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 river. The sky is a clear, pale blue.

# SRP Integrated System Plan Advisory Group Meeting #9 Continuing Forward

January 27<sup>th</sup>, 2023

# Welcome

Bobby Olsen

Senior Director, Corporate Planning, Environmental Services, and Innovation, SRP

# Welcome SRP 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

# Introductions

## Integrated Planning Team



Energy+Environmental Economics

**K E A R N S   ⚡   W E S T**

# SRP Integrated System Plan Advisory Group

	Organization Name
1	AZ Hispanic Chamber of Commerce
2	A New Leaf
3	American Association of Retired Persons (AARP)
4	Arizona State University (ASU)
5	AZ Arizona Public Interest Research Group (PIRG)
6	Building Owners and Managers Association (BOMA)
7	Chicanos Por La Causa
8	City of Phoenix
9	CMC Steel AZ
10	Common Spirit Health
11	CyrusOne
12	Environmental Defense Fund
13	Intel
14	Local First
15	Mesa Public Schools
16	Profile Precision Extrusions
17	Pinal County
18	SRP Customer Utility Panel (CUP)
19	Salt River Pima-Maricopa Indian Community (SRPMIC)
20	Southwest Energy Efficiency Project (SWEET)
21	United Dairymen of AZ
22	Western Resource Advocates (WRA)
23	Wildfire

*Welcome*

Green: Organization with new representatives on the Advisory Group

# Safety & Sustainability Minute

# Meeting Objectives:

- Review final Guiding ISP Principles
- Inform & answer questions about ISP analysis validation work
- Debrief the Technical Working Session: Inflation Reduction Act & discuss plans for use of Inflation Reduction Act funding
- Update on ISP stakeholder engagement timeline

# Agenda

Time		Topics	Discussion Lead
<b>8:30-9:00</b>	<b>30 min</b>	Breakfast & Networking	
<b>9:00-9:20</b>	<b>20 min</b>	Welcome, Opening Remarks and New Advisory Group Members Welcome	Bobby Olsen (SRP) Joan Isaacson (K&W)
<b>9:20-9:50</b>	<b>30 min</b>	Since We Last Met	Angie Bond-Simpson (SRP) Bobby Olsen (SRP)
<b>9:50-10:15</b>	<b>25 min</b>	Final Guiding ISP Principles	Domonique Cohen (SRP)
<b>10:15-10:30</b>	<b>15 min</b>	Coffee Break	
<b>10:30-10:50</b>	<b>20 min</b>	ISP Analysis Validation Work	Angie Bond-Simpson (SRP) Joe Hooker (E3)
<b>10:50-11:50</b>	<b>60 min</b>	Technical Working Session: Inflation Reduction Act Debrief, Breakout Session and Proposal	Arne Olson (E3) Angie Bond-Simpson (SRP) Joe Hooker (E3)
<b>11:50-12:00</b>	<b>10 min</b>	ISP Timeline and Engagement Calendar Updates/Wrap Up	Angie Bond-Simpson (SRP)
<b>12:00- 1:00</b>	<b>60 Min</b>	Working Lunch	



# **Rocket Roundtable:**

**What is a priority for your organization in 2023?**

# Guides for Productive Meetings

- Actively participate
- Stand up name tent to indicate wanting to provide input, ask a question, etc.
- Encourage and seek multiple perspectives, including use of multiple engagement methods
- When introducing technical subjects, begin with straightforward definitions and avoid acronyms; create comfortable environment for questions and understanding
- Stay concise so that everyone has time to participate
- Maintain one representative per Advisory Group member organization in meeting discussions
- Enjoy the meeting!

# Since We Last Met

Angie Bond-Simpson

Director, Integrated System Planning & Support, SRP

Bobby Olsen

Senior Director, Corporate Planning, Environmental Services, and Innovation, SRP

# Fall Discussion Themes

## September 28th Advisory Meeting

- Increased dialogue!
- Products of the ISP
- Guiding ISP Principles
- ISP Analysis: Customer Programs & Forecasting
- Reliability

## October 25th Modeling Subgroup

- ISP Analysis: Forecasting, Customer Programs, Distribution Planning, Resource Planning
- Electric vehicles
- Customer-sided technology
- Inflation Reduction Act
- Resource modeling

# SRP Updates

# Guiding ISP Principles

Domonique Cohen

Communications Lead, Integrated System Planning & Support, SRP

# Guiding ISP Principles Purpose & Intended Use

## **DRAFT Purpose:**

The purpose of the Guiding ISP Principles is to ensure SRP appropriately balances all important considerations in developing an Integrated System Plan. SRP strives to understand the inherent tradeoffs between reliability, affordability and sustainability among the principles and seeks to establish an Integrated System Plan that fully considers and balances all Guiding ISP Principles.

