

SALT RIVER PROJECT AGRICULTURAL IMPROVEMENT AND POWER DISTRICT BOARD MEETING NOTICE AND AGENDA

JOINT MEETING OF THE BOARD OF DIRECTORS AND COUNCIL WORK STUDY SESSION

Tuesday, August 29, 2023, 9:30 AM

PERA Training and Conference Center
1 E. Continental Drive, Tempe, AZ 85288

Roll Call
Safety Minute

1. Call to OrderPRESIDENT DAVID ROUSSEAU
2. Integrated System Planning Overview.....ANGIE BOND-SIMPSON;
NICK SCHLAG, ENERGY AND ENVIRONMENTAL ECONOMICS, INC.;
APRIL SMITH, BELLOMY RESEARCH; and VARIOUS

Informational presentation to provide an overview of the Integrated System Plan (ISP) and demonstrate how coordinated planning throughout generation, transmission, distribution, and customer programs will guide SRP through the energy transition.

3. Adjourn Until August 30, 2023PRESIDENT DAVID ROUSSEAU

The Board may vote during the meeting to go into Executive Session, pursuant to A.R.S. §38-431.03 (A)(3), for the purpose of discussion or consultation for legal advice with legal counsel to the Committee on any of the matters listed on the agenda.

The Board may go into Closed Session, pursuant to A.R.S. §30-805(B), for records and proceedings relating to competitive activity, including trade secrets or privileged or confidential commercial or financial information.

Visitors: The public has the option to attend in-person or observe via Zoom and may receive teleconference information by contacting the Corporate Secretary's Office at (602) 236-4398. If attending in-person, all property in your possession, including purses, briefcases, packages, or containers, will be subject to inspection.



NOTICE WILL BE SENT REGARDING THE NEXT JOINT MEETING OF THE BOARD OF DIRECTORS AND COUNCIL WORK STUDY SESSION

08/22/2023

**SAFETY MINUTE: SCHOOL ZONES
SRP BOARD AND COUNCIL
WORK STUDY SESSION**

**SARA MCCOY
DIRECTOR, RISK MANAGEMENT
AUGUST 29, 2023**



Delivering water and power™

SAFETY MINUTE: SCHOOL ZONES

- Focus on driving and watching for people
- Drive carefully through neighborhoods
- Arizona school zones are 15mph
- Stop if anyone is within the crosswalk
- No passing other vehicles
- Stop for school bus (both directions)

Better to be late for an appointment than have a tragic accident.



RED LIGHTS & STOP ARM





An aerial photograph of a large dam and reservoir situated in a deep, rugged canyon. The canyon walls are composed of layered, reddish-brown rock. The reservoir is a deep blue color, and the dam is a long, curved structure across the middle of the canyon. The sky is a clear, pale blue.

Integrated System Plan (ISP) Overview: Day 1

ISP Board and Council Study Session

Angie Bond-Simpson, Sr. Director | August 29, 2023

Safety & Sustainability Minute

Welcome

Bobby Olsen

AGM & Chief Planning, Strategy & Sustainability Executive

Meeting Objectives

Day 1

- Introduce Integrated System Planning (ISP)
- Review collaborative study plan and engagement processes

Day 2

- Present ISP recommended System Strategies based on key findings from the analysis
- Illustrate Management's ISP Implementation Steps
- Address questions with SRP Subject Matter Experts

Agenda

Time (incl. Q&A)		Topics	Presenter
DAY 1	DAY 1		
9:30-9:40	10 min	Welcome, Opening Remarks and Meeting Objectives	Bobby Olsen
9:40-10:10	30 min	Introduction to the Integrated System Plan (ISP)	Angie Bond-Simpson
10:10-10:40	30 min	ISP Study Plan & Stakeholder Engagement	Kyle Heckel
10:40- 11:35	55 min	Voice of the Residential Customer Research	April Smith (Bellomy)
11:35-12:00	25 min	Key Findings and ISP Strategy Development	Angie Bond-Simpson
12:00-12:30	30 min	Lunch	
DAY 2	DAY 2		
9:30-9:40	10 min	Welcome and Day One Recap	Bobby Olsen Angie Bond-Simpson
9:40-10:20	40 min	ISP Recommendation: System Strategies Including Key Findings that Support the Recommendation	Angie Bond-Simpson Nick Schlag (E3)
10:20-10:45	25 min	ISP Implementation Steps: Balanced System Plan	Angie Bond-Simpson
10:40- 11:15	35 min	ISP Implementation Steps: ISP Actions	Adam Peterson Dan Dreiling Vanessa Kisicki Grant Smedley Bryce Nielsen
11:15-12:00	45 min	Q&A	All
11:55-12:00	5 min	Wrap Up & Next Steps	Angie Bond-Simpson
12:00-12:30	30 min	Lunch	

Introduction to the ISP

Angie Bond-Simpson
Sr. Director, Resource Management

Outline

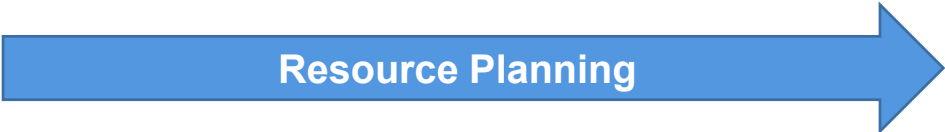
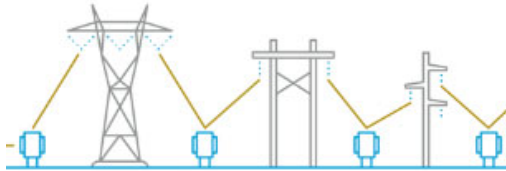
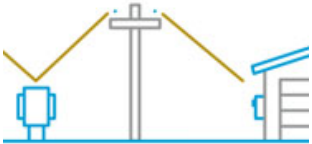
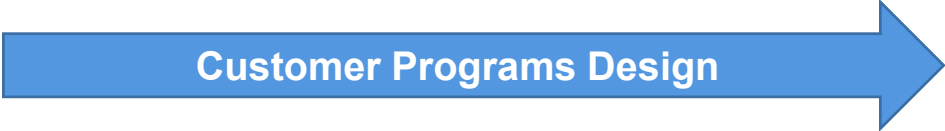
- What is an ISP?
- Why is an ISP needed?
- What is the process for the first ISP?
- Who is involved in the first ISP?

SRP's Integrated System Plan

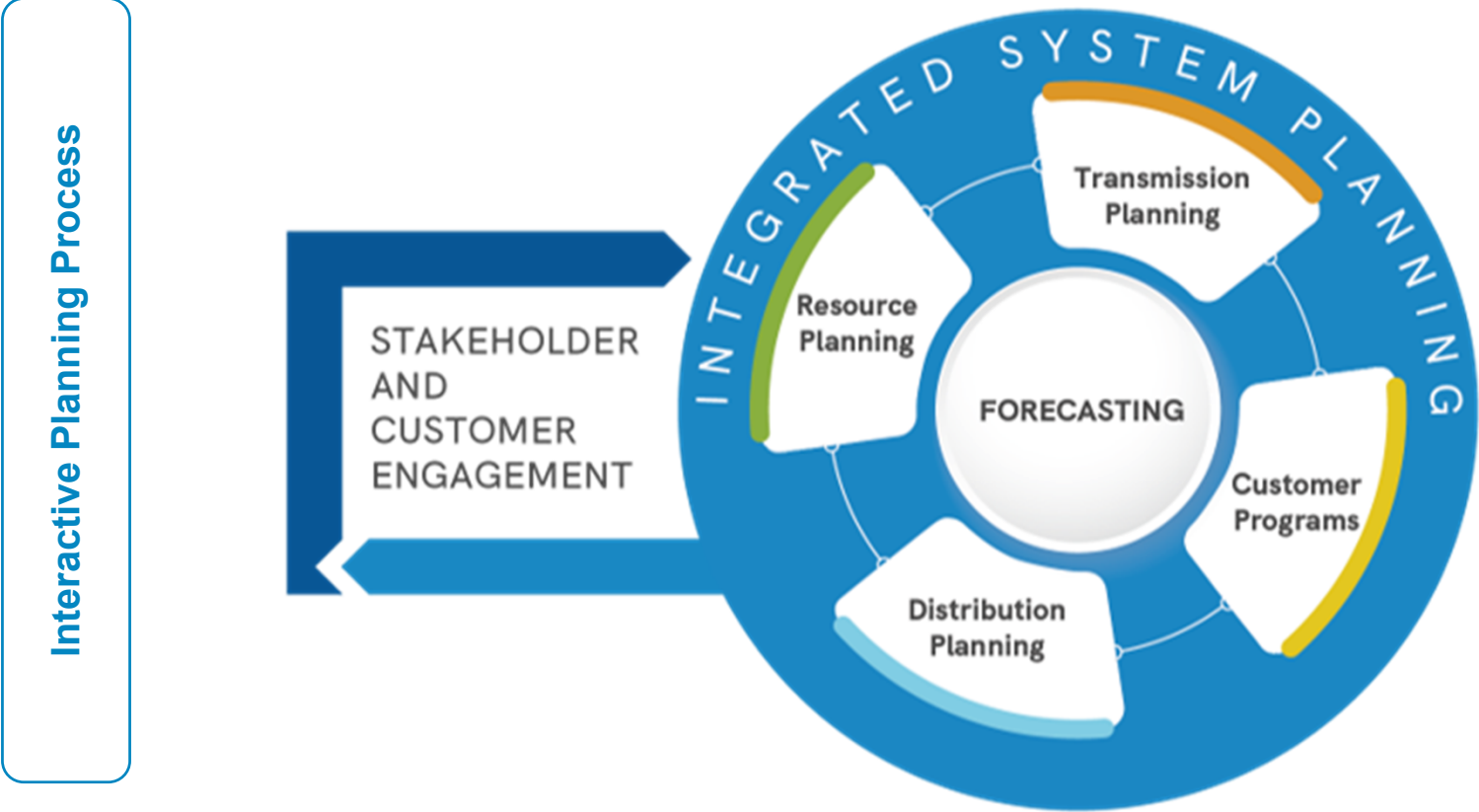
An Integrated System Plan is the holistic **roadmap** for the **power system of the future** which considers **evolving customer needs** for **reliability, affordability, and sustainability** and achieves our 2035 goals.

Traditional Utility Planning

Parallel Planning Processes



Integrated System Planning





Why move to an Integrated System Planning Process?



Evolving customer preferences



Technology advancements and supply chain impacts



Los Angeles Times

BUSINESS

How an Oregon wildfire almost derailed California's power grid



SUBSCRIBERS ARE READING

LIFESTYLE
FOR SUBSCRIBERS
They turned a house full of cockroaches and code violations into a 'must have' home -- and ADU

LIFESTYLE
The L.A. Times 2023 holiday gift guide

CALIFORNIA
FOR SUBSCRIBERS

The burning fire burns in southern Oregon

Bloomberg Green



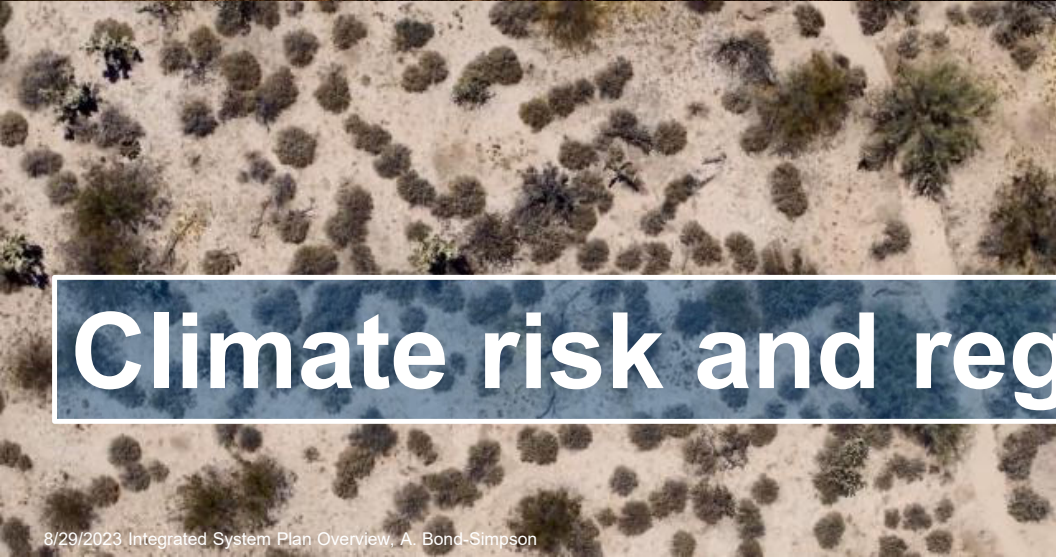
Energy & Science

Blackouts Threaten Entire U.S. West This Summer as Heat Awaits

Outages are possible from Washington to New Mexico, with drought and searing temperatures forcing states to compete for electricity

By Naureen S. Malik, David R. Baker, and Mark Chediak
May 13, 2021, 4:15 AM MST Updated on May 13, 2021, 11:59 AM MST

