# PUBLIC BENEFITS & ENERGY EFFICIENCY COMMUNITY WORKING GROUP

Meeting #3 – December 18, 2025

# Welcome & Introductions

1. Recap of Meetings #1 and #2

2. Themes for today
   - Review of Input
   - Solar Costs and Benefits
   - Need for Batteries
   - Projects and Options

RIVERSIDE PUBLIC UTILITIES
ALL DAY EVERY DAY

# OBJECTIVE OF THE GROUP

**Answer the question of what programs and activities does the community recommend RPU support with Public Benefit Funds and how RPU should spend down the accumulated $34 million in Public Benefit Funds**

**Summer-Fall 2025**

**Working Group**

Establishing overall program goals

Providing input to help guide detail analysis and future program development

**Fall 2025-Summer 2026**

**Consulting Services**

Detail program analysis

Community Survey

**Summer 2026**

**A Way Forward**

Conclude the Analysis

Community & Stakeholder Meetings

Final Plan & Strategy

# COMMUNITY WORKING GROUP = ADVISORY

The Community Working Group is intended to provide ideas, comments, express questions, and provide community frameworks around how RPU's Public Benefits Funds should be spent.

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**Final decisions on the expenditures, programs, structures, and budgets will be established by the RPU Board and City Council.**

# PUBLIC BENEFIT FUND SOURCE OF AUTHORITY

**Public Benefits funds were established in 1996 by Assembly Bill 1890 (AB 1890)**

**Goals**

1. Provide cost-beneficial energy efficiency services to customers
2. Offer customers meaningful information on the costs and benefits of energy efficiency measures
3. Reduce market barriers to investments in energy efficient products and services
4. Create a sustainable and competitive energy efficiency services market

**Created a Non-bypassable Customer Charge to provide for customer programs**

1. Minimum charge of 2.85%
2. Residential and commercial customers
3. Average residential customer pays ~ $3.00 per month
4. Average commercial customer pays ~ $10.00 per month
5. RPU collects approximately $10 million annually

# PUBLIC BENEFIT FUND ALLOWED SPENDING CATEGORIES

**Limited Use of the Funding**

1. Cost effective demand side management to promote energy efficiency and energy conservation
2. New investment in renewable energy resources and technologies
3. Research, development, and demonstration programs for the public interest to advance science or technology which is not adequately provided by competitive and regulated markets
4. Services provided for low-income electricity customers, including, but not limited to, energy efficiency services, education, weatherization, and rate discounts


# CLOSING THOUGHTS AND NEXT STEPS

Examples only

## Program Concepts RPU Should Explore

- Battery storage
- A/C efficiency
- Direct installs more broadly offered

## Big Project / Demonstration

- Demonstration house / education center
- Solar
- Other?

## Are there areas for better communication / outreach / education? Who should we talk to?

## Anything that you think is missing or could be done better

## Presentation of Outcomes to Board and Council

# MAIN THEMES FROM MEETINGS OF WG

## Questions and responses and topics raised during the first two meetings by the Working Group members

1. **Non-Energy Impacts (NEIs)** — Benefits of Energy Efficiency in comfort and safety
2. **How do customers use electricity** — Largest energy usage and behavioral changes
3. **Desire to focus on solar project** — Focus on solar and investment within the City
4. **Focus on customer benefit** — Keep benefits to customers the main focus

# CONCEPTS DISCUSSED AT MEETINGS #1 & #2

- Messaging should focus on comfort not just energy savings
- Low-income customer programs are important, overview
- EE programs may focus on where energy is used most & be stackable

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- Benefits need to focus on customers – ensuring all RPU customers benefit
- RPU should seek energy independence
- Refund to customers interest earned on Public Benefits Fund
- Focus on local renewable generation for the big project
  - Solar over Gage Canal
  - Solar rooftops and canopies at City facilities (including replacing solar that is no longer working)
  - Solar on warehouses/homes/parking/etc.
  - What does RPU pay for solar contracts?

