

SRP Summer Stakeholder Series – Where We Want to Go

August 16th, 2021

Welcome

Kelly Barr

Associate General Manager Chief Strategy and Corporate Services & Sustainability Executive

safety minute

Water Safety

- A** **Adult Supervision**
Designate a “Water Watcher” to watch children at all times. Remember, children drown in more locations than just pools, such as bathtubs, buckets, canals and other bodies of water.
- B** **Barriers**
Barriers include pool fences with self-closing and latching gates. Place locks on openings such as doors, windows, pet doors and pool covers.
- C** **Classes**
Take swimming lessons and learn CPR. For swimming lessons, call your local city aquatics or swim schools. For CPR certification, call your local fire department. To view and order your free CPR awareness video, visit us at srpnet.com/safety.

sustainability minute

Energy Efficient Pool Equipment

- Variable-speed pool pump
 - Up to 90% more efficient than standard one-speed pumps
- Pool lights
 - Replace your current pool lights with LEDs
- Solar pool cover/blanket
 - Reduces water evaporation by up to 50%

Welcome SRP Board and Council Observers



John Hoopes
SRP Vice President



Randy Miller
SRP Board Member



Anda McAfee
SRP Board Member



Jack White
SRP Board Member



Larry Rovey
SRP Board Member



Suzanne Naylor
SRP Council Member



Rocky Shelton
SRP Council Member

Agenda

Time		Topics	Presenter
8:30 – 8:40	10 mins	Welcome and Opening Remarks	Kelly Barr
8:40 – 8:45	5 mins	Agenda Overview and Participation Opportunities	Kearns & West
8:45 – 9:45	60 mins	IRP to ISP Transition Topics, Stakeholder Engagement and Q&A	Angie Bond-Simpson and SRP Subject Matter Experts
9:45 – 9:55	10 min	Next Meeting Preview	Grant Smedley
9:55 – 10:00	5 min	Next Steps	Angie Bond-Simpson





July Meeting Feedback:

Overall Meeting Experience?

- **The time spent, logistics, overall understanding and pre-read material were all beneficial with insignificant disagreement.**

Further information needed to understand SRP's near-term planning strategy

- Customer program **incentives** and **affordability impacts**
- **Links between near-term and long-term planning**
- Further clarification on **transmission constraints**

Strengths & Risks of SRP Near-Term Planning Efforts

- **Strengths: Collaboration & Balance**
- **Risks: Fossil Fuels & Market Growth/Volatility**

What could SRP do more of, better, or differently?

- Stakeholder meeting **feedback focused**

Summer Series and Meeting #3 Overview

Joan Isaacson, Facilitator
Kearns & West

ISP Summer Series Overview

Meeting #1

Since We Last Met

Update on 2017-18 IRP Strategic Resource Directions progress.

Meeting #2

Near Term Planning

Educate on forces of change affecting the industry and near-term planning.
Collect perspectives from stakeholders.

Meeting #3

Where We Want to Go “Long-Term”

Engage stakeholders in early development of the ISP.

***Additional Meeting “Near-Term Planning: Part 2” to discuss next resource decision in SRP’s near-term plan**

Date: August 23rd, 2021

Time: 10:00AM-11:30AM (PST)

Our Objectives for Meeting #3

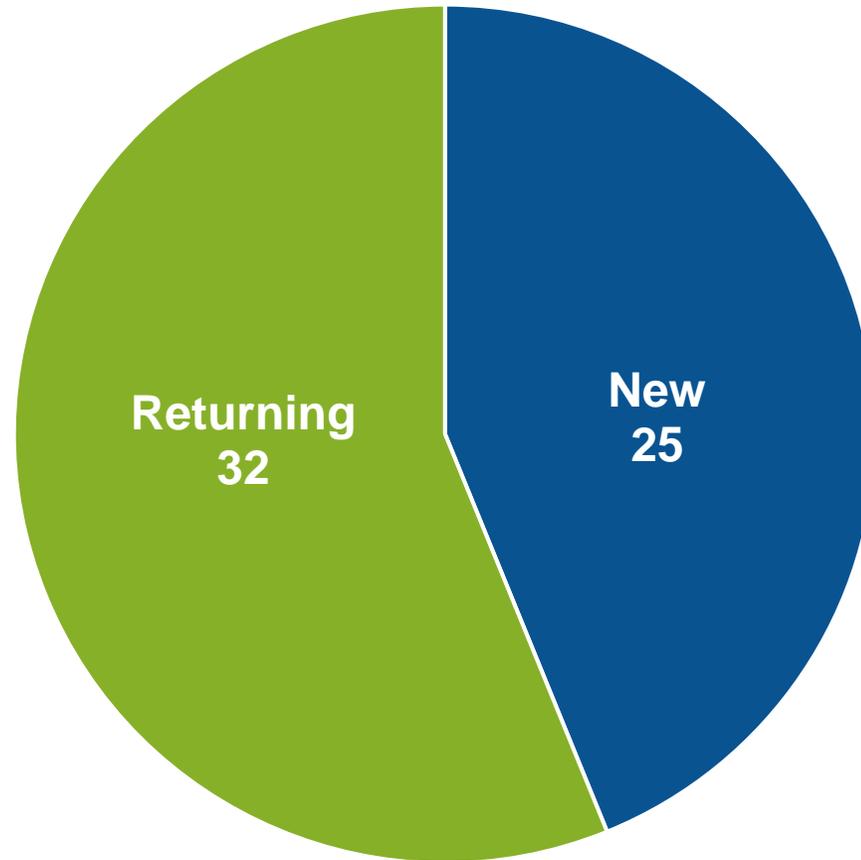
- **Address stakeholders' feedback and questions from Meeting #2**
- **Increase SRP's understanding of stakeholders' interests to inform the stakeholder engagement program for the longer-term ISP.**

ISP Summer Series Stakeholders

1. AARP
2. AEPCO
3. AES
4. Air Products
5. Amazon
6. AMPUA
7. AMWUA
8. Apache County
9. Apache Junction
10. Apex Clean Energy
11. Apple Inc
12. APS
13. Arizona Cattle Growers Association
14. Arizona Center for Law in the Public Interest
15. Arizona Chamber of Commerce
16. Arizona Commerce Authority
17. Arizona Competitive Power Alliance
18. Arizona Cotton Growers Association
19. Arizona Energy Policy Group
20. Arizona Farm Bureau
21. Arizona Hispanic Chamber of Commerce
22. Arizona Lodging and Tourism Association
23. Arizona Power Authority
24. Arizona Residential Utility Consumer Office
25. Arizona Solar Deployment Alliance
26. Arizona Solar Energy Industries Association
27. Arizona State Land Department
28. ASU
29. Avangrid Renewables (Iberdrola)
30. AZ Thrives
31. AZ PIRG
32. AZ Strategies
33. AZ Sustainability Alliance
34. Basha's
35. Beatitudes Campus
36. Boeing
37. Bureau of Land Management
38. Casa Grande
39. Candela Renewables
40. Chandler
41. Chicanos Por La Causa
42. City of Mesa
43. City of Phoenix
44. City of Tempe
45. CMC Steel
46. Coolidge
47. Copper State Consulting Group
48. Cushman & Wakefield
49. Cyrus One
50. Digital Realty
51. DMB
52. East Valley Chamber of Commerce
53. East Valley Partnership
54. Environment America
55. Environmental Defense Fund
56. EPRI
57. First Solar
58. Florence
59. Forest Service U.S. Department of Agriculture
60. Fort McDowell Yavapai Nation
61. Freeport McMoRan Copper and Gold
62. Gamage & Burnham Attorneys at Law
63. General Electric
64. Gila Bend
65. Gilbert
66. Glendale
67. Google
68. Greater Phoenix Economic Council
69. Greater Phoenix Leadership
70. Greenlots
71. Home Builders Association of Central Arizona
72. Intel
73. Interwest Energy Alliance
74. Leeward Energy
75. Local First Arizona
76. Kyl Center for Water Policy
77. Mercy Gilbert Medical Center/Dignity Health
78. Mitsubishi Hitachi Power Systems Americas, Inc.
79. NAU
80. Navajo County
81. New Leaf/ Mesa-CAN
82. NextEra Energy Resources
83. NREL
84. Page
85. Phoenix Chamber of Commerce
86. Pinal County
87. Queen Creek
88. Roosevelt Water Conservation District
89. Salt River Pima-Maricopa Indian Community
90. Scottsdale
91. Scottsdale School District
92. Seguro Energy
93. Sierra Club
94. Southwest Energy Efficiency Project
95. Springerville
96. SRP Customer Utility Panel (CUP)
97. St. Johns
98. Strata Solar
99. Sustainable Energy Power Alliance
100. TEP
101. The Nature Conservancy
102. U of A
103. United Dairymen of Arizona
104. Valle Del Sol Strategic Initiatives: The Real Arizona Coalition
105. Valley Partnership
106. Walmart
107. West Marc
108. Western Grid Group
109. Western Resource Advocates
110. WildFire

