Call to Order

Roll Call

1. **CONSENT AGENDA:** The following agenda item(s) will be considered as a group by the Committee and will be enacted with one motion. There will be no separate discussion of these item(s) unless a Committee Member requests, in which event the agenda item(s) will be removed from the Consent Agenda and considered as a separate item .............................................................. CHAIRMAN MARIO HERRERA

   - Request for approval of the minutes for the meeting of February 23, 2023.

2. **Electric Power Research Institute (EPRI) Advanced Nuclear Update** ............................................................... STEVE CHENGELIS, EPRI

   Informational presentation from EPRI regarding emerging advanced nuclear energy generation technologies.

3. **Coronado Generating Station Transition Studies** ............... KATHLEEN MUNROE

   Informational presentation regarding the Coronado Repurposing Study and the Gateway for Accelerated Innovation in Nuclear (GAIN) Study.

4. **Integrated System Plan (ISP) Update** ................................. ANGIE BOND-SIMPSON

   Informational presentation regarding progress on the ISP analytical process and community stakeholder engagement.

5. **Closed Session, Pursuant to A.R.S. §30-805(B), for the Committee to Consider Matters Relating to Competitive Activity, Including Trade Secrets or Privileged or Confidential Commercial or Financial Information, with Respect to a Request for Approval to Modify the Terms Under Which SRP May Enter into 1) an Amendment of an Existing 400 Megawatt (MW) Solar Power Purchase Agreement and 2) Enter into a New Power Purchase Agreement for 394 MW of Solar Energy** .............................................................. GRANT SMEDLEY

6. **Closed Session, Pursuant to A.R.S. §30-805(B), for the Committee to Consider Matters Relating to Competitive Activity, Including Trade Secrets or Privileged or Confidential Commercial or Financial Information, with Respect to Future Generation Resources, Siting Such Resources, and as Follow-up to Previous Closed Session Presentations Provided to the Power Committee and Board** .............................................................. BILL McCLELLAN
The Committee 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 Committee 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.

THE NEXT POWER COMMITTEE MEETING IS SCHEDULED FOR THURSDAY, APRIL 20, 2023
A meeting of the Power Committee of the Salt River Project Agricultural Improvement and Power District (the District) convened at 9:30 a.m. on Thursday, February 23, 2023, from the Board Conference Room at the SRP Administration Building, 1500 North Mill Avenue, Tempe, Arizona. This meeting was conducted in-person and via teleconference in compliance with open meeting law guidelines. The District and Salt River Valley Water Users’ Association (the Association) are collectively known as SRP.

Committee Members present at roll call were M.J. Herrera, Chairman; K.B. Woods, Vice Chairman; and N.R. Brown, K.J. Johnson, K.L. Mohr-Almeida, and S.H. Williams.

Committee Members absent at roll call were R.C. Arnett; and Association Board of Governors observer L.D. Rovey.


In compliance with A.R.S. §38-431.02, Andrew Davis of the Corporate Secretary’s Office had posted a notice and agenda of the Power Committee meeting at the SRP Administration Building, 1500 North Mill Avenue, Tempe, Arizona, at 9:00 a.m. on Tuesday, February 21, 2023.

Chairman M.J. Herrera called the meeting to order.

Consent Agenda

Chairman M.J. Herrera requested a motion for Committee approval of the Consent Agenda, in its entirety.

On a motion duly made by Board Member K.L. Mohr-Almeida and seconded by Board Member S.H. Williams, the Committee unanimously approved and adopted the following item on the Consent Agenda:

- Minutes of the Power Committee meeting on January 24, 2023, as presented
Corporate Secretary J.M. Felty polled the Committee Members on Board Member K.L. Mohr-Almeida’s motion to approve the Consent Agenda, in its entirety. The vote was recorded as follows:

**YES:** Board Members M.J. Herrera, Chairman; K.B. Woods, Vice Chairman; N.R. Brown, K.L. Mohr-Almeida, K.J. Johnson, and S.H. Williams (6)

**NO:** None (0)

**ABSTAINED:** None (0)

**ABSENT:** Board Member R.C. Arnett (1)

**SRP’s Rules and Regulations**

Using a PowerPoint presentation, Ken J. Lee, SRP Senior Director of Legal Services, stated that the purpose of the presentation was to request approval to amend SRP’s Rules and Regulations to delete provisions related to the now repealed Electric Competition Act, as well as additional revisions to the Rules and Regulations, and amend the Rate Book to incorporate certain definitions previously included in the Rules and Regulations and make additional revisions to the Rate Book.

