

**EXH. GA-11C
DOCKETS UE-240004/UG-240005
2024 PSE GENERAL RATE CASE
WITNESS: GILBERT ARCHULETA**

**BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION**

**WASHINGTON UTILITIES AND
TRANSPORTATION COMMISSION,**

Complainant,

v.

PUGET SOUND ENERGY,

Respondent.

**Docket UE-240004
Docket UG-240005**

**TENTH EXHIBIT (CONFIDENTIAL) TO THE
PREFILED DIRECT TESTIMONY OF**

GILBERT ARCHULETA

ON BEHALF OF PUGET SOUND ENERGY

REDACTED VERSION

FEBRUARY 15, 2024

DER RFP Phase 2 Update

EMC Informational
September 30, 2022



Kimo Spector
DER Commercial Acquisition Manager

Highly Confidential

Informational Summary

- The demand response (DR) capacity target has increased with settlement negotiations
- The DR portfolio will fulfill the new target as well as service our 2031 IRP goals
- PPA returns provide the greatest yield for programs, but are not a guarantee
- Highly impacted communities (HIC) and vulnerable populations (VP) are targeted by programs
- Concurrent analysis is underway and will be presented in October
- Negotiations targeted to begin in November, pending EMC approval

Demand response capacity target has increased from the 2021 CEIP (basis for the approved RFP) to current target through GRC negotiations

IRP Incremental DER additions through 2045

- **24 MWs** of DR will be required by **2025**

Distributed Energy Resource Type	Incremental Resource Additions			Total
	2022-2025	2026-2031	2032-2045	
Battery Energy Storage	25 MW	175 MW	250 MW	450 MW
Solar	80 MW	180 MW	420 MW	680 MW
Demand Response	24 MW	167 MW	21 MW	212 MW
Total	129 MW	522 MW	691 MW	1,342 MW

Demand response target increased through settlement process

- **40 MWs** of DR is targeted by **2024**, with 105% and 115% reward targets
- **2025** CEIP target may be increased up to **70 MWs** as part of a multi-party settlement process, which would be a threefold increase from the 2021 CEIP goal

Portfolio (Enel X, AutoGrid and Oracle) will achieve settlement MW targets

The selected portfolio is maximizing the potential DR and energy storage (ES) capacity we can utilize for winter peak events while minimizing customer segment overlap

- The new 2024 and 2025 targets should be achieved with minimal risk
- The majority of the 2031 IRP DR target could be achieved by cultivating these programs and working on contract extensions



	Portfolio Capacity	Settlement Capacity
2024	57 MWs	40 MWs
2025	78 MWs (excludes 12 MWs ES)	Up to 70 MWs*
		IRP Capacity
2028	118 MWs** (excludes 20 MWs ES)	125 MWs
2031	145 MWs** (excludes 20 MWs ES)	191 MWs

*Dependent on outcome of negotiations

**Dependent on 10 year contracts. Actual contracts will be 5 year with extension provisions based on pricing, performance and other elements

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DER RFP portfolio maximizes DR and BESS MWs

Developer	Program Costs 2022-2025	Total Program Costs	Levelized Cost of Capacity (\$/kW)	DR Winter Capacity (MWs)	Energy Storage (MWs)*	Customer Segment and Resource
Enel X	[REDACTED]	[REDACTED]	[REDACTED]	2024 – 35 MWs 2025 – 40 MWs 2028 – 60 MWs		Large C&I DR with limited to no SMB, but potential partnership with retail chains
AutoGrid				2024 – 18 MWs 2025 – 34 MWs 2028 – 46 MWs	2024 – 4 MWs 2025 – 12 MWs 2028 – 20 MWs	2025: Residential is 32 MWs (T-stat, EV, BDR) and C&I is 14 MWs. 2028: Res is 46 MW and C&I is 20 MW
Oracle				2024 – 4 MWs 2025 – 4 MWs 2028 – 4 MWs		Residential BDR
Total				2024 – 57 MWs (1.5x target) 2025 – 78 MWs (3x target) 2028 – 110 MWs	2024 – 4 MWs 2025 – 12 MWs (.5x target) 2028 – 20 MWs	Overlap (2025): C&I - 14 MWs; Res. - 4 MWs of BDR

Values above are based off of 5 year contracts

*BESS MWs have not been confirmed as separate from DR MWs. BESS is bid under a DR contract, but has greater operational parameters than DR.

**DR counts toward the load reduction side

- The three year \$/kW average of the DER RFP portfolio, compared to the average of the CEIP DR resources is cheaper, [REDACTED] to \$149 /kW.
- Energy storage is provided by AutoGrid through residential programs, but if that counts toward the BESS goal is still being determined.



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Potential return for demand response programs

