

APPENDIX C

SRP Customer Research Future of Energy Phase 3 Report



Delivering water and power®

Future of Energy: ISP Residential Customer Research

Phase III Report

Revised: December 13, 2023

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Background & Objectives

Background

Salt River Project (SRP) is preparing its first Integrated System Plan (ISP), which is focused on a new way of planning the power system through 2035. While multiple inputs are needed to prepare this plan, one crucial contribution is input from residential customers.

Looking into the future, SRP expects there to be many changes and disruptions to the energy industry including evolving customer needs and expectations with a key aspect being the balance between reliability, sustainability, and affordability. Furthermore, the perspectives of different groups of customers, with different values and mindsets and each group's perception of this balance will need to be understood and considered.

Objectives

The goal of this research was to bring the voice of SRP's residential customers into the planning of the future power system.

More specifically, this research was designed to gain an understanding of how customers think about, and value sustainability, affordability, and reliability related to their electricity service from SRP and gauge their reactions to potential energy systems. SRP sought to understand areas of diverse viewpoints and agreement, as well as identify preferred methods of engagement on this topic.

The research aimed to address the following specific objectives:

1. Understand the concerns customers have about the future of Arizona, the economy and the U.S.
2. Understand diverse perspectives and opinions relating to SRP's sustainability plan and evolution.
3. Develop and test system-planning metrics that are understood and resonate with customers.
4. Generate a list of power system and future energy topics that interest customers.
5. Understand customer perspectives on power reliability and potential tradeoffs with sustainability and affordability.
6. Understand preferred methods of learning about and engaging with the power system planning process.



Methodology & Reporting

Approach

A three-phased research approach was applied, starting with virtual focus groups (December 2021), followed by a quantitative confirmation (March 2022) and culminating in a choice exercise (May 2023).

All customers included in the research were SRP residential customers, who were energy decision makers for their household (make decisions about their utility service and pay the bill), did not work for a related industry, and were over 18 years old.

Phase I: Virtual Focus Groups

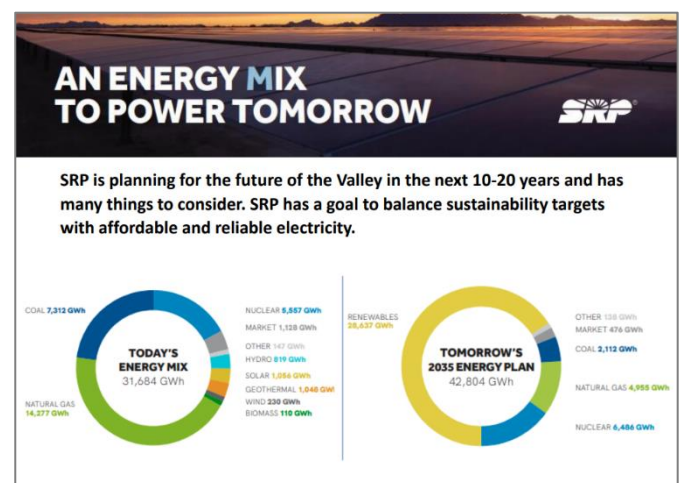
Four 90-minute virtual focus groups were held December 13 & 14, 2021. A total of 24 SRP customers participated virtually (via Zoom) and received a \$125 bill credit for participating.

Customers were grouped to encourage engagement and maximize the ability to explore attitudes and have a meaningful conversation.

Phase II: Online Survey

An online survey was fielded between March 7 – March 14, 2022. Respondents evaluated SRP's illustrative energy plan of how the system may develop in relation to attributes of customer interest identified in Phase I. Quotas were set for the survey to ensure the respondent pool best represented SRP's residential customer population.

Customers evaluated a visual example of SRP's future potential energy mix, which describes the transition of the power system over the next 10-20 years. The visual depiction of the illustrative plan shown to respondents is displayed to the right. The illustrative energy plan shown in Phase II did not include details on bill impacts, water reduction, carbon emission reduction, or timing to meet the sustainability goals. Customers were provided background on SRP's priorities prior to evaluating energy mix; this wording is included in the Appendix on page 20.



Pre-Test Research: Optimizing Survey Materials

Prior to the Phase III survey, a multi-staged pre-test study was conducted to test education materials, survey instructions, and choice exercise design among non-SRP customers. The pre-test research included an initial pre-test survey, qualitative ride-along interviews, and a revised pre-test survey.

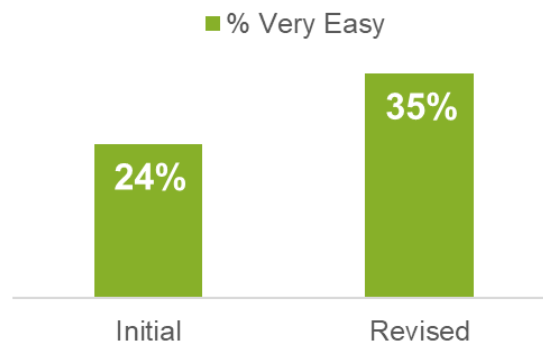


Throughout the three pre-test phases, respondents identified areas of the instructions and educational materials that were difficult to understand. Based on feedback from this pre-test, instructions for the choice exercise were crafted with clear tasks respondents could understand and accurately complete.

This confirmation helped secure the highest quality of actionable data. Changes made to the choice exercise included:

- Impactful phrase rewording which resulted in less confusion (~40% reduction in confusion)
- Redesign of the choice activity which created an easier survey experience.