Community Stakeholder Participation

Meeting #2 Returning Stakeholders



Guides for Productive Virtual Meetings

- Actively participate
- Be respectful of other perspectives
- Listen for understanding
- Stay concise to allow time for everyone to participate
- Enjoy the meeting

IRP to ISP Transition Topics

Angie Bond-Simpson, Director

Integrated System Planning & Support (SRP)

SRP ISP ROADMAP

Stakeholder Engagement and Public Outreach



ISP Summer Series Meeting 1
“Since We Last Met”:
 Review 2017-18 IRP process and the actions taken since.

ISP Summer Series Meeting 2
“Near-Term Planning”:
 Discuss IRP to ISP transition and current planning environment.

ISP Summer Series Meeting 3
“Near-Term Planning Part 2 / Where We Want to Go”:
 Address Stakeholder feedback to date and inform of upcoming resource decisions. Engage in early development of the ISP.

ISP Goals
 Discuss objectives for the ISP.

Periodic SRP Elected Officials and Leadership Updates:
 Share updates on progress to date.

ISP Metrics & Scenario Workshops:
 Determine measures of success and what to test.

Periodic SRP Elected Officials and Leadership Updates:
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ISP Analytical Framework Overview:
 Review approach to the ISP analysis and share inputs and assumptions.

ISP Analysis Update(s):
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ISP Draft Results:
 Preview the ISP before it’s finalized.

Periodic SRP Elected Officials and Leadership Updates:
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ISP Final Results & Recommendations:
 Share finalized ISP and next steps.

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ISP Vision

SRP collaboratively plans a future system (2025-2035), achieving or exceeding our 2035 goals, at the best customer value.

Renewables Support

What fills in the renewable gaps?



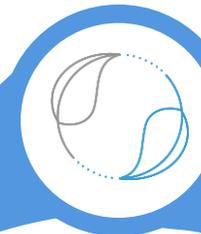
Storage Potential

How can we unlock the potential of energy storage?



Customer Greenhouse Gas Reduction

How can we empower customers to contribute to greater greenhouse gas reductions?



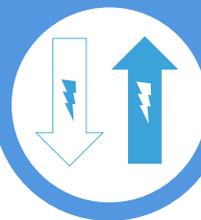
Grid Location

Where should resources be located to enhance the grid?



Two-Way Powerflow Enablement

How can we re-imagine a reliable and equitable grid infrastructure to enable two-way power flow for customers with evolving energy needs?



New Technology Timing

When is new technology ready to scale safely and reliably?



Analytical Considerations



The vision for the ISP requires

- Technical analysis
- Innovation
- Enhanced coordination

Analytical Considerations



The results of early system analysis informed near-term decisions.

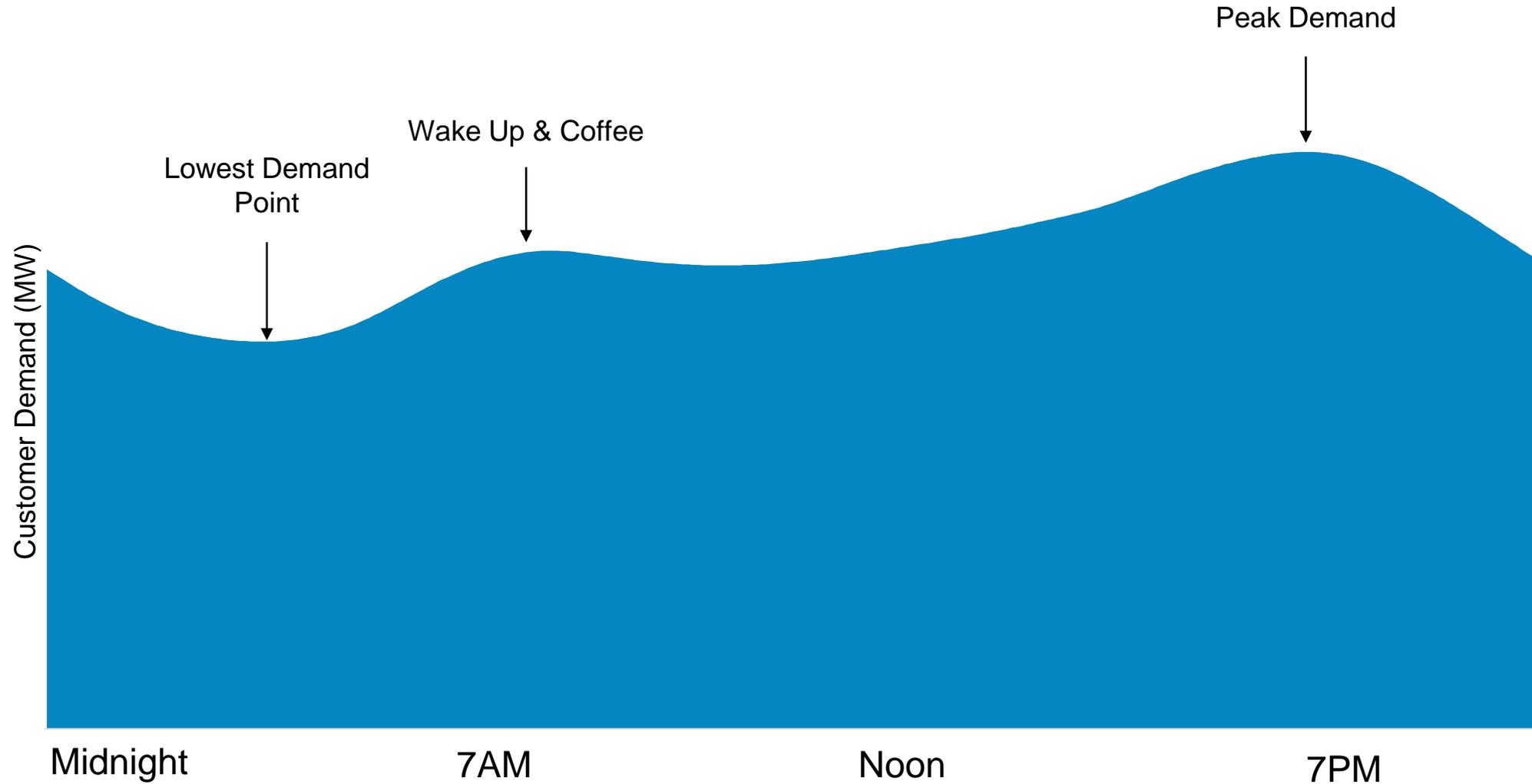
What is Solar Hosting?

