RATE ADVISORY COMMITTEE UPDATE

GENERATION PLANNING A JOURNEY FOR OUR FUTURE

October 25, 2022

AGENDA & OBJECTIVES

- RAC's Journey to today
- Basic principles
- Public input
- Closing Remarks

The Rate Advisory Committee (RAC) was started back in 2021 with generation planning as one of it's primary objectives. This part of their journey will be complete when they send their recommendation to the CPS Energy Board in December.

PURPOSE OF THE RAC

The purpose of the RAC as defined in the bylaws is:

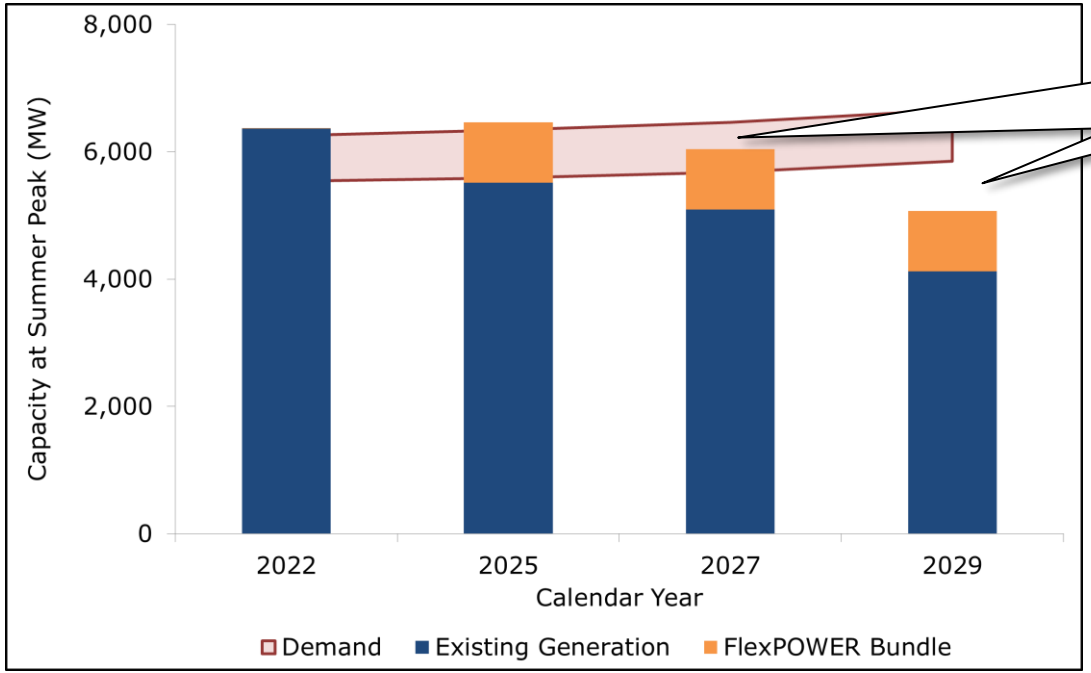
> *"Members of the RAC will devote the necessary time and energy to learn about the utility business and the rate design function in order to understand and provide thoughtful input and perspectives to CPS Energy Management and Board of Trustees on rate structure, rate design, proposed rate increases and generation planning issues."*

One of the founding purposes of the RAC is to learn & provide thoughtful input & perspectives on generation planning.

