City of Glendale Water & Power

Your Trusted Community Utility

Energy+Environmental Economics

Community Meeting

Plan to Increase Solar Adoption and Develop Additional Distributed Energy Resources

May 30th, 2024

Welcome & Introduction

Meeting Objectives

- Provide information and progress about the plan to the community
- Gather feedback
- Understand areas of concern

Meeting Agenda

Agenda	Minutes
Welcome and Introduction	5
Plan Scope & Objectives	10
Community Inputs	5
Plan Analysis Insights	60
Q&A	30
Closing Remarks and Future Engagement	5

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Important Notes

- Plan in mid-design phase
- Sharing plan progress
- Seeking your feedback
- Results are subject to further refinement

Plan Scope & Objectives

Types of DERs *(Distributed Energy Resources)*

- **Energy Efficiency**
- **Electric Vehicles**
- **Customer-Sited Solar**
- **Flexible Loads**
- **Energy Storage**
- **Demand Response**

Today's Coverage and Exclusions

What we will cover today

1. DERs, including solar and storage
2. Preliminary quantitative analysis results

What we will <u>not</u> cover today

1. Other DERs (EV, EE, DR, etc.)
2. Improved avoided costs
3. Deep dive of program design proposals

Plan Scope

City Council Resolution of August, 2022:

10% of GWP customer solar and energy storage adoption by 2027

Dispatchable and peak load reduction capacity of 100 MW

Plan Objectives

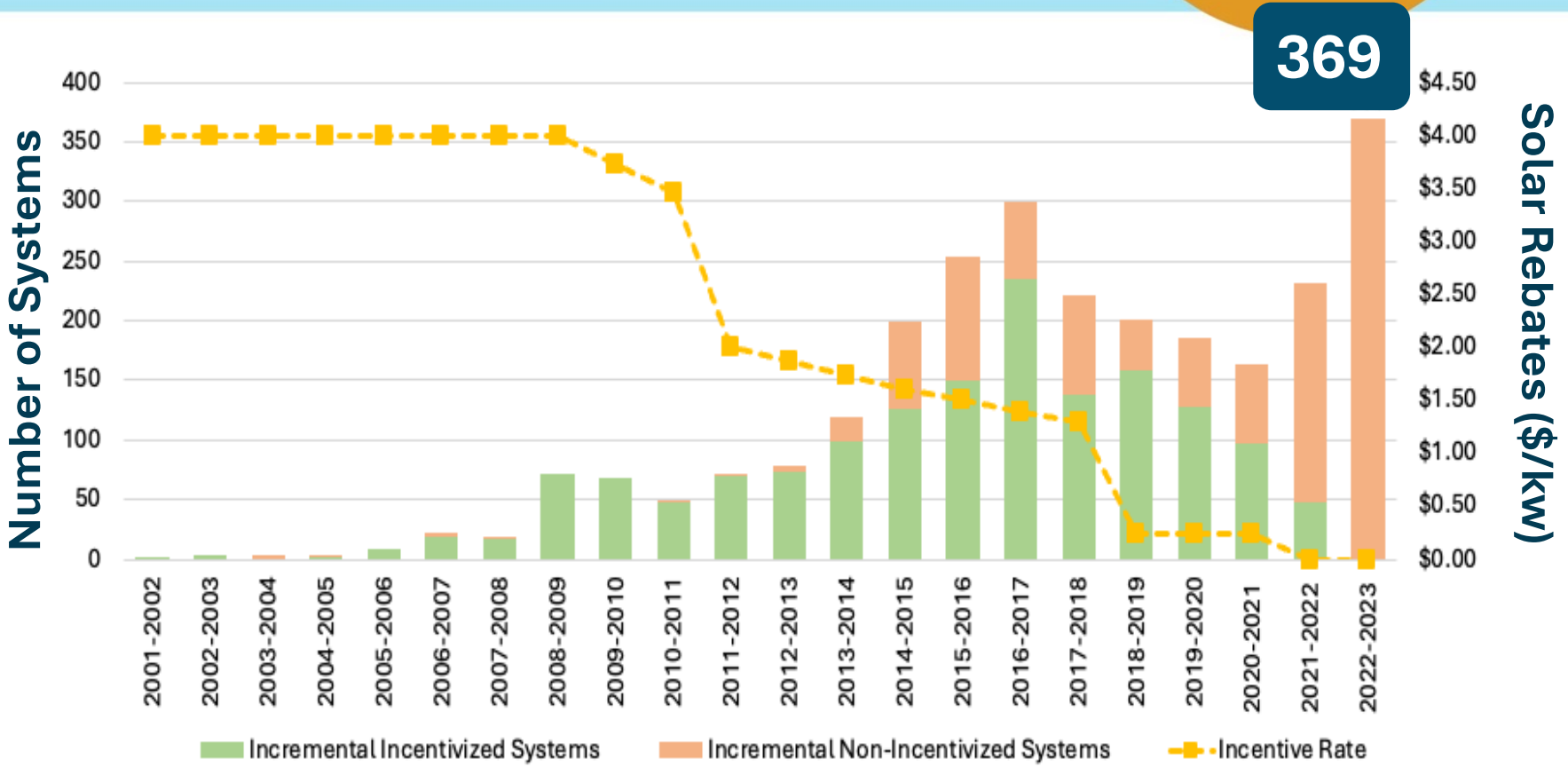
Encourage customer adoption of solar and storage

Manage cost-shifts to ensure affordability

Deliver grid and community benefits at a reasonable cost

City of Glendale Water & Power
Your Trusted Community Utility

- 2,921 solar systems installed since 2001 (28 MW)
- 3.25% of customers have solar



Plan Timeline

We're Here!