The amount of solar generation that can be reliably placed on SRP's system

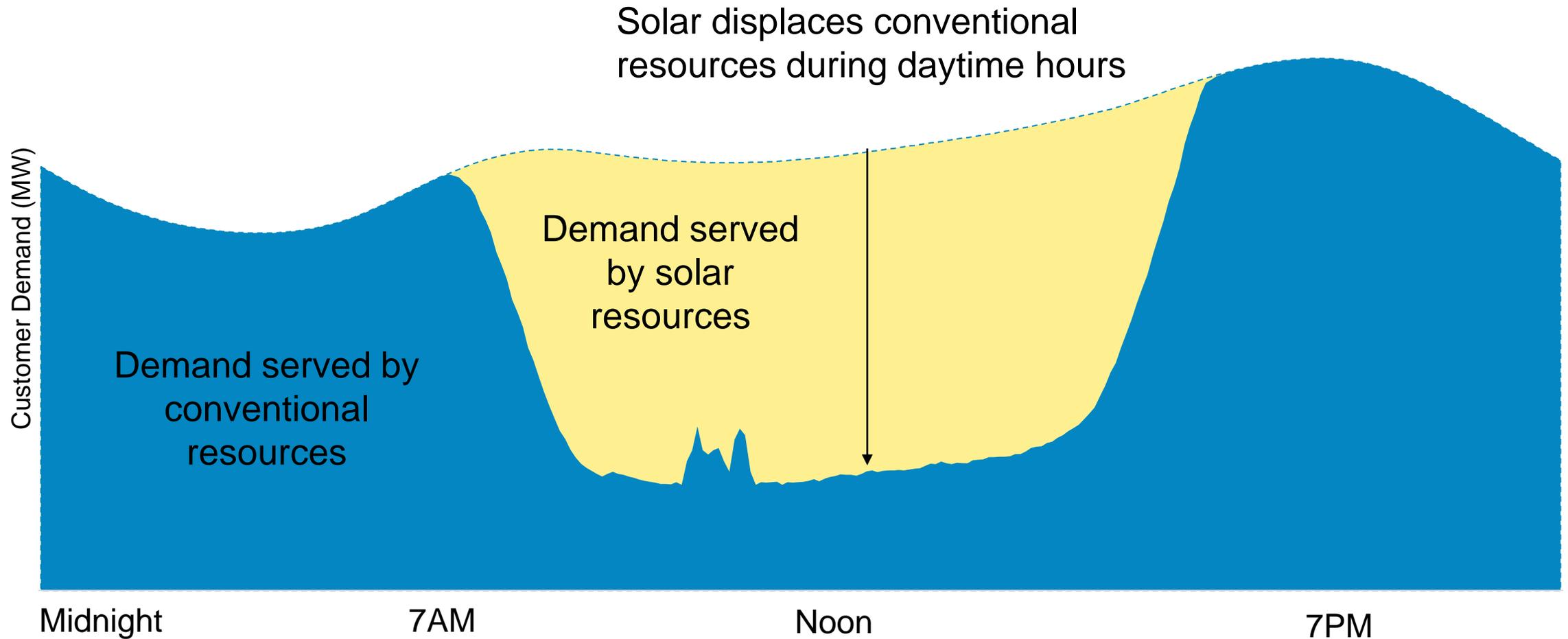
- What does it cost to add more?
- Where should it be located to maximize value for the grid?