GENERATION PLANNING PRINCIPLES

GENERATION PLANNING

CURRENT GENERATION PLANNING PROCESS TAKES US THROUGH 2030

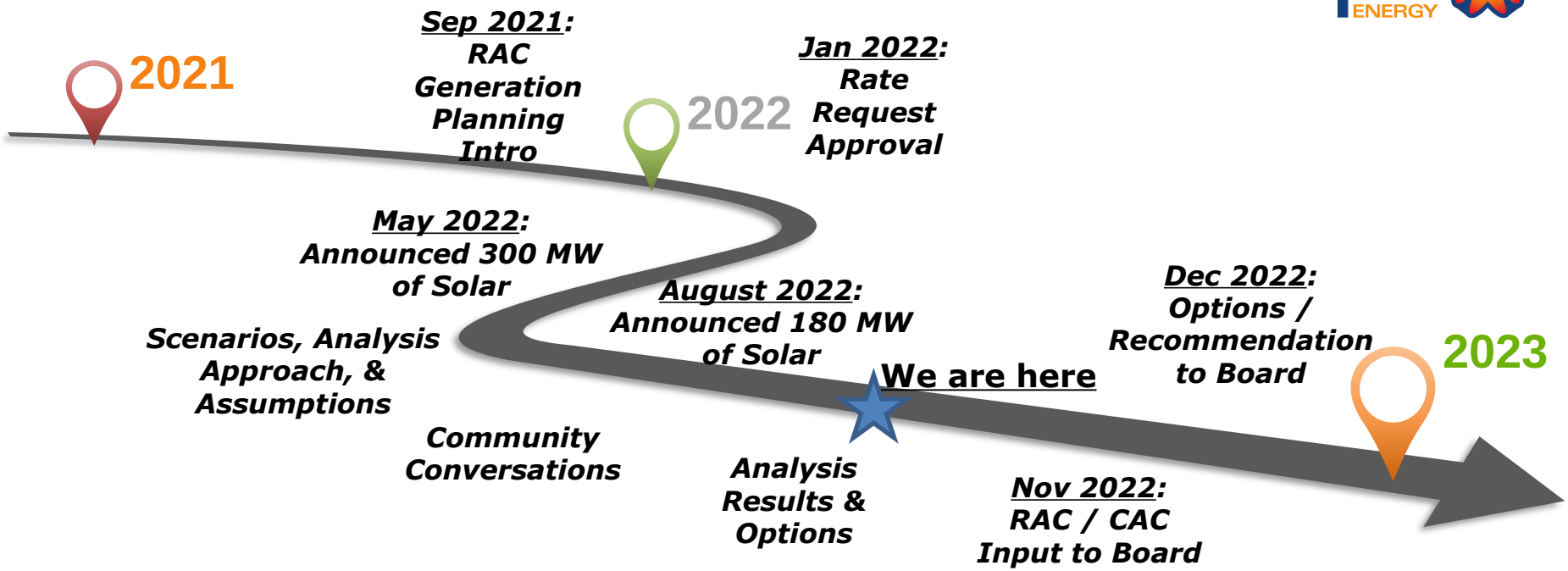


Generation planning process is largely focused between now & 2030.

Load growth (~115 MW per year) and upcoming capacity retirements mean that CPS Energy needs new capacity to meet customer needs.

POWER GENERATION PLAN UPDATE

TIMELINE



Our objective is to develop a recommended generation plan by December 2022.

CRA POWER GENERATION RESOURCE PLANNING APPROACH

Identify Planning Objectives	Develop Market Scenarios	Develop Resource Portfolios	Portfolio Modeling and Analysis	Select Preferred Plan
Agree on planning objectives and metrics to measure the performance of the plan against each objective	Identify key sources of uncertainty and the potential range of future outcomes, and design internally consistent future scenarios	Design options for future resource plans, often based on different future scenarios and priorities	Evaluate the performance of each resource portfolio against each future scenario, stochastic uncertainty, & extreme risk events	Identify trade-offs from each resource portfolio and select the preferred portfolio

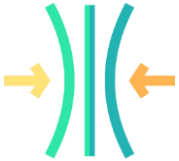
Charles River Associates' (CRA) integrated 5-step resource planning approach starts with identifying the planning objectives and ending with a preferred plan.

GENERATION PLANNING OBJECTIVES

System Reliability & Climate Resiliency
RAC: 18 (31%)

Environmental Sustainability
RAC: 13 (22%)

Affordability
RAC: 12 (20%)



System Flexibility
RAC: 5 (8%)

Workforce Impact
RAC: 1 (2%)

Five planning objectives were established, with System Reliability & Climate Resiliency, Environmental Sustainability, and Affordability scoring as most important by RAC members

RAC numbers represent "Dot Plot" ranking tallies out of 59 total from August RAC meeting

METRICS/EVALUATION CRITERIA

Planning Objectives	Metrics	Measures
System Reliability & Climate Resiliency	Diversity of Generation Capacity Mix	Pie chart of generation mix in CPS Energy portfolio by fuel type (e.g. wind, solar, gas, coal, etc.) in 2030
	Capacity Headroom	Reserve Margin in 2030
	Climate Resiliency	Revenue requirements in extreme weather in 2030
		Market purchases in extreme weather in 2030
Environmental Sustainability	Progress Towards City of SA Climate Action & Adaptation Plan (CAAP) Goals	% reduction in CO_2 intensity from CPS Energy generation in 2030, relative to 2016 baseline
		The carbon intensity (CO_2 per MWh) of electricity generated by CPS Energy fleet in 2030 and 2040
		% reduction in electricity demand due to energy efficiency measures in 2030
Affordability	Bill Impact	Estimated monthly bills in 2030 (Reference & scenarios)
	Revenue Requirements	Present value of revenue requirements between 2023 and 2030
		Present value of revenue requirements between 2023 and 2050

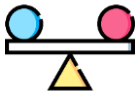
Evaluation criteria are refined based on RAC feedback, with more focus on near-term outcomes.

