PATRYLAK ENERGY ADVISORS

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BROWNSVILLE PUBLIC UTILITIES BOARD

Integrated Resource Plan Workshop #3

FEBRUARY 26, 2025

Agenda

- Recap of January 15, 2025, BPUB Board & PUBCAP Meeting (10 min.)
- Review Resource Plans, Evaluation Process & Group Exercise (50 min.)
  - Review Evaluation Process and Review Resource Plans
  - Review Resource Plan Evaluation Exercise
- Resource Plan Evaluation Exercise (2 hours)
  - Interactive Stakeholder Engagement and Presentations (3 teams)
  - Stakeholder Voting and Justifications (Individual & Group Discussion)
  - Decision Consensus Building (Group Discussion)
  - Final Selections (Group Discussion)
- Next Steps

Recap January 15, 2025 Workshop

- Introduction to IRP variables and assumptions
  - Load forecast
  - Energy and Fuel prices
  - Resource options evaluated
- Evaluation Matrix Exercise Review typical IRP Evaluation Criteria
  - Select non-price evaluation criteria and define
  - Develop non-price evaluation criteria weightings

Evaluation Matrix Exercise

- The Brownsville Public Utilities Board Integrated Resource Plan (IRP) Workshop #2 was tasked with identifying and addressing key criteria to the Brownsville community that should be used in development of the Brownsville Public Utilities Board Integrated Resource Plan.
- Each PUBCAP member submitted written notes highlighting concerns, which were organized into the following focus areas: Environmental, Social and Economic, Reliability and Resiliency, Technical & Operational, Policy & Regulation, Risk and Uncertainty Cost, Customer Impact/Cost, Other
- The PUBCAP members were divided into smaller teams corresponding to these focus areas. Each team analyzed the collected notes, breaking them down into subgroups to provide more detailed insights and align specific notes with concerns.
- Subsequently, the PUBCAP reconvened to present the Resource Plan Evaluation Criteria Statements developed by all of the subgroups.
- Next, each PUBCAP member participated in a prioritization exercise. Members placed one of their 6 dots/stickers next to the Resource Plan Evaluation Statement they considered most critical.

Evaluation Matrix and Decision Model

The goal of the evaluation matrix is to define and rank each resource plan option based on its ability to best meet the criteria important to BPUB and its customers. The typical evaluation criteria include:

- Environmental
- Reliability and Resiliency
- Social and Economic
- Technical and Operational
- Risk and Uncertainty Cost
- Policy and Regulatory
- Customer Impact/Cost

Determined specifically which key considerations of the above are most important to BPUB and its customers as well as provide input on ranking/weighting their importance.

Exercise Results

Topic	Resource Plan Evaluation Statement	Priority Votes Received
2 - Social & Economic	Ensure mission of utility is to develop leaders inside the organization and the community as well	9
3 - Reliability and Resiliency	BPUB Community wants electric resources that are accessible to the consumers should be reliable long term and resilient to natural disaster and weather conditions	9
1 - Environmental	Consider incentives for renewable generation	6
7-Customer Impact/Cost	Select strategy/plan that offer rate stability or a lower rate	6
5 - Policy & Regulation	Using our political capital, select projects that qualify for state and federal funding (grants) - could be dispatchable or renewable	5
8 - Other	Extreme Transparency	5

Exercise Results (con't)

Topic	Resource Plan Evaluation Statement	Priority Votes Received
4 - Technical & Operational	We want diversified power, power sources that will insolate BPUB from swings in fuel prices	4
7-Customer Impact/Cost	Adopt a tiered structure "fees" proportionate to the project/house size	4
6-Risk and Uncertainty Cost	Prioritize resources where the impact of market price volatility can be minimized	3
5 - Policy & Regulation	All the while building trust with the community	2
6-Risk and Uncertainty Cost	Avoid taking risks of new large customers that could suddenly leave	2
2 - Social & Economic	Enable economic development by working with the city and ensure its not hampered by energy constraints	1
4 - Technical & Operational	Grid compatibility - we want resources that support the integration of intermittent power resources	1
6-Risk and Uncertainty Cost	Favor resources that have lower new technology and/or cyber risk	1
1 - Environmental	Select power resources that limit water usages	0
1 - Environmental	Select power resources that reduce carbon emissions	0