May 2024

This is the 5th community meeting

Aug – Sept 2024

E3 delivers plan analysis and recommendations to GWP for review

Shortly Thereafter

GWP and E3 will present the final report to Commission and City Council

Community Inputs

Collecting Community Inputs

- **Comment Cards**
- **Emails**
- **In-Person Notes**

+ Upfront rebates for mitigating initial costs
+ Net metering for solar and storage
+ Expedited and streamlined approval process
+ More guidance on federal and state resources
+ More guidance and support in solar and DER adoption process

Collecting Community Inputs

- **40,000** customers surveyed
- **100+** unique responses received

- **Survey respondent priorities:**
  - Affordability and reliability
  - Community solar projects to assist renters and low-income households
  - Rebates, net metering, and bill transparency
  - More education and outreach
  - Regulatory and approval process clarity

Addressing Community Inputs

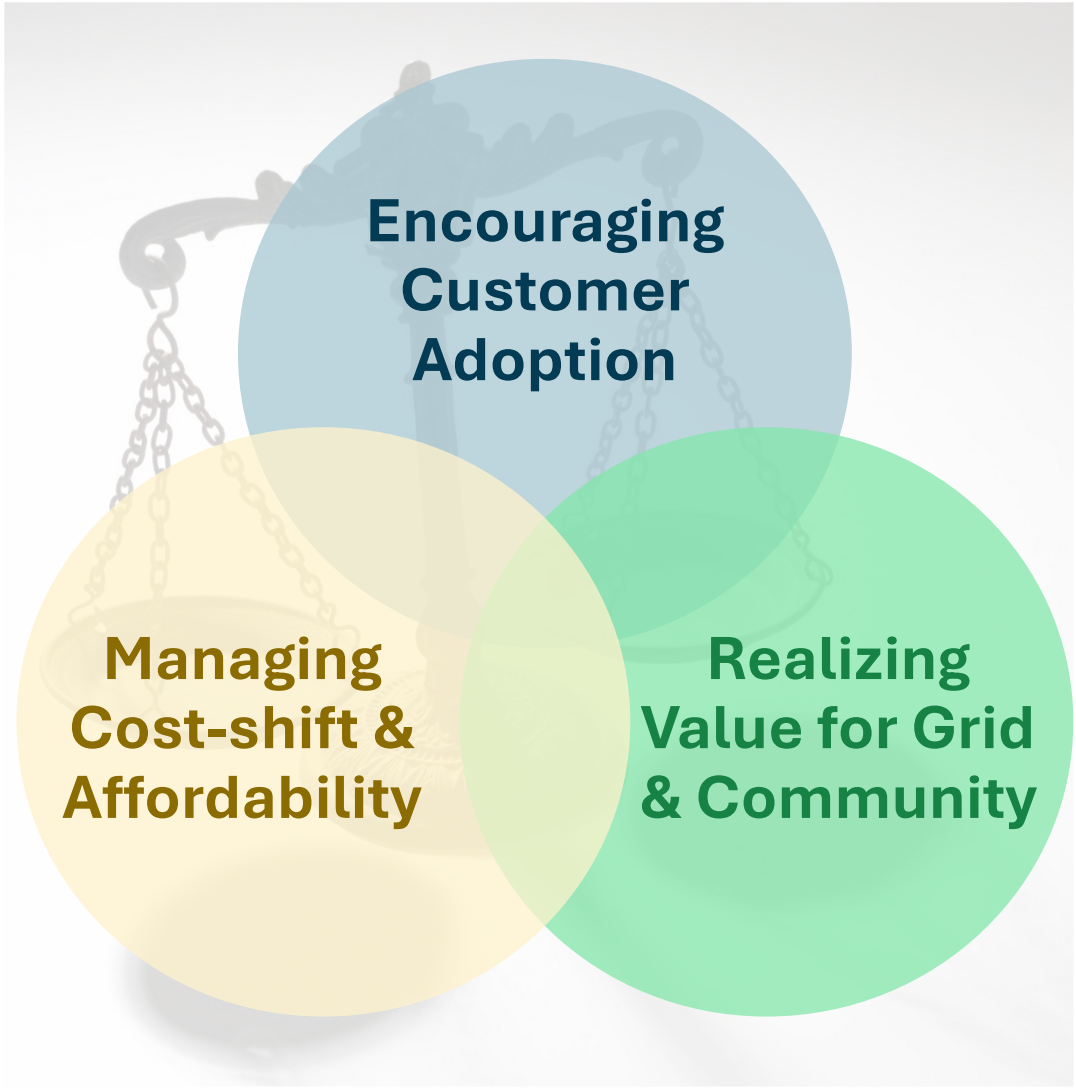
- Solar & Battery Storage Contractors on GWP website
- Number of installations completed

