



STATE OF RHODE ISLAND
**ENERGY EFFICIENCY &
RESOURCE MANAGEMENT COUNCIL**

2019 Energy Efficiency Plan EERMC Consultant Team Review

EERMC Council Meeting October 4, 2018



Outline

- Energy Efficiency (EE) Plan Review/Analysis Process
- 2019 EE Plan Highlights
- Changes from 1st Draft to 2nd Draft of the EE Plan
 - Electric Program Comparisons
 - Gas Program Comparisons
- Remaining Changes to 2nd Draft of EE Plan still Needed
- Summary and Recommendations



EE Plan Review Process Overview

Step 1: Consultant team (C-team) reviews Benefit-Cost Ratio (BCR) Models

- Cross-reference BCR Models with Evaluations and Technical Reference Manual (TRM)
- Cross-reference Previous year and 3-year plan BC Models to detect changes
- Cross-reference BCR Models with qualitative narrative in the EE Plan

Step 2: C-team and other stakeholders provide written questions and comments to the Company

Step 3: C-team, OER and the Company iteratively review feedback

- Conduct calls and exchange emails to review and handle individual comments



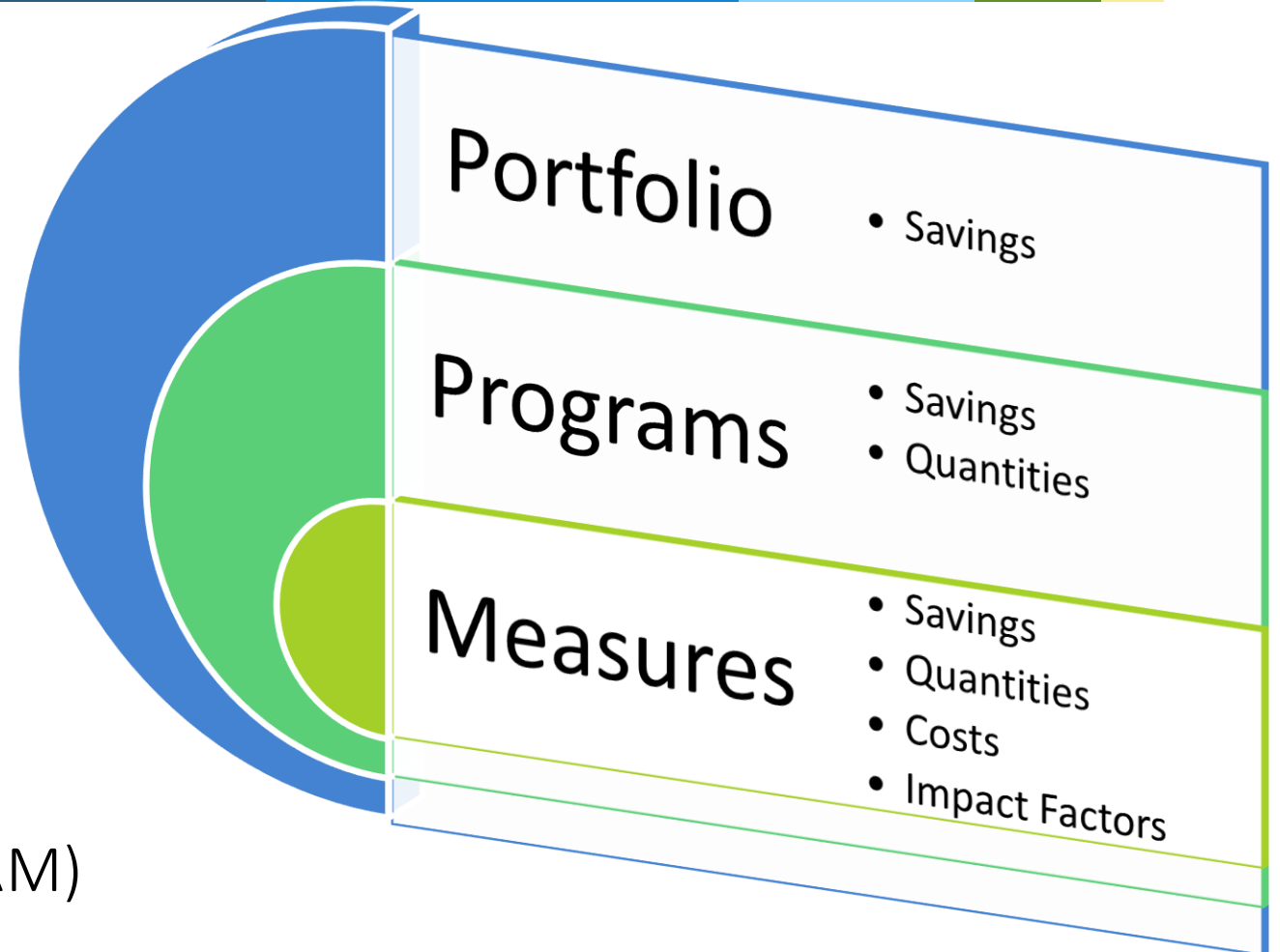
BCR Models Review Details

BCR Models Levels of Review

- Quality Assurance
- Scoping
- Technical (Industry Expertise)

