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January 8, 2019

### MEMORANDUM

**TO: Power Committee**

**FROM: Charlie Grist, Kevin Smit, Jennifer Light, and Tina Jayaweera**

**SUBJECT: Draft Value of Conservation White Paper**

### BACKGROUND:

Presenter: Ben Kujala

Summary: Staff updated the draft Value of Conservation white paper based on feedback from Council members from the December meeting and internal review. Pending Council approval, the paper would be released for public comment in February. The primary changes are the addition of an executive summary and conclusions. The list below highlights these and other changes made since the December version.

Section 1: Executive Summary. This section is new.

Section 2: Value Streams of Energy Efficiency. Staff added discussions about short-term market price under the sections titled "Reduced Cost" and "Reduced Risk" and updated Figure 8 (pages 2-5 and 2-12)

Section 3: Context of the Bonneville System. Clarified language describing prior Bonneville conservation program structures (pages 3-3,3-4). Added a section on the transmission and retail competition policy changes resulting from the Energy Policy Act of 1992 and discussed their impact on the distribution of value of energy savings (pages 3-5, 3-20, 3-22)

Section 4: Utility-Specific Value of Energy Efficiency. Added caveat on limited scope of utility interviews (page 4-1)

Section 5: Barriers to Energy Efficiency. Added discussion of long-term versus short-term value (page 5-2)

Section 6: Conclusions. This section is new.

**Relevance:** Throughout the development of the Seventh Plan, utility general managers presented to the Council on the challenges they face in implementing energy efficiency. In part a response to this, the Seventh Plan identified three action items for Bonneville to quantify the value of conservation, explore different efficiency implementation approaches, and identify barriers to conservation acquisition (BPA-5, BPA-6, and BPA-7). While not directly tied to these Action Items, Council staff have been working on a white paper outlining the value of conservation, with a focus on how those benefits flow back differentially to utilities.

**Workplan:** A.1.2. Engage with Bonneville to ensure the value of conservation is included in budgeting discussions.

**Background:** The Seventh Plan highlights the value of conservation to the region. This includes direct value to the utility system, as well as to end use customers and the society at large. It is clear, however, that energy efficiency does not provide equal value to all utilities. The purpose of this paper is to explore the broad value of energy efficiency, as well as how that value flows back differentially to utilities. The paper focuses on the Bonneville utilities.

At the August 2018 Power Committee meeting, staff shared an earlier draft of the paper. Council member recommendations were incorporated in the December 2018 version that the Power Committee reviewed. In December, the Power Committee made suggestions for refinement and agreed on the final scope of the paper pending review of the executive summary and other modifications.

**More Info:** Draft Value of Conservation White Paper

# Value of Energy Efficiency

January 15, 2019  
Power Committee



## Changes since December

- **Section 1 Executive Summary:** **New**
- **Section 2 Value Streams of EE:** Minor updates about short-term market price
- **Section 3 Context of BPA System:** Added section on Energy Policy Act of 1992 and its impact on current rate structure
- **Section 4 Utility-Specific Value of EE:** Expanded caveats on limited scope of interviews
- **Section 5 Barriers to EE:** Added discussion on short-term versus long-term value
- **Section 6 Conclusion:** **New**



## Appendix A

- Plan to include examples similar to Emily Traetow (BPA) presentation to Power Committee Sept 2017
  - Slides following
- Will highlight impacts on rates, charges, and differences based on product (load following, slice/block, block) and whether above/below rate period high water mark
- Appendix will be completed for February meeting



Example 1: Block Customer

USING BP18 Rate Case Data	TRL aMW	NLSL aMW	Existing Resource aMW	TRL - NLSL - Existing Resource aMW	RHWM aMW	Above-RHWM Load aMW	Net Requirement aMW	Tier 1 Block Amounts aMW	
Seattle City Light, forecast	1126.595	0.000	615.746	510.849	515.503	0.000	510.849	510.849	
Seattle City Light, 5% conservation before annual Net Requirements	1070.265	0.000	615.746	454.519	515.503	0.000	454.519	454.519	
Seattle City Light 5% conservation after annual Net Requirements	1126.595	0.000	615.746	510.849	515.503	0.000	510.849	510.849	can market surplus generation
	TOCA	Slice%	Non-Slice TOCA	Composite Charge	Non-Slice Charge	Slice Charge	Load Shaping Charge	Total Power Charges	Effective Rate \$/MWh
Seattle City Light, forecast	0.0735580	-	0.0735580	\$187,406,244	-\$26,428,356	\$0	\$9,356,380	\$170,334,268	\$38.06
Seattle City Light, 5% conservation before annual Net Requirements	0.0654470	-	0.0654470	\$166,741,572	-\$23,514,192	\$0	\$8,327,093	\$151,554,473	\$38.06
Seattle City Light 5% conservation after annual Net Requirements	0.0735580	-	0.0735580	\$187,406,244	-\$26,428,356	\$0	\$9,356,380	\$170,334,268	\$38.06