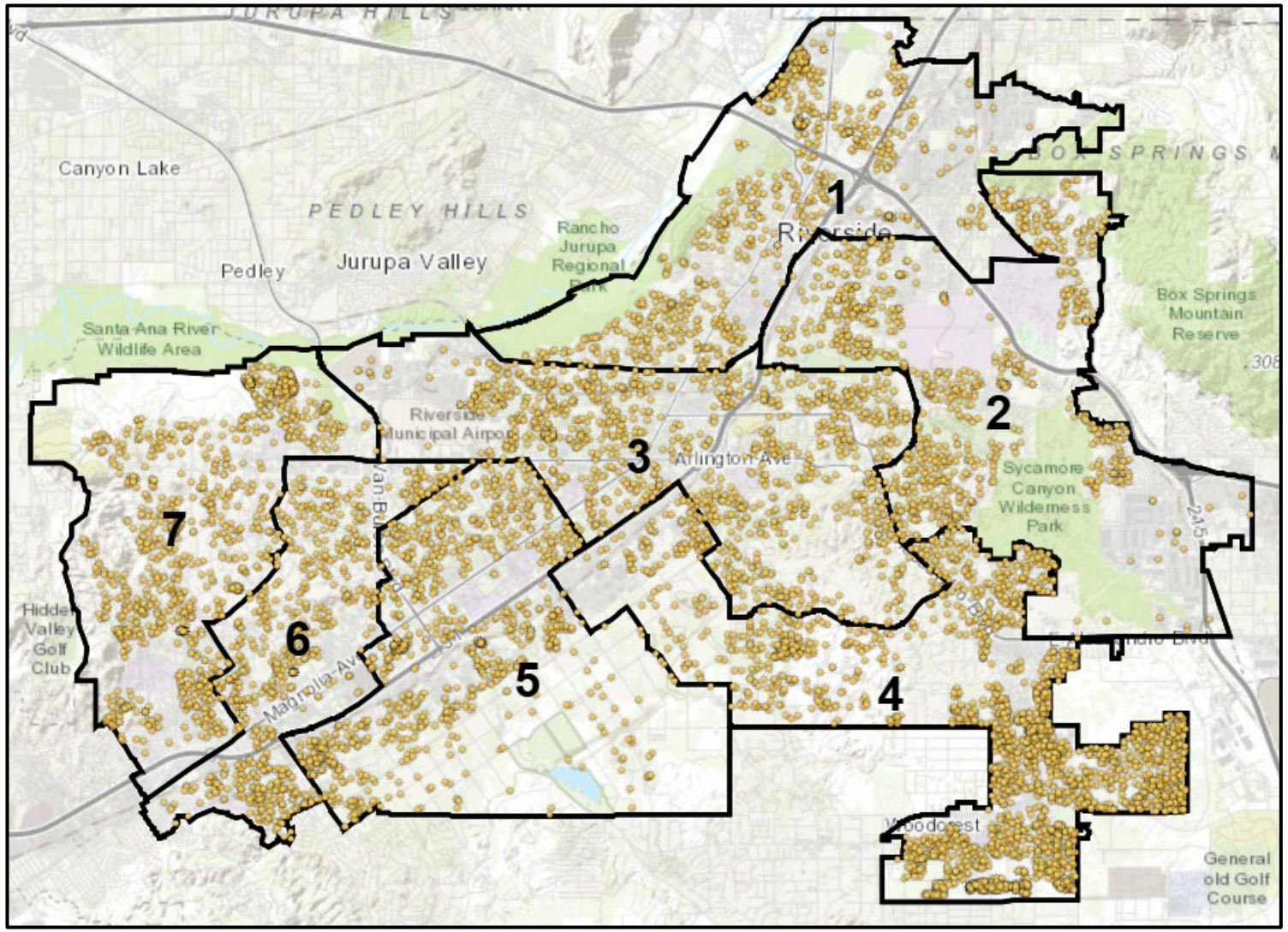
# RIVERSIDE HAS A LOT OF INSTALLED SOLAR

## 7,975 Solar Installations
## 80,620 kW Capacity

**Shining Cities 2022 Report**

- Riverside is a **Solar Superstar**
- 195 Watts/person (2021)
- 11th in the nation for most installed capacity per person