## **Intended Use:**

- Guardrails for metric evaluation and tradeoff discussions of the various system plans
- Compare ISP Strategies and Balanced System Plan metrics against the Guiding ISP Principles to ensure the balance of all considerations

# **DRAFT** Guiding Integrated System Plan (ISP) Principles

The purpose of the Guiding ISP Principles is to ensure SRP appropriately balances all important considerations in developing an Integrated System Plan. SRP strives to understand the inherent tradeoffs between reliability, affordability and sustainability among the principles and seeks to establish an Integrated System Plan that fully considers and balances all Guiding ISP Principles.

## **Integrated Long-Term View**

Develop a holistic view, including resources, transmission, distribution and customer program perspectives for meeting growing customer needs and achieving our 2035 Corporate Goals. 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 transparent system planning process that is responsive to questions and input.

## **Measure Success Through the Eyes of Our Customers**

Respond to evolving consumer expectations by providing sustainable, safe, reliable, equitable and affordable power. SRP prides itself in serving the needs of customers and goes to great lengths to continually exceed expectations.

## **Manage Costs**

Deliver exceptional Power System value by keeping prices low 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. Anticipate a grid that is able to prepare for and recover from both anticipated and unanticipated disruptions to ensure energy availability and reliability sufficient to meet customers' needs.

## **Adapt Toward a More Sustainable Future**

Meaningfully reduce carbon emissions to help combat climate change. Reduce other environmental impacts of SRP's operations by using less water and energy, and by creating less waste. SRP can pass those savings on to customers, and everyone can enjoy the benefits of a better environment.



# What We Heard: Guiding Integrated System Plan (ISP) Principles

## Affordability and Equity

- Importance of affordability
- Lack of clear metrics for affordability
- Affordability/equity connection

## Balance

- Balancing the three pillars
- How each pillar impacts the others
- Different customer types (e.g., business vs. residential)
- Affordability seemed less in balance than the other two pillars

## Intention vs. Implementation

- Consider customer behavior unpredictability
- Transparent reporting

# FINAL Guiding Integrated System Plan (ISP) Principles

The purpose of the Guiding ISP Principles is to balance all important considerations in developing an Integrated System Plan. SRP strives to understand the inherent tradeoffs between reliability, affordability and sustainability for the principles and seeks to establish an Integrated System Plan in **accordance with these Guiding ISP Principles**.

## Integrated Long-Term View

Develop a holistic view, including resources, transmission, distribution and customer program perspectives for meeting **evolving** customer needs and achieving our 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 energy value **by minimizing impacts from the energy transition and future uncertainties to the average retail prices** 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.**

# Roundtable Questions:

How does your organization use these types of guiding principles in your strategic planning and implementation?

For future meetings and conversations, how do you want the Guiding ISP Principles to be available for reference?

**Coffee Break**

# ISP Analysis Validation: Work Overview

Angie Bond-Simpson

Director, Integrated System Planning & Support, SRP

Joe Hooker

Associate Director, E3

# Drivers that Led to the ISP Model Validation Effort

## Ambitious Level of Analysis

The ISP is a first of its kind effort for SRP and the industry.

The ISP Study plans defines a high volume of cases to process and manage.

## Quality Assurance & Control

The scenario design framework used in the ISP incorporated numerous new input assumptions that SRP had not previously used in modeling studies.

## Third Party Review

Desire to build confidence in the ISP process and results

# E3 review of ISP Resource Plan Modeling

- E3 has extensive experience performing resource planning and reviewing utility resource plans throughout North America.
- E3 performed a thorough review of SRP's resource modeling input assumptions for the ISP and provided feedback, which SRP incorporated.
- E3 believes that SRP's resource planning modeling framework is consistent with industry practices for resource planning and is well suited to assess the scenarios and strategic approaches for the ISP.