www.glendaleca.gov/SolarContractors

Analysis Insights

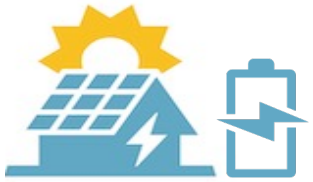
Carefully Balancing Multiple Objectives

Incentives for encouraging solar adoption



Manage cost-shift & ensure social equity

Different Types of Solar and Storage Installations



Rooftop

Customer Owned

- Residential
- Commercial
- Industrial

Community

Community

- Municipal
- Parking lots
- Landfill

Utility-Scale

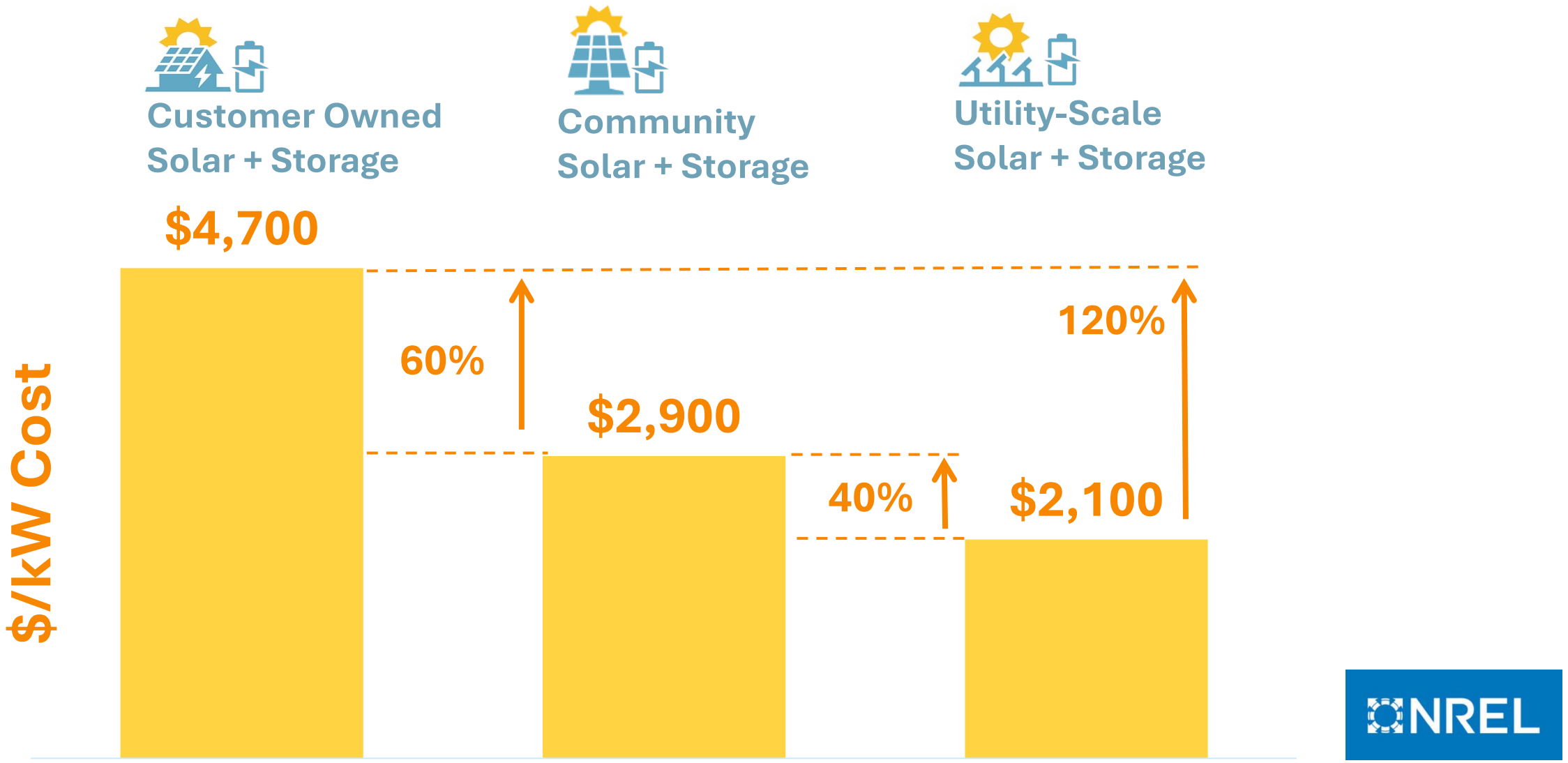
Utility Scale

- High Desert
- Agricultural
- Scrubland

Achieving 10% Customer Adoption

Lower-cost Alternatives with Similar Environmental Benefits

Customer Owned Solar And Storage Is More Expensive

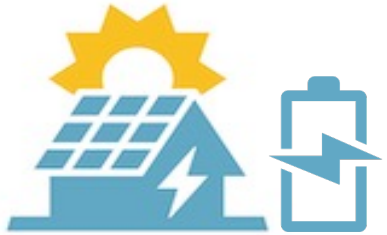


Additional Benefits of Community and Customer Owned over Utility Scale Solar and Storage

Community

+ Community Solar

- Transmission & Distribution (T&D) Investment Reduction
- T&D Line Loss Reduction
- Reduced Land Use Impacts
- Local Reliability, Resilience
- Local Jobs



Customer Owned

+ Rooftop Solar

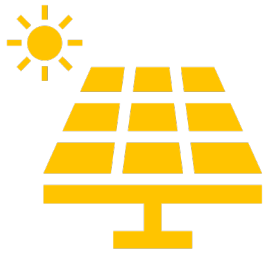
- All Benefits of Community Solar

Plus

- Customer Reliability
- Energy Use Awareness
- Increased Home Value

NEM Compensation for Rooftop Solar Increases Rates for All Customers

Solar Benefits



Not Utility Costs

Avoided by Customer Solar

Avoided by Utility Scale Solar

Environmental & Societal

Some Transmission & Distribution

Energy, GHG, Some Capacity

NEM Bill Savings

Utility Costs Not Avoided by Solar

Utility Costs Avoided by Solar

NEM Cost Shift

Rate Increase

GWP has been exploring city-owned solar!

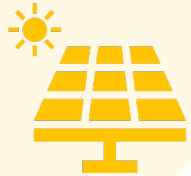
- **GWP has identified 10-15 large city-owned sites for developing solar projects**
  - Large rooftops, parking lots, landfill, etc.
  - Collectively 10 MW of solar capacity
  - 6 projects approved for construction (5 MW)

- **Cooperation between GWP and the community is essential**

Can we reach 10% customer solar adoption by 2027?