PUBCAP Weighting

PUBCAP Input	2nd (6)	Highest (9)	Highest (9)	4	4	3rd (5) & Transparentcy	2nd (6)	
Weighted Raw Score Ranking	Environmental	Reliability and Resiliency	Social & Economic	Technical & Operational	Risk & Uncertainty	Policy & Regulatory	Customer Impact/Cost	Weighted Score
Portfolio 1	0.50	1.00	1.00	0.85	0.90	1.00	1.00	2.19
Portfolio 2	0.50	1.00	1.00	0.85	0.90	1.00	1.00	2.41
Portfolio 3	0.50	1.00	1.00	0.85	0.90	1.00	1.00	1.31

Portfolio # 1

Portfolio 1

Row Labels	2026	2027	2028	2029	2030	2031	2032	2040	2041	2043	2044	2045	2046	2047	2048	2049	Total
BPUB IRP - Portfolio 1	**95.60**	**96.30**	**35.00**	**125.00**	**-87.70**	**35.00**	**35.00**	**50.00**	**-78.00**	**0.00**	**0.00**	**25.00**	**25.00**	**75.00**	**35.00**	**25.00**	**491.20**
AEP Desert Sky Wind					-73.00												-73.00
AEP PPA					-50.00												-50.00
BPUB Commercial Energy Efficiency SOP	0.30	0.30															0.60
BPUB Residential Energy Efficiency SOP	0.30				0.30												0.60
Constellation-Sendero PPA									-78.00								-78.00
Hidalgo CC1																	0.00
IRA New Battery_ERCOT-South:Hybrid:TX	10.00	10.00															20.00
IRA New Solar_ERCOT-South:1-Axis:TX	20.00																20.00
IRA New Solar_ERCOT-South:Hybrid:TX	30.00	30.00															60.00
IRA New Wind_ERCOT-South: H25:C4:TX	25.00	25.00	25.00	25.00	25.00	25.00	25.00										175.00
New Battery_ERCOT-South:Battery-Hybrid:TX														10.00			10.00
New Battery_ERCOT-South:Utility:Battery:TX	10.00	10.00	10.00		10.00	10.00	10.00							10.00	10.00		80.00
New IC_ERCOT-South:TX		21.00															21.00
New Solar_ERCOT-South:Hybrid:TX														30.00			30.00
New Wind_ERCOT-South:H 25:C4:TX												25.00	25.00	25.00	25.00	25.00	125.00
New AERO_ERCOT-South:TX				100.00				50.00									150.00
Silas Ray 10																	0.00
Silas Ray 6_9																	0.00

Portfolio # 2

Portfolio 2																	
Row Labels	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2040**	**2041**	**2043**	**2044**	**2045**	**2046**	**2047**	**2048**	**2049**	**Total**
BPUB IRP - Portfolio 2	**95.60**	**96.30**	**35.00**	**125.00**	**-48.00**	**25.00**	**25.00**	**50.00**	**-78.00**	**0.00**	**0.00**	**25.00**	**25.00**	**35.00**	**35.00**	**25.00**	**470.90**
AEP Desert Sky Wind					-73.00												-73.00
AEP PPA					-50.00												-50.00
BPUB Commercial Energy Efficiency SOP	0.30	0.30															0.60
BPUB Residential Energy Efficiency SOP	0.30																0.30
Constellation-Sendero PPA									-78.00								-78.00
Hidalgo CC1																	0.00
IRA New Battery_ERCOT-South:Hybrid:TX	10.00	10.00															20.00
IRA New Solar_ERCOT-South:1-Axis:TX	20.00																20.00
IRA New Solar_ERCOT-South:Hybrid:TX	30.00	30.00															60.00
IRA New Wind_ERCOT-South: H25:C4:TX	25.00	25.00	25.00	25.00	25.00	25.00	25.00										175.00
New Battery_ERCOT-South:Utility:Battery:TX	10.00	10.00	10.00											10.00	10.00		50.00
New IC_ERCOT-South:TX		21.00															21.00
New Wind_ERCOT-South:H 25:C4:TX												25.00	25.00	25.00	25.00	25.00	125.00
New AERO_ERCOT-South:TX				100.00	50.00			50.00									200.00
Silas Ray 10																	0.00
Silas Ray 6_9																	0.00