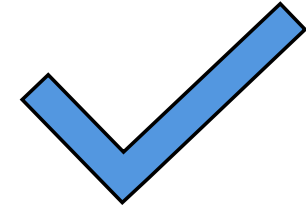
# E3 process for reviewing ISP resource plan modeling

1. Confirm that the ISP model **inputs** in the ISP model match the inputs that were developed for the ISP scenarios and strategic approaches. For other inputs not developed specifically for the ISP, benchmark key inputs to public data sources.
2. Confirm that the ISP model **configuration** for loads, resources and modeling parameters is correct such that the model minimizes costs while satisfying reliability, sustainability and operational requirements in each case.
3. Confirm that the ISP model inputs flow properly through the model by checking **outputs**.



# Benefits of the Validation Effort

- SRP feels confident that the resource planning model has been validated for use in the ISP.
- SRP and E3 used the validation effort to investigate how to incorporate impacts from the Inflation Reduction Act (IRA).
- To complement SRP's existing modeling toolkit, we are now able to accelerate testing of PLEXOS capabilities, which E3 is helping to support.



PLEXOS

# Technical Working Session: Inflation Reduction Act Debrief

Arne Olson  
Senior Partner, E3

# E3 Summary of Presentations



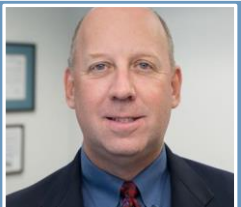
## Christine Turner

Chief Commercialization and  
Engagement Officer

**Solar Energy Manufacturers  
for America Coalition**

### Domestic Solar Manufacturing Post-IRA

- Implications for current China-dominated global supply chain and opportunities for domestic manufacturing
- Benefits of direct pay and specific solar tax credits across entire manufacturing supply chain
- Projected growth in domestic supply chain capacity relative to domestic demand over next decade



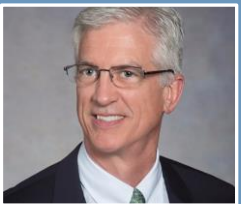
## Mitchell Rapaport

Partner

**Nixon Peabody LLP**

### Federal Tax Issues for Public Power

- Implications of direct pay for public power project ownership; appeal/risks vs. power purchase agreement (PPA) structure
- Benefits and risks associated with tax credit bonuses, particularly for domestic content requirements
- Opportunities for risk mitigation and needed guidance from the IRS



## Michael Mace

Managing Director

**PFM Financial Advisors**

### Implications for Public Power

- “IRA math” to assess effective benefit to public power after tax-exempt debt “haircut” and prior PPA costs
- Appeal and risks of direct ownership vs. PPA
- New decision-making considerations (economics and risk) for production tax credit (PTC) vs. investment tax credit (ITC)



## Hanson Wood

Senior VP, Development- West  
Region

**EDF Renewables North  
America**

### Post-IRA Western Market Outlook

- Expected impacts on magnitude/distributions of clean energy resource procurement and manufacturing
- IRA pros (e.g., 10-year commitment, direct pay) vs. cons (e.g., uncertainty, no incentives for transmission)
- Key challenges in energy transition (e.g., battery storage material constraints, curtailment and congestion)

# E3 takeaways from panel discussion

## The IRA represents a **step change** in funding clean energy

- Acceleration of clean energy transition
- New direct pay for public power
- Domestic manufacturing buildout
- Technology-neutral production tax credit extends to solar and nuclear
- 10-year tax credit certainty is significant
- Storage tax credits open up new markets

## The IRA doesn't solve everything

- Current supply chain impacts
- No meaningful transmission provisions
- Monetizing tax credits still has a cost

## There are **risks** that must be considered in planning

- Satisfying apprenticeship and fair wage requirements
- Domestic content risk for public power
- Penalties for excess credits
- Regulatory and performance risks for the production tax credit

## There are currently many **uncertainties**

- Additional guidance needed from Treasury on many provisions, which may take 6-18 months
- Clarity needed for domestic content and energy community bonus credits

# Discussion Groups

Hear takeaways from Advisory Group members who attended the Technical Working Session

# Roundtable Discussion

## Discuss organization's plans for Inflation Reduction Act (IRA) funding

1. Is your organization planning to use IRA funding, and if so, for what?
2. What impacts to customer behavior/technology adoption are you seeing from the IRA?