METRICS/EVALUATION CRITERIA

Objectives	Metrics	Measures
System Flexibility	Market Purchases	% of CPS Energy electricity demand that is met through ERCOT market purchases in 2030
	Dispatchability	% of generating capacity in CPS Energy fleet that can have its output adjusted on demand in 2030
Workforce Impact	CPS Energy Workforce Impact	Number of CPS Energy Generation Employees in 2030
	Local Economic Impact	Total $ in capital expenditures for new generation capacity built in greater San Antonio area

Evaluation criteria has been refined based on RAC feedback, with more focus on near-term outcomes.

ERCOT SCENARIOS

	ERCOT Scenario	Narrative
	**Reference Scenario (REF)**	• Continuation of historical trends in demand growth, technological developments
	**Carbon-Based Economy (CBE)**	• Reduced environmental regulations and no federal or state-level carbon limits
	**Net Zero Carbon Economy (NZE)**	• Federal or state-level economy-wide net zero carbon targets by 2045
	**Volatile Market (VMA)**	• Geopolitical concerns drive policy decision-making

Key sources of uncertainty to incorporate into analysis.

Natural Gas Prices

Carbon Policies

Technology Costs

Demand Growth

Market Design

CRA developed 4 ERCOT scenarios, which reflect diverse but possible future states of the world.

VARIABLES OF KEY ERCOT SCENARIO

**Note that all CPS Energy portfolio analysis will incorporate IRA tax credit provisions*

ERCOT Scenario	Natural Gas Prices	Carbon Policies	Technology Costs	Demand Growth	ERCOT Market Design Change
Reference Scenario (REF)	Baseline	Baseline carbon price	Baseline	Baseline	Confirmed changes only
Carbon-Based Economy (CBE)	Low due to production increases	No carbon price	Baseline	High demand driven by low fuel and carbon prices	Confirmed changes only
Net Zero Carbon Economy (NZE)	Low due to electrification drive	High carbon price	Fast decline + Inflation Reduction Act Tax Credits*	High demand driven by electrification	Capacity market launched & seasonal reserve margins
Volatile Market (VMA)	High	No carbon price to alleviate inflation pressure	Slow decline + Inflation Reduction Act Tax Credits*	Low demand due to high natural gas prices	Confirmed changes only

Each scenario comprises a combination of five input variables whose levels vary across the scenarios as shown below.

PORTFOLIO DESIGN

Gas

Future power to come from gas technologies only, including combined cycles and reciprocating internal combustion engines (“RICE”)

Renewables

Future power to come from wind, solar, and storage technologies

Blend

Future power to come from gas, wind, solar & storage technologies

Three basic options are being analyzed, where new generation resources are either, all-natural gas, all-renewables & storage, or a blend of technologies.

CPS ENERGY PORTFOLIO CONCEPTS

	Portfolio	P1	P2	P3	P4	P5	P6	P7	P8	P9
	Allowed Technology to Meet Capacity Gaps	Gas Only	Blend 1	Renewables	Blend 2	Renewables				
Existing Fleet Retirement Dates	**Spruce 1**	Dec 2028		Dec 2028	Dec 2047	Mar 2025	Mar 2025	Mar 2025	Mar 2025	Mar 2028
	Spruce 2	Convert to gas in Dec 2027 and retire in Dec 2065		Dec 2027	Dec 2065	Mar 2028	Mar 2028	Mar 2028	Convert to gas in Dec 2025 and retire in Mar 2035	Convert to gas in Dec 2028 and retire in Mar 2035
	Braunig 1 - 3	Mar 2025		Mar 2025	Mar 2025	Mar 2025	Mar 2024	Mar 2024	Mar 2025	Mar 2025
	Sommers 1	Mar 2027		Mar 2027	Mar 2027	Mar 2027	Mar 2026	Mar 2026	Mar 2027	Mar 2027
	Sommers 2	Mar 2029		Mar 2029	Mar 2029	Mar 2029	Mar 2028	Mar 2028	Mar 2029	Mar 2029
	Arthur Von Rosenberg	Dec 2047		Dec 2047	Dec 2047	Dec 2047	Mar 2030	Mar 2030	Dec 2047	Dec 2047
	Rio Nogales	Dec 2049		Dec 2049	Dec 2049	Dec 2049	Mar 2030	Mar 2030	Dec 2049	Dec 2049
	Milton B Lee 1 – 4	Dec 2039		Dec 2039	Dec 2039	Dec 2039	Mar 2035	Mar 2040	Dec 2039	Dec 2039
	Milton B Lee 5 - 8	Dec 2045		Dec 2045	Dec 2045	Dec 2045	Mar 2035	Mar 2040	Dec 2045	Dec 2045