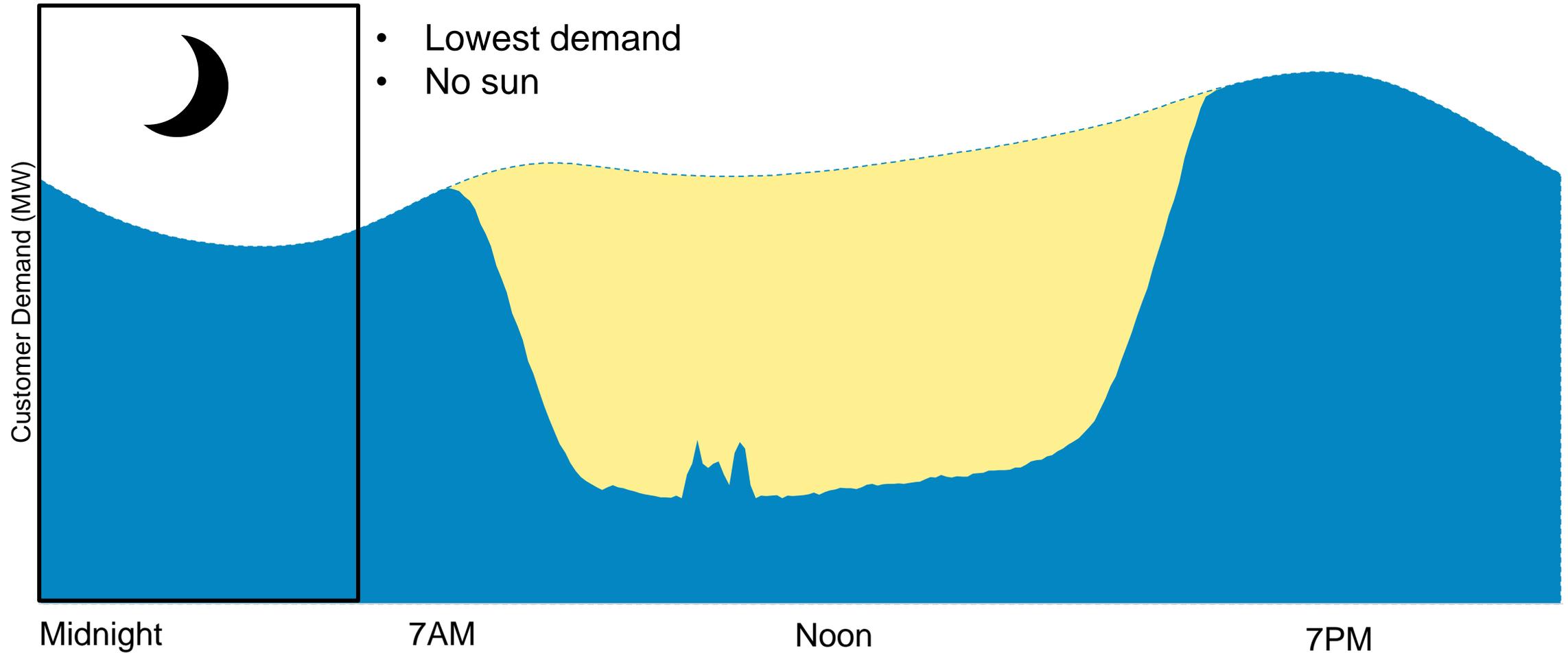
Meeting Customer Load



Integrating Substantial Solar

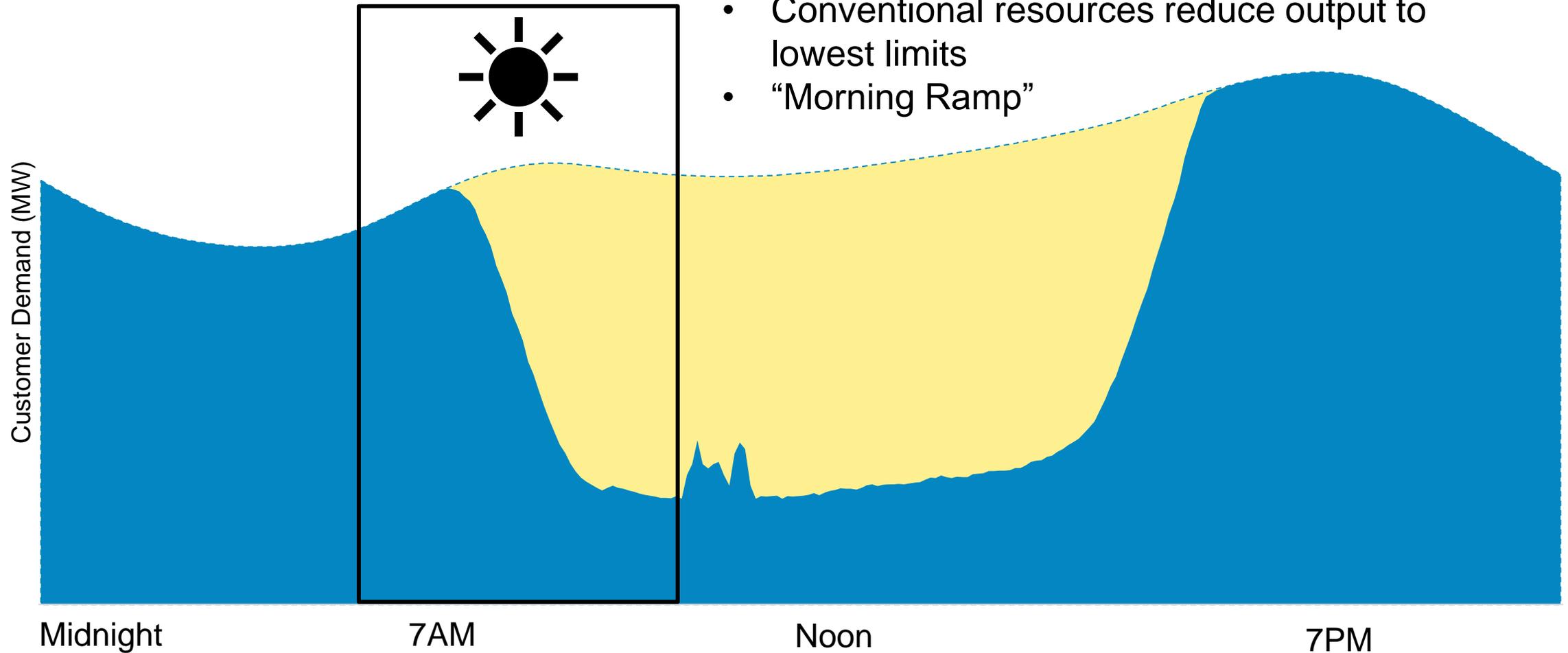


Integrating Substantial Solar- Midnight to Sunrise



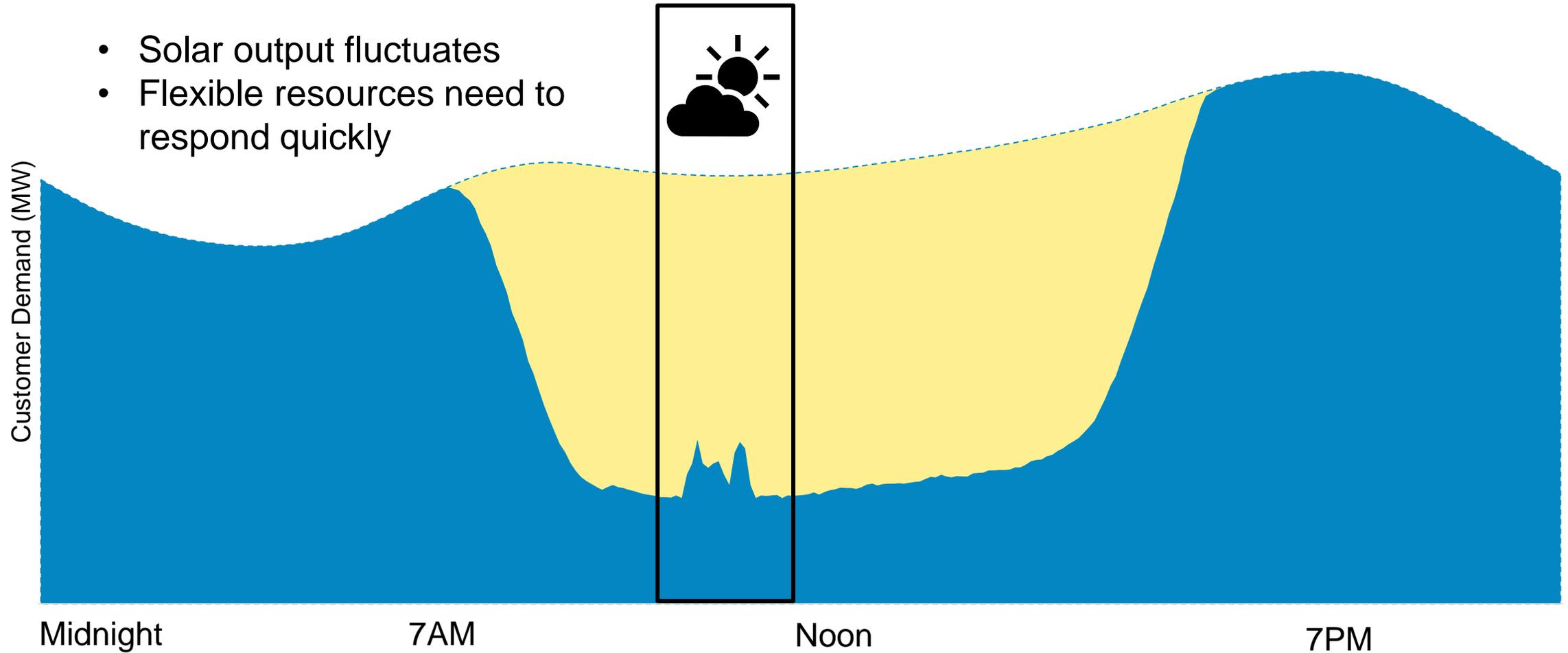
Integrating Substantial Solar- Sunrise & Morning Hours

- Solar output increases
- Conventional resources reduce output to lowest limits
- “Morning Ramp”