- **Theoretically feasible only with significant utility investment**
- **Net impact of $60-$140 million in 2024-2030 to Glendale ratepayers**
  - + Bill Savings
  - + Utility Incentives
  - - Benefits
- **Electric rates increased by 8%-16% by 2030**

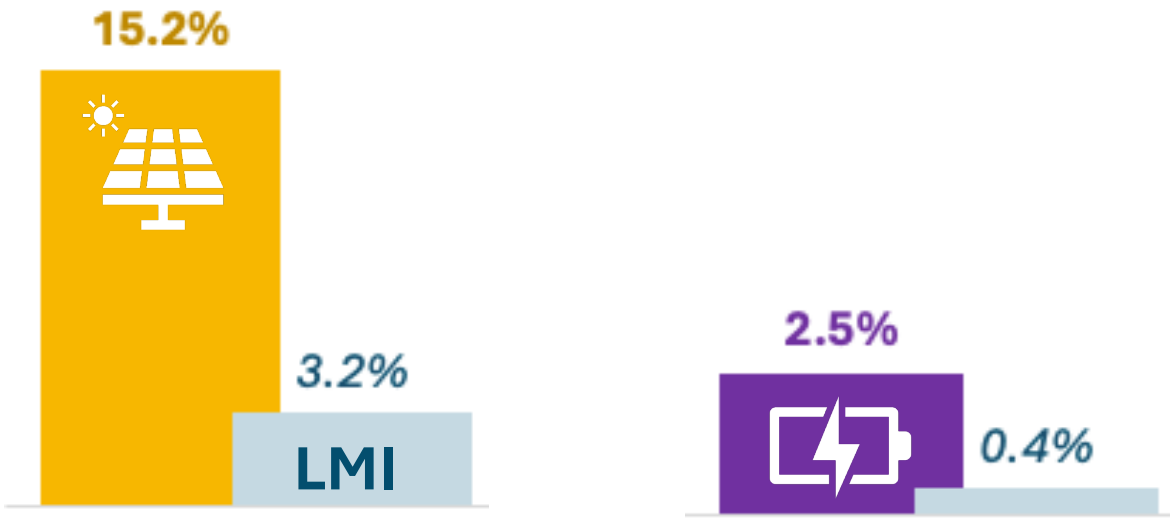
- **Prerequisites needed by early 2025:**
  1. Robust community outreach & support
  2. Improved permitting processes
  3. Available solutions to address tenant-owner split incentives



- **2027 goal is technically feasible, but expensive**
- **2030 would be more realistic, and could potentially reduce program costs**

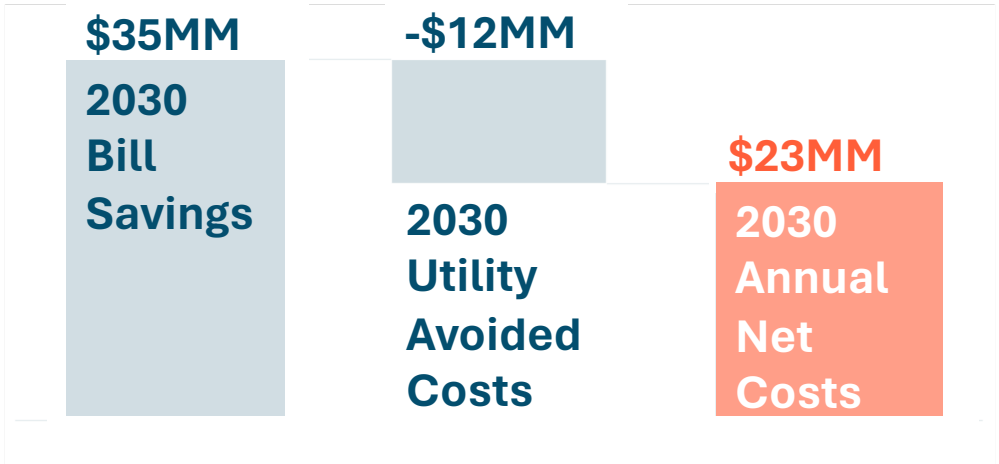
Adoption and Cost Implications of Continuing Current NEM

2030 Adoption



2030 Cost

- **$80 Million** net ratepayer costs in 2024-2030
- **$23 Million** net ratepayer costs in 2030
- **~ 9%** rate increase in 2030
- **~ $6-7/mo** bill impact on LMI customer in 2030