Shining Cities 2022



# SOLAR & RENEWABLES IN RPU'S PORTFOLIO

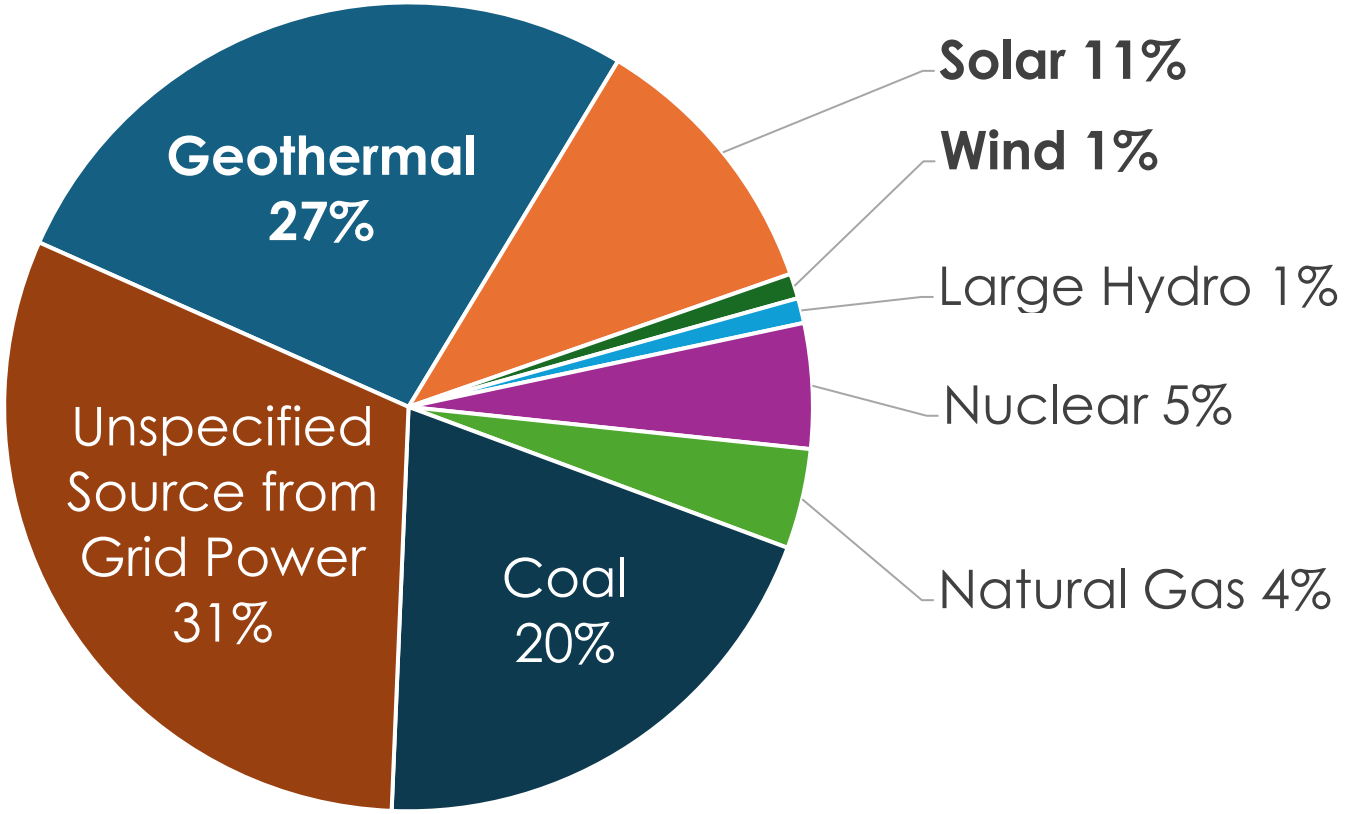
**45%** Zero GHG Emitting Sources

**39%** Renewable Sources

**11%** Solar Sources (not including self-generation)

On track for 60% - 80% zero GHG emitting resources by 2030

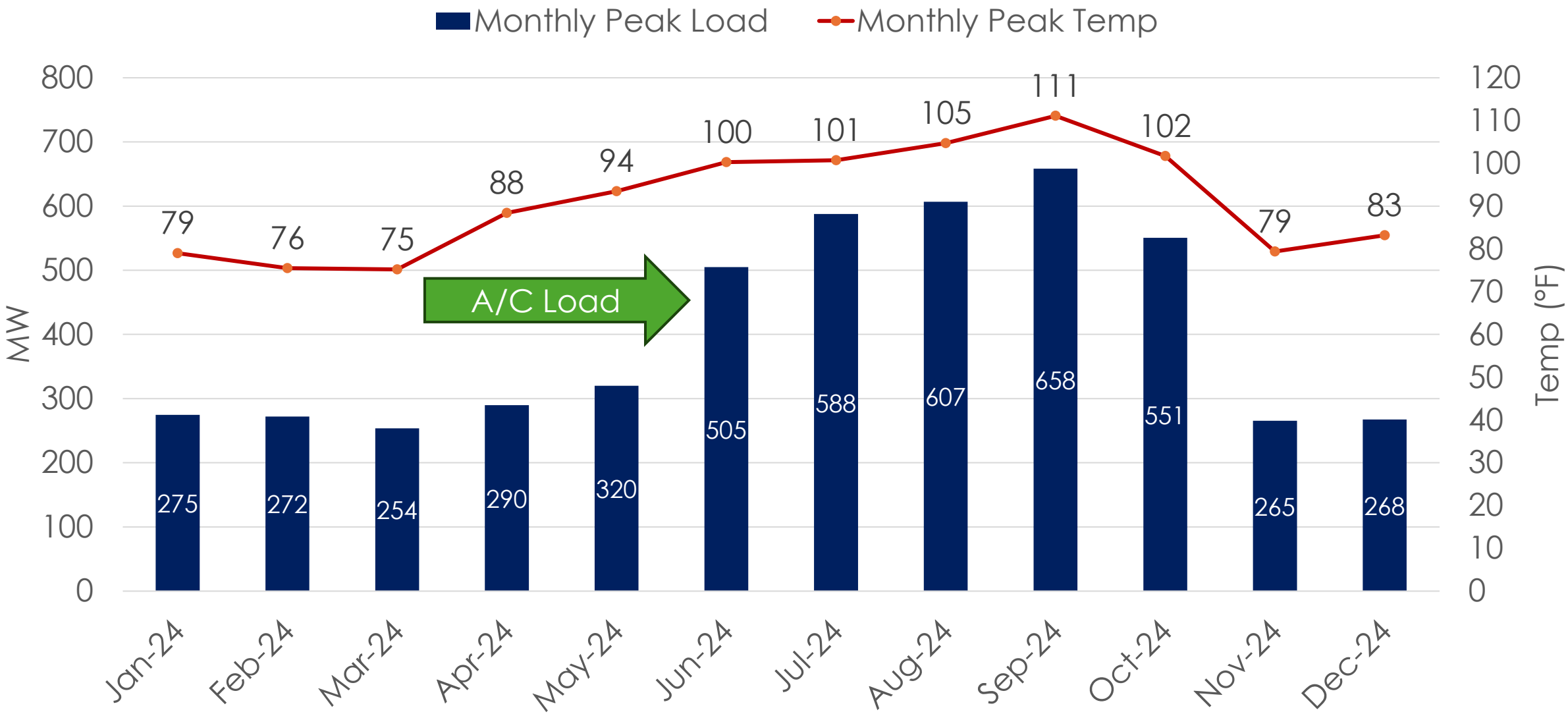
## RPU 2024 Power Content Label



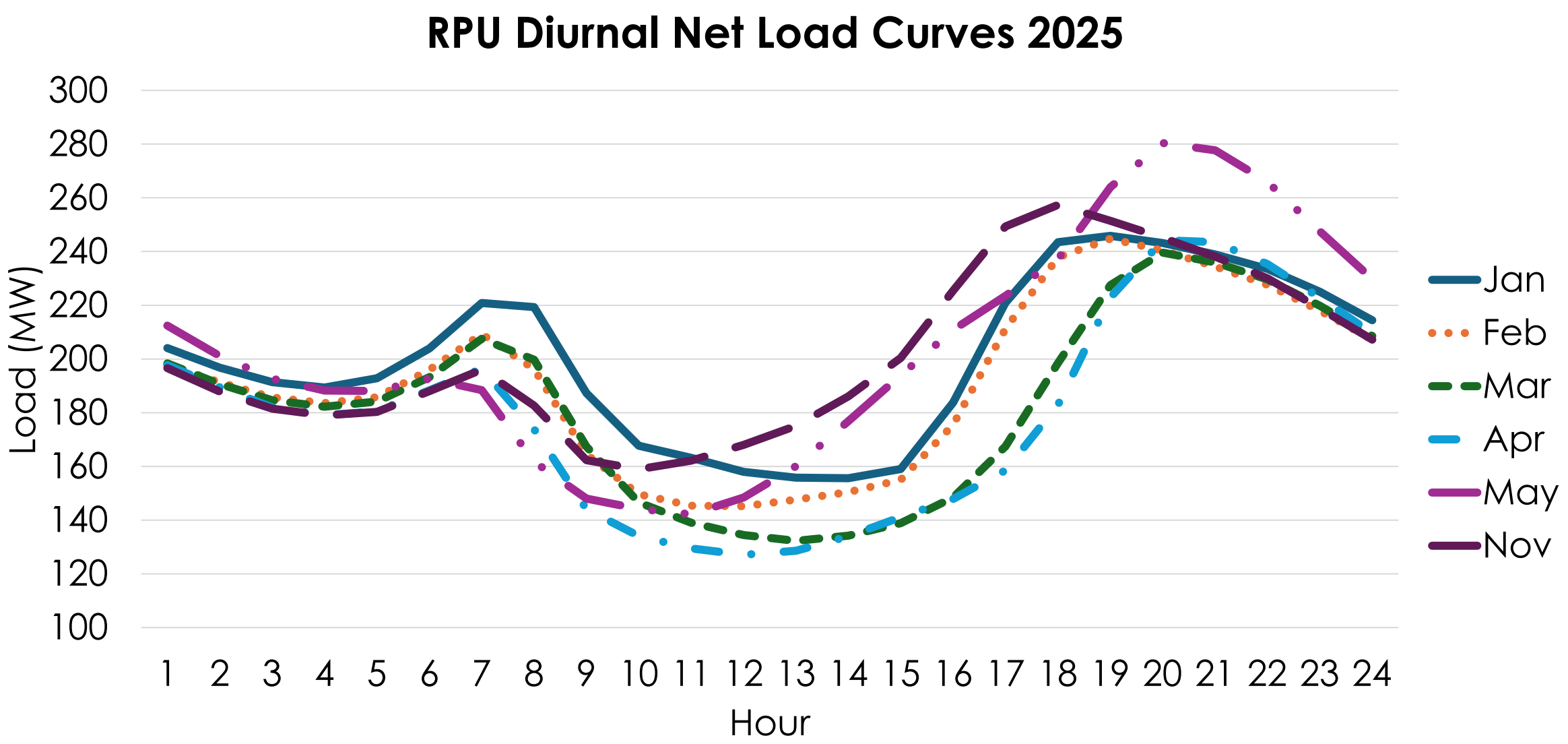
# RENEWABLE RESOURCES CONTRACTS

- RPU's Integrated Resource Plan (IRP) lists all existing generation projects/agreement that RPU has in its portfolio
- RPU forecasts contact prices in the IRP at $70 / MWh
  - All in costs including receipt of all renewable and environmental credits and resource adequacy value (when specified)
  - Older contracts were more expensive while new contracts may be lower price
- Renewable intermittent contracts range from $59.30 / MWh for the term of the contract and include all resource adequacy value for recent wind resources (2019) to $88.25 / MWh with a 1.5% escalator and no resource adequacy for the local, Tequesquite Solar facility in Riverside (2014 agreement)
  - Prices for all of RPU's contracts are disclosed in the 2023 IRP