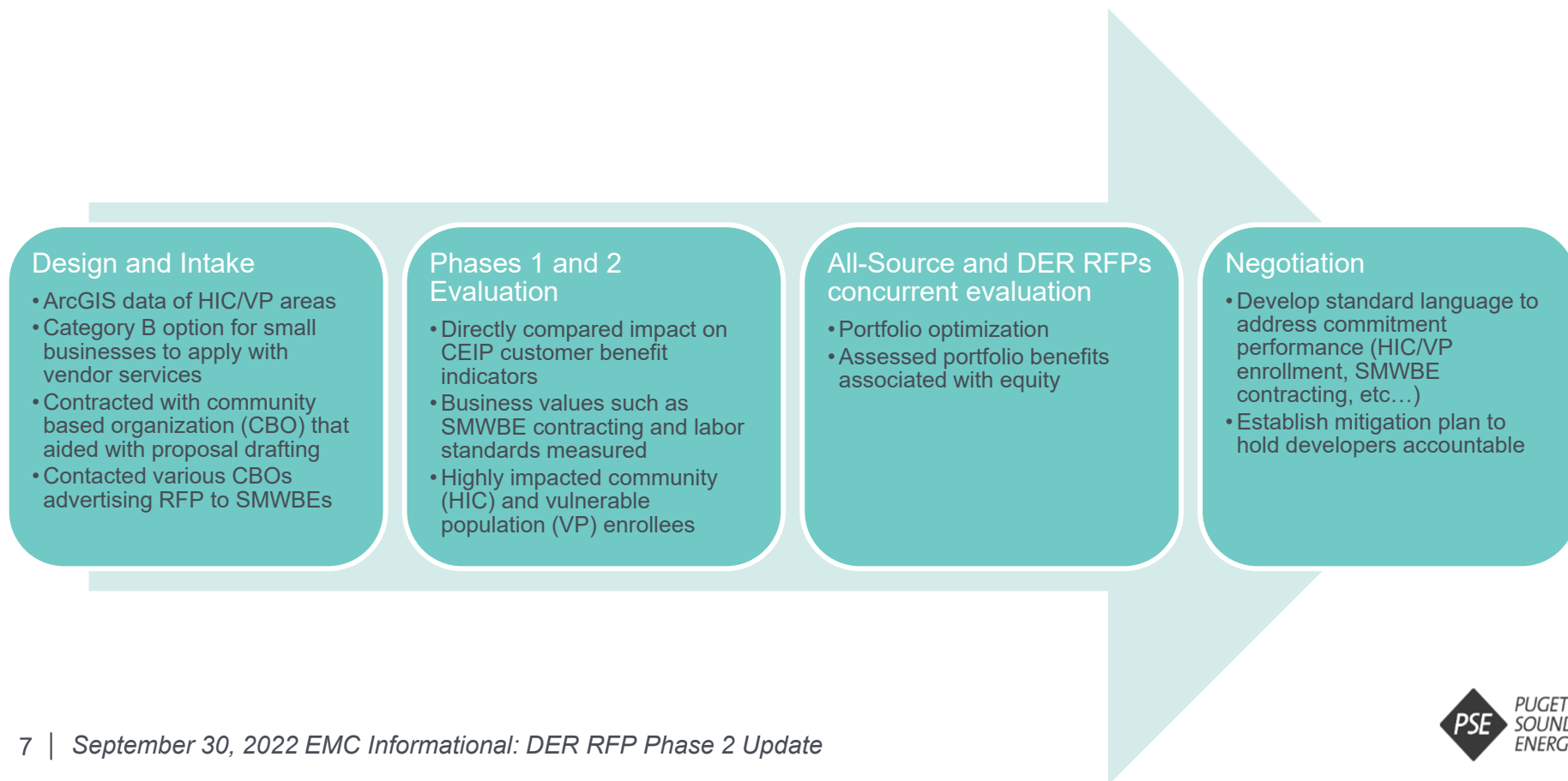
Developer	2024 PIM <i>15% return on OPEX, with cap of \$1M if 40 MW 2024 goal is achieved</i>	PPA Return* <i>RCW 80.28.410 (2b), for duration of PPA a return no less than cost of debt (5.5%) and no greater than rate of return (7.39%)</i>	Ownership Return <i>Return on CapEx</i>	Total Rate of Return <i>Return on total program costs based on receiving PIM and PPA incentives</i>	2022-2024 Program Costs (OpEx)	Total Program Costs (OpEx)
Enel X	[REDACTED]		N/A	[REDACTED]		
AutoGrid			N/A			
Oracle			N/A			
Total			N/A			

*It is unknown if a DR contract can be considered a PPA, but more importantly PSE has not tried to earn a return on a PPA based on RCW 80.28.410(2)(b)

- If we can receive a return on our DR contracts based on RCW 80.28.410(2)(b), it will be a much greater incentive than the 2024 settlement target
- None of these contracts allow for ownership, but DR programs are inherently low CapEx



Inclusion of equity throughout the entire RFP process



AutoGrid and Oracle will target highly impacted communities (HIC) and vulnerable populations (VP)

Resource Type	Enrollees from named communities	Impact and benefits from resource type
Behavioral Demand Response (BDR)	AutoGrid: 15,000 Oracle: 25,000	BDR is a great program for named communities since no upfront purchase or smart devices are necessary; everyone can participate. BDR campaigns are easy to implement and can be customized for languages. AutoGrid and Oracle both have extensive experience in low-income targeted programs, and can work with census tract data to target HIC/VP.
Direct Load Control Thermostats (DLC)	AutoGrid: 3,000	DLC programs can be directly targeted to HIC/VP or implemented through community organizations and government agencies that work with qualified rental properties to offer change outs of old thermostats for smart models. These programs cost a bit more than BDR due to the device and higher incentive cost to motivate owners to install and maintain WiFi.
Electric Vehicle Chargers (EV)	AutoGrid: 300 (chargers)	EV chargers are not a natural fit for HIC/VP communities, so a large adoption rate is not expected. However, installing EV chargers in named communities and promoting EV adoption has a direct impact on reducing local pollution. Multi-family properties would be the target for this program and AutoGrid has channel partners that excel in targeting these segments.