CPS Energy Portfolios

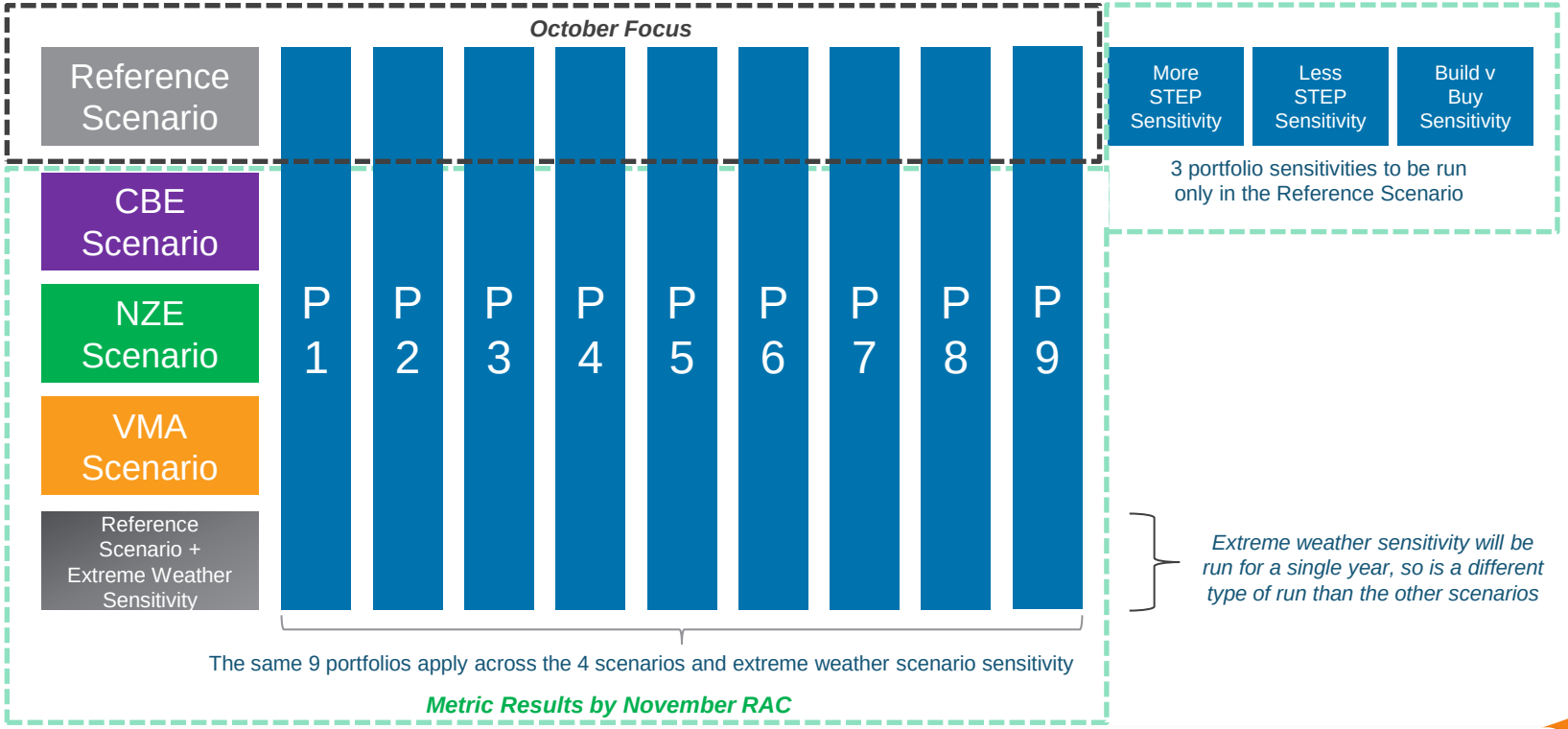
Proposed by RAC Member Belmares

CRA is modeling 9 candidate portfolio concepts for CPS Energy (P1 – P9). Each portfolio concept is a combination of a retirement schedule and allowed technologies to meet capacity gaps.

