

# IRP COMMUNITY



WATER AND  
POWER

## MEETING #1:

# Resource Planning 101

April 20, 2023

**Presented by:**

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Manager

Power Supply Division, Burbank Water  
and Power



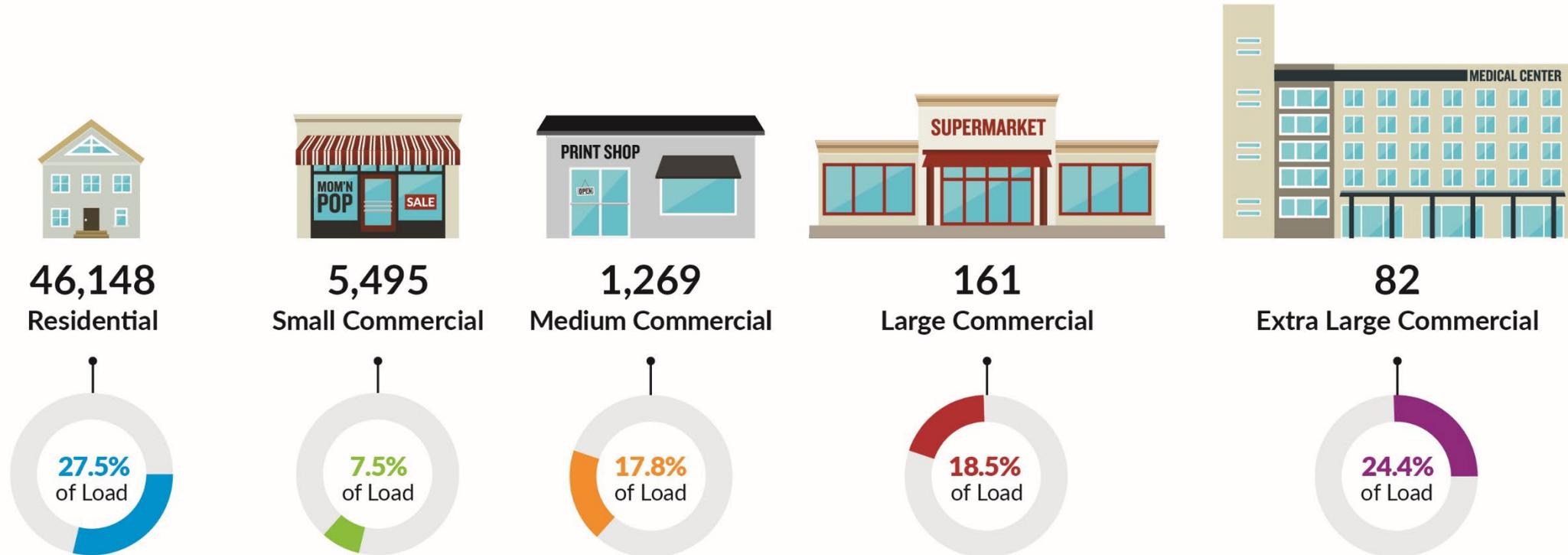
# BWP Statistics

Details	Data
Estimated Burbank Population	102,511
BWP Customers (# of Meters)	53,155
All Time Peak Demand (MW)	322
Local BWP Generation (MW)	140
Retail Sales (MWh)	986,855
Residential Power Rates (per kWh)	\$0.1781
Balancing Authority	LADWP
State Regulatory Agencies	California Energy Commission & California Air Resources Board



# A Few Statistics on BWP

## BWP's Electric Load





# Resource Planning

- Balancing Act between Supply and Demand, constrained by...
  - RPS Obligations (Mandatory)
  - Emissions Obligations (Mandatory)
  - Transmission Limitations (Physical)
  - Reliability (Customer Expectations)
  - Cost (Customer Expectations)



# Resources

Resource	Type	Maximum Capacity (MW)	Note
IPP	Coal	89	
MPP	Combined Cycle	95	Internal Generation
Lake	Natural Gas	45	Internal Generation
Hoover	Large Hydro (zero carbon)	20	
Palo Verde	Nuclear (zero carbon)	9.5	
Renewables	Mix	Next Slide	



# Renewable Resources

Resource	Location	Technology	Annual Energy (MWh)
Copper Mountain Solar 3	NV	Fixed Tilt-Solar PV	91,000
Pebble Springs Wind	OR	Wind	29,000
Milford Wind	UT	Wind	26,500
Burbank Micro-Hydro	Burbank, CA	Conduit Hydro	700

