FEI 2016 Rate Design Application

Workshop 2 – COSA & Rate Design Proposals

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March 9, 2017

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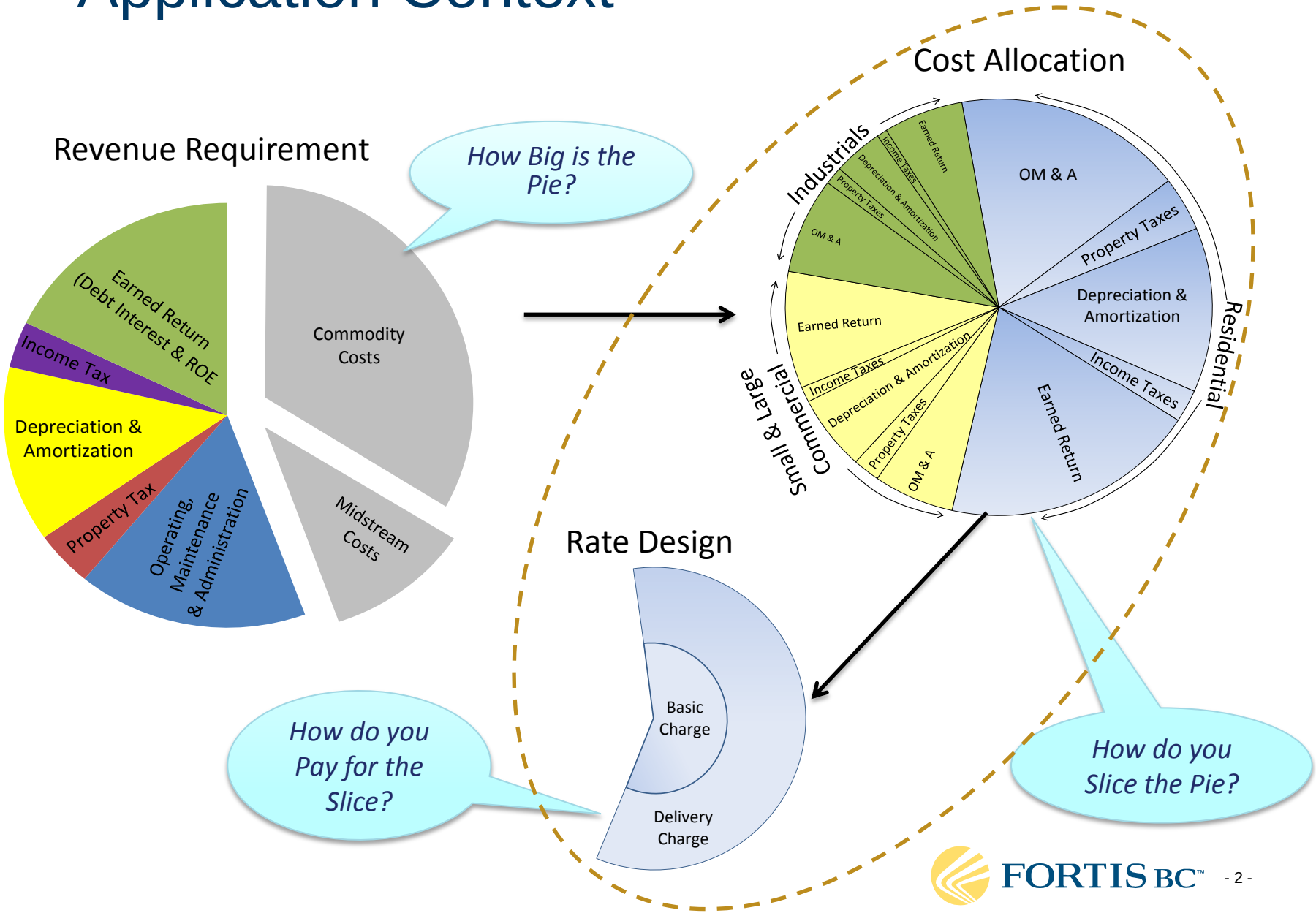
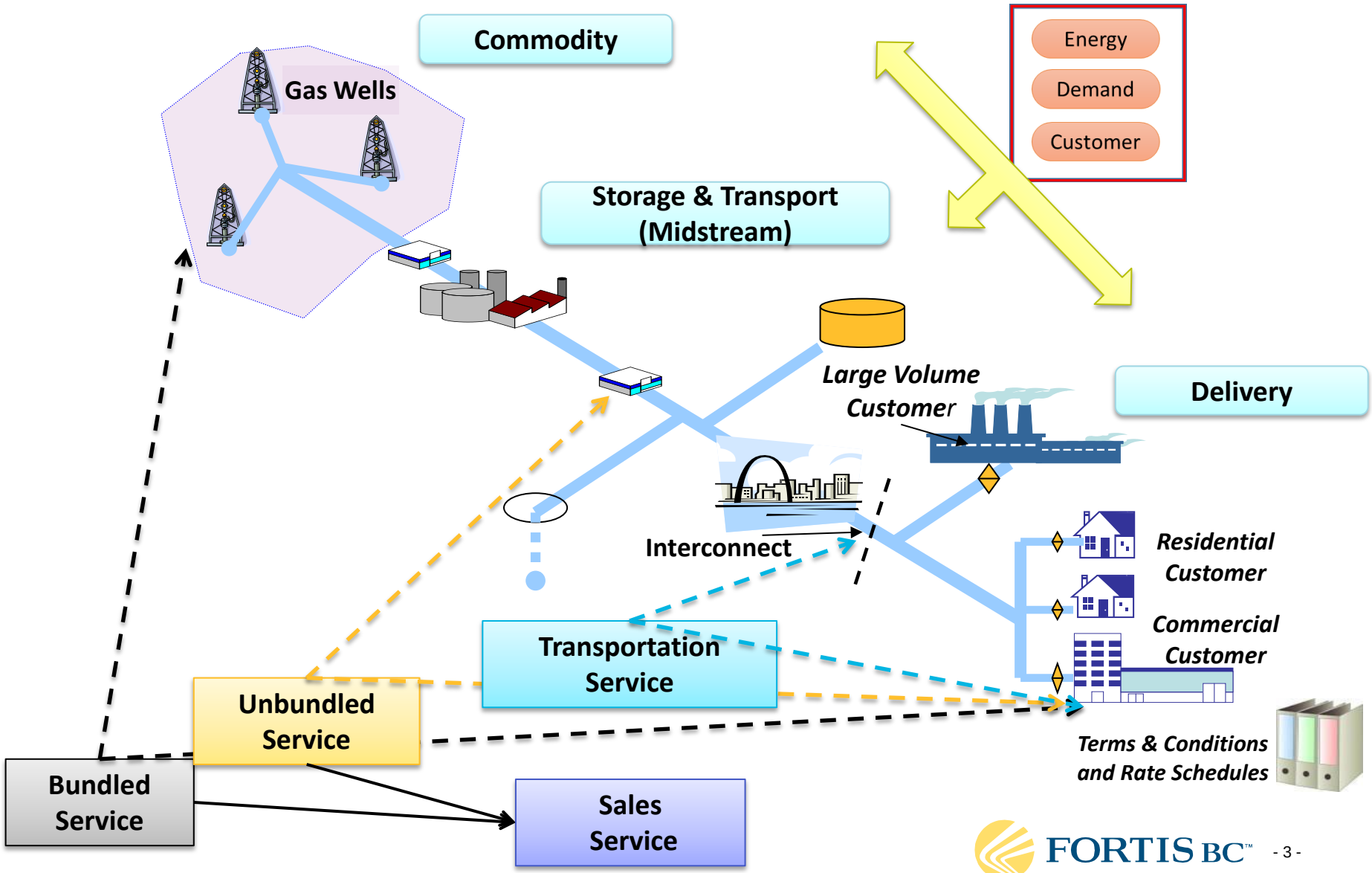
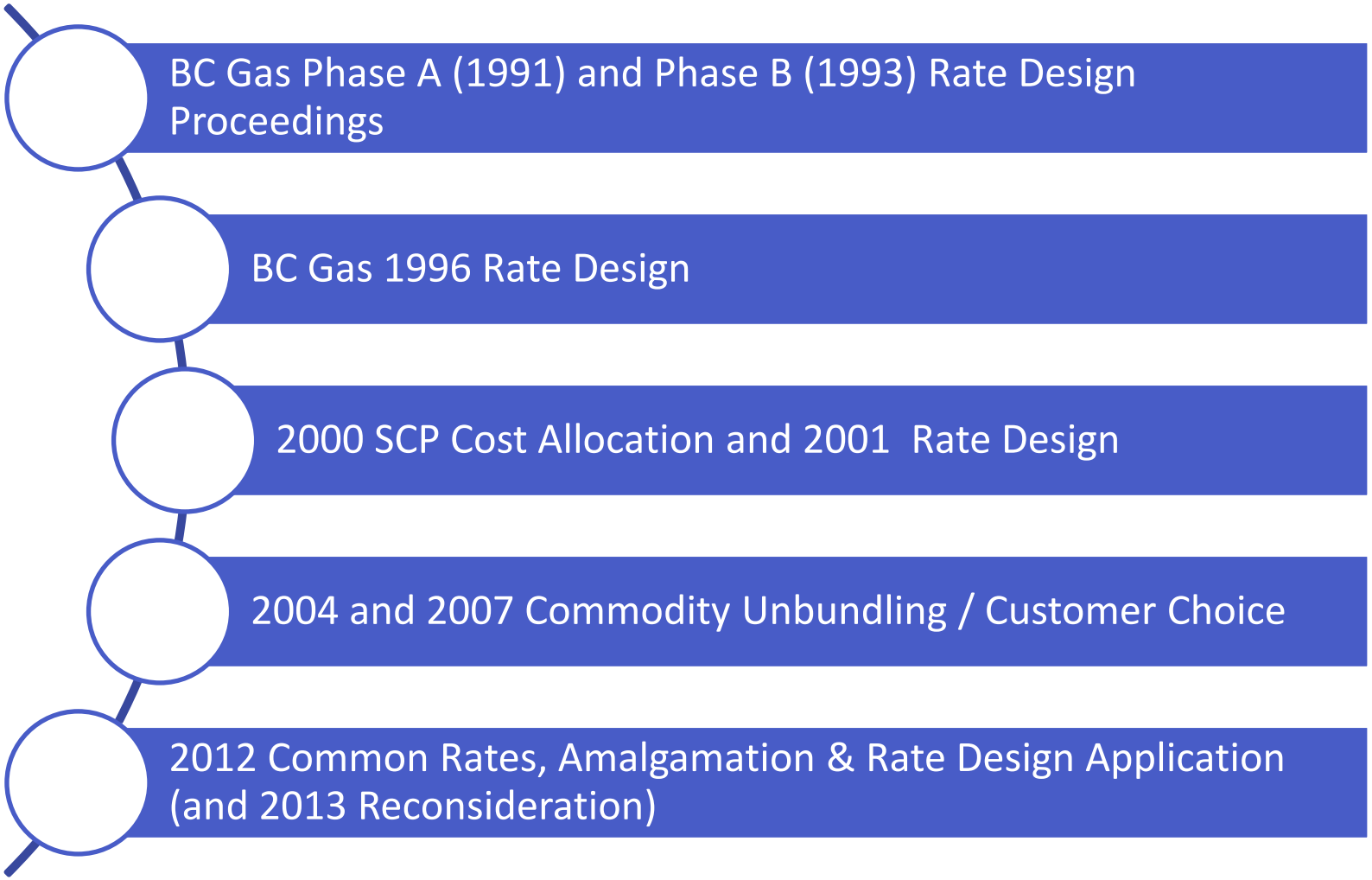
Application Context



Services, Cost Allocation and Rate Design



FEI Rate Design History



Agenda

COSA	COSA Methodology
	COSA Model Cost and Revenue Assumptions
	COSA Model Adjustments & Supporting Studies
	Functionalization, Classification and Allocation – Examples & Summary
	COSA Results Before Rate Design Proposals – R:C Ratios
Rate Design Proposals	FEI Residential, Commercial & Industrial Rate Design Proposals
	Transportation Service Proposed Changes
	Summary incl. Final COSA Results with Rebalancing and Bill Impacts
	Approvals Sought – FEI
	Fort Nelson Rate Design Proposed Changes and Approvals Sought
Next Steps	Regulatory Timetable

COSA Results

PART I

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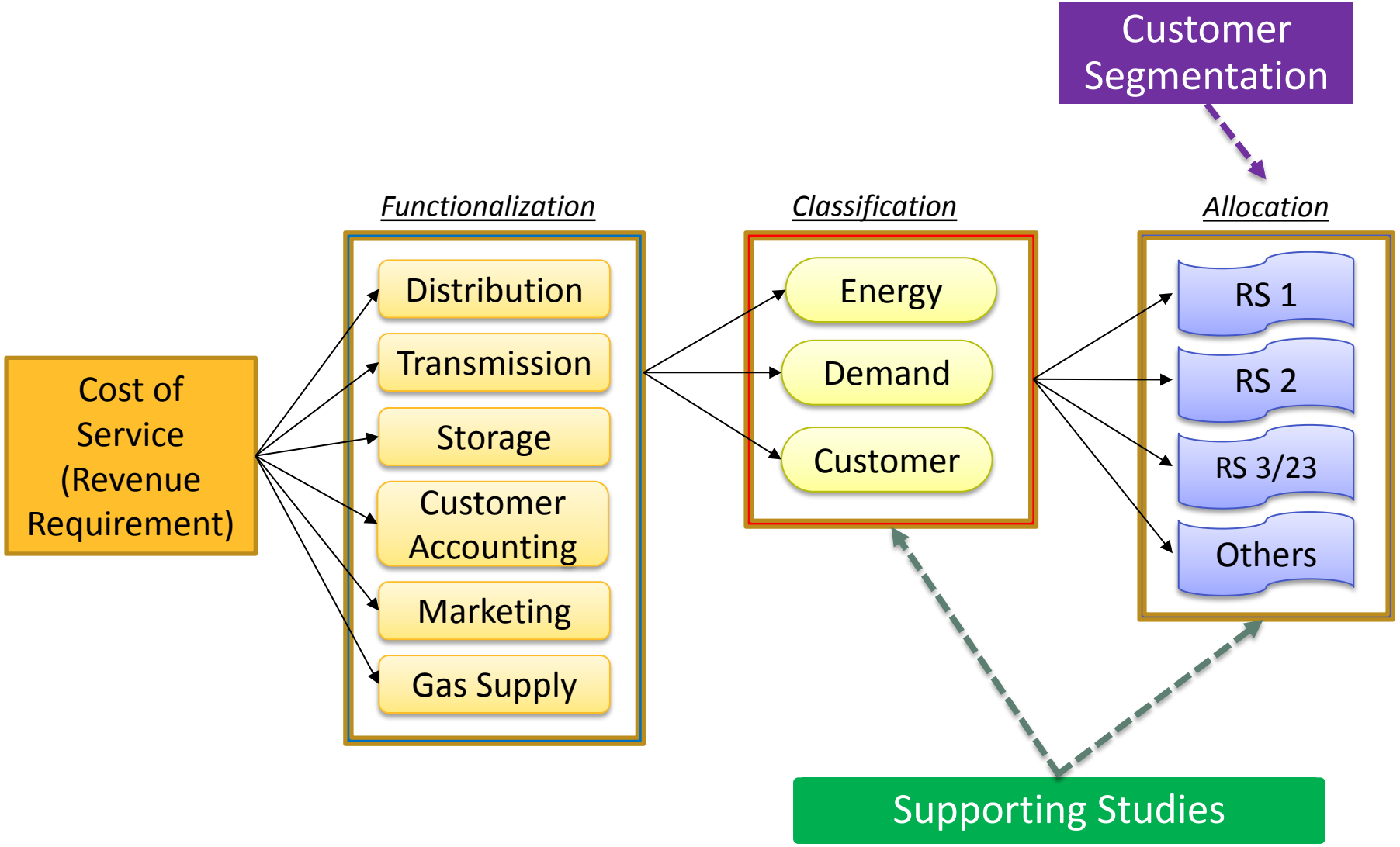
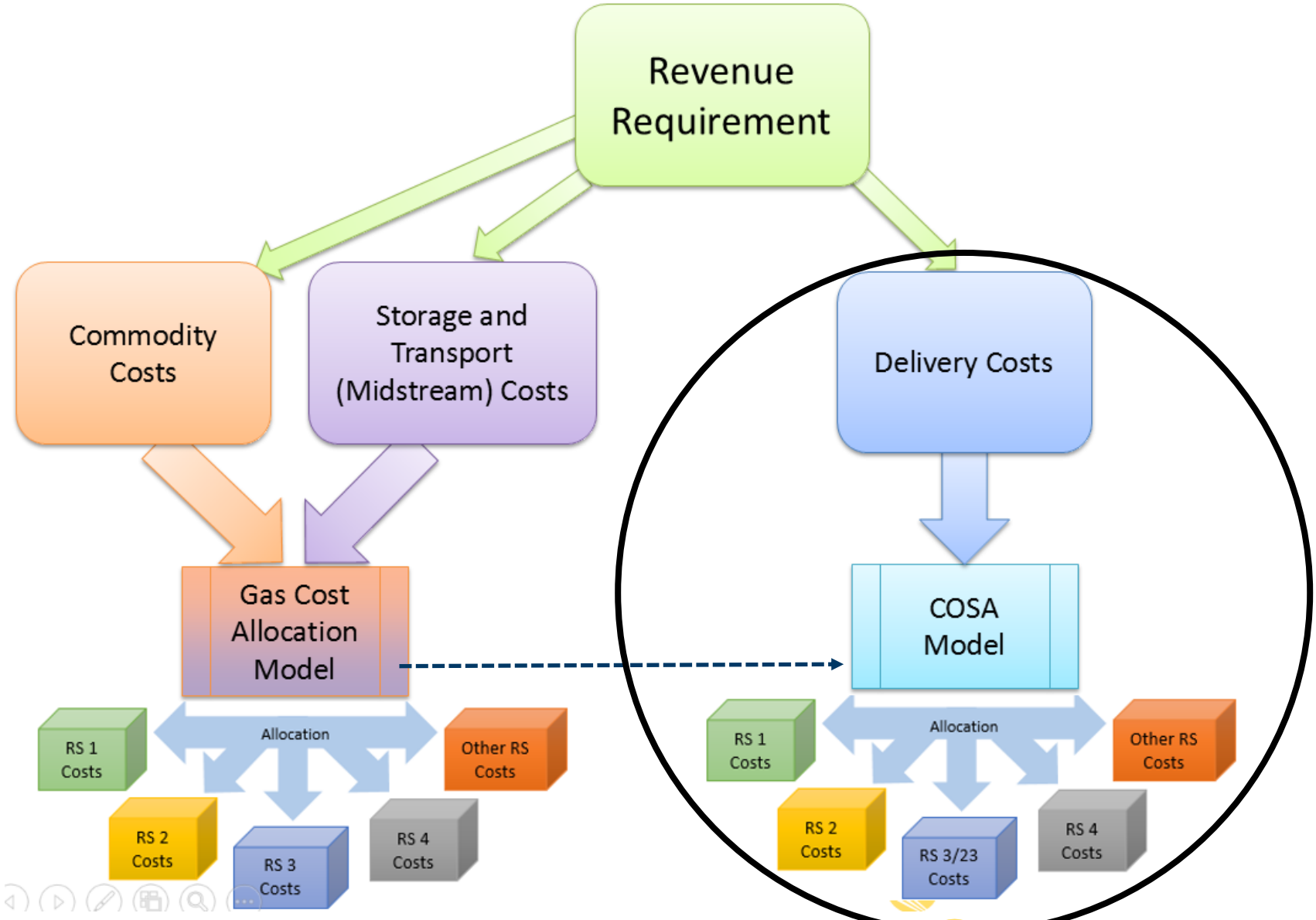
Cost of Service Allocation Steps



How we split up our Revenue Requirement amongst our customers

What is Cost of Service Allocation (COSA)?