Regional Trends



Climate risk and regulations

Planning a System That's Affordable, Reliable, Sustainable

Maintaining Reliability

Technology maturity
Timely development
Available when needed



Sustainability Commitments

Carbon
Water



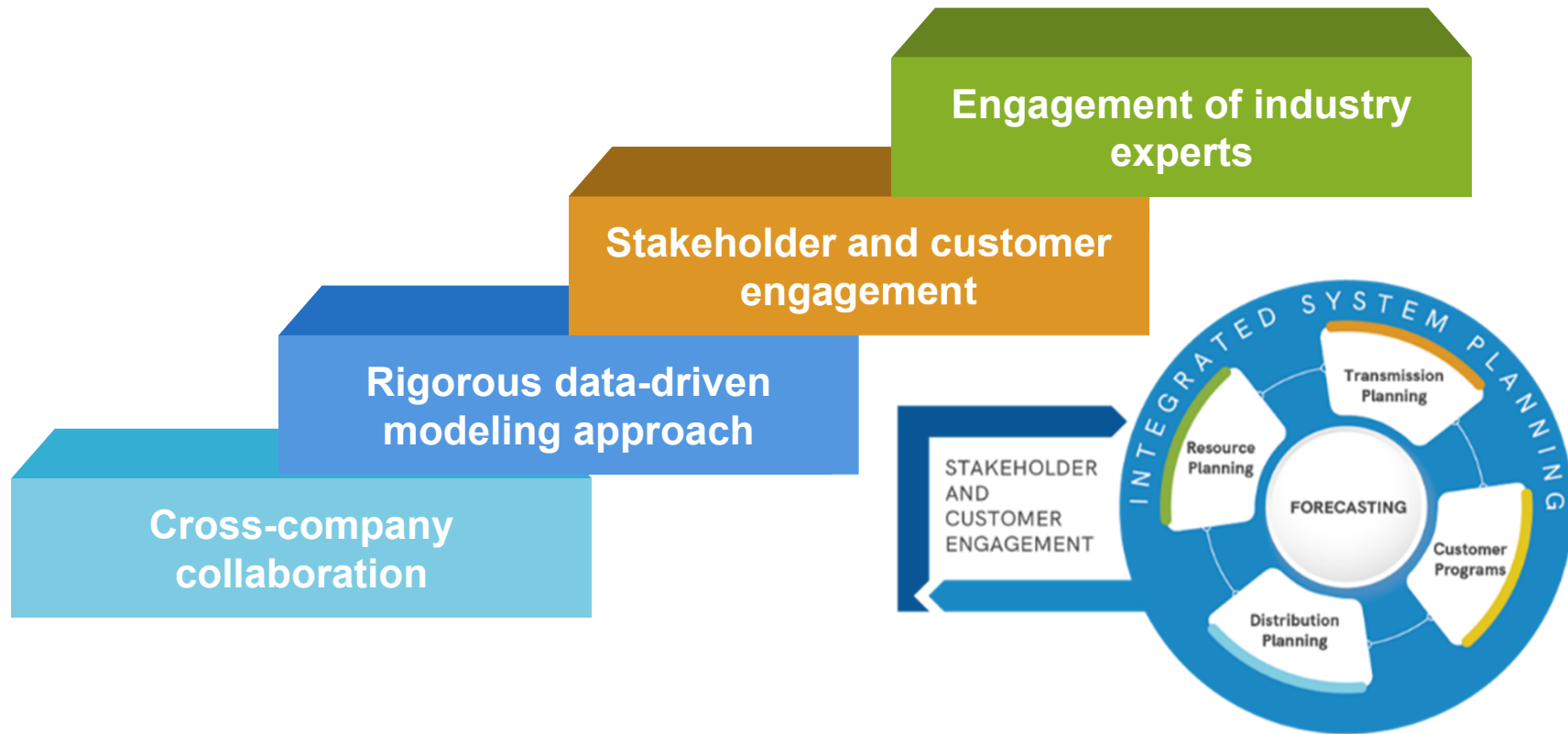
Affordability

Cost stability
Investment longevity
Lowest quartile prices regionally

The Integrated Planning Process



Major Building Blocks of the ISP



ISP Project Team

Key Contributing Departments



Coordination, Leadership Guidance, Analysis & Support

Leadership Guidance & Analysis Teams

Customer Research Team

Consultants:



ISP Stakeholder and Customer Engagement



ISP Board and Council Observers



John Hoopes
SRP Association Vice
President



Chris Dobson
SRP District Vice
President



Anda McAfee
SRP Board Member



Jack White
SRP Board Member



Larry Rovey
SRP Board Member



Krista O'Brien
SRP Board Member



Suzanne Naylor
SRP Council Member



Rocky Shelton
SRP Council Member



Mark Mulligan
SRP Council Member

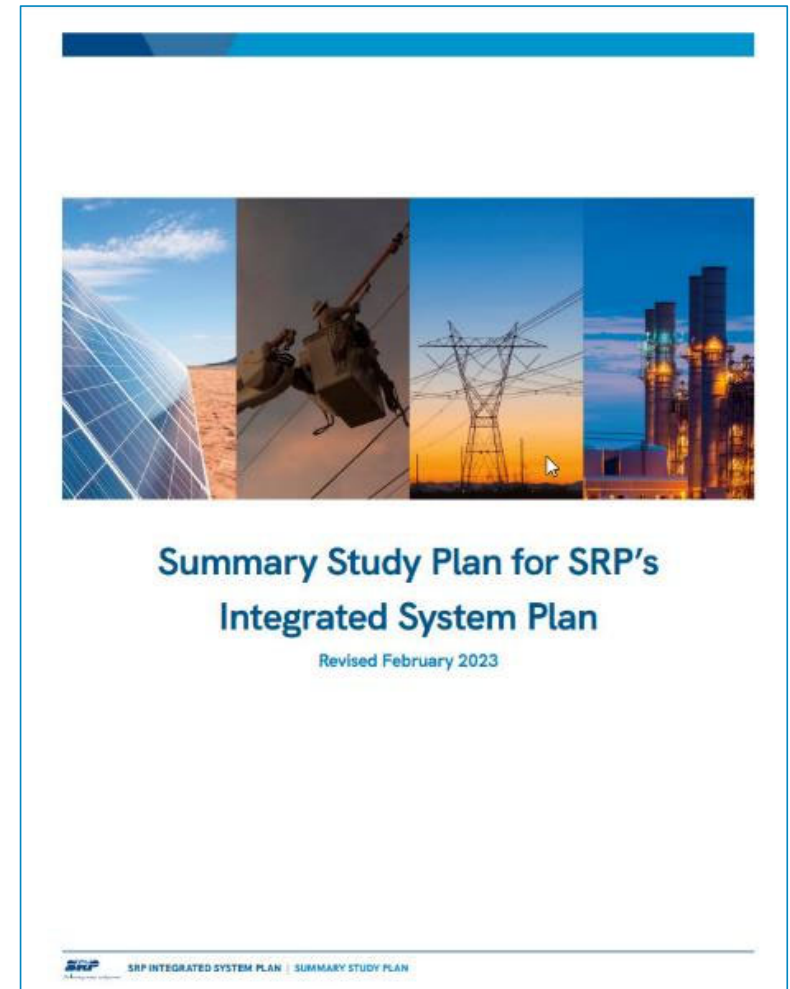
ISP Study Plan & Engagement Processes

Kyle Heckel

Sr. Engineer, Integrated Planning

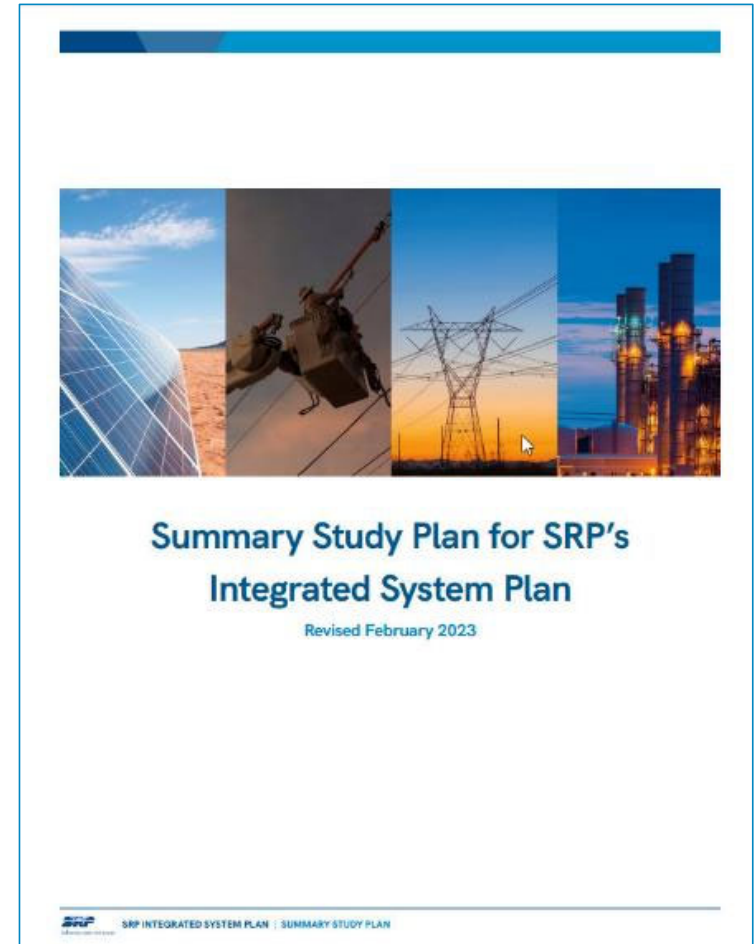
The ISP Study Plan

- Considers wide-ranging perspectives of what may happen in the future
- Assesses SRP's future system through a variety of strategic planning options
- Is designed to evaluate trends and tradeoffs in affordability, reliability, and sustainability
- Reflects customer and community stakeholder input

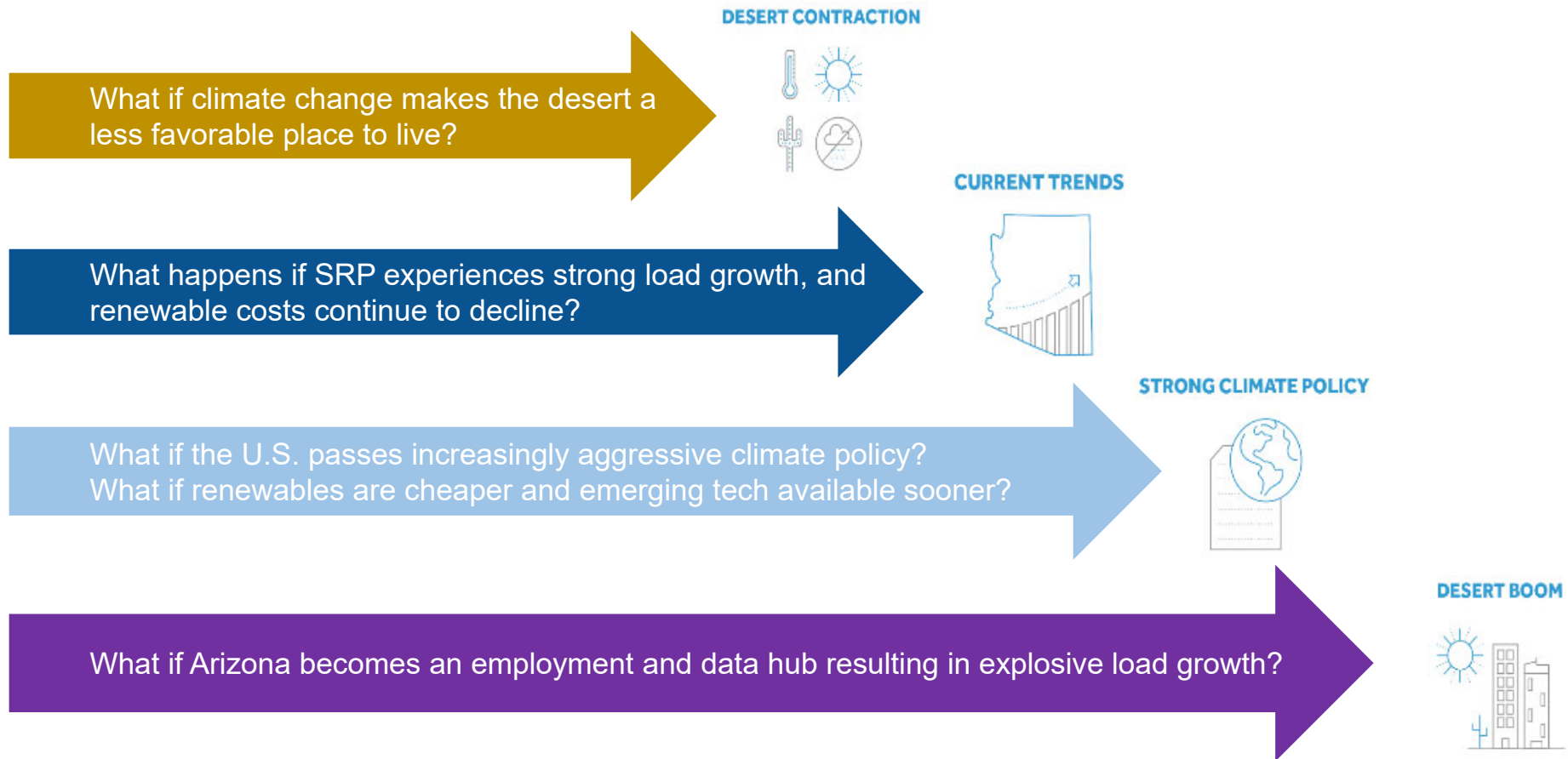


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Considering Wide-Ranging Perspectives for the Future



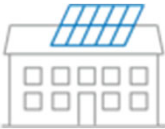
Additional Sensitivities in the ISP Study Plan