Mr. K.J. Lee reminded the Committee that the Rules and Regulations are approved by the SRP Board and specify the terms upon which SRP provides service to its retail customers; any material changes to the Rules and Regulations must be approved by the Board; the Rules and Regulations are published on SRP’s website; and the Rules and Regulations do not govern wholesale sales, generation interconnection, or transmission services. He said that in 2022, significant portions of the Arizona Electric Competition Act (A.R.S. Sections 30-801, et al.) were repealed or amended; and the 2022 amendment repealed all the deregulation language from the Arizona Electric Competition Act, which resulted in the Rules and Regulations needing to be revised to comply with the revised statutes.

Mr. K.J. Lee stated that the existing Rules and Regulations contain provisions not relevant to retail customers; the update removes and revises definitions that mix transmission system and generation interconnection concepts; utility scale generation concepts will be removed to avoid confusion and consistently deal with all potential utility scale generation interconnectors; and all potential utility scale generators will be handled outside of the Rules and Regulations. He said that the definitions for “distributed generation facility” and “energy storage facility” were added and that the definition for “distributed energy devices” was updated to address current practices.

Mr. K.J. Lee explained how the Rules and Regulations now distinguish between “behind the meter” generation sources and those connected directly to SRP’s system and that the update also reserves the right for SRP to require retail customers who install solar or batteries to go through the Open Access Transmission Tariff (OATT) interconnection process if a customer wants to install a distributed energy resource that is large enough that it might have system impacts. He described the challenges with customers who
refuse to allow SRP to trim or remove encroaching or hazardous vegetation, resulting in expanding the vegetation encroachment provisions, and stated that certain pricing terms need updating to reflect current usage in SRP’s Rate Book.

Mr. K.J. Lee concluded by requesting approval to update SRP’s Rules and Regulations, as proposed; and revise SRP’s Rate Book to incorporate the definitions from Appendix A of SRP’s Rules and Regulations.

Mr. K.J. Lee responded to questions from the Committee.

On a motion duly made by Board Member R.C. Arnett, seconded by Board Member K.J. Johnson and carried, the Committee agreed to recommend Board approval, as presented.

Corporate Secretary J.M. Felty polled the Committee Members on Board Member R.C. Arnett’s motion to recommend Board approval. The vote was recorded as follows:

YES: Board Members M.J. Herrera, Chairman; K.B. Woods, Vice Chairman; R.C. Arnett, N.R. Brown, K.L. Mohr-Almeida, K.J. Johnson, and S.H. Williams (7)
NO: None (0)
ABSTAINED: None (0)
ABSENT: None (0)

Copies of the handouts distributed and PowerPoint slides used in this presentation are on file in the Corporate Secretary’s Office and, by reference, made a part of these minutes.

Board Members R.C. Arnett and L.D. Rovey; Ms. M.M. Klein; and Messrs. C.A. Hofmann and C.N. Hunter entered the meeting during the presentation.

Western Power Pool Reserve Sharing Group

Using a PowerPoint presentation, Chris A. Hofmann, SRP Director of Transmission and Generation Operations, stated that the purpose of the presentation was to request approval to transition from participating in the Southwest Reserve Sharing Group (SRSG) to participation in the Western Power Pool (WPP) Reserve Sharing Group, including the revision of the SRP Open Access Transmission Tariff (OATT) to reflect this change.

Mr. C.A. Hofmann described contingency reserves as capacity available to respond to disturbances in ten minutes or less and required by the North American Electric Reliability Corporation (NERC) for all Balance Authorities (BAs). He said that all participating BAs share in the Reserve Sharing Group (RSG) obligation.
Mr. C.A. Hofmann discussed key details of RSGs as follows: minimum of two BAs share in the reserve obligations; increases reliability with diversity; enhances capacity to meet loads; Power Pools have existed since 1927; RSGs were recognized by NERC Reliability Standards in 2005; 12 registered RSGs in North America; and SRP has participated in SRSG since 1997. He said that participation in the WPP will reduce SRP’s reserve obligation, increase transmissibility of reserves, increase access to capacity, and integrates with SRP’s Energy Management System software.