# Capturing IRA impacts: Energy demand

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

## CURRENT TRENDS



## DESERT CONTRACTION



- 500,000 EVs by 2035
- 83% residential electric heating by 2035
- 1,300 MW of distributed solar by 2035
- 3,800 GWh total energy efficiency by 2035

## DESERT BOOM



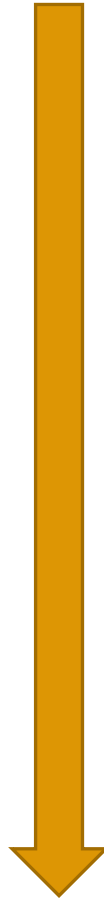
- 600,000 EVs by 2035
- 86% residential electric heating by 2035
- 1,800 MW of distributed solar by 2035
- 3,800 GWh total energy efficiency by 2035

## STRONG CLIMATE POLICY



- 975,000 EVs by 2035
- 86% residential electric heating by 2035
- 2,300 MW of distributed solar by 2035
- 4,500 GWh total energy efficiency by 2035

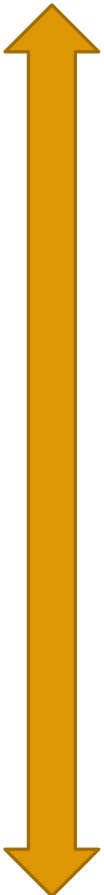
*Increasing levels  
for electrification,  
distr. generation,  
energy efficiency*



# Updated renewable and battery costs with IRA impacts

ISP scenario analysis designed to capture uncertainties in renewable and battery resource costs:

Higher costs



**DESERT CONTRACTION**

**HIGH TECH COSTS**

- NREL 2022 Annual Technology Baseline Conservative
- Inflation Reduction Act tax credits\* (monetized at 80%)
- Investment/Production Tax Credit phase-out post-2045
- Supply chain impacts (30% cost impact)

**CURRENT TRENDS**

**DESERT BOOM**

- Midpoint between low costs and high costs

Lower costs

**STRONG CLIMATE POLICY**

**LOW TECH COSTS**

- NREL 2022 Annual Technology Baseline Moderate
- Inflation Reduction Act tax credits\* (monetized at 90%)
- Investment/Production Tax Credit phase-out post-2045
- Supply chain impacts resolve fully (no cost impact)

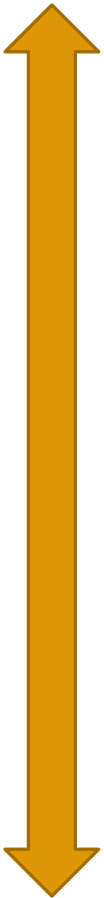
*\*Includes the base credit and 5x multiplier for satisfying prevailing wage and apprenticeship requirements. Includes the Energy Community bonus (+10%) for Arizona wind built after the retirement of Coronado (and Springerville in the Minimum Coal strategic approach). Range reflects uncertainty in cost to monetize tax credits (e.g., profit margin for tax equity investor or transfer entity, transaction costs) and satisfy applicable requirements (e.g., prevailing wage requirements)*



# Updated emerging technology costs with IRA impacts

ISP scenario analysis designed to capture uncertainties in emerging resource costs:

Higher costs



<p><b>DESERT CONTRACTION</b></p>	<p><b>HIGH TECH COSTS</b></p>	<ul style="list-style-type: none"> <li>• (Assumed carbon capture and sequestration (CCS), 100% green hydrogen, and nuclear small modular reactor (SMR) resource options not available by 2035)</li> <li>• Hydrogen fuel production tax credit (monetized at 80%)</li> </ul>
<p><b>CURRENT TRENDS</b></p>	<p><b>DESERT BOOM</b></p>	<ul style="list-style-type: none"> <li>• (Assumed carbon capture and sequestration, 100% green hydrogen, and nuclear small modular reactor resource options not available by 2035)</li> <li>• Hydrogen fuel production tax credit (monetized at 85%)</li> </ul>
<p><b>STRONG CLIMATE POLICY</b></p>	<p><b>LOW TECH COSTS</b></p>	<ul style="list-style-type: none"> <li>• EIA 2022 Annual Energy Outlook –20% for CCS &amp; SMR</li> <li>• Inflation Reduction Act tax credits (monetized at 90%)</li> <li>• Investment Tax Credit for new nuclear*</li> <li>• Hydrogen fuel production tax credit</li> <li>• Carbon capture and sequestration credit</li> </ul>