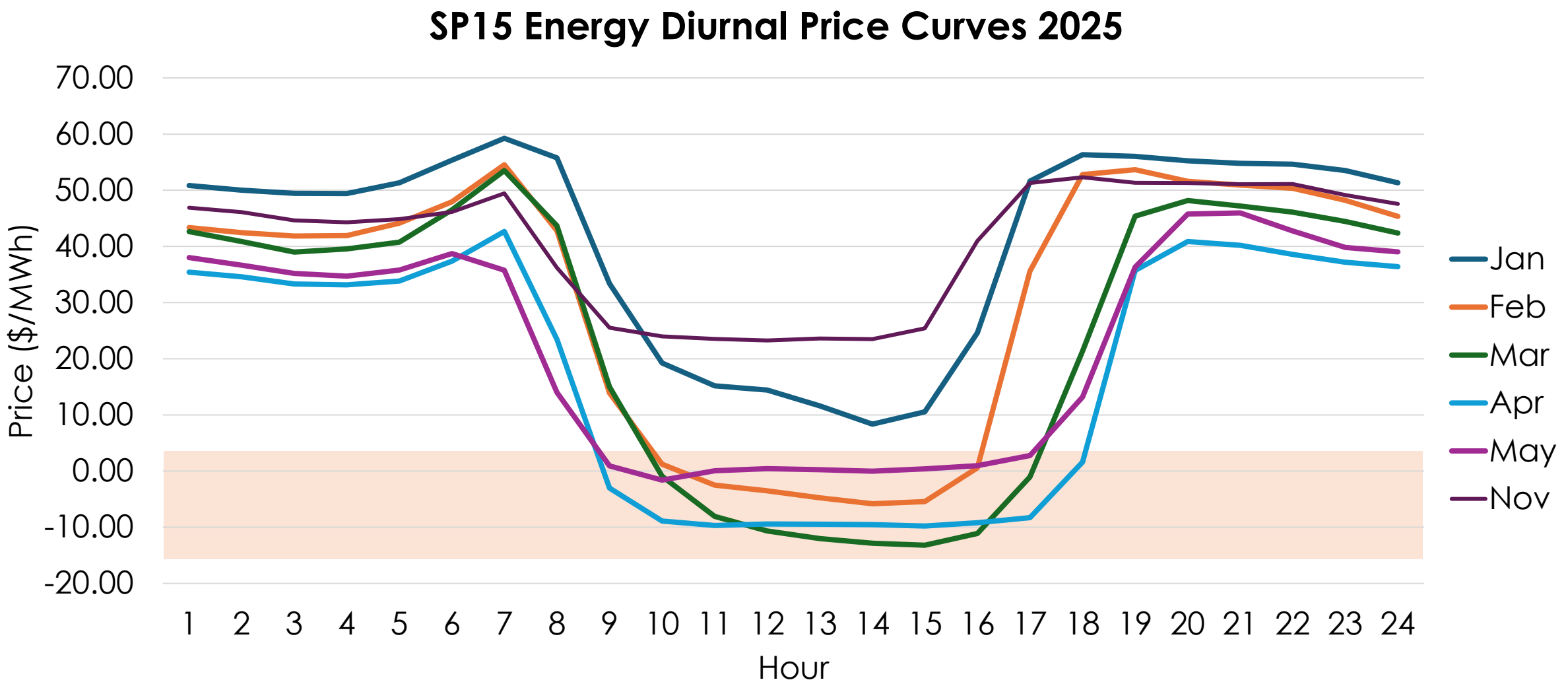
# RPU PEAK DEMAND & TEMPERATURE TRENDS



# RPU LOAD AFTER NETTING SOLAR ENERGY



# OPPORTUNITY TO USE BATTERIES