Portfolio # 3

Portfolio 3

Row Labels	2026	2027	2028	2029	2030	2031	2032	2040	2041	2043	2044	2045	2046	2047	2048	2049	Total
BPUB IRP - Portfolio 3	**95.60**	**96.60**	**35.00**	**146.00**	**-98.00**	**75.00**	**25.00**	**0.00**	**-78.00**	**10.00**	**25.00**	**35.00**	**75.00**	**75.00**	**10.00**	**35.00**	**562.20**
AEP Desert Sky Wind					-73.00												-73.00
AEP PPA					-50.00												-50.00
BPUB Commercial Energy Efficiency SOP	0.30	0.30															0.60
BPUB Residential Energy Efficiency SOP	0.30	0.30															0.60
Constellation-Sendero PPA									-78.00								-78.00
Hidalgo CC1																	0.00
IRA New Battery_ERCOT-South:Hybrid:TX	10.00	10.00		10.00													30.00
IRA New Solar_ERCOT-South:1-Axis:TX	20.00																20.00
IRA New Solar_ERCOT-South:Hybrid:TX	30.00	30.00		30.00													90.00
IRA New Wind_ERCOT-South: H25:C4:TX	25.00	25.00	25.00	25.00	25.00	25.00	25.00										175.00
New Battery_ERCOT-South:Battery-Hybrid:TX													10.00	10.00			20.00
New Battery_ERCOT-South:Utility:Battery:TX	10.00	10.00	10.00	10.00						10.00		10.00	10.00	10.00	10.00	10.00	100.00
New IC_ERCOT-South:TX		21.00		21.00													42.00
New Solar_ERCOT-South:Hybrid:TX													30.00	30.00			60.00
New Wind_ERCOT-South:H 25:C4:TX											25.00	25.00	25.00	25.00		25.00	125.00
New AERO_ERCOT-South:TX				50.00		50.00											100.00
Silas Ray 10																	0.00
Silas Ray 6_9																	0.00