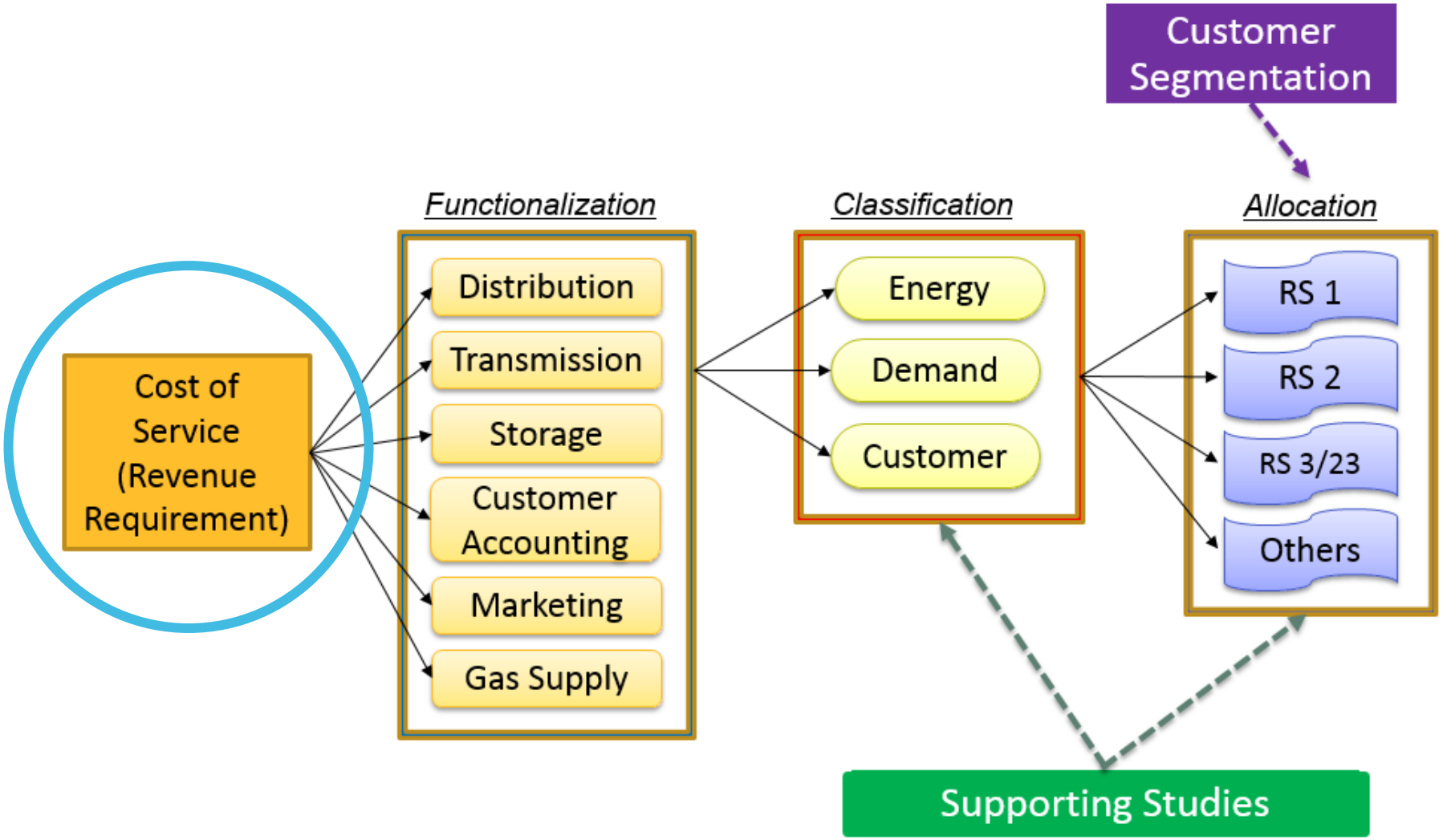
COSA Model: Cost and Revenue Assumptions

Test Year: Costs from 2016 Annual Review used in COSA

Delivery Costs

- Based on the forecast delivery costs approved in the 2016 Annual Review
- Pro forma adjustments to test year costs and revenue

Adjustments to Test Year



How do the adjustments Test Year affect the COSA model

Start with test year (2016 Annual Review)

- Revenue = Cost

Make Adjustments

- Creates a mismatch in revenue and cost
- Difference between revenue and cost applied to all Rate Schedules as a change in revenue required
  - Apply the same percentage change to all RS
- Revenue = Cost
- Perform Cost Allocation

Adjustments to Test Year

- Adjustments made so that the COSA reflects what the Utility will look like in the near term
- Changes included:
  - Test Year O&M into an activity view
  - RS 22A Volume
  - Contract Revenue
  - Lower Mainland Intermediate Pipe System Upgrade Project (LMIPSU)
  - Coastal Transmission System (CTS)
  - Tilbury Expansion Project

Operating and Maintenance Costs

- Split O&M into an Activity view based on historical actuals

Category	Total ($million)
Distribution	56.4
Transmission	24.3
LNG Plant	6.5
Meter Reading	11.8
Energy Supply and Resource Development	4.7
General Operations	41.1
Energy Solutions and External Relations	26.1
Customer Care	30.1
Business and IT Services	29.5
Administration and General	41.1
Total	**271.6**

Reference: *Application, Appendix 6-3*

RS 22A Volume Adjustment

- Adjusted the COSA for RS 22A revenue that was incorrectly classified in the 2016 Annual Review between firm and interruptible
- Result is a net decrease in revenue of $1.3 million

Table 6-2: Correction to RS 22A Data in COSA Model

Particulars	2016 Annual Review	Corrected for COSA	Difference
Firm Revenue ($000s)	$4,446	$6,982	$2,536
Interruptible Revenue ($000s)	$3,980	$178	($3,802)
Firm Volume (TJ/Day)	20.483	29.721	9.238

Reference: *Application, Section 6.3.1.3, Page 6-7*

Contract Revenue Adjustments

- Adjusted COSA for revenue and volume changes for two contract changes that were effective November 2016:
  - BC Hydro IG increased firm volume and rate
  - Burrard Thermal agreement expired

Table 6-3: Changes to BC Hydro IG and Burrard Thermal in COSA Model

Particulars	2016 Annual Review	Updated in COSA	Difference
BC Hydro IG Firm Revenue ($000s)	$13,097	$15,735	$2,638
BC Hydro IG Firm Volume (TJ/Day)	40	45	5
Burrard Thermal Firm Revenue ($000s)	$8,314	$0	($8,314)

Reference: *Application, Section 6.3.1.4, Page 6-8*

Lower Mainland Intermediate Pipe System Upgrade Project and Coastal Transmission System Upgrade

Costs included in COSA

- Capital Costs included in Plant $426 million
- Annual Cost of Service $39 million

Forecast to be completed in 2018

Reference: *Application, Section 6.3.2.1 & 6.3.2.2, Page 6-11*

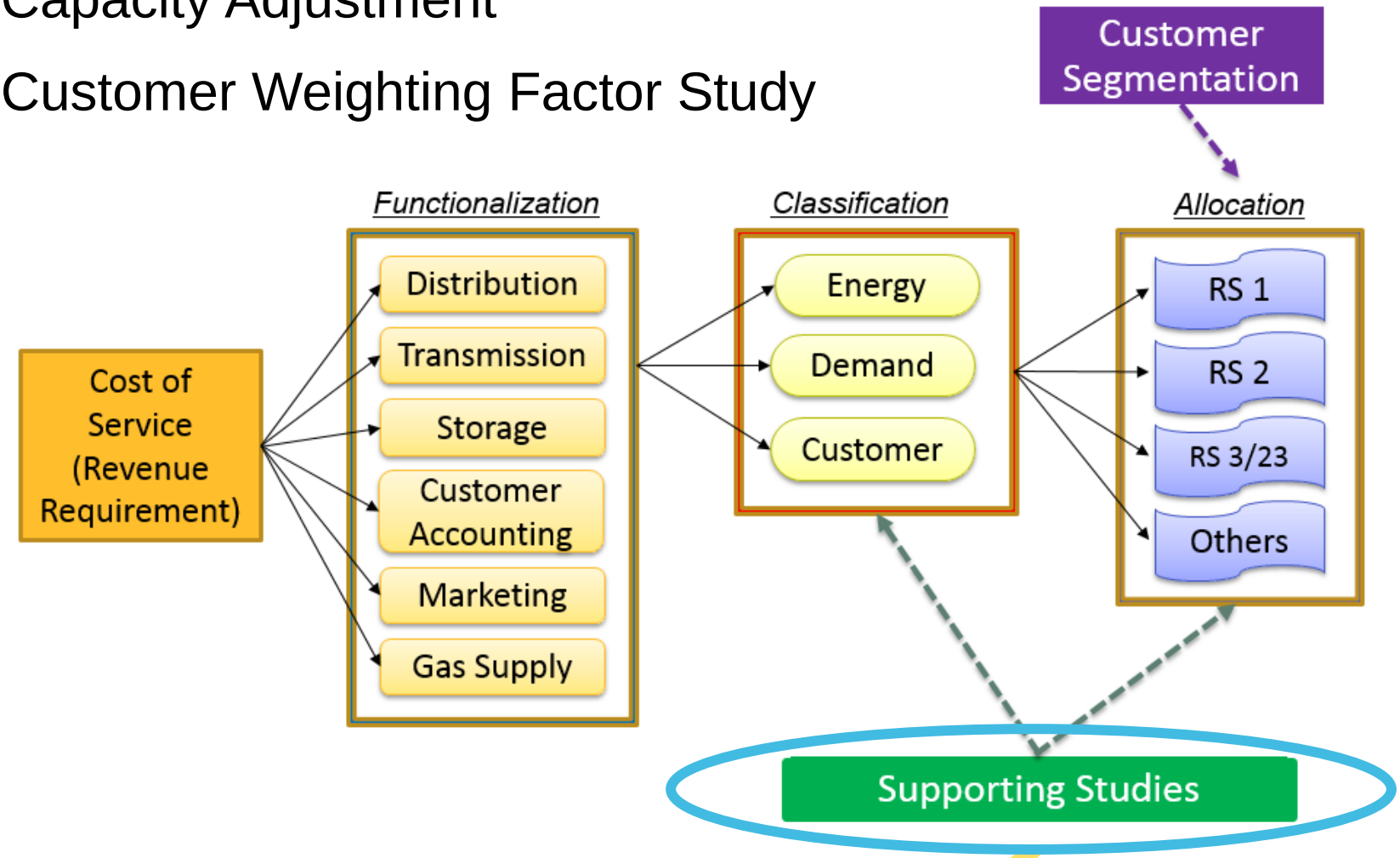
Tilbury Expansion Project

- Forecast to be completed in 2017
- Directly assigned Cost and Revenue to Rate Schedule 46 in COSA
- 10 year levelized net costs and revenues equal $7 million
- Net difference between costs and revenues allocated to all other customers

Reference: *Application, Section 6.3.2.3, Page 6-11*

Supporting Studies used in COSA

- Minimum System Study & Peak Load Carrying Capacity Adjustment
- Customer Weighting Factor Study



Minimum System Study

- 25,000 KM Distribution Mains Polyethylene (PE) and Steel
- Minimum Standard is 60 mm PE
- Value of Distribution Mains assuming 60 mm PE $1,419 million
- Value of Distribution Mains at Weighted Cost $4,686 million
- Minimum System equals $1,419/$4,686 = 30%
- 30% of Distribution Mains Costs classified as Customer related
- 70% as Demand Related

Reference: *Application, Appendix 6-5*

PLCC Adjustment

- Peak Load Carrying Capacity (PLCC)
- Recognizes that the minimum system (60 mm) still has a capacity component
- Calculate the GJ/Day per customer capacity that is included in 60 mm pipe
- Result equals 0.205 GJ/Day per Customer
- Used to reduce the Peak Day Demand when allocating costs of Distribution Plant Costs
- Example RS 1
  - 0.205 GJ/Day per Customer x 886,652 customers = 182 TJ/Day
  - RS 1 Peak Day Demand 636 TJ/Day
  - Peak Day Demand used to allocate Distribution Plant Demand related costs

    = 453 TJ/Day (636 – 182)

Reference: *Application, Appendix 6-5*

Customer Weighting Factor Study

Weighting Factor for Meters and Services

- Used to weight the number of customers in a rate schedule for allocation of Distribution Meters & Services costs
- Weighting is relative to RS 1

RS1	RS2	RS3	RS4	RS5	RS6	RS7	RS22 Firm	RS23	RS25	RS27
1.0	1.7	7.0	13.6	11.1	13.3	132.5	* 1400.7	10.3	17.6	46.2

* RS22 Firm factor is a blend of existing large industrial customers that would fall into RS22 Firm as discussed in Application Section 9.8.5.2

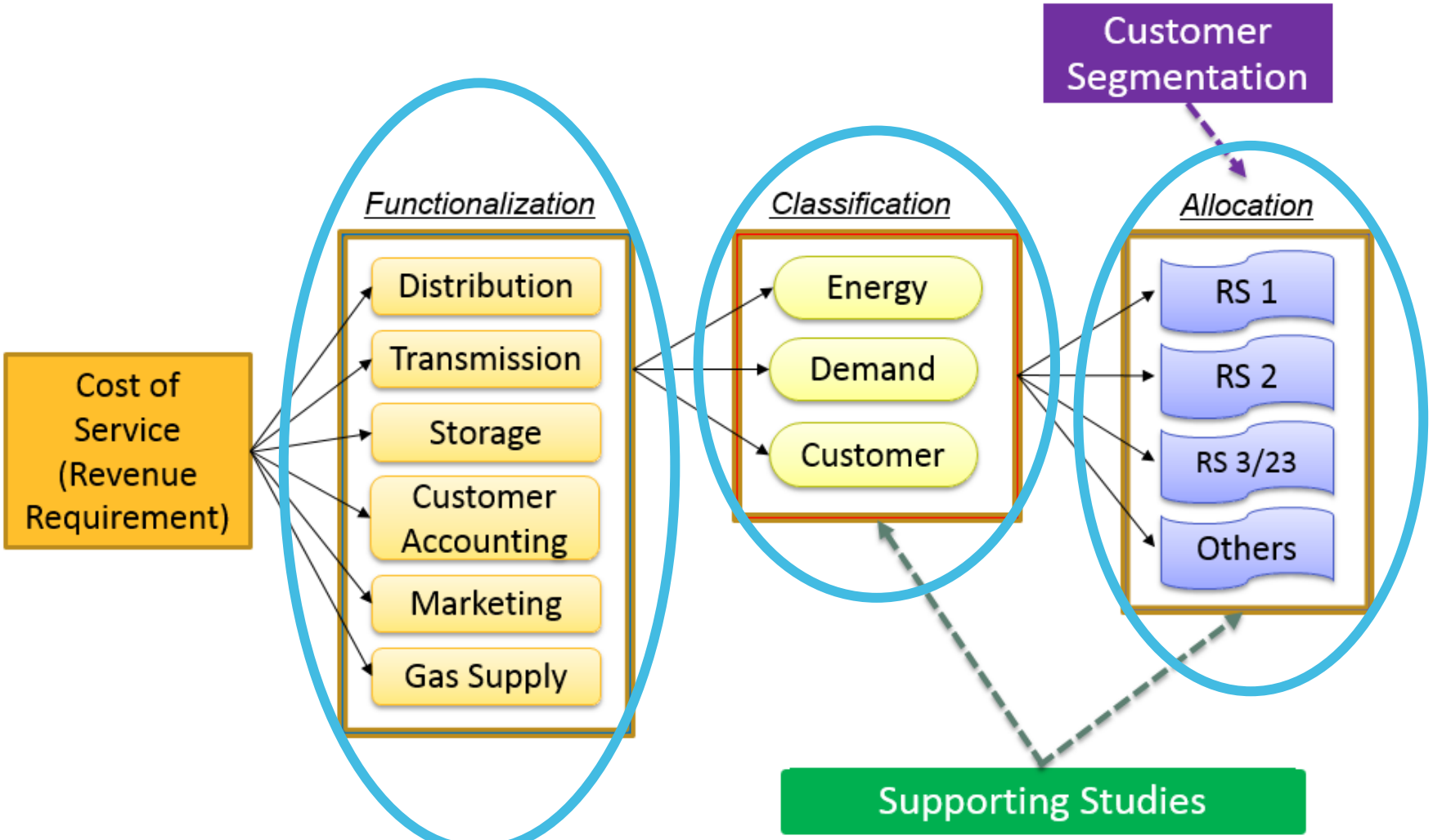
Weighting Factor for Administration and Billing

- Used to weight the number of customers in as rate schedule for allocation of Customer Service costs

RS 1	RS 2	RS 3	RS 4	RS 5	RS 6	RS 7	RS 22	RS 23	RS 25	RS 27
1.0	1.0	1.2	0.9	43.0	43.0	43.0	75.0	75.0	75.0	75.0

Reference: *Application, Appendix 6-8*

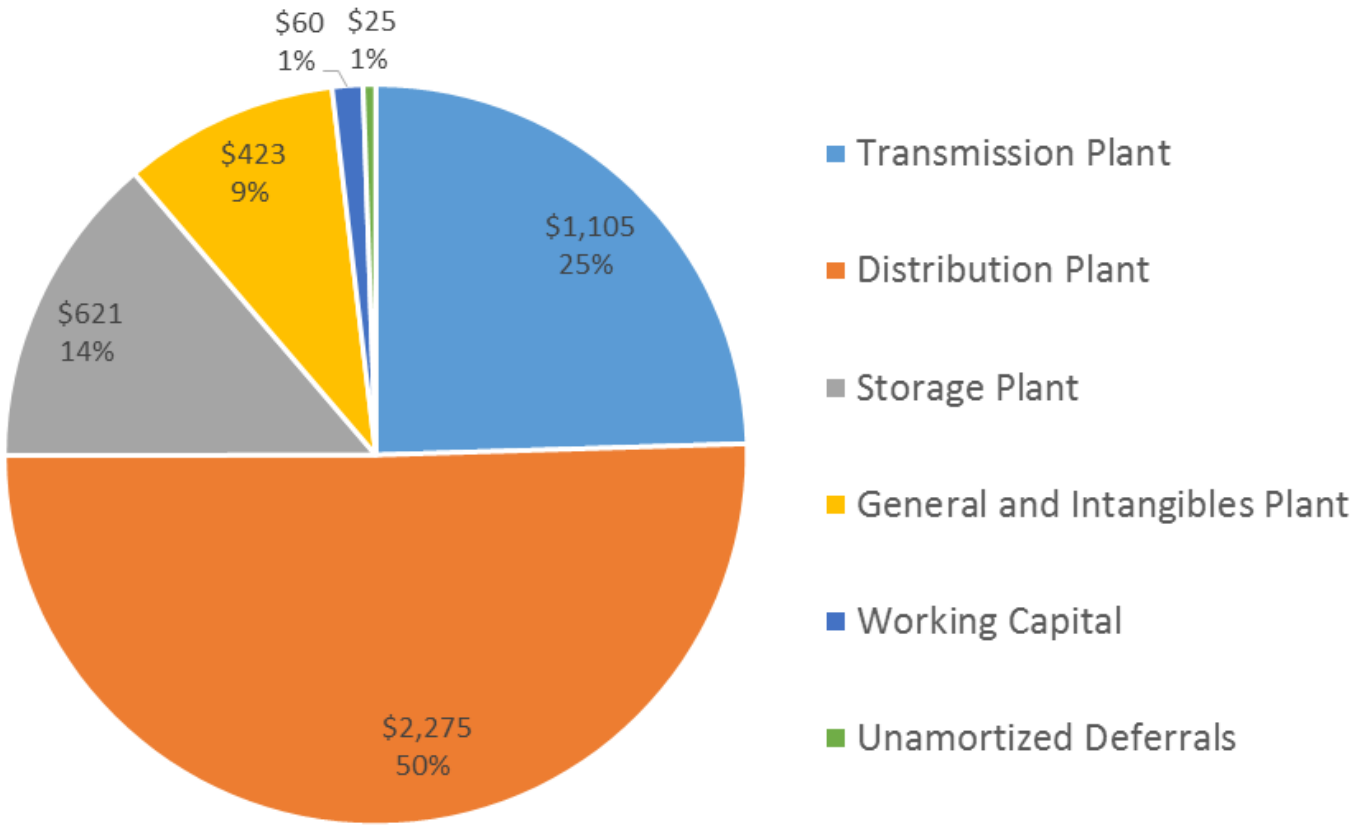
Functionalization, Classification & Allocation – Plant and Rate Base



Plant and Rate Base Allocation

- $4.5 billion in Rate Base to allocate
- Allocated Plant and Rate Base used to allocate Delivery Cost

Rate Base Categorized



Plant and Rate Base Allocation

- Following slides show the allocations of some Rate Base Items

The examples include:

- Distribution Mains
  - Application of Minimum System Study (MSS)
  - Application of Peak Load Carrying Capacity (PLCC)
- Distribution Service Lines and Meters
  - Application of Weighting Factor for Service Lines and Meters

- Summary

Plant and Rate Base Allocation

Account	Plant Description	Amount ($million)	Function	Classify	Allocate
475	Distribution Plant - Mains	**$ 1,123.4**	Distribution	70/30 - Demand/Customer from MSS	Demand - PLCC Adj Peak Day, Customer - Avg Customer

	Minimum System Study	Cost Allocation
Customer	30%	$ 340.1
Demand	70%	783.3
Total	100%	**$ 1,123.4**

Rate Schedule	Customers	Precentage	Customer Cost Allocation
RS 1	886,652	90.6%	$ 308.0
RS 2	84,737	8.7%	29.4
RS 3	5,040	0.5%	1.8
RS 4	18	0.0%	0.0
RS 5	230	0.0%	0.1
RS 6	15	0.0%	0.0
RS 7	5	0.0%	0.0
RS 22 Firm	7	0.0%	0.0
RS 23	1,669	0.2%	0.6
RS 25	566	0.1%	0.2
RS 27	108	0.0%	0.0
Total	**979,047**	**100.0%**	**$ 340.1**

Plant and Rate Base Allocation

Account	Plant Description	Amount ($million)	Function	Classify	Allocate
475	Distribution Plant - Mains	**$ 1,123.4**	Distribution	70/30 - Demand/Customer from MSS	Demand - PLCC Adj Peak Day, Customer - Avg Customer

	Minimum System Study	Cost Allocation
Customer	30%	$ 340.1
Demand	70%	783.3
Total	100%	**$ 1,123.4**

Rate Schedule	Peak Day Demand	PLCC	Peak Day Demand adjusted	Precentage	Demand Cost Allocation
RS 1	636	182	453	44.4%	$ 347.6
RS 2	247	17	230	22.5%	176.0
RS 3	134	1	133	13.0%	101.9
RS 4	-	-	-	0.0%	-
RS 5	13	0	13	1.3%	10.1
RS 6	0	0	0	0.0%	0.1
RS 7	-	-	-	0.0%	-
RS 22 Firm	60	0	60	5.9%	46.0
RS 23	67	0	66	6.5%	50.8
RS 25	67	0	66	6.5%	50.9
RS 27	-	-	-	0.0%	-
Total	**1,223**	**201**	**1,022**	**100.0%**	**$ 783.3**

Plant and Rate Base Allocation

Account	Plant Description	Amount ($million)	Function	Classify	Allocate
473/478	Distribution Plant - Service Lines & Meters	$ 962.7	Distribution	Customer	Avg Customer adj by CWF-Meters & Services

Rate Schedule	Customers	Weighting Factor for Svcs & Meters	Weighted Customers	Precentage	Cost Allocation
RS 1	886,652	1.0	886,652	79.6%	$ 766.0
RS 2	84,737	1.7	146,934	13.2%	126.9
RS 3	5,040	7.0	35,204	3.2%	30.4
RS 4	18	13.6	245	0.0%	0.2
RS 5	230	11.1	2,547	0.2%	2.2
RS 6	15	13.3	199	0.0%	0.2
RS 7	5	132.5	662	0.1%	0.6
RS 22 Firm	7	1,400.7	9,805	0.9%	8.5
RS 23	1,669	10.3	17,199	1.5%	14.9
RS 25	566	17.6	9,981	0.9%	8.6
RS 27	108	46.2	4,991	0.4%	4.3
Total	**979,047**		**1,114,420**	**100.0%**	**$ 962.7**