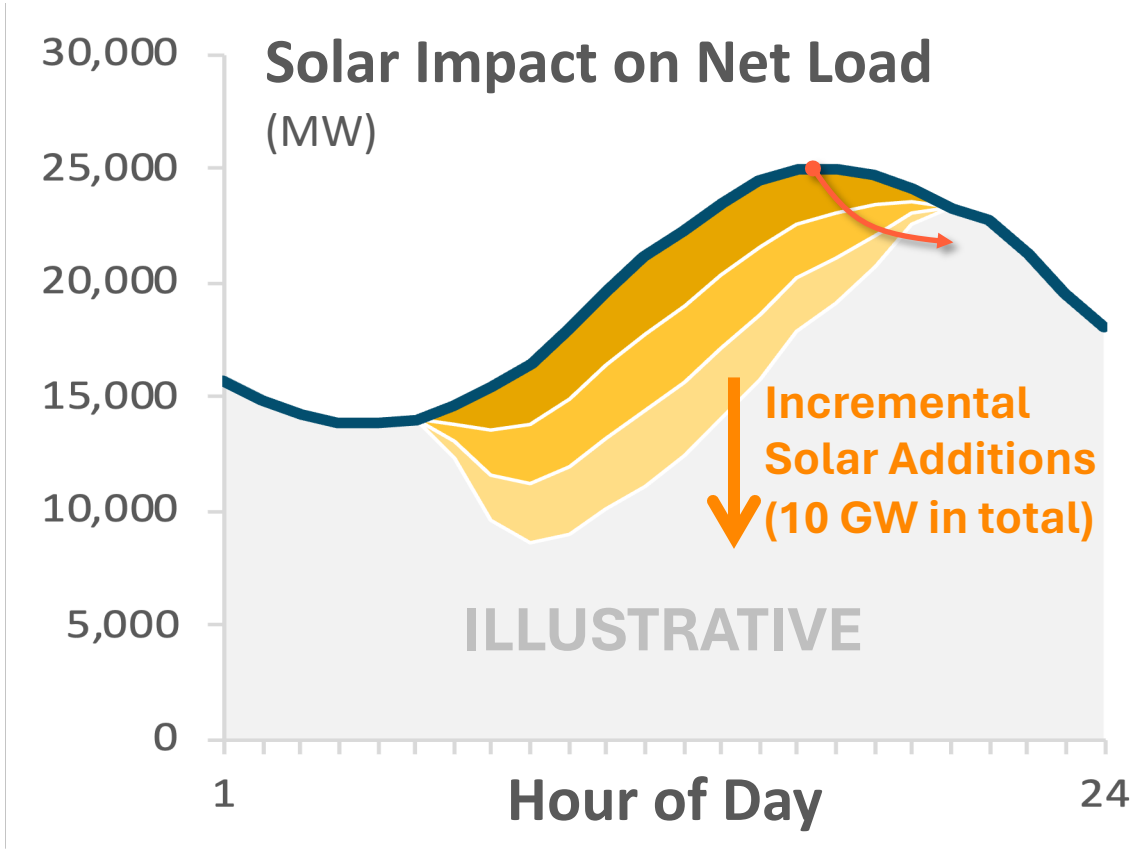
- **Continuing the current NEM program will result in an annual net cost to ratepayers of $23 million in 2030 and increase rates by 9%**

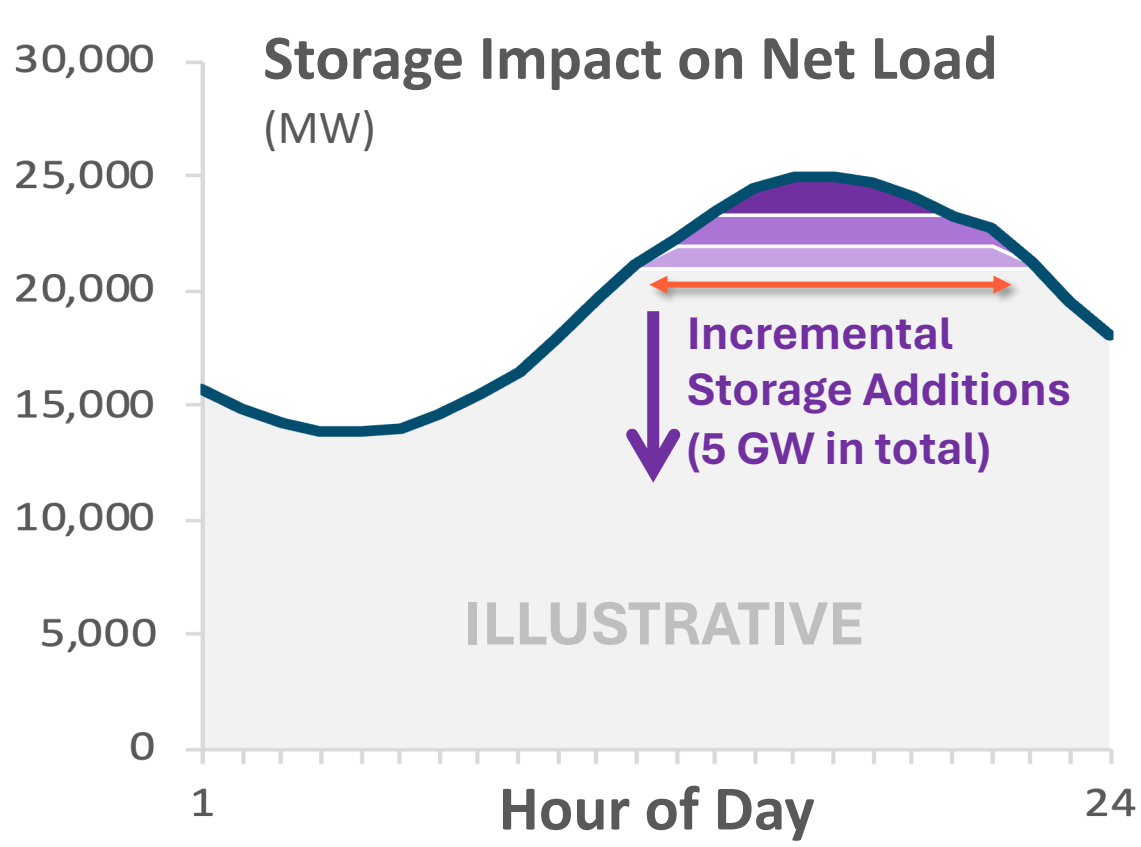
Can we reach 10% customer storage adoption by 2027?