Mr. C.A. Hofmann outlined who participants in the SRSG reserve zone and the WPP reserve zone with Desert Southwest. He reviewed the necessary revisions to SRP’s OATT to reflect the transition and discussed next steps.

Mr. C.A. Hofmann concluded by requesting approval (1) of SRP’s transition from participation in the SRSG to participation in the WPP RSG; (2) to authorize the General Manager and Chief Executive Officer, Associate General Manager and Chief Power Executive, President, or Vice President to enter into agreements required with an application to join the WPP RSG; and (3) to make changes to SRP’s OATT necessary to reflect the transition.

Mr. C.A. Hofmann responded to questions from the Committee.

On a motion duly made by Board Member R.C. Arnett, seconded by Board Member S.H. Williams and carried, the Committee agreed to recommend Board approval, as presented.

Corporate Secretary J.M. Felty polled the Committee Members on Board Member R.C. Arnett’s motion to recommend Board approval. The vote was recorded as follows:

| YES: | Board Members M.J. Herrera, Chairman; K.B. Woods, Vice Chairman; R.C. Arnett, N.R. Brown, K.L. Mohr-Almeida, K.J. Johnson, and S.H. Williams (7) |
| NO: | None (0) |
| ABSTAINED: | None (0) |
| ABSENT: | None (0) |

Copies of the PowerPoint slides used in this presentation are on file in the Corporate Secretary’s Office and, by reference, made a part of these minutes.

Ian Calkins of Copper State Consulting Group entered the meeting during the presentation. Mr. G.M. Smedley entered the meeting.

Financial Plan 2024 Resource Plan

Using a PowerPoint presentation, Grant M. Smedley, SRP Director of Resource Planning, Acquisition, and Development, stated that the purpose of the presentation was to review the Financial Plan 2024 (FP24) Resource Plan. He said that since FP23,
the following changes have occurred: Inflation Reduction Act (IRA); natural gas price volatility; supply chain challenges; load forecast uncertainty; permitting and regulatory challenges; and the suspension of the Coolidge Expansion Project (CEP).

Mr. G.M. Smedley provided charts from 2010 to 2035 forecasting load peak demand and energy sales. He discussed the remaining resource needs to serve peak demand from 2023 to 2035. Mr. G.M. Smedley presented a six-year financial plan from 2023 to 2028, and from 2029 to 2035, highlighting new resources. He reported on the progress relating to the Board-established carbon reduction goals and the transformational change in SRP’s energy mix today, in 2025, and in 2035. Mr. G.M. Smedley said that 75% of electricity needs will be met without carbon emissions by 2035.

Mr. G.M. Smedley concluded with a review of FP24 retail fuel and purchased power, capital expenditures, and key takeaways.

Mr. G.M. Smedley responded to questions from the Committee.

Copies of the PowerPoint slides used in this presentation are on file in the Corporate Secretary’s Office and, by reference, made a part of these minutes.

Mr. C.A. Hofmann left the meeting during the presentation. Ms. C.C. Burke; and Messrs. C.N. Hunter, R.T. Judd, B.J. McClellan, B.A. Olsen entered the meeting during the presentation.

2023 All-Source Request for Proposals Update

Using a PowerPoint presentation, Mr. G.M. Smedley stated that the purpose of the presentation was to provide information regarding the All-Source Request for Proposals (RFPs) solicitation for projects that can be online between 2026 and 2027 to meet expected future SRP capacity needs.

Mr. G.M. Smedley stated that at least an additional 200 Megawatts (MW) are needed by the summer of 2026 and additional 300 MW by the summer of 2027. He said that SRP continues to solicit RFPs that will provide capacity at summer peak and continues in its efforts to accelerate its planned carbon-free resource additions.

Mr. G.M. Smedley informed the Committee that SRP will develop a self-build natural gas option; a RFP will be used to identify other alternatives; SRP retained a power advocate to administer RFPs and support the evaluation process; the self-build option will be compared to RFP alternatives; and the Power Advocate will independently review. He concluded with a discussion regarding the evaluation criteria for peak capacity and carbon-free energy and an overview of the target schedule.

Mr. G.M. Smedley responded to questions from the Committee.
Copies of the PowerPoint slides used in this presentation are on file in the Corporate Secretary’s Office and, by reference, made a part of these minutes.