Summary of Plant and Rate Base Allocation

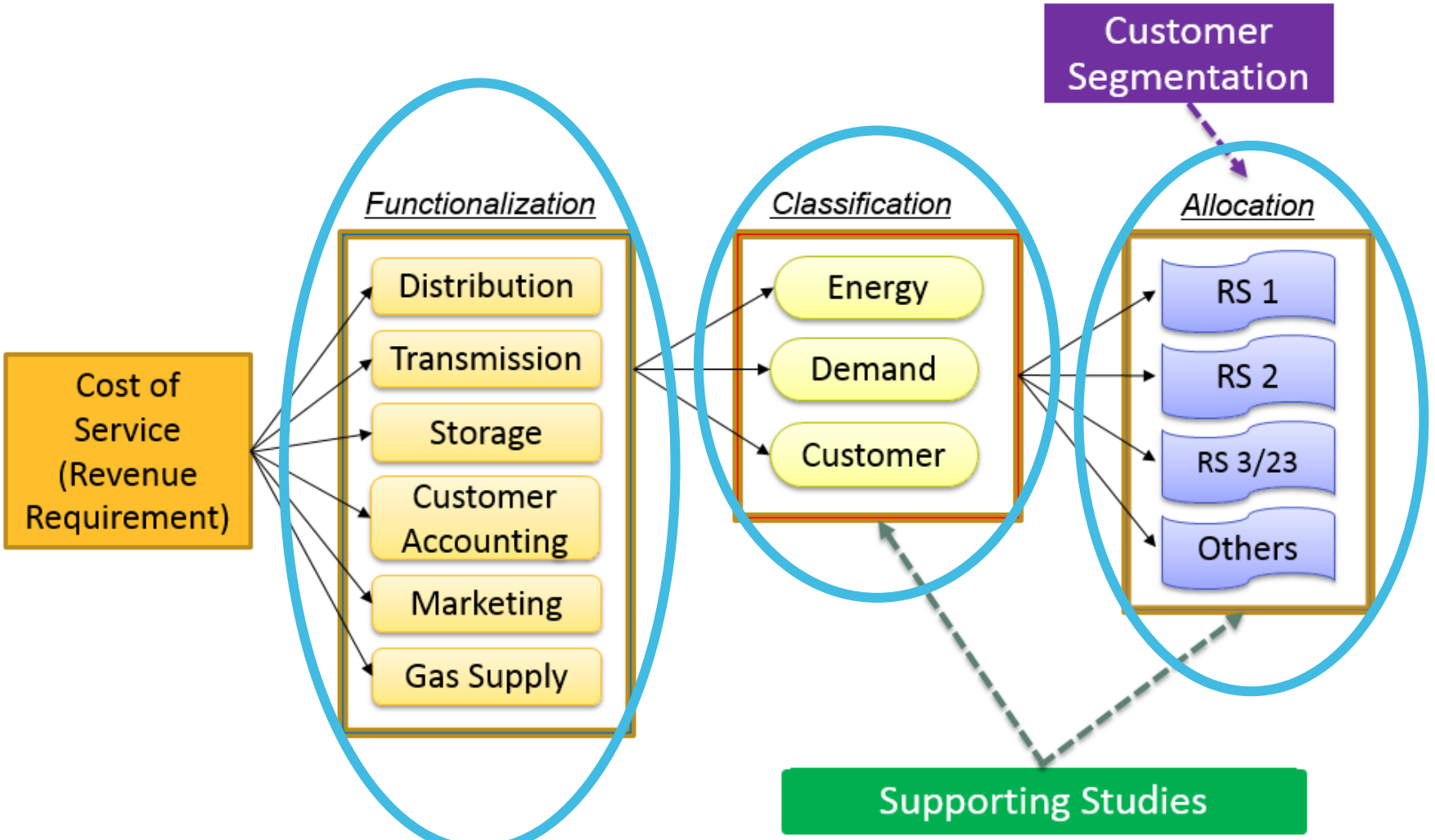
- Both Plant and Rate Base are used to allocate Delivery Costs

Rate Base & Plant Allocated

$ million

Rate Schedule	Net Plant	Rate Base
RS 1	$ 2,603	$ 2,505
RS 2	738	714
RS 3	343	336
RS 4	0	0
RS 5	33	31
RS 6	1	1
RS 7	1	1
RS 22A	41	40
RS 22 Firm	144	137
RS 22B	16	15
RS 23	173	172
RS 25	162	155
RS 27	5	5
RS 46	406	399
Total	**$ 4,666**	**$ 4,509**

Functionalization, Classification & Allocation – Delivery Costs



Delivery Cost Allocation

- $790 million of Delivery Costs to be allocated
- Depreciation expense embedded in the delivery cost of service follows the same allocation as Plant

- Next Slides
  - Summary of key allocators
  - Details of the allocations

- Summary of Delivery Cost Allocation

Summary of Key Allocators

	Peak Day Demand	Dist RB Classified as Customer	Avg Customer adj by CWF-Admin & Billing	Dist RB Classified as Demand	Gross Plant before General & Intangible classifed as Demand	Avg Customer adj by CWF-Services/Meters
Costs ($million)	$ 193.3	$ 121.3	$ 92.4	$ 75.6	$ 51.0	$ 34.0
RS 1	50.3%	82.4%	76.1%	44.8%	48.0%	79.6%
RS 2	19.5%	11.9%	7.3%	22.3%	20.7%	13.2%
RS 3	10.6%	2.4%	0.5%	12.8%	11.6%	3.2%
RS 4	-	0.0%	0.0%	-	-	0.0%
RS 5	1.0%	0.2%	0.8%	1.3%	1.1%	0.2%
RS 6	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%
RS 7	-	0.0%	0.0%	-	-	0.1%
RS 22A	2.4%	0.3%	0.1%	0.2%	1.4%	-
RS 22 Firm	4.7%	0.6%	0.0%	5.8%	5.1%	0.9%
RS 22B	0.9%	0.1%	0.0%	0.1%	0.5%	-
RS 23	5.3%	1.2%	10.7%	6.4%	5.8%	1.5%
RS 25	5.3%	0.6%	3.6%	6.4%	5.8%	0.9%
RS 27	-	0.3%	0.7%	-	-	0.4%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

- Above allocators are used to allocate total of $568 million of Delivery Costs
- Total Delivery Costs allocated in COSA model equal $790 million

Delivery Cost Allocation

Peak Day Demand

- Most costs from Transmission and Distribution

Amount ($million)	Classifier	Allocator
$ 193.3	Demand	Peak Day Demand

	Peak Day Demand	Precentage	Cost Allocation
RS 1	635.5	50.3%	$ 97.2
RS 2	247.0	19.5%	37.8
RS 3	134.0	10.6%	20.5
RS 5	13.2	1.0%	2.0
RS 6	0.1	0.0%	0.0
RS 22A	29.7	2.4%	4.5
RS 22 Firm	60.0	4.7%	9.2
RS 22B	11.5	0.9%	1.8
RS 23	66.6	5.3%	10.2
RS 25	66.6	5.3%	10.2
Total	**1,264.2**	**100.0%**	**$ 193.3**

Delivery Cost Allocation

Distribution Rate Base - Customer

- Distribution related costs

Amount ($million)	Classifier	Allocator
$ 121.3	Customer	Dist RB Classified as Customer

	Distn RB Classifed as Customer	Precentage	Cost Allocation
RS 1	$ 1,220	82.4%	$ 99.9
RS 2	176	11.9%	14.4
RS 3	36	2.4%	2.9
RS 4	0	0.0%	0.0
RS 5	3	0.2%	0.2
RS 6	0	0.0%	0.0
RS 7	1	0.0%	0.0
RS 22A	4	0.3%	0.3
RS 22 Firm	9	0.6%	0.8
RS 22B	1	0.1%	0.1
RS 23	17	1.2%	1.4
RS 25	9	0.6%	0.7
RS 27	4	0.3%	0.4
Total	**$ 1,480**	**100.0%**	**$ 121.3**

Delivery Cost Allocation

Average Customer Adjusted for Customer Weighting factor - Admin & Billing

- Most costs from Customer Accounting

Amount ($million)	Classifier	Allocator
$ 92.4	Customer	Avg Customer adj by CWF-Admin & Billing

	Customers	Weighting Factor for Admin & Billing	Weighted Customers	Precentage	Cost Allocation
RS 1	886,652	1.0	886,652	76.1%	$ 70.3
RS 2	84,737	1.0	84,737	7.3%	6.7
RS 3	5,040	1.2	6,048	0.5%	0.5
RS 4	18	0.9	15	0.0%	0.0
RS 5	230	43.0	9,890	0.8%	0.8
RS 6	15	43.0	645	0.1%	0.1
RS 7	5	43.0	215	0.0%	0.0
RS 22A	9	75.0	675	0.1%	0.1
RS 22 Firm	7	75.0	525	0.0%	0.0
RS 22B	5	75.0	375	0.0%	0.0
RS 23	1,669	75.0	125,175	10.7%	9.9
RS 25	566	75.0	42,450	3.6%	3.4
RS 27	108	75.0	8,100	0.7%	0.6
Total	**979,061**		**1,165,502**	**100.0%**	**$ 92.4**

Delivery Cost Allocation

Distribution Rate Base – Demand

- Distribution related costs

Amount ($million)	Classifier	Allocator
$ 75.6	Demand	Dist RB Classified as Demand

	Distn RB Classifed as Demand	Precentage	Cost Allocation
RS 1	$ 452	44.8%	$ 33.9
RS 2	225	22.3%	16.8
RS 3	130	12.8%	9.7
RS 4	-	-	-
RS 5	13	1.3%	1.0
RS 6	0	0.0%	0.0
RS 7	-	-	-
RS 22A	2	0.2%	0.1
RS 22 Firm	58	5.8%	4.4
RS 22B	1	0.1%	0.0
RS 23	65	6.4%	4.8
RS 25	65	6.4%	4.8
RS 27	-	-	-
Total	**$ 1,010**	**100.0%**	**$ 75.6**

Delivery Cost Allocation

Gross Plant before General & Intangible - Demand

- Distribution related costs

Amount ($million)	Classifier	Allocator
$ 51.0	Demand	Gross Plant before General & Intangible classifed as Demand

	Gross Plant	Precentage	Cost Allocation
RS 1	$ 1,601	48.0%	$ 24.5
RS 2	691	20.7%	10.6
RS 3	385	11.6%	5.9
RS 4	-	-	-
RS 5	38	1.1%	0.6
RS 6	0	0.0%	0.0
RS 7	-	-	-
RS 22A	46	1.4%	0.7
RS 22 Firm	170	5.1%	2.6
RS 22B	18	0.5%	0.3
RS 23	192	5.8%	2.9
RS 25	192	5.8%	2.9
RS 27	-	-	-
Total	**$ 3,333**	**100.0%**	**$ 51.0**

Delivery Cost Allocation

Average Customers – Weighted for Service Lines/Meters

- Distribution related costs

Amount ($million)	Classifier	Allocator
$ 34.0	Customer	Avg Customer adj by CWF-Services/Meters

	Customers	Weighting Factor for Services & Meters	Weighted Customers	Precentage	Cost Allocation
RS 1	886,652	1.0	886,652	79.6%	$ 27.1
RS 2	84,737	1.7	146,934	13.2%	4.5
RS 3	5,040	7.0	35,204	3.2%	1.1
RS 4	18	13.6	245	0.0%	0.0
RS 5	230	11.1	2,547	0.2%	0.1
RS 6	15	13.3	199	0.0%	0.0
RS 7	5	132.5	662	0.1%	0.0
RS 22 Firm	7	1,400.7	9,805	0.9%	0.3
RS 23	1,669	10.3	17,199	1.5%	0.5
RS 25	566	17.6	9,981	0.9%	0.3
RS 27	108	46.2	4,991	0.4%	0.2
Total	**979,047**		**1,114,420**	**100.0%**	**$ 34.0**

Summary of Delivery Cost Allocation

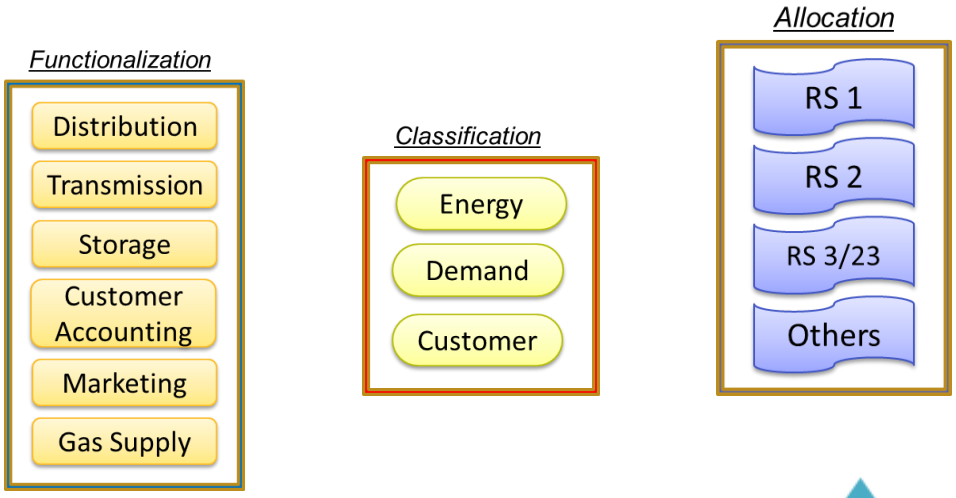
- Allocation summary by Classification

$ million

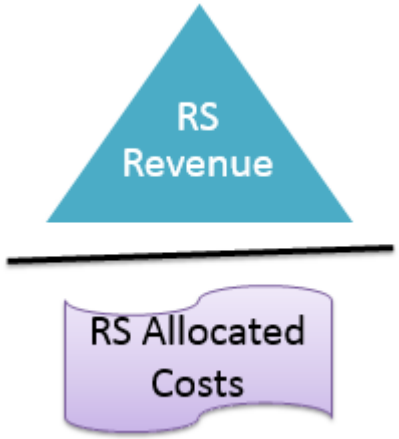
Rate Schedule	Energy	Demand	Customer	Total
RS 1	$ 7	$ 192	$ 306	$ 504
RS 2	2	83	41	127
RS 3	2	47	8	56
RS 4	0	(0)	0	0
RS 5	0	5	1	6
RS 6	0	0	0	0
RS 7	0	-	0	0
RS 22A	0	5	1	7
RS 22 Firm	0	19	2	21
RS 22B	0	2	0	3
RS 23	1	23	13	37
RS 25	0	23	5	28
RS 27	0	-	1	1
Total	**$ 12**	**$ 400**	**$ 378**	**$ 790**

Summary of COSA Results

- Summary of Allocations



- Resulting Revenue to Cost Ratios and Margin to Cost ratios before proposals and rebalancing



Function, Classify, Allocate Summary
(Delivery Cost of Service)

Function	$ million	Percentage of Total
Gas Supply	2.0	0.3%
Storage	43.8	5.6%
Transmission	179.0	22.7%
Distribution	462.9	58.6%
Marketing	50.1	6.3%
Customer Accou	52.1	6.6%
Total	**790.0**	**100.0%**

Classification	$ million	Percentage of Total
Energy	11.8	1.5%
Demand	399.7	50.6%
Customer	378.5	47.9%
Total	**790.0**	**100.0%**

Allocation	$ million	Percentage of Total
RS 1	504.5	63.9%
RS 2	126.7	16.0%
RS 3	55.6	7.0%
RS 4	0.1	0.0%
RS 5	5.9	0.7%
RS 6	0.1	0.0%
RS 7	0.1	0.0%
RS 22A	6.6	0.8%
RS 22 Firm	21.4	2.7%
RS 22B	2.5	0.3%
RS 23	36.9	4.7%
RS 25	28.1	3.6%
RS 27	1.4	0.2%
Total	**790.0**	**100.0%**

Revenue to Cost Ratio before proposals

Rate Schedule	R:C	M:C
Rate Schedule 1 *Residential Service*	95.6%	93.1%
Rate Schedule 2 *Small Commercial Service*	101.3%	102.5%
Rate Schedule 3/23 *Large Commercial Sales and Transportation Service*	101.6%	103.3%
Rate Schedule 5/25 *General Firm Sales and Transportation Service*	104.9%	112.2%
Rate Schedule 6 *Natural Gas Vehicle Service*	131.2%	159.1%
Rate Schedule 22A *Transportation Service (Closed) Inland Service Area*	109.5%	109.8%
Rate Schedule 22B *Transportation Service (Closed) Columbia Service Area*	99.7%	99.7%

Rate Schedule	R:C	M:C
Rate Schedule 4 *Seasonal Firm Gas Service*	147.4%	550.9%
Rate Schedule 7/27 *General Interruptible Sales and Transportation Service*	139.6%	712.3%
Rate Schedule 22 *Large Volume Transportation Service*	1425.5%	1864.4%

Reference: *Application, Section 6.5.2, Page 6-35 & 6-36*

FORT NELSON COST OF SERVICE ALLOCATION (COSA)

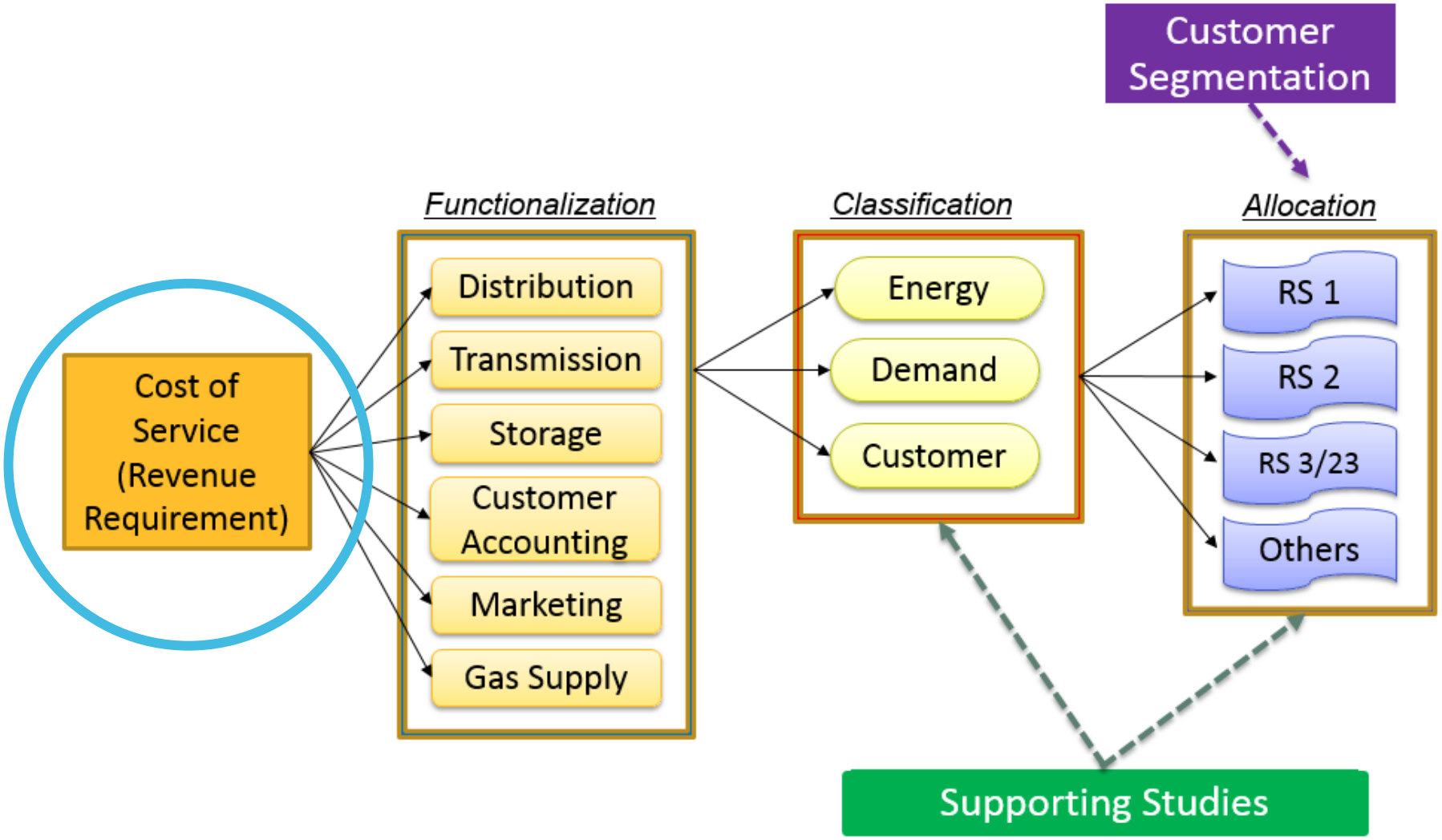
COSA Model: Cost Assumptions

Test Year: 2018 costs from 2017/2018 Revenue Requirement

Delivery Costs

- Based on the 2018 forecast delivery costs approved in the 2017/2018 Revenue Requirement Application

Adjustments to Test Year



Adjustments to Test Year

- One RS 25 customer has moved to Rate 2.1
- Zero volume forecast for this customer
- Change in revenue from move based on difference in basic (minimum) charges

Table 13-6: Adjustment to 2018 Test Year from Movement of RS 25 Customer

	RS 25	Rate 2.1	Total
Revenue ($000)	-$24.3	+$0.5	-$23.8
Customers	-1	+1	0

- Load Factor used for RS 25 set at 40%
- RS 25 designed for customers with load factors >= 40%
- Allows allocation of costs based on the intended use of RS 25