- LT resources = 30% RPS, ST resources make up the difference



# Renewable Resources

Resource	Location	Technology	Annual Energy (MWh)
Chiquita Canyon Landfill	Castaic, CA	Landfill Gas to Energy	10,500
Don A. Campbell	NV	Geothermal	19,000
Desert Harvest	Riverside County, CA	Single Axis-Solar PV	43,000
Renewable Exchange	Various	Various	56,000
Powerex 10 yr PCC1	British Columbia	Wind	20,000
<b>Total MWh</b>			<b>295,700</b>

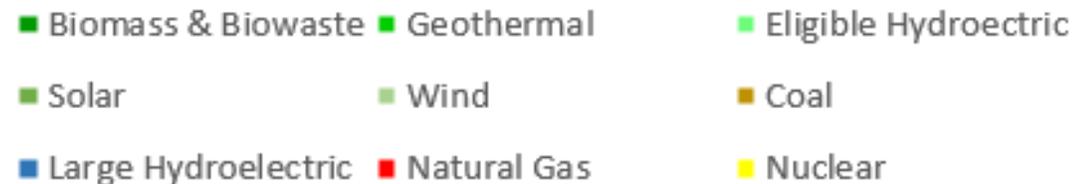
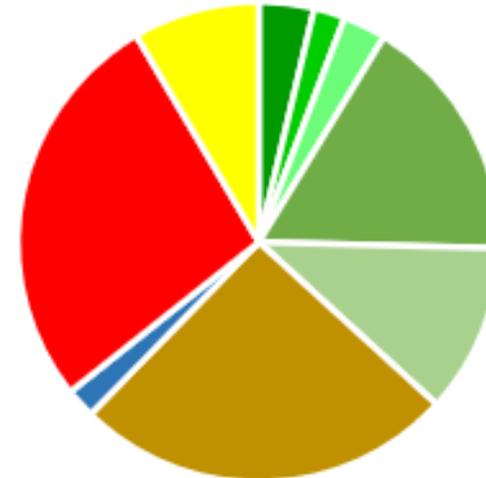
- LT resources = 30% RPS, ST resources make up the difference



# Estimated Power Procurement

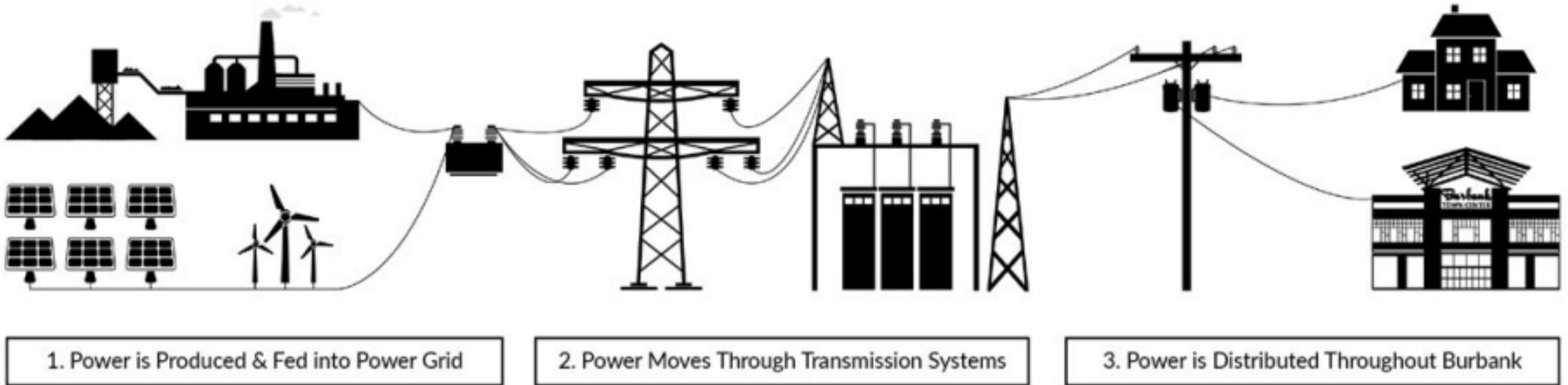
- 36.8% renewables in 2021
- 38.5% renewables in 2022
- 41.25% renewables projected in 2023

**BWP's 2021 Energy Resources**



# How Power Flows-LA BA

## How Power Gets to Burbank Homes and Businesses



# Balancing Authorities in CA



# PPA Cost vs. True Cost

- Contract Price (PPA) –  
Typically Take or Pay
- Delivered Price (True Cost)  
Transmission  
Time of Delivery  
Losses  
Renewable Integration  
Reliability