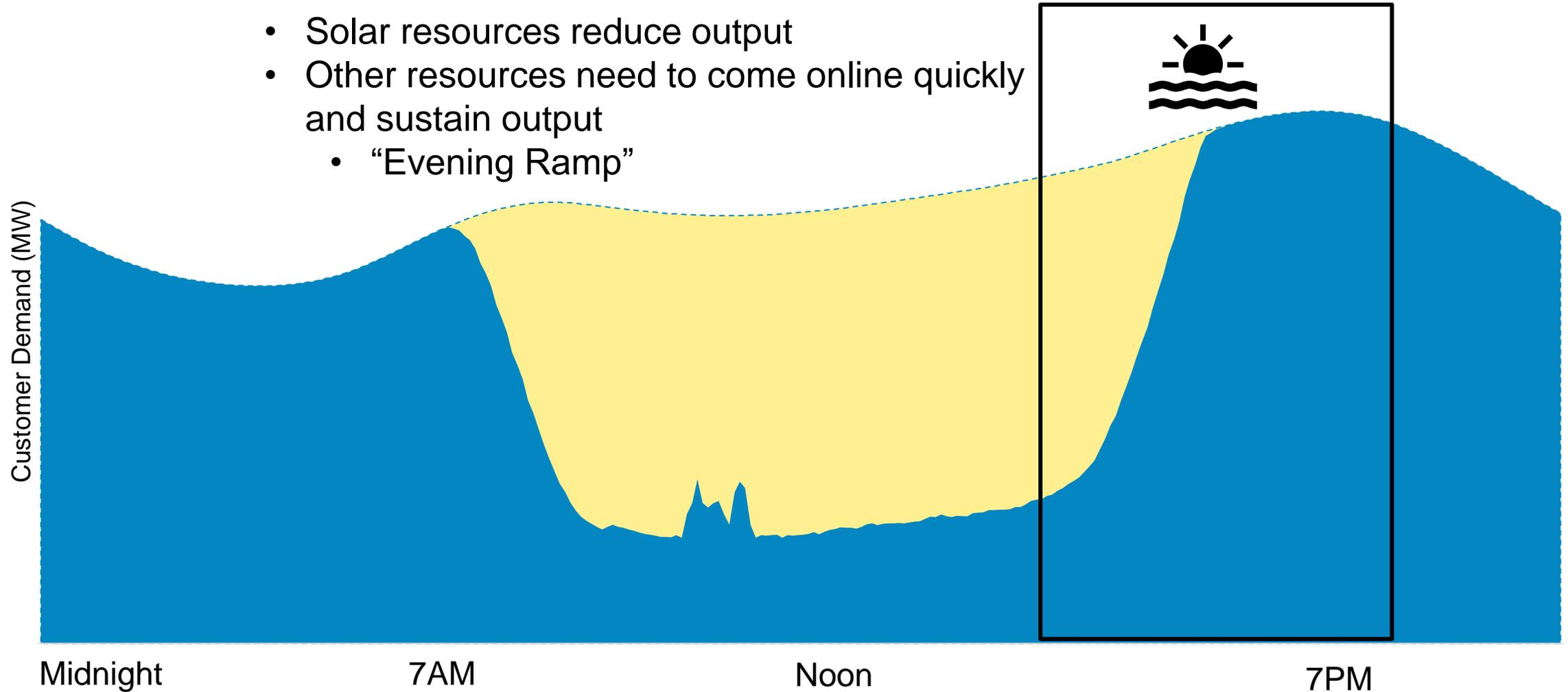
Integrating Substantial Solar- Cloud Cover

- Solar output fluctuates
- Flexible resources need to respond quickly



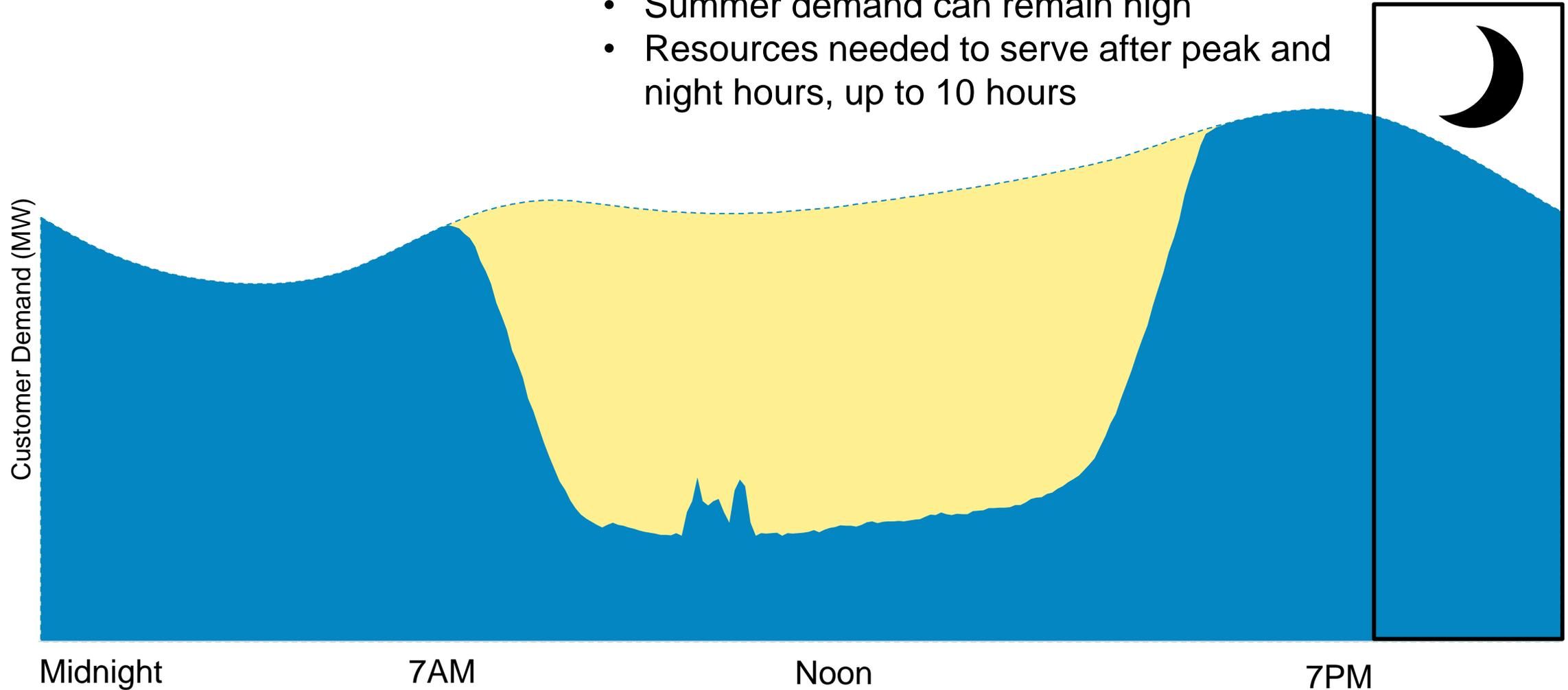
Integrating Substantial Solar- Sunset and Peak

- Solar resources reduce output
- Other resources need to come online quickly and sustain output
 - “Evening Ramp”