Cross-referencing

- 3-year plan BC Models
- 2018 BC Models
- EE Plan Narrative
- Technical Reference Manual (TRM)
- Evaluation Results





Electric Program Comparisons

ANNUAL MWhs

FIRST DRAFT 2019 PLAN

% of 2019 Savings Portfolio
6%
6%
38%
49%
2%
2%
4%
0%
1%
4%
2%
12%
25%
2%
47%
100%

Program
Small Business Direct Install
Large Commercial New Construction
Large Commercial Retrofit
C&I Total
Single Family - Income Eligible Services
Income Eligible Multifamily
Income Eligible Total
Residential New Construction
ENERGY STAR HVAC
EnergyWise
EnergyWise Multifamily
Home Energy Reports
ENERGY STAR Lighting
Residential Consumer Products
Residential Total
Future Innovation Adder
Portfolio Total

2018 Plan	2019 in 3YR Plan	First Draft 2019 Annual Plan	Compared to 2018 Plan		Compared to 2019 in 3YR Plan	
9,940	8,000	10,021	80	1%	2,021	25%
13,959	15,473	10,597	-3,362	-24%	-4,876	-32%
75,616	73,317	71,771	-3,845	-5%	-1,546	-2%
99,515	96,790	92,389	-7,127	-7%	-4,401	-5%
4,185	3,995	3,771	-414	-10%	-224	-6%
3,287	3,325	3,219	-68	-2%	-106	-3%
7,472	7,321	6,990	-482	-6%	-331	-5%
619	668	882	263	43%	214	32%
2,091	2,550	2,897	806	39%	347	14%
6,157	5,630	8,068	1,911	31%	2,438	43%
4,207	4,250	3,592	-616	-15%	-658	-15%
25,054	25,036	24,130	-924	-4%	-906	-4%
38,891	24,450	49,606	10,714	28%	25,156	103%
2,849	2,443	3,484	635	22%	1,040	43%
79,868	65,028	92,658	12,790	16%	27,630	42%
-	25,539					
186,855	194,677	192,036	5,181	3%	(2,641)	-1%



Electric Program Comparisons

ANNUAL MWhs		SECOND DRAFT 2019 PLAN						
% of 2019 Savings Portfolio	Program	Second Draft 2019 Annual Plan	Compared to 2018 Plan		Compared to 2019 in 3YR Plan		Compared to First Draft 2019 Plan	
6%	Small Business Direct Install	12,163	2,222	22%	4,163	52%	2,142	21%
6%	Large Commercial New Construction	10,863	-3,096	-22%	-4,610	-30%	266	3%
38%	Large Commercial Retrofit	73,013	-2,603	-3%	-304	0%	1,242	2%
49%	C&I Total	96,038	-3,477	-3%	-752	-1%	3,650	4%
2%	Single Family - Income Eligible Services	3,742	-443	-11%	-253	-6%	-29	-1%
2%	Income Eligible Multifamily	3,219	-68	-2%	-106	-3%	0	0%
4%	Income Eligible Total	6,961	-511	-7%	-360	-5%	-29	0%
0%	Residential New Construction	756	137	22%	88	13%	-126	-14%
1%	ENERGY STAR HVAC	2,710	619	30%	160	6%	-187	-6%
4%	EnergyWise	8,182	2,024	33%	2,551	45%	114	1%
2%	EnergyWise Multifamily	3,593	-614	-15%	-657	-15%	2	0%
12%	Home Energy Reports	24,130	-924	-4%	-906	-4%	0	0%
25%	ENERGY STAR Lighting	48,381	9,490	24%	23,931	98%	-1,224	-2%
2%	Residential Consumer Products	3,925	1,076	38%	1,482	61%	441	13%
47%	Residential Total	91,677	11,809	15%	26,649	41%	-981	-1%
	Future Innovation Adder							
100%	Portfolio Total	194,677	7,821	4%	(1)	0%	2,640	1%