How easy would it be to complete this activity?



This testing ensured SRP's diverse customer base would be able to understand and easily complete the choice exercise in Phase III.

Phase III: Choice Exercise Online Survey

In this 20-minute survey fielded between May 9 and May 29, 2023, offered in English and Spanish, respondents completed a choice exercise to assess their preferences for SRP's potential future energy system. Quotas were set to mirror the true population split for SRP's customer base. A choice-based methodology known as a conjoint exercise was utilized to understand customer preference for potential future energy systems being analyzed in the Integrated System Plan.

Conjoint methodology is used to optimize a product or service of interest by asking respondents to make a series of choices through an exercise simulating real-life situations, determining what tradeoffs they are willing to make.

The following best practices were used in development of the choice exercise for the Phase III survey:

- Exposing respondents to educational information regarding system inputs prior to asking them to make a choice (e.g., explaining energy mixes and defining carbon reduction)
- Ensuring complex inputs are positioned in customer-friendly terms (e.g., showing carbon reduction in terms of the number of gas-powered vehicles)
- Utilizing visuals where possible to "show" rather than "tell" (e.g., including a graphical representation of the energy mix)
- Creating precise levels for each system input (e.g., utilizing data outputs from other ISP research efforts to build levels)
- Ensuring system configurations are realistic to respondents to avoid asking them to make a non-sensical choice



- Including no more than seven inputs per system to ensure ease of comprehension
- Limiting the number of screens in the exercise to no more than twelve to minimize respondent fatigue

Customers were asked to evaluate 11 screens, each showing 2 energy plans and a “none of these” option representing the current energy system and choose the plan they would most prefer SRP to pursue. Through selections made, a customer preference rating was produced for each potential future energy system. An example of the choice exercise is shown on the following page.

The ISP's analytical framework and outputs from the system planning informed the following system inputs for the choice exercise:

- Illustrative energy mix (9 mixes tested)
- When SRP will meet its sustainability goals (2030 or 2035)
- Percent reduction in carbon emissions (4 levels for each energy mix)
- Percent reduction in water usage (4 levels for each energy mix)
- If SRP will build new gas power plants (yes or no)
- Monthly bill impact (4 levels calculated on customers' average bill)
- Number of 2-hour power outages (0, 1, 2, or 3)

Illustrative mixes and variations in options for the inputs shown were representative of the resource builds and implications for each strategic approach under the future scenarios from the ISP system plans. Various levels (or options) were shown for each component resulting in evaluation of over 9,200 possible system configurations. An example of the choice exercise screen respondents completed is located in the Appendix on page 21.

Reporting

Quantitative results are reported in charts at the total level with qualitative results represented throughout. When evaluating survey data, sub-groups were compared to one another to investigate if there were statistically significant differences between two or more groups.

A 95% confidence level is used, which indicates we can conclude with 95% confidence that differences are not due to chance and that survey results should match results from the actual population (plus or minus the margin of error). Only significant differences relevant to the research objectives are reported.

The following subgroups are noted in this report:

- **Age** (18-44 years old/ 45-54 years old/ 55-64 years old/ 65+ years old)
- **Income** (Under \$75k/year / \$75k/year or more) (Phase II Only)
- **Limited Income** (200% of HHS Poverty Guidelines/ Non-Limited at 200%)
- **Gender** (Male/ Female/Nonbinary)



- **Energy Mix Prioritization** (Affordability first/ Reliability first/ Sustainability first)
- **Hispanic** (Hispanic/ Non-Hispanic)
- **Credit Rating** (5 levels)
- **Usage Category** (Low/ Moderate/ Medium/ High)
- **Overall Opinion of Energy Plan** (Positive/ Negative)
- **Overall Experience as SRP Customer** (Positive/ Neutral/ Negative)
- **Years at Address** (2 or less/ 3-5/ 6-20/ 21-39/ 40+)

Analysis Note: Rating scale questions are reported differently for 10-point and 5-point scales.

10-point scales are reported using Top-Box (TB – ratings of 10), Top-3-Box (T3B – ratings of 8,9, or 10), Middle-2-Box (M2B – ratings of 6 or 7), and Bottom-5-Box (B5B – ratings of 1-5).

5-point scales are reported using Top-Box (TB – ratings of 5), Top-2-Box (T2B – ratings of 4 or 5), Middle-Box (MB – ratings of 3), and Bottom-2-Box (B2B – ratings of 1 or 2).



Executive Summary



In Phase I & II, most customers reacted positively to SRP's initial path forward, and a quarter felt it was excellent. A majority agreed the plan should be prioritized by SRP. Phase III revealed residential customers' preferences for the future energy system.

Top factors: affordability & bill impacts

Affordability concerns were some of the most-selected future issues facing Arizona. In each phase of this research, affordability surpassed reliability slightly in importance when ranked by customers. Those with limited incomes put greater emphasis on affordability, while non-limited income customers reflected greater balance across factors. Additionally, when choosing a future energy system, customer selections revealed monthly bill impact as the top driver of preference.

Understanding and openness to change

Despite prioritizing affordability, customers recognized that the forthcoming challenges facing the region are interrelated and pose risks to sustainability, the economy, and overall quality of life. Thus, they understood the need for a lower-carbon future energy system, however, across scenarios, lower cost strategic approaches were more preferred by customers. While customers recognized the need for and expressed interest in SRP's investment in sustainable energy sources, they do not want to bear the cost of that investment.