Result from concurrent analysis between DER RFP and All-Source RFP will be reported at Oct EMC and DER short list will not change

Original approach

- Start with 24 MWs as a floor and see what incremental costs would result from targeting 125%, 150%, etc... of the target floor

New approach

- The DER shortlist is decided from the Phase 2 results, which picked the most cost efficient bids to achieve our settlement targets, so the total proposal pool used for resource analysis is the same as the DER short list
- The concurrent analysis will focus on analyzing variations of short list (Portfolio A: Enel X, Portfolio B: Enel X and AutoGrid, etc...) to determine incremental costs for CBIs

Reasoning

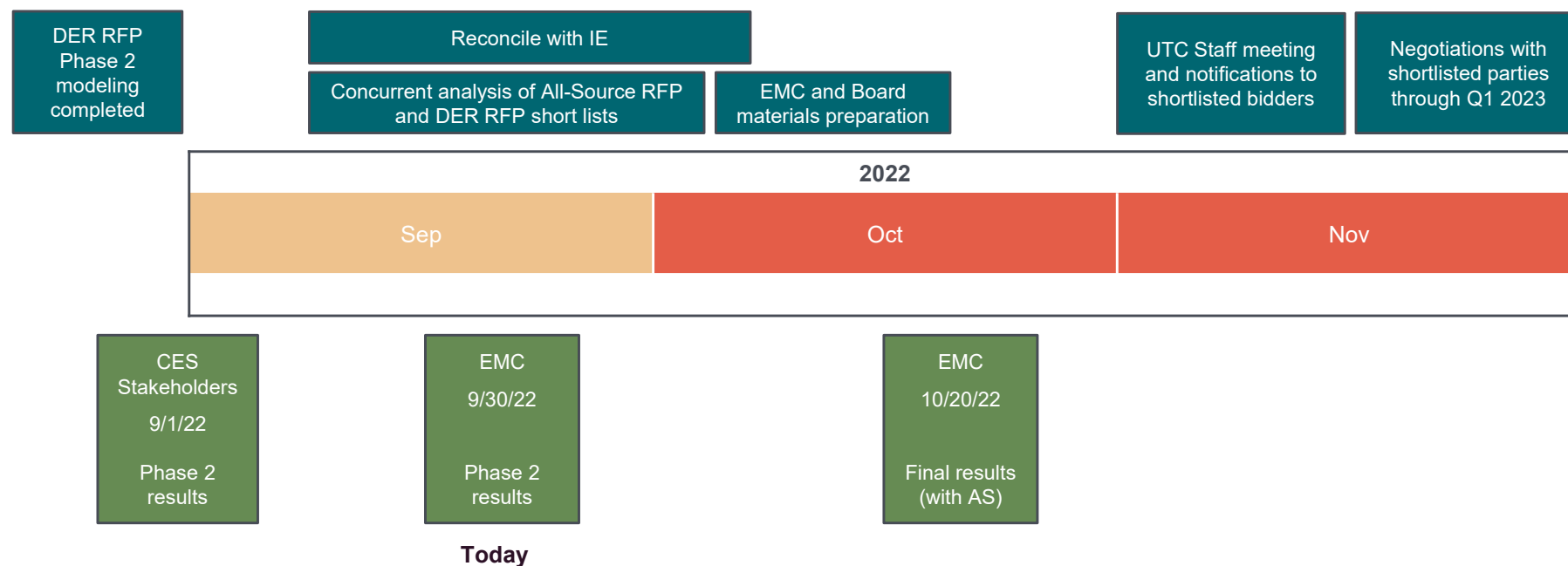
- An incremental cost comparison will still be achieved
- We needed to increase our 24 MW target due to a lot of third party push back
- The BCA is a better tool for analyzing the societal and ancillary benefits of DERs than Aurora

The concurrent analysis should not alter the final DER shortlist from Phase 2, but instead provide analysis on incremental benefits.

The concurrent analysis is mandated by WAC 480-107-009 (4) Targeted RFP requirements. If the utility issues a targeted RFP in conjunction with an all-source RFP, it must fairly compare all resource options in its combined analysis.

Phase 2 next steps

The DER RFP Phase 2 analysis is complete and the shortlist has received IE approval.



Appendices

- A. Proposal rankings and quantitative elements
- B. Quantitative comparison of Portfolios 1 and 2
- C. Qualitative elements
- D. Evaluation methodology
- E. Segment overlap

Appendix A

Proposal rankings and quantitative elements

Ranking of proposals – Uplight is more cost efficient, but provides a tenth the capacity of AutoGrid * **Confidential** *

Developer	Combined Score*	Utility Cost Test*	Net Benefit \$M/MW*	MWs of Winter Capacity	Customer Segment and Resource	VPP Integration
Enel X (C&I)	66.4	2.14	.01	2025 – 40 MWs* 2028 – 60 MWs** 2031 – 75 MWs**	Large C&I DR with limited to no SMB, but has partnered with retail chains	Prior experience (Low Risk)
Uplight (Res)	58.9	1.63	.16	2025 – 5 MWs* 2028 – 7 MWs*	Residential and focused on BYOD	Prior experience (Low Risk)
Oracle (Res)	55.2	4.71	.2	2025 – 4 MWs* 2028 – 4 MWs*	Residential BDR	No prior experience, but Oracle is willing to attempt integration (Medium Risk)
AutoGrid (Res)	42.5	1.69	.01	2025 – 46 MWs* 2028 – 74 MWs** 2031 – 86 MWs**	Residential is 32 MWs and C&I 14 MWs. Res. touches on T-stat, EV, BDR and BESS. Res. BESS is 20 MWs by 2026.	Existing VPP provider (Low Risk)
CLEAResult (C&I)	40.4	1.95	.02	2025 – 23 MWs* 2028 – 38 MWs** 2031 – 53 MWs**	Large C&I DR with T-stat for HIC/VP and Edo handling SMB	Minimal experience (Medium Risk)
Itron (C&I)	34.3	1.53	.01	2025 – 36 MWs* 2028 – 52 MWs** 2031 – 52 MWs**	Large C&I DR with limited to no SMB. Some residential, but all BYOT.	Minimal experience (Medium Risk)
C+C/EcoTech (MF Solar)	23	.32	(.47)	2025 – 3.8 MWs* 2028 – 3.8 MWs*	Multi-family community solar targeting HIC/VP (>50% from named communities)	N/A (<.5 MW no VPP visibility)
Sunverge (Res)	19.8	.29	(1.94)	2025/28/31 – 1-1.5 MWs*	Residential BESS is 1 MW and up to .5 MWs of DR	Experience through Bainbridge project (Low Risk)