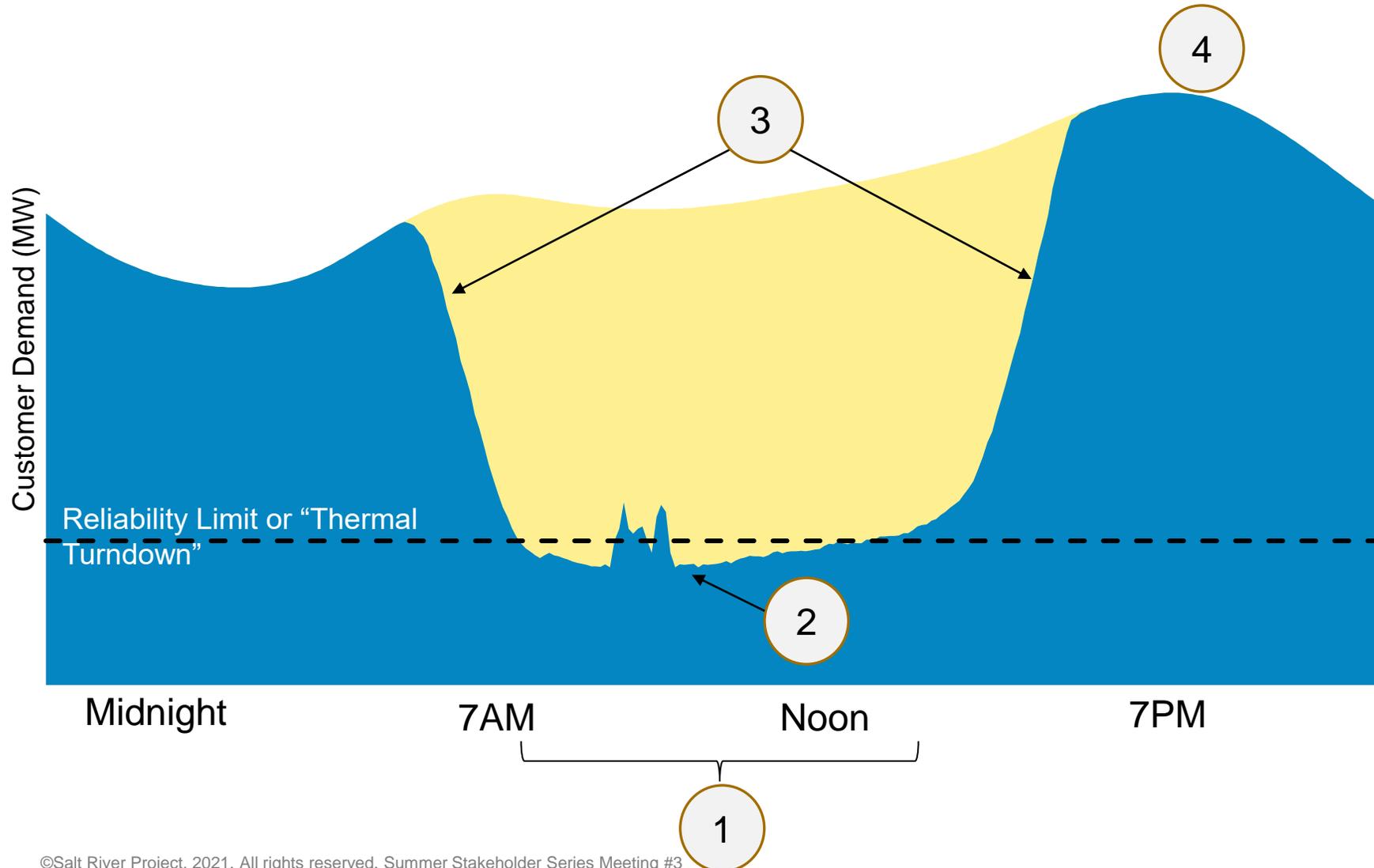


Integrating Substantial Solar- After Peak to Midnight

- Summer demand can remain high
- Resources needed to serve after peak and night hours, up to 10 hours



Solar Hosting Considerations



1. Times of potential excess generation
"Overgeneration"
2. Cloud cover
"Intermittency"
3. Sunrise and sunset
"Ramping"
4. Peak demand
5. Stability (not shown)
6. What ifs (not shown)

What about Batteries?

- Over 30 SRP efforts directed at opportunities to integrate energy storage
- Efforts span laboratory R&D to advancing operational maturity
- Considerations include use cases, locational value, operational requirements, communication standards, safe deployment, environmental life-cycle
- All-of-the-above approach: bulk electric system, distribution grid and customer sited



Unlocking Battery Potential

Near-Term Roadmap to 2025

Duration, Size, Chemistry, Charge/Discharge Strategy, Performance, Safety, Controls, Communication, Siting, What's Next?

Research Projects

- 9 EPRI
- 8 University
- 1 SRP

Pilots & Studies

- 20 MW
- Innovation Lab
- Transmission Demonstrations
- Distribution Pilots
- Customer Programs Pilots

Deployment & Engagement

- 372 MW
- Interconnection Standards
- Resource Adequacy

Performance & Analytics

- Effective Load Carrying Capability (ELCC)

Partners:



Energy+Environmental Economics

Reliability Analyses & Planning

Weather impacts

WEATHER

Within its first week, October becomes third wettest month for Phoenix



Capital Weather Gang

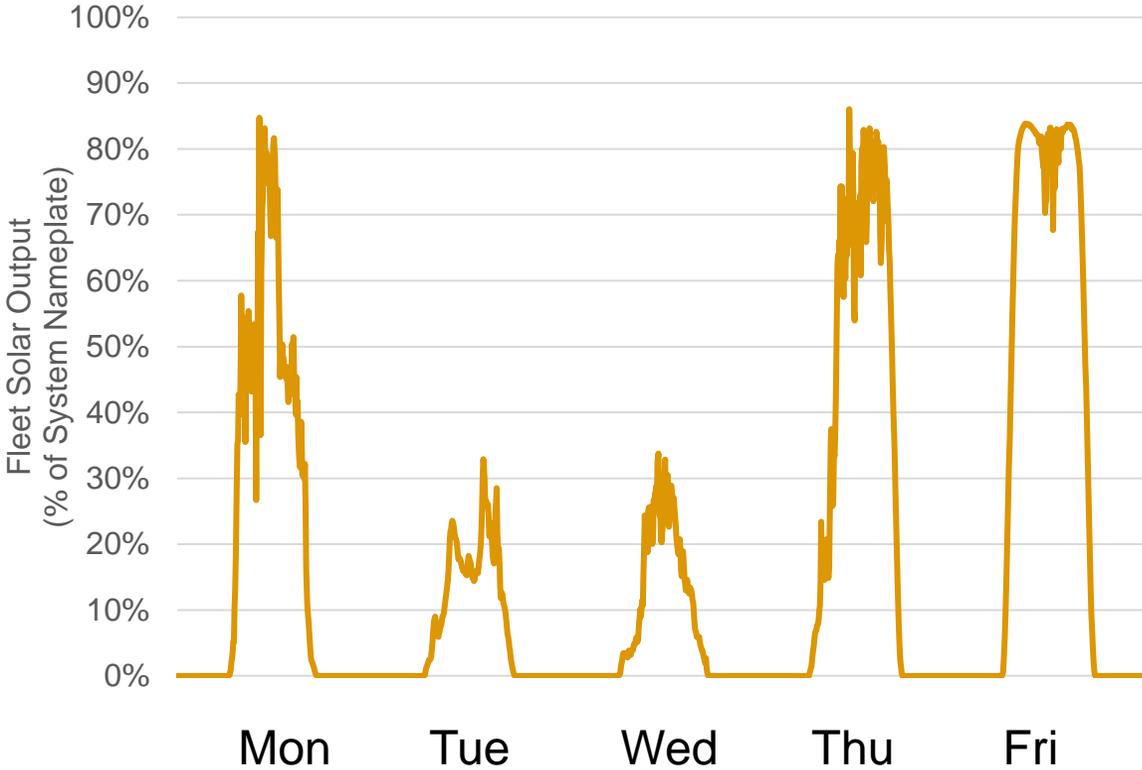
Heavy monsoon rains to flood the Southwest into this weekend

Some locations could see a month's worth of rainfall in hours.