Willingness to engage

Customers reported positive experiences with SRP's programs and over half were interested in programs and rebates that will help them save money and energy. Additionally, about a third or more expressed interest in learning about SRP's energy efficiency programs, environmental efforts, and infrastructure improvements.

Recommendations

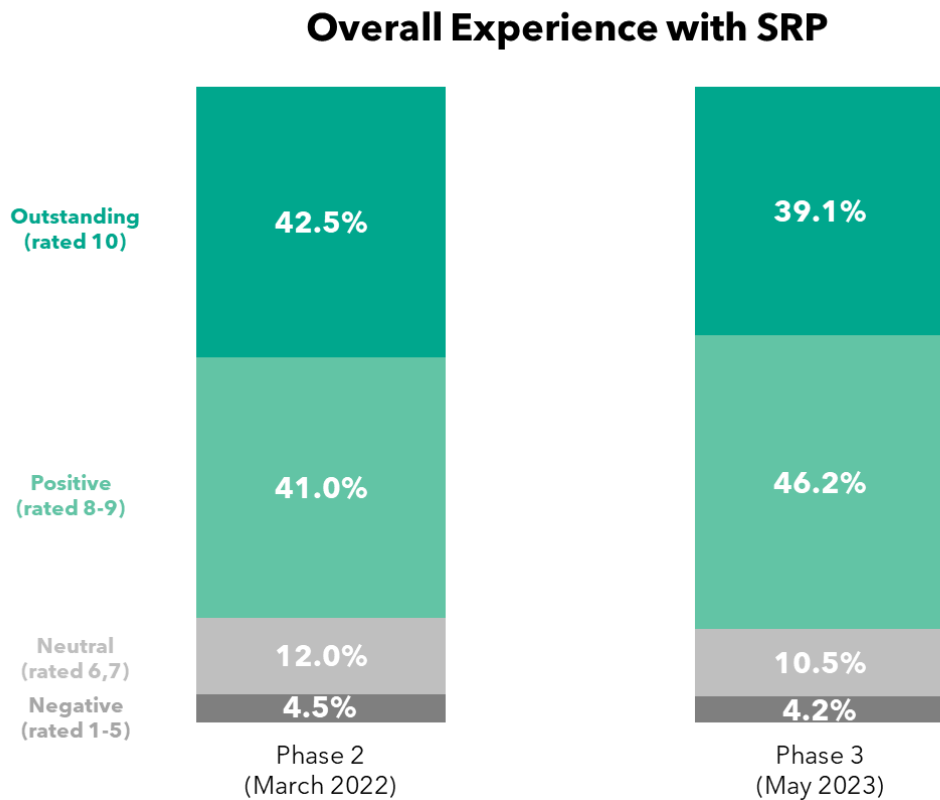
- **For SRP's ISP, focus investment on a least-cost portfolio:** With cost being the top driver of customer preference, it will be critical to ensure system costs are managed and explained to customers proactively and transparently.
- **For SRP's ISP, highlight and maintain grid readiness and resiliency:** Reliability was the second highest ranked priority.
- **In ISP implementation, utilize a targeted approach to customer programs:** Customers expressed a willingness to engage with SRP via customer programs. These programs should be designed to meet the varying needs of customers.

Detailed Findings

Experiences with SRP, Concerns, and Priorities

Most rated their experience with SRP positively

Similar to March 2022, in May 2023 surveying, over 4 in 5 customers rated their experience with SRP positively. While about 2 in 5 provided an “Outstanding” rating.



In qualitative focus groups, customers attributed their highly positive perception of SRP to the reliability of service and helpful customer service. Additionally, participants felt positively about SRP’s customer programs, agreeing that programs help them manage and reduce their electricity bills.

Groups **more likely** to provide a positive rating of their experience with SRP included:

- Customers aged 55 or older
- Non-Hispanics



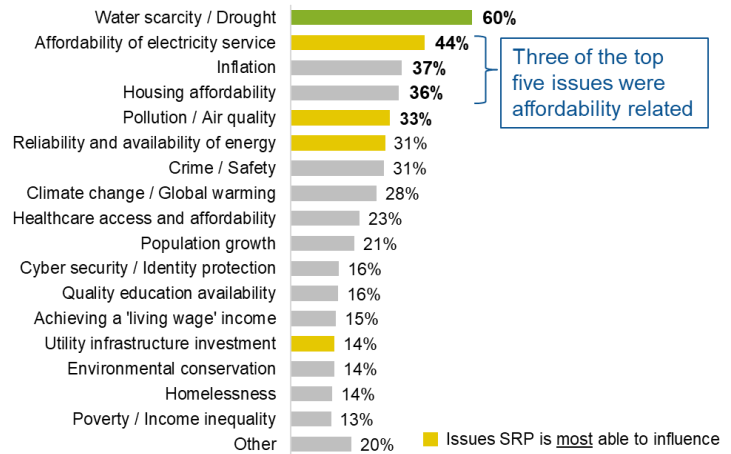
Customers demonstrated affordability concerns

Respondents most selected that they were concerned about water scarcity. After water scarcity, affordability related to electricity, inflation, and housing were most concerning.