* Based on 5 year contracts

** Estimates of growth given for 10 year contracts

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Summary of quantitative elements * Confidential *

Developer	<u>Utility Cost Test</u> <i>Greater than 1 is profitable or a positive NPV for a utility</i>	<u>Societal Cost Test</u> <i>Greater than 1 is a net benefit for society</i>	<u>Net Benefit (\$M/MW)*</u> <i>Greater than 0 is better than a similar generic program</i>	<u>LCOC (\$/kW)</u> <i>Levelized cost of capacity</i>
Oracle	4.71	4.82	.2	[REDACTED]
Enel X	2.14	10.76	.01	
Uplight	1.63	4.85	.16	
AutoGrid	1.69	4.41	.01	
Sunverge (Option4)	.29	.32	(1.94)	

Values above are based off of 5 year contracts
*Program costs are 2022-2025



Portfolio 1 – latest ELCCs make the DER options much more competitive

IRP 2021 ELCCs for winter peaking only

Latest ELCCs for winter and summer peaking

Developer	LCOE - LCOC (\$/kWh) - (\$/kW)	UCT	SCT	Net Benefit \$M/MW*	LCOE - LCOC (\$/kWh) - (\$/kW)	UCT	SCT	Net Benefit \$M/MW*
Enel X		.88	2.23	.002		2.14	10.76	.01
AutoGrid		.5	.96	(.002)		1.69	4.41	.01
Oracle		.67	.67	(.02)		3.92	3.92	.19
Sunverge (Option4)		.06	.07	(2.47)		.35	.44	(1.94)

Values above are based off of 5 year contracts

*Program costs are 2022-2025

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Average DER RFP portfolio cost compared to CEIP DR resources

	2022	2023	2024	2025	Total
CEIP DR Resource Cumulative Winter mW's	0	5.1	11.0	23.7	23.7
DER RFP DR Resource Cumulative Winter mW's	0	29.7	60.6	90.2	90.2
CEIP DR Resource Total Annual Costs	\$ 341,996	\$ 1,017,981	\$ 1,252,897	\$ 3,142,219	\$ 5,755,093
DER RFP DR Resource Total Annual Costs					
Annual Cost Difference CEIP and RFP Resources					
CEIP DR Resource \$ total annual/Cumulative Winter kW	\$ -	\$ 200.52947	\$ 113.86302	\$ 132.85948	3-Year \$/kW Average \$ 149.08399
DER RFP DR Resource \$ total annual/Cumulative Winter kW					

Appendix B

Comparison of Portfolios 1 and 2

Comparison of Portfolios 1 and 2

		Program Costs 2022-2025	Total Program Costs	DR MWs of Winter Capacity	BESS MWs	Customer Segment and Resource		
Portfolio 1	Enel X	[REDACTED]	[REDACTED]	2024 – 35 MWs 2025 – 40 MWs 2028 – 60 MWs		Large C&I DR with limited to no SMB, but potential partnership with retail chains		
	AutoGrid			2024 – 18 MWs 2025 – 34 MWs 2028 – 46 MWs	2024 – 4 MWs 2025 – 12 MWs 2028 – 20 MWs	2025: Residential is 32 MWs (T-stat, EV, BDR) and C&I is 14 MWs. 2028: Res is 46 MWs and C&I is 20 MWs		
	Oracle			2024 – 4 MWs 2025 – 4 MWs 2028 – 4 MWs		Residential BDR		
	Total			2024 – 57 MWs (1.5x target) 2025 – 78 MWs (3x target) 2028 – 110 MWs	2024 – 4 MWs 2025 – 12 MWs (.5x target) 2028 – 20 MWs	<u>Overlap (2025):</u> C&I - 14 MWs; Res. - 4 MWs of BDR		
Portfolio 2	Enel X			[REDACTED]	[REDACTED]	2024 – 35 MWs 2025 – 40 MWs 2028 – 60 MWs		Large C&I DR with limited to no SMB, but potential partnership with retail chains
	Uplight					2024 – 5 MWs 2025 – 5 MWs 2028 – 7 MWs		Residential and focused on BYOD
	Oracle					2024 – 4 MWs 2025 – 4 MWs 2028 – 4 MWs		Residential BDR
	Total					2024 – 44 MWs (1x target) 2025 – 49 MWs (2x target) 2028 – 71 MWs		No Overlap

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Potential Return of Portfolio 2