Reference: *Application, Sections 13.4.1.3 and 13.4.1.4*

Adjustments - Operating and Maintenance Costs

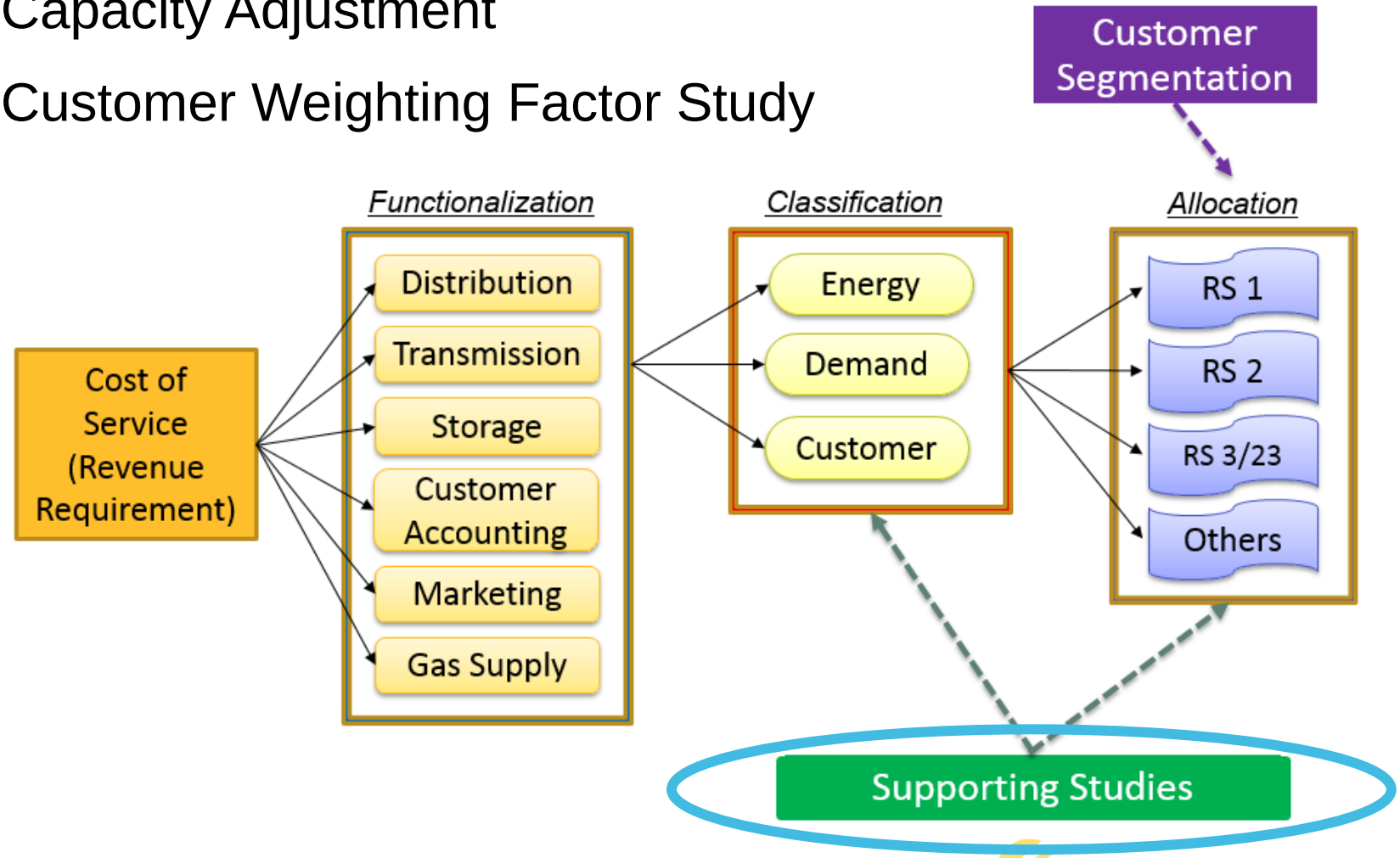
- FEFN revenue requirement has a single line item (Shared Services) that represents all O&M costs allocated from FEI except Distribution O&M, which is directly forecast
- In the COSA Shared Services ($532 thousand) line item split into parts based on FEI O&M percentages

Category	Total ($thousands)
Transmission	61.5
Meter Reading	30.8
Energy Supply and Resource Development	12.3
General Operations	107.6
Energy Solutions and External Relations	68.3
Customer Care	78.9
Business and IT Services	77.2
Administration and General	95.4
Total	**532.0**

Reference: *Application, Appendix 13-3*

Supporting Studies used in COSA

- Minimum System Study & Peak Load Carrying Capacity Adjustment
- Customer Weighting Factor Study



Minimum System Study

- 116 KM Distribution Mains Polyethylene (PE) and Steel
- Minimum Standard is 60 mm PE
- Value of Distribution Mains assuming 60 mm PE $5.3 million
- Value of Distribution Mains at Weighted Cost $11.6 million
- Minimum System equals $5.3/$11.6 = 46%
- 46% of Distribution Mains Costs classified as Customer related
- 54% as Demand Related
- PLCC used is equal to FEI's

Reference: *Application, Appendix 13-1*

Customer Weighting Factor Study

Weighting Factor for Meters and Services

- Used to weight the number of customers in a rate schedule for allocation of Distribution Meters & Services costs
- Weighting is relative to RS 1

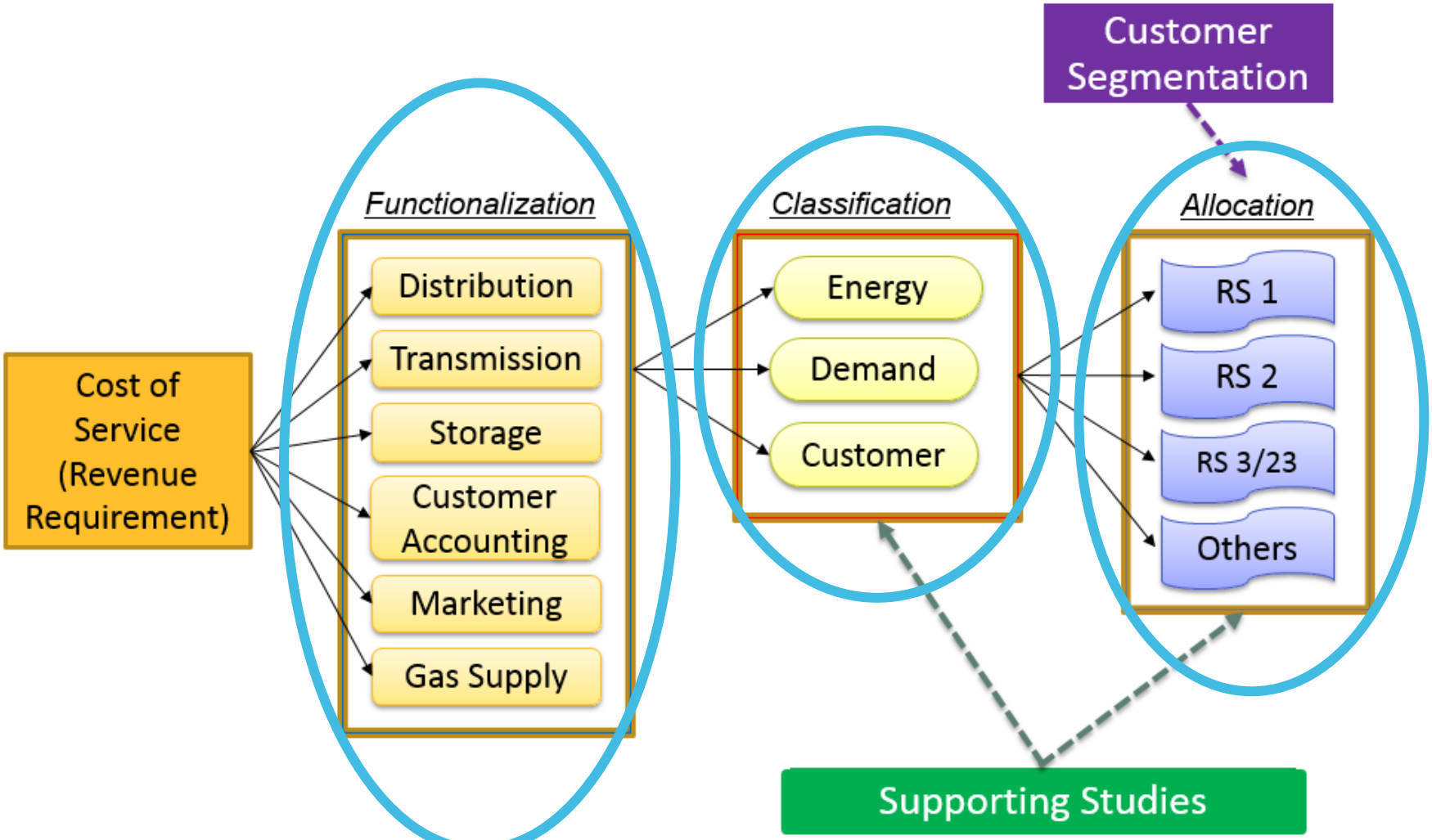
Rate 1	Rate 2.1	Rate 2.2	RS 25
1.0	1.6	5.7	191.5

Weighting Factor for Administration and Billing

- Used to weight the number of customers in as rate schedule for allocation of Customer Service costs

Rate 1	Rate 2.1	Rate 2.2	RS 25
1.0	1.0	1.2	75.0

Functionalization, Classification & Allocation – Plant and Rate Base

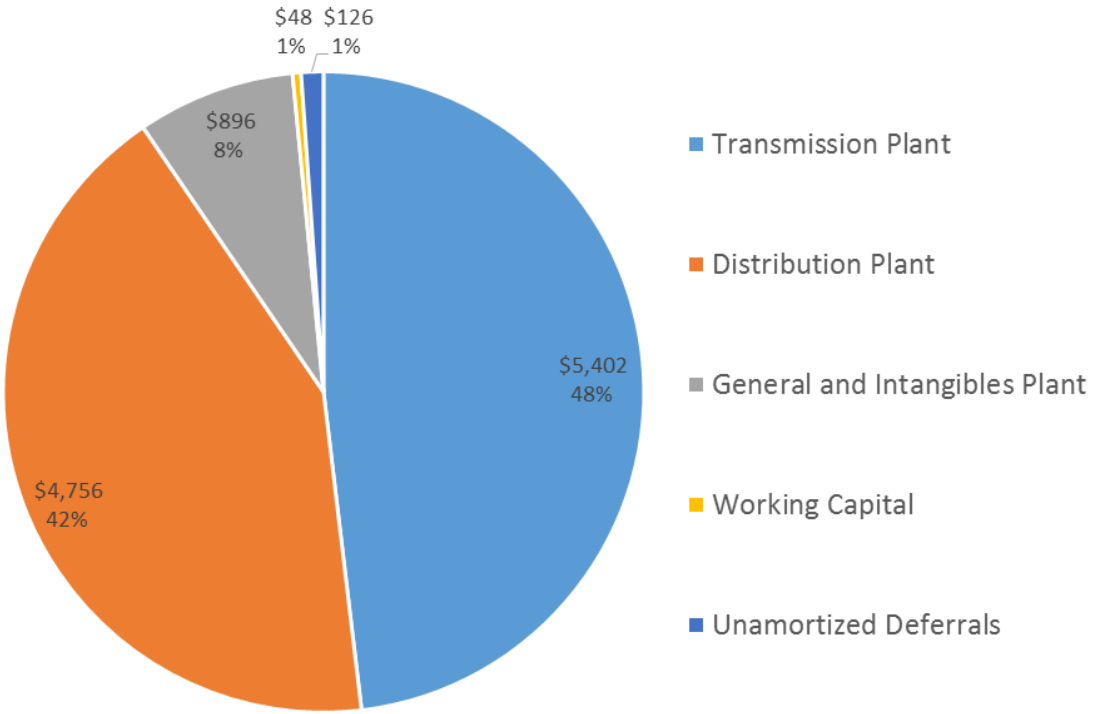


Summary of Plant and Rate Base Allocation

- $11.2 million Rate Base to allocate (No Storage costs in Fort Nelson)
- Allocation methods are very similar to FEI

Summary of Plant and Rate Base allocations

Rate Base Categorized



Rate Base & Plant Allocated

$000

Rate Schedule	Net Plant	Rate Base
Rate 1	$ 6,192	$ 5,967
Rate 2.1	3,684	3,580
Rate 2.2	1,107	1,089
RS 25	618	591
Total	**$ 11,601**	**$ 11,228**

Delivery Cost Allocation

- $2,489 thousand Delivery Costs to be allocated
- Depreciation expense embedded in the delivery cost of service follows the same allocation as Plant

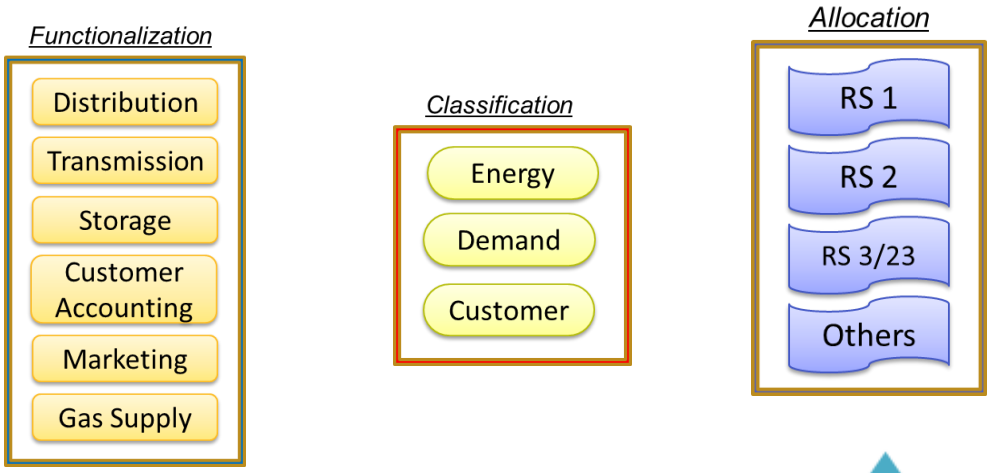
- Summary of Delivery Cost Allocation

$000

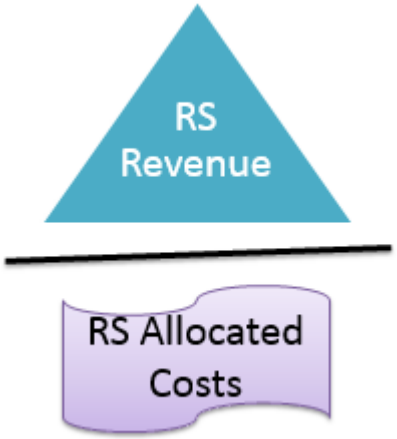
Rate	Energy	Demand	Customer	Total
Rate 1	10	625	776	$ 1,411
Rate 2.1	6	497	240	743
Rate 2.2	3	179	20	201
RS 25	0	62	71	133
Total	**$ 19**	**$ 1,363**	**$ 1,107**	**$ 2,489**

Summary of COSA Results

- Summary of Allocations



- Resulting Revenue to Cost Ratios and Margin to Cost ratios before proposals and rebalancing



Function, Classify, Allocate Summary
(Delivery Cost of Service)

Function	$000	Percentage of Total
Gas Supply	8	0.3%
Transmission	831	33.4%
Distribution	1,491	59.9%
Marketing	94	3.8%
Customer Accounting	65	2.6%
Total	**2,489**	**100.0%**

Classification	$000	Percentage of Total
Energy	19	0.8%
Demand	1,363	54.8%
Customer	1,107	44.5%
Total	**2,489**	**100.0%**

Allocation	$000	Percentage of Total
Rate 1	1,411	56.7%
Rate 2.1	743	29.9%
Rate 2.2	201	8.1%
RS 25	133	5.4%
Total	**2,489**	**100.0%**

Revenue to Cost Ratio before proposals

Rate	R:C	M:C
Rate 1 Domestic (Residential) Service	81.9%	77.5%
Rate 2.1 General (Small Commercial) Service	119.9%	126.4%
Rate 2.2 General (Large Commercial) Service	142.3%	164.5%
Rate Schedule 25 General Firm Transportation Service	112.1%	112.1%

Reference: *Application, Section 13.4.3, Page 13-20*

Rate Design Proposals

PART II

FORTIS BC™

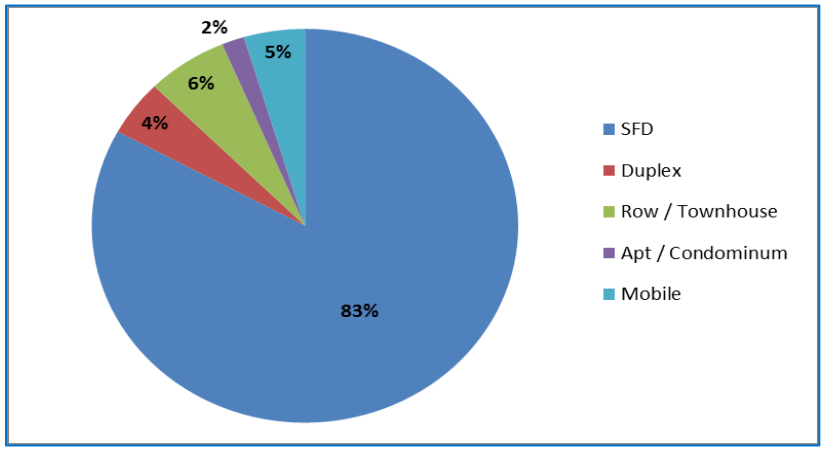
Residential Rate Design

Residential Customer Characteristics

Rate Schedule 1: *single family residences, separately metered single family townhouses, row houses and apartments*

	Amount	Percentage of FEI Total
Average Number of Customers	886,652	91%
Annual Consumption (PJ)	72.5	35%
Revenue ($000s)	730,278	59%

Customer Mix



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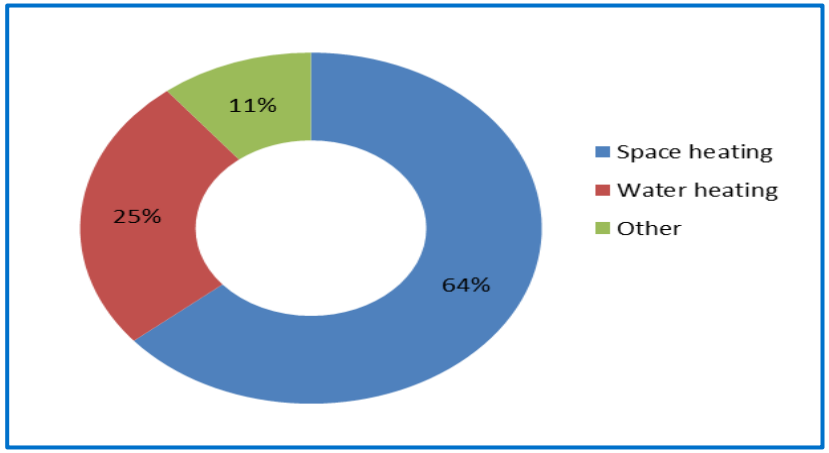
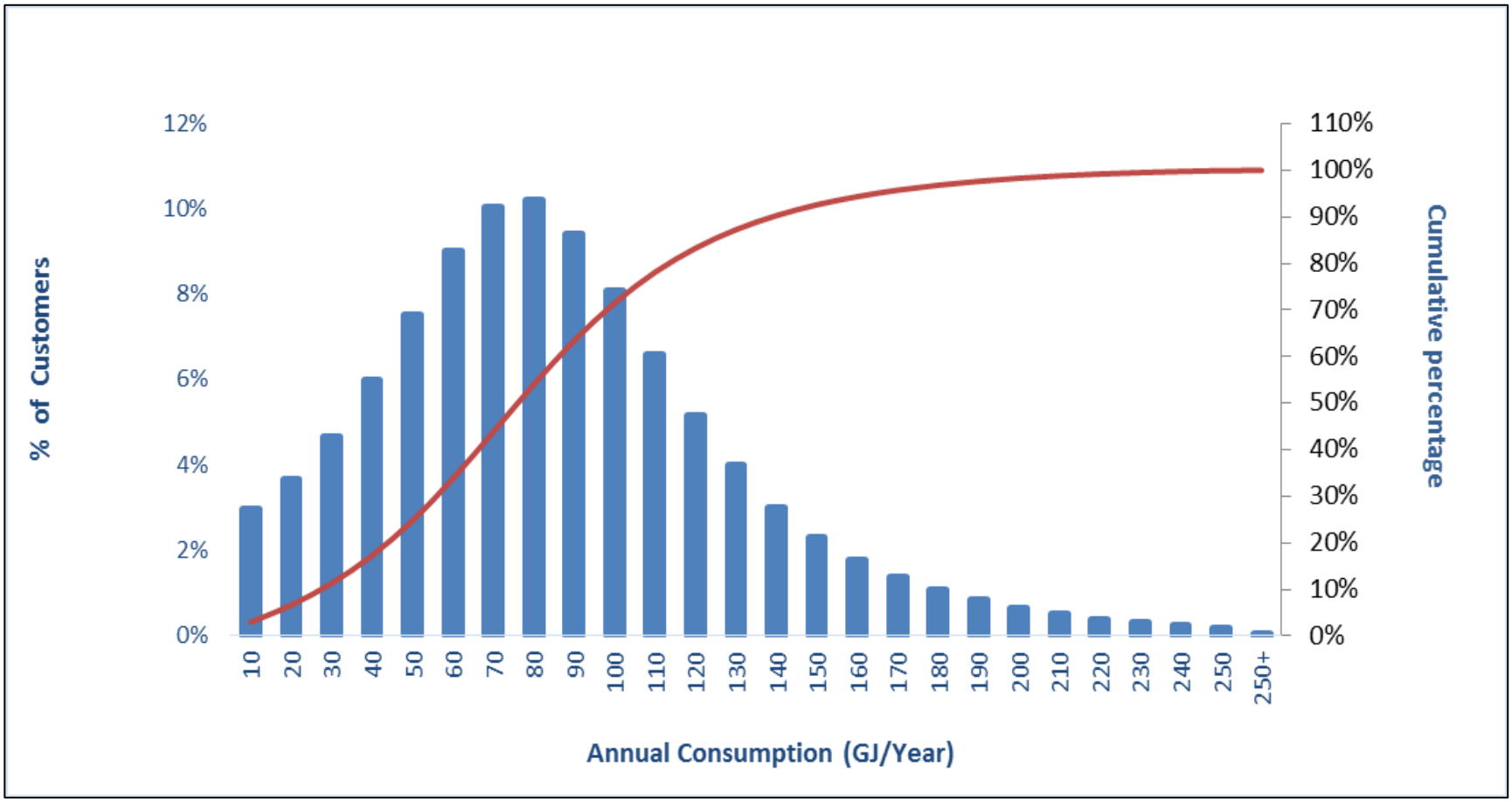