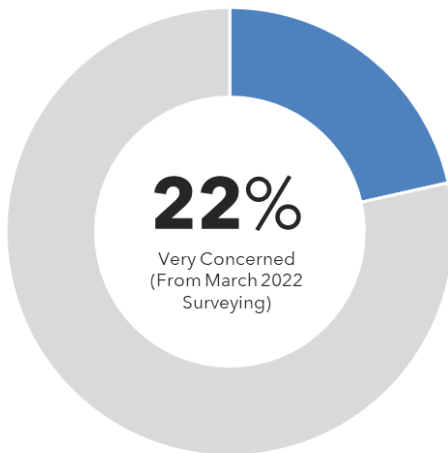
The focus on affordability of electricity is of note, as it was the second-most selected future concern. These issues were followed by some items related to energy service, including pollution, energy reliability, and climate change.

Future Issues Facing Arizona

(From March 2022 Surveying)



- **Lower income** customers (earning under \$75k/year) reflected **greater concern for affordability**.
- **Year-round** residents are more likely to **prioritize housing affordability**.
- Those with a household **income of \$75k or more** were more likely to **prioritize water scarcity** and were less likely to prioritize housing affordability.
- **Non-Hispanic** customers were more likely to **prioritize water scarcity**.



Further, 22% of customers were very concerned about other community members being able to pay their electricity bills.

Groups **more likely** to be concerned about others' ability to pay their electric bill include:

- Customers with household incomes less than \$75k
- Females
- Hispanic customers



Affordability and Reliability were most often ranked 1st

When asked how SRP should rank affordability, reliability and sustainability, affordability was the top priority in both Phase II & III for over two-fifths of customers. Over one-third prioritized reliability, and less than one-quarter prioritized sustainability.

In the focus groups, while a majority of customers ranked reliability first, they discussed a tough tradeoff between reliability and affordability.

While the ranking of priorities was similar across Phases, reasons for these rankings in May 2023 highlighted greater emphasis on the rising cost of living and a need for consistent electricity.

Affordability: Reasons Ranked First

Almost half (46%) of those who ranked affordability first in Phase III mentioned keeping energy costs down and the rising cost of living. This was more than in Phase II where only one-third ranked affordability first for the same reason. The increase in concern over rising cost of living and keeping energy costs down may be due to the rise in inflation and increased conversation about rising prices across products and services in 2023.

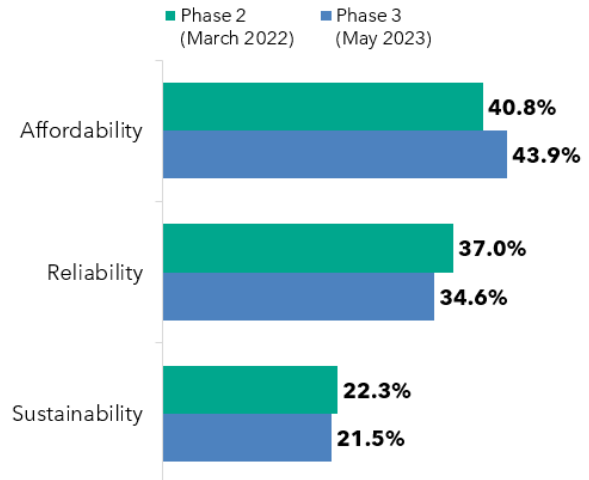
Reliability: Reasons Ranked First

In Phase III, half (51%) of the customers who ranked reliability first noted a need for consistent electricity to maintain the status quo. This increased from about one-quarter (23%) ranking reliability first in Phase II for the same reason.

Sustainability: Reasons Ranked First

While the smallest proportion of customers ranked sustainability first, three-fifths (62%) of those who did in Phase III noted the importance of taking care of the Earth and future energy needs. This was higher than the almost half (45%) who ranked sustainability first for the same reason in Phase II.

Ranked 1st: SRP Should Prioritize



In Phase III surveying, groups **more likely** to rank **affordability first** included:

- **Limited income** customers (200% of HHS Poverty Guidelines)
- Females
- Hispanics
- Those enrolled in **M-Power for Pre-Pay**

In Phase III surveying, groups **more likely** to rank **reliability first** included:

- Non-Limited income customers
- Males
- Those with Preferred Credit Ratings

Customers **aged 55 to 64** were **less likely** than all other age groups to rank **sustainability first**. In Phase III surveying.



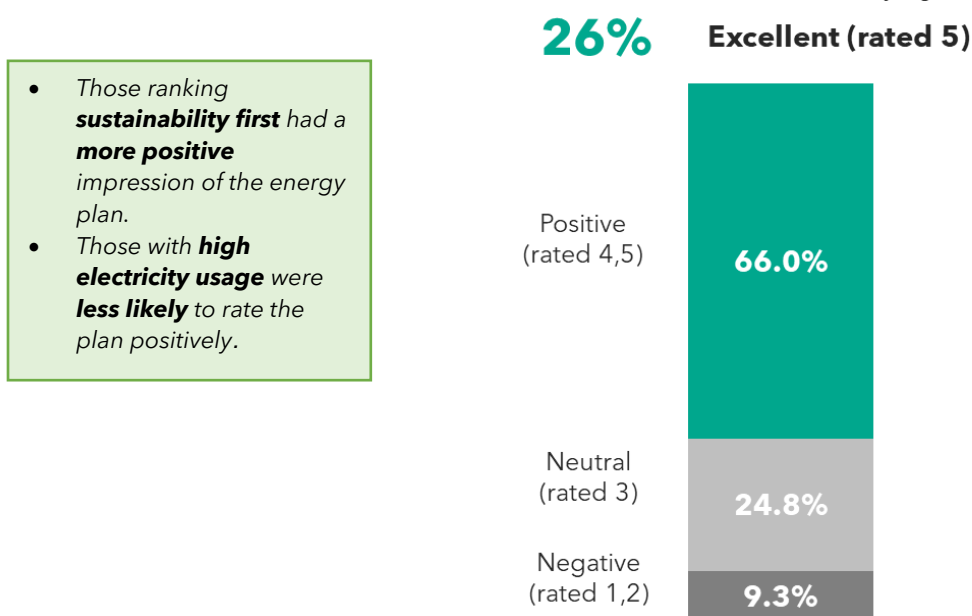
SRP Energy Plan: Initial Reactions (Phase I & II)