Developer	<u>2024 PIM</u> <i>15% return on OPEX, with cap of \$1M if 40 MW 2024 goal is achieved</i>	<u>PPA Return*</u> <i>RCW 80.28.410 (2b), for duration of PPA a return no less than cost of debt (5.5%) and no greater than rate of return (7.39%)</i>	<u>Ownership Return</u> <i>Return on CapEx</i>	<u>Total Rate of Return</u> <i>Return based on receiving PIM and PPA return</i>	<u>2022-2024 Program Costs (OpEx)</u>	<u>Total Program Costs (OpEx)</u>
Enel X	[REDACTED]		N/A	[REDACTED]		
Uplight			N/A			
Oracle			N/A			
Total			N/A			
AutoGrid			N/A			

Appendix C

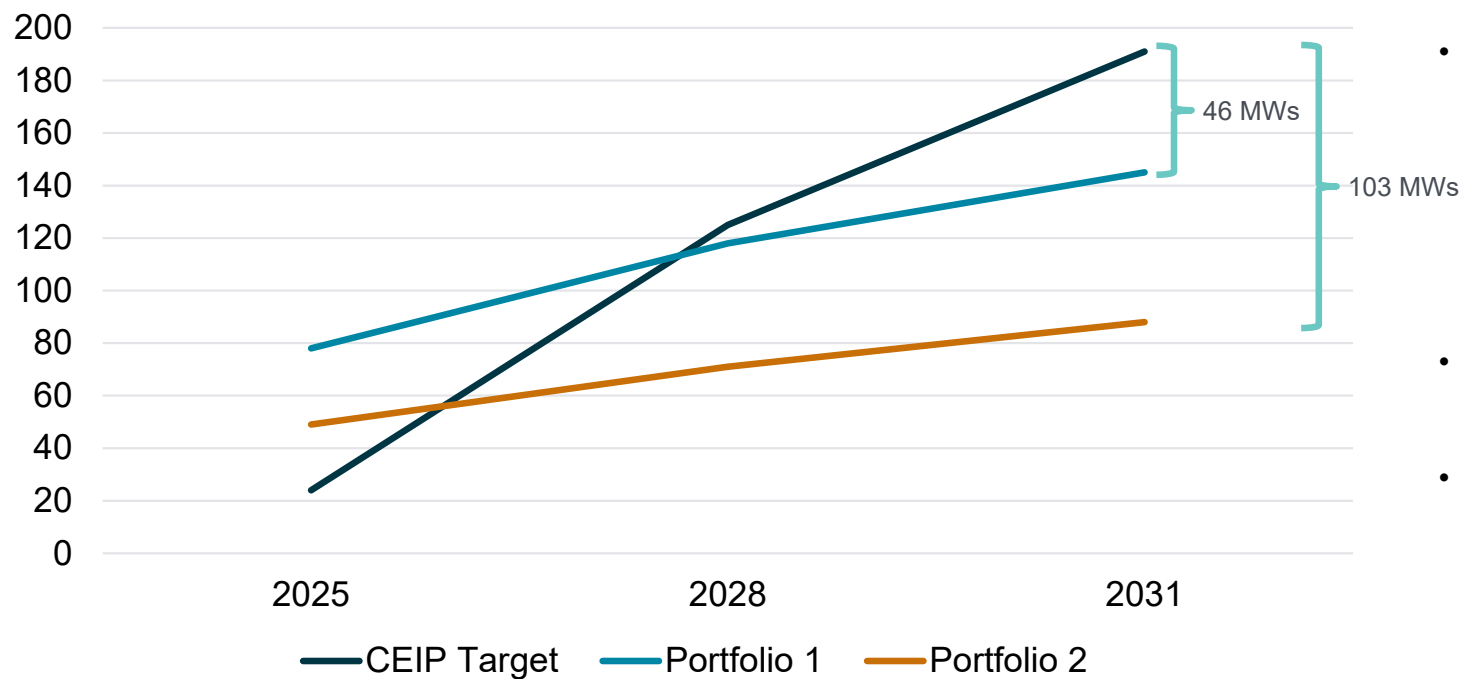
Qualitative elements

Summary of qualitative elements

Bidder	Customer Overlap	VPP Integration	HIC/VP Fulfillment	Customer Mgmt. Experience	Agreement
Enel X	With AutoGrid	Minimal to no risk	N/A	Excels in their field	DR Agreement (PPA)
AutoGrid	Every proposal	Minimal to no risk	BDR: 15k enrolled DLC: 3k enrolled	Moderate experience	DR Agreement (PPA)
Oracle	With AutoGrid	Risk	BDR: 25k enrolled	Excels in their field	DR Agreement (PPA)
Sunverge	With AutoGrid	Minimal to no risk	BESS: 153 enrolled (100% of program)	Moderate experience	Ownership Agreement
Uplight	With AutoGrid	Minimal to no risk	BYOD: 2.5k (25% of 10k enrolled)	Excels in their field	DR Agreement (PPA)

Portfolio 1 could service our MW targets going into 2031, Portfolio 2 would require more assistance

Demand Response



- These values are based off of 10 year contracts, which we will likely not execute. Realistically we'll target 5 year contracts with some sort of extension provision based on pricing, performance and other elements.
- Portfolio 1 only considers the DR portion of AutoGrid, Enel X and Oracle
- Portfolio 2 lists Enel X's, Oracle's and Uplight's values, but Uplight's 2031 MWs are estimated.