Notes:

1. *All unit retirements require ERCOT approval.*
2. *When units retire, ERCOT may require transmission reliability upgrades to the grid, which typically take 4 to 5 years (i.e. estimated completion in the 2026 to 2027 timeframe).*
3. *New generation resources may not be available until 2026, so bridge purchases will be considered for P5-P8 as needed.*
4. *Spruce 2 gas conversion is likely not feasible before 2027, so bridge purchases will be considered in P8 as needed.*

PORTFOLIO EVALUATION



CRA will generate up to 50 sets of results as part of a comprehensive portfolio evaluation.

TIMELINE - FORWARD LOOK

DATE	EVENT
Nov 3rd	Open Q&A with Burns & McDonnell-Peer Review • Morning session 9:00 am – 11:00 am • Afternoon session 4:00 pm – 6:00 pm
Nov 14th	CPS Energy Board Meeting
Nov 17th	RAC Meeting
Dec 1st	Open House for Power Generation Resource Planning • Morning session TBD • Afternoon session TBD
Dec 2nd	Open Q&A with Burns & McDonnell-Peer Review • Morning session 9:00 am – 11:00 am • Afternoon session 4:00 pm – 6:00 pm
Dec 6th	Special RAC Meeting
Dec 15th	Regular RAC Meeting
Dec 19th*	**CPS Energy Board Meeting**

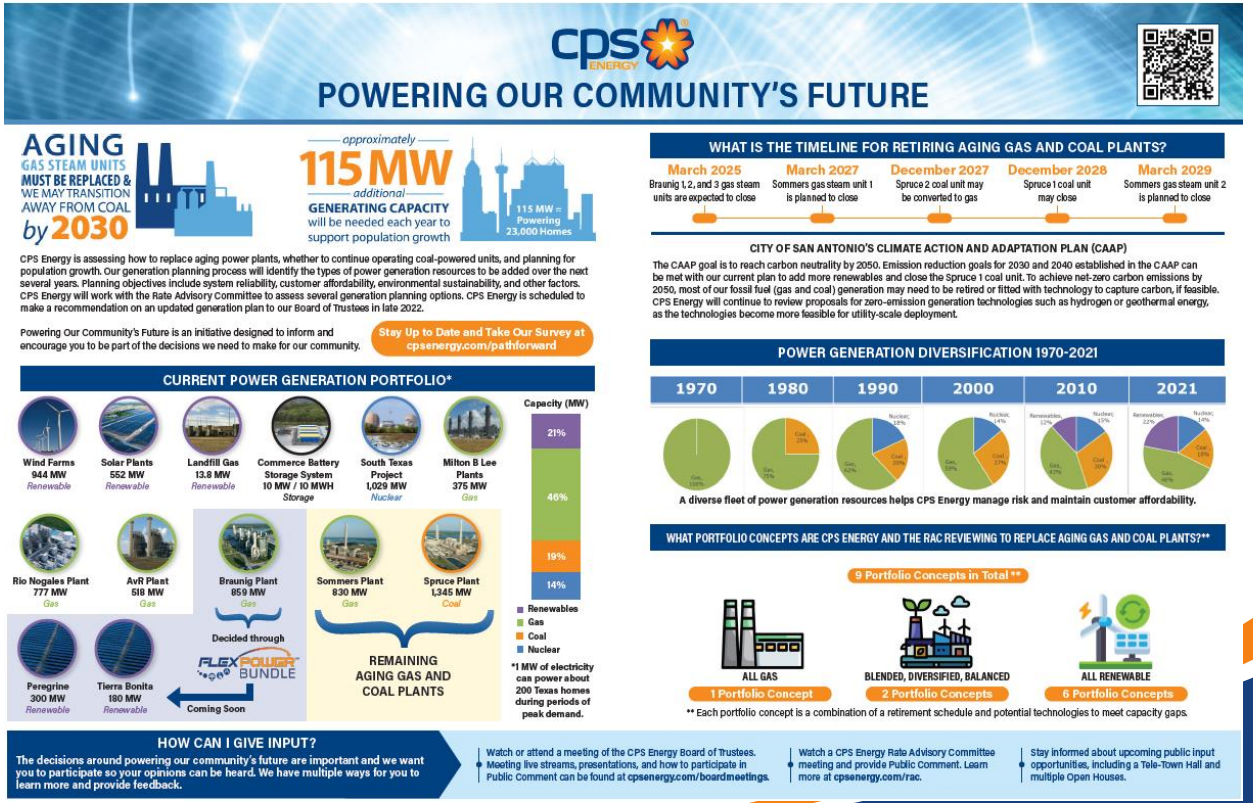
The RAC will have two Q&A sessions & two RAC meetings before their potential vote on December 15th.

