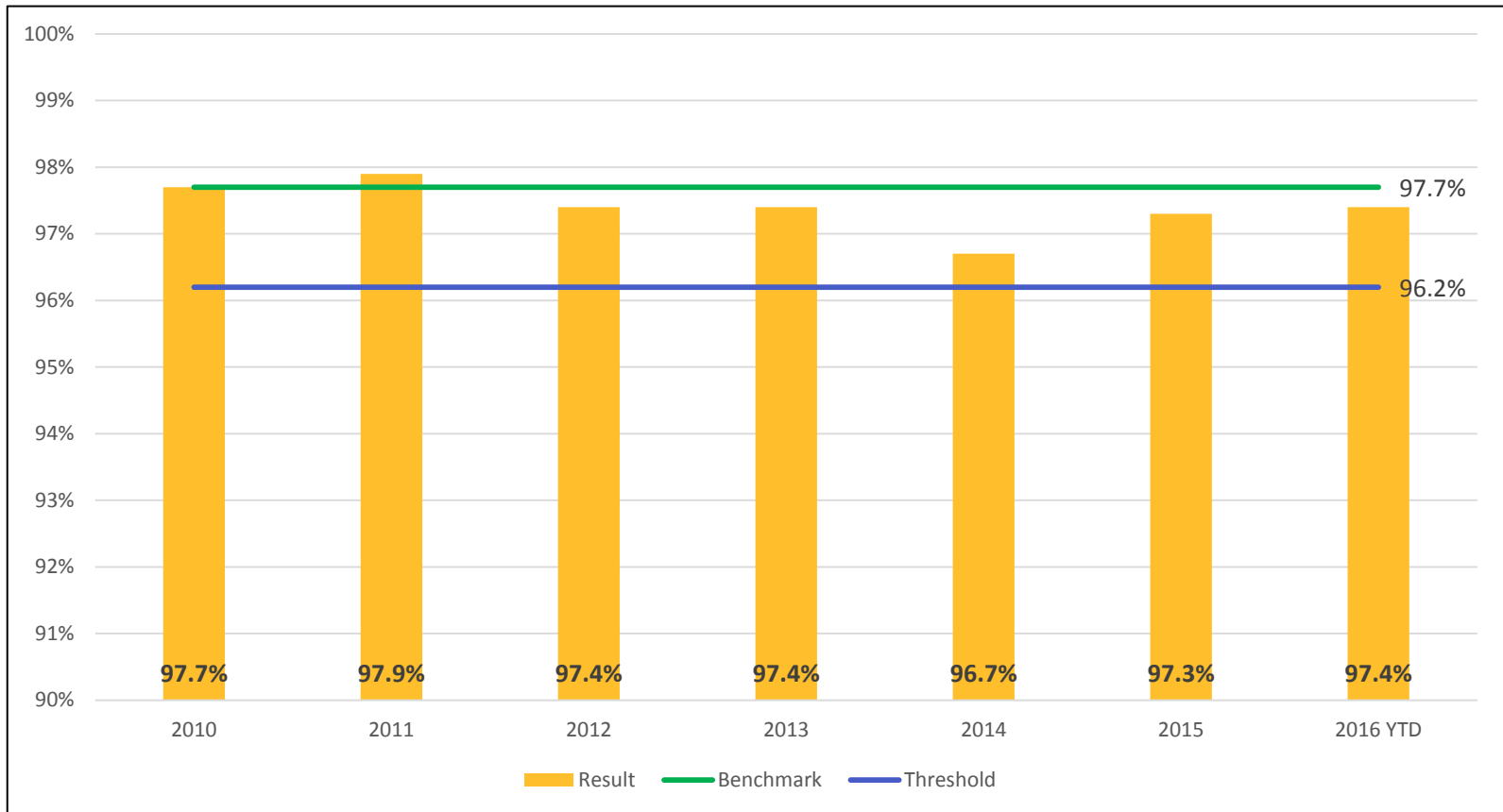
# Safety and Reliability

Service Quality Indicator	2015 Results	Status (Relative to Benchmark and Threshold)	2016 Aug YTD Results	Status (Relative to Benchmark and Threshold)	Benchmark	Threshold
<b>Safety SQIs</b>						
Emergency Response Time	97.3%	Within Range	97.4%	Within Range	97.7%	96.2%
Telephone Service Factor (Emergency)	97.6%	Meets	98.8%	Meets	95%	92.8%
All Injury Frequency Rate	2.42	Within Range	2.05	Meets	2.08	2.95
Public Contacts with Pipelines	9	Meets	9	Meets	16	16

Informational Indicators	2015 Results		2016 Aug YTD Results		2013 Actuals	2014 Actuals
<b>Reliability SQIs</b>						
Transmission Reportable Incidents	3	n/a	2	n/a	0	2
Leaks per KM of Distribution System Mains	0.0045	n/a	0.0031	n/a	0.0075	0.0059

# Emergency Response Time

# Emergency Response Time (within 1 hour)



- Improvement from 96.7% in 2014 to 97.3% in 2015
- Continued improvement to 97.4% Aug 2016 YTD

# Transmission Reportable Incidents

# Three Transmission Reportable Incidents YTD

- Brentlawn Dr. Burnaby
  - ▣ Leak on 508mm IP system
- 168<sup>th</sup> St. Surrey
  - ▣ 3<sup>rd</sup> party damage to 26mm steel IP service
- 168<sup>th</sup> St. Surrey
  - ▣ 3<sup>rd</sup> party damage to 26mm steel IP Branch service



# IP Damage at 168<sup>th</sup> Street



# Safety

# All Injury Frequency Rate (AIFR)

Description	2009	2010	2011	2012	2013	2014	2015	August 2016 YTD
<b>Annual Results</b>	2.49	2.66	1.66	1.91	3.02	1.73	2.52	1.91
<b>Three Year Rolling Average</b>	2.55	2.26	2.27	2.08	2.20	2.22	2.42	2.05
<b>Benchmark</b>	n/a	n/a	n/a	n/a	n/a	2.08	2.08	2.08
<b>Threshold</b>	n/a	n/a	n/a	n/a	n/a	2.95	2.95	2.95

2015 AIFR is between the Benchmark and Threshold

- WorkSafeBC Certificate of Recognition retained in 2015
- Target Zero implemented
- 2016 YTD results trending positively

# Question Period