- Most customer owned storage is paired with solar
- Only 7% of existing customer solar systems in Glendale have attached with battery storage
- Not theoretically feasible, even by 2030, without significant utility investment through full direct install programs

- It would be more realistic to target 10% total solar adoption and 2% solar + storage adoption by 2030

Peak Load Reductions Decline with Increasing Adoption





- Net peak load shifts to after sunset

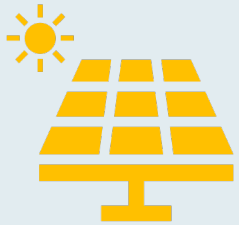
- Effective capacity per MW of storage declines

Can we reach 100 MW dispatchable and peak load reduction capacity by 2027?

- **Plan requires further study in next phase**
- **Effective Capacity:** requires 200-300 MW customer solar, 40-60 MW customer storage, and other DERs
- **Nameplate Capacity:** theoretically feasible with significant utility investment: suggested target year between 2030 and 2035

- **100 MW effective capacity would require at least 300 MW of DER additions by 2027**

Customer Solar and Storage Economics



+ Economic case for customer solar is already strong

- Solar payback in 6-9 years
- Faster payback with 30% federal tax credits

+ Economics for customer storage is poor

- Provides reliability, but pricier than fossil fuel alternatives
- Minor bill savings with full NEM compensation and flat (non-TOU) retail rates