Reference: *Application, Section 7.2, Pages 1-3*

Residential Customer Characteristics

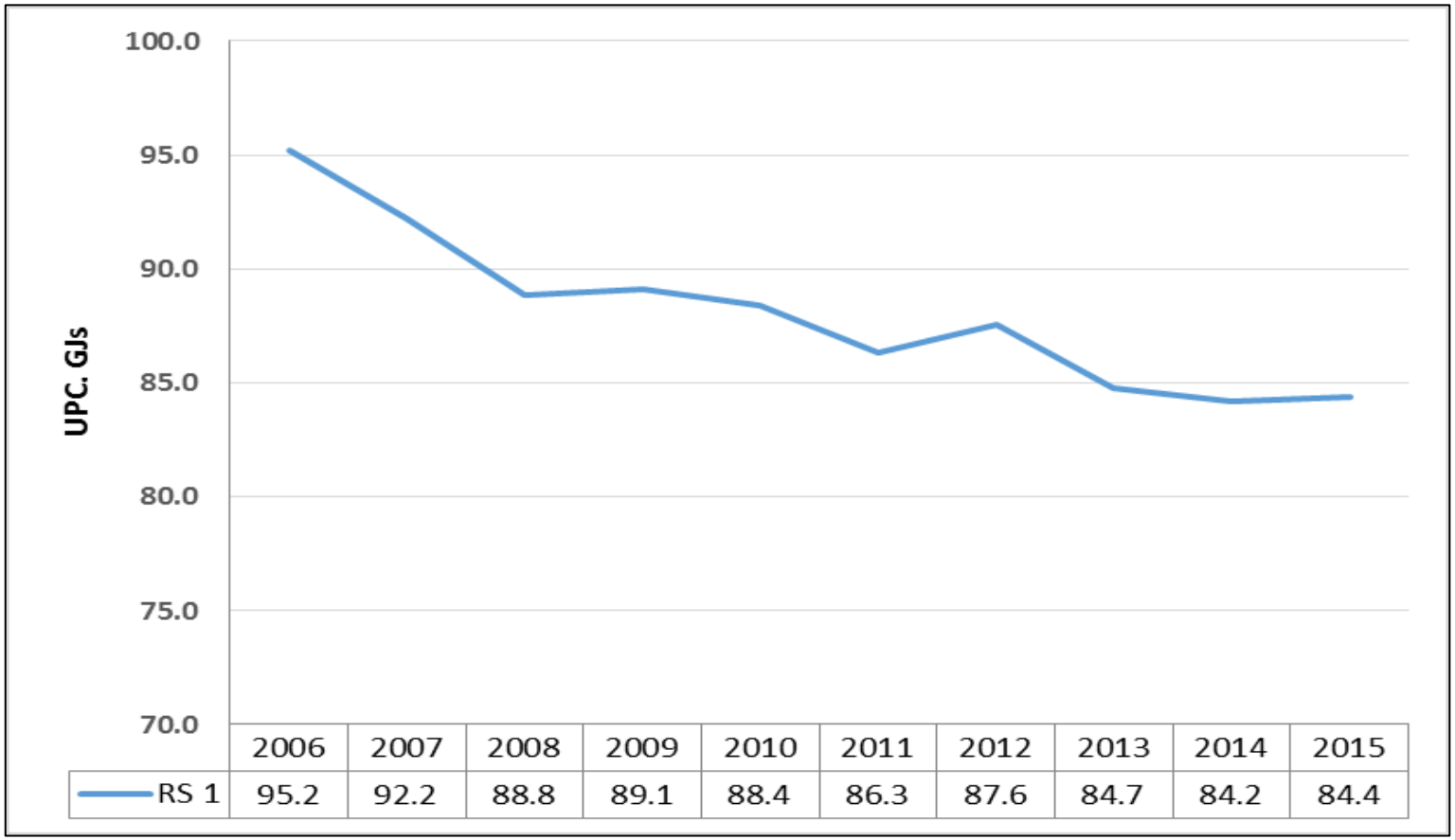
2015 Residential Normalized Consumption Distribution



Reference: *Application, Section 7.2, Page 6*

Residential Customer Characteristics

FEI's Historical Residential Normalized Use Per Customer (UPC)



	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
RS 1	95.2	92.2	88.8	89.1	88.4	86.3	87.6	84.7	84.2	84.4

Reference: *Application, Section 7.2, Page 7*

Customer Research Survey

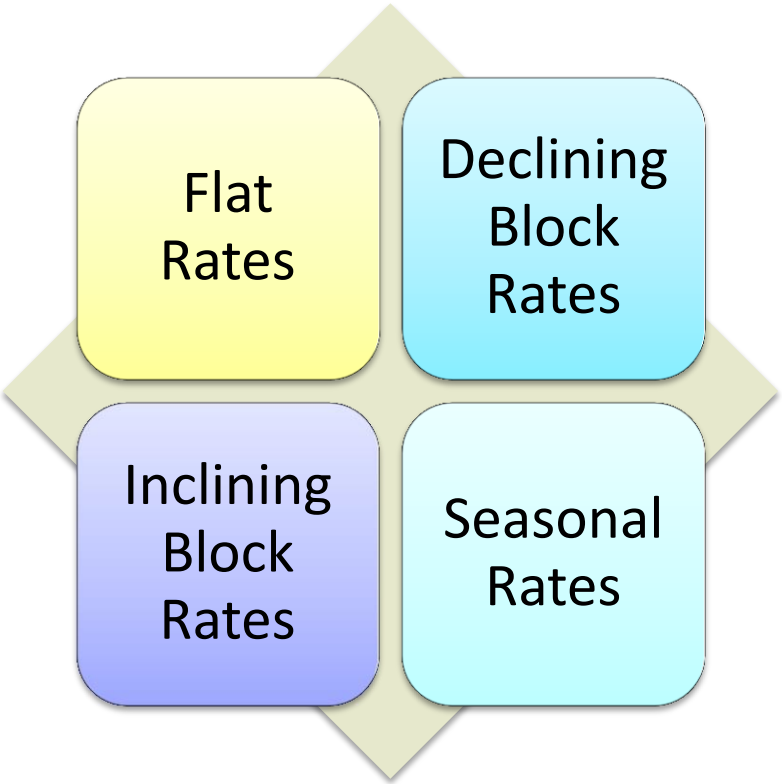
Survey Topic	Summary of Survey Results
Understanding of current rates and bill components	FEI customers are fairly familiar with their respective current rates and bill components.
Preferences regarding rate design considerations	FEI customers consider that ease of understanding is a critical rate design principle. Other rate design considerations were rated to be less important than ease of understanding, but all were rated approximately at the same level.
Assessment of rate structures	A flat rate is considered by FEI customers to be the easiest to understand and lead to more stable monthly bills. The respondents gave slightly higher scores to inclining block rates for promoting efficiency. The flat rate also received the highest score for economic fairness.

Detailed version of survey scope, methodology and results can be found in Appendix 4-5.

Reference: *Application, Section 7.4.4, Pages 14-16*

Flat Rate Structure is the Preferred Rate Structure

- Ease of understanding and administration
- Relatively neutral option for economic efficiency and economic fairness
- Better rate stability and resulting impact on customers' bills
- Used by majority of Canadian natural gas utilities



FEI believes that its existing flat rate structure provides the best balance of rate design considerations for residential customers and proposes to maintain the current flat rate structure

Reference: *Application, Sections 7.4.2 & 7.4.3, Pages 10-13*

Residential Fixed Costs and Fixed Charge Recoveries

Type of Cost	Unit Cost Based on COSA Results	Current Average Monthly Basic Charge	Difference
Customer-related cost	$27.10 per month		
Demand-related cost	$17.04 per month		
Total fixed costs	$44.14 per month	$11.84 per month	$32.30 per month

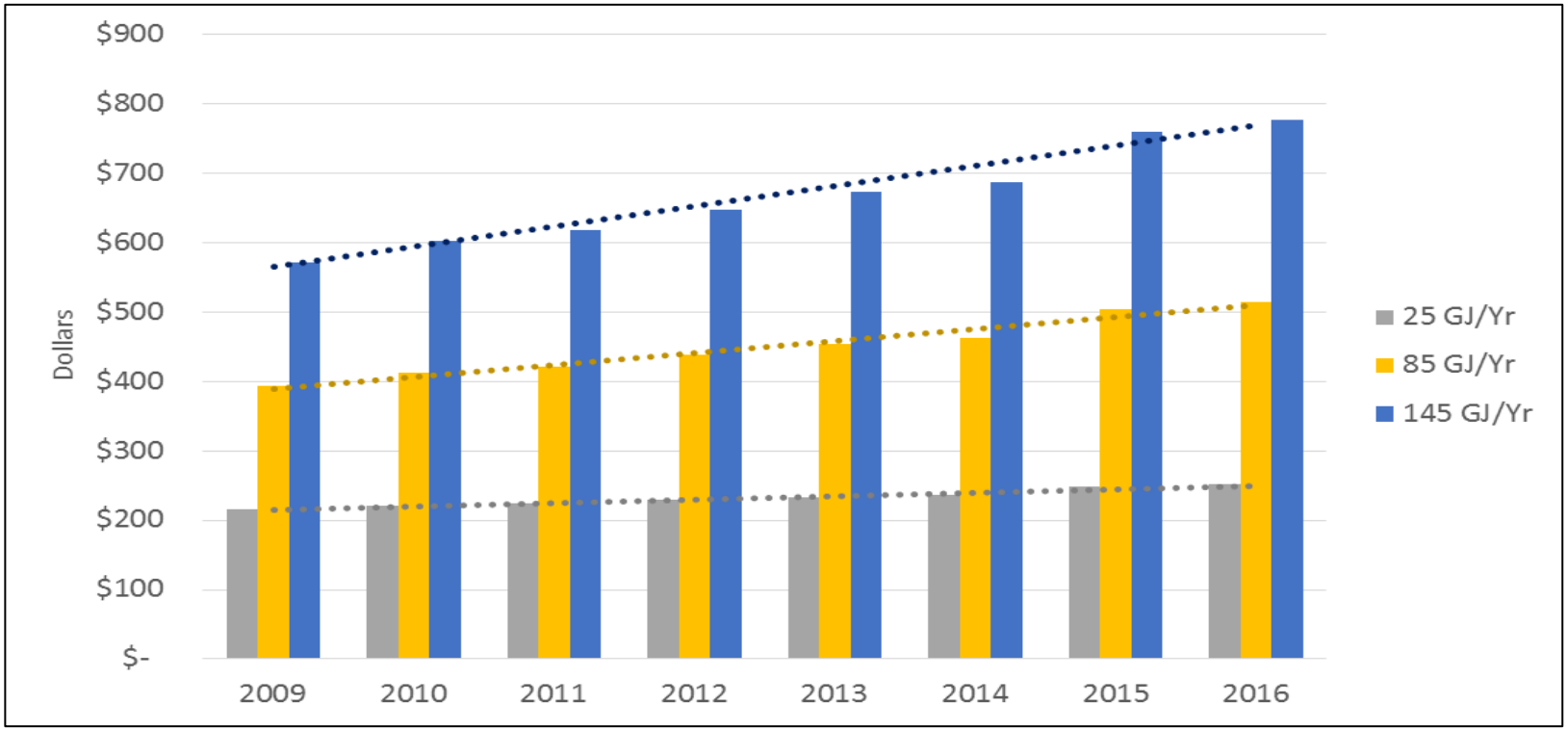
Current Basic Charge recovers about 44% of the customer-related costs allocated to the residential rate schedule

As approved starting in 2010, and in alignment with energy conservation policies, the Basic charge has been fixed at 2009 levels.

Reference: *Application, Section 7.5.1, Pages 16-17*

Impact of Holding the Basic Charge Flat Differs Depending on UPC

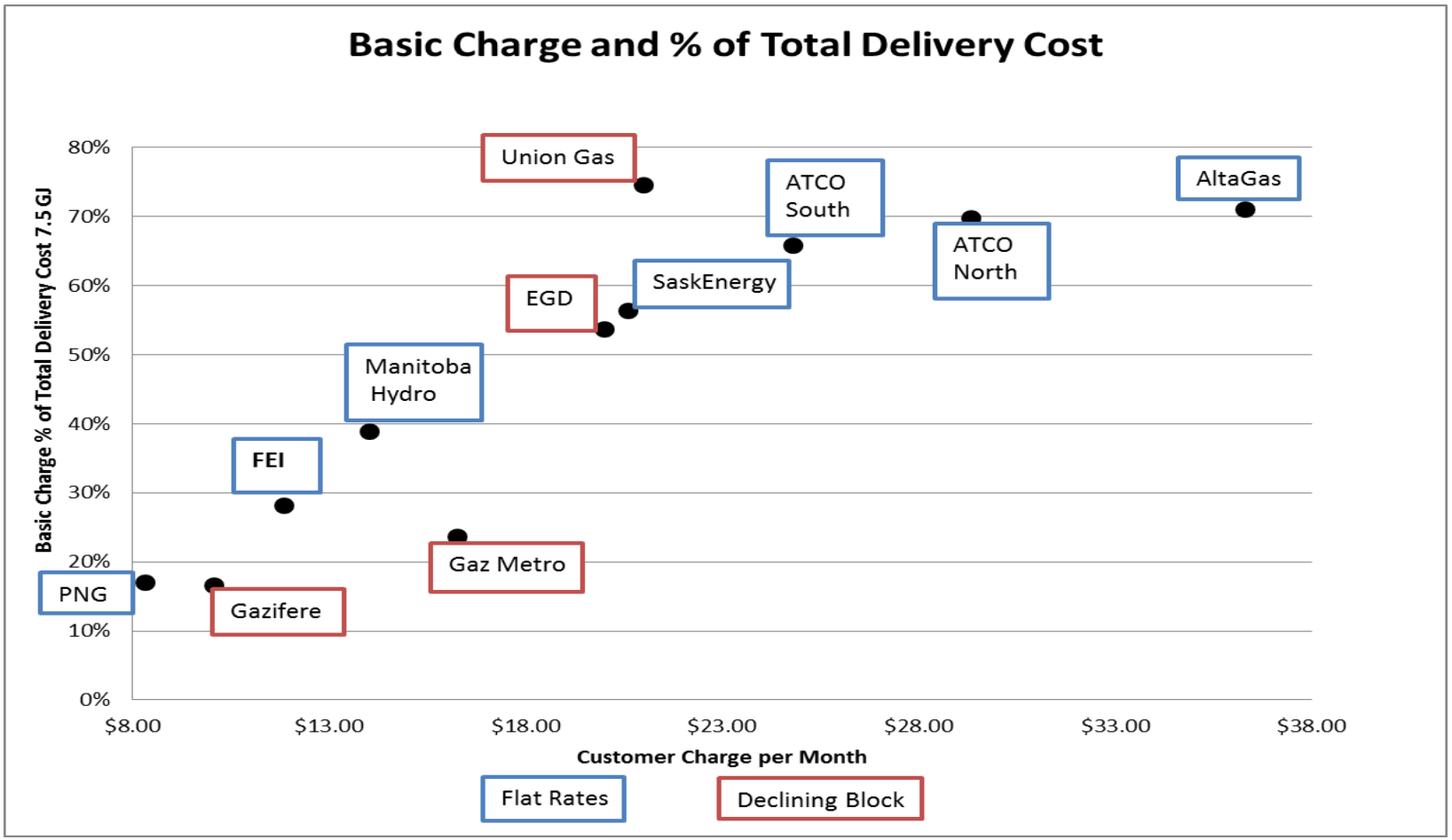
Impact of Delivery Rate Increases on Delivery Portion of Annual Bill



Based on rate design Principle 2 (fair apportionment of costs among customers), an increase in cost recovery through the Basic Charge is desirable.

Reference: *Application, Section 7.5.1, Pages 17-18*

Jurisdictional Comparison



The Jurisdictional comparison suggests that an increase to the residential Basic Charge would not be inconsistent with fixed cost recovery in other jurisdictions (detailed rates can be found in Appendix 7-2).

Reference: *Application, Section 7.6, Pages 19-21*

Other Basic Charge Considerations

Government energy conservation policies

- A high Basic Charge would discourage customers' engagement in energy saving initiatives

Rate stability and bill impact

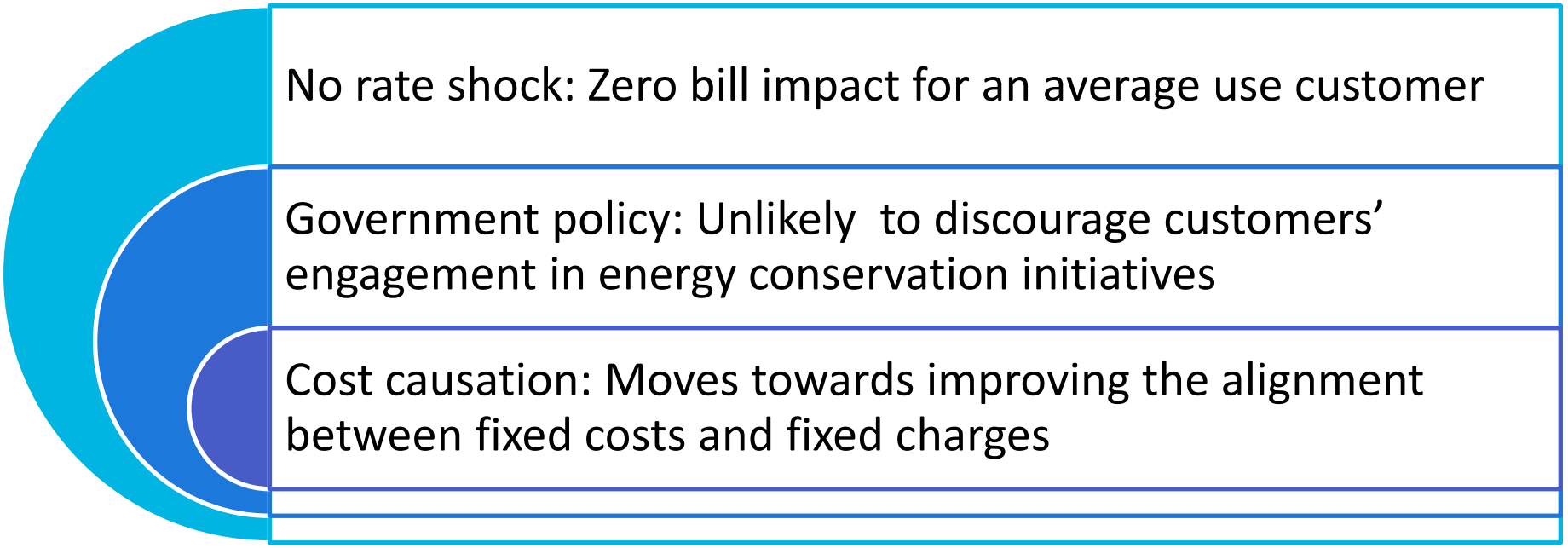
- Rate design proposals should consider the bill impact to customers and should avoid rate shock to customers

Feedback received from stakeholders

Reference: *Application, Sections 7.5.2 & 7.5.3, Pages 18-19*

FEI's Proposal for Fixed and Volumetric Charges

A one-time 5% increase in the Basic Charge and an offsetting decrease in the volumetric Delivery Charge achieve a reasonable balance among competing rate design considerations



Reference: *Application, Section 7.8, Pages 22-25*

Summary of Residential Rate Design Proposals

FEI is proposing a residential rate design that:

- Maintains the current flat rate structure with a fixed Basic Charge and a flat volumetric Delivery Charge
- Improves the alignment between the fixed costs allocated and the fixed charges recovered by a one-time 5% increase to the Basic Charge and an offsetting decrease in the volumetric Delivery Charge

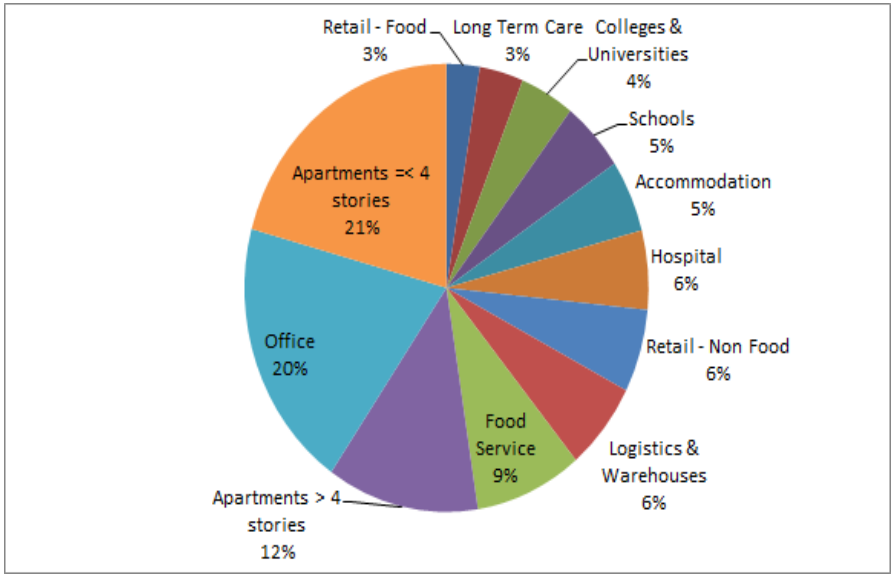
Reference: *Application, Section 7.8, Pages 22-25*

Commercial Rate Design

Commercial Customer Characteristics

	Avg. # of Customers	% of FEI Total	Annual Demand (PJ)	% of FEI Total
RS 2 – Small Commercial	84,737	8.6%	28	13.5%
RS 3 – Large Commercial Sales	5,040	0.5%	18	8.7%
RS 23 – Large Commercial Transportation	1,669	0.2%	9	4.3%
Total Commercial	91,446	9.3%	55	26.5%