TO LOWER COSTS



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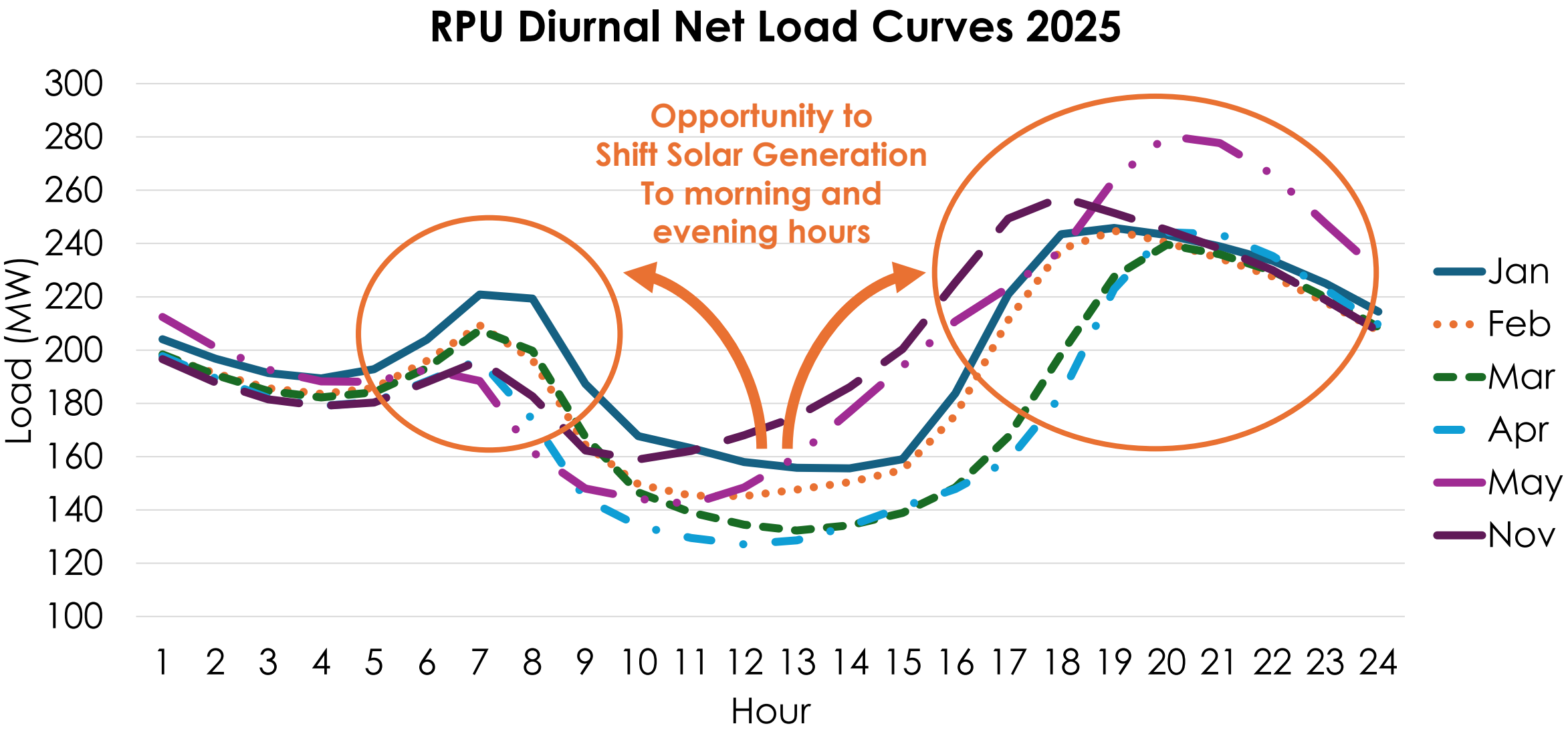
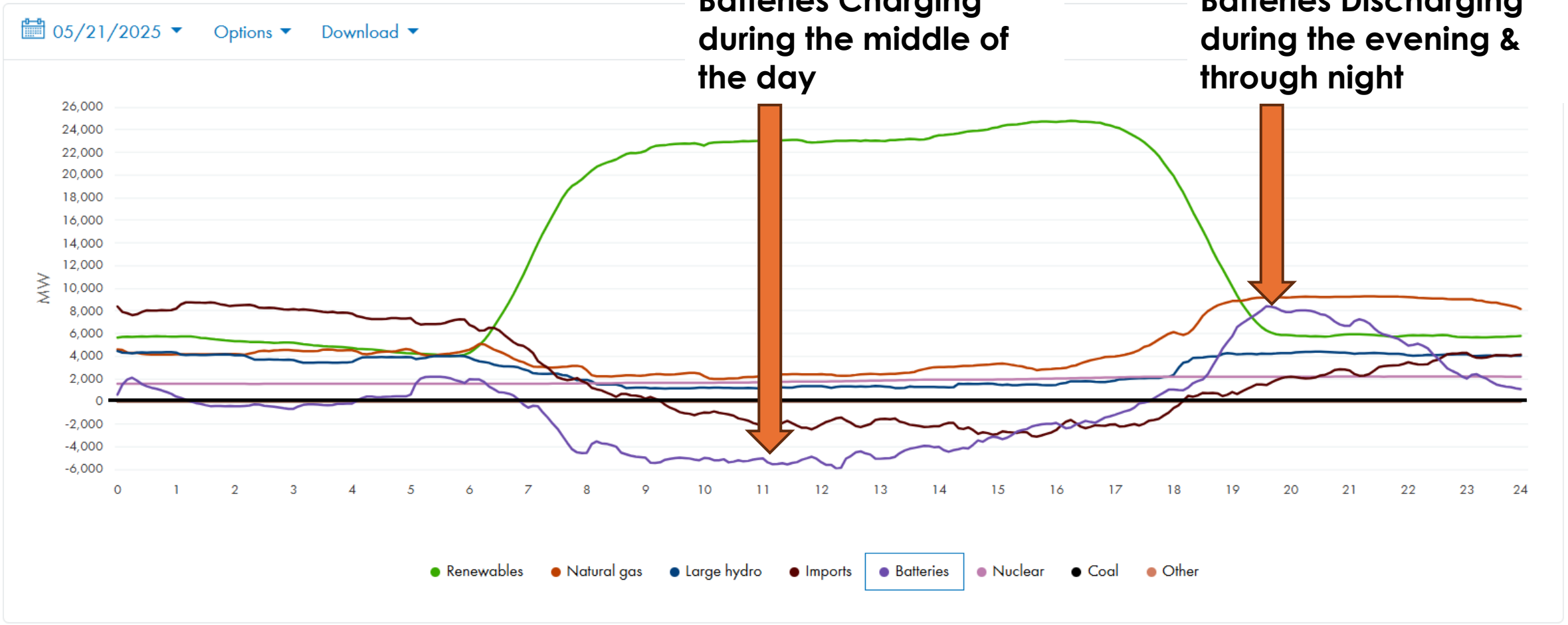