Ms. A. Hope; and Brian Morad of Bright Night Power left the meeting during the presentation. Mr. C.A. Friedrich; and Jasmie Guan of AES Clean Energy entered the meeting during the presentation.

Closed Session: Sites Identified for Future Resources

Chairman M.J. Herrera called for a closed session for the Power Committee at 10:33 a.m., pursuant to A.R.S. §30-805(B), to consider matters relating to competitive activity, including trade secrets or privileged or confidential commercial or financial information, with respect to an update on sites identified for future resources, as a follow up to presentations provided to the Power Committee and Board in 2022.

Nikos Bountas of Strata Clean Energy, Ian Calkins of Copper State Consulting Group, Jasmie Guan and Kellie Pitera of AES Clean Energy, Zach Nelson of Balanced Rock Power, and Collin Thomas of Triple Oak Power left the meeting.


Closed Session: Long-Duration Energy Storage Pilot Projects
Phase 3 of Copper Crossing Energy and Research Center

Chairman M.J. Herrera called for a closed session for the Power Committee at 10:48 a.m., pursuant to A.R.S. §30-805(B), to consider matters relating to competitive activity, including trade secrets or privileged or confidential commercial or financial information, with respect to the selection of long-duration energy storage pilot projects for Phase 3 of the Copper Crossing Energy and Research Center.

The Committee reconvened into open session at 11:10 a.m. with the following Members and other present: President D. Rousseau; District Vice President C.J. Dobson; Board Members R.C. Arnett, N.R. Brown, M.J. Herrera, K.J. Johnson, A.G. McAfee, R.J. Miller, K.L. Mohr-Almeida, M.V. Pace, L.D. Rovey, J.M. White Jr., S.H. Williams, and K.B. Woods; Council Vice Chairman J.R. Shelton; Council Liaisons A.S. Hatley and T.S. Naylor; Council Members G.E. Geiger, M.R. Mulligan, and I.M. Rakow;

Closed Session: Sale to Arizona Public Service (APS) of Power to Serve Eastern Mining Area

Chairman M.J. Herrera called for a closed session for the Power Committee at 11:11 a.m., pursuant to A.R.S. §30-805(B), to consider matters relating to competitive activity, including trade secrets or privileged or confidential commercial or financial information, with respect to a request for approval of the sale to APS of power to serve the area referred to as the “Eastern Mining Area.”


Ian Calkins of Copper State Consulting Group, Kellie Pitera of AES Clean Energy, Zach Nelson of Balanced Rock Power, and Collin Thomas of Triple Oak Power entered the meeting.

Report on Current Events by the General Manager and Chief Executive Officer or Designees

Mike Hummel, SRP Associate General Manager and Chief Executive Officer, reported on a variety of federal, state, and local topics of interest to the Committee. He provided an update on recent storm activity and the CEP.

Ms. P.L. Syrjala and Mr. T.B. Perry left during the report. Council Member R.W. Swier entered the meeting during the report.
Future Agenda Topics

Chairman M.J. Herrera asked the Committee if there were any future agenda topics. None were requested. Board member J.M. White Jr. requested a presentation on how SRP generation resources will handle multiple consecutive days of weather events with the projected additional solar generation.

There being no further business to come before the Power Committee, the meeting adjourned at 11:19 a.m.

John M. Felty
Corporate Secretary
Advanced Nuclear Technologies

Steve Chengelis
Director – Future Fleet

SRP Board Meeting
3/21/2023
Nuclear Electricity

...began in 1951 with EBR-I

...reached commercial criticality in 1958 at Shippingport

...accelerated to >400 reactors worldwide by 1990
Nuclear Electricity

...growth plateaued after that

But to reach net-zero by 2050, 250+ GW of new nuclear capacity would be needed

Amounting to over 1800 new ARs at 300 MWe capacity
Opportunity and Role for Nuclear in 21st Century

Projected nuclear capacity to meet U.S. climate goals

2050 emissions reduction milestone

Nuclear Electricity Capacity (GWe)

2005 2010 2015 2020 2025 2030 2035 2040 2045 2050 2055 2060 2065 2070 2075

60-year operation

80-year operation

Non-water-cooled Reactors

Late 2020s

SMRs

Non-water-cooled Reactors

2030s

maintain/expand with ALWRs now

Adapted from Figure produced by US DOE
Benefits of Advanced Reactors

Advanced reactors integrate better with renewable energy and improve the utilization of secure energy resources.