\*Not the customer's actual charges, based on forecasts in rate case. Does not include REP Refund, Low Density Discount, and Irrigation Rate Discounts.

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## Example 2: Slice/Block Customer

USING BP18 Rate Case Data	TRL aMW	NLSL aMW	Existing Resource aMW	TRL - NLSL - Existing Resource aMW	RHWM aMW	Above-RHWM Load aMW	Net Requirement aMW	Tier 1 Block + Critical Slice Amounts aMW	
Okanogan PUD, forecast	73.986	0.000	24.258	49.728	45.174	4.554	45.174	45.174	
Okanogan PUD, 5% conservation before annual Net Requirements	70.287	0.000	24.258	46.029	45.174	0.855	45.174	45.174	
Okanogan PUD, 5% conservation after annual Net Requirements	73.986	0.000	24.258	49.728	45.174	4.554	45.174	45.174	can market surplus generation
	TOCA	Slice%	Non-Slice TOCA	Composite Charge	Non-Slice Charge	Slice Charge	Load Shaping Charge	Total Power Charges	Effective Rate \$/MWh
Okanogan PUD, forecast	0.0065047	0.0036117	0.0028930	\$16,572,252	-\$1,039,416	\$0	\$97,984	\$15,630,820	\$39.50
Okanogan PUD, 5% conservation before annual Net Requirements	0.0065047	0.0036117	0.0028930	\$16,572,252	-\$1,039,416	\$0	\$97,984	\$15,630,820	\$39.50
Okanogan PUD, 5% conservation after annual Net Requirements	0.0065047	0.0036117	0.0028930	\$16,572,252	-\$1,039,416	\$0	\$97,984	\$15,630,820	\$39.50

\*Not the customer's actual charges, based on forecasts in rate case. Does not include REP Refund, Low Density Discount, and Irrigation Rate Discounts.

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## Example 3: Load Following Customer

USING BP18 Rate Case Data	TRL aMW	NLSL aMW	Existing Resource aMW	TRL - NLSL - Existing Resource aMW	RHWM aMW	Above-RHWM Load aMW	Tier 2 Amount aMW	actual Tier 1 Load aMW	actual Net Requirement Load aMW
Kootenai Elec Coop, forecast	53.233	0.000	0.000	53.233	50.181	3.052	3.052	50.181	53.233
Kootenai Elec Coop, 5% conservation before RHWM Process	50.571	0.000	0.000	50.571	50.181	0.390	0.390	50.181	50.571
Kootenai Elec Coop, 5% conservation after RHWM Process	53.233	0.000	0.000	53.233	50.181	3.052	3.052	47.519	50.571
	TOCA	Non-Slice TOCA	Composite Charge	Non-Slice Charge	Load Shaping Charge	Demand Charge	Tier 2 Charge	Total Power Charges	Effective Rate \$/MWh
Kootenai Elec Coop, forecast	0.0072256	0.0072256	\$18,408,912	-\$2,596,056	\$285,285	\$751,330	\$727,103	\$17,576,574	\$37.69
Kootenai Elec Coop, 5% conservation before RHWM Process	0.0072256	0.0072256	\$18,408,912	-\$2,596,056	\$363,875	\$751,357	\$0	\$16,928,088	\$38.21
Kootenai Elec Coop, 5% conservation after RHWM Process	0.0072256	0.0072256	\$18,408,912	-\$2,596,056	-\$250,559	\$751,357	\$727,103	\$17,040,757	\$38.47

\*Analysis assumes conservation load reduction occurs as a flat block. Not the customer's actual charges, based on forecasts in rate case. Does not include REP Refund, Low Density Discount, and Irrigation Rate Discounts.

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