Initial Costs

Available Incentives

Net Metering Bill Savings

4 program scenarios to show trade-offs in adoption, equity and costs

Scenario 1: Continue NEM

Scenario 2: Targeted Low and Moderate Income (LMI) & Multi-family (MF) Adoption

Scenario 3: Balanced

Scenario 4: High Adoption

Program & Incentive Design

- Bill Savings
- Additional Incentives

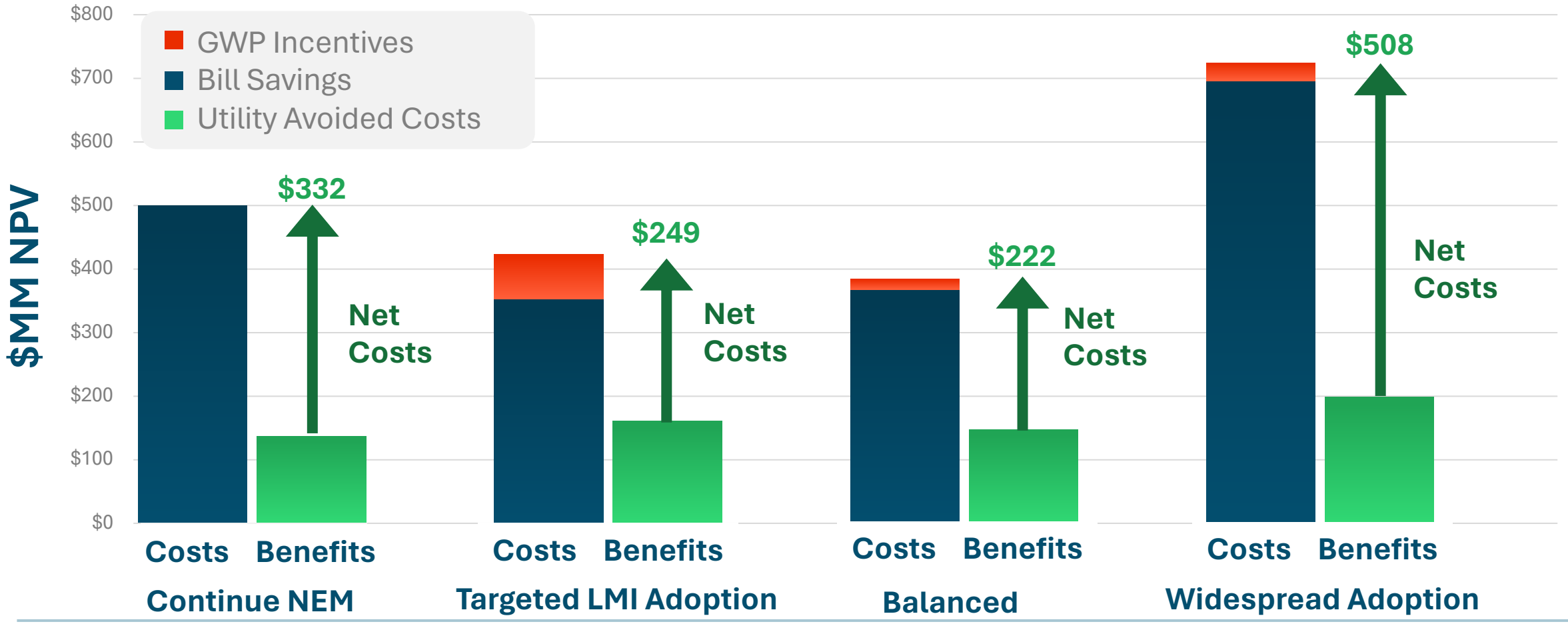
Address Additional Barriers

- Resolve Split Incentives
- Provide More Utility Support

All Scenarios have net ratepayer costs that increase GWP rates

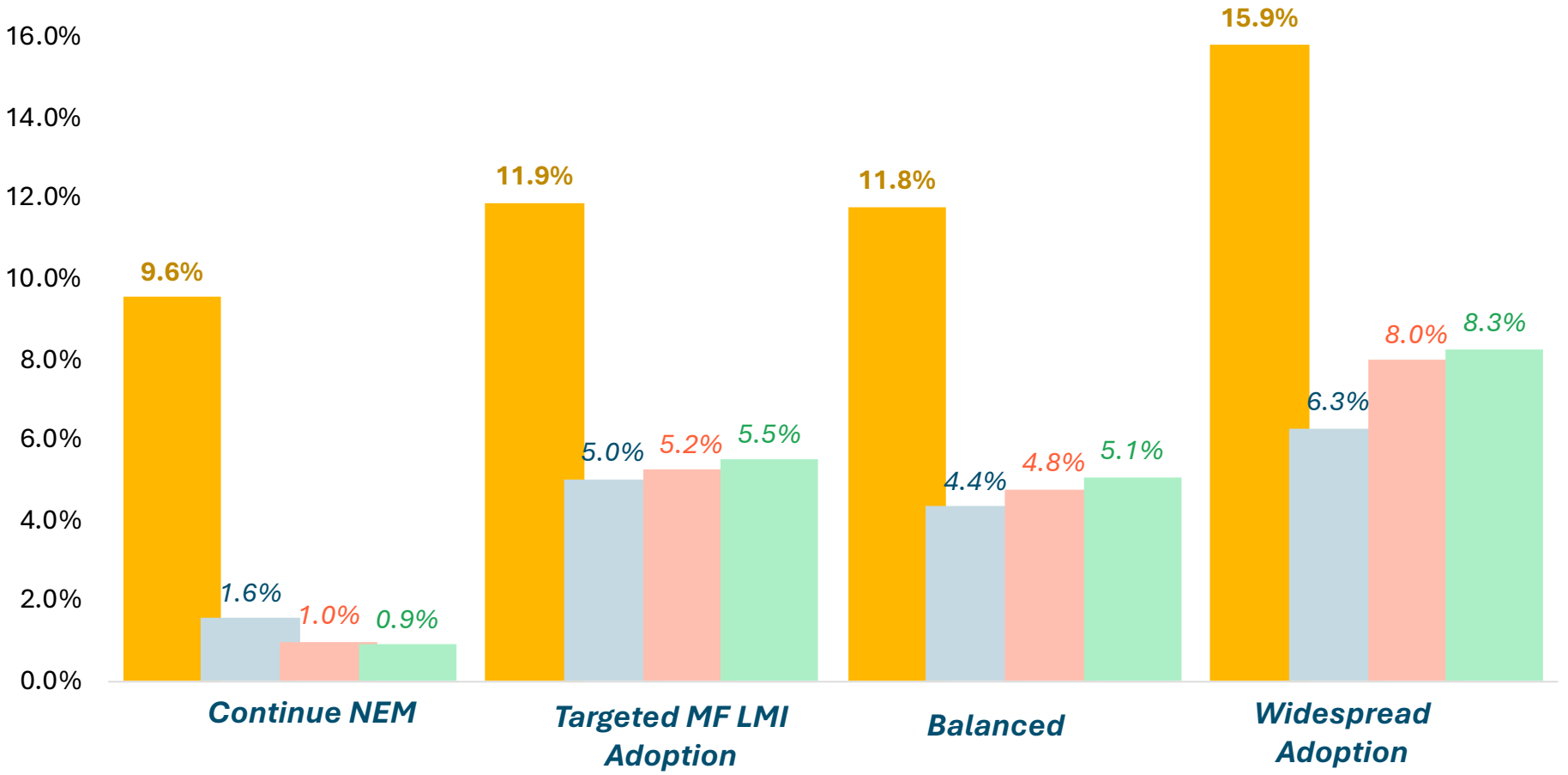
Total Glendale Ratepayer Costs and Benefits

For Solar and Solar+Storage Systems Adopted in 2024-2030



2027 Adoption Rates

Solar Adoption (% of Total GWP Electric Customers)