- Increased FLEXIBILITY
- NEW DESIGNS can load-follow closer, faster, and more flexibly
- More conducive to DECARBONIZATION goals
- Ability to reach UNIQUE communities
- Ability to convert more FUEL ENERGY to usable electricity
- Many designs are small: ≤300 MWe
How do we get there?
Reactor Types

01 Water-Cooled Reactors
Mature technology with deployment options and wide power range

02 Fast Reactors
Highly resource efficient with near-ambient pressure of operation

03 Molten Salt Reactors
Wide diversity of coolant and fuel options for various missions

04 High-Temperature Gas-Cooled Reactors
Test scale experience in Japan for advanced hydrogen production

05 Microreactors
Rapidly deployable, opportunity for industrial heat production
Advanced Reactor Demonstration Project (ARDP) Tier 1

**Xe-100 HTGR**
- TRISO-X Pebble-bed fueled
- Helium cooled
- 4x 76 MWe SMR Plant

**Natrium SFR**
- Intermediate molten salt thermal storage
- Sodium cooled
- 345 MWe Plant

TerraPower
- Awarded $80M USD in initial funding
- Demonstrate integrated thermal storage SFR plant at INL by 2028
- Thermal storage enables nearly 150% peak power output

energy
- Awarded $80M USD in initial funding
- Demonstrate four-unit Xe-100 plant at INL by 2027
- Includes commercial scale TRISO fabrication facility demonstration
ARDP Risk Reduction and Advanced Reactor Concepts Awards

**Risk Reduction (Tier 2)**
- Kairos Power’s Hermes Demonstration molten salt reactor
- Westinghouse’s eVinci Microreactor
- BWXT’s BANR microreactor
- Holtec’s SMR-160 light-water small modular reactor
- Southern and TerraPower’s molten chloride fast reactor

**Advanced Reactor Concepts (Tier 3)**
- ARC Clean Energy’s SMR
- General Atomics Fast Modular Reactor
- MIT’s Horizontal Compact HTGR
How Can EPRI Help
Advanced Nuclear Technology (ANT) Program Focus

Accelerating the deployment of nuclear power around the world

- Informing Resource Planning
- Technology Development
- Reducing Deployment Costs
- Supporting Plant Startup
- Training
- Siting and Owner Requirements
- Design and Engineering
- Construction Optimization
- Advanced Manufacturing
- Commissioning
- Energy Economics
- Technical Basis
- Initial Operations
- More than 80 companies make up the broadest advanced nuclear collaborative

From project initiation through initial operation, ANT is an extension of your team.

Extensive Portfolio
- 40+ Ongoing Projects
- 200+ Past Products
2023 ANT Membership –
ANT Participation Extended to Over 80 Companies

**NUCLEAR SECTOR BASE MEMBERS**

- **22** US Members
- **26** International Members
- More than 83% of the world's commercial nuclear units
- More than 340 reactors worldwide

**FULL ANT SUPPLEMENTAL MEMBERS**

- Bechtel
- Fluor
- GE
- Hitachi
- Nippon Steel & Sumitomo Metal Corporation
- SKP
- Kairos Power
- Rolls-Royce
- Nuscale
- TerraPower
- Doosan
- Holtec
- Ultra Safe Nuclear
- Puget Sound Energy

**ADVANCED REACTOR INITIATIVE MEMBERS**

- Deep Isolation
- Electric Company
- Dominion Engineering, Inc.
- Enercon
- Engie
- Williams
- Teledyne Brown Engineering
- Paragon
- Studsvik
- IHI
- Ultra
- Pittsburg Technical
- Jensen Hughes
Enable **existing** and **future** nuclear plants to participate in energy markets beyond the practice of generating baseload electricity.