Gas Program Comparisons

ANNUAL MMBTus

FIRST DRAFT 2019 PLAN

% of 2019 Savings Portfolio	Program	2018 Plan	2019 in 3YR Plan	First Draft 2019 Annual Plan	Compared to 2018 Plan		Compared to 2019 in 3YR Plan	
10%	Large Commercial New Construction	42,764	35,842	42,536	-229	-1%	6,694	19%
36%	Large Commercial Retrofit	186,780	171,777	155,049	-31,731	-17%	-16,728	-10%
3%	C&I Multifamily	6,643	6,643	10,829	4,186	63%	4,186	63%
1%	C&I Small Business Direct Install	3,059	2,500	2,559	-500	-16%	59	2%
49%	C&I Total	239,246	216,762	210,974	-28,273	-12%	-5,788	-3%
2%	Single Family - Income Eligible Services	12,620	13,251	9,178	-3,442	-27%	-4,073	-31%
5%	Income Eligible Multifamily	16,222	16,497	20,487	4,265	26%	3,991	24%
7%	Income Eligible Total	28,842	29,748	29,665	823	3%	-82	0%
6%	ENERGY STAR HVAC	27,513	30,422	28,120	607	2%	-2,302	-8%
6%	EnergyWise Single Family	26,787	27,250	27,806	1,019	4%	556	2%
4%	EnergyWise Multifamily	12,069	12,078	16,043	3,975	33%	3,965	33%
27%	Home Energy Reports	77,220	77,112	115,520	38,300	50%	38,408	50%
1%	Residential New Construction	3,117	3,487	4,240	1,123	36%	754	22%
44%	Residential Total	146,706	150,349	191,729	45,023	31%	41,381	28%
100%	Portfolio Total	414,795	396,859	432,369	17,574	4%	35,510	9%



Gas Program Comparisons

ANNUAL MMBTus

% of 2019 Savings Portfolio
10%
36%
3%
1%
49%
2%
5%
7%
6%
6%
4%
27%
1%
44%
100%

Program
Large Commercial New Construction
Large Commercial Retrofit
C&I Multifamily
C&I Small Business Direct Install
C&I Total
Single Family - Income Eligible Services
Income Eligible Multifamily
Income Eligible Total
ENERGY STAR HVAC
EnergyWise Single Family
EnergyWise Multifamily
Home Energy Reports
Residential New Construction
Residential Total
Portfolio Total

SECOND DRAFT 2019 PLAN

Second Draft 2019 Annual Plan
42,536
155,049
10,829
2,559
210,974
9,178
20,487
29,665
27,960
27,806
16,043
115,520
4,741
192,069
432,708

Compared to 2018 Plan	
-229	-1%
-31,731	-17%
4,186	63%
-500	-16%
-28,273	-12%
-3,442	-27%
4,265	26%
823	3%
446	2%
1,019	4%
3,975	33%
38,300	50%
1,624	52%
45,363	31%
17,913	4%

Compared to 2019 in 3YR Plan	
6,694	19%
-16,728	-10%
4,186	63%
59	2%
-5,788	-3%
-4,073	-31%
3,991	24%
-82	0%
-2,462	-8%
556	2%
3,965	33%
38,408	50%
1,254	36%
41,720	28%
35,850	9%

Compared to First Draft 2019 Plan	
0	0%
0	0%
0	0%
0	0%
0	0%
0	0%
0	0%
0	0%
-161	-1%
0	0%
0	0%
0	0%
500	12%
340	0%
340	0%



2019 Plan Highlights

- Combined lifetime savings exceeds \$300 million across gas and electric measures
- Meets Three-Year Plan savings targets
- Energy Efficiency remains much cheaper than supply
- Continued commitment to innovation in energy efficiency
- Program benefits extend beyond savings to jobs and emissions





2019 Plan Highlights

- Full compliance with Least-Cost Procurement and Standards

Requirements	
The Plan helps to meet RI's electrical and natural gas needs in a manner that is optimally <u>cost-effective, reliable, prudent, and environmentally responsible</u>	√
Complements RI's existing energy programs	√
Drives program <u>Innovation</u>	√
Is <u>Comprehensive</u> : ensures all customers have an opportunity to benefit	√
Is designed to ensure <u>Equity</u> across sectors and customer types	√



2019 Plan Highlights

Policy Achievements:

- Incentive parity with natural gas weatherization incentives for delivered fuel customers
- Expanded customer access and support of automated Portfolio Manager data uploads
- Enhanced support of state energy code advancement and appliance standards adoption
- Greater support, trainings, and pilots to spur the Zero Energy Buildings market and use of Rhode Island's Stretch Codes