PUBLIC INPUT

ENGAGEMENT RESOURCES

POWERING OUR COMMUNITY'S FUTURE

- **ONGOING OUTREACH**
- **RAC & BOARD MEETINGS**
- **CPSENERGY.COM/PATHFORWARD**
- **SURVEY**
- **QR CODE**
- **MATERIALS DISTRIBUTION VIA COMMUNITY ENGAGEMENT**
- **COMMUNITY TOWN HALL (NOV. 15)**
- **NEXT OPEN HOUSE (DEC. 1)**
- **VIRTUAL TOWN HALL (DEC. 8)**



ENGAGEMENT
OPEN HOUSE

EVENT OVERVIEW

- DATE: THURSDAY, OCT. 6
- HOSTED AT HQ GRID ROOMS & TWO TIME OPTIONS TO ATTEND
- COME AND GO FORMAT
- SUBJECT MATTER EXPERTS ENGAGE AND ANSWER QUESTIONS AT EACH STATION
- COMMENTS COLLECTED THROUGH VIDEO, SURVEY, AND COMMENT CARDS
- SPANISH SPEAKERS AVAILABLE

OPEN HOUSE RECAP

- ATTENDANCE: 35 (18 AM, 17 PM)
- SURVEY PARTICIPATION AS OF OCT. 17: 125

ENGAGEMENT
SURVEY QUESTIONS[1]

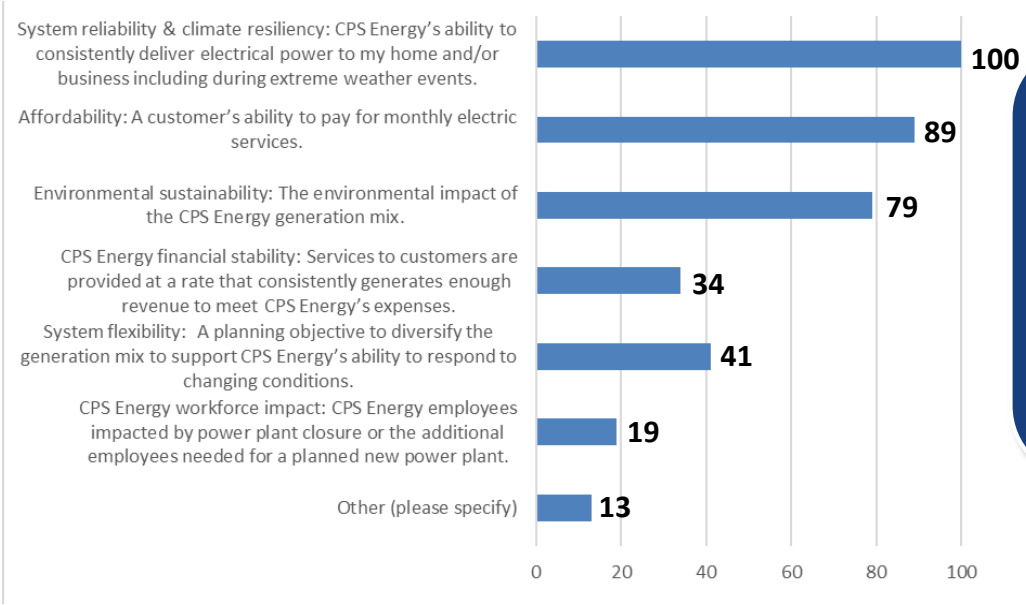
1. Please select three objectives listed below that are important to you in how CPS Energy powers our community now and in the future.