Two thirds rated the initial energy plan positively

When evaluating an illustrative example of SRP’s energy plan during initial phases of research (visual and background evaluated can be found in the Appendix on page 20), one-quarter (26%) rated it as excellent, but 66% rated it positively overall (rated 4 or 5 on a 5-point scale). This demonstrates opportunity for improvement.

Overall Opinion of the Illustrative Plan

(From March 2022 Surveying)



Customers noted the plan could be improved with more specifics

Initial responses to viewing the plan revealed that customers were interested in more specifics. In addition to questions on plan affordability and achievability, respondents cited varying thoughts on which renewable sources SRP should prioritize.

- Twenty-seven percent (27%) of customers shared concerns around the type of energy sourced.
- Nineteen percent (19%) shared affordability and cost concerns.
- Thirteen percent (13%) shared achievability concerns regarding the timing of the plan being too slow.

Focus group participants were also generally positive about the plan’s intent but suggested some opportunities for improvement. These opportunities included the amount of time needed to implement the plan, getting customer buy-in and being transparent, ensuring SRP’s accountability for the changes, and clarifying how this would affect rates.



Phase III Customer Preference for Future Energy System

Monthly bill impact of most importance when selecting an energy system

After completing the exercise, over one-third of respondents (37%) reported the monthly bill impact was the most important input when choosing a preferred future energy system.















Groups **more likely** to rank **monthly bill impact first** included:

- Year-round residents
- Those **employed part-time**

Among those ranking the **energy mix first (14%)**, top ranked priorities were evenly split:

- Affordability – 31% ranked 1st
- Reliability – 36% ranked 1st
- Sustainability – 34% ranked 1st

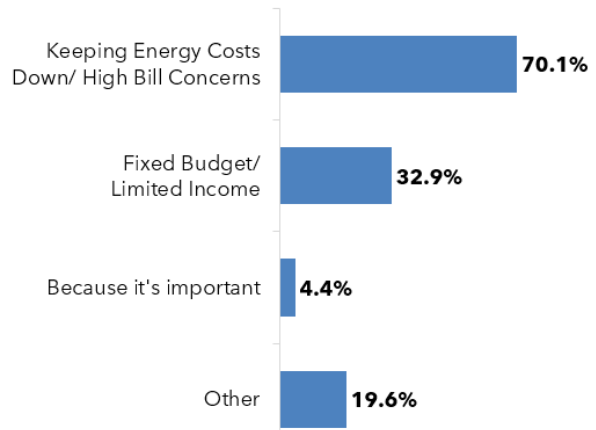
This suggested the energy mix was seen as a component related to all three priorities.

Attribute	Ranked 1 st Most Important
 Monthly bill impact	 36.8%
 Reduction in carbon emissions	 15.9%
 Number of 2-hour power outages	 14.5%
 Energy mix	 13.9%
 Reduction in water usage	 11.4%
 If SRP will build new gas power plants	 5.0%
 When SRP will meet its sustainability goals	 2.5%

Reasons for ranking inputs first varied

Customer open-ended comments highlighted concerns regarding financial constraints due to changing socio-economic conditions and future uncertainty stemming from inflation and escalating energy expenses. Looking to the future, customers attributed greater costs to the anticipated new infrastructure needed to meet growing demand for electricity and expressed concerns that cost increases could impact quality of life. Additionally, the viability and affordability of future green energy initiatives raised doubts for some given the present economic context.

Reasons Why Monthly Bill Impact Is Most Important*






*Among those ranking monthly bill impact first (n=364); multiple responses accepted

The following groups were **more likely** to mention **"fixed budget/ limited income"**:

- Customers **aged 55+**
- Retirees
- Those with **limited incomes** (200% of HHS Poverty Guidelines)

Among those ranking carbon reduction first, about a third mentioned reducing carbon via the use of cleaner energy sources (like solar or nuclear) while nearly half of those ranking energy mix first mentioned these topics as reasons for ranking energy mix as most important.

Reasons Why Most Important

 Reduction in carbon emissions *(n=169)	 Number of 2-hour power outages *(n=139)	 Energy mix *(n=147)
37% Reducing carbon has direct impact on climate change	58% Dangers associated with outages (hot climate, health concerns, etc.)	46% Emphasis on reducing carbon and/or increasing solar or nuclear
32% Emphasis on reducing carbon and/or increasing solar or nuclear	34% General reliability concerns	33% Some energy sources are limited/ need a mix