Resource dispatch kWh

(kWh) - year	2023	2024	2025	2026	2027	2028
EnelX	377,941	661,397	755,882	944,853	1,039,338	755,882
AutoGrid	209,840	795,184	1,700,811	2,455,500	2,455,500	2,245,660
Oracle	65,000	65,000	65,000	65,000	65,000	0
Total	652,782	1,521,581	2,521,693	3,465,353	3,559,838	3,001,542

- For the lifetime of the portfolio it will dispatch 20,633,750 kWhs

Appendix D

Evaluation methodology

ArcGIS data for bidders

Targeting named communities:

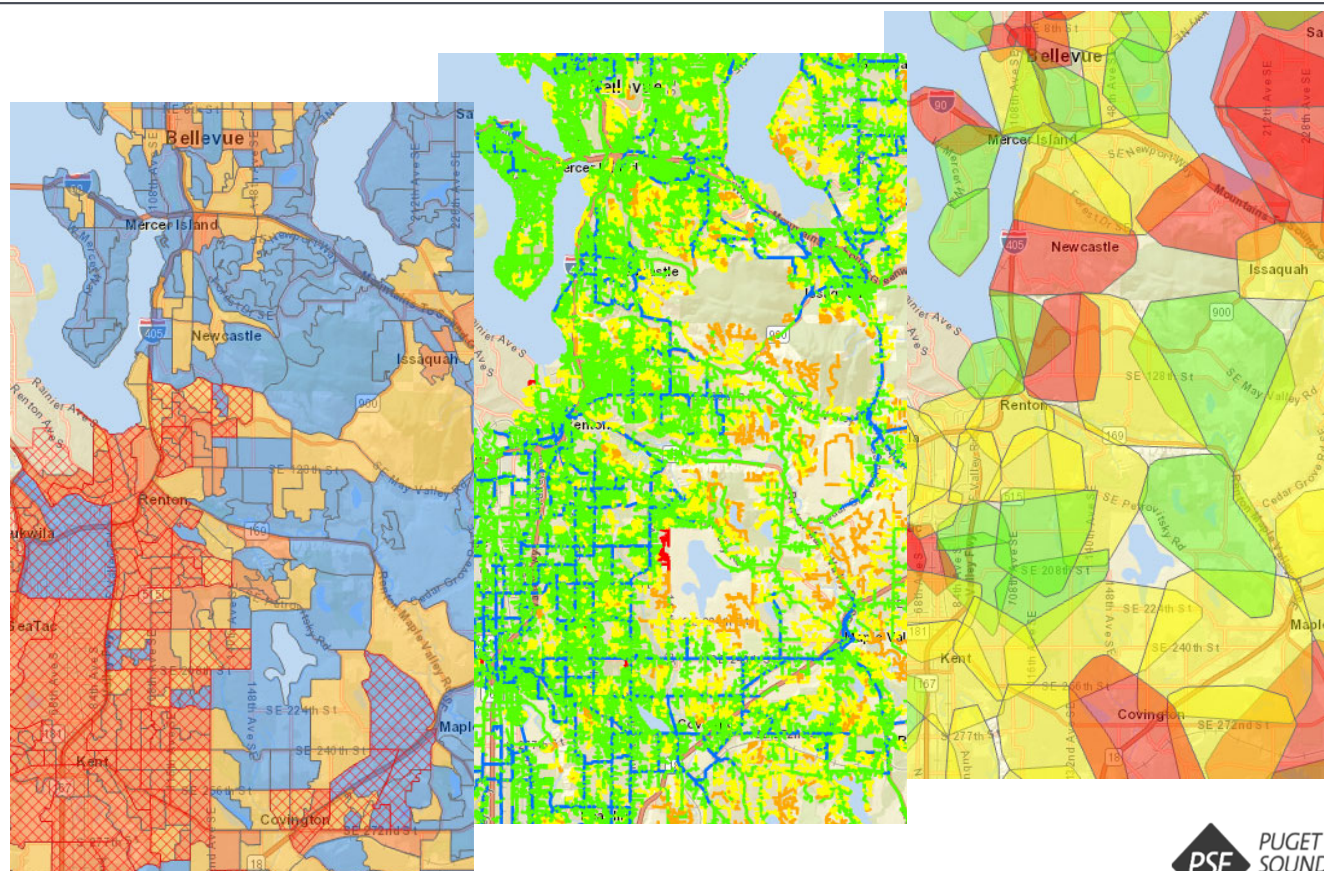
- For vulnerable population mapping, red represents high density, yellow medium and blue low.
- Highly impacted communities are noted by diagonal stripes.

Hosting Capacity Map

- Heat map showing where potential DERs can be installed without requiring significant upgrades

Distribution Substation Load Map

- Shows forecasted loading at PSE substations



Detailed evaluation process

Intake

- New proposal submission web portal
- New proposal data collection method

Phase 1 individual proposal screening

- Quantitative evaluation (60%) - Automated inputs from database for energy and financial modeling
- Qualitative evaluation (40%) - Evaluation is cross-functional, thorough and spotlights CETA benefits
- Phase 1 candidate list - Represents resources and services among the lowest costs and highest balanced value of each technology group, and meets at least 150% of the RFP resource needs (if possible)

Phase 2 portfolio of proposals optimization

- Optimal program design to maximize program benefits
- Optimal portfolio mix of resources with maximum portfolio benefits
- Sensitivity analysis will be performed for optimization under different economic settings such as levels of carbon costs and load growth; may include analysis of portfolio that maximizes CBIs
- Creates the short list for negotiation and contracting

Concurrent Evaluation

- Combined portfolio analysis of DER and All-Source RFPs' preliminary shortlists
- Output is final shortlist for both RFPs