Sources: [AZ Central](#), [Washington Post](#)

Low Solar Output October 2018



Reliability Analyses & Planning

What ifs

News

NERC Warns Energy Shortfalls Almost Inevitable This Summer



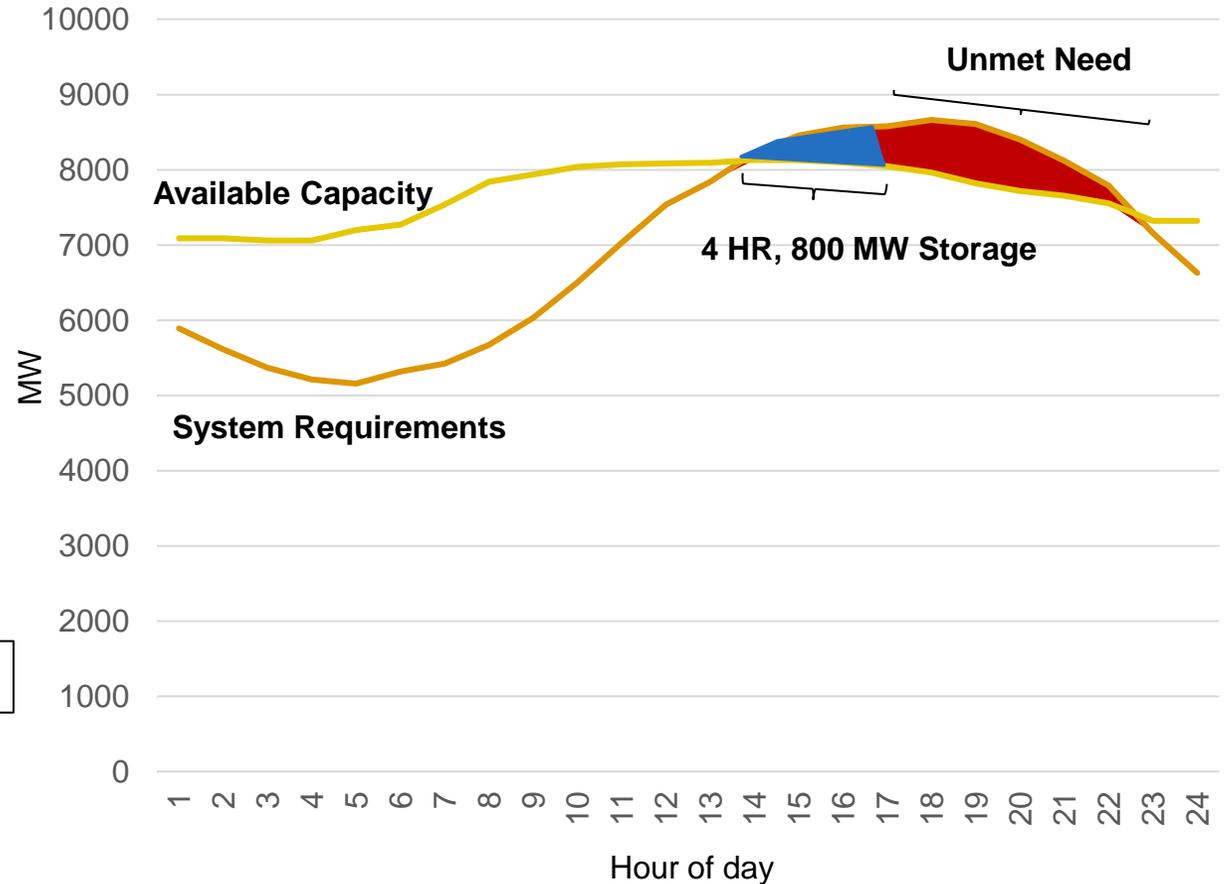
Western officials reckon with reliability challenges as heat and 'wildcard' wildfire threaten grid

Salt Fire near Roosevelt Lake knocks out SRP power line



Sources: [Power](#), [Utility Dive](#), [AZ Family](#)

Reliability Simulation Summer 2024



Customer & Grid Enablement

Enable the interconnection of all customer-sided resources while maintaining grid integrity & customer satisfaction.

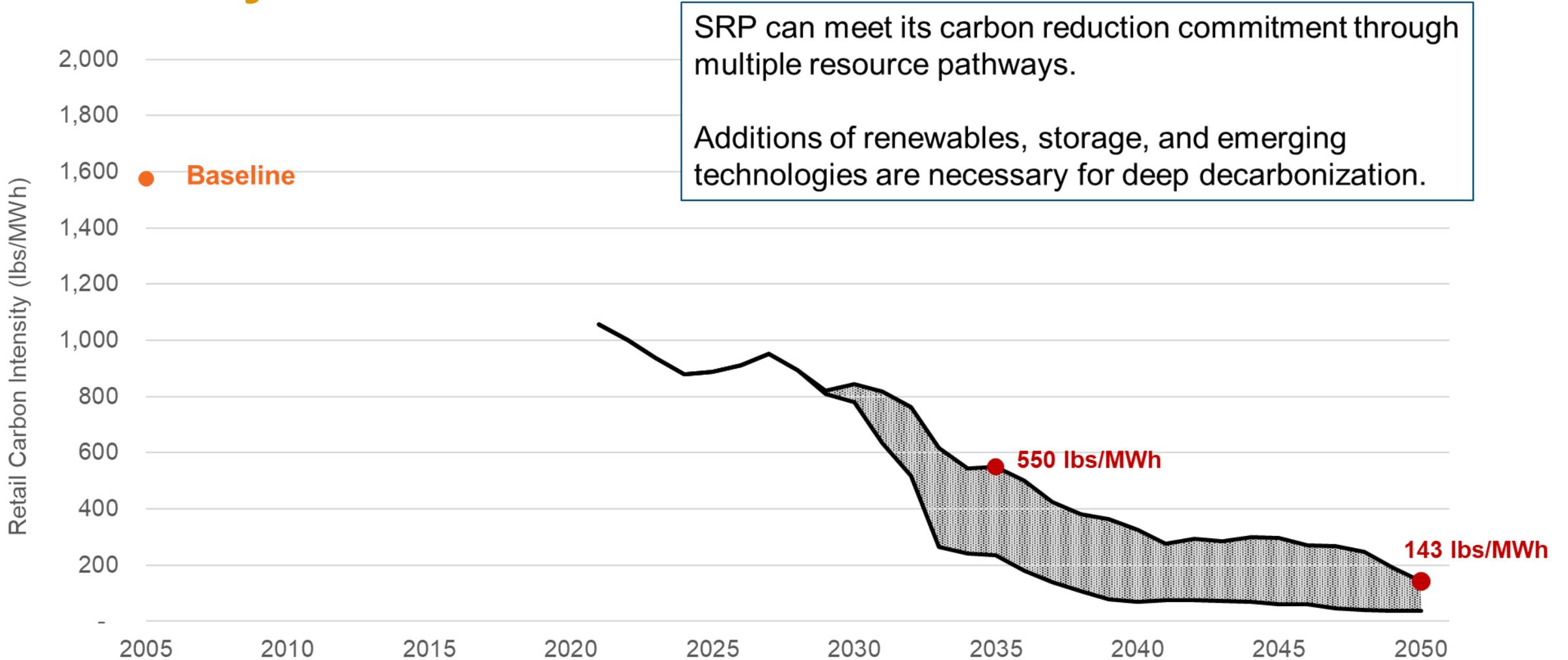
Enable 500,000 electric vehicles in SRP's service territory and manage 90% of charging.

5 Key Initiatives



SRP Carbon Commitment

Intensity Based





SRP ISP ROADMAP

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Prepare Phase Objectives

Identify desired levels of stakeholder involvement and commitment

Understand stakeholder priorities for analysis

Intake perspectives for measures of success

Develop draft analytical approach and data needs assessment

Next Outreach Timing - November



Seeking Stakeholder Perspectives

What is most important for SRP to consider and study in the ISP?