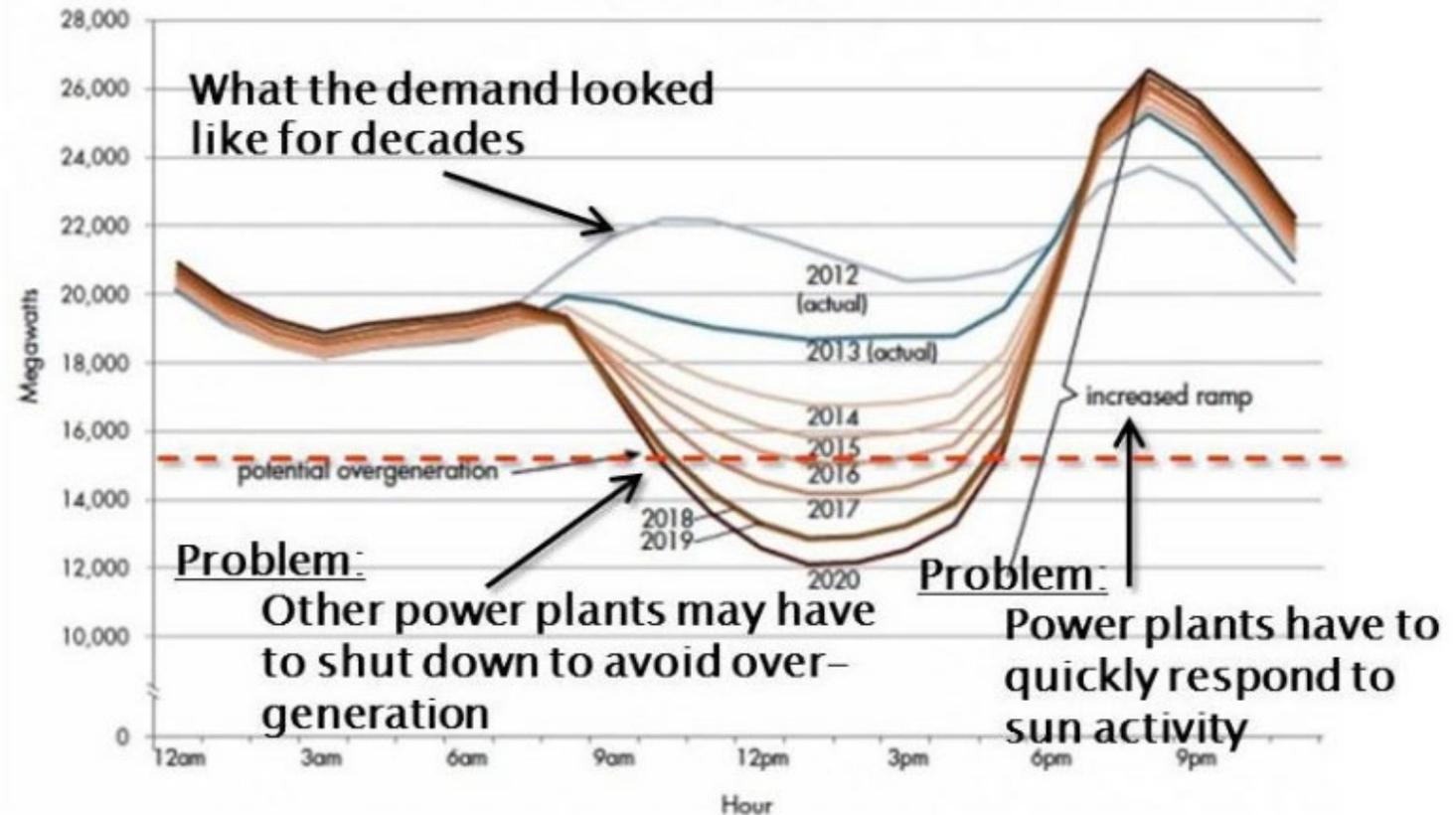


# CAISO's "Duck Curve"

For more info, see: "CAISO Fast Facts - What The Duck Curve Tells Us About Managing A Green Grid" at:

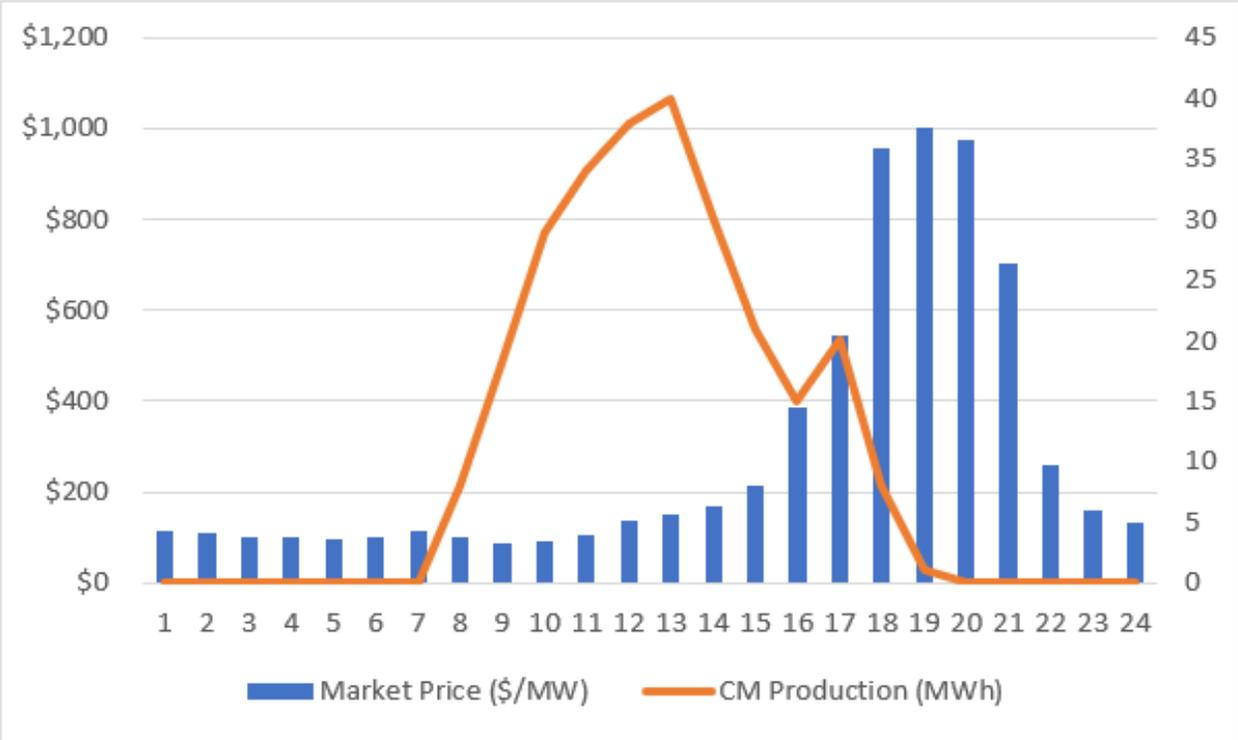
[http://www.caiso.com/Documents/FlexibleResourcesHelpRenewables\\_FastFacts.pdf](http://www.caiso.com/Documents/FlexibleResourcesHelpRenewables_FastFacts.pdf)