Customer Mix



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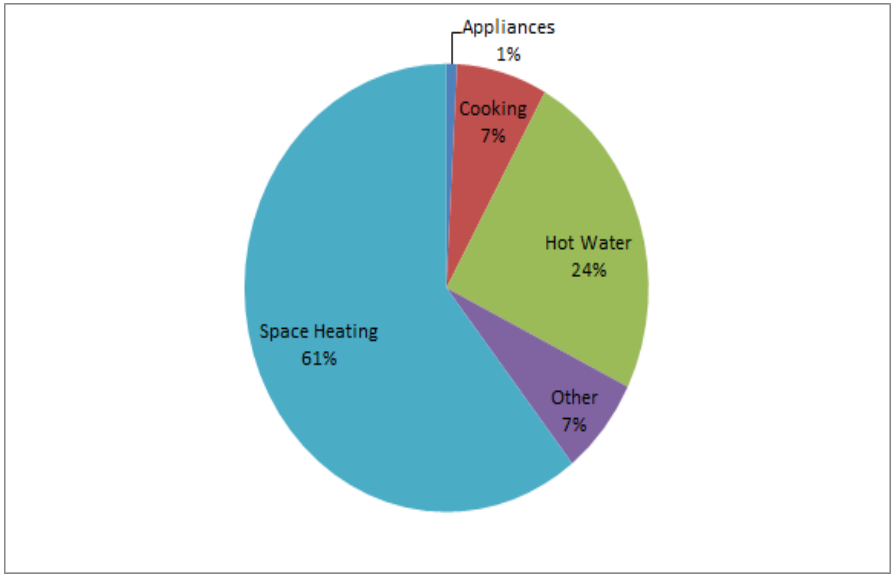
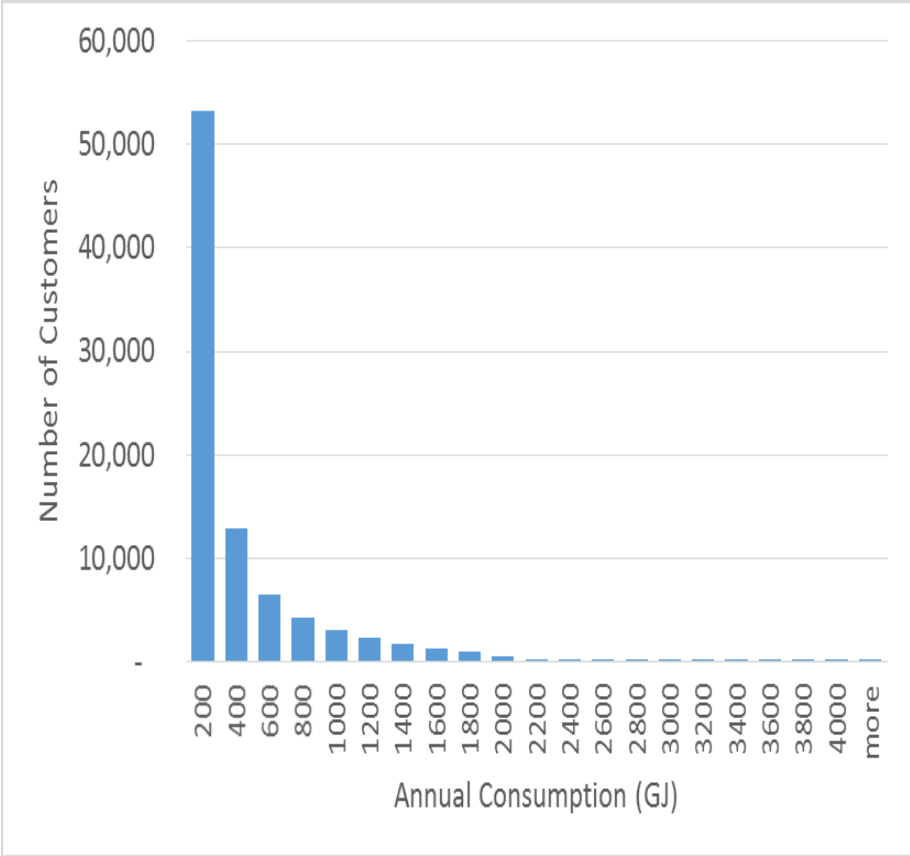


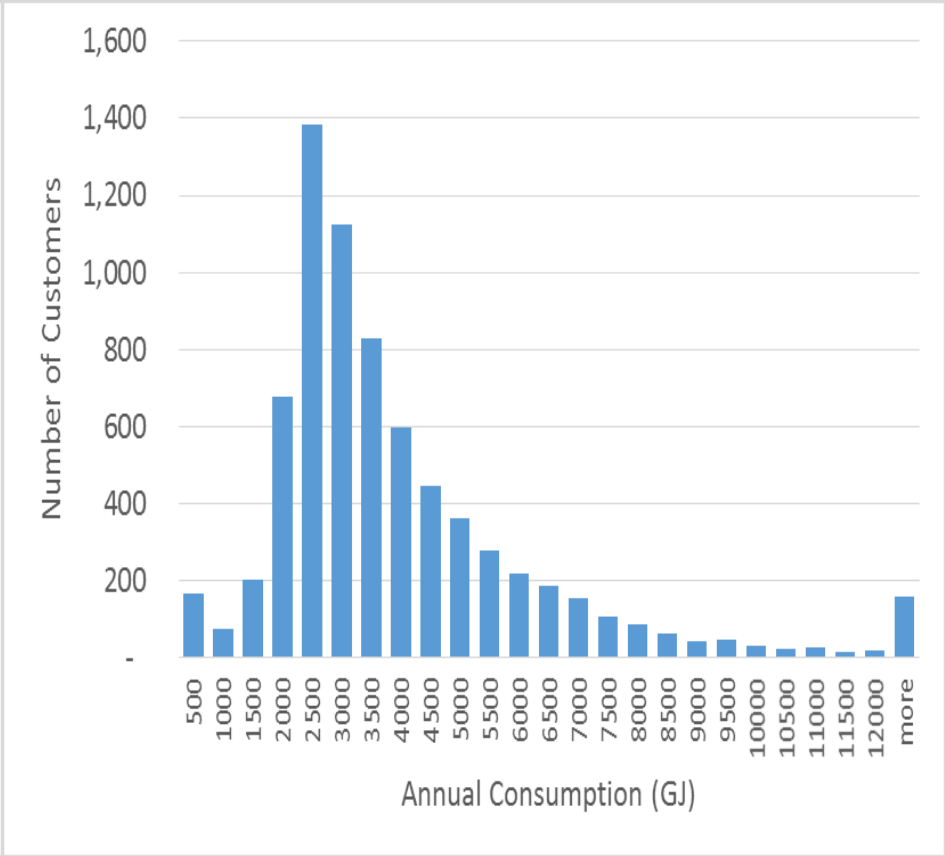
Reference: *Application, Section 8.2*

Review of Existing Customer Segmentation

Customer Bill Frequency of Small & Large Commercial Customers



Small Commercial

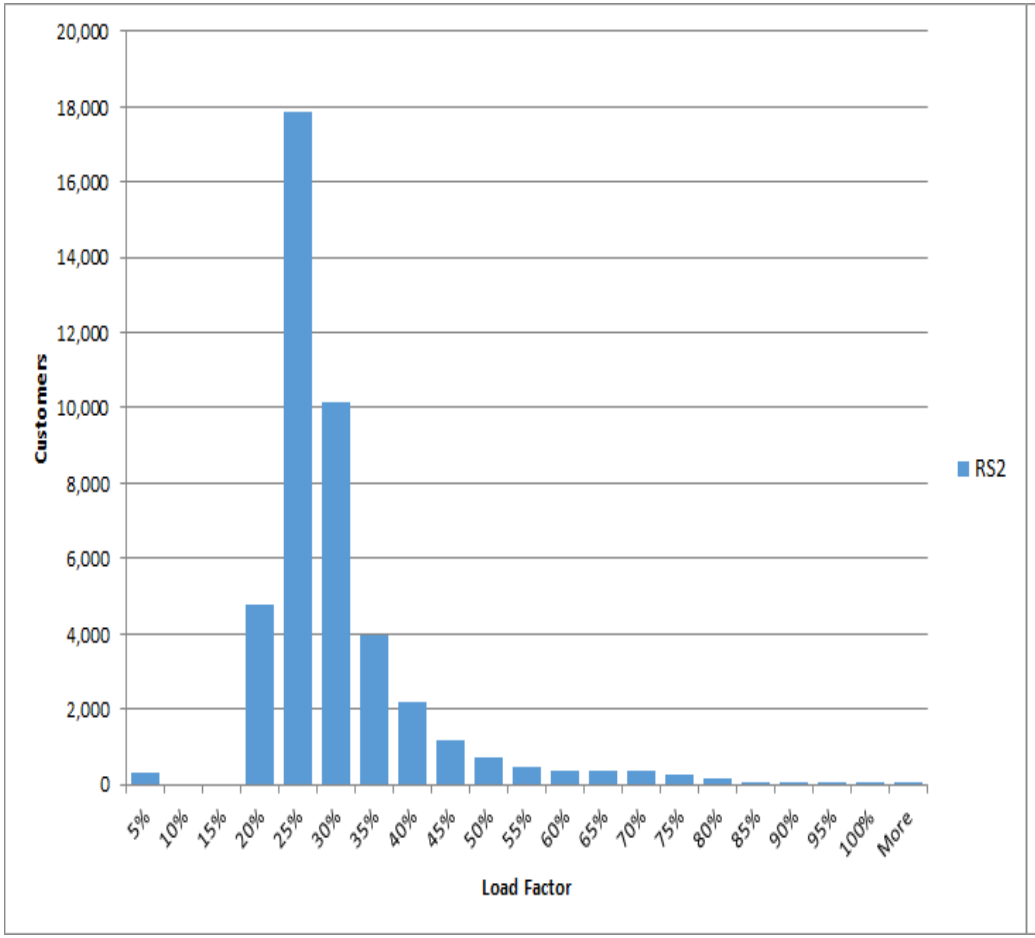


Large Commercial

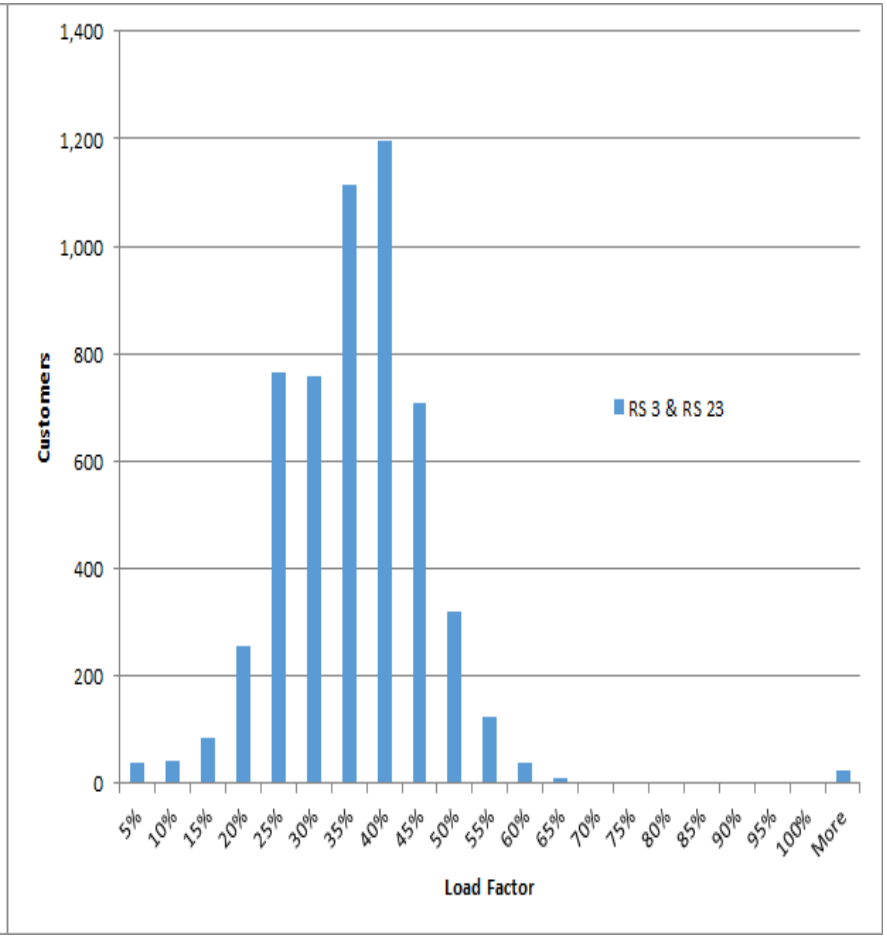
Reference: *Application, Section 8.3.2.1*

Review of Existing Customer Segmentation

Load Factor Distribution of Small & Large Commercial Customers



Small Commercial

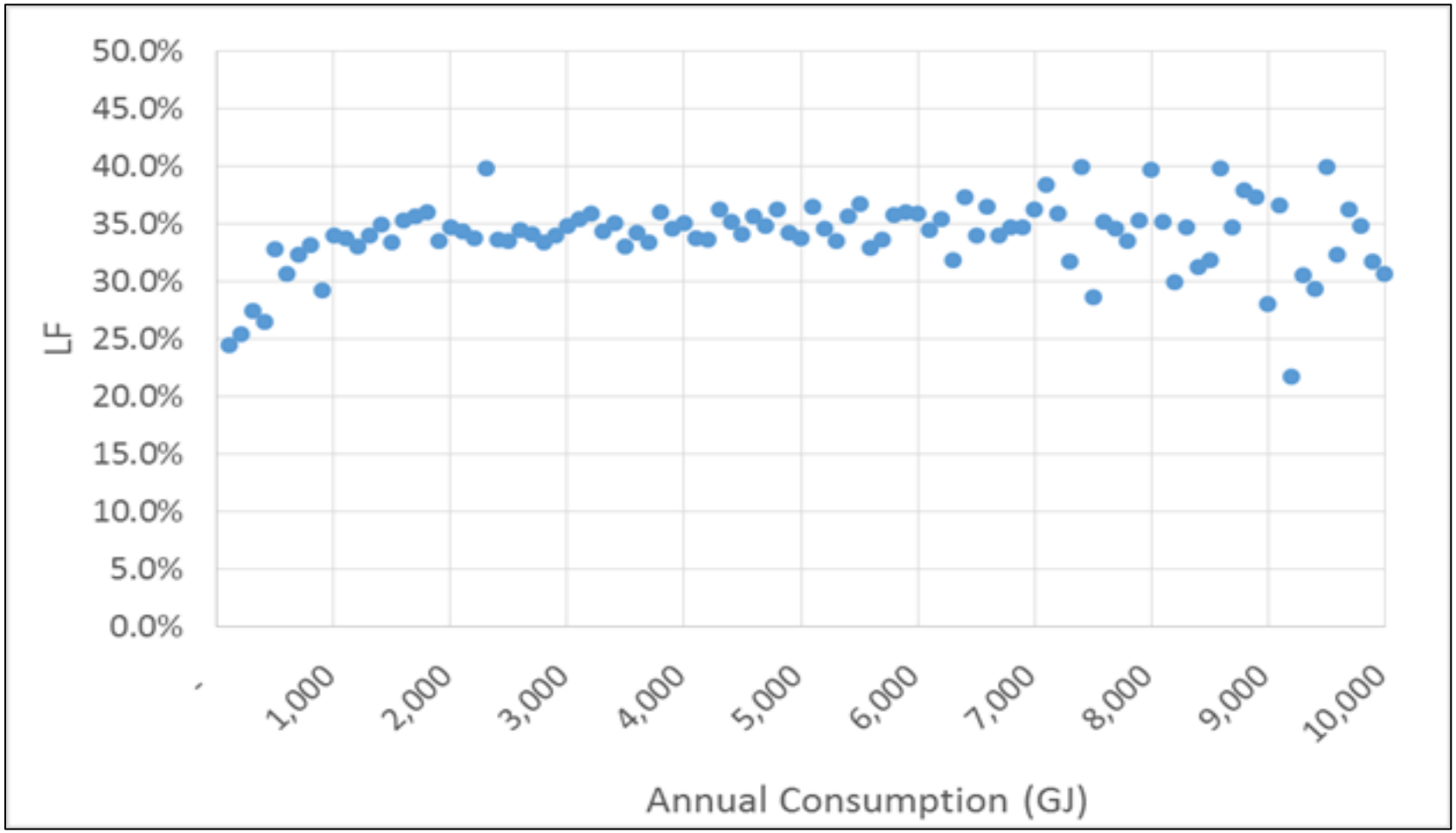


Large Commercial

Reference: *Application, Section 8.3.2.2*

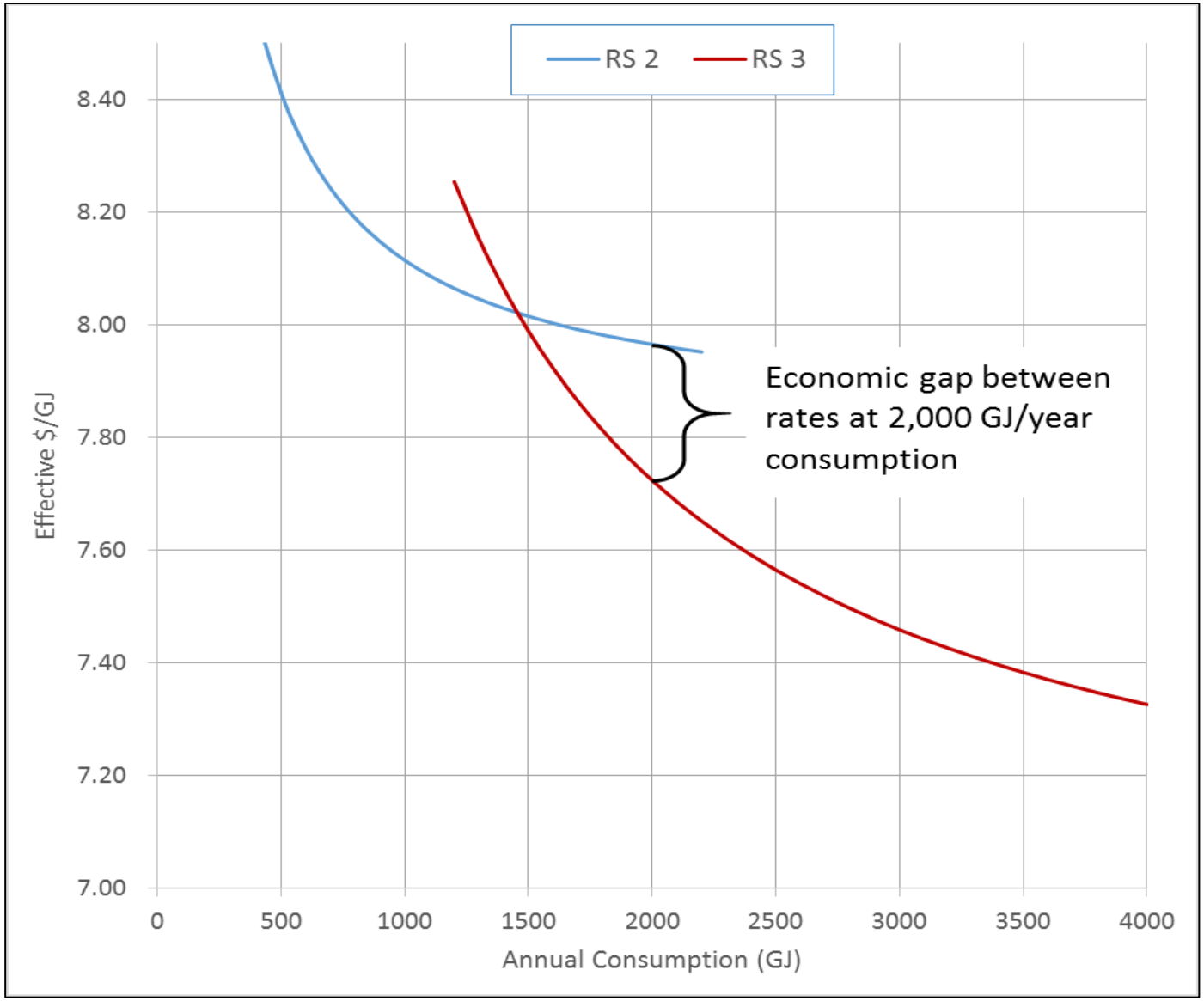
Review of Existing Customer Segmentation

Scatter Plot: Avg Commercial Customer Load Factor vs Annual Consumption



Reference: *Application, Section 8.3.2.2*

Economic Crossover Point between RS 2 and RS 3



Reference: *Application, Section 8.3.3.3*

Rate Design Options Considered

Option A – Move Threshold between RS 2 and RS 3 to 1,000 GJ

- Results in significant customer disruption by moving customers
- Not supported by rate design principles of Rate and Revenue Stability

Option B – Move Threshold between RS2 and RS 3 to 1,400 GJ

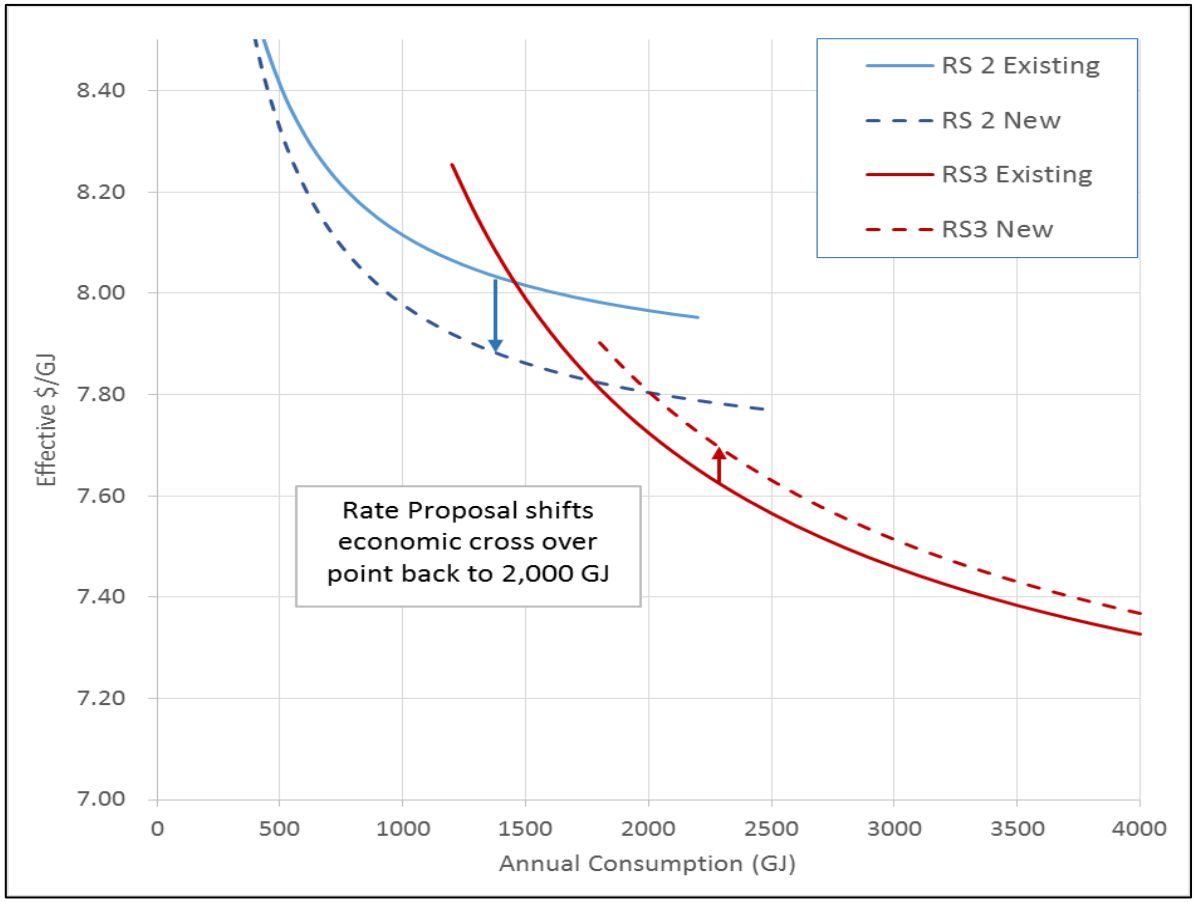
- Still a material change in the customer movement thus causing customer disruption
- Leads to about $600 thousand net revenue shift to RS 3 from RS 2