2019 Plan Highlights

Policy Achievements Continued:

- 100% landlord incentives to help overcome the tenant-landlord disincentive
- Online home energy assessments and online assessment scheduling
- A proposal to update fund balances for Dec 1st in order to improve rate accuracy
- Commitment to enhance coordination between SRP and EE Teams
- And a rework of the Small Business qualification requirements





2019 Sector Highlights

Residential Highlights

- More focus on electric heating in RI
- Expanded residential retail lighting to fully transform the market
- Begin the transition of EnergyWise in preparation for the loss of lighting savings

C&I Highlights

- Small business enhancements
- Focused commitment to help K-12 schools improve their energy efficiency
- Expanded industrial initiative





Overview of Proposed Amendments

SEE HANDOUT FOR MORE DETAILS

Ref #	Section	Pg. #	Description
1	Main Text	9	Update reference to cost of supply to corrected values (slide 13)
2	Main Text	34	Remove language referencing the Navy CHP project
3	Main Text	49	Strengthen language supporting GHG reductions tracking
4	Attachment 1	35	Add description of National Energy Education Development prgm
5	Atch 2 Sec 2.b.ii	17	Add language re: dif. avenues for incorporating MOUs in hospitality
6	Atch 2 Sec 2.c.iii	22	Add language re: details on training target audience and timeline
7	Atch 2 Sec 3.c.ii	41	Add language re: NC target of 20% above code in two end uses
8	Attachment 5	1-3	Update Tables E-2 and E-3 to account for removing Navy CHP
9	Throughout	--	Update text and tables to account for BCR model error (slide 14)
10	Throughout	--	Edits text throughout for spelling, grammar, acronym references and other cosmetic changes



Key Amendment #1: Cost of Supply

Original values in Second Draft

- *Electric*
 - Cost of Energy Efficiency: \$126.3 million
 - Cost of electric supply: \$523.7 million.
 - Total savings: \$397.4 over lifetime of installed measures
- *Gas*
 - Cost of Energy Efficiency: \$42.6 million
 - Cost of gas supply: \$90.1 million.
 - Total savings: \$47.5 million over lifetime of installed measures.

Revised Numbers to 2nd Draft

- *Electric*
 - Cost of Energy Efficiency¹: \$126.3 million
 - Cost of Electric Supply²: \$415.2 million.
 - Total savings³: \$289.0 million over the lifetime of installed measures.
- *Gas*
 - Cost of Energy Efficiency: \$42.6 million
 - Cost of Gas Supply: \$67.7 million
 - Total savings: \$25.1 million over lifetime of installed measures.

1. Not impacted by removal of the Navy Combined Heat and Power (CHP) project

2. Following the C-Team's completion of this memo, the Company notified the C-Team on October 2nd of a linking error in the electric BCR model that impacted the calculation of non-embedded carbon savings applied to gas savings measures in the electric portfolio. This number reflects the cost of electric supply following the correction of this error. Prior to this error, the revised cost of electric supply was \$450.8 million.