Negotiation and contracting

- Prototype term sheets and redlines for efficient negotiation
- Compliance report filed with WUTC within 90 days of the conclusion of the RFP

The CEIP developed the methodology and tools used in the RFP

CEIP Process

Developed program concepts and costs (Black and Veatch Report included as part of CEIP)

Developed Benefit/Cost model to rank program costs and benefits (BCA)

Developed Customer Benefit Indicators (CBIs) with EAG to rank program customer benefits

Explored boundary conditions for suites of programs: lowest cost, broadening access, most customer benefits

Preferred Portfolio Suite to come closest to boundary conditions while hitting 2025 targets



RFP Alignment

Provides background on potential responses

Incorporated into Phase 1 and 2 of the evaluation

Incorporated into Phase 1 and 2 of the evaluation

Defines the acquisition goals

Provides guidelines to bidders of potential programs

Quantitative Evaluation (60%): Metrics and Models

METRICS	
<p>Net Resource benefit (\$): Difference between the net present value of bid resource and the net present value of equivalent generic resource. Projects may have a portfolio benefit by displacing higher cost DERs.</p>	Higher is better. Useful for comparing projects of similar size and technology type. Used to determine the optimal combination of resources that meets PSE's resource needs.
<p>Net Resource benefit per offered Nameplate (\$/MW) Net present value of a proposed project's net resource benefit divided by the net present value of the project's offered nameplate capacity.</p>	Higher is better. Useful for comparing different project sizes and technologies. Used along with qualitative metrics in establishing an initial ranking of projects for inclusion in the portfolio design.
<p>Cost Test Output (ratio): The ratio of net present value of benefits over net present value of costs with different cost tests using different specific costs, benefits, and discount rates.</p>	Higher is better. Useful for comparing project cost and benefits from different perspectives.
MODELS	
<p>BCA: Excel-based model that aligns with standards in the National Standard Practice Manual (NSPM)¹ and was utilized for PSE's 2021 CEIP. The BCA model analyzes both the utility's and customers' economic perspectives and the interdependencies between the two. To align with existing PSE modeling practices, where possible, the BCA utilizes the same base Aurora modeling assumptions used to develop PSE's 2021 IRP.</p>	
<p>Indicative Pricing Cat. B: Excel-based model that determines the annual cost of a vendor service to benchmark it against comparable services.</p>	

[1] See National Standard Practice Manual For Benefit-Cost Analysis of Distributed Energy Resources August 2020, https://www.nationalenergyscreeningproject.org/wp-content/uploads/2020/08/NSPM-DERs_08-24-2020.pdf

Qualitative Evaluation (40%): Non-price scoring rubric and due diligence

- Category A (Turnkey Resources) and Category B (Vendor Service Components) have their own respective rubrics due to the different requirements of each proposal. Both categories were evaluated separately for Phase 1.
- The rubric is designed to evaluate key areas applicable to all projects regardless of technology type.
- The DER RFP team, Marketing and Guidehouse assisted in the qualitative analysis.

Category A (Turnkey Resources)			Category B (Vendor Components)		
Evaluation Categories	Measures	Weight	Evaluation Categories	Measures	Weight
1. Counterparty Viability	<ul style="list-style-type: none"> • Experience with similar projects • Counterparty stability 	10%	1. Counterparty Viability	<ul style="list-style-type: none"> • Experience with similar projects • Counterparty stability 	15%
2. Project Viability	<ul style="list-style-type: none"> • Financing plan • Execution Plan • Technology Risk 	10%	2. Project Viability	<ul style="list-style-type: none"> • Execution Plan 	15%
3. Site Control / Customer Acquisition	<ul style="list-style-type: none"> • Land agreements status • Customer acquisition plan 	20%	3. Site Control / Customer Acquisition	<ul style="list-style-type: none"> • Customer acquisition plan (DR, DER) 	15%
4. Permitting and Studies	<ul style="list-style-type: none"> • Status of permitting and habitat studies 	5%			
5. Energy Delivery	<ul style="list-style-type: none"> • Interconnection on Distribution 	10%	4. CETA Equity Plan: Customer Benefits	<ul style="list-style-type: none"> • Plan to address all CBIs 	35%
6. CETA Equity Plan: Customer Benefits	<ul style="list-style-type: none"> • Plan to address all CBIs 	25%			
7. CETA Equity Plan: Business Values	<ul style="list-style-type: none"> • ESG Policy • SMWBE contracting • Labor standards 	10%	5. CETA Equity Plan: Business Values	<ul style="list-style-type: none"> • ESG Policy • SMWBE contracting • Labor standards 	20%
8. Named Communities Enrollment	<ul style="list-style-type: none"> • Commitment for named communities enrollment 	10%			

Cost Test Summaries

Utility Cost Test

Description: The purpose of the UCT is to indicate whether the benefits of a DER resource will exceed its costs from the perspective of only the utility system.⁷³ The UCT includes all benefits and costs that affect the operation of the utility system and the provision of electric and gas services to customers. For vertically integrated utilities, this test includes all of the benefits and costs that affect utility revenue requirements. For utilities that are not vertically integrated, this test includes all benefits and costs that affect utility revenue requirements, plus additional benefits and costs associated with market-based procurement of electricity and gas services.