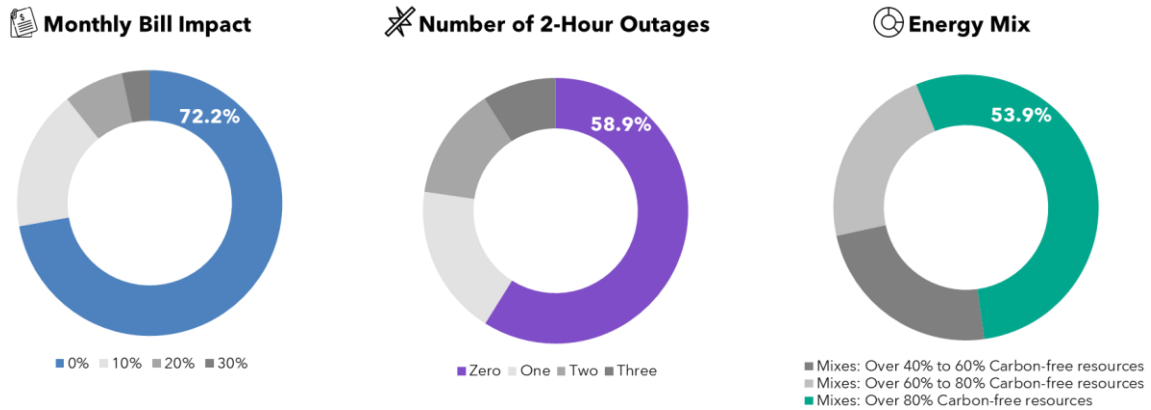


Choices indicate a desire to "have it all"

The choice exercise also revealed the preference for each level of key factors in isolation.

- Bill Impact: a majority preferred 0% increase
- Outages: a majority preferred zero 2-hour outages
- Energy Mix: a majority preferred energy mixes with over 80% carbon-free sources

Summed Share of Preference by Attribute



While monthly electricity bills have the largest impact on preference (72%), these preferences indicate that customers want the cleanest, greenest energy at the lowest cost with no implications to reliability.

Real-world cost constraints force tradeoffs

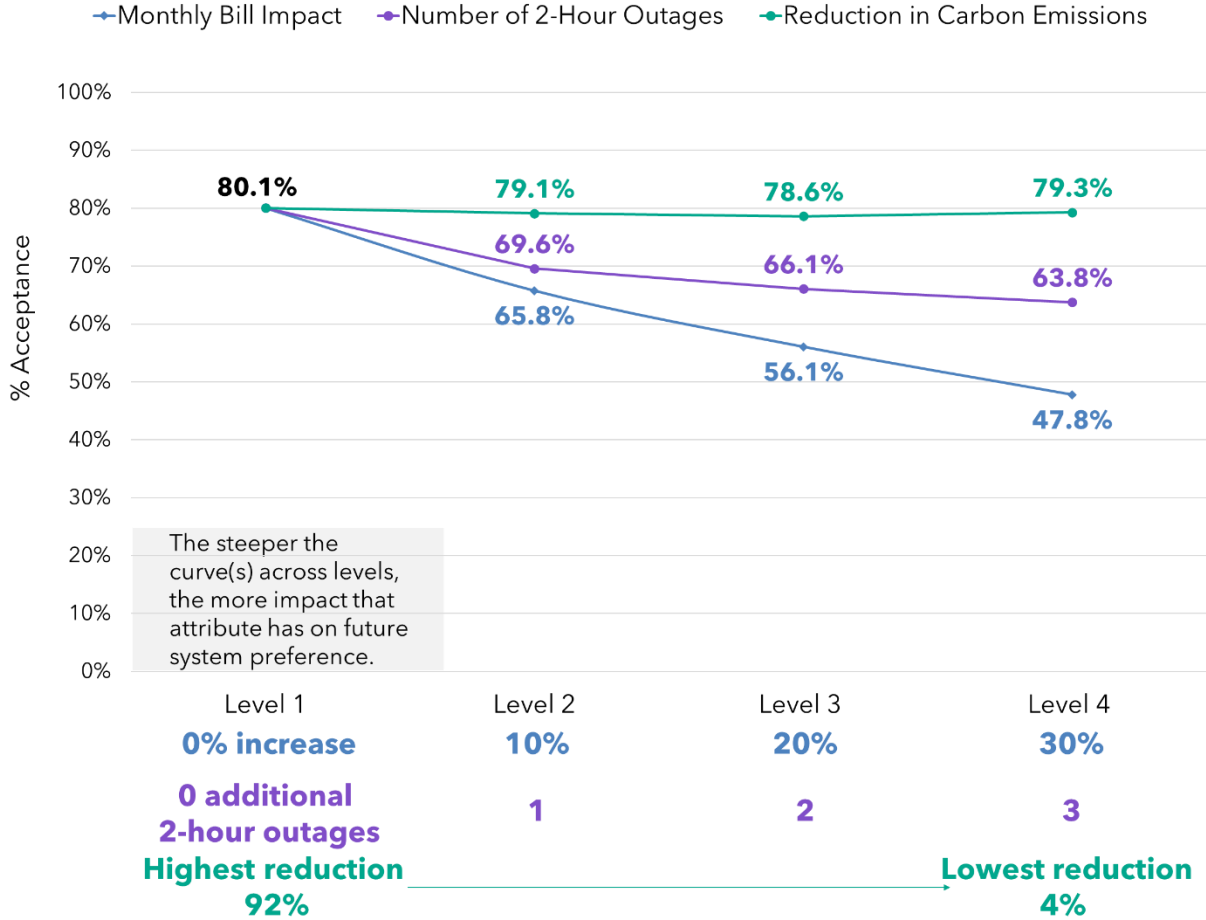
While most customers agree that sustainability is important and should be considered by SRP and their customers, there are limitations on how much customers feel they can invest in the "greater good." Customers expressed that fixed incomes and limited budgets often constrain the degree to which they can support and prioritize sustainability.