**Nuclear Beyond Electricity (NBE)**

- Flexible Electric Grid
- Low Carbon Fuels
- Process Manufacturing
- District Energy
- Data Centers
- Water & Wastewater
Coal Repowering: Coal to Nuclear

Existing Coal Plant
- Transmission
- Cooling Water
- Heavy Transport
- Land

Advanced Nuclear
- Permits
- Skilled Workers
- Land

Efficiently deploying existing assets for decarbonizing equitably
Key Takeaways

- Nuclear power could play a significant role in reaching decarbonization goals by 2050
- Many new types of advanced reactor designs in development and pilots underway
- New designs are more flexible to pair with renewables, provide system reliability
- EPRI helping utilities follow this space and supporting development of advanced reactors to meet industry needs
Together...Shaping the Future of Energy®
Coronado Generating Station Transition Studies

Power Committee
Kathleen Munroe | March 21, 2023
Agenda

• Coal Communities Transition
• Repurposing Studies
• Next Steps
• Key Takeaways
Coal Communities Transition / Concurrent Studies

- Economic Impacts of Reduced Operations & Closures of Springerville & Coronado Generating Stations
- Economic Impact of Expanding Broadband Service in Apache County
- Transportation & Workforce
- Coronado Repurposing Study – Exploring clean energy replacement options
- (a Department of Energy initiative) Study suitability of advanced nuclear reactors as a replacement technology

03/21/2023 Power Committee | K. Munroe
Coronado Repurposing Study (Kiewit)

GOAL – identify technologies most promising for the site

PROCESS – screen technologies for suitability

DELIVERABLE – summary of repurposing options
Technology Classifications

Phase 1
- PV Solar
- Wind
- Biomass
- Battery Storage
- Long Duration Energy Storage*

Phase 2
Technologies that lack the maturity, supply chain or critical infrastructure to be online by Spring 2033
Advanced nuclear is a Phase 2 technology

- Anticipated decision point for Phase 1 2028
- Coronado 1 & 2 Closure 2032
- Phase 2 TBD

*monitoring current projects
Progress to Date

- 30+ Technologies Screened for:
  - Demonstrated technical maturity
  - Established infrastructure and supply chain
  - Site compatibility (topography & geology)

- Screened Technologies
  - PV Solar, Wind, Biomass, Battery Storage and Long Duration Energy Storage*

- Drafting Report
  - Evaluation of hybrid combinations
  - Conceptual cost, site layout and capacities

- Community Engagement
  - Open House
  - Bi-Monthly CCT meetings

*monitoring current projects
GAIN Study
Gateway for Accelerated Innovation in Nuclear

Site Assessment

- Inform SRP on the strengths & weaknesses of CGS site for Advanced Nuclear
- Recommend next steps in assessment process

Technology Screening

- Evaluate design, development, & regulatory maturity of candidate technologies
- Comment on maturity of companion infrastructure (fuel, manufacturing, etc.)
- Identify technologies’ development risks, threats & opportunities

Economic Impact Analysis

- Evaluate impact of replacing closed plant with nuclear facility
- Supports GAIN’s development of guidance & strategies for coal communities considering a transition to nuclear generation
Next Steps

• Finalize and Share Study Results

• Monitor Technologies & SRP’s Resource Needs
  • Identify decision points
  • Preserve options

• Continued Community Engagement
Key Takeaways

• The CGS site can support multiple generation resource types
  • The site offers transmission, land, water and community workforce/support

• Only a few resources are suitable for deployment by 2033
  • Employment opportunities vary by resource

• Top community concerns are jobs and tax revenue

• Advanced nuclear is in the development stage
Questions
Integrated System Plan Update

Power Committee

Angie Bond-Simpson | March 21, 2023
SRP’s Integrated System Plan Objectives

Planning a future system (2025-2035) that will enable us to achieve or exceed our 2035 goals with the highest customer value.

The first Integrated System Plan (ISP) identifies:

• Viable strategies for achieving SRP’s 2035 Corporate Goals
• Costs, risks and tradeoffs of different strategies to building the future power system
• System solutions that are valuable across different future scenarios
• New capabilities and tools needed to plan as the system evolves
The Current Trends scenario reflects a central case for how Arizona’s future might unfold.

The Desert Contraction scenario is a future in which growth slows, in part due to climate change impacts in the Southwest.

The Strong Climate Policy scenario is a future in which the U.S. implements strong climate policies.

The Desert Boom scenario is a future in which economic growth in the Valley further accelerates.