Option C – Maintain the existing threshold of 2,000 GJ but adjust the Basic and Delivery Charges

- No customer migration thus less customer disruption

Reference: *Application, Section 8.6*

Commercial Rate Design Proposal



FEI is proposing a commercial rate design that:

- Maintains the existing threshold of 2,000 GJ between Rate Schedules 2 and 3
- Adjusts Rate Schedule 2 and 3 charges to close the economic gap

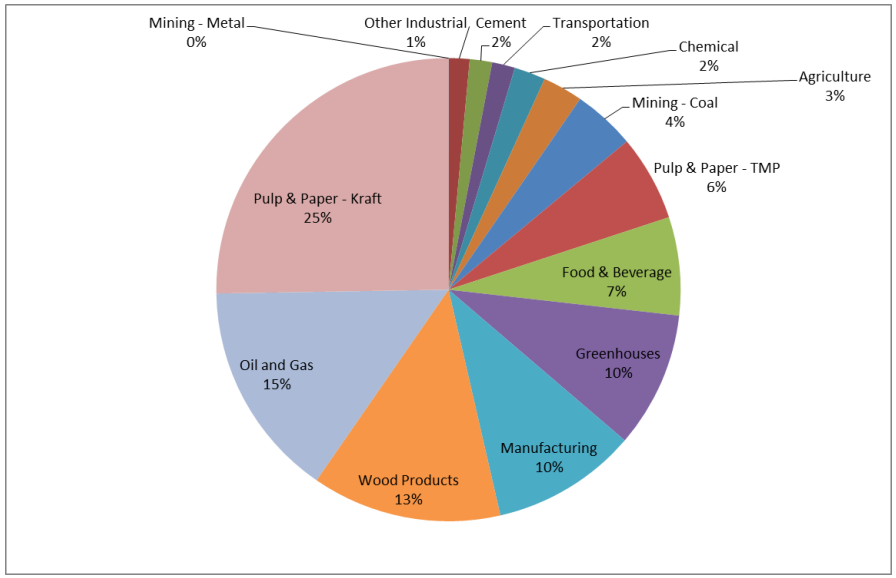
Reference: *Application, Section 8.6.3*

Industrial Rate Design

Industrial Customers Characteristics

Rate Schedule	2016 Average Number of Customers	2016 Demand Forecast (PJ)	Percentage of Industrial Total
RS 4 – Seasonal	18	0.1	0.1%
RS 5 – General Firm Sales	230	2.2	3.1%
RS 25 – General Firm Transportation	566	13.5	19.4%
RS 7 – General Interruptible Sales	5	0.2	0.3%
RS 27 – General Interruptible Transportation	108	6.5	9.3%
RS 22 / 22A / 22B – Large Volume Transportation	40	27.6	39.6%
Large Industrial Contract	2	19.7	28.3%
Industrial Total	**984**	**69.7**	**100.0%**

Customer Mix



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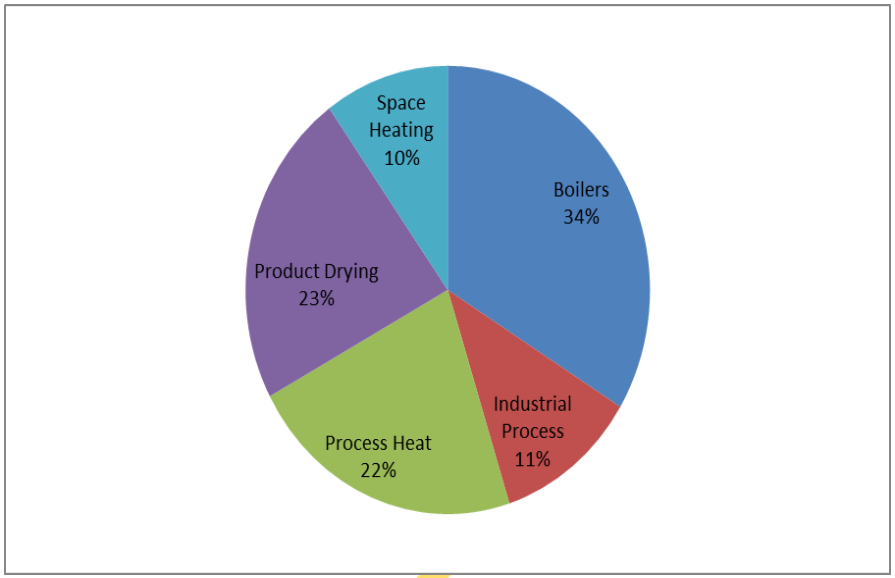


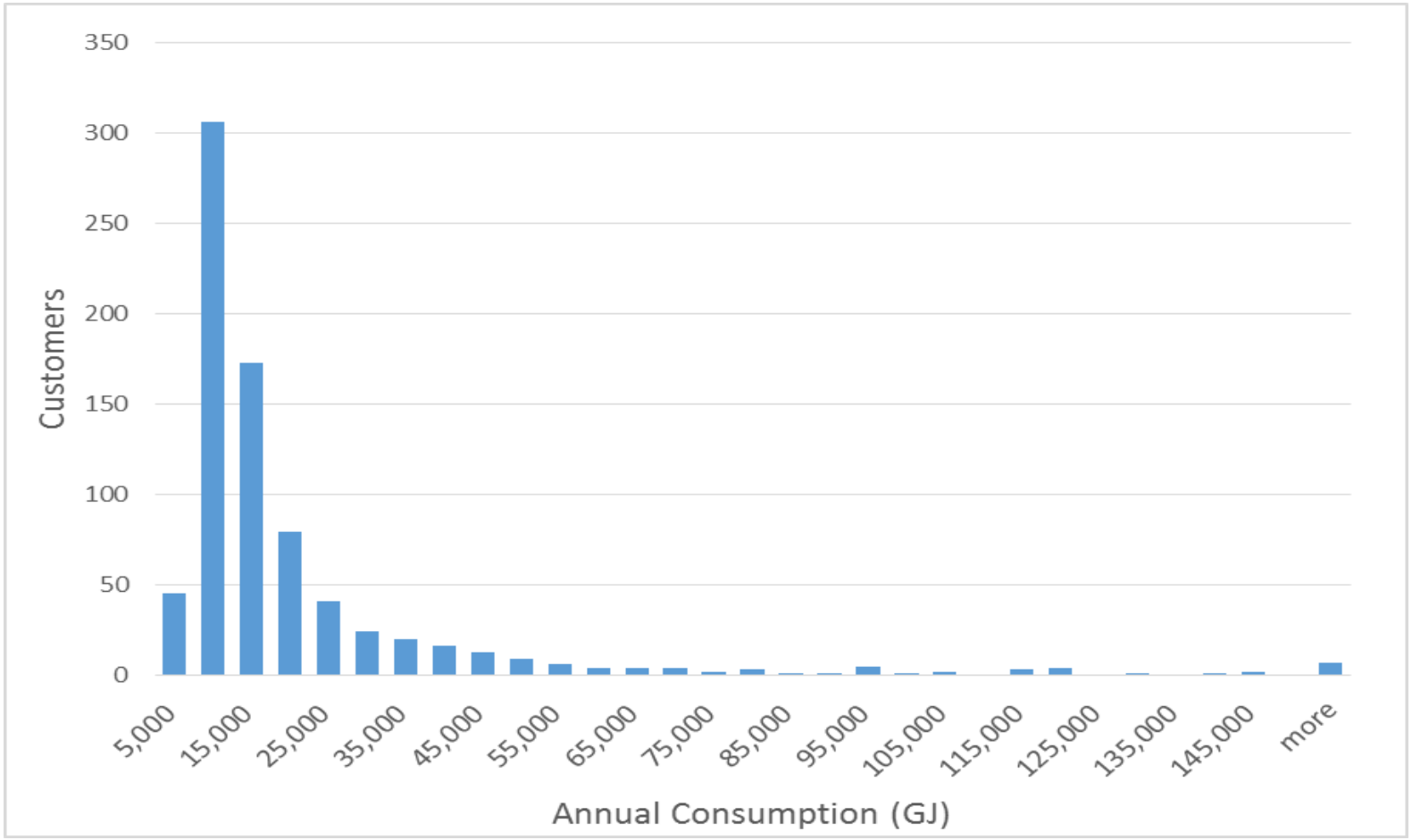
Reference: *Application, Section 9.2 and 9.3*

Industrial Rate Design

- RS 5/25
- RS 7/27
- RS 4
- RS 22/22A/22B & Large Contract Customers

General Firm Service (RS 5/25) – Customer Characteristics

Annual Bill Frequency for RS 5 and RS 25 Customers Combined



Reference: *Application, Section 9.5.3.1, Page 9-11*

RS 5/25 Rate Structure Review

2016 COSA Rates for RS 5 and RS 25

	RS 5	RS 25
Basic Charge $ / Month	$587.00	$587.00
Demand Charge $ / Month / GJ of Daily Demand	$21.596	$21.596
Delivery Charge $ / GJ	$0.887	$0.887
Administrative Charge $ / Month	N / A	$78.00

Reference: *Application, Section 9.5.3.2, Page 9-11*

RS 5/25: Existing Rate Design Review

Peak Daily Demand Methodology	The current method to estimate daily demand uses a formula and monthly consumption data.
	Overestimates the peak day demand for the majority of RS5/25 customers.
Load Factor Price Signals	RS 5/25 is intended for higher load factor customers (40% or above).
	Currently there is an economic incentive for lower load factor RS 3/23 (~ 35% Load Factor) customers to move to RS 5/25.

RS 5/25: Daily Demand Methods

Method 1: Current Formula

- Daily Demand is equal to 1.25 x greater of:
  - Customer's highest avg daily consumption of any month during the winter period, or
  - ½ Customer's highest avg daily consumption of any month during the summer period

Method 2:

- Current Formula with Adj. multiplier

Method 3:

- FEI System Max Day Send Out

Method 4:

- Avg. Consumption on 3 or 5 Coldest Days

Method 5:

- Modified Formula on 5 Coldest Days

RS 5/25 - Daily Demand Methods Evaluation

Method 2 – Current Formula with updated multiplier results in:

- Better alignment of coincident peak demand
- Customer understanding
- Information to determine Daily Demand is readily available to customers
- Reduces anomalous results
- Ease of implementation

RS 5/25 – Load Factor Price Signal Options

Option 1 - Change the Basic Charge	Mostly incents low volume customers to take service under RS 3/23, but would not target customers with a low load factor.
Option 2 - Change the Delivery Charge	Will affect all customers. Will encourage more customers with a high load factor to migrate to Large Commercial which is not the intent.
Option 3 - Remove the Demand Charge	Would remove the mechanism that rewards more efficient system utilization by higher load factor customers. RS 5/25 were designed to serve high load factor customers.
Option 4 - Change the Demand Charge	Raising the Demand Charge will more directly incent low load factor customers to take service under Large Commercial RS 3/23 instead of RS 5/25.

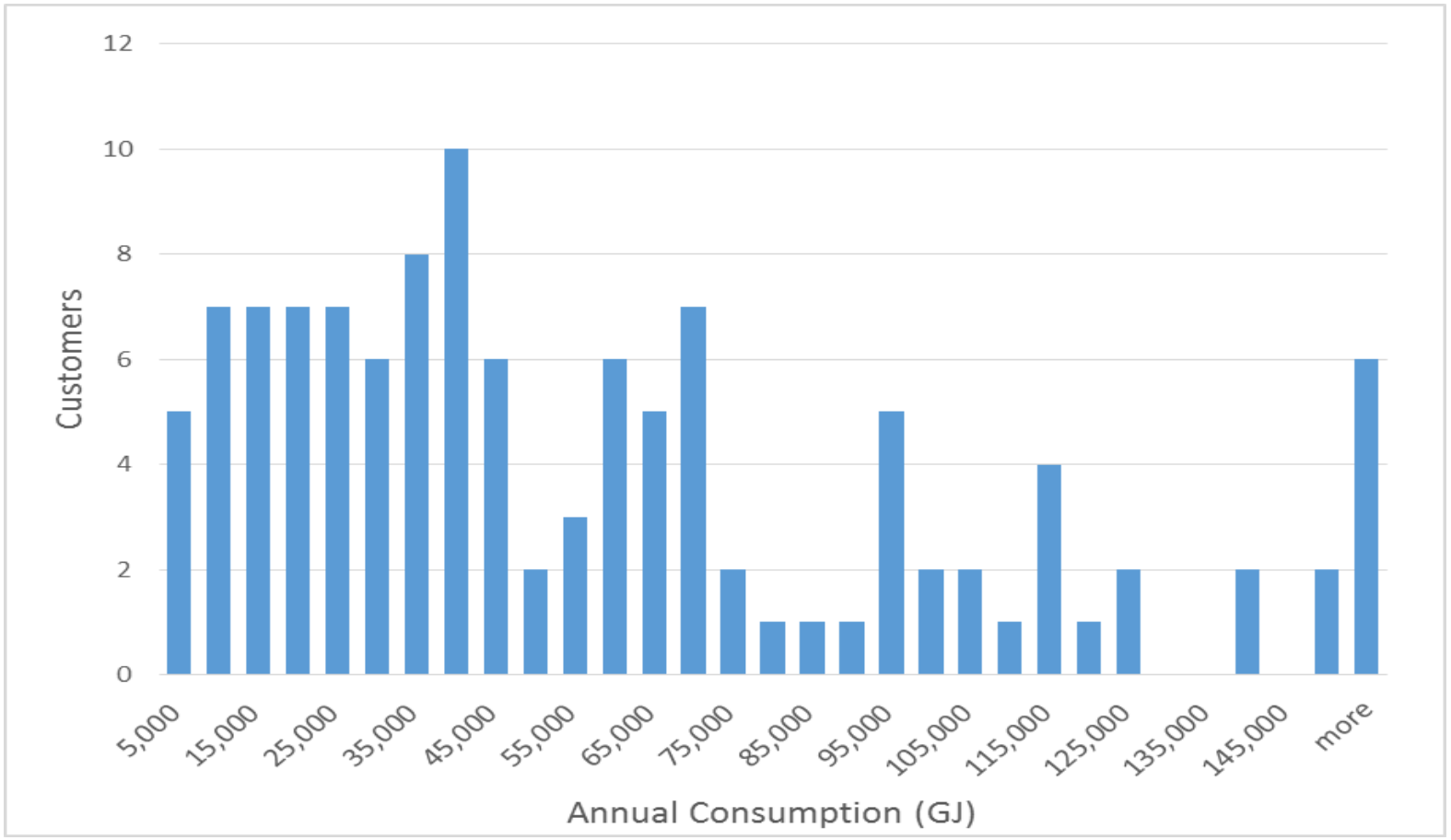
RS 5/25 Rate Design Proposal

FEI is proposing a rate design for RS 5/25 that:

- Maintains the current rate structure with a fixed Basic Charge, a Demand Charge and a flat volumetric Delivery Charge.
- Updates the multiplier from 1.25 to 1.10 that is used in the current method to determine the Daily Demand as an estimate of a customer's peak demand.
- Increases the Demand Charge by $3.00 to continue the incentive for low load factor customers to take service under Large Commercial RS 3/23 rather than General Firm Service RS 5/25.

General Interruptible Service (RS 7/27) – Customer Characteristics

Annual Bill Frequency for RS 7/27 Customers Combined



Reference: *Application, Section 9.6.2, Page 9-25*

RS 7/27 Rate Structure Review

2016 COSA Rates for RS 7/27

Rate Schedule	2016 COSA[1] Based Rates			
	Basic Charge/ Month	Administration Charge/Month	Delivery Charge/GJ	Commodity + Storage & Transport Charge/GJ
RS 7 *General Interruptible Sales Service*	$880.00	n/a	$1.455	$3.323
RS 27 *General Interruptible Transportation Service*	$880.00	$78.00	$1.455	n/a

[1] The COSA rates shown are estimated based on 2016 approved rates plus known and measureable changes.

Reference: *Application, Section 9.6.3.1, Page 9-26*

RS 7/27 Rate Design Proposal

Update RS 7/27 from Proposed Changes to RS 5/25

Rate Schedule	Line No.		2016 COSA with 80% Load Factor Adjustment	2018 RS 7/27 Charges using 2001 Methodology	2018 Proposed with 90.9% Load Factor Adjustment[1]
RS 5/25	1	*Demand Charge*	$21.596	$24.596	$24.596
Load Factor for Equivalent firm Demand Charge	2		80.0%	80.0%	90.9%
Load Factors for Interruptible Rate	3		N A	55.0%/80.0%	62.5%/90.9%
Effective Rate/GJ for an RS 5 firm service customer	4	*Demand Charge*	$0.888	$1.011	$0.889
	5	*Delivery Charge*	$0.887	$0.887	$0.887
	6	*Total*	$1.775	$1.898	$1.776
RS 7 *General Interruptible Sales Service*	7	*Delivery Charge*	$1.455	$1.443[2]	$1.443
Differential (per GJ) *RS 5 – RS 7*	8		$0.320	$0.455	$0.334
Discount as a Percentage of Total Firm	9		18.0%	24.0%	18.8%

Reference: *Application, Section 9.6.5, Page 9-32*

RS 4 Rate Design Proposal

Update RS 4 from Proposed changes to RS 5/25 & RS 7/27

Row	RS 4	2016 COSA[1] Based Rates	Proposed Rates
1	RS 5/25 Demand Charge equivalent at 100% Load Factor[2]	$0.391	$0.505
2	RS 5/25 Delivery Charge ($/GJ)	$0.887	$0.887
3	**RS 4 Off-Peak Delivery Rate $/GJ (Row 1 + Row 2)**	**$1.278**	**$1.392**
4	RS 7/27 Delivery Charge ($/GJ)	$1.455	$1.443
5	**RS 4 Extension Period $/GJ (Row 4 x 1.5)**	**$2.183**	**$2.165**

Reference: *Application, Section 9.7.5, Page 9-36*

Large Volume Transportation – Customer Characteristics

Customers and Annual Demand (TJ)

Rate Schedule	Customers	Annual Demand (TJ)
RS 22	26	13,189
RS 22A	9	9,030
RS 22B	5	5,277
Subtotal	40	27,496
Joint Venture	1	4,758
BC Hydro IG	1	16,425
Total	**42**	**48,679**

Reference: *Application, Section 9.8.1, Page 9-37*

Large Volume Transportation & Contract Customers: Rate Design Considerations

Minimize regional differences

JV Agreement expires end of 2017

BC Hydro IG Agreement in effect until 2022

Need to review the Firm Rate methodology for RS 22 (Creative Energy) within this Rate Design Process as directed by the BCUC and other RS 22 customers have expressed interest in a Firm Rate

Large Volume Transportation & Contract Customers: Rate Design Options

Rate Schedule	Option 1	Option 2
22A	Grandfathered	Same as Option 1
22B	Grandfathered	
22	Currently Interruptible – Add a Firm Service Offering	Single RS 22 Including RS 22 Interruptible and Firm offerings, JV and BCH IG
Joint Venture	Negotiated Rate (no change)	
BCH IG	Negotiated Rate (no change)	

Large Volume Transportation & Contract Customers: Rate Design Proposal

FEI is proposing a rate design for Large Volume Transportation customers that:

- **Continues to grandfather RS 22A/22B as closed service offerings**
- **Creates a firm rate for RS 22, VIGJV and BC Hydro IG based on cost allocation**
  - Tariff supplement G-21 for Creative energy would be terminated
  - BC Hydro IG could choose to become a RS 22 customer after their contract expires
  - Rates for RS 22 Firm are illustrated in the table below

Rate Schedule	Basic Charge /Month	Administration Charge /Month	Delivery Demand Charge /Month /GJ of Firm Daily Transportation Quantity (DTQ)	Delivery Charge /GJ of Firm Monthly Transportation Quantity (MTQ)	Delivery Charge /GJ of Interruptible Monthly Transportation Quantity (MTQ)
RS 22 *Large Volume Transportation Service (including VIGJV)*	$3,664.00	$78.00	$25.00	$0.15	$0.972

Summary of Industrial Rate Design Proposals

RS 5/25 - General Firm Service

Maintain current formula with updated multiplier of 1.1 for daily demand calculation

Raise the Demand Charge for RS 5/25 by $3.00 per month per GJ of daily demand.

RS 7/27 - General Interruptible Service

Maintain existing rate structure for RS 7/27, but adjust the resulting rates and delivery charge calculations to reflect proposed changes to RS 5/25 to maintain RS 7/27 % discount to firm.

RS 4 - Seasonal Service

Maintain the existing rate setting methodologies for RS 4, but adjust the resulting rates due to changes to the RS 5/25 and RS 7/27.