Total Adoption

LMI Adoption

MF Adoption

Renter Adoption

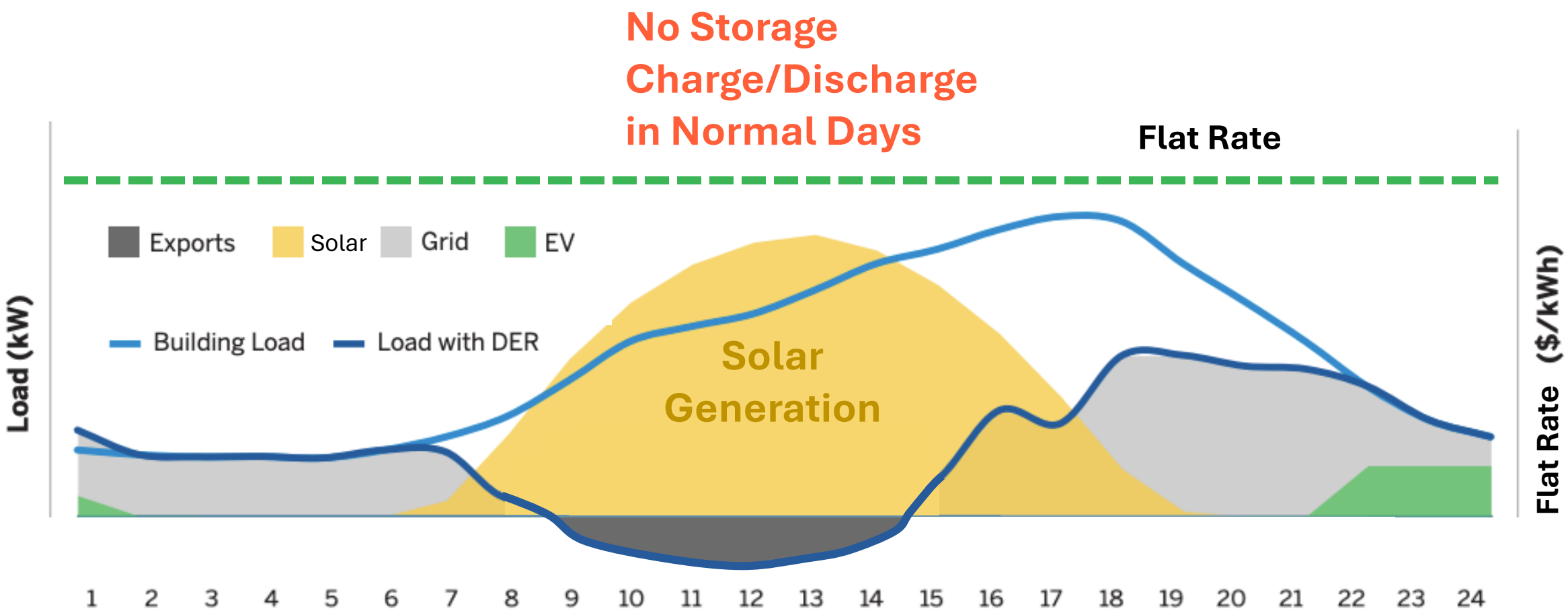
LMI: Low and Moderate Income

MF: Multifamily

Maximizing Community Benefits

ILLUSTRATIVE

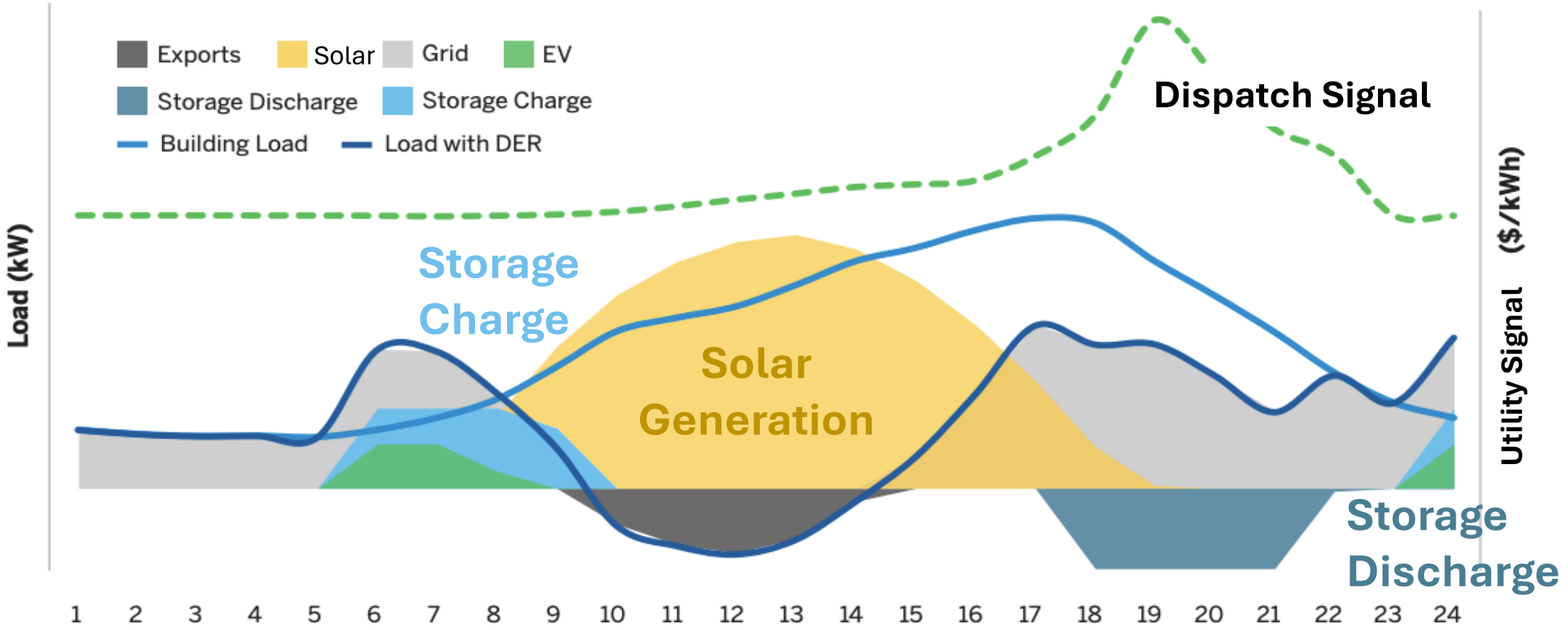
+Customer storage for back-up power



Maximizing Community Benefits

ILLUSTRATIVE

+ Provide dispatch signals to customer storage



Key Takeaways

- 10% adoption by 2027 is theoretically achievable but expensive for solar (pg. 25)
- 10% adoption is not achievable for storage (pg. 27)
- Delaying target to 2030 could reduce costs for GWP customers (pg. 25)
- Higher adoption for rooftop solar increases rates and energy burden on LMI customers (pg. 19, 23, 26, 32, 33)
- Utility scale and community solar and storage offers similar benefits with more equitable access at lower cost (pg. 20, 21, 22)
- Encouraging customers to dispatch storage for grid needs increases benefits (pg. 34, 35)

Next Steps

+ Current Status

- Mid-plan design phase
- Sharing progress and analysis
- Seeking input and feedback

+ Next Steps

- Enhance avoided costs
- Analyze other DER technologies
- Evaluate effective program options

Q&A (30 minutes)

Closing Remarks and Future Engagement

@ **Thank you for attending! Learn more about the plan**
www.GlendaleCA.gov/Solar-DER-Plan

? **Share your thoughts!**

Email GWP at solar-der@glendaleca.gov