Lower costs

*\*Includes the base credit and 5x multiplier for satisfying wage and apprenticeship requirements. Range reflects uncertainty in cost to monetize tax credits (e.g., profit margin for tax equity investor or transfer entity, transaction costs) and satisfy applicable requirements (e.g., prevailing wage requirements)*

# ISP Timeline and Engagement Calendar Updates

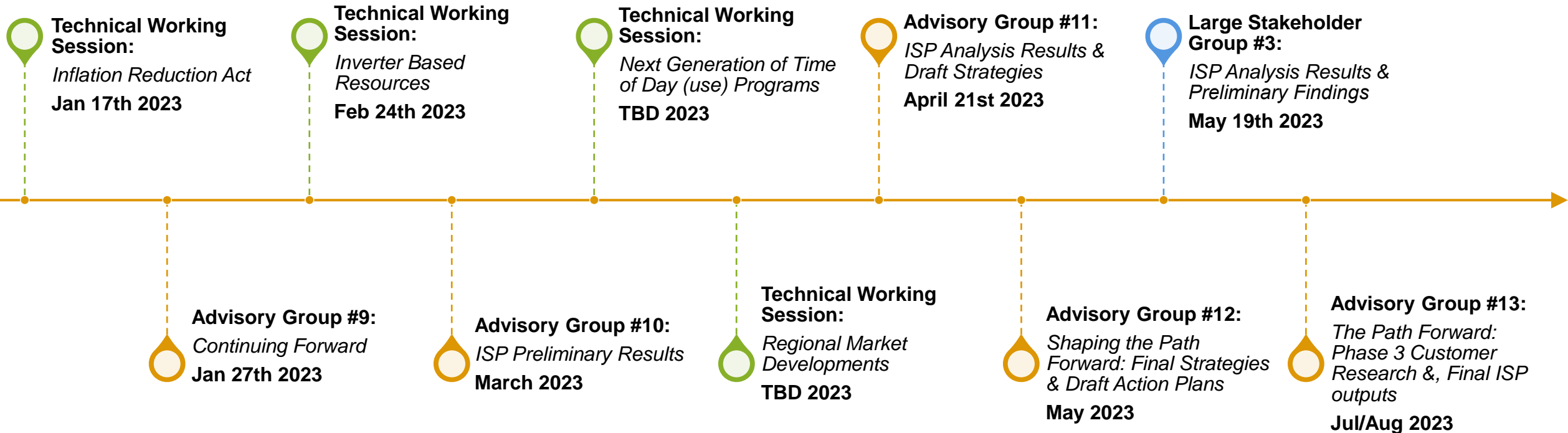
Angie Bond-Simpson

Director, Integrated System Planning & Support, SRP

# ISP Timeline Revision

- Update ISP analysis to reflect Inflation Reduction Act (IRA) resource cost impacts and validation driven updates
- Maintain iterative process with ISP Advisory Group
- Continue engagement with Large Stakeholder Group
- Bring ISP to SRP's Board summer 2023

# Draft 2023 Engagement Calendar



# Wrap Up and Next Steps

Angie Bond-Simpson

Director, Integrated System Planning & Support

# Next Steps

## Advisory Group

- Inverter Based Resources Technical Working Session (February 24)
- Advisory Group Meeting (March)

## SRP Team

- Update ISP Scenario Narratives and Model Assumptions documentation on ISP website
- Send invitation for Inverter Based Resources Technical Working Session
- Complete ISP Analysis



**Stakeholder Communication Email:**  
**[IntSysPlan@srpnet.com](mailto:IntSysPlan@srpnet.com)**

**Integrated System Plan: Informational Portal**  
**<https://srpnet.com/about/integrated-system-plan.aspx>**

**thank you!**