3. See footnote 2. Prior to this error, the revised total savings was \$324.6 million.

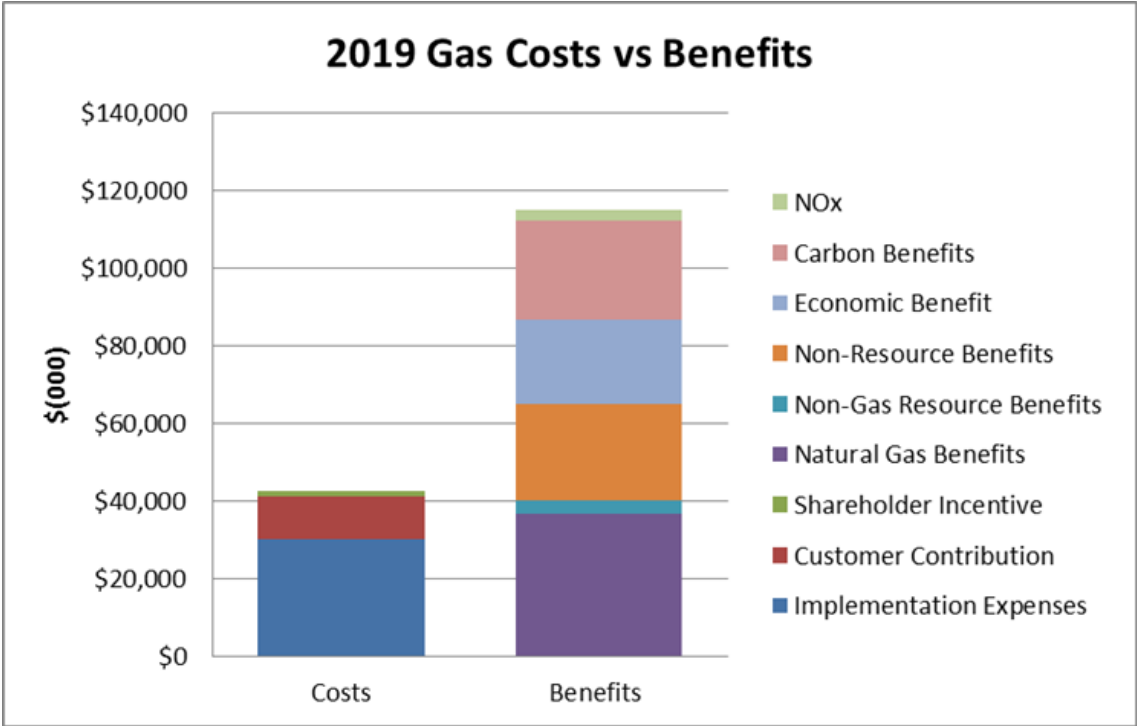
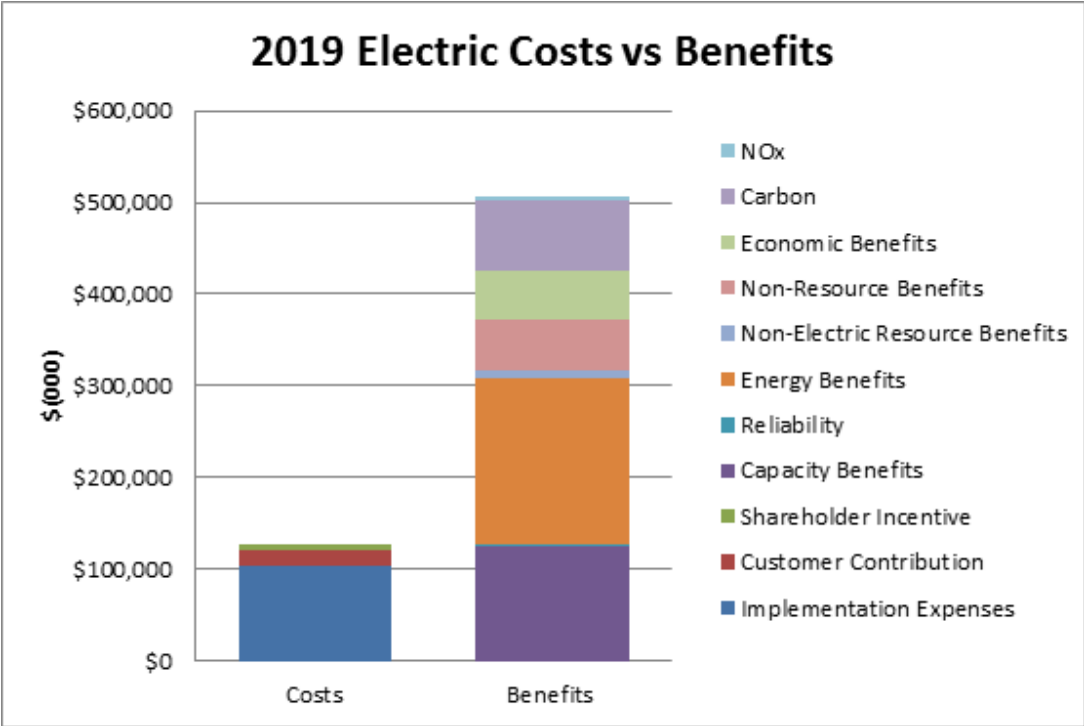


Key Amendment #2: BCR Models Correction

- The Company recently discovered an Excel error in the BCR models
- This affected the calculation of non-embedded carbon savings applied to gas savings measures in the electric portfolio
- A Correction changes the BCR models' estimated benefits substantially
- The Company will make all necessary changes to reflect this correction
- Prior slide includes footnoted updates to key summary data



Updated Cost-Benefit Charts





Summary & Recommendations

EE Plan

- Substantial improvement between 1st and 2nd EE Plan drafts
- A few items remain to be amended in 2nd EE Plan Draft
- Plan is cost-effective, below cost of supply, and meets 2019 targets

Today's Council Meeting

- Vote today contingent on implementing proposed amendments
- **Recommending approval of Draft 2**, as it will be amended
- Planning process improvements will carry into future years