High Demand Response



High Energy Efficiency

High Distributed Generation Adoption



Increased Load Management

High, Low & Volatile Gas Prices



High & Low Technology Costs

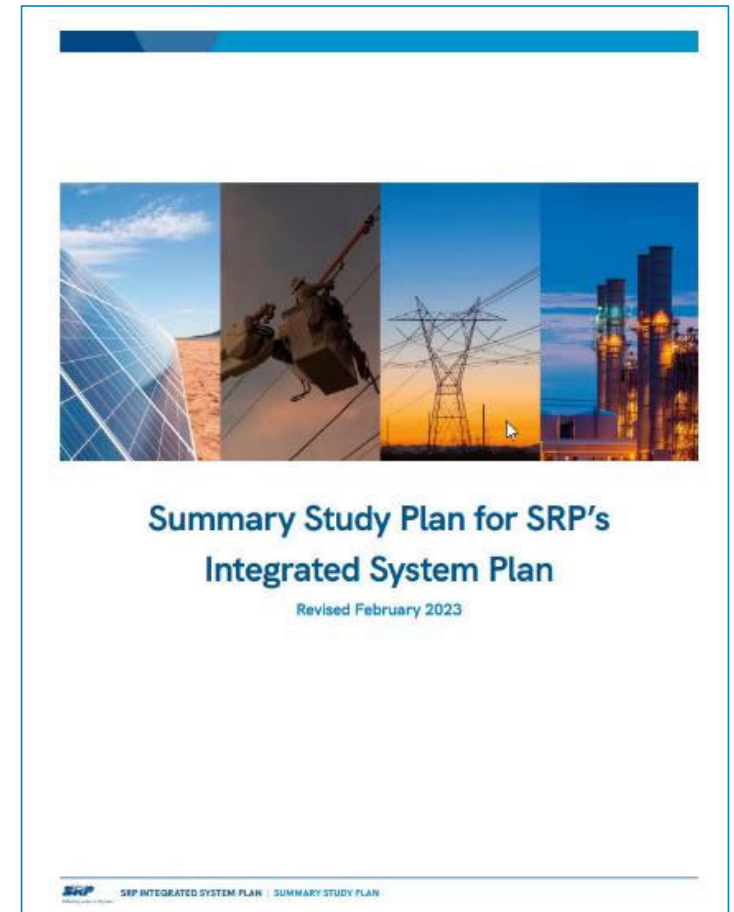


Regional Diversity

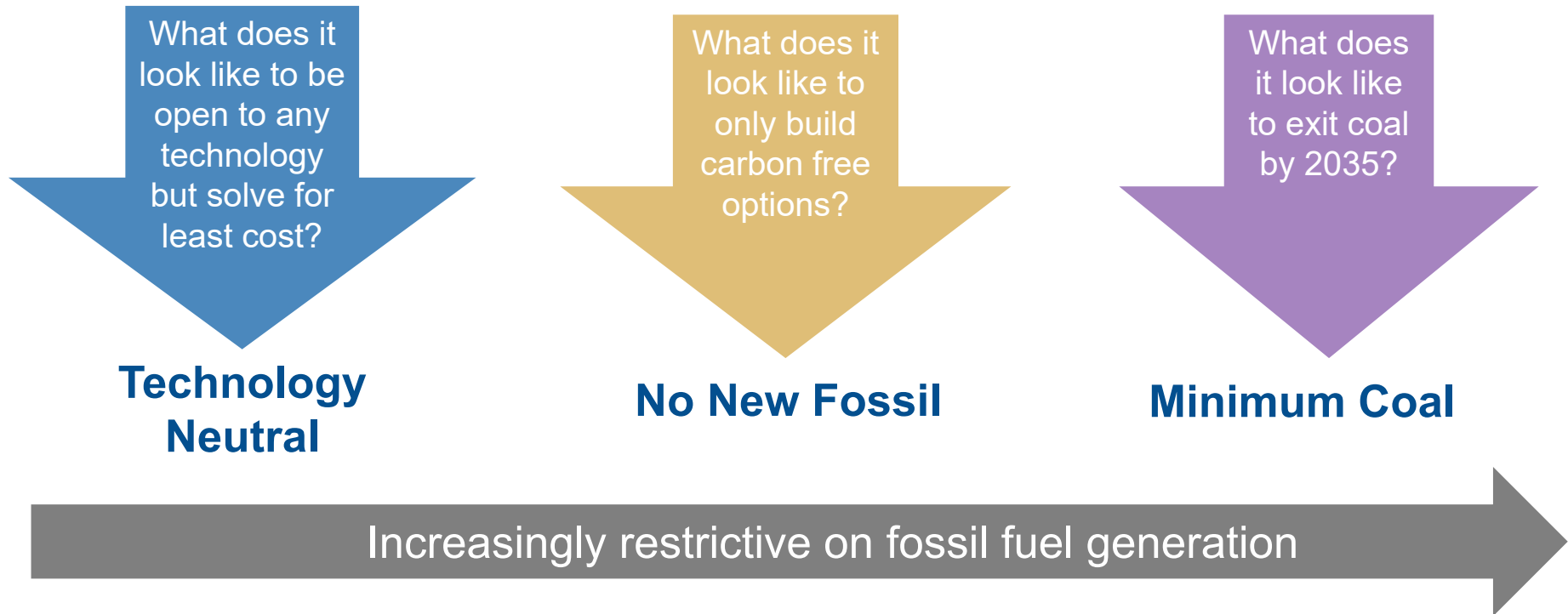


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The Strategic Approaches in the ISP Study Plan



System-Wide Analysis

Strategic Approaches

Scenarios

	Technology Neutral	No New Fossil	Min. Coal
Desert Contraction	●	●	●
Current Trends	●	●	●
Strong Climate Policy	●	●	●
Desert Boom	●	●	●

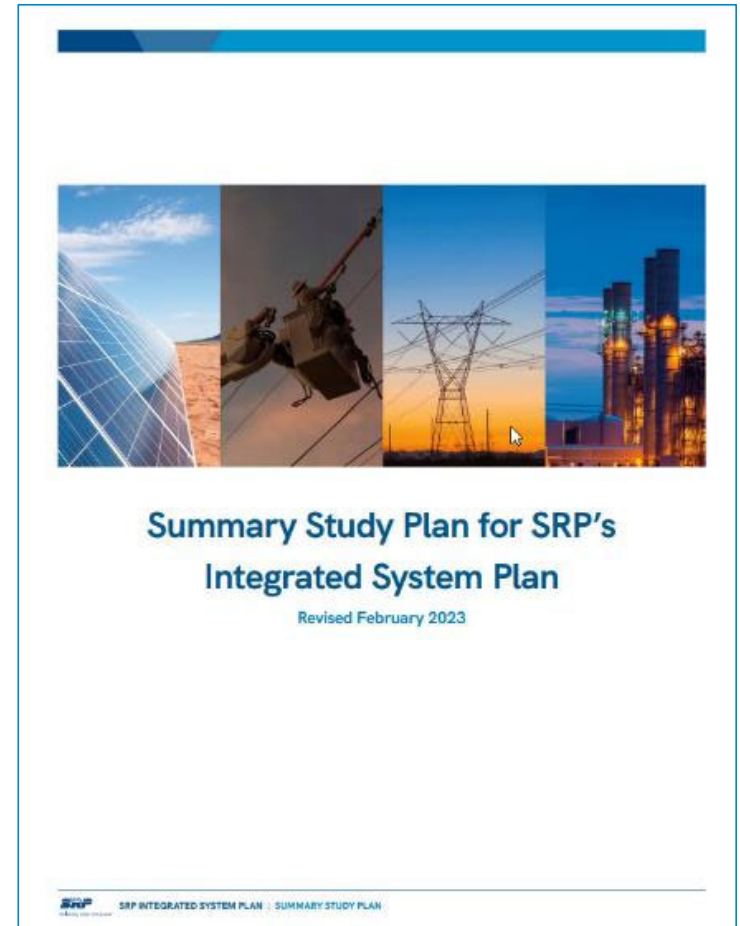
12 Scenario-Based System Plans



30 Sensitivity Cases

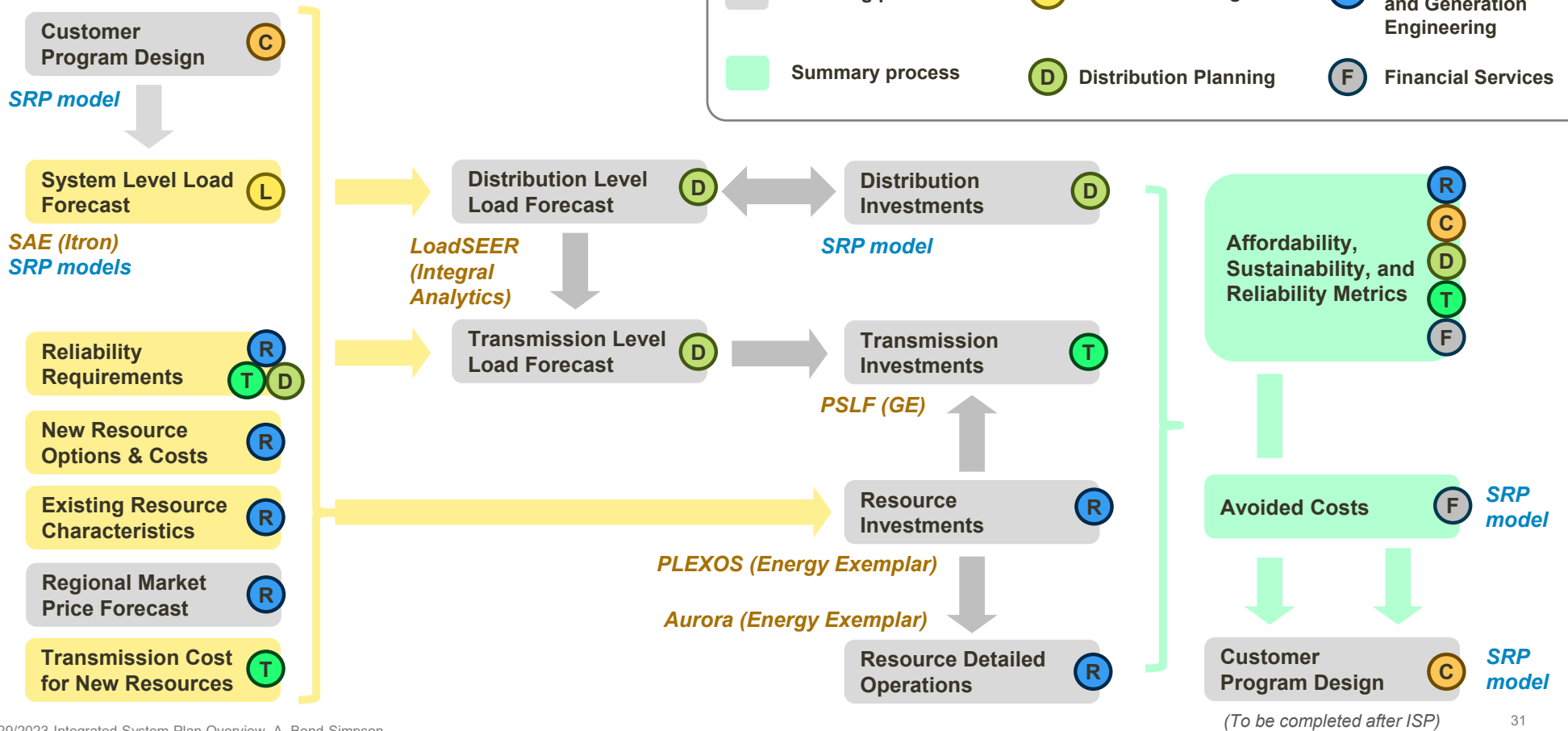
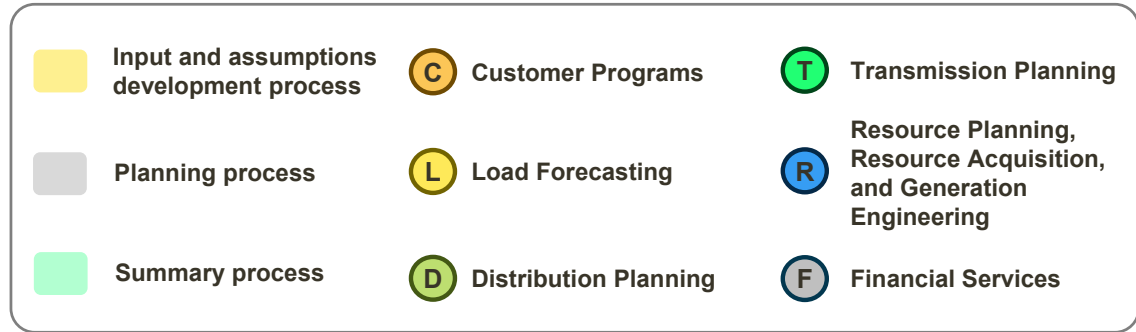
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Integrated System Plan

SRP and third-party models



Integrated System Plan Metrics



Affordability

Total System Costs
Average System Costs
Average Residential Price
Impact



Sustainability

CO2 Reductions
Water Use
Carbon-Free Generation
Capacity Factor for Gas Fleet
Direct Air Emissions (NOx, SO2,
PM, VOC)



Reliability

Resource Contribution to
Reliability
Reliance on Emerging
Technologies
Qualitative Risk
Ratings (Development
Risk and Operational Risk)
Planning Reserve Margin