## Problems Grow as Solar Grows Net Load - March 31



# All Resources are not Created Equal

### Copper Mountain Solar MWh and Market Value (09/08/2022)

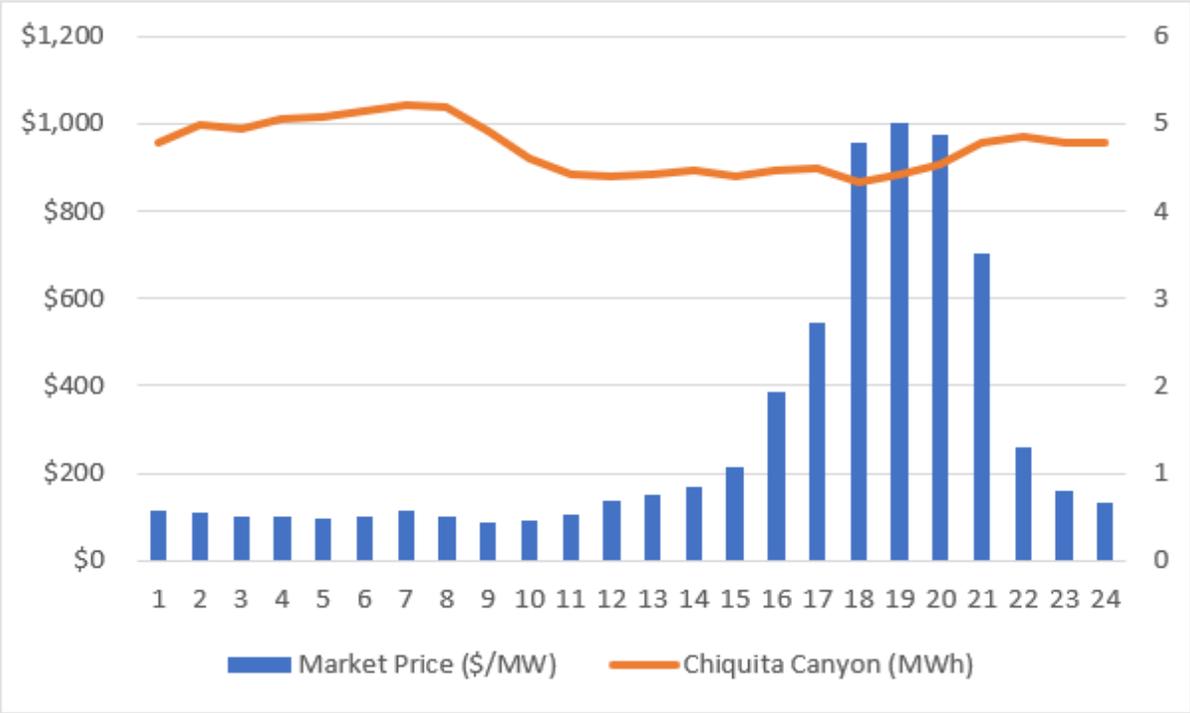


Copper Mountain  
Average  
\$/MWh=\$209



# All Resources are not Created Equal

## Chiquita Canyon Landfill MWh and Market Value (09/08/2022)

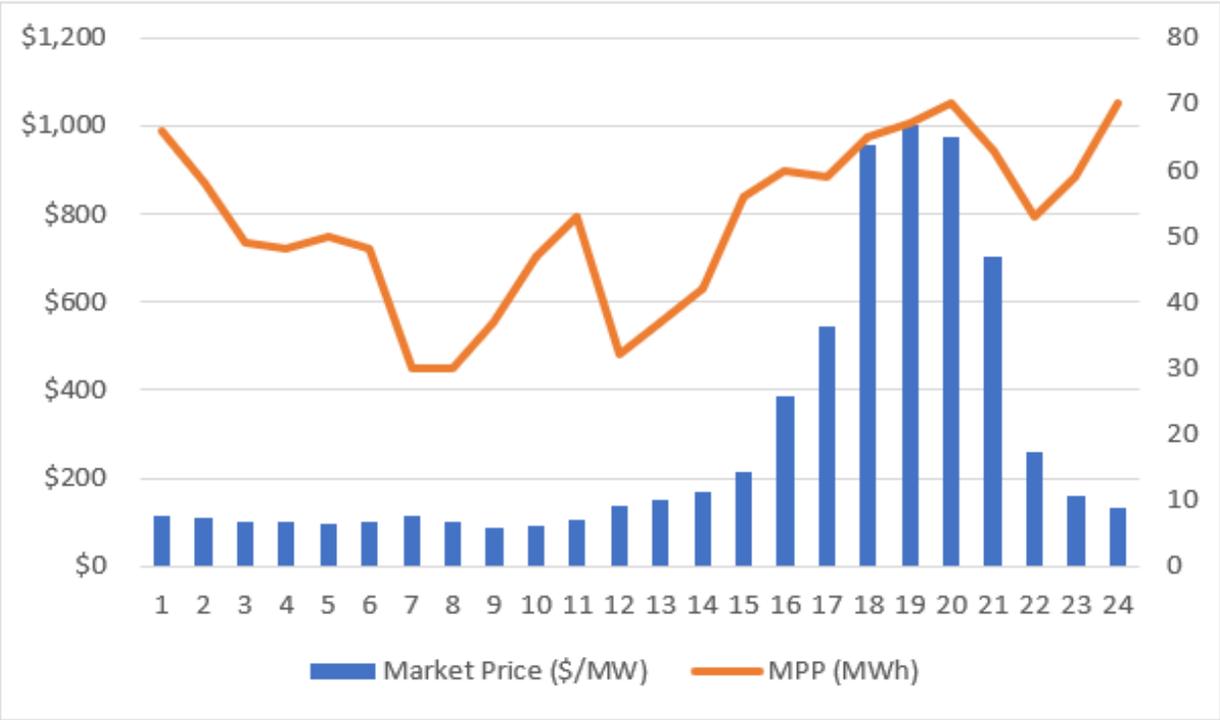


Chiquita Canyon  
Average \$/MWh=  
\$279



# All Resources are not Created Equal

### MPP MWh and Market Value (09/08/2022)



MPP Average  
\$/MWh=\$329



# Renewable Resources Update

- Renewable resource prices going up, close to 2010 prices
  - Actively negotiating several projects, but since June 2022 4 of 4 projects have dropped off
    - (1) geothermal, (2) solar+storage and (1) wind