2. What is your primary preference for how CPS Energy will make power in the future?

3. Please provide any additional comments or feedback you would like to share with CPS Energy regarding Powering Our Community's Future.

Notes: 1) Questions in survey are aligned with questions presented to the Rate Advisory Committee (RAC).

ENGAGEMENT
SURVEY QUESTIONS #1

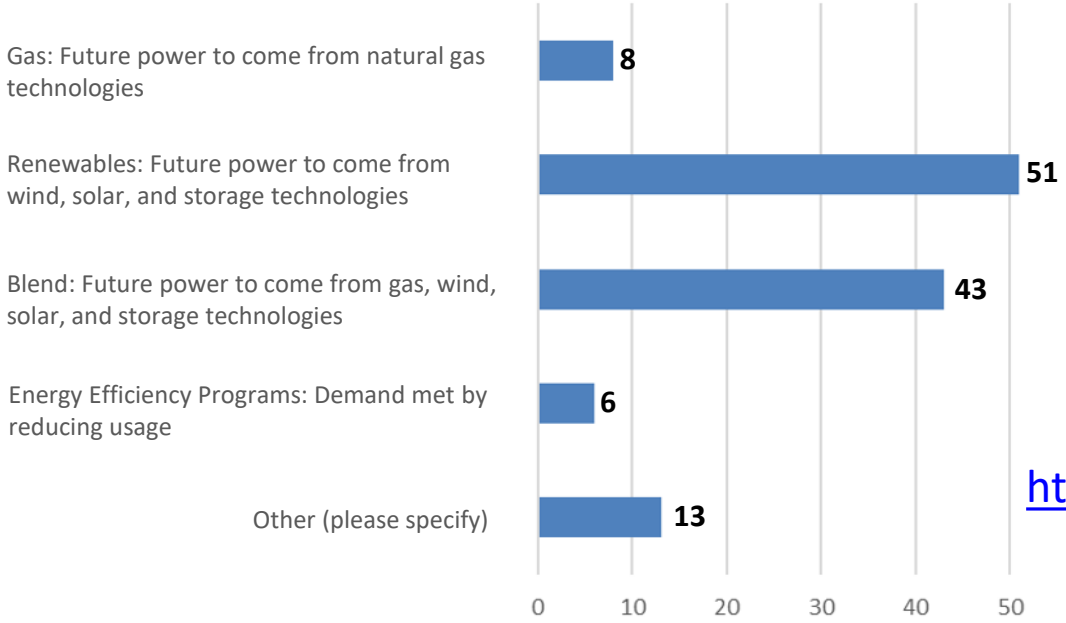


System Reliability and Affordability have received the highest scores so far to date with Environmental Sustainability a close third.

https://www.cpsenergy.com/pathforward

Results as of Oct. 17, 2022

ENGAGEMENT
SURVEY QUESTIONS #2



A renewables portfolio is preferred by the survey participants to date with blend coming in second.

https://www.cpsenergy.com/pathforward

Results as of Oct. 17, 2022

ENGAGEMENT
UPCOMING EVENTS

DECEMBER OPEN HOUSE

- DATE: THURSDAY, DEC. 1
- LOCATION: TBD
- TIME: 9-11 A.M. & 5:30-7:30 P.M.
- FEEDBACK WILL CONTINUE TO BE COLLECTED VIA COMMENT CARD, SURVEYS AND VIDEO
- SPANISH SPEAKERS WILL BE AVAILABLE
- A GRASSROOTS OUTREACH CAMPAIGN WILL HELP TO INFORM HARD-TO-REACH AUDIENCES WHO MAY BE INCLINED TO SHARE THEIR INPUT TO CPS ENERGY

DECEMBER VIRTUAL TOWN HALL

- DATE: THURSDAY, DEC. 8
- LOCATION: VIRTUAL/CALL-IN
- TIME: TBD
- CPS ENERGY WILL TAKE QUESTIONS AND COMMENTS FROM THE COMMUNITY AND ANSWER AS MANY AS POSSIBLE
- FEEDBACK WILL BE COLLECTED AND DEVELOPED INTO A FAQ SECTION ON THE GENERATION PLANNING PROCESS WEBPAGE
- SPANISH & ASL TRANSLATION WILL BE AVAILABLE FOR PARTICIPANTS

CLOSING REMARKS
BY
CHAIR REED WILLIAMS

Thank You