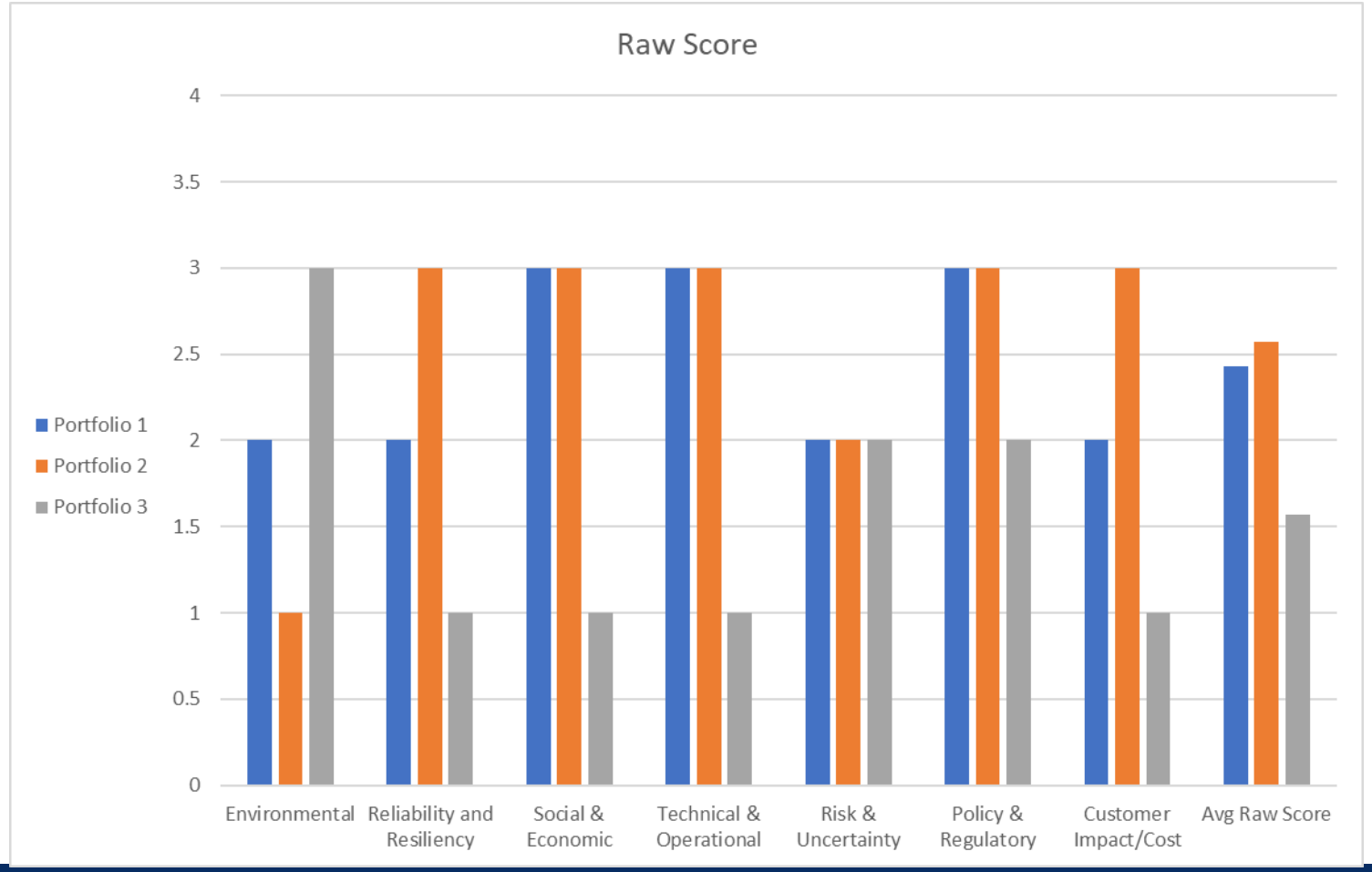
NPV Costs by Portfolio

BPUB - Net Present Value Total Plan Costs by Resource Plan over 25 years				
Scenario	**Total Costs ($000)**	**Total Operating Cost ($000)**	**Carrying Costs ($000)**	**Estimated bill Impact (%)**
BPUB IRP - Portfolio 1	$1,535,726	$993,472	$542,255	0.33%
BPUB IRP - Portfolio 2	$1,435,068	$860,665	$574,404	-2.41%
BPUB IRP - Portfolio 3	$1,583,915	$1,017,138	$566,777	1.97%

Portfolio Scoring

Raw Score Ranking	Environmental	Reliability and Resiliency	Social & Economic	Technical & Operational	Risk & Uncertainty	Policy & Regulatory	Customer Impact/Cost	Avg Raw Score
Portfolio 1	2	2	3	3	2	3	2.0	2.4
Portfolio 2	1	3	3	3	2	3	3.0	2.6
Portfolio 3	3	1	1	1	2	2	1.0	1.6

Portfolio Raw Scores



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Portfolio 3	0.50	1.00	1.00	0.85	0.90	1.00	1.00	1.31

Portfolio Raw & Weighted Scores

Resource Plan Evaluation Exercise (2 Hours)

- Interactive Stakeholder Engagement and Presentations (3 teams)
- Stakeholder Voting and Justifications (Individual & Group Discussion)
- Decision Consensus Building (Group Discussion)
- Final Selections (Group Discussion)

Questions and Next Steps

- Questions?
- Workshop # 4 – March 10, 2025 (1.5 Hour Meeting)