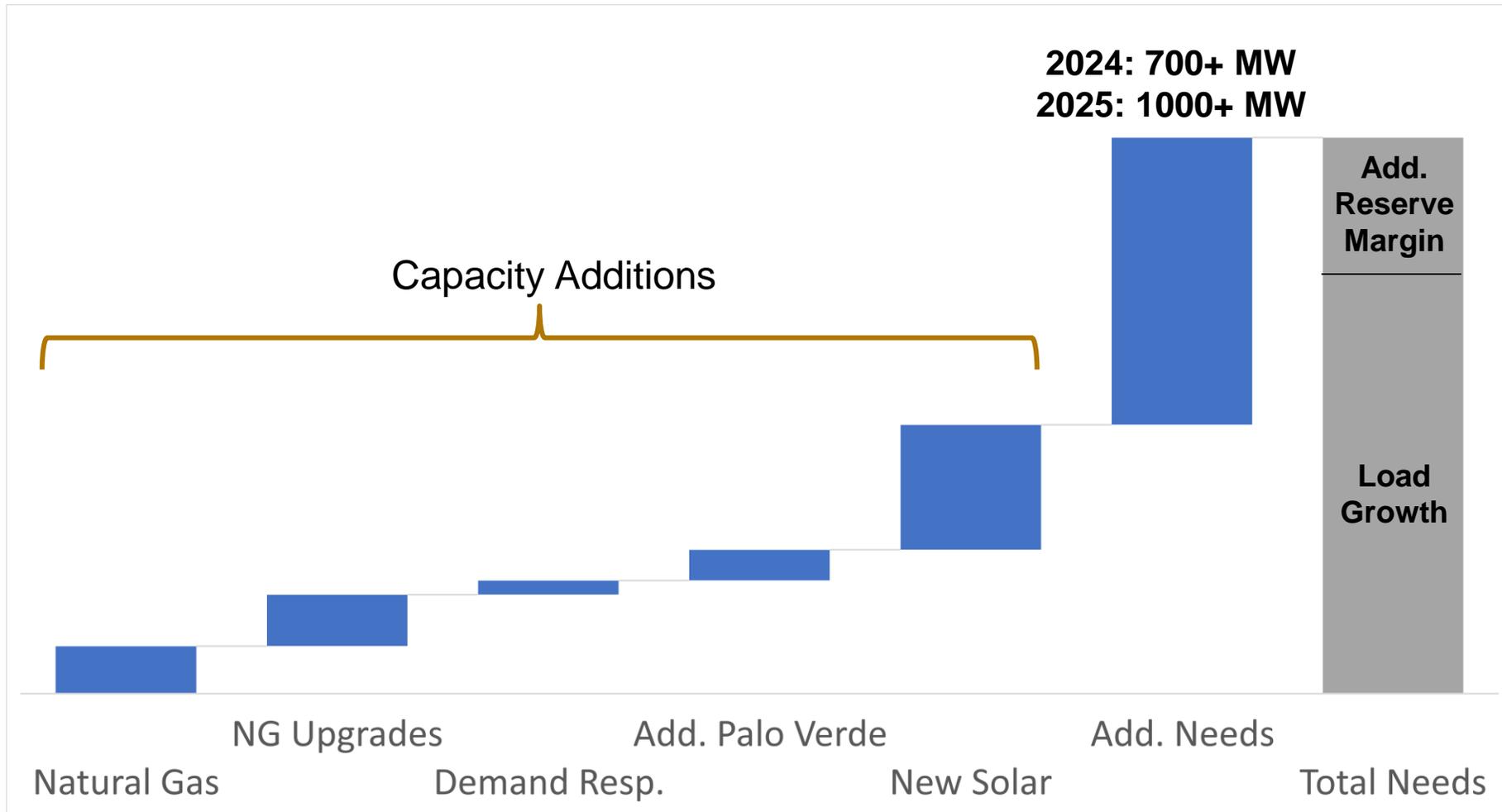
Q&A

Next Meeting Preview

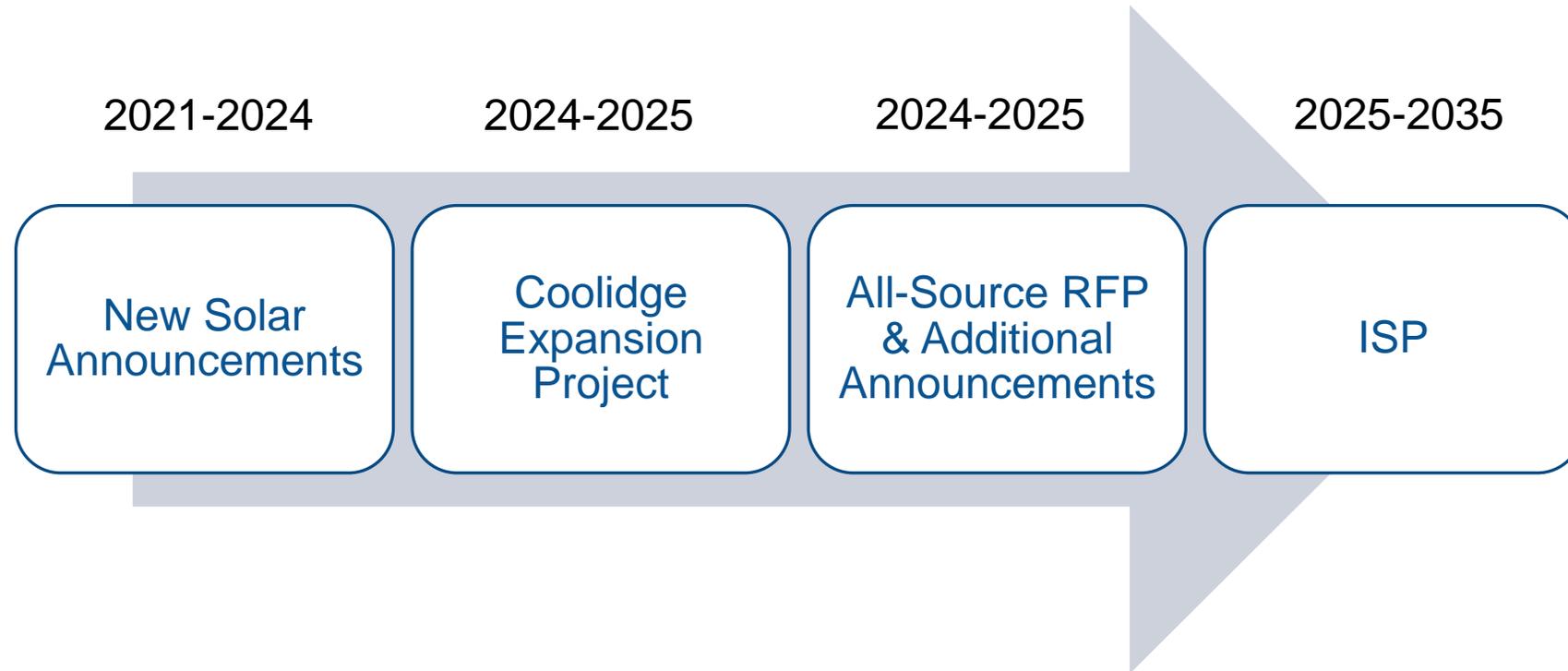
Grant Smedley, Director

Resource Planning, Acquisition & Development (SRP)

Near-Term Resource Additions and Needs



Addressing Near-Term Needs – “AND” Strategy



Next Steps & Wrap-up

Angie Bond-Simpson, Director

Integrated System Planning & Support (SRP)

Next Steps

Near-Term Resource Plan

- Meeting on Monday 8/23 to inform on SRP's next resource decisions



Integrated System Plan (ISP)

- Post-meeting feedback survey
- 1:1 phone call to discuss ISP Goals
 - Follow-up with your ISP liaison if you are interested
- Watch for announcements about the upcoming ISP engagement opportunities

Integrated System Plan: Summer Series Informational Portal

<https://srpnet.com/about/integrated-system-plan.aspx>

thank you!