The Scenarios in the ISP Study Plan
Preparing for Future Customer Demand

Peak Load Forecasts

Desert Boom 4.0%
Current Trends 3.0%
Strong Climate Policy 2.9%
Desert Contraction 1.1%

Energy Demand Forecasts

Desert Boom 4.8%
Current Trends 3.3%
Strong Climate Policy 3.1%
Desert Contraction 0.1%

Growth rates calculated as compound annual growth rates (CAGR)
Capturing Customer Program Impacts

SRP plans to reflect uncertainties in energy demand impacts through scenario analysis:

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Electric Vehicles by 2035</th>
<th>Residential Electric Heating by 2035</th>
<th>Distributed Solar by 2035</th>
<th>Total Energy Efficiency by 2035</th>
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<tbody>
<tr>
<td>Current Trends</td>
<td>500,000</td>
<td>83%</td>
<td>1,300</td>
<td>3,800</td>
</tr>
<tr>
<td>Desert Contraction</td>
<td>600,000</td>
<td>86%</td>
<td>1,800</td>
<td>3,800</td>
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<tr>
<td>Desert Boom</td>
<td>975,000</td>
<td>86%</td>
<td>2,300</td>
<td>4,500</td>
</tr>
<tr>
<td>Strong Climate Policy</td>
<td>975,000</td>
<td>86%</td>
<td>2,300</td>
<td>4,500</td>
</tr>
</tbody>
</table>
The Distribution System Lens

- Most scenarios follow historical and consistent growth rates aligned with ISP scenario forecasts.
- Desert Boom growth spikes in southeast valley and requires rapid infrastructure.
- Preliminary cost range for substation bay additions: $111M to $318M.

Total Substation Bay Additions (FY23-35)

- Current Trends: 65
- Desert Boom: 84
- Desert Contraction: 26
- Strong Climate Policy: 51
# Bulk System Analysis

## Strategic Approaches

<table>
<thead>
<tr>
<th>Scenarios</th>
<th>Technology Neutral</th>
<th>No New Fossil</th>
<th>Min. Coal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Desert Contraction</td>
<td>●</td>
<td>●</td>
<td>●</td>
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<tr>
<td>Current Trends*</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Strong Climate Policy</td>
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</tr>
<tr>
<td>Desert Boom</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
</tbody>
</table>

**Increasing Bulk System Transformation**

**Increasing Pace**

**12 Scenario- Based System Plans**

*Additional Sensitivities*
Preliminary Results: Technology Neutral – Current Trends

Technology-neutral / least-cost approach – current trends continue for external factors

Total Installed Capacity (MW)

More than double SRP’s current total installed capacity

- 1,800 MW
- 4,800 MW
- 1,100 MW
- 9,500 MW
- 1,400 MW retirements

Demand Response
Market Purchases
Pumped Hydro
Battery Storage
Solar
Wind
Hydrogen
Hydro
Biomass with CCS
Biomass
Geothermal
Nuclear
Natural Gas
Coal

803/21/2023 Power Committee, A. Bond-Simpson
Preliminary Results: Minimum Coal – Desert Boom

No new fossil, seasonal coal operations, and coal exit by 2035 — accelerated economic growth

**Total Installed Capacity (MW)**

- More than 3x SRP’s current total installed capacity
- 1,300 MW pumped hydro
- 10,300 MW
- 10,400 MW
- 3,800 MW
- 1,100 MW geothermal
- 1,800 MW retirements

Does not meet reliability criteria
From Integrated Analysis to Integrated Plan

**Technical Input**
- Technical Working Sessions
- Operational Checkpoint
- Development Risk

**Customer & Community Input**
- Residential Research
- Guiding ISP Principles Reflection

**Synthesis**

**System Strategies** are the key points of focus SRP management will recommend to the Board for planning and operating the power system through 2035.

*For illustration only*
Preliminary Key Takeaways

• Periods of rapid growth will require responsive development and could come with risk if we are unprepared.

• Cost-optimal resource technology selection is unique in each case; there is no always-perfect portfolio.

• Natural gas is an economic capacity resource.

• Inverter based resources will play a growing role in helping SRP meet increasing customer demand and reduce carbon intensity.

There is more work to be done!
ISP Next Steps

• Continue Bulk System Analysis
• Residential Customer Research Phase 3
• Continued Customer and Community Stakeholder Engagement
  • 3/31 – Regional Market Developments Technical Working Session
  • 4/21 – Advisory Group Meeting
  • 4/28 (tentative) – Evolving Time of Day Technical Working Session
thank you!