# ENERGY STORAGE BENEFITS

## Supply trend

Power separated by resource, on a 5-minute average.



# COSTS OF SOLAR BY TYPE (2025)

| | Residential PV (flat-roof mount) | Commercial PV (privately owned, flat-roof mount) | Utility-Scale (ground mounted, one-axis tracking) |
|---|---|---|---|
| LCOE ($/MWh) | $89-$97 | $58-$65 | $25-$29 |
| CAPEX ($/kW) | $2,436-$2,636 | $1,311-$1,750 | $1,456-$1,540 |
| Fixed O&M ($/kW-yr) | $28-$30 | $18-$19 | $21-$26 |
| Capacity Factor | 0.17-0.172 | 0.17-0.179 | 0.26 – 0.27 |
| | Pricing declines through 2031 with increases due to loss of tax credits in 2035, then pricing declines each year following | Pricing declines at varying rates depending on scenario and impacts of tax credits | Prices continue to decline to a point where some scenarios have negative energy costs post-2040 |

Source: https://atb.nrel.gov/electricity/2024b/utility-scale_pv

# COSTS OF BATTERIES BY TYPE (2025)

| | Residential (Lithium Ion, 5kW, 12.5 kWh, 2.5 hour) | Commercial (Lithium Ion, 4 hour) | Utility-Scale (Lithium Ion, 4 hour) |
|---|---|---|---|
| CAPEX ($/kW) | $2,580-$4,122 | $1,542-$2,463 | $1,391-$2,160 |
| Fixed O&M ($/kW-yr) | $62-$99 | $37-$59 | $31-$50 |
| Total CAPEX | 5kW - $12,900 to $20,610 + permitting and other costs | | 24 MW $33.4 M to $51.8 M + additional admin costs |

Source: https://atb.nrel.gov/electricity/2024b

# ADDITIONAL CONSIDERATIONS FOR SOLAR

1. Residential and Commercial solar do not count towards meeting RPS targets
2. Solar development in the City does not provide resource adequacy or reduce other electric market costs – these are additional to all construction costs
3. Land area, purchase or rent costs in urban areas is very high and land area must accommodate vehicles and equipment for maintenance (5-10 acres/MW for utility scale)
4. Liability and costs if the Utility owns the solar PV system
5. Ground mounted canopies (parking or over canals) require costly footings and design to accommodate wind shear, geotechnical, etc.
6. Urban solar PV, such as at Tequesquite Solar Facility, require 24/7, armed security to discourage theft and vandalism
7. NIMBY's – not everyone wants to look at solar
8. Rooftop retrofits of existing buildings may require costly structural retrofits and must avoid existing roof-mounted equipment such as air conditioning, venting, and roof-lights

# DISCUSSION OF PROPOSAL


**$5 million**
**Energy Storage Rebate Program**: Technology agnostic – will be presented to the Board and Council for consideration in early 2026

**$5 million**
**Resiliency Centers**: Solar, batteries and deep energy efficiency at community centers that serve as community resiliency centers

**$5 million**
**Resiliency at Utility Operation Center and City Emergency Operation Center**: Solar and Batteries with microgrid for operation during a power outage (up to 4 hours)

**$19 million**
**Springs Battery Energy Storage Project**: Replace Springs Power Plant generation