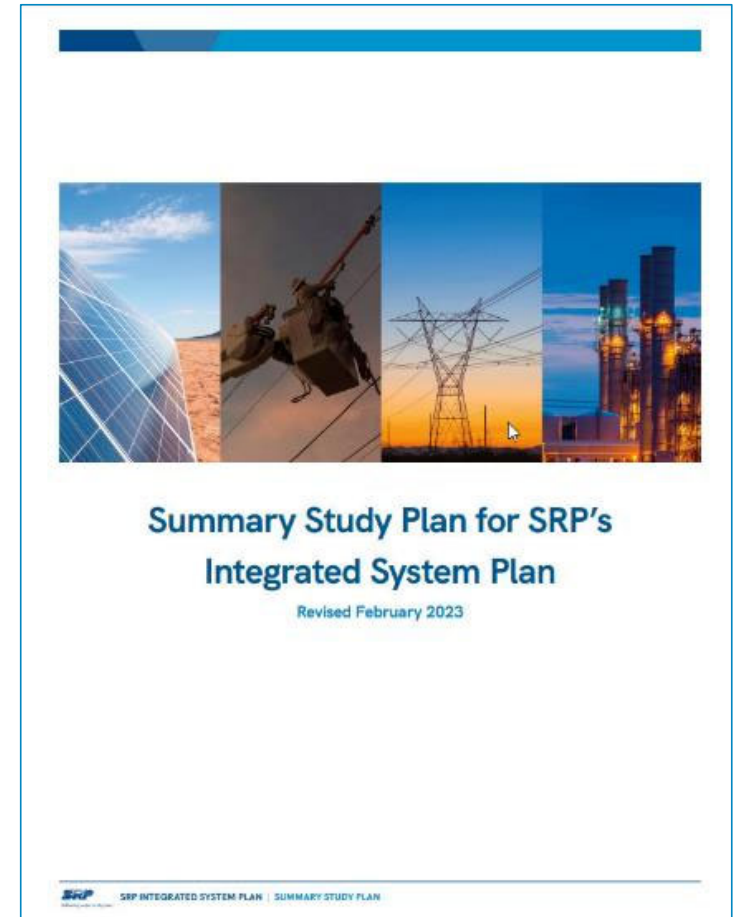


Customer Focus

Customer Preference Rating
CO2 Reductions from energy
efficiency, demand response,
distributed generation, and
electrification

The ISP Study Plan

- Considers wide-ranging perspectives of what may happen in the future
- Assesses SRP's future system through a variety of strategic planning options
- Is designed to evaluate trends and tradeoffs in affordability, reliability, and sustainability
- **Reflects customer and community stakeholder input**



ISP Study Plan Stakeholder Engagement

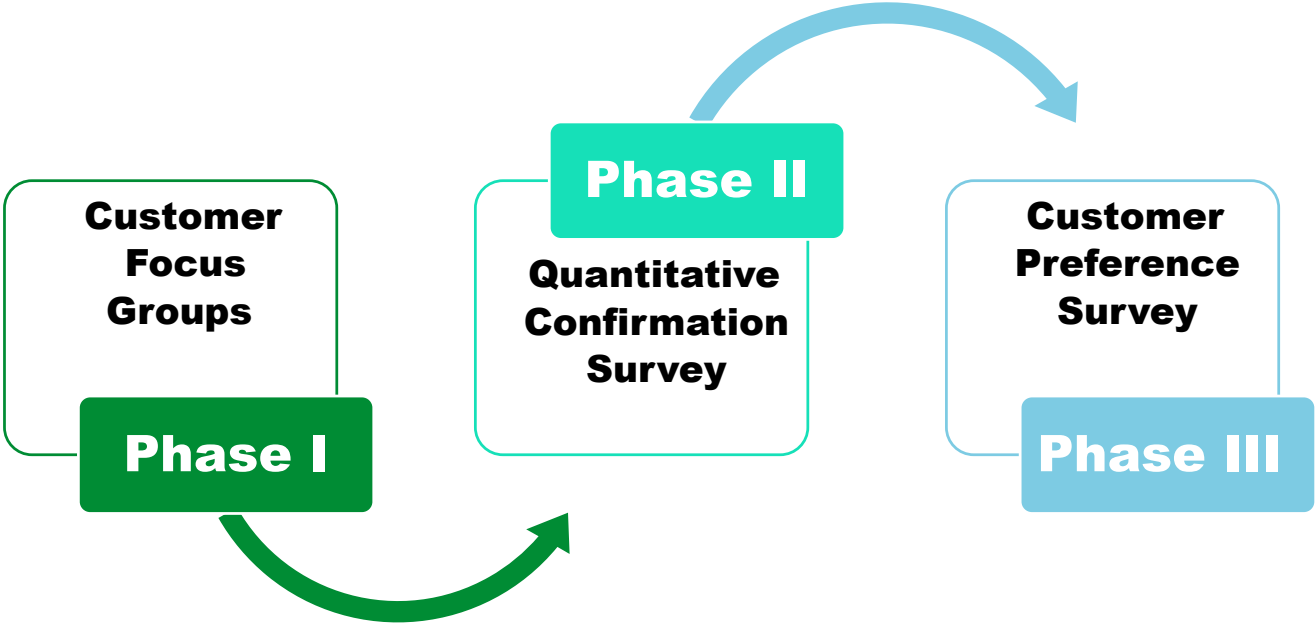
SRP used a multi-step process with ISP stakeholders to collaboratively develop each study plan component (e.g., scenarios, strategic approaches, and metrics)



- 7 Advisory Group Meetings
- 3 Modeling Subgroup Meetings
- 2 Large Stakeholder Group Meetings

Residential Customer Research: Bringing the Voices of Our Customers into the System Plan

Three Phases of Residential Customer Research



ISP RESIDENTIAL CUSTOMER RESEARCH

Board & Council Study Session| August 29, 2023

John Sessions, CEO
April Smith, Director Client Services
Bellomy Market Intelligence

PREPARED FOR

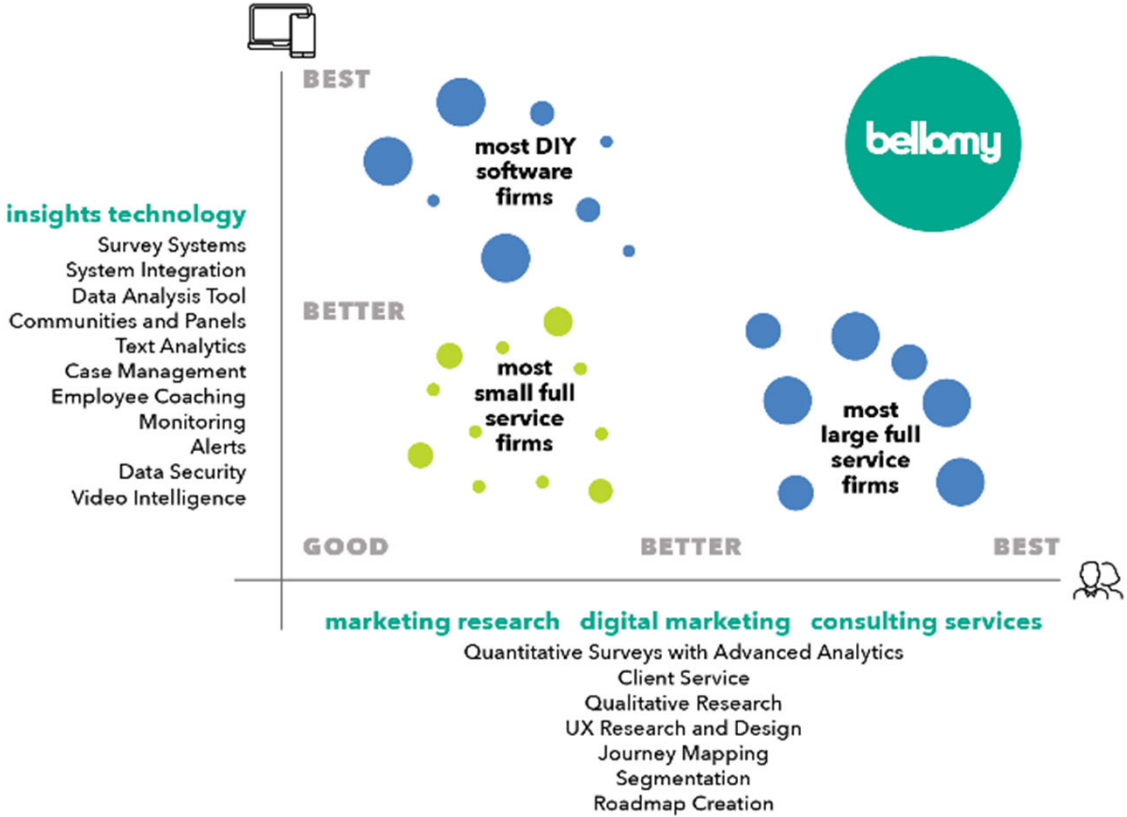


Delivering water and power®



About Bellomy

Insights
Technology
**Designed +
Developed**
by Insights
Professionals



About Bellomy

OUR GUARANTEE

We will be the best team you've ever worked with

COMPANY STATS

- Full-service market research firm with a digital marketing agency in-house
- Founded in 1976
- Headquartered in Winston-Salem, NC
- 100+ person company, with in-house researchers, designers, strategists, and developers across 14 states
- Ranked among the Top 50 market research firms in the US for the last 10+ years

SOME OF OUR ENERGY CLIENTS



Fueling digital acceleration through research + design

Background + Objectives

Bring the **voice of SRP's residential customers** into the planning of the future energy system

Create a **residential customer preference metric** for consideration in the ISP's decision-making process



Methodology: Multi-Phased Approach

A three-phased research approach was applied.

Virtual Focus Groups

4
90-minute
focus groups
December 13 & 14, 2021



Confirmation Survey

400
respondents
March 7 –14, 2022



Choice Exercise Survey

1,011
respondents
May 9 – 29, 2023

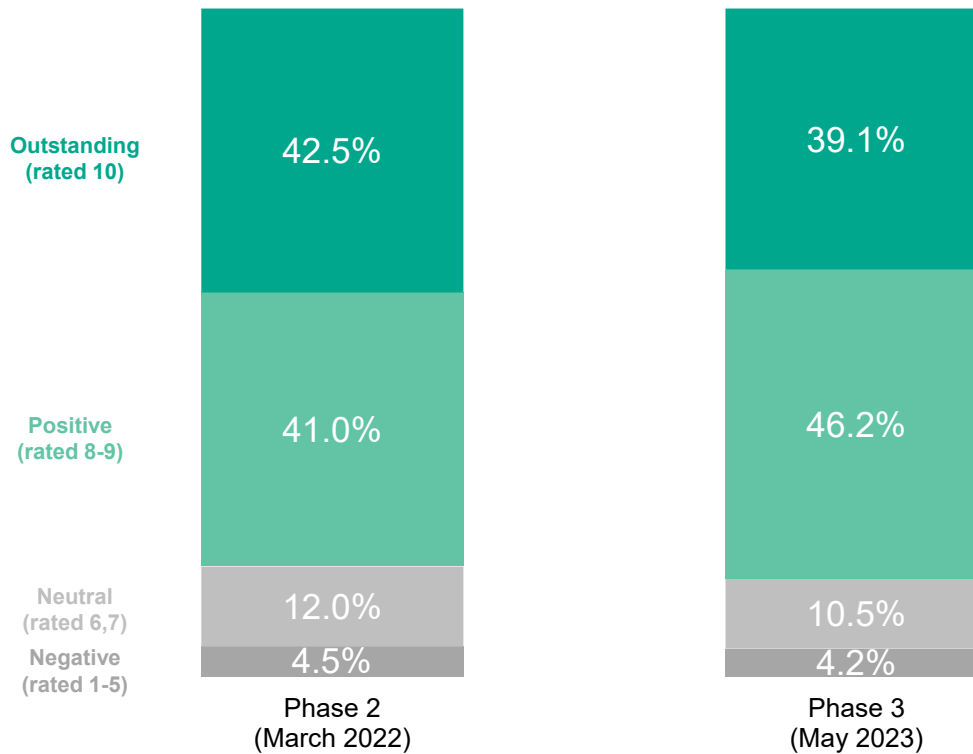


All respondents were: SRP customers, aged 18 or older, energy decision makers, and did not work for a related industry. Quotas set to ensure results were representative of SRP's residential customer base.

EXPERIENCE WITH SRP, CONCERNS, & PRIORITIES

Most rated their experience with SRP positively

Overall Experience with SRP

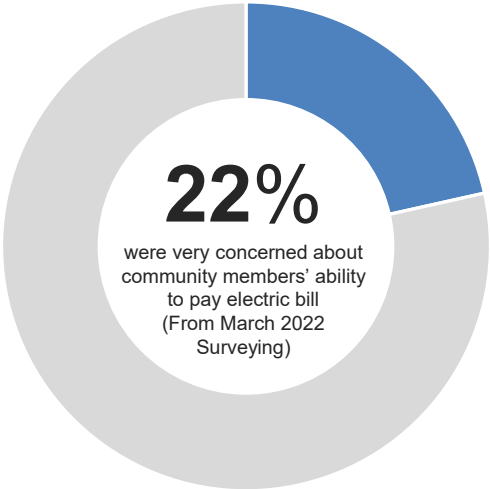
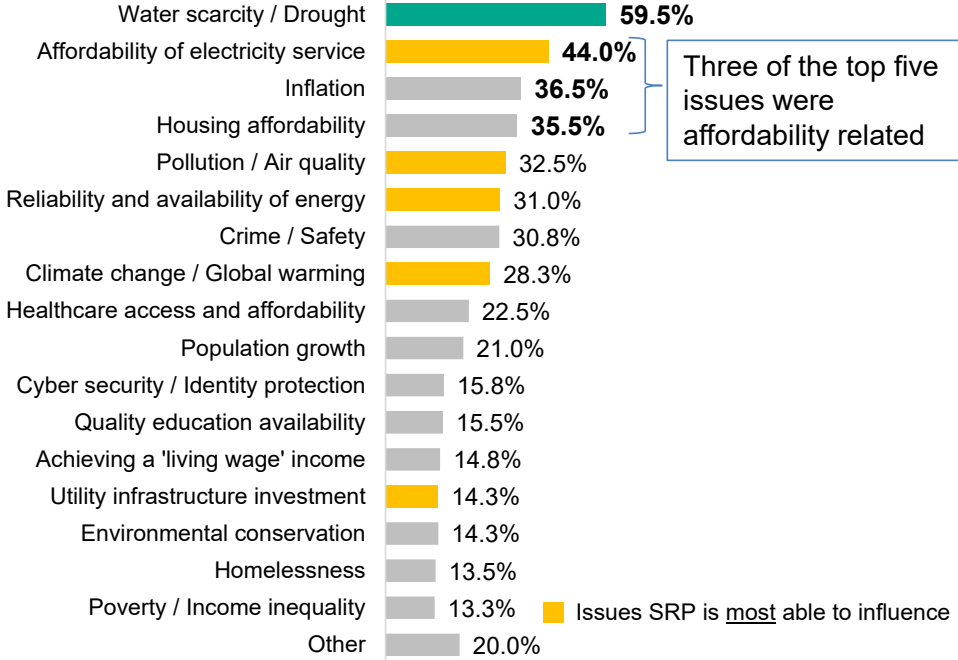


In qualitative findings, customers noted a highly positive perception of SRP, specifying the reliability of service along with helpful customer service were key factors.