Acceptance of future energy systems declines above 0% bill impact

As bill impacts increase, the proportion of customers who accepted an energy system over the current system declined sharply. However, acceptance declines were less steep for the number of 2-hour outages suggesting that customers are less accepting of price increases and more tolerant of minimal additional 2-hour outages.

Furthermore, when tradeoffs are required, carbon reduction has minimal impact with acceptance of energy systems relatively unchanged as the level of reduction in carbon emissions increases.

Max Acceptance versus Current System by Component Level



Customer preferences for a balanced future energy system

While SRP does not know what the future will look like, it will be important to design the future energy system with customer preferences in mind. Findings revealed that from the residential customer's perspective the ideal future energy system should...

- Manage cost, first and foremost
- Strive to manage monthly bill impacts below a 10% increase
- Include a diverse energy mix to ensure reliability
- Provide the cleanest, most sustainable energy without exceeding a 10% bill increase



Topics of Interest

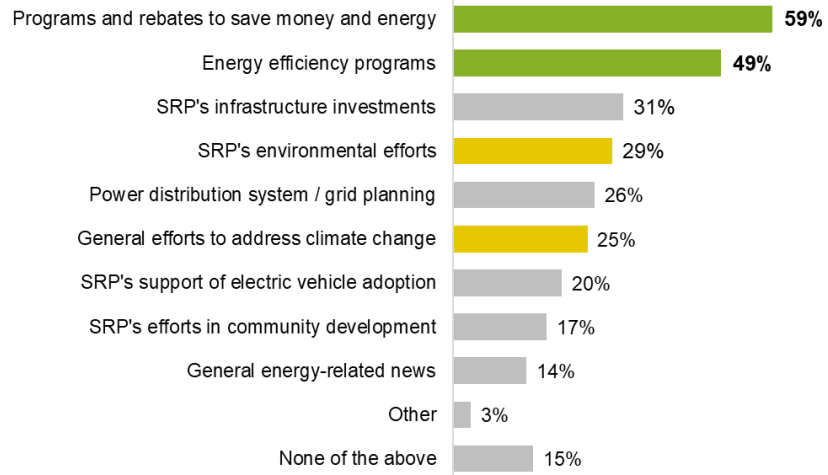
Over half had interest in ways to save

Customers would most like to continue to hear about ways to save via energy efficiency program and/or rebates. Meanwhile, over one-quarter were interested in topics related to SRP’s environmental efforts and/or climate change.

Focus group participants agreed that SRP programs help customers manage and reduce their electricity bills.

Topics of Interest

(From March 2022 Surveying)



Those with a **household income less than \$75k** were **more likely** to want to hear about the following:

- Programs and rebates to save money and energy
- SRP's support for community development

Groups more interested in hearing about **SRP's infrastructure investments** included:

- Customers **aged 65+**
- Non-Hispanics

Part-time residents were **more likely** than those living in Phoenix year-round to want to hear about the following: energy efficiency programs, SRP's environmental efforts, and general efforts to address climate change

Appendix

Focus Group Participant Description*

Total	24		
		Age	
Gender		25-34	6
Female	13	35-44	7
Male	10	45-54	2
Non-binary	1	55-64	4
		65-74	2
		75+	3
Ethnicity			
Black	3		
Hispanic	2		
White	18		
Other	1		
		Income	
		<25k	2
		25-49k	5
		50-74k	8
		75-99k	3
		100-149k	3
		150+	3

* Focus Groups are exploratory in nature and cannot be projected to a larger population. Attendees are not representative of the full SRP customer base or stakeholders



Survey Respondent Demographics

	Phase 2 Survey March 2022 (n=400)	Phase 3 Survey May 2023 (n=1,011)
GENDER		
Female	51%	49%
Male	45%	46%
Non-binary	0%	0%
Prefer not to answer	4%	5%
INCOME		
Limited Income 200%	31%	31%
Non-Limited Income 200%	69%	69%
CREDIT RATING		
Preferred	67%	64%
Satisfactory/Slow/ Unsatisfactory	12%	18%
New Customer	21%	18%
Cash Only	-	1%
ETHNICITY (MULTIPLE SELECTIONS)		
White	69%	69%
Black or African American	4%	5%
Other	13%	12%
Prefer not to answer	18%	17%
HISPANIC ORIGIN		
Hispanic	15%	12%
OWN/RENT HOME		
Own	73%	71%
Rent	28%	29%

	Phase 2 Survey March 2022 (n=400)	Phase 3 Survey May 2023 (n=1,011)
AGE		
18-44	30%	38%
45-64	37%	37%
65+	34%	25%
EMPLOYMENT		
Full-time/Part-time	51%	53%
Self-employed	6%	8%
Retired	33%	27%
Unemployed/seeking employment/student	4%	3%
Not working/not seeking	2%	2%
N/A / Prefer not to answer	5%	7%
YEARS IN PHOENIX		
2 or less	7%	8%
3-5	10%	9%
6-20	30%	34%
21-39	30%	29%
40+	15%	20%
USAGE*		
Low (6,000 kWh or less)	19%	12%
Moderate (6,001-12,000 kWh)	33%	32%
Medium (12,001-18,000 kWh)	29%	31%
High (More than 18,000 kWh)	20%	23%