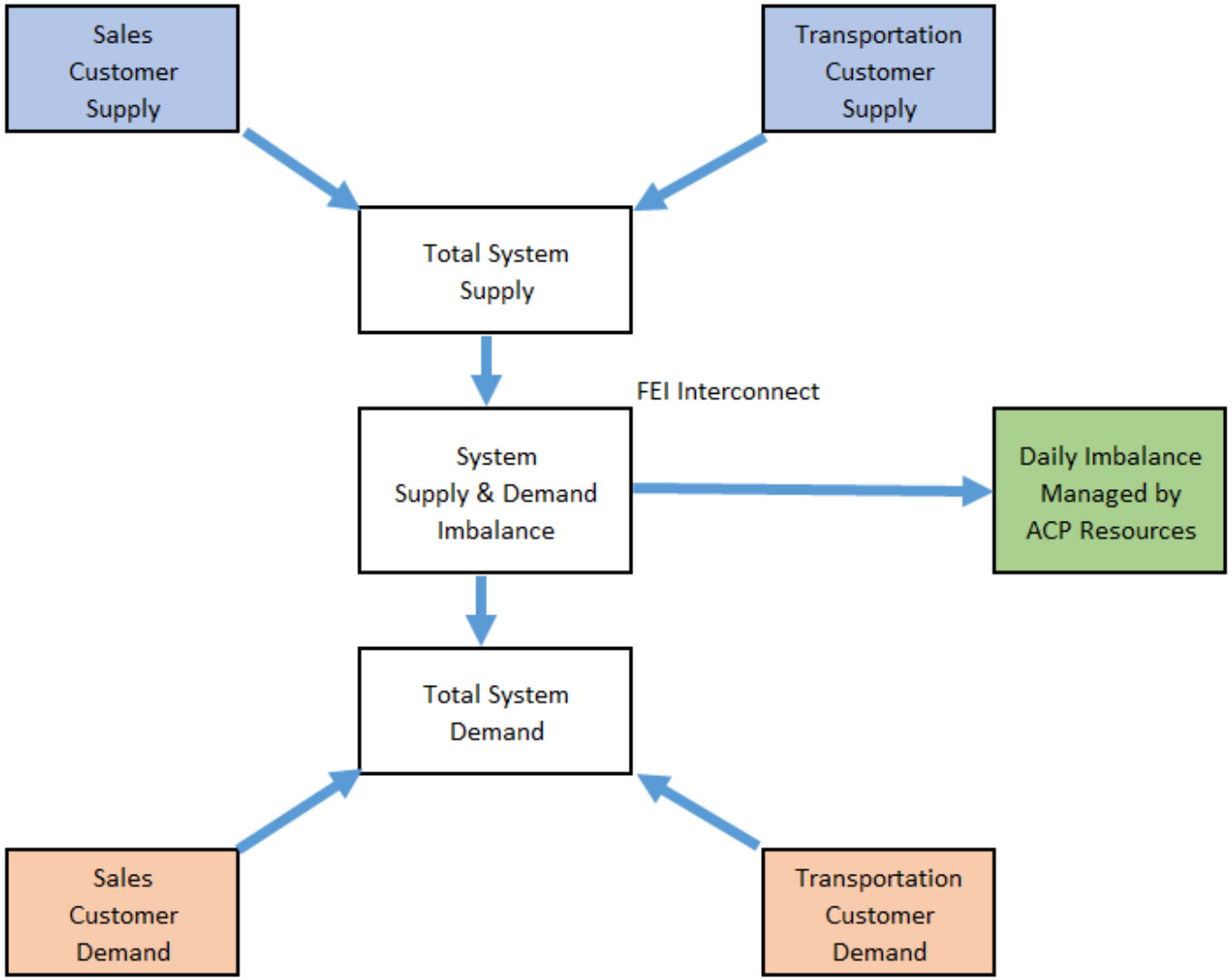
RS 22/22A/22B & Contract Customers - Large Volume Transportation

Maintain RS22A and RS22B as closed and grandfathered for existing customers.

Calculate a single RS 22 firm rate based on the allocated costs in the COSA Model for RS 22, VIGJV and BC Hydro IG together as a group.

Transportation Service Review

FEI Daily Load Balancing Function Overview



Overview of Transportation Business Model

Balancing Provisions	Currently, FEI has two balancing options for transportation service: Monthly & Daily balancing.
Balancing Tolerance	Currently, there are no daily balancing requirements applicable to monthly balanced customers whereas daily balanced transportation customers are held to a 20% tolerance level.
Balancing Charges	Currently, there is no charge when imbalances occur within the 20% tolerance level; balancing charges apply when imbalances exceed this level.

Balancing Provisions: Review of Options & Proposal

Option 1 – Status Quo

- Inequality
- Commission directive

Option 2 – Modify terms to monthly balancing

- Industry practice
- Commission directive

Option 3 – Move exclusively to Daily Balancing

- Satisfies the principle of fairness
- Industry practice
- FEI must balance daily with upstream pipelines

Balancing Tolerance and Charges: Review of Options & Proposal

Option 1 – Balancing Fee (service offering)

- Balancing charge per GJ to apply to all customers/marketers
- Will penalize customers/marketers who balance within tolerance

Option 2 – Tighten the threshold with charges

- FEI continues to balance the system as a whole
- Tighten the current threshold from 20% to 10%

Balancing Tolerance and Charges: Review of Options & Proposal

Transportation Balancing Incremental Variable Costs

Sumas Price (US$/MMBtu)	NWP Com. Charge	NWP Fuel	Storage Fuel	Incremental Variable Costs (US$/MMBtu)	Incremental Variable Costs (CAD$/GJ)
$2.50	$0.06	$0.07	$0.04	**$0.16**	**$0.20**
$3.00	$0.06	$0.08	$0.04	**$0.19**	**$0.23**
$3.50	$0.06	$0.10	$0.05	**$0.21**	**$0.25**
$4.00	$0.06	$0.11	$0.06	**$0.23**	**$0.28**
$4.50	$0.06	$0.12	$0.07	**$0.25**	**$0.31**
$5.00	$0.06	$0.14	$0.07	**$0.27**	**$0.33**

Balancing Range and Proposed Charges

Tolerance Range	Winter Charge/GJ	Summer Charge/GJ
Tier 1: 0-10%	**No fee**	**No fee**
Tier 2: 10-20%	**$0.25**	**$0.25**
Tier 3: 20+%	**$1.10**	**$0.30**

Reference: *Application, Section 10.7.6*

Summary of Proposals for Transportation Service

Eliminate the existing monthly balancing provisions entirely for the transportation model and require all transportation customers in all service areas to balance daily.

Amend the balancing tolerance from 20% to 10%, and implement a tiered charge approach whereby charges increase as tolerance ranges are exceeded.

Rebalancing and Final COSA Results

Final COSA Results after Rebalancing

R:C and M:C Results after Rate Design Proposals and Rebalancing

Rate Schedule	COSA after Rate Design Proposals		Rebalance Amount ($000)	Approximate Annual Bill Change	COSA after Rate Design Proposals and Rebalancing	
	R:C	M:C			R:C	M:C
Rate Schedule 1 *Residential Service*	96.4%	94.4%	61.7	0.0%	96.4%	94.4%
Rate Schedule 2 *Small Commercial Service*	102.2%	104.1%			102.2%	104.1%
Rate Schedule 3/23 *Large Commercial Sales and Transportation Service*	103.6%	107.6%			103.6%	107.6%
Rate Schedule 5/25 *General Firm Sales and Transportation Service*	106.3%	116.0%			106.3%	116.0%
Rate Schedule 6/6P *Natural Gas Vehicle Service*	131.7%	160.4%	(61.7)	-16.5%	110.0%	119.0%
Rate Schedule 22A *Transportation Service (Closed) Inland Service Area*	113.0%	113.4%			113.0%	113.4%
Rate Schedule 22B *Transportation Service (Closed) Columbia Service Area*	103.1%	103.1%			103.1%	103.1%
Rate Schedule 22 *Large Volume Transportation Service*	100.0%	100.0%			100.0%	100.0%

Rate Schedule *(rates not set using allocated costs)*	COSA after Rate Design Proposals		Rebalance Amount ($000)	Approximate Annual Bill Change	COSA after Rate Design Proposals and Rebalancing	
	R:C	M:C			R:C	M:C
Rate Schedule 4 *Seasonal Firm Gas Service*	150.2%	578.3%			150.2%	578.3%
Rate Schedule 7/27 *General Interruptible Sales and Transportation Service*	139.3%	713.6%			139.3%	713.6%

Reference: *Application, Section 12.3, Page 12-7*

Summary of FEI Proposed Rate Changes

Rate Schedule	Estimated COSA-Based 2018 Rates[1]	Proposed Rate Changes	Estimated 2018 Rates After Proposed Changes
RS 1 – Residential			
Basic Charge (daily)	$0.3890	$0.0195	$0.4085
Delivery Charge ($/GJ)	$4.821	($0.075)	$4.746
RS 2 – Small Commercial			
Basic Charge (daily)	$0.8161	$0.1324	$0.9485
Delivery Charge ($/GJ)	3.850	($0.186)	3.664
RS 3/RS 23 – Large Commercial			
Basic Charge (daily)	$4.3538	$0.4357	$4.7895
Delivery Charge ($/GJ)	$3.189	$0.001	$3.190
RS 4			
Basic Charge (Monthly)	$439	Nil	$439
Delivery Charge ($/GJ) Off Peak	$1.278	$0.114	$1.392
Delivery Charge ($/GJ) Extended Period	$2.183	($0.018)	$2.165
RS 5/RS 25			
Basic Charge (Monthly)	$587.00	Nil	$587.00
Delivery Charge ($/GJ)	$0.887	Nil	$0.887
Demand Charge ($/Month/GJ)	$21.596	$3.00	$24.596
RS 6/RS 26			
Basic Charge (Monthly)	$61	Nil	$61
Delivery Charge ($/GJ)	$4.873	($1.318)	$3.555
RS 7/RS 27			
Basic Charge (Monthly)	$880.00	Nil	$880.00
Delivery Charge ($/GJ)	$1.455	($0.012)	$1.443
RS 22			
Basic Charge (Monthly)	$3,664.00	Nil	$3.664.00
Firm Demand Charge ($/Month/GJ)	n/a		$25.000
Firm MTQ ($/GJ)	n/a		$0.150
Interruptible MTQ ($/GJ)	$1.060	($0.088)	$0.972

Reference: *Application, Section 12.4, Page 12-8*

FEI Approvals Sought

Approvals Sought - FEI

- Midstream Cost Allocation Methodology
- Residential Rate Schedules
- Commercial Rate Schedules
- Industrial Rate Schedules
- General Terms and Conditions

Fort Nelson Rate Design Proposal and Approvals Sought

Unbundling the Rates

Unbundling the rates for Fort Nelson refers to separating the gas cost recovery charges and the delivery charges in the tariff & customers' bills

Why Unbundle Residential & Commercial Rates?

- Consistent with other service areas of FEI - unbundling of rates for FEI occurred in 1994
- Transparency of gas cost components and delivery cost components in customer rates
- Enables ability to participate in programs that require unbundled rates
- Industrial Service Rates 3.1, 3.2 & 3.3 are already unbundled

Residential customer survey shows support for change to unbundled rates - 21% supported bundled rates whereas 42% supported unbundled flat rate structure

FEI is proposing to unbundle Fort Nelson's rates

Reference: *Application, Section 13.5.2*

Declining Block Versus Flat Rate Structure

Current Declining Block Rate Structure

	Residential	Commercial
Minimum Charge	First 2 GJ	First 2 GJ
1ST Block	Next 28 GJ	Next 298 GJ
2ND Block	Excess of 30 GJ	Excess of 300 GJ

FEI proposes a Flat Rate Structure for Fort Nelson customers

- Most common rate structure
- In line with Government policy
- Preferred rate structure from customer survey
- Lack of evidence of benefits from Declining Block rates
- Unstable minimum charge due to fluctuating gas cost changes

Reference: *Application, Section 13.5.3*

Existing Residential Rate Design

	Amount	% of Total
Number of Customers	1,961	80%
Annual Consumption (TJ)	260	46%
Revenue ($000's)	$1,423	45%

Fort Nelson Rate 1 Existing Rate Structure			
Item Description	**Minimum daily charge**	**Next 28 GJ in any month ($/GJ)**	**Excess of 30 GJ in any month ($/GJ)**
Approved 2018 Delivery Charge	$0.4588	$3.557	$3.455
Gas Cost Recovery Charge	$0.0850	$1.294	$1.294
Bundled 2018 Rates	$0.5438	$4.851	$4.749

Reference: *Application, Section 13.5.4*

Proposed Residential Rate Design

- Unbundle Residential Rates
- Move to a Flat Rate Structure
- Set the level of Basic Charge to achieve lowest dollar amount bill impact

Proposed charges for Rate 1 Before Rebalancing

Item Description	Rate
Daily Basic Charge ($/Day)	$0.2783
Delivery Charge ($/GJ)	$3.512

Reference: *Application, Section 13.5.4*

Existing Commercial Rate Design

Rates	2018 Avg # of Customers	2018 Annual Demand Forecast (TJ)	% of Total Commercial Annual Demand
Rate 2.1 – General (Small Commercial)	479	203.7	78 %
Rate 2.2 – General (Large Commercial)	7	56.7	22 %
Total Commercial	486	260.4	100 %

Fort Nelson Rate 2.1 / 2.2 Existing Rate Structure

Item Description	Minimum daily charge	Next 298 GJ in any month ($/GJ)	Excess of 300 GJ in any month ($/GJ)
Approved 2018 Delivery	$1.3487	$4.042	$3.916
Gas Cost Recovery	$0.0850	$1.294	$1.294
Bundled 2018 Rates	$1.4337	$5.336	$5.210

Current threshold between small & large commercial customers is 6,000 GJ

Reference: *Application, Section 13.5.5*

Proposed Commercial Rate Design

- Unbundle Commercial Rates
- Move to a Flat Rate structure
- Set threshold between small & large commercial customers at 2,000 GJ

Proposed Charges for Rates 2.1 & 2.2 Before Rebalancing		
	Rate 2.1	Rate 2.2
Basic Charge $/Day	$1.1296	$1.8862
Delivery Charge $/GJ	$4.057	$3.919

Reference: *Application, Section 13.5.5*

Industrial Rate Design

Existing Industrial Rate Structure

Charge	Rate 3.1	RS 25
Administration Charge (per Month)	n/a	$202
Delivery Charge First 20 GJ/Month ($/GJ)	$4.552	$4.552
Delivery Charge Next 260 GJ/Month ($/GJ)	$4.201	$4.201
Delivery Charge Excess over 280 GJ/Month ($/GJ)	$3.450	$3.450
Minimum Monthly Charge ($/Month)	$1,826	$1,826
Gas Cost Recovery Charge ($/GJ)	$1.294	n/a

Proposed Industrial Rate Structure

Charge	Rate 3.1	RS 25
Basic Charge (per Month)	$600.00	$600.00
Demand Charge (per GJ per Month)	$28.727	$28.727
Delivery Charge (per GJ)	$1.000	$1.000
Administration Charge (per Month)	n/a	$39.00
Commodity Cost Recovery Charge (per GJ)	$1.275	n/a
Storage and Transport Charge (per GJ)	$0.019	n/a

- Calculation of Daily Demand to which Demand Charge would apply same as for other FEI customers
- RSAM to be phased out

Reference: *Application, Section 13.5.6*

Revenue to Cost Ratios After Rebalancing

Rate Schedule	COSA after Rate Design Proposals		Rebalance Amount ($000)	Approximate Annual Bill Change	COSA after Rate Design Proposals and Rebalancing	
	R:C	M:C			R:C	M:C
Rate 1 *Domestic (Residential) Service*	82.1%	77.9%	131.0	9.9%	89.6%	87.1%
Rate 2.1 *General (Small Commercial) Service*	117.1%	123.2%	(71.0)	-5.3%	110.0%	113.6%
Rate 2.2 *General (Large Commercial) Service*	145.8%	162.4%	(60.0)	-14.3%	123.9%	132.6%
Rate Schedule 25 *General Firm Transportation Service*	111.0%	111.0%			111.0%	111.0%

Reference: *Application, Section 13.7.1.4*

Summary of Rate Proposals

Rate Component	Rate 1	Rate 2.1	Rate 2.2	Rate 3.1	RS 25
COSA Rates					
Minimum daily Charge incl. 1st 2 GJ/month	$0.5483	$1.4337	$1.4337		
Administration Charge (/month)					$202
Next 28 GJ/month	$4.885				
Excess over 30 GJ/month	$4.782				
Next 298 GJ/ month		$5.336	$5.336		
Excess over 300 GJ/month		$5.210	$5.210		
Delivery Charge First 20 GJ/month				$4.522	$4.522
Delivery Charge Next 260 GJ/month				$4.201	$4.201
Excess over 280 GJ/month				$3.450	$3.450
Minimum Delivery Charge/month				$1,826	$1,826
Total Annual Bill:	$742	$2,433	$28,546	n/a	$148,664
Proposed Rates	**RS 1**	**RS 2**	**RS 3**	**RS 5**	**RS 25**
Basic Charge/Day	$0.4591	$1.0234	$5.7284		
Basic Charge (/Month)				$600.00	$600.00
Administration Charge (/Month)					$39.00
Demand Charge (/GJ/Month)				$28.727	$28.727
Delivery Charge ($/GJ)	$3.512	$3.764	$2.905	$1.000	$1.000
Commodity Cost Recovery Charge ($/GJ)	$1.275	$1.275	$1.275	$1.275	
Storage and Transport Charge ($/GJ)	$0.019	$0.020	$0.017	$0.019	
Total Annual Bill:	$816	$2,306	$24,470	n/a	$148,243

Reference: *Application, Section 13.7.2*

Postage Stamp Rates Not Being Proposed

Summation of Effective Delivery Variance and Cost of Gas Variance $/GJ

	Residential	Small Commercial	Large Commercial
Effective Delivery Rate Difference	$1.09	$(0.17)	$0.22
Cost of Gas Difference	$0.97	$0.98	$0.82
Total Difference	$2.06	$0.81	$1.04
Total Difference (%)	-23%	-11%	-16%

Major reason for the variance in the Fort Nelson rates compared to FEI rates is due to the Midstream cost recovery; approximately 2-3 cents/GJ versus approximately $1/GJ for FEI

Delivery rate differences for commercial customers are modest but residential customers would see a $1.09/GJ increase

FEI is not proposing to postage stamp Fort Nelson rates

Reference: *Application, Section 13.7.3*

Approvals Sought – Fort Nelson

- **Cancellation of Rates**
- **Renaming of Rate Schedules**
- **Unbundling of Rates**
- **Billing System Changes Cost**
- **Commodity Cost Recovery Charge & Storage and Transport Charge**
- **Residential Rates**
- **Commercial Rates**
- **Industrial Rates**
- **The Fort Nelson Gas Tariff**

Reference: *Application, Section 13.1*

FEI General Terms and Conditions and Rate Schedules

Proposed Amendments

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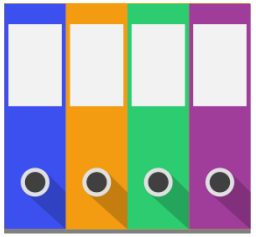
FEI General Terms and Conditions (GT&Cs)

Summary of Proposed Amendments



FEI General Terms and Conditions

- General wording and housekeeping changes [1]

Standard Charges Schedule

- Proposed decrease to the Application Charge (Application Fee) from $25 to $15 [2]
- Proposed decrease to the Return Payment Charge (Dishonoured Cheque Charge) from $20 to $8 [2]

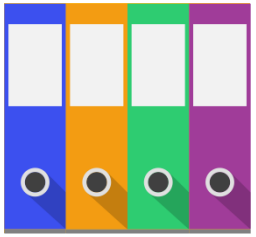
References:

[1] *Application, Section 11, Pages 2-18, and Appendix 11-1*

[2] *Application, Section 11, Pages 18-20, and Appendix 11-2*

FEI Rate Schedules

Summary of Proposed Amendments



Rate Schedules 1 to 27

- General wording and housekeeping changes [1]

Rate Schedules 22 to 27

- New proposed daily balancing threshold of 10% and charge of $0.25/GJ
- Proposed decrease to the Administration Charge per Month from $78 to $39 [2]

Rate Schedules 6A and 40

- Proposed to cancel as there are not any customers taking service under these rate schedules

References:

[1] *Application, Appendix 11-3*

[2] *Application, Appendix 11-3, Pages 8-10 and Appendix 11-4*

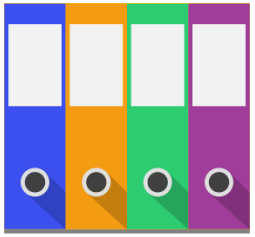
The Fort Nelson Gas Tariff

Proposed Amendments

FORTIS BC™

The Fort Nelson Gas Tariff

Summary of Proposed Amendments



Rate Schedule 1 Residential Service

- Terms and conditions consistent with FEI Rate Schedule 1
- Table of Charges outlines different rate components (unbundled)

Rate Schedule 2 Small Commercial Service

- Terms and conditions consistent with FEI Rate Schedule 2
- Table of Charges outlines different rate components (unbundled)

Rate Schedule 3 Large Commercial Service

- Terms and conditions consistent with FEI Rate Schedule 3
- Table of Charges outlines different rate components (unbundled)

Rate Schedule 5 General Firm Service

- Terms and conditions consistent with FEI Rate Schedule 5

Rate Schedule 6 Natural Gas Vehicle Service

- Terms and conditions consistent with FEI Rate Schedule 6

Rate Schedule 25 General Firm Transportation Service

- Amended terms and conditions to be consistent with FEI Rate Schedule 25

Reference: *Application, Section 13, Pages 46-47 and Appendix 13-6*

Next Steps

PART III

FORTIS BC™

Implementation of Approved Changes

June 1, 2018 FEI Target Implementation Date

- Provides sufficient time for review of RDA
- Provides sufficient time for FEI to implement changes
- Less complex than if combined with other changes (Delivery or Gas Cost); will enable clearer and simpler communications to customers

Regulatory Timetable

ACTION	DATE (2017)
Procedural Conference on the Rate Design Report key topics*	Wednesday, April 5, 9:00 a.m.
Elenchus' Cost of Service Allocation Report	Wednesday, April 26
Commission Information Request No. 1 to FortisBC Energy Inc. (FEI)	Thursday, May 4
Intervener Information Request No. 1 to FEI	Thursday, May 11
Information Request to Elenchus on COSA Report	Wednesday, May 24
Participant Assistance/Cost Award Budgets	Wednesday, May 24
FEI Response to Information Request No. 1	Friday, June 9
Elenchus Response to Information Request on COSA Report	Friday, June 9
Elenchus' Rate Design Report	Friday, June 23
Intervener Notice on Filing Intervener Evidence	Wednesday, June 28
Procedural Conference - on further process*	Wednesday, July 5, 9:00 a.m.
Further process	To be determined

** Location: Commission Hearing Room, 12th Floor, 1125 Howe Street, Vancouver*

For further information, please contact:

Gas.Regulatory.Affairs@fortisbc.com

www.fortisbc.com/ratedesign

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