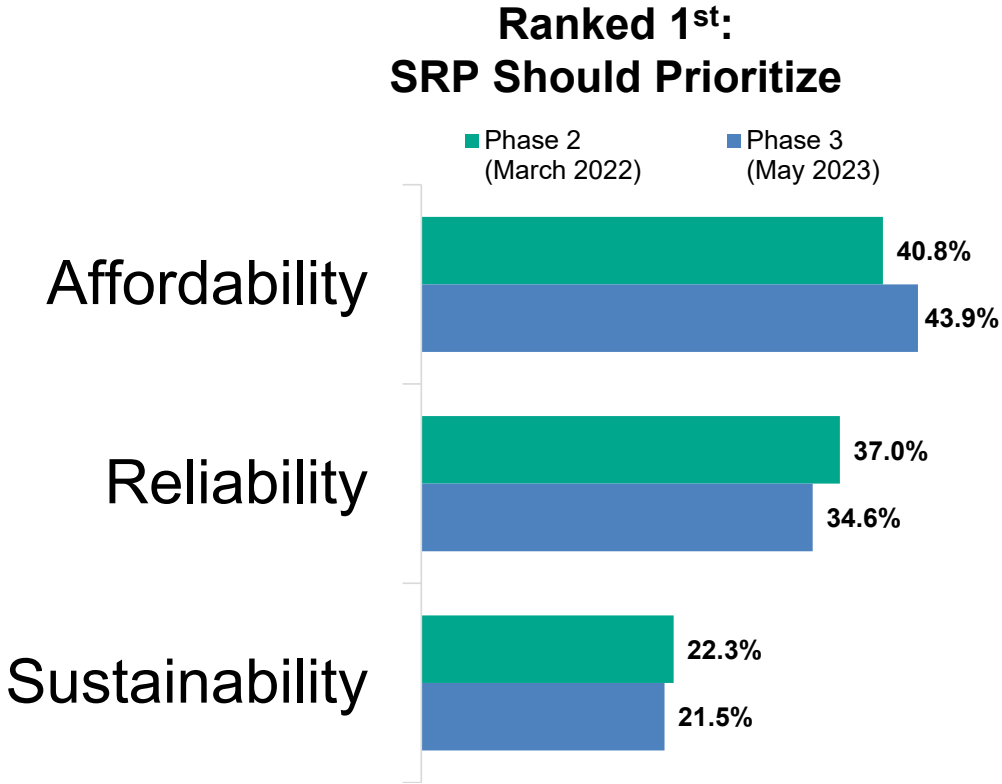
Customers demonstrated affordability concerns

Future Issues Facing Arizona

(From March 2022 Surveying)



Affordability and Reliability were most often ranked 1st



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

Groups **more likely** to rank **affordability first** included:

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

Represents **about a third** of SRP's residential customer base

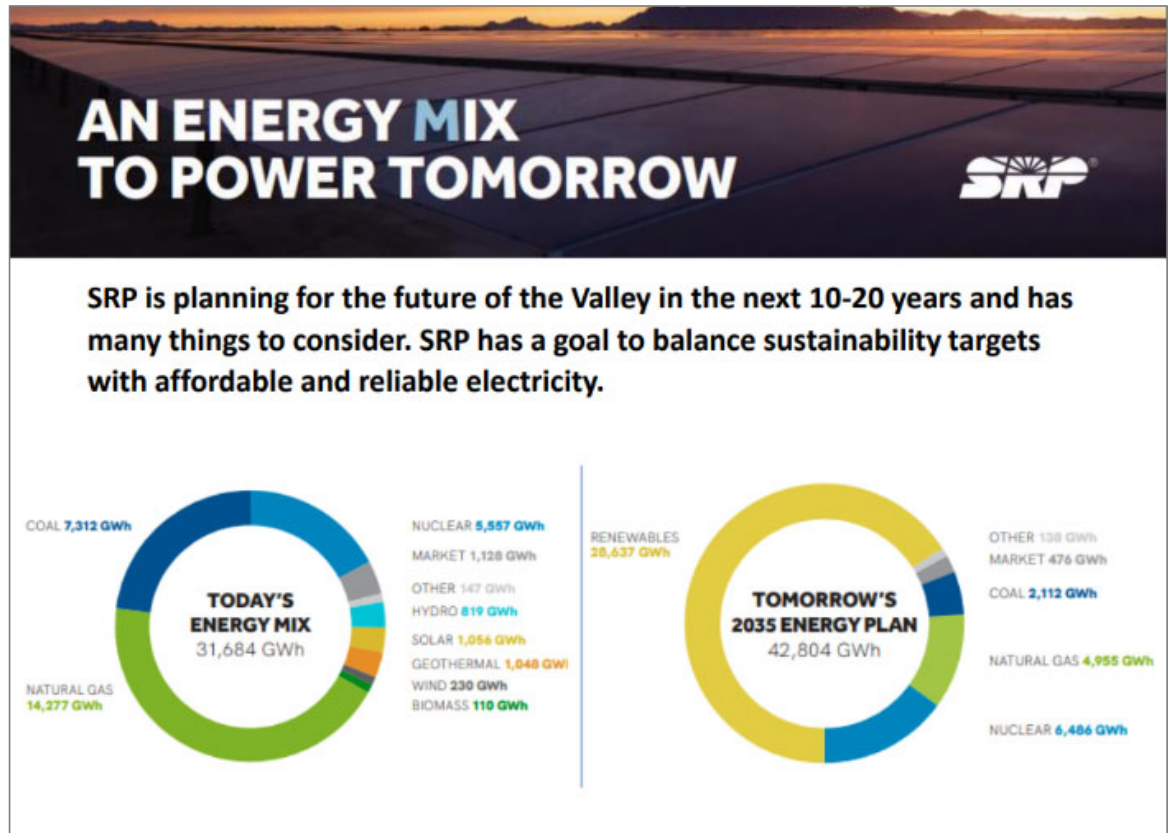
INITIAL ENERGY PLAN REACTIONS

(PHASE I & II)

Illustrative Energy Plan

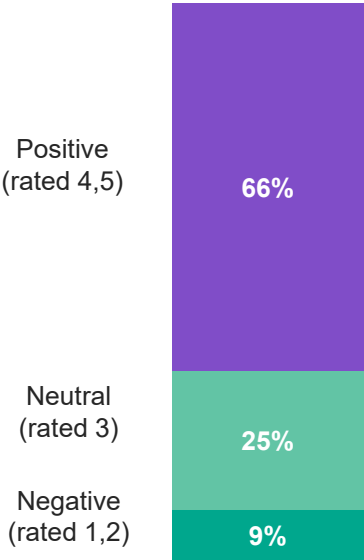
Customers evaluated an illustrative SRP energy mix, which could take place in the next 10-20 years.

Customers were given background on SRP's priorities to ensure power quality continues to improve.



Two thirds rated the energy plan positively

Overall Opinion of the Illustrative Plan (From March 2022 Surveying)



26% Excellent (rated 5)

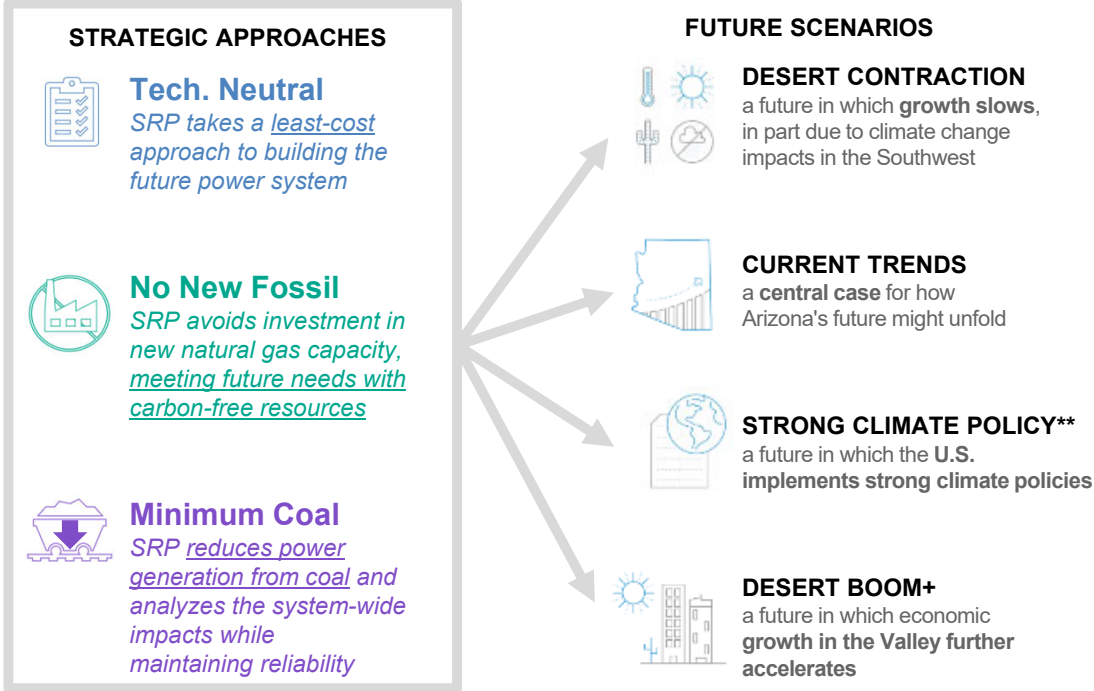
Focus group participants suggested some initial opportunities, such as:

- The amount of time needed to implement the plan
- Getting customer buy-in and being transparent
- Ensuring SRP's accountability for changes
- Clarifying how this would affect rates

CHOICE EXERCISE DESIGN








(BASED ON ISP ANALYSIS RESULTS)

ISP's Analytical Framework



**Within the Strong Climate Policy scenario, cases for Tech. Neutral and No New Fossil are identical. Only one illustrative mix was shown to customers to represent both cases, thus data shown are identical for these two cases.
 +Within the Desert Boom scenario, Tech. Neutral was the only strategy tested; No New Fossil and Minimum Coal cases do not reach reliability targets.

Informed The Following System Inputs:

-  Illustrative **energy mix** (9 mixes)
-  When SRP will **meet its sustainability goals** (2030/ 2035)
-  % reduction in **carbon emissions*** (4 levels)
-  % reduction in **water usage*** (4 levels)
-  If SRP will **build new gas power plants** (Yes/ No)
-  Monthly **bill impact** (4 levels)
-  Number of **2-hour power outages** (4 levels)

Variation in levels resulted in evaluation of ~9,200 possible system configurations.








*Levels were conditional on the energy mixes shown

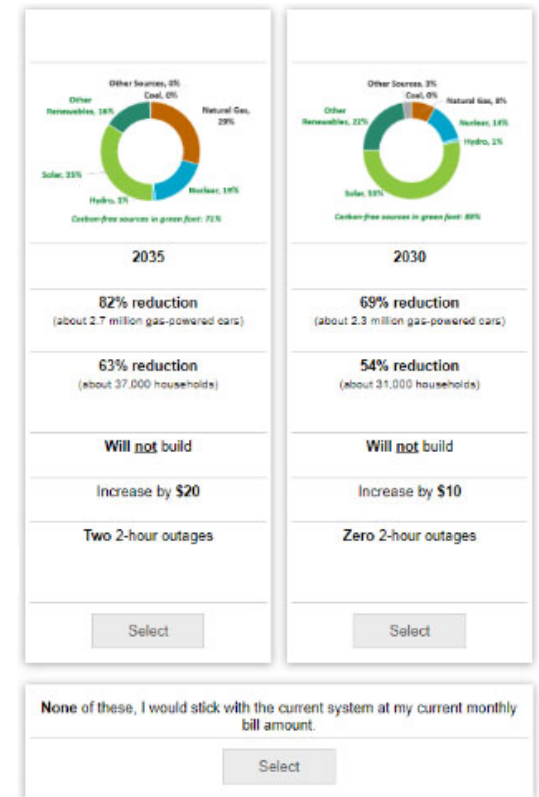
Inputs Were Used in a Choice Exercise

Conjoint methodology was used to understand customer preference

11 screens showing **2 energy plans** and a “none of these” option were shown

Customer preference ratings were produced for each potential future energy system

-  Energy Mix
-  Timing
-  Carbon Emissions
-  Water Usage
-  Build Gas Plants
-  Bill Impact
-  2-hour power outages



An example survey screen is shown to the right

Educational Information Included In Survey



Delivering water and power™

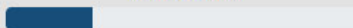
SRP is planning for the future of the greater Phoenix community and working towards a **sustainable future** for the benefit of our customers and communities we serve. SRP's 2035 Sustainability Goals are about making decisions through the eyes of our customers while balancing costs, reliability of service, and the sustainability of our energy production. Two key components of the 2035 Sustainability Goals are:

- [Reducing the amount of Carbon emitted](#) by 65% from [2005](#) levels by 2035.
- [Reducing the amount of Water used](#) in energy generation by 20% by 2035.