# Renewable Resources Update

- 2023 RFP Responses
  - Commercial operation date of 2026 and later
  - Initiating negotiations for 40 MW solar + storage

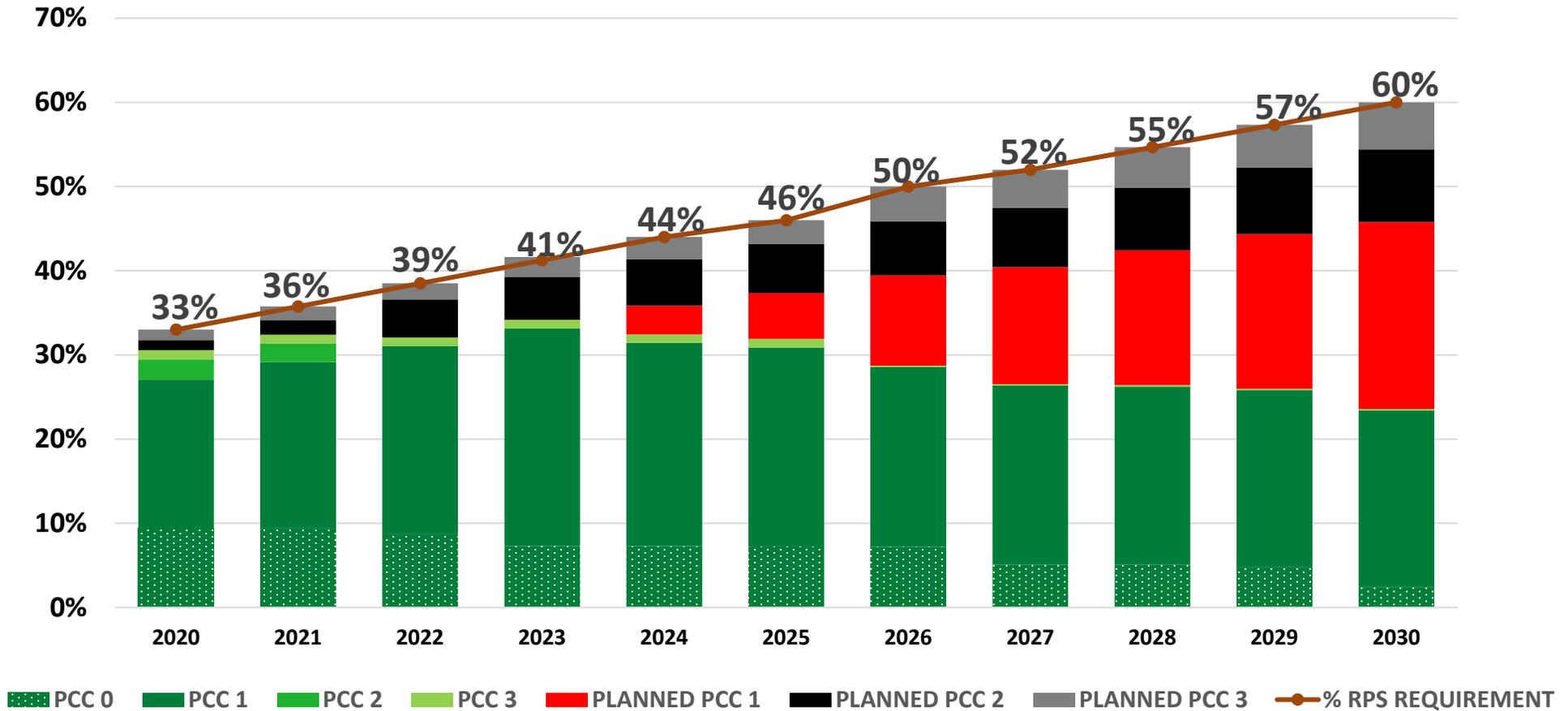


# Why Renewable Prices are Increasing?

- Supply chain issues
- Labor issues
- Tariff concerns
- Supply vs. demand
  - RPS increases to 60% by 2030



# BWP RPS Projections



# **Thank You for Your Time**

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