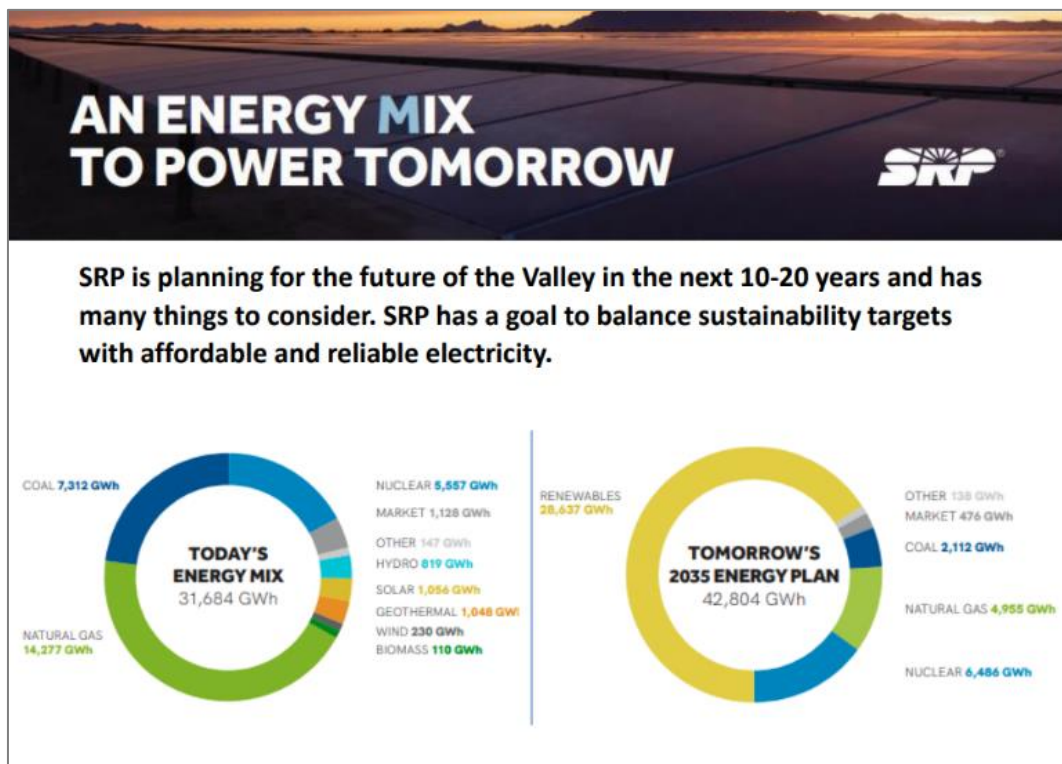


Illustrative Plan Description and Background (Phase I & II)

In addition to the visual depiction of the illustrative plan shown below, respondents were provided the following additional description and background during Phases I & II of this research:

“SRP is working at all times to make sure your power stays on, including during Arizona’s extreme summers. To ensure power quality continues to improve, SRP needs to plan long term for the future of the Valley. This means:

- Balancing a transition to clean energy
- Planning for population growth (and an increased demand for energy)
- Considering the types of power to buy to make up their power mix (including solar, wind, geothermal, biomass, nuclear, natural gas, and coal)
- Reducing SRP’s carbon intensity (the amount of carbon released per unit of energy produced) by 90% by the year 2050”



Choice Exercise Example Screen (Phase III)


Customers were asked to evaluate 11 screens, each showing 2 energy plans and a “none of these” option representing the current energy system. An example screen with question wording is shown below.


Which of these hypothetical future energy systems would you prefer SRP implement


Please read through each plan carefully and select the plan you most prefer.


Click [here](#) to view a glossary of terms. This will open in a new browser and you can come back to this page to complete the activity.


Energy Mix:


 SRP will meet its Sustainability Goals by:

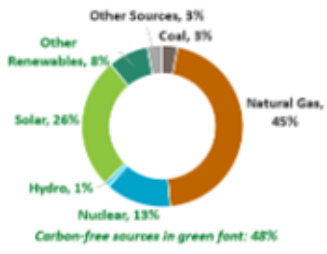
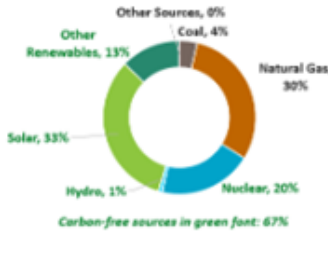
 % reduced carbon emissions (equal to number of gas-powered cars on the road each year):

 % reduced water usage (equal to the amount of water used by the number of 4-person households shown per year):

 Will SRP build new gas power plants to source energy?

 Your monthly bill will:

 Number of 2-hour power outages experienced in one year due to high energy demand (on a hot summer's day):

	2035	2030
Energy Mix:		
SRP will meet its Sustainability Goals by:		
% reduced carbon emissions (equal to number of gas-powered cars on the road each year):	20% reduction (about 675,000 gas-powered cars)	61% reduction (about 2.0 million gas-powered cars)
% reduced water usage (equal to the amount of water used by the number of 4-person households shown per year):	16% reduction (about 9,000 households)	52% reduction (about 30,000 households)
Will SRP build new gas power plants to source energy?	Will build	Will <u>not</u> build
Your monthly bill will:	Increase by \$30	Not increase
Number of 2-hour power outages experienced in one year due to high energy demand (on a hot summer's day):	Two 2-hour outages	Three 2-hour outages
	Select	Select

None of these, I would stick with the current system at my current monthly bill amount.

Select