SRP's planning efforts aim to build a future system that will be **implemented by 2035** and meet these Sustainability Goals. Meeting the 2035 Sustainability Goals sooner means fewer carbon emissions. However, customers might be impacted through [increased costs or more power outages](#).


The "Next" button will appear once you've had time to read this page.

Progress (24%)



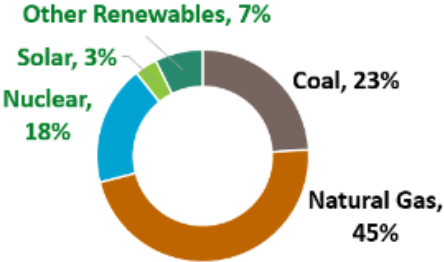
Please do not use your browser's back button

Educational Information Included In Survey



In the next part of this survey, you will be asked to **choose between different potential future energy plans that SRP is considering**. Before you begin this activity, please **review SRP's current energy mix below**. This outlines the amount of coal, natural gas, nuclear, solar, and other renewables currently being used to generate the power SRP provides.

SRP's Current Energy Mix



Energy Source	Percentage
Coal	23%
Natural Gas	45%
Nuclear	18%
Solar	3%
Other Renewables	7%
Carbon-free sources (Total)	28%

Carbon-free sources shown in green font: 28%

The "Next" button will appear once you've had time to read this page.

Progress (26%)

Please do not use your browser's back button

Explanation and Example Provided



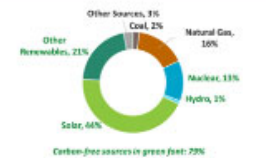
Delivering water and power™

Before you start this activity, we'd like to show you an **example of a future energy plan**, like the ones you will review shortly.

Please reference the following on how to understand the [energy mix](#) and the impacts of the plan (*For each of these potential impacts, the effects are hypothetical*):

- **Timing:** SRP is planning to reach the Sustainability Goals and implement a new energy mix by 2035.
- **Carbon reduction:** The mass amount of carbon reduced by this possible future energy mix has been translated to the amount of carbon produced by cars. In the energy plan below, the carbon reduction is equal to the number of gas-powered cars removed from the road each year.
- **Reduction in water usage:** The decrease in water used in generating power for the possible future energy mix has been translated from gallons to the amount of water used by an average 4-person household in one year. In the example below, the amount of water reduced is equal to the number of households it would take to use that water in one year.
- **Building new infrastructure:** Some possible future energy mixes will require SRP to build new natural gas power plants, while others will not. This will vary across possible future energy mixes.
- **Bill impact:** Each possible future energy mix will have added costs from using new energy sources and transitioning to them by 2035. Customers might have higher monthly bills as the cost is passed along in part on SRP bills.
- **Number of power outages:** SRP is designing a future energy system with zero outages caused by a lack of energy supply each year. However, SRP wants to understand how you would evaluate an energy plan that has the possibility of one to three 2-hour outages. These outages would occur during times with high energy demand, like a hot summer's day, and would not be caused by storms.

Energy Mix:



SRP will meet its Sustainability Goals by:	2035
% reduced carbon emissions (equal to number of gas-powered cars on the road each year):	10% reduction (about 275,000 gas-powered cars)
% reduced water usage (equal to amount of water used by the number of 4-person households shown per year):	23% reduction (about 31,000 households)
Will SRP build new gas power plants to source energy?	Will not build
Your monthly bill will:	Increase by \$10
Number of 2-hour power outages experienced due to high energy demand (on a hot summer's day):	Two 2-hour outages

Conjoint Exercise Screens

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:

	2030	2035
SRP will meet its Sustainability Goals by:	75% reduction (about 2.6 million gas-powered cars on the road each year)	86% reduction (about 2.9 million gas-powered cars)
% reduced carbon emissions (equal to number of gas-powered cars on the road each year):	46% reduction (about 27,000 households)	52% reduction (about 30,000 households)
% reduced water usage (equal to the amount of water used by the number of 4-person households shown per year):	Will build	Will not build
Will SRP build new gas power plants to source energy?	Increase by \$20	Increase by \$10
Your monthly bill will:	Two 2-hour outages	One 2-hour outage
Number of 2-hour power outages experienced in one year due to high energy demand (on a hot summer's day):	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	<input type="button" value="Select"/>	<input type="button" value="Select"/>
	None of these, I would stick with the current system at my current monthly bill amount. <input type="button" value="Select"/>	

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

	2035	2030
SRP will meet its Sustainability Goals by:	55% reduction (about 1.8 million gas-powered cars)	24% reduction (about 810,000 gas-powered cars)
% reduced carbon emissions (equal to number of gas-powered cars on the road each year):	57% reduction (about 32,000 households)	18% reduction (about 19,000 households)
% reduced water usage (equal to the amount of water used by the number of 4-person households shown per year):	Will not build	Will build
Will SRP build new gas power plants to source energy?	Increase by \$30	Increase by \$20
Your monthly bill will:	Two 2-hour outages	Three 2-hour outages
Number of 2-hour power outages experienced in one year due to high energy demand (on a hot summer's day):	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="button" value="Select"/>	<input type="button" value="Select"/>
	None of these, I would stick with the current system at my current monthly bill amount. <input checked="" type="checkbox"/>	

SYSTEM PLAN PREFERENCES

(PHASE III)

Monthly bill impact of greatest importance

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%



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

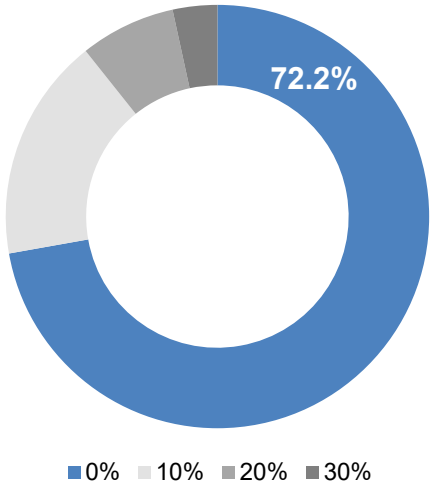
- Affordability – 31% ranked 1st
- Reliability – 36% ranked 1st
- Sustainability – 34% ranked 1st


Suggesting energy mix was seen as a **component related to all three priorities**.

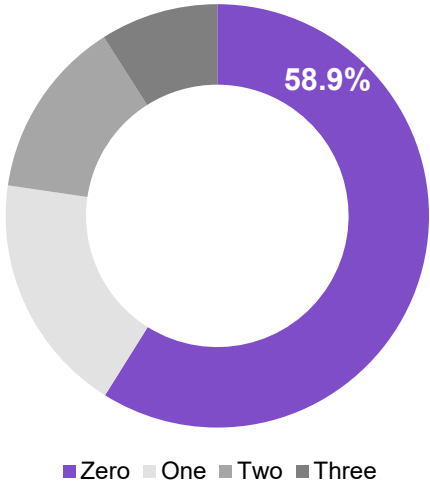
Choices indicate a desire to “have it all”

Summed Share of Preference by Attribute

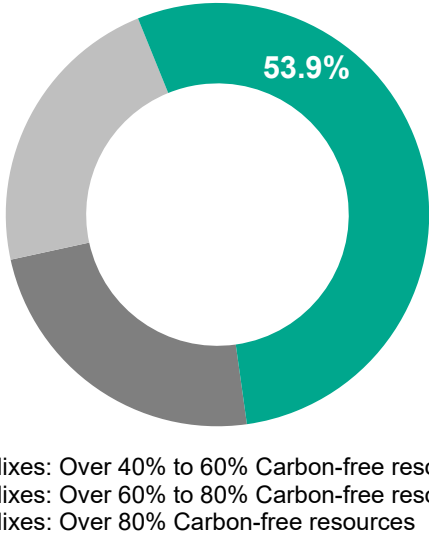
 Monthly Bill Impact



 Number of 2-Hour Outages



 Energy Mix



Real-world cost constraints force tradeoffs

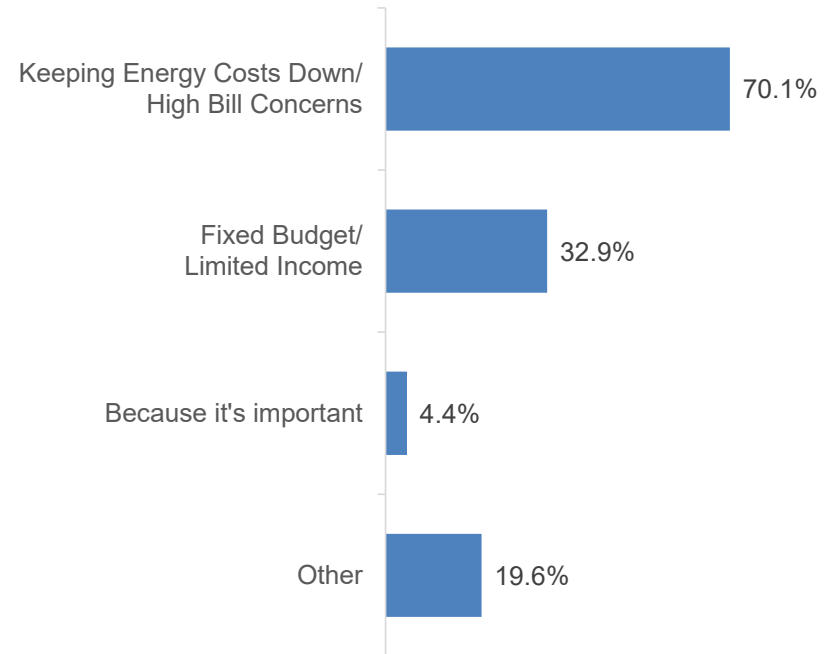
Limitations on how much customers feel they can **invest in the “greater good”**

Fixed incomes and limited budgets constrain the degree to which they can prioritize sustainability

Price sensitivity analysis revealed a sharp decline in energy plan acceptance as levels increase **above a 10% monthly bill impact**



Reasons Why Monthly Bill Impact Most Important*



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

Customers' optimal future energy system

Findings revealed that from the residential customer's perspective the **ideal future energy system should...**

- **Manage cost, first and foremost**
- Keep monthly bill impacts **below a 10% increase** (from current bill)
- Include a diverse mix to **ensure reliability**
- Provide the cleanest, **most sustainable energy without exceeding a 10% bill increase** (from current bill)



Executive Summary

66%

Rated
Positively

Most customers reacted positively to SRP's proposed path forward, and a quarter felt it was excellent. A majority agreed the plan should be prioritized by SRP.



Top factors: affordability & bill impacts

- In each quantitative phase of research, **affordability surpassed reliability slightly in importance.**
- Those with **limited incomes put greater emphasis on affordability.**
- When choosing a future energy system customer selections revealed **monthly bill impact as the top driver of preference.**



Customer understanding and openness to change

- Customers recognized that **challenges are interrelated** and pose **risks to sustainability, the economy, and overall quality of life.**
- In general, **lower-cost plans were more preferred.**
- Customers recognized the need for and expressed interest in SRP's investment in sustainable energy, but they **do not want to bear the cost of that investment.**

Key ISP Findings

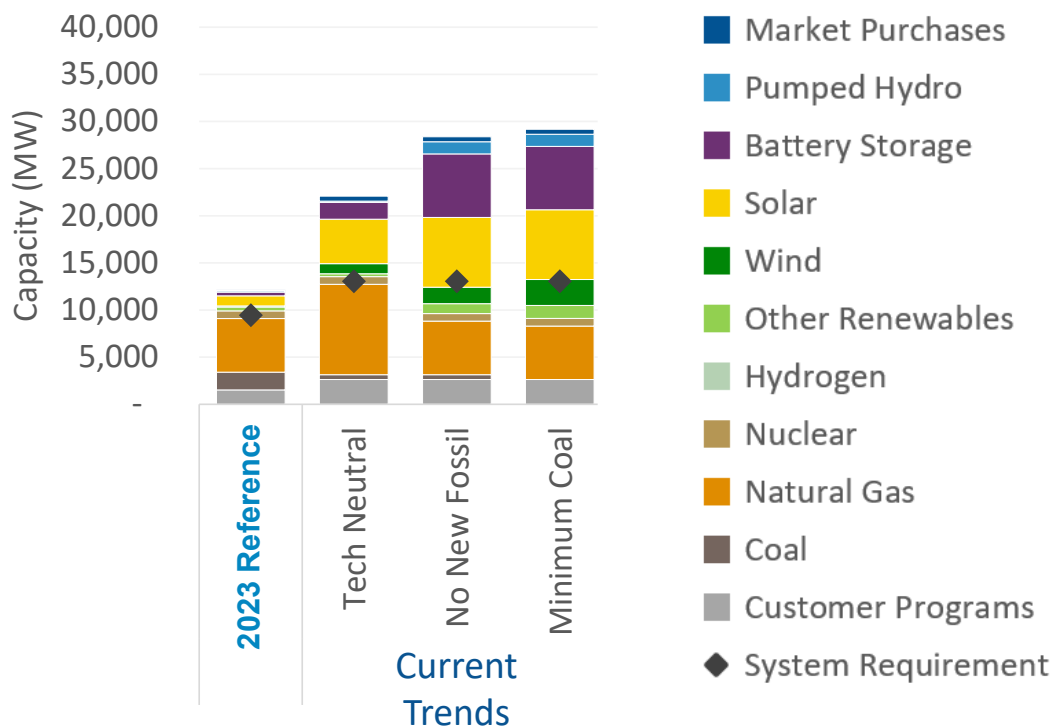
Angie Bond-Simpson
Sr. Director, Resource Management

ISP Results: Investments Needed at a Rapid Pace

- ✓ SRP will likely need to **double** or **triple** resource capacity in the **next decade** to serve customers while achieving reliability and sustainability goals. This will be at an unprecedented pace.
 - ✓ New renewables **and** firm capacity are part of a least-cost portfolio, even under a wide range of gas price and technology cost sensitivities.
 - ✓ When **paired** with firm capacity, solar and wind contribute to a least-cost portfolio while being able to help reduce carbon emissions.
- ✓ Without **new firm generation capacity**, the system cannot satisfy reliability requirements under a high load growth scenario. Higher levels of renewables and storage, including pumped storage are required in lower load growth scenarios.
- ✓ **Hundreds of miles** of new or upgraded transmission lines and nearly double the number of 500/230 kV transformers could be needed relative to today.
- ✓ Location of generation matters and plays a significant role in the buildout of the **500 kV transmission system**.