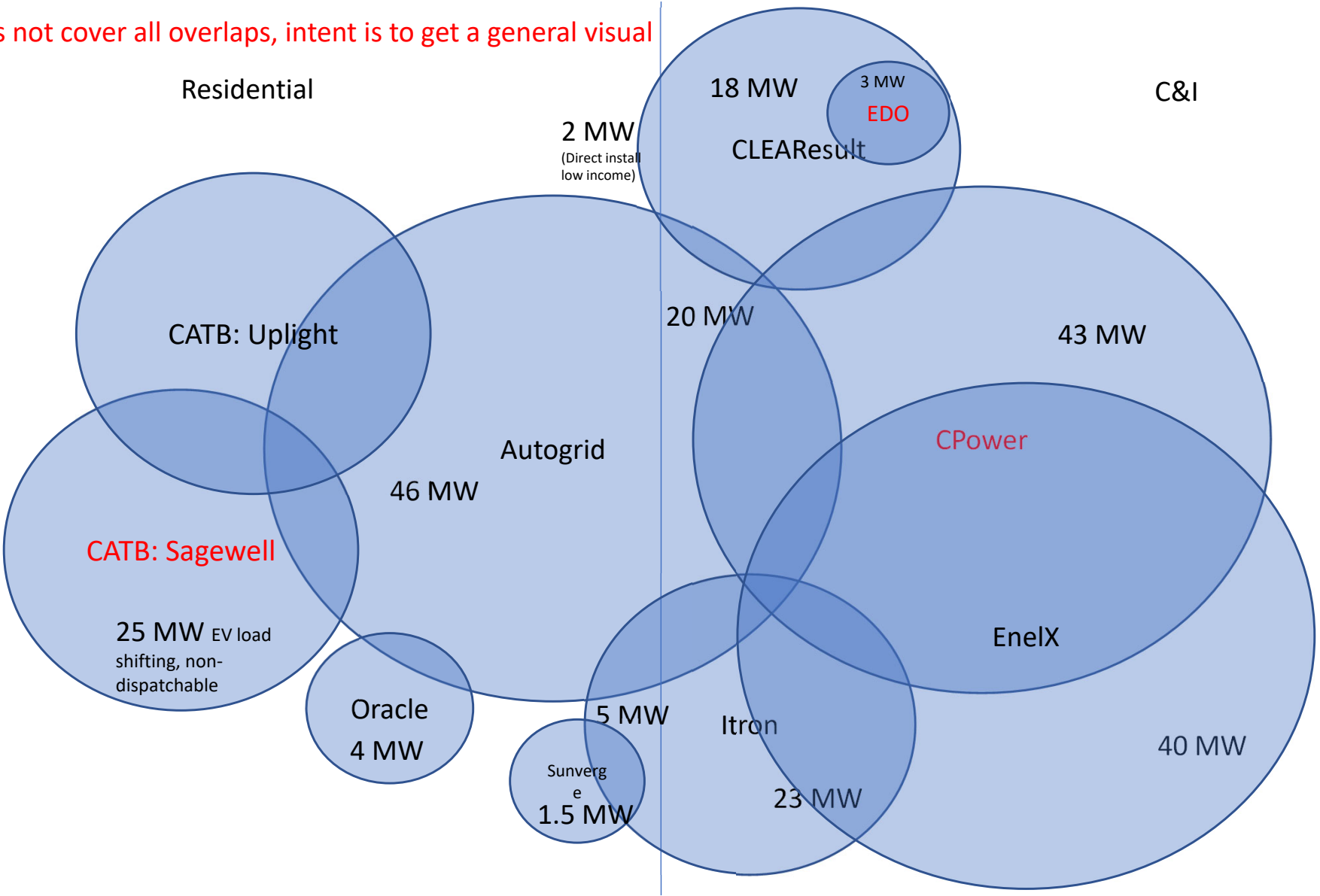
Societal Cost Test

Description: The purpose of the SCT is to indicate whether the benefits of a DER resource will exceed its costs from the perspective of society as a whole. This test provides the most comprehensive picture of the total impacts of a DER resource. This test includes all the impacts of the TRC Test, plus the additional impacts on society. The CaSPM refers to the SCT as a “variation” of the TRC Test (CPUC 2001). Since then, many jurisdictions and many studies have referred to the SCT as a separate test with different implications.

Appendix E

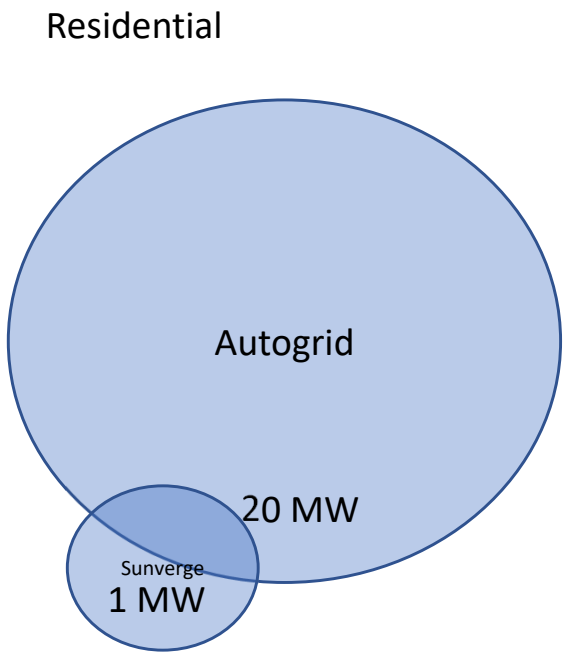
Segment overlap

Does not cover all overlaps, intent is to get a general visual



Does not cover all overlaps, intent is to get a general visual

BESS ONLY



EV ONLY