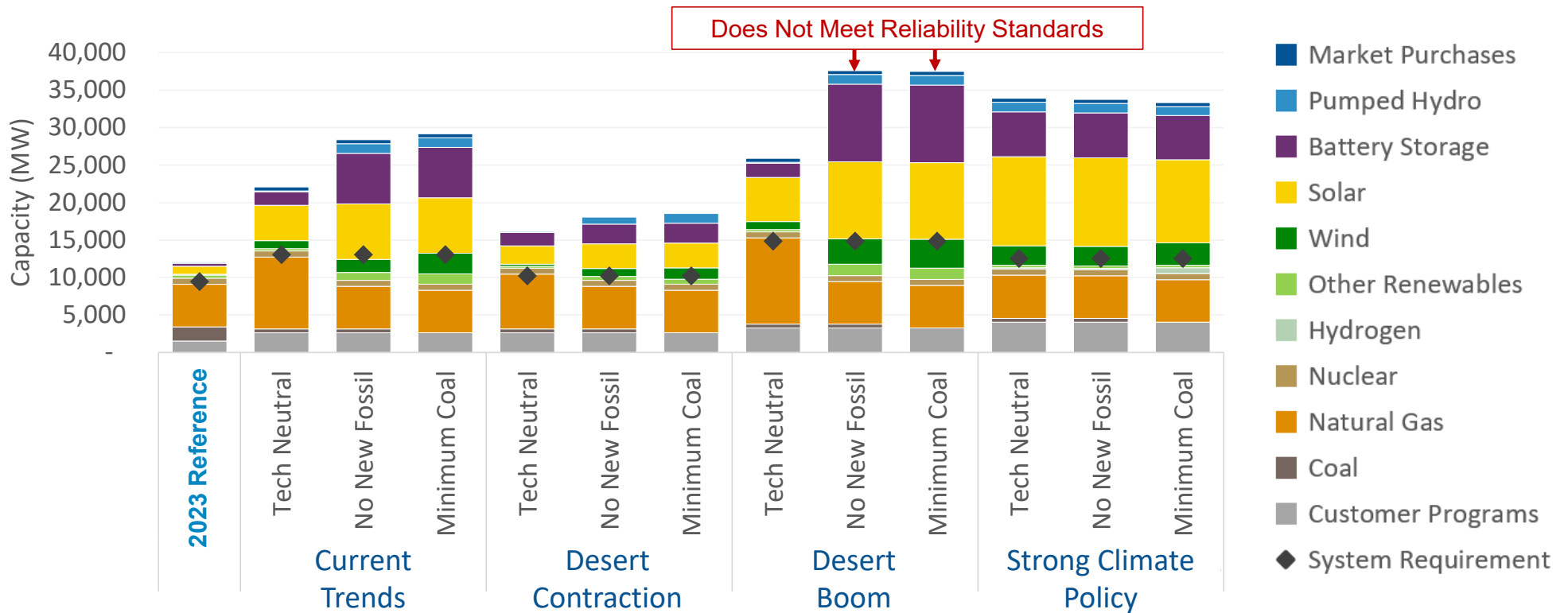
ISP Analysis: Total Nameplate Capacity of Resource and Customer Programs, 2035 (MW)

Key Takeaway: SRP will likely need to **double** or **triple** resource capacity in the **next decade** to serve customers while achieving reliability and sustainability goals. This will be at an unprecedented pace.



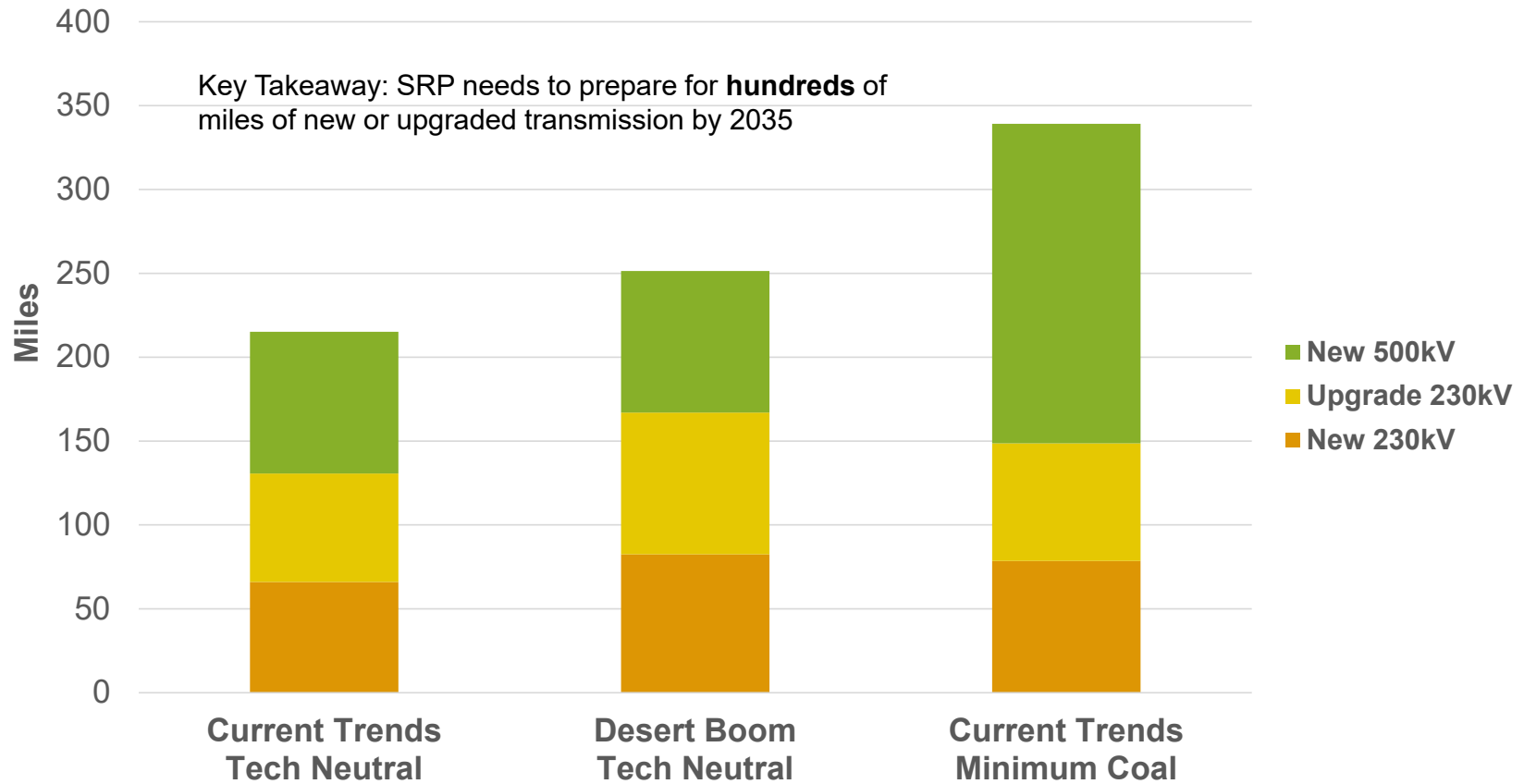
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ISP Analysis: Future Transmission Needs

Average Transmission Line Upgrades and Additions



Metrics Takeaways: The Need for Balance



Affordability

A Tech Neutral strategic approach results in lowest system cost and lower bill impacts.



Sustainability

A Minimum Coal strategic approach results in greater emissions reductions and lower water use.



Reliability

A Tech Neutral strategic approach results in paced infrastructure development and is the only approach able to meet reliability under high customer demand conditions.



Customer Focus

Residential customer are sensitive to bill impacts.

Customer programs potentially unlock greater economy wide carbon reductions.

Integrated System Plan: System Strategies

Energy Investments

Invest in renewable resources and storage to manage fuel consumption, and drive carbon and water reductions.

Capacity Investments

Invest in firm generation, including natural gas, to support reliability and manage affordability, while also supporting advancement of emerging firm technologies.

Proactive Transmission

Proactively plan to expand transmission infrastructure to enable generator interconnections and load growth.

Distribution Innovation

Ensure distribution grid readiness to maintain reliability and enable customer innovations to drive carbon reductions.



Strategic Investment & Reinforcement of Existing Assets

Reinforce and maximize value of existing infrastructure with strategic investments to manage affordability, and ensure future performance, grid security and resilience.

Evolution of Customer Programs & Pricing

Evolve pricing and customer programs to improve economy-wide carbon reductions and pace infrastructure development, while recognizing customers' diverse needs.

Partnerships & Suppliers

Explore partnerships, supply chain and development solutions that manage cost and availability to meet the pace of transformation.

Day One Wrap Up

Angie Bond-Simpson
Sr. Director, Resource Management

Lunch



SRP Integrated System Plan Board and Council Study Session

DAY 1

AGENDA OVERVIEW

- Welcome, Opening Remarks and Meeting Objectives
- Introduction to the Integrated System Plan
- ISP Study Plan & Stakeholder Engagement
- Voice of the Residential Customer Research
- Key Findings and ISP Strategy Development
- Lunch

MEETING OBJECTIVES

- Introduce Integrated System Planning
- Review collaborative study plan and engagement processes

Integrated System Plan (ISP) Output: System Strategies

The System Strategies are long-term strategies for planning and operating the power system to achieve SRP's 2035 goals.

How they will be used:

- Provide guidance and priority for how to plan and operate the system in the future.
- Provide transparency to customers and other stakeholders of what strategies SRP plans to employ to evolve its system.
- Serve as the starting point for building an illustrative Balanced System Plan and ISP Actions designed to implement the System Strategies

Energy Investments

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NOTES:

SRP Integrated System Plan Web Page

Web page includes, but is not limited to, public information and reports, meeting slide decks, educational pre-read materials and meeting summaries



For Reference:

Guiding ISP Principles and other ISP Output definitions are on the back



SRP Team's Implementation of ISP System Strategies

Balanced System Plan: An illustrative path for SRP's system that is consistent with the ISP System Strategies.

How it will be used:

- The Balanced System Plan will provide a common starting point for future planning efforts, and serve as a basis for various external reporting and communication activities
- SRP will continue to monitor factors impacting system planning and may deviate from this illustrative path as necessary to adapt to change.

ISP Actions: A set of near-term actions that the SRP Team will complete following the publication of the ISP.

How they will be used:

- The ISP actions will kick start implementation of the System Strategies and make progress toward the 2035 Goals.
- Serve as SRP's commitment to pursue these actions and to provide annual progress updates to stakeholders.

Guiding ISP Principles

The Guiding ISP Principles balance reliability, affordability, and sustainability, and other important factors for purposes of developing the ISP.

Integrated Long-Term View

Develop a holistic view, including resources, transmission, distribution and customer program perspectives for meeting evolving customer needs and achieving SRP's Corporate Goals for 2035 and beyond. The long-term view ensures that SRP is making the right decisions today to support its customers and stakeholders in the future.

Transparency

Engage customers and other stakeholders in a system planning process that is responsive to questions and input.

Measure Success Through the Eyes of Our Customers

Maintain industry-leading customer satisfaction by responding to evolving customer needs by providing sustainable, safe, reliable, and affordable power while equitably recognizing the different needs, challenges, and perspectives of our customers.

Manage Costs

Deliver exceptional system and energy value by minimizing impacts from additional grid needs and future uncertainties to average retail prices, while maximizing customer value through diligent, long-term oriented cost management.

Build an Adequate and Reliable Power System

Meet, and in some cases, exceed industry standards to provide a dependable supply of electricity to all SRP customers. Provide a reliable grid that is able to prepare for and recover from both anticipated and unanticipated disruptions to ensure energy availability.

Adapt Toward a More Sustainable Future

Meaningfully reduce carbon emissions and generation water usage to achieve SRP's 2035 Sustainability Goals to help address climate change and create less waste.



SRP's Integrated System Plan Pre-Read

August 2023 Board & Council Study Session

The purpose of this document is to provide Board & Council members context and background about SRP's first Integrated System Planning (ISP) process in preparation for the two half-day Board & Council ISP Work Study Sessions on August 29th and August 30th, 2023, where the SRP project team will:

- *Share the motivation behind SRP's transition to Integrated System Planning*
- *Demonstrate the extensive and collaborative nature of the ISP process*
- *Present ISP findings and proposals for SRP's planning through 2035*

ALIGN: BUILDING A SHARED VISION TOGETHER

The electric power industry is undergoing a rapid transformation, presenting Salt River Project (SRP) with unprecedented opportunities and future uncertainties. SRP strives to provide high quality electricity services to its customers and work closely with them to respond to their needs, advance their priorities and goals, and collaboratively adapt to changes.

An Integrated System Plan (ISP) is a data-driven, collaboratively developed plan for generation, transmission, distribution and customer programs to meet SRP's 2035 Corporate Goals at a high customer value while preparing for rapidly evolving system needs.

The analytical objectives of the ISP are to identify:

- Viable pathways for achieving SRP's 2035 Corporate Goals
- Costs, risks and tradeoffs of these different pathways
- System strategies that are valuable across different pathways
- New capabilities or tools required to effectively plan and operate as the system evolves
- Activities SRP should undertake in the next 6 years to plan for these system strategies

SRP considers customers and community stakeholders to be important partners in building a sustainable, reliable, and affordable future power system. During the ISP process, SRP built a study plan that considered customers' needs and interests and allowed SRP to explore a shared vision for the future of the power system.

Guiding ISP Principles

In developing the ISP, SRP followed certain Guiding ISP Principles, which were defined through a collaborative and transparent process involving the ISP Advisory Group, which represents a diverse set of stakeholder perspectives. These principles were intended to balance reliability, affordability, sustainability, and other important considerations.

Integrated Long-Term View: Develop a holistic view, including resources, transmission, distribution and customer program perspectives for meeting evolving customer needs and achieving SRP's Corporate Goals for 2035 and beyond. The long-term view ensures that SRP is making the right decisions today to support its customers and stakeholders in the future.

Transparency: Engage customers and other stakeholders in a system planning process that is responsive to questions and input.

Measure Success Through the Eyes of Our Customers: Maintain industry-leading customer satisfaction by responding to evolving customer needs by providing sustainable, safe, reliable, and affordable power while equitably recognizing the different needs, challenges, and perspectives of our customers.

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Build an Adequate and Reliable Power System: Meet, and in some cases, exceed industry standards to provide a dependable supply of electricity to all SRP customers. Provide a reliable grid that is able to prepare for and recover from both anticipated and unanticipated disruptions to ensure energy availability.

Adapt Toward a More Sustainable Future: Meaningfully reduce carbon emissions and generation water usage to achieve SRP's 2035 Sustainability Goals to help address climate change and create less waste.

PREPARE: PLANNING AMIDST CHANGE

The ISP used scenario planning methods to help SRP better understand future uncertainties and take advantage of opportunities. Using scenario planning allows SRP to develop the future power system in a way that can flexibly adapt to the changing industry and maintain affordable, reliable and sustainable power delivery.

The scenario planning framework for the ISP included three distinct elements: scenarios, strategic approaches and metrics.

Scenario defines a plausible future state of the world around us, reflecting societal, technological, economic, environmental, and political trends and conditions. These factors are outside of SRP’s control and reflect the unpredictable nature of the future that needs to be accounted for in SRP’s planning activities.

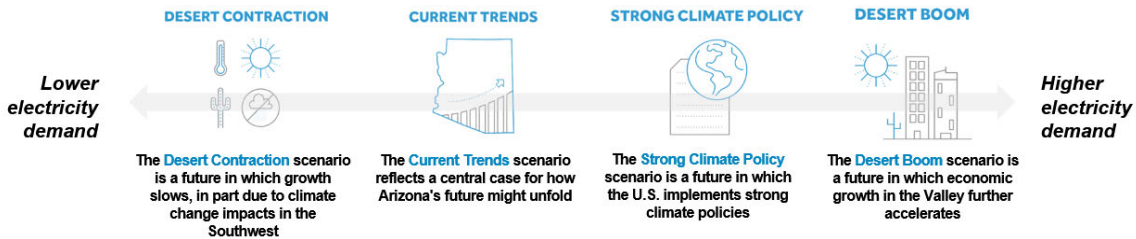
Strategic approach represents a possible decision, or set of decisions, that SRP could make in planning the future power system. These decisions are fully within SRP’s direct control.

Metrics are outputs from the ISP modeling ecosystem that allow SRP, customers and other stakeholders to measure the performance of different system plans across a range of future scenarios and sensitivities.

These elements of the ISP made up the holistic study plan that was developed with input from SRP subject matter experts and customer and stakeholder feedback. The SRP project team, consisting of representatives from Forecasting, Resource Planning, Transmission Planning, Distribution Planning and Customer Programs, performed a first of its kind system-wide scenario analysis that allowed SRP to test strategies for building the future power system across a wide range of possible futures. Based on learnings from that analysis, the project team developed, and shared with stakeholders, the ISP key findings that identified costs, risks and tradeoffs to consider when planning the future power system.

Scenarios

SRP, with Advisory Group input, developed four scenarios to analyze in the ISP. The four scenarios reflect a diverse set of possible futures and consider uncertainties across a broad set of parameters. The figure below shows the four scenarios with a short narrative that describes each scenario.






Strategic Approaches

SRP developed three strategic approaches to analyze in the ISP. These strategic approaches were intended to explore clearly delineated key decisions that may impact the future power system and to understand how these strategies perform across the scenarios described above. SRP strategy decisions resulting from the ISP are not restricted to only those analyzed in the strategic approaches and will include paths that combine the strategies described below.

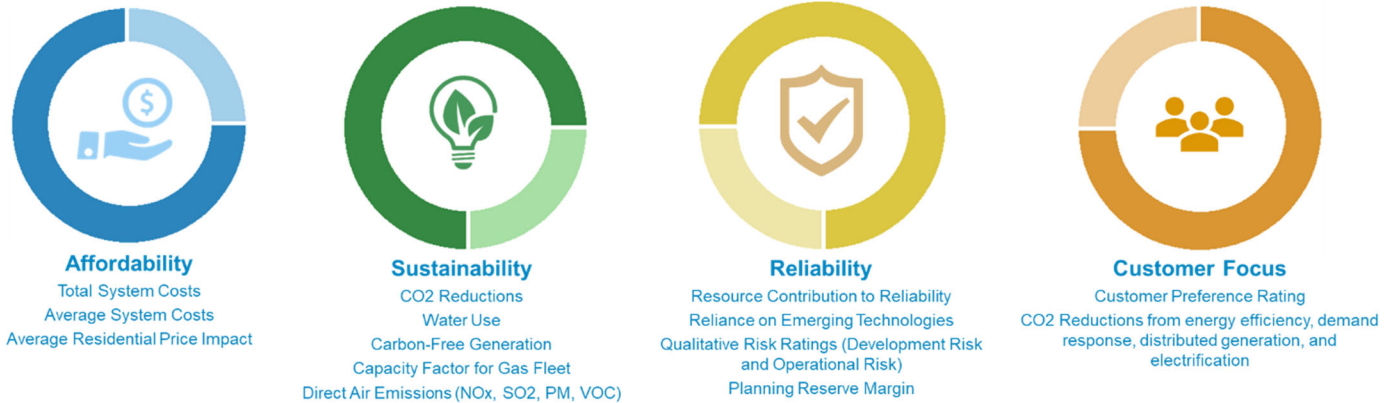
- The **Technology Neutral** strategic approach aimed to develop future system plans on a technology-neutral and least-cost basis.
- In the **No New Fossil** strategic approach, SRP explored a system with no new natural gas capacity, meeting future needs with carbon-free resources. Existing and in-development natural gas units were still able to be used to meet customer needs under this strategic approach.
- The **Minimum Coal** strategic approach utilized a no new fossil approach to new capacity and also aimed to reduce power generation from coal in SRP’s system by testing operational changes to SRP’s coal resources, including seasonal operations and SRP coal exit by the end of the study period in 2035.

Strategic Approaches for System Analyses

<p>Technology Neutral</p>  <p>SRP takes a least-cost approach to building the future power system</p>	<p>No New Fossil</p>  <p>SRP explores a system with no new natural gas capacity, meeting future needs with carbon-free resources</p>	<p>Minimum Coal</p>  <p>SRP reduces power generation from coal and analyzes the system-wide impacts while maintaining reliability</p>
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Metrics

Metrics were used to provide information to internal and external stakeholders, evaluate the performance of each strategic approach across scenarios, and design customer preference research. SRP, drawing on Advisory Group input, developed metrics for affordability, sustainability, reliability, and customer focus, as shown in the figure below.



ANALYZE: PERFORMING ANALYSIS & VALIDATING RESULTS

SRP’s planning groups evaluated the strategic approaches across scenarios using a rigorous analytical process. For each combination of a strategic approach and scenario, SRP developed a system plan for 2025-2035 that sought an affordable way to meet customer needs while ensuring reliability and meeting or outperforming SRP’s sustainability goals related to generation carbon emissions and water usage. Each modeled system plan includes a plan for customer programs, distribution investments, transmission investments and generation resource additions.



External Validation: SRP leveraged external technical expertise, from Energy and Environmental Economics (E3), to benchmark analytical methods used in the ISP. E3 has worked collaboratively with the SRP Project team in developing an industry-leading ISP by providing validation services on generation capacity modeling.

Transparency: A key aspect of the ISP was the development and implementation of a robust plan to actively engage customers and community stakeholders. Inclusive, transparent and proactive dialogue with SRP stakeholders aimed to build support for the ISP process. The ISP team has hosted more than 20 forums for engagement, including ISP Advisory Group meetings, Large Stakeholder Group meetings, Technical Working Sessions, Modeling Subgroups and one-on-one discussions with interested stakeholders. The ISP team posts meeting agendas, slides and summaries on the ISP web portal.

Voice of the Customer: To bring the voice of SRP’s residential customers into the planning of the future energy system, SRP conducted residential customer research in partnership with Bellomy. During three phases of research, information on preferences pertaining to reliability, affordability and sustainability was collected through customer focus groups and surveys.

Metric Takeaways: The Need for Balance

The section below provides a brief description on how the ISP strategic approaches performed across scenarios under the four metric categories described above: affordability, sustainability, reliability, and customer focus.



Affordability: On affordability, a Tech Neutral strategic approach results in lowest system cost, driven largely by differences in generation costs across cases. All strategic approaches have similar costs under a scenario where the U.S. government provides federal incentives for clean energy technologies (Strong Climate Policy).



Sustainability: With respect to sustainability, a Minimum Coal strategic approach results in greater emissions reductions and lower water use, followed by No New Fossil. Decreased dependence on fossil fuel technology for energy (e.g., coal retirements and projected declined utilization of natural gas), paired with renewable and storage additions drive significant carbon reductions. These efforts enable SRP to achieve the 2035 Sustainability Goals related to generation carbon emissions and water reduction in all cases.



Reliability: In terms of reliability, a Tech Neutral strategic approach results in paced infrastructure development and is the only approach able to meet reliability under high customer demand conditions. Existing resources play a key role in ensuring reliability across all cases. When allowed, firm capacity resources are selected to help meet reliability needs at the least cost. All cases have development and operational risks given the amount of infrastructure necessary to enable the future system, which also poses new operational challenges and proactive measures to mitigate.



Customer Focus: Residential customers are sensitive to bill impacts and have preferences for managing costs while maintaining reliability and transitioning to a more sustainable energy system. Customer Preference Ratings reflected that Tech Neutral is most favorable in futures with higher load growth driven by lower generation costs, while Minimum Coal and No New Fossil were preferred when there is low load growth and federal incentives are driving down the cost of technology. Customer programs also have the potential to unlock greater economy-wide carbon reductions.

Summary of ISP Key Findings

SRP shared these key findings from the ISP analysis with stakeholders in the spring of 2023.

Resources & Infrastructure

- ✓ Significant investment over the next decade is needed to strategically locate and build out new grid infrastructure to connect new resources and customers, while achieving reliability and sustainability goals.
- ✓ SRP will likely need to double or triple resource capacity in the next decade to serve customers while achieving reliability and sustainability goals. This will be at an unprecedented pace.
- ✓ New renewables and firm capacity are part of a least-cost portfolio, even under a wide range of gas price and technology cost sensitivities.
- ✓ When paired with firm capacity, solar and wind contribute to a least-cost portfolio while being able to help reduce carbon emission.
- ✓ Without new firm generation capacity, the system cannot satisfy reliability requirements under a high load growth scenario. Higher levels of renewables and storage, including pumped storage, are required in lower load growth scenarios.
- ✓ Hundreds of miles of new or upgraded transmission lines and nearly double the number of 500/230 kV transformers could be needed relative to today.
- ✓ Location of generation matters and plays a significant role in the buildout of the 500 kV transmission system.

Customer Programs

- ✓ Electrification of end uses, including transportation and heating demand, creates new opportunities to shift energy usage to mid-day hours to help integrate more renewable energy and maximize carbon reduction impacts.
- ✓ SRP will need to evolve programs and price plans to shift consumer behavior, and further educate customers on when to consume and when to conserve energy.

Future Considerations

- ✓ If the U.S. government enacted a mandate for 85% CO2 reductions by 2035 (Strong Climate Policy), SRP would need to significantly accelerate renewable & storage deployment.
- ✓ Future uncertainties around development, planning and permitting processes could impact SRP's ability to grow at the pace needed to meet increasing future load growth.
- ✓ With the amount of future infrastructure and resources needed, internal and external partnerships are going to be essential to